THE UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL

Department of Pathology
Annual Report
1 July 2005 – 30 June 2006

The University of Michigan
Department of Pathology

2005 - 2006

2006-2007 PATHOLOGY RESIDENTS AND FELLOWS

Christopher Przybycin,MD
HO, PGY 4
CHIEF RESIDENT

Jason Carvalho,MD
HO, PGY 3
ASST. CHIEF RESIDENT

Lauren Smith,MD
HO, PGY 5

Diane Hall,MD,PhD
HO, PGY 4

Bun (Brian) Siu,MD,PhD
HO, PGY 4

Dionne Stanchina,MD,PhD
HO, PGY 4

Angela Wu,MD
HO, PGY 4

Kristen Curlett,MD
HO, PGY 3

Malti Kshirsagar,MD
HO, PGY 3

Amir Lagstein,MD
HO, PGY 3

Kajal Sitwala,MD,PhD
HO, PGY 3

Matthew Wasco,MD
HO, PGY 3

Allecia (Lisa) Wilson,MD
HO, PGY 3

Bryan Coffing,MD
HO, PGY 2

Jonathan Cutlan,MD
HO, PGY 2

Julie Jorns,MD
HO, PGY 2

Seung (David) Kim,MD,PhD
HO, PGY 2

Cohra Mankey,MD
HO, PGY 2

Julianne Purdy,MD
HO, PGY 2

Lindsay Schmidt,MD
HO, PGY 2

Ebe Chinweze,MD
HO, PGY 1

Sara Farmen,MD,PhD
HO, PGY 1

Donna Jones,MD
HO, PGY 1

Jingmei Lin,MD,PhD
HO, PGY 1

Pedram Pouryazdanparast,MD
HO, PGY 1

He Wang,MD,PhD
HO, PGY 1

Limin Yu,MD
HO, PGY 1

Maria Braman,MD
LECTURER
SURGICAL PATH FELLOW

Christopher Golembeski,MD
LECTURER
GASTROINTESTINAL FELLOW

Michael Hayes,MD
LECTURER
BREAST PATHOLOGY FELLOW

Erica Jacobson,MD
PGY 5
HEMATOPATHOLOGY FELLOW

Xin Jing,MD
PGY 5
CYTOPATHOLOGY FELLOW

Stephen Olsen,MD
PGY 6
DERMATOPATHOLOGY FELLOW

Angela Ruiz,MD
LECTURER
SURGICAL PATH FELLOW

Masood Siddiqui,MD
PGY 6
CYTOPATHOLOGY FELLOW

Mohammad Yousef,MD
LECTURER
SURGICAL PATH FELLOW

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Departmental Overview

DEPARTMENTAL OVERVIEW

Jay L. Hess, M.D., Ph.D.
Carl V. Weller Professor and Chair

Dear Colleagues:

This has been a very exciting and dynamic year, both for the Department of Pathology as well as the Healthcare System. The Department has seen the arrival of a new Chair, a new hospital CEO, a new hospital COO, and the departure of Dean Lichter. I am very fortunate to follow in the footsteps of Dr. Peter Ward, who turns over to me a Department with a distinguished past, superb faculty and staff, and excellent financial resources.

One of the most significant changes we implemented in the Department was the reorganization of the Department into seven Divisions. This included the creation of two new Divisions: Pathology Informatics and Translational Research to better address Departmental needs in these critical areas. The Division Directors were reorganized into a management team with regular meetings to support executive decision making. One of our first tasks was to perform a Strengths-Weaknesses-Opportunities-and-Threats Analysis of each Division. This process was extremely important for understanding who we are – that is, what is the Departmental culture. Some of the key tenets of our Departmental culture are that:

1. **We work for the patient.** Our highest priority is to deliver the safest, highest-quality patient care possible. Part of our mission is to improve the ways we deliver healthcare.
2. **We must excel in all three of our missions.** While patient care is our highest priority, teaching and research also directly impact the quality of and the future of patient care. None of our three missions can be neglected if we are to be a world class department.
3. **We are all scholars.** Scholarship takes many forms, but at its core, it is contributing to innovation in some aspect of healthcare.
4. **We aim high.** We have the culture, the people, and the financial resources to be one of the finest Departments in the nation. In any new initiative, our first question should be, “What would it take to be #1 or #2 in this field?” and then marshal the resources to get there.
5. **We hold each other accountable**. Effective communications are essential for becoming a better organization. We need to make our expectations clear and provide timely, objective, direct feedback. This applies to all levels of the organization, including staff, residents, faculty, as well as the chair.
6. **Outreach is an important part of our mission.** The MLabs program has, and will continue to be, an important part of the financial and academic health of the Department. This program generates significant revenue that can be used to support all three of our important missions.

The Directors drafted Strategic Plans for each of their Divisions and began implementing these plans. Some of our important accomplishments during the 2005-2006 year included:

1. **Creation of a new Division of Pathology Informatics.** This is co-directed by Dr. Ulysses Balis, recruited from Massachusetts General Hospital to head up Clinical Informatics, and Dr. Arul Chinnaiyan, to head up Research Informatics. As is described in more detail in the Pathology Informatics Division Report, space is being renovated on the 4th level of the Medical Sciences I building to provide a home for this Division. A high-performance computing cluster will become operational in September in support of the Research Activities of this Division.
2. **The Division of Translational Research was created to support a variety of research activities involving high technology instrumentation within the Department.** We recruited Dr. Kojo Elenitoba-Johnson from the University of Utah, who is a Hematopathologist, Molecular Pathologist, and expert in proteomics and mass spectroscopy, to head up this Division. The Division is described in more detail in the Division report and includes resource facilities in Mass Spectroscopy, Molecular Pathology, and Analytic Flow Cytometry.
3. **The Department increased NIH funding** by nearly $4 million, moving the Department to 15th from 20th among Pathology Departments.
4. **Pathology Department faculty published numerous papers in high impact journals** including *Cell, Cancer Cell, Journal of Experimental Medicine, Molecular Cell, Nature, Nature Immunology, Nature Medicine, New England Journal of Medicine, PNAS,* and *Science*. In addition, the Department received further recognition for Dr. Arul Chinnaiyan's work on autoantibody biomarkers in prostate cancer, which was highlighted on ABC WorldNews Tonight.
5. **We established the S. P. Hicks Endowed Professorship**, with Dr. Arul Chinnaiyan as its first recipient.
6. **Dr. Yali Dou was recruited from Dr. Robert Roeder's laboratory** at Rockefeller University as a BSSP Scholar and Assistant Professor. Dr. Dou's research focuses on histone methyltransferases and epigenetic regulation of transcription.
7. **Dr. Alexey Nesvizhskii was recruited from Dr. Ruedi Abersold's laboratory** at the Institute for Systems Biology in Seattle. Dr. Nesvizhskii's area of research expertise is in the computational analysis of mass spectroscopy data.
8. **Eight research faculty relocated to the BSRB,** while others relocated to space in the Cancer Center and MSRB I, II and III.
9. **Dr. Jeffrey Myers was recruited from the Mayo Clinic to head up the Division of Anatomic Pathology**. He was followed by Dr. Daniel Visscher, from the Mayo Clinic, who will serve as the Director of Surgical Pathology. In addition, Dr. Jonathan McHugh, who is currently completing a fellowship in Head and Neck Pathology, at the University of Pittsburgh, will return to Michigan as a faculty member in Surgical Pathology and Head and Neck Pathology.
10. **Dr. Megan Lim was recruited from the University of Uta**h to serve as Director of the Hematopathology Section.

11. **Dr. Douglas Smith was recruited from Baylor University** to head the HLA Tissue Typing laboratory.
12. **A number of work flow process improvement projects were completed** in the clinical laboratories, most notably a laboratory-wide consultancy with ValuMetrix to plan for a laboratory-wide implementation of Lean processes.
13. **Renovations are underway in the histology and cytology** areas to improve clinical workflow.
14. **The Department is in the process of selecting a new, much needed laboratory information system.**
15. **The Department is awaiting a site location decision for the new Pathology Building.** This "Institute of Pathology" will house almost all of the clinical activities and, in addition, will house a significant amount of new research space.
16. **In the Education Division, we implemented a three-track strategy for resident education,** recognizing the broad range of interests of our incoming residents. Tracks for research-oriented faculty, academic-clinicians, and community practice-oriented pathologists are currently under development. The amount of funded residency slots was increased to 36 and the range of subspecialty fellowships was broadened considerably. These include the successful accreditation of the Dermatopathology fellowship, lead by Dr. Douglas Fullen and the Molecular Pathology fellowship, which is currently being reviewed for submission to the ACGME.
17. **Clinical residents and fellows presented 19 preferred papers at the USCAP** and garnered a number of prestigious awards including the Stowell Orbison Award, which was awarded to Dr. Rohit Mehra and the 2006 Young Investigator Research Grant from the Society of Pediatric Pathology, that was awarded to Dr. Jason Jarzembowski.
18. **Dr. Nicholas Lukacs takes over as head of the graduate program.** At the same time, we thank Dr. Sem Phan for his dedicated leadership.
19. **Dr. Lloyd Stoolman introduces virtual microscopy** into the medical school curriculum. Glass slides have been replaced by high resolution full slide images that can be zoomed, panned and digitally annotated online.
20. **Dr. Andrew Flint wins the American Medical Student Association's 2006 National Golden Apple for Teaching Excellence Award.**
21. **The MLabs program business plan was redesigned** with targeted growth in esoteric testing including Hematopathology, Cytogenetics, Molecular Pathology, and Surgical Pathology, with additional areas to be defined. In addition, the MLabs program has implemented a new lab web portal with rollout to selected clients in September 2006.
22. **Finally, the finances of the Department remain strong,** despite considerable investment in research, teaching and clinical programs, with net assets increasing by over $5 million in 2005-2006.

Many more exciting plans are in store for the Department of Pathology for the upcoming year. It has been a great pleasure serving as Chairman of the Department of Pathology at the University of Michigan over the past year and I hope you find this Annual Report to be a helpful source of information about this outstanding Department.

Jay L. Hess, M.D., Ph.D.
Carl V. Weller Professor and Chair

Division Reports

Anatomic Pathology

DIVISION OF ANATOMIC PATHOLOGY

Jeffrey L. Myers, M.D.
A. James French Professor of Pathology
Director of Anatomic Pathology

Summary

Anatomic Pathology experienced substantial change in fiscal year 2006, including transitions in several leadership roles. The practice remains strong with sustained growth in both surgical pathology and cytopathology. Dermatopathology continues to show significant practice growth while expanding educational programs. Neuropathology remains a vital part of the practice, supporting needs in both surgical and autopsy pathology. The autopsy service continues to provide high levels of service while developing a forward-thinking plan to establish a national Center of Excellence in Forensic Pathology. New operational imperatives include ongoing collaboration with a departmental lean initiative, remodeling hospital laboratories, identification of a new LIS, and expansion of data-driven practice management. Strategic priorities are evolving around safety, quality, innovation and informatics driven by our vision that *by 2010, everyone, everywhere will think of the University of Michigan when asked about excellence in Anatomic Pathology*.

Education programs remain strong as demonstrated by the continued success and expansion of our fellowship training programs. Success and vitality in our academic mission is further evidenced by continued visibility in peer-reviewed journals considered high impact by the academic anatomic pathology community, broad participation in funded research activities, and successful completion of the first quarterly funding cycle for a new model of project support.

General

A number of leadership transitions occurred in fiscal year 2006. Dr. Jeffrey Myers was appointed Director of Anatomic Pathology effective January 1, 2006. Effective July 1, 2006, Dr. Daniel Visscher joined the Division as Director of Surgical Pathology. Dr. Visscher will also serve as Medical Director of Histopathology and Director of the Pathology Assistants Program. These high level appointments were accompanied by several internal transitions including appointments of Dr. David Lucas as Medical Director of Immunohistochemistry and Dr. Barbara McKenna as Program Director for the Surgical Pathology Fellowship.

Clinical Practice

Surgical Pathology

A total of 68,295 surgical pathology cases, including a combination of intramural and extramural cases, were processed in 2006 compared to 66,883 in 2005. This represents an annual growth rate of just over two percent and a 26.4% increase compared to 2001 (Fig. 1).

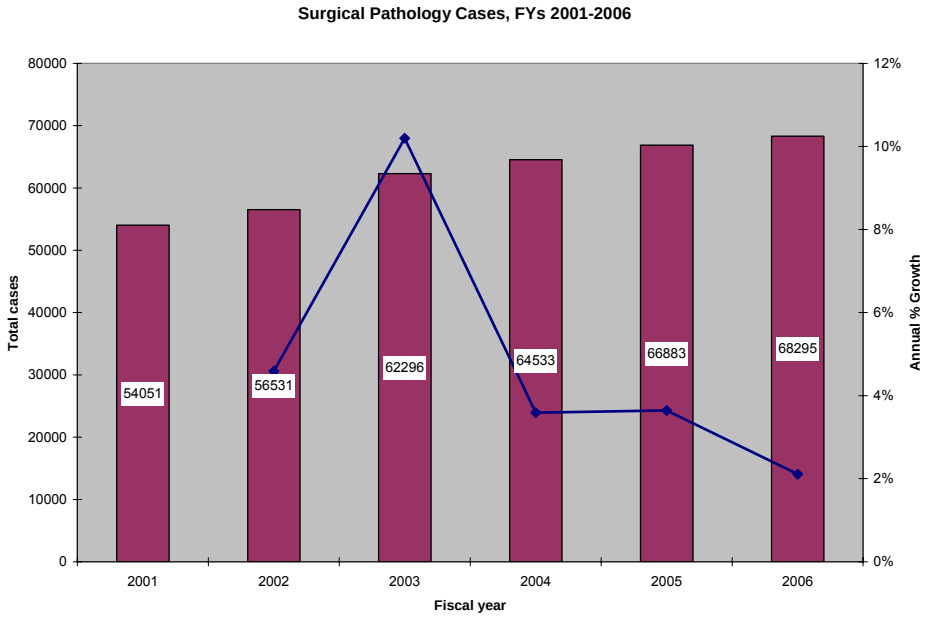


Fig. 1

Consultation cases accessioned through M-Labs grew at an annual rate of nearly nine percent, accounting for 6,161 cases in 2006 compared to 3,471 in 2001 (Figure 2).

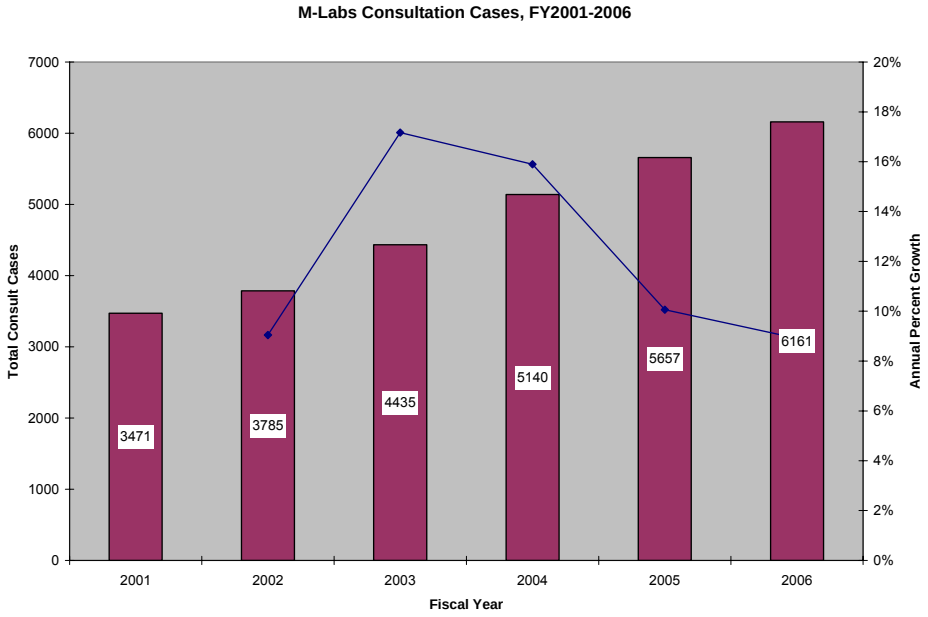


Fig.2

This represents a 77.5% increase in the extramural consultation practice over five years. The disproportionate contribution of consultations and higher complexity cytology cases (see below) has resulted in a growth in relative value units (RVUs) that exceeds the growth expressed as simple case numbers (Figure 3). Expressed as a 12-month rolling average, RVUs demonstrated an annual growth rate of 3.8% in FY2006 and a 41.9% increase compared to FY2001.

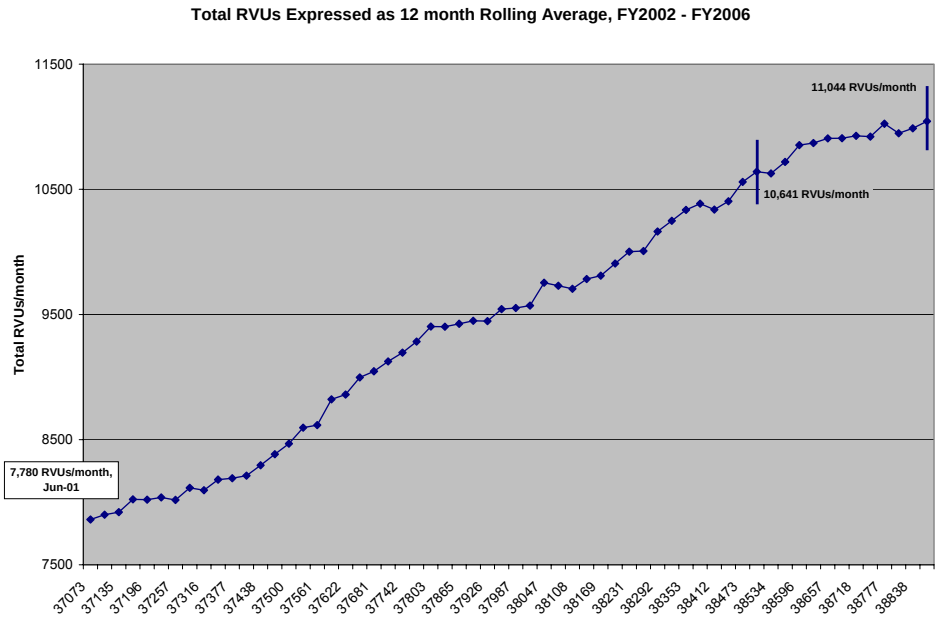


Fig. 3

Growth in practice has been accompanied by proportional growth in faculty expressed as paid clinical FTEs (Figure 4), resulting in a continued slight downward trend in the ratio of total RVUs (*i.e.* surgical pathology + cytology) to clinical FTEs (Figure 5). Dr. Jon McHugh, Chief Resident in the 2005-2006 academic year, is currently a Michigan-funded fellow in head and neck pathology at the University of Pittsburgh and will return as a faculty member in July 2007 in surgical pathology with a subspecialty focus in head and neck pathology. With Dr. McHugh's recruitment staffing needs in surgical pathology are fully met for the foreseeable future.

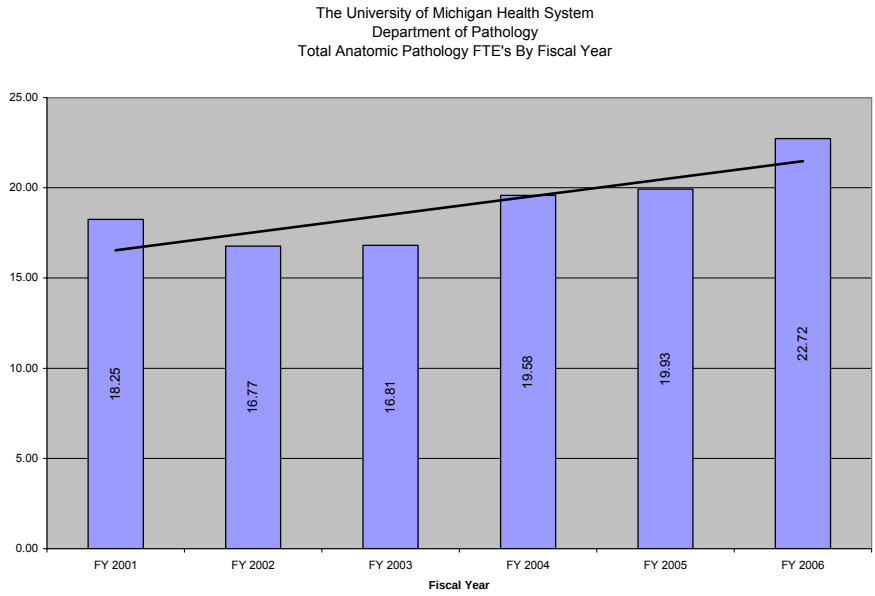


Fig. 4

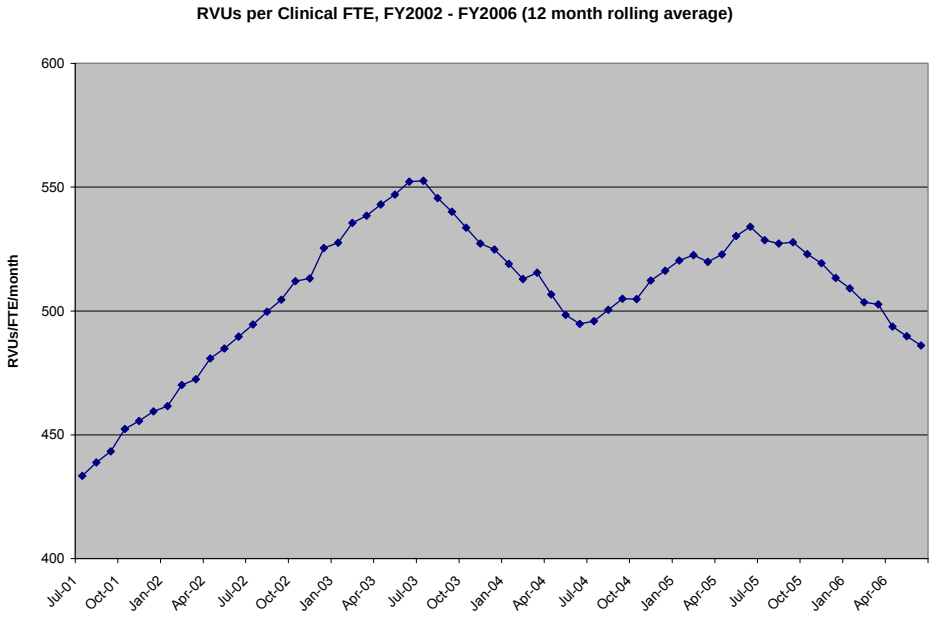


Fig. 5

Dermatopathology

The Dermatopathology Service case load is serviced by Drs. Douglas Fullen, Lori Lowe, Linglei Ma and Lyndon Su. There are four primary sources of diagnostic case materials: (1) UMMC (ID) cases; (2) outside contractual (MD) cases; (3) personal consultation cases (DP); and (4) outside slides reviewed for referred patients (TD) cases, which accounted for 56.7% of the annual practice growth in Surgical Pathology.

The clinical service volume was as follows:

	2003-2004	**2004-2005**	**2005-2006**
ID	6343	6888	11,586
MD	9514	8878	4892
TD	1568	1758	1703
DP	1**577**	1871	2162
MISC	172	148	123
TOTAL	**19,174**	**19,543**	**20,343**

This represents an overall 4% growth in case load and approximately 30% of surgical pathology accessions. The consult service experienced a 15% growth in volume.

In addition, the faculty are actively involved in the University of Michigan Multidisciplinary Melanoma Clinic (MDMC) and Tumor Board. This remains the largest melanoma program in the United States. Accordingly, the volume of difficult pigmented lesions seen by our service is substantial, as are the numbers of wide local excisions, biopsies, and sentinel lymph node biopsies generated by this busy clinic, all of which directly impact Dermatopathology. In addition, a very visible role in Cutaneous Lymphoma Conference and Tumor Board continues.

Neuropathology

The Neuropathology Service is provided by Drs. Mila Blaivas, Andrew Lieberman, Paul McKeever and Ms. Constance D'Amato. There were 1200 neurosurgical cases examined this year. The Diagnostic Unit of the Neuropathology Core Laboratory of the MADRC processed 20 dementia brain cases. In addition, 175 brains were examined for the University Hospital, 322 muscle biopsies were completed, and 150 neuro-oncology cases were reviewed. The neuropathology faculty were active in the educational efforts of the Department, as summarized below.

Medical Renal Pathology

Our renal biopsy service remains an important growth area showing 4.4% growth compared to FY2005 and a remarkable 54% increase over the last decade (see Table 1). Averaged over a 12 month period, that represents a monthly increase of 20 cases from a low of 37 cases in May1996 to a 12-month average of 57 cases in June 2006 (Figure 6). As also reflected in the data, there remains significant month-to-month variation in practice (range 13 to 149 cases/month in FY2001-FY2006) resulting in significant staffing challenges. Laboratory remodeling planned for early in FY2007 will allow more efficient case signout and opportunities to explore more flexible staffing models.

Table 1: Renal Biopsy Practice, FY1996 – FY2006

FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06
446	552	519	535	629	594	610	715	665	658	687

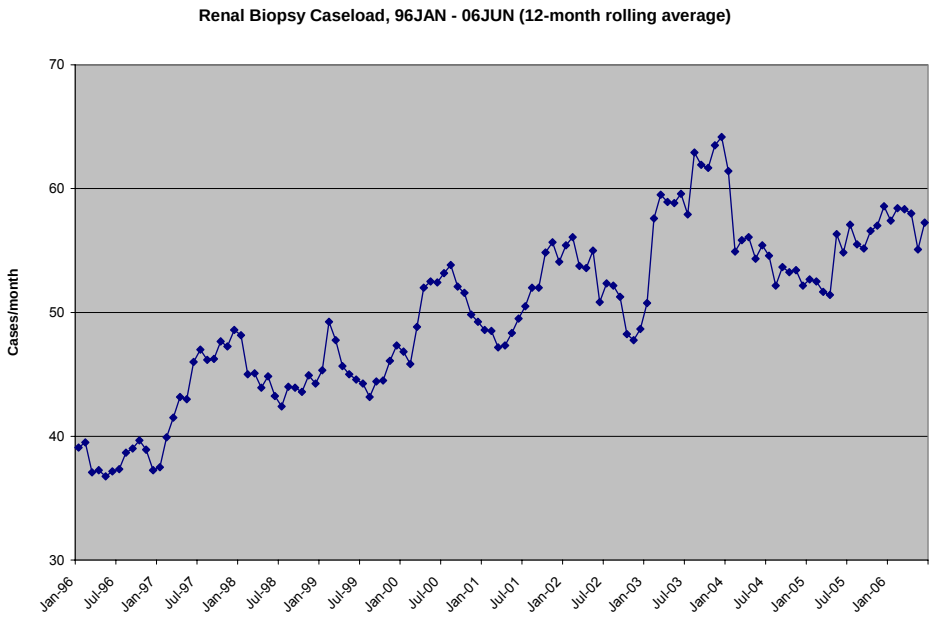


Fig. 6

Cytopathology

The cytopathology practice remains stable, with a total of 57,424 cases in 2006 compared to 56,472 in 2005 for an annual growth rate of 1.7% (Figure 7). This represents a 1.8% increase compared to 2001, a figure that fails to account for a significant shift in case-mix (see Table 2). Non-gynecologic cases and FNAs have

increased from 6,112 to 8,619 and from 1,476 to 1,946, respectively, while gynecologic cases (*i.e.* pap smears) have fallen from 48,843 to 46,859 in the same five year period. The decrease in pap smears in 2004 reflects the loss of a single M-Labs client who elected to retain their own pap smears rather than refer them to us. The impact of the change in case-mix is an increase in cytology-associated RVUs that is disproportionate to the 1.8% increase in case numbers, given that only 8% of pap smears require review by a cytopathologist whereas all other cases are reviewed by a member of the faculty. A national search is underway for a candidate with dedicated interest and experience in cytopathology to address this growth and to also accommodate the loss of two faculty, Drs. Cynthia Krueger (Lecturer) and Yiran Dai (Assistant Professor). Continued participation of other faculty from within and outside the Division in the cytology practice is also an essential component of our near-term staffing strategy.

Table 2: Cytology Case-Mix in FY2001 and FY2006

	FY2001	FY2006	% Change
non-gynecologic	6,112	8,619	41.0%
FNAs	1,476	1,946	31.8%
pap smears	48,843	46,859	-4.1%
TOTAL	56,431	57,424	1.8%

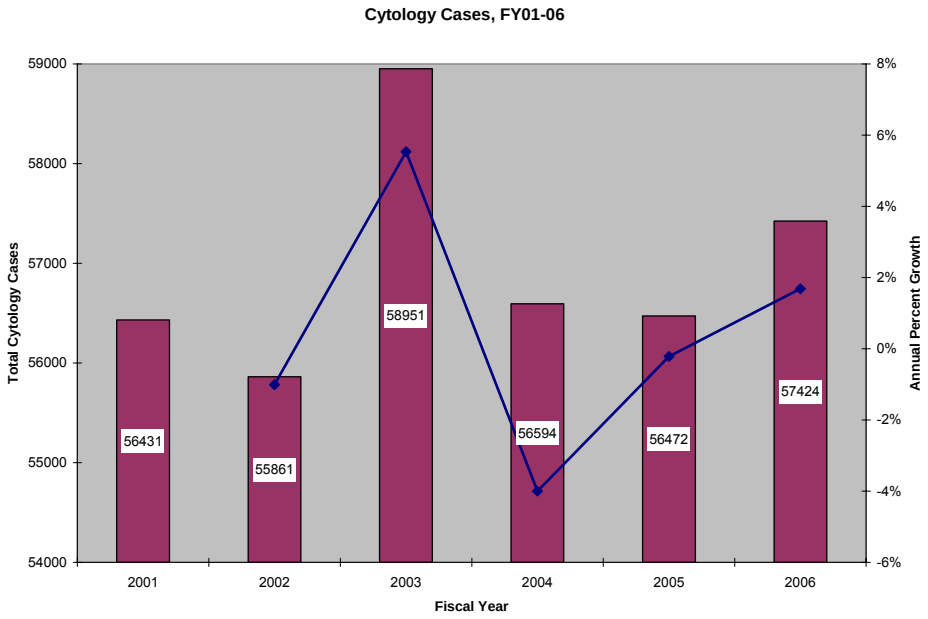


Fig. 7

The section of cytopathology is currently engaged in a visioning process intended to lead to further recognition as world leaders in diagnostic services, education and research. Participating faculty have articulated core values essential to their ongoing success in achieving excellence in all of their missions as follows.

1. Foster a stimulating and collaborative work environment encouraging intellectual discussions, collegial interactions and promoting opportunities for professional growth and development.
2. Provide an equitable working place that respects individual members and welcomes diversity.

3. Promote team work in our daily interactions and strive to achieve goals.
4. Utilize innovative approaches to our practice, teaching and research.

Autopsy Pathology

The hospital autopsy practice remains stable with a slight decline in both the hospital autopsy rate (20% in FY2006 compared to 23% in FY2005) and the number of autopsies (Figure 8). The autopsy service continues to emphasize timely completion of all autopsy reports in order to effectively communicate with both our clinical colleagues and the families. The table below lists the autopsy completion time for the past 10 years.

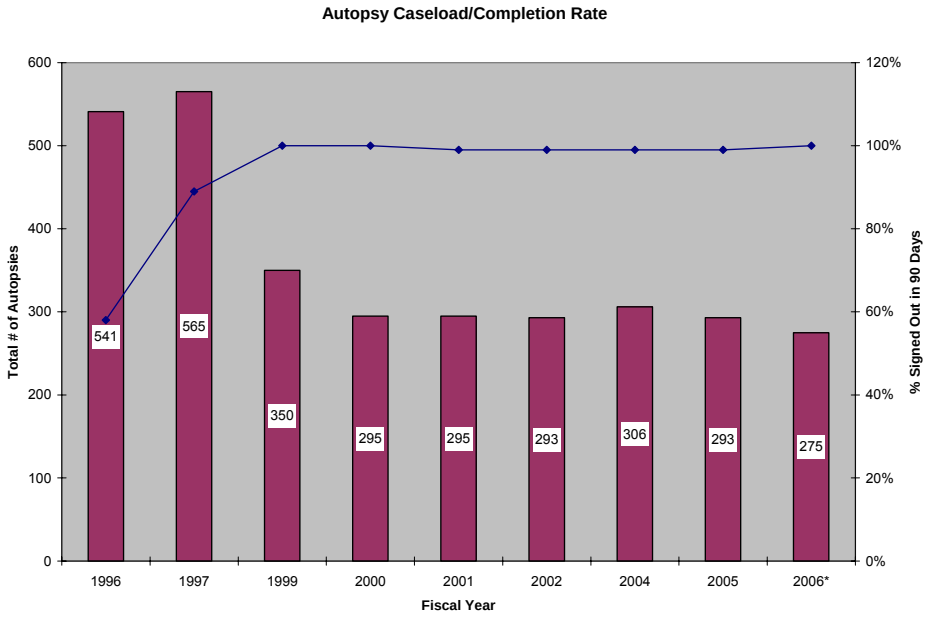


Fig. 8

We continue to determine the autopsy rate by clinical service in the hospital. The total number of deaths, number of cases and autopsy percentage for the period April 2005 to March 2006 are listed below. For comparison, the previous year's data are also included. The figures below do not include the number of brain only autopsies performed.

	Deaths 4/1/05 3/31/06	Deaths 2004-5	**# of Autopsies 4/1/05 3/31/06**	# of cases 2004-5	**% of deaths 4/1/05 3/31/06**	% of deaths 2004-5
Medicine	**451**	458	**95**	106	**21%**	23%
Surgery	**299**	288	**34**	50	**11%**	17%
Pediatrics	**120**	103	**42**	36	**35%**	35%
Other services	**33**	27	**7**	8	**21%**	30%
Total Hospital	***903***	*876*	***178***	*200*	***20%***	*23%*

Hospital autopsy percentage April 05 to Mar 06 23%

The Department of Pathology continues to have a presence in Medical Examiner issues in the State of Michigan and Washtenaw County. Medical examiner autopsies continue to be done at the University of Michigan. Additionally, the Director of the Autopsy Service serves on the Executive Committee of the Michigan Association of Medical Examiners as well as being the Executive Editor of the Association's newsletter.

A financial effect analysis is currently underway for a novel proposal that would position our autopsy service to provide forensic services to much of southeast Michigan (draft proposal attached to Appendix 4). This plan has the potential to significantly impact not only our autopsy practice but also educational programs in forensic pathology.

Education

Education is an essential and vibrant component of our mission. Anatomic Pathology continues to provide a robust experience for both residents and fellows, including standard rotations in autopsy, surgical and cytopathology as well as required and elective rotations in various subspecialties. Fellowships in breast pathology (1), cytopathology (2), gastrointestinal pathology (1), and surgical pathology (3) were filled by competitive candidates in the 2005-2006 and 2006-2007 academic years. A dermatopathology fellowship was newly accredited in 2006 and the position filled for the 2006-2007 academic year. A strong candidate has already been recruited to serve as our second dermatopathology fellow in July 2007. Fellowship programs in genitourinary and pulmonary pathology are also recruiting for open positions in July 2007. Trainees actively participated in various research projects during the course of the year, serving as authors or co-authors for nearly 20 abstracts presented at the 2006 spring meeting of the USCAP.

Faculty in Anatomic Pathology continue to play significant roles in the medical school, including primary responsibility for first and second year courses in pathology as lecturers, laboratory instructors, advisers and mentors. Electives for senior-level students remain popular and are supported by a number of faculty including Drs. Andy Flint, Dave Lucas and Robert Ruiz. In addition, several faculty including Drs. Joe Fantone, Dave Gordon and Dan Remick continue to play important administrative roles in the Dean's office. Multiple faculty also participate in teaching dental students.

Nearly all faculty in Anatomic Pathology participate in supporting an impressive array of interdisciplinary conferences including Tumor Boards for adrenal (monthly), bone and soft tissue (weekly), brain (weekly), breast (weekly), endocrine (monthly), gastrointestinal (weekly), genito-urinary (weekly), gynecologic (monthly), liver (monthly), pediatric (semimonthly), and lung (weekly) tumors. Faculty also regularly participate in various other conferences including brain cutting, dementia brain cases (quarterly), diagnostic dermatology, cutaneous T-cell lymphoma, nephrology, nerve and muscle (weekly and monthly), multiple pediatric subspecialties (GI, hematology-oncology, lung, surgery) and adult non-neoplastic lung disease (semimonthly). Educational conferences targeting primarily pathology trainees in which faculty participate include weekly slide (Monday) and didactic (Tuesday) teaching sessions, weekly autopsy gross conferences (Tuesday and Friday), a semimonthly cytology conference (every other Thursday), and a monthly "extended" gross conference.

Plans are evolving for an annual, on-campus, case-based CME workshop targeting a regional and national audience with a proposed date of October 4-6, 2007 for the first symposium. This will provide opportunities for broad participation, including faculty from

outside the Division of Anatomic Pathology. Tom Colby, an internationally recognized authority in pulmonary pathology and an alumnus of the University of Michigan Medical School, has agreed to serve as guest faculty for the 2007 course.

Research

Anatomic Pathology faculty remain remarkably productive despite the demands of patient care and our educational programs as summarized above. Twenty nine (88%) of 33 faculty (including 2 emeritus staff) who submitted annual summaries reported an average of 6.7 (median 5) peer-reviewed publications (range 1 to 23) (Figure 9). In addition faculty reported the results of their work in abstract form on 84 different occasions. A total of 16 book chapters were contributed to various pathology textbooks. Twenty-one (64%) faculty served as invited lecturers, speakers or visiting professors on 107 occasions, for an overall average of 5.1 invited presentations per participant. Eleven faculty currently serve on 27 different editorial boards including the most highly visible peer-reviewed pathology journals.

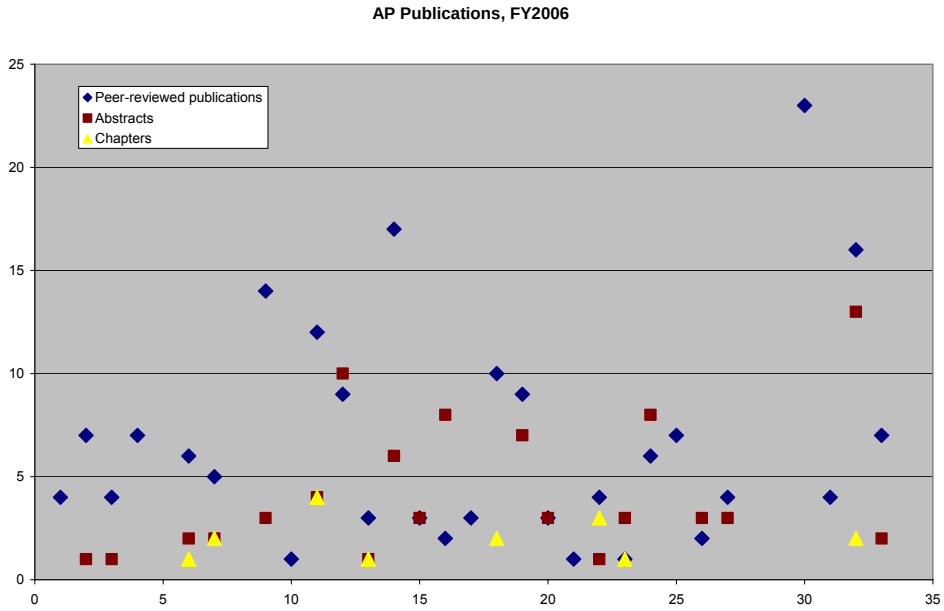


Fig. 9.

Eleven different faculty participated as Principle Investigators or Co-Investigators in 50 different projects funded by various government and industry sources and accounting for over $4 million dollars in actual research expenditures (Figure 10). This level of funding accounted for just over 4.8 FTEs and $680,241 in recovered effort and salary, respectively. The diverse list of projects reflects critical support for multidisciplinary collaborative translational research including funded participation in Cancer Center programs, SPORE grants in cervical and prostate cancer, and 7 different NIH Cores. Support of the Cancer Center includes tissue procurement and Dr. Giordano's role as Tissue Core Director.

An additional $150,000 is being made available annually from departmentally allocated division resources to spark continued growth in peer-reviewed projects (≤ $20,000 per

project) that are aligned with strategic priorities in translational research and have the potential to expand collaboration within or across divisions.

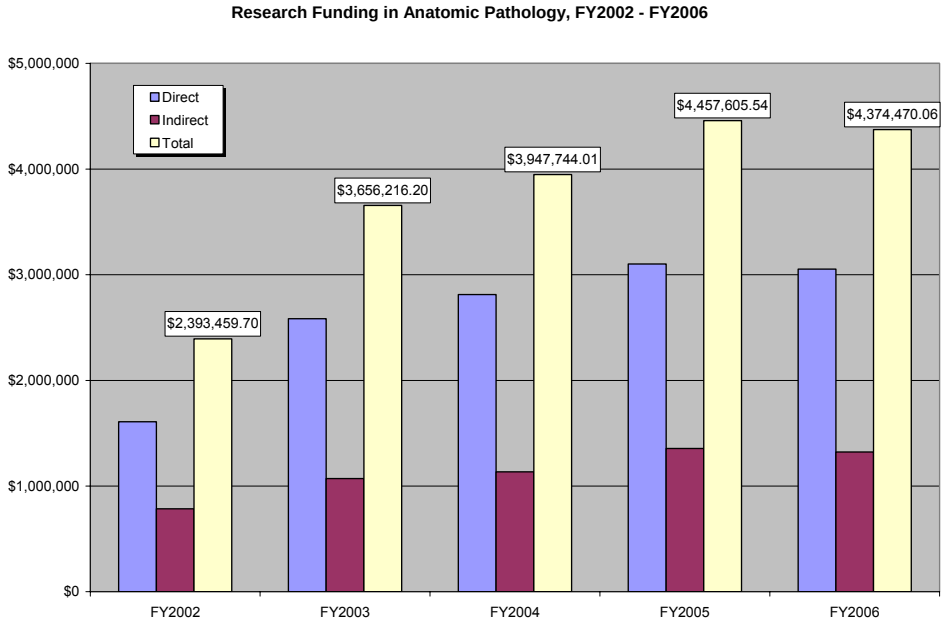


Fig. 10

Future Directions

This enviable track record of accomplishment in practice, education and research stands as testimony to the fundamental health of Anatomic Pathology and represents a sound foundation for growth across the enterprise. The first two quarters of FY2007 will be devoted to evaluation and modification of the Division's administrative structure and attention to strategic planning in order to prioritize resource allocations. Strategic priorities will include commitment to the highest levels of *safety*, *quality* and *service* in patient care and *innovation* as an essential core competency among all staff and faculty. Education and research will remain the foundation for distinguishing the University of Michigan as *the place that will be top of mind when anyone, anywhere is asked about excellence in Anatomic Pathology.*

Respectfully submitted,

Jeffrey L. Myers, M.D.
A. James French Professor and Director, Division of Anatomic Pathology

Clinical Pathology

DIVISION OF CLINICAL PATHOLOGY

Jeffrey S. Warren, M.D.
Aldred S. Warthin Endowed Professor
Director of Clinical Pathology

OVERVIEW

The Clinical Laboratories continued to provide excellent, full-spectrum service (more than 800 different laboratory analyses) as the University of Michigan Health System continued to expand both its clinical volume and scope. Particularly brisk growth has been observed in the hematopoietic stem cell transplantation programs and selected surgical subspecialty procedures. Substantial effort has been directed towards the implementation of more robust specimen labeling requirements, improved coordination of specimen procurement, utilization of phlebotomists to access central venous ports, and the implementation of many new assays. Aggressive laboratory utilization control, improvement of laboratory logistics, and achievement of compliance with CMS-mandated rules on documentation of test-ordering indications have continued. Department of Pathology personnel are critically involved at many levels of the $74 million UMHS “Orders Management Project” which promises to streamline patient care in the Hospitals and in so-called “inpatient-like venues”.

In 2005-06 the Clinical Laboratories performed more than 3.9 million billable analyses (10 million individual measurements), supported a wide array of clinical and research programs, and added or replaced more than 40 testing methods. There was a 10.0% increase in inpatient-derived laboratory activity and a 7.7% increase in outpatient-derived activity. Gross laboratory (CP and AP) revenue neared $296M in 2005-06. The maintenance of high quality services by the Clinical Laboratories, in the face of increasing complexity and breadth of demands, is testimony to the professionalism of the staff and the management capabilities of the laboratory directors and senior laboratory personnel. The Clinical Laboratories successfully completed the biannual College of American Pathologists self inspection in May, 2006. Maintenance of the delicate balance among quality service, cost effective testing, utilization control, and the research and development which characterizes an academic institution, will be a continuing challenge.

A major achievement was the continuing pursuit of an aggressive utilization management program. More than $1.3M in direct laboratory cost avoidance and test utilization control was realized in 2005-06. This was made possible through educational meetings with selected clinical program directors, daily interactions with many clinical services, and the support of the Clinical Information Decision Support Service.

Finally, the Clinical Laboratories have continued to respond to the change in scope and organization of UMHS patient care activities. In contrast to the early 1990s when 70% of laboratory testing volume came from inpatient services and 30% from ambulatory patients, the split is now 50:50. The laboratories currently support more than 30 UMHS-owned regional satellite facilities, our regional outreach program (MLabs) as well as many more patients who are M-Care subscribers. The Department has been successful in the recruitment of several new faculty who will participate in various aspects of clinical laboratory service. These individuals include Dr. Jay Hess (Chairman, Department of Pathology; Hematopathology Service), Dr. Megan Lim (Director, Hematopathology Section; effective September 2006), Dr. Kojo Elenitoba-Johnson (Hematopathology and Director, Division of Translational Research; effective September 2006), Dr. Douglas Smith (Director, Histocompatibility Laboratory; effective August, 2006), Dr. Ulysses Balis (Director, Clinical Informatics; effective July, 2006), and Dr. Steven Pipe (Associate Professor of Pediatrics; Interim Director, Coagulation Laboratory).

Faculty and laboratory staff participated in a wide variety of intramural and extramural educational programs during 2005-06. For instance, the AIMCL (informatics) course in Las Vegas was again very well attended, making it the most visible program of its kind in the United States. The March AIMCL course brought together leaders from a variety of institutions and laboratory information technology fields to discuss the future of informatics in clinical pathology practice. The UMHS again hosted the annual update in Transfusion Medicine and Blood Banking, a program with a nearly 30 year tradition. These programs, along with M-Labs educational programs, are prominent examples of educational outreach activities.

The revised clinical pathology residency training format, which organizes pathology residents into teams that rotate through five blocks of clinical laboratories grouped according to “relatedness of discipline”, was again successful. The high quality of trainees in the Hematopathology Fellowship program, the Blood Bank/Transfusion Medicine Fellowship program, and the Molecular Diagnostics Fellowship has enhanced the service, educational, and academic missions of these groups and the Department.

The academic achievements of faculty members within the Clinical Pathology Division have been excellent. As a group, the CP faculty had nearly 70 articles published in peer-reviewed journals. Many faculty members played highly visible leadership roles in national organizations, courses, symposia, as well as on editorial boards, examining committees, and research review study sections; an illustration of their high levels of recognition throughout the United States (see individual reports). Numerous faculty members received extramural funding that supported a variety of scholarly activities (see individual reports).

The Clinical Pathology Division will continue to face new challenges. In addition to its ongoing academic enterprises, educational goals, leadership and development in quality assurance, and laboratory resource utilization in the context of the hospital cost efficiency program, the Division plans to focus on robust expansion in the areas of hematopathology, molecular diagnostics, and molecular cytogenetics. Clinical Informatics has been accorded divisional status. This restructure promises to markedly enhance both service and academic initiatives in this area. It is anticipated that there will be continued emphasis on the recruitment of faculty who will successfully contribute to both the service and scholarly activities of the Department. Participation in the design of new clinical and research space under the leadership of our new Chairman, Dr. Jay

Hess, is anticipated with great eagerness. Likewise, a Laboratory-wide Lean process initiative is highly anticipated. Achievement of these objectives will require the continued commitment, professionalism, and hard work of the faculty, laboratory staff, administration, and house officers.

Additional information on each of the sections within the Division of Clinical Pathology follow. These sections are: Blood Bank and Transfusion Services, Chemical Pathology, Clinical Immunology Laboratory, Clinical Mirobiology/Virology Laboratories, Combined Hematology Services, Histocompatibility and Immunogenetics Laboratory, and Molecular Diagnostics Laboratory.

Blood Bank and Transfusion Services

The Blood Bank and Transfusion Services section is headed by Dr. Robertson D. Davenport, with Drs. Laura Cooling and W. John Judd serving as faculty on the team. Both the faculty and the staff on the Blood Bank and Transfusion Services team are highly trained and maintain numerous memberships in national and regional professional organizations.

Blood component utilization increased in all areas relative to the previous year, with the greatest increase seen in FFP and thawed plasma (18.9%). The 8.4% increase in overall utilization represents increased clinical activity. The pretransfusion testing activity remained relatively stable. Hematopoietic progenitor cell processing activity increased in excess of 25% to 458 units processed, while the number of HPC transplants performed remained essentially constant. The increase in HPC laboratory activity reflects changes in the BMT patient population as well as higher collection targets for autologous transplants.

The Transfusion and Apheresis Service activity increased significantly. There was growth in all areas, but HPC collections were sharply higher. This reflects changes in the BMT patient population as well as high collection targets.

	2004-2005	2005-2006	Percent change
Therapeutic apheresis	827	871	5.3
HPC collections, autologous	281	509	81.1
HPC collections, allogeneic	90	117	30.0
LDL apheresis	104	141	39.4
Total patient encounters	1,641	1,882	14.7

The Reference Laboratory activity was mixed. There was an 11.8% increase in antibody identifications performed, but an overall 8.3.% decrease in total procedures, reflecting fewer specialized tests performed. Significantly, the M-Labs/referrals procedures dropped 33.3%.

Patient safety remains a top priority for the Blood Bank and Transfusion Services. Installation of the bidirectional interface of the ProView instruments to PathNet was successfully completed. This resulted in operation efficiencies and improved patient

safety by eliminating manual result entry steps. In addition, new security procedures were implemented in compliance with Nuclear Regulatory Commission orders.

Chemical Pathology Laboratory

The Chemical Pathology Laboratory is under the direction of Dr. Donald Giacherio. The past year was once again marked by a steady increase in laboratory workload. The Chemistry Section experienced an approximate 7.5 % increase in overall testing volume this year, performing over 5.8 million individual tests. Certain areas of the laboratory such as Immunology and Point of Care testing experienced even larger percent increases in testing volume. This workload was absorbed without the addition of incremental personnel.

The major focus of the Chemistry Section this past year was on the implementation of new Bayer chemistry and immunoassay analyzers along with a lab automation track system. The Bayer Centaur immunoassay instruments were installed in July and August 2005. The laboratory began phasing the movement of testing to these chemistry analyzers in May 2006, and went fully live with all testing on the Bayer system in early July 2006. This new lab automation system allows the loading of the labs 2400 to 2500 daily samples for chemistry/ immunoassay testing at one sample manager on the automation line. Previously, these samples had to be delivered to one of 5 chemistry analyzers and / or one of 4 immunoassays analyzers. Over the first part of the current fiscal year, the lab will explore opportunities to utilize the sophisticated computer "middleware" associated with the system to allow for significantly increased autoverification of test results and more individualized use of critical value reporting. In addition, the lab will phase in automated centrifuge workstations on the line to also achieve increased efficiencies.

The lab continues its efforts to bring in-house testing that is currently being sent out to reference laboratories. In November 2005 the lab implemented testing for CA 19-9. In May 2006 the immunology lab implemented testing for anti-beta2glycoprotein I. The lab worked diligently with medical center purchasing and Dade Behring to come to a contract agreement on a new nephelometer that will allow testing for free kappa and lambda light chains to be brought in-house. The lab began the evaluation of a Diasorin Liason immunoassay platform that will allow for Vitamin D testing to be brought in-house by fall 2006.

The laboratory has also continued its efforts to automate manual testing. Correlation studies on a new chemiluminescent immunoassay for IGF-1 have been initiated. BNP testing was moved from the Biosite Triage platform to the Bayer Centaur with a considerable savings in labor and reagents. Tricyclic antidepressant assays were developed on the HPLC-mass spectrometer systems utilized for the growing volume of immunosuppressant drug testing. Hepatitis C antibody testing was moved to the Bayer Centaur. Correlation studies for the switch of urine free cortisol testing from RIA to automated immunoassay were begun in June 2006.

The Chemistry Laboratory continued its leadership role in Point of Care (POC) testing both within the hospitals and at the off-site health care centers. Testing for Hemoglobin A1c and microalbuminuria in diabetics and prothrombin time in patients on coumadin has continued to expand. Laboratory personnel were active participants in the planning process for the new Surgery Center being built at the East Ann Arbor Campus and the infusion center at the Canton Health Center. Laboratory functions at both of these new

sites will be supervised through the Chemistry Section. Intraoperative testing for PTH at the EAA Surgery Center was initiated in June 2006. A Nova Biomedical whole blood chemistry analyzer capable of performing a Basic profile was purchased and testing went live to support the Canton Infusion Center in June 2006. Laboratory staff continue to be key participants in the drafting and implementation of institution wide point of care testing guidelines for nursing in order to comply with JCAHO accreditation checklists.

The lab has continued its active role in the supervision of bedside blood glucose monitoring programs at University Hospitals. The growth of tight glycemic control protocols has nearly doubled the volume of POC blood glucose testing. The lab maintains quality control, linearity, and proficiency testing records on more than 130 whole blood glucose meters stationed throughout the institution. Results from these meters are now downloaded directly to a server in Pathology, and patient glucose results passed directly to the laboratory information system.

Clinical Immunopathology Laboratory

The Immunopathology Laboratory, under the direction of Dr. Jeffrey Warren, performed more than 75,000 analyses in 2005-06. Don Giacherio, Ph.D, provided outstanding leadership in the area of laboratory logistics and operations and contributed immensely in new assay deployment. John Thorson, M.D., Ph.D., provided invaluable service to the laboratory in the interpretation of protein electrophoresis studies. Kent Johnson, M.D., and Paul Killen, M.D., Ph.D., also provided invaluable coverage of anti-neutrophil cytoplasmic antibody (ANCA) and anti-GBM studies. Integration of clinical immunopathology testing into the Chemistry Section and establishment of the laboratory at its Traverwood site have been fully realized. New procedures were implemented in the quantitative urine Bence Jones electrophoresis area, in the analysis of antibodies to extractable nuclear antigens, and in the measurement of several individual analytes previously measured by nephelometry. Several new assays were deployed and/or developed for deployment in early FY07. These include anti-cyclic citrullinated peptide, the quantitative free clonal immunoglobulin light chain assay, the anti-endomysial antibody assay, and the anti-beta 2 glycoprotein I assay.

In the Research arena, the Laboratory supported clinical studies in the areas of multiple myeloma and systemic lupus erythematosus. Several commercially-financed methods and instrument evaluations were also carried out. These studies involved new systems for detection of antibodies to extractable nuclear antigens and antineutrophil cytoplasmic antibodies.

A total of 34 residents, M4 medical students, and medical technology students rotated through the Laboratory in 2005-06. Clinical Pathology Grand Rounds included immunopathology presentations by Dr. David Keren (Warde Medical Laboratory, Ann Arbor), and Dr. Warren (see individual faculty report). Drs. Warren and Keren continued a weekly series of didactic sessions entitled "Current Topics in Immunopathology". Other professional activities of faculty and staff in the laboratory are summarized under individual reports.

Clinical Microbiology/Virology Laboratory

The Laboratory, headed by Dr. Duane Newton, continued to experience significant increases in test volume with an overall 8.6% increase compared to that of FY 2004-05, with a total testing volume of over 360,000 tests. While this increase is being seen

relatively equally across all areas of the laboratory, we are continuing to see higher increases in our most complex testing areas, specifically in molecular diagnostics.

Molecular diagnostics continues to be a major growth area of the laboratory. Although our volumes increased for each molecular test, major increases in CMV viral load and HCV viral load testing were seen, with each doubling in volume compared to 2004-05. Automated instruments for specimen processing for many of the assays were selected and ordered. Delivery of this instrumentation is expected in Q1 2006. We are also in the process of bringing up assays for EBV viral load, enterovirus and Bordetella pertussis detection which will have the impact of reducing sendout costs (EBV), reducing length of hospitalizations for presumed bacterial meningitis (enterovirus), and improving diagnostic methods of detection (enterovirus and B. pertussis). These activities have progressed quickly over recent weeks primarily because of the addition of a newly created technologist's position, part of whose role it is to facilitate the rapid integration of new tests into the clinical laboratory.

We have recently completed contract negotiations with a vendor to bring an automated bacterial identification and antibiotic susceptibility-testing instrument into our lab. The department's investment into this instrumentation will have a significant impact on reducing turn-around-time for result reporting, increasing the standardization of testing methods, and improving management of laboratory data through instrument-LIS interfaces rather than manual data management by the technologists. Each of these will make a major contribution in our ability to handle the consistently increasing workload. Delivery of this instrumentation is expected in Q1 2006.

We recently completed contract negotiations with our blood culture instrumentation vendor that has resulted in our acquisition of new, replacement instrumentation, with an increase in total bottle handling capacity and a full service contract for the duration of the agreement, with no increase in our cost/bottle. This will have a significant impact on our ability to handle the increasing volumes of blood cultures received each year (up 12% this past year). Installation of this instrumentation is currently underway.

Several QA projects were also completed this year, two of which involved Pathology Residents. A review was undertaken (with assistance from Jason Jarzembowski) of clinical and laboratory data associated with specimens submitted for C. difficile toxin testing. This review found that 2 specimens/week were sufficient to accurately detect the toxin, and that additional specimens do not increase diagnostic sensitivity. This information is being communicated to clinical services through the Antibiotic Subcommittee of the Pharmacy and Therapeutics Committee so that improvements can be made in test ordering practices and antibiotic utilization in the management of C. difficile colitis. In an effort to expand our blood culture instrumentation capacity, a review was also undertaken (with assistance from Diane Hall and Bryan Coffing) of clinical and laboratory data to determine whether blood culture incubation time could be reduced from 5 days to 4 days. Although many institutions utilize 4-day incubation protocols, our review found that many clinically significant isolates (primarily yeasts causing fungemia in immunosuppressed patients) were recovered on day 5. This data has implications for laboratories serving immunosuppressed patient populations and will be submitted for presentation at an international meeting this year.

A great deal of effort has also been put in over the past year to expanding the depth of activity performed by our afternoon shift. Through the addition of personnel and cross-

training, we are transitioning our activities on this shift from primarily specimen processing and test ordering, to one which includes a large amount of diagnostic testing. This has been undertaken to both maximize the efficiencies that can be realized with the new automated instrumentation, as well as to alleviate the compression (both physical space and test volume) caused by the increased workload on the day shift.

In collaboration with Pharmacy, Infectious Diseases and Infection Control, we have generated several unit- and hospital-specific antibiograms to more closely track trends in antimicrobial resistance throughout the hospital and health system. These are being used to assess the appropriateness of antibiotic usage and determine whether changes in therapeutic recommendations or antibiotic formulary are required.

In addition, our faculty are actively involved in ongoing research efforts in the field of microbiology and viriology. The staff are continuing their education through participation in national and regional professional meetings as well as in-house training opportunities. Additional details regarding the research and training efforts of our faculty can be found in the individual reports.

Combined Hematiology Laboratory
(Hematology, Bone Marrow, Flow Cytometry, Coagualtion)
The past year saw continued growth in the hematopathology labs. Plans are complete for major laboratory renovation that will allow us to accommodate all lab functions and will also allow for more efficient operations. These plans are currently under review by hospital administration with funding decisions to be determined at the time of this writing. We bid farewell to valued faculty and staff this year, including Alvin Schmaier, M.D., Riccardo Valdez, M.D., Mary Lou Erber, MT (ASCP), and Kay Lynne Lantis (MT (ASCP), SH. We also welcomed Dr. Steven Pipe, who took over as director of the Coagulation Laboratory with the departure of Dr. Schmaier last fall.

<u>Hematology Laboratory</u>
We now run every routine hematology sample via the Beckman Coulter LH 1500 automation line. This allows about 80% of routine hematology testing to be performed in fully automated fashion including pre-analytical, and post-analytical steps via our established auto-verification system. This has increased productivity and allowed us to maintain high level service and turnaround time without incremental staff increases, despite a nearly 8% volume increase over last year.

Our efforts to increase efficiency continue, and we are working with Dr. Steven Mandell and the central distribution staff on value stream mapping on hematology sample throughput with the intention of deploying a lean systems approach to our operations, and to optimize operation of the automation line.

We successfully opened a satellite laboratory at the Canton Infusion Center, including substantial adjustments to the lab information system to accommodate the new testing site. We have also welcomed several new members to our staff, and we completed last year's leadership transition, including the successful transition of Mary Jane Liu, MT (ASCP) into the role of senior clinical technologist in charge of quality assurance and compliance, following the retirement of Kay Lynne Lantis MT (ASCP) SH.

Testing volumes continue to increase. We performed over 451,000 complete blood counts last year – an increase of 7.4% over fiscal 2005. Of over 280,000 differential leukocyte orders, only about 6% were performed manually due to a robust system of optimizing manual review of automated differential count results (Am J Clin Pathol 2003; 119:656).

The bone marrow laboratory show a fairly sudden rise in volume of over 30% around the middle of fiscal 2006, likely due to the conversions of incremental growth in the bone marrow transplant and myeloma programs, and new faculty recruitment in hematology oncology. We continue to monitor this volume increase, and we are looking into novel scheduling strategies to better manage the bone marrow workflow.

Coagulation Laboratory

We welcomed Steven Pipe, M.D. as the interim director of the coagulation laboratory. The laboratory has thrived under Dr. Pipe's leadership. Active projects include a change in platelet aggregation methods to a lumiaggregometer-based platform. This will allow us phase out radioactive reagents in the laboratory. Furthermore, it will decrease cost and increase usable space in the laboratory. We anticipate an increase in demand for platelet aggregation studies with the expansion of the pediatric cardiac surgery program. We are also working with pediatric cardiac surgery and the deployment of a rapid, focused, limited platelet function instrument ("Verify Now") manufactured by Accumetrix. Again, this will allow us to provide effective platelet function monitoring to patient's in the emerging total artificial heart (TAH) program, and will help with other post-operative cardiac surgery monitoring. This platform may also be further expanded to provide aspirin resistance testing and other platelet testing for medical cardiologists.

Test volumes continue to increase. Our benchmark high throughput coagulation studies, prothrombin time (PT) and activated partial thromboplastic time (aPTT) increased 5.4% and 11.8%, respectively, over the last year. We performed over 142,000 PT's and over 116,000 aPTT's this fiscal year.

We continue to streamline and automate special coagulation testing. We switched anti-thrombin 3 antigen testing to an automated platform in September 2005, replacing a two-day manual procedure. We performed studies evaluating protein S activity assays on the automated instrument.

We anticipate further demand for special coagulation talent, and we are doing our best to be proactive in meeting these needs.

Flow Cytometry Laboratory

The flow cytometry saw a transition in leadership this year. Following the promotion of Usha Kota, MT (ASCP) to day supervisor for the combined hematopathology laboratories, we welcomed Laura Glashauser, MT (ASCP) to her new role as senior clinical technologist for the flow cytometry laboratory.

We successfully deployed Beckman Coulter FC500 5-color flow cytometers, and we are currently designing uniform 5-color panels for leukemia and lymphoma analysis. With these upgrades, we have improved our ability to store raw list-mode data on internal servers, as well as our ability to immediately create digital copies of analyzed data, allowing us to end our practice of scanning printed output for digital storage, thereby saving considerable cost.

We began a formal orientation process for rotating fellows and residents, which will familiarize them with flow cytometry acquisition and analysis software. The combination of hardware upgrade, software upgrade, and improvements in our reporting software and formatting have resulted in substantial decreases in turnaround times for leukemia/lymphoma immunophenotyping reports.

After a slight drop in clinical volume the previous year, we saw a substantial increase in clinical volume this year. We accessioned 6,116 flow cytometry samples in fiscal 2006, an increase in volume of over 11% over last year. The volume increase accelerated in the spring. With regard to leukemia/lymphoma immunophenotyping, there was a 40% increase in acute leukemia panels and a 13% increase in non-acute flow cytometry panels in March. April saw a 17% increase in acute panels and a 16% increase in non-acute panels. May saw a 34% increase in acute panels and a 6% increase in non-acute panels compared to the previous year.

Academic and Educational Efforts

This past year, we bid farewell to our outgoing fellows, Dr. Maurice Grant, Dr. Tarek Rehmeh, Dr. Lauren Smith, and Dr. Michael Hayes. We also welcomed this year's fellows, Dr. Tove Isaacson and Dr. Erica Jacobson.

We continue to be very active participants in all aspects of resident and medical student education, and Dr. Stoolman continues to serve as co-director of the second year medical school hematology sequence.

Our group also continues to enjoy regional and national recognition, with several of our members holding office or committee assignments in numerous national organizations. Our faculty also serve on editorial boards and enjoy numerous invited speakerships and peer-reviewed publications.

Our staff also continues to be active in educational and scholarly activities. Laurie Gable, MT (ASCP) continues to develop our medical technology training program for student externs rotating from regional medical technology programs at Eastern Michigan University, Wayne State University, and Ferris State University. Gerald Davis, MPH, MT (ASCP) serves on the CLSI Committee for the establishment of standards for auto-verification for results in hematology laboratories.

Histocompatibility and Immunogenetics Laboratory

The Histocompatibility and Immunogenetics Laboratory, under the direction of Dr. Jeffrey Warren continued to grow in 2005-2006. The clinical activity as well as the overall case complexity in the Histocompatibility Laboratory increased in FY 2005-6 due to robust and expanding bone marrow and solid organ transplant programs (making the Laboratory one of the ten busiest in the United States). The largest volume increases occurred in the number of sera screened for HLA antibodies and in the number of donor-recipient crossmatches performed (9.7% and 12.2% increase over FY 2004-05, respectively). These increases are attributed to an increasing number of highly sensitized patients followed in our Transplant Center and the expanding use of living-related donor renal transplantations. A high degree of pre-sensitization in our patient population (due to prior failed grafts or blood product transfusions) adds significant complexity to the performance and interpretation of the laboratory tests performed in the HLA Laboratory.

DNA-based typing is the primary technique used for the determination of HLA class I and class II alleles. The Luminex instrument, which uses microsphere-based technology, is currently being used to perform high-throughput mid-resolution typing at a substantial cost savings over previously used methods; nucleotide sequencing is used for bone marrow transplant recipients and donors. Antibody screening is performed by several methods including the complement dependent cytotoxicity (CDC) assay, ELISA, and flow cytometry, while crossmatches are performed by CDC and flow cytometric methodologies.

Application of the electronic medical record for tissue typing results continues to function effectively. The clinical staff in the Transplant programs view tissue typing results in CareWeb (rather than relying on facsimile copies of reports sent by the laboratory staff during regular laboratory hours). Efforts to also make antibody screening (i.e. panel reactive antibody) and crossmatch results available on CareWeb are near fruition.

After five years of outstanding service to the HLA Laboratory, Dr. Riccardo Valdez departed the UMHS to accept an appointment at the Mayo Clinic – Scottsdale, Arizona. The Department of Pathology succeeded in the recruitment of a new Laboratory Director, Dr. Douglas Smith (Baylor University) who will commence at the University of Michigan in August, 2006. Dr. James Baker will continue in his role of Laboratory Director pending Dr. Smith's arrival.

Molecular Diagnostics Laboratory

Under the direction of Dr. John Thorson, the Laboratory experienced a 4% increase in volume relative to the same period in the previous year. Tom Wilson, M.D., Ph.D., Assistant Director of the Laboratory, and Jeffrey Warren, M.D., provided assistance with sign out responsibilities. The Laboratory's overall annual volume (July through June) increased to approximately 8,650 tests, representing a 4% increase relative to the same period last year. This change was in part due to across-the-board increases in test activity as well as the introduction of several new assays. Following the initial introduction of a quantitative assay for BCRABL p210 transcripts in August of 2005, the number of specimens received per month for BCRABL determinations essentially doubled. This trend has continued through the first 6 months of 2006, as the number of specimens received for BCRABL determinations to date has already exceeded the previous year's total annual volume. Turn-around times for tests performed in the Laboratory were essentially unchanged from the previous year, with an average of 5 days overall.

Several new assays were developed and validated for clinical use by the Laboratory during the past year. These include 1) real time PCR assays for the detection and quantification of BCR/ABL p210 (introduced in August of 2005) and p190 transcripts (introduced in May of 2006) in chronic myeloid leukemia and acute lymphoblastic leukemia, and 2) a PCR based assay for genotyping polymorphisms in the promoter region of the UGT1A1 gene, used to predict sensitivity to the chemotherapeutic agent Irinotcan in the treatment of colon cancer. In addition, validation and full clinical implementation of a group of RT-PCR based assays for the detection of translocations that characterize alveolar rhabdomyosarcomas (PAX3/FKHR, PAX7/FKHR), desmoplastic small round cell tumors (EWS/WT1), and Ewing's sarcomas (EWS/FLI1, EWS/ERG) was completed. Finally, a multiplex amplification/invasive oligonucleotide assay developed for CFTR mutation screening by Third Wave, Inc., was placed into clinical service after the laboratory participated in beta testing of this assay.

In May of 2006, the Laboratory conducted an interim self-inspection for accreditation purposes. A number of changes to the College of American Pathologists' Molecular Pathology inspection checklist were noted and necessary modifications to procedures, etc., were implemented.

Validation of a PCR-based assay to detect microsatellite instability in colon cancer specimens is currently underway and this assay will be available on a clinical basis within the next 3-4 months.

A number of new quantitative and DNA sequencing assays are currently being assessed for development/implementation in consultation with the hematology/oncology and bone marrow transplant services, targeting the current and expected future needs of these groups. These include assays to quantify tumor-specific translocation transcripts as well as assays to detect mutations, such as those described in the kinase domain of the ABL gene, which may influence therapeutic decisions.

The upcoming 2006-2007 fiscal year brings with it new leadership in many of the laboratories, including Dr. Megan Lim (Director of Hematopathology), Dr. Douglas Smith (Director of the HLA Laboratories), Dr. Steven Pipe (Interim Director of the Coagulation Laboratory) and others throughout the Department. Along with the new leadership comes a renewed vision and excitement for the future. We are looking to a year in which Lean processes will be further implemented, facilities will be renovated for greater efficiencies and productivity, and the number of tests offered will be increased.

Jeffrey S. Warren, M.D.
Director, Clinical Pathology Division

Pathology Education

DIVISION OF PATHOLOGY EDUCATION

Joseph C. Fantone III, M.D.
Godfrey D. Stobbe Professor in Pathology Education
Associate Dean for Medical Education

The Department of Pathology offers a diverse and expanding array of outstanding educational programs. Foremost among these are programs focused on medical student, resident, graduate student and clinical and research fellow training. Departmental teaching also extends to practitioners in the region and nation through continuing medical education (CME) programs, workshops and seminars offered through The University of Michigan, and professional organizations including the United States and Canada Association of Pathologists (USCAP), and American Society of Clinical Pathologists (ASCP).

Pathology faculty are also actively involved in teaching other learners within the University of Michigan including the Medical School, Dental School, School of Public Health, College of Literature, Science and the Arts, and the Rackham School of Graduate Studies. This involves formal lecture and laboratory exercises, senior clinical clerkships, and research training for undergraduate, graduate, and medical students, as well as postdoctoral fellows. Departmental teaching activities also extend to house officers and the staff of many clinical departments in the form of regularly scheduled clinical teaching conferences.

Medical Student Education:
Pathology faculty continue to provide outstanding leadership (e.g. course directors, sequence coordinators, Associate Dean for Medical Education, Assistant Dean for Admissions) and excellent teaching in the first two years of the medical student curriculum. Faculty continue to be recognized as recipients of student teaching awards, including recognition as one of two class marshals at graduation. Efforts to increase student active learning experiences in a web-based teaching format continue with the development of the “Virtual Microscope” and interactive laboratory exercises. Elective fourth year clerkships in General Pathology as well as research and specialty experiences continue to be highly evaluated by students and meet important curriculum educational goals.

Residency Training:
There has been significant expansion of our graduate medical education programs in the Department during the past academic year. The Department offers both individual and combined residency training in Anatomic and Clinical Pathology as well as ACGME-approved fellowships in Cytopathology, Hematopathology, and Blood Bank/Transfusion Medicine. A new Dermatopathology fellowship recently received accreditation by the ACGME and a Molecular Genetic Pathology Fellowship is pending review. Additional fellowship opportunities include training in the specialty areas of surgical pathology,

breast pathology, pulmonary pathology, urologic pathology, GI pathology and informatics. Approximately 36 residents and fellows receive training annually. Residents and fellows continue to be very academically active, with multiple presentations at national meetings and first author publications. Several residents continue to provide strong support to the medical student educational programs through their involvement as laboratory instructors, mentors and tutors to students. Fourteen house officers and fellows completed training this past year. Graduates found desirable fellowships (10), faculty positions (3) at academic health centers and employment in private practice (1).

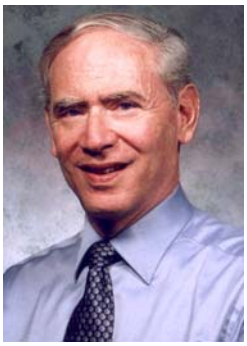
Graduate Program:
The Department's doctoral graduate program continues to expand and thrive (approx. 13 students) with a focus on providing excellent training in preparation for student's careers as scientific investigators. The quality of the faculty and training offered is reflected by the continued interest of MSTP students and the completion of doctoral theses by two students this past year. Two training grants within the Department continue to serve as important sources of support for graduate students and post-doctoral fellows. The Department of Pathology is an active participant with other basic science departments in the Program in Biomedical Science (PIBS). This program involves a joint recruitment effort of biomedical graduate programs to recruit the very best students to the University of Michigan and allow them to delay selection of specific departments until they have completed their first year of study. Several faculty serve on both the curriculum and admissions committees for the program. An annual Pathology Research Symposium was implemented this past year and was well received by students and faculty.

University / CME Programs:
Department faculty continue to offer high quality laboratory research opportunities to both undergraduate and medical students, a Dental student pathology course with lab, CME programs, and individual teaching in the other schools of the University including Public Health. The Pathology Informatics and Blood Bank CME courses continue to be recognized as foremost programs in the country. Faculty continue to develop internet-based educational modules that can be linked to established and future CME programs. The fall A.J. French Society meeting continues to be a focal point for CME especially for graduates of our resident training programs.

Respectfully Submitted,

Joseph C. Fantone, III, M.D.
Director of Pathology Education

Pathology Informatics



DIVISION OF PATHOLOGY INFORMATICS

Bruce A. Friedman, M.D.
Professor of Pathology
Director of Pathology Informatics

During the past fiscal year, the Pathology Data Systems section of the Department of Pathology was moved to a Division-level entity, now known as the Division of Pathology Informatics. Within the Division of Pathology Informatics resides the Clinical Informatics Section, headed by Dr. Bruce Friedman, and the Research Informatics Section, headed by Dr. Arul Chinnaiyan. Dr. Ulysses Balis was recruited to head the new Division and to take over the Clinical Informatics Section effective July 1, 2006.

A number of projects were initiated during the past year. Two critical efforts undertaken were initiating the selection process for a new LIS system and relocation planning for the Division's hardware and personnel. The Division undertook the development of the RFP and review of the RFP responses for the new LIS system. Support for the on-site vendor demonstrations as well as conducting off-site visits and evaluations of the systems were completed. A final evaluation of the systems under consideration will be completed early in fiscal year 2006. Planning is also underway for a new Pathology Informatics laboratory and office suite, which will house the current and future hardware for the Department as well as the faculty and support staff needed to effectively support the Department's technology initiatives. Finally, Dr. Alexey Nesvizhskii was recruited from the Institute for Systems Biology to enhance the Department's research capabilities in the analysis of mass spectroscopy data.

Some of these technology initiatives effected in 2005-2006 include:

1. Neared final completion of the core image installation in Pathology using the mandated MCIT desktop/laptop support model.
2. Reconfigured the ADT oracle server to support future test orders, blood bank forms, and other Departmental applications.
3. Provided support for the enhancement of the new Pathology Handbook, a critical electronic resource for all users of the UM laboratory system.
4. Provided support for the enhancement of the Pathology Web page, which has become a critical resource for the Department, addressing how it is viewed both within the institution and outside by clients, potential trainees, and the research community.
5. Conducted design and validation activities regarding the Health System Data Warehouse in order to validate the accuracy and reliability of data generated therewith. The HSDW was found not to be a source suitable for patient care issues.
6. Used Lean/Six Sigma processes to enhance the utility of CareWeb physicians' lab report in-box and other aspects of the physician interface to CareWeb.

7. Enhanced the process by which laptops are distributed to all new pathology residents, including security upgrades.
8. Implemented pod casting technology to publish and disseminate "content" by our faculty; this technology is being used by Dr. Jeffrey Myers in the blog that he has established for his pulmonary journal club.

In addition to these initiatives, a number of other projects were undertaken under the specific auspices of Clinical Informatics and Research Informatics. Reports on these sections follow this report.

CLINICAL INFORMATICS

The Clinical Informatics section was involved in a number of projects that both upgraded existing programs as well as developed and implemented new technologies. Upgrades include:

1. Accession number expansion to support the increased volume of laboratory testing related to POCT and to prepare for automated test ordering activity required for the OMP CareLink activation.
2. Modification of all laboratory software "keys" to improve the functionality of the clinical data repository (CDR) and the database integrity.
3. Enhancements to the "requisition forms image project", an electronic repository of all lab requisitions that is searchable on-line.
4. Enhancements of the Hospital Infectious Disease control reporting system by providing a reporting mechanism of infectious isolates for post-discharge patients.
5. Implementation of a solution to ensure all surgical pathology reports and corresponding addendum reports are grouped together in the Careweb lab viewer application to enhance patient safety.
6. Enhancement of the management reporting system for Surgical Pathology in support of many of the new management initiatives in Anatomic Pathology launched by Dr. Jeffrey Myers.
7. Enhancement of the AP gross image capture process with new camera technology; this system will ultimately be enhanced to provide digital images services to all of Anatomic Pathology.

The new technologies brought to the Department include:

1. Implementation of Bar Code 128 across all the laboratories to harmonize with the robotics development projects in the various clinical laboratories.
2. OMP-driven workflow redesign planning and testing activities including the purchase of a Bridge Positive Patient Identification Project (PPID) system to enable phlebotomists to produce collection labels at the patient's bedside; rebuild of the PathNet Classic phlebotomy sweep lists with numerous configuration updates to the PathNet Classic database; enhancement of the wireless printing technology; improved ADT messaging and processing of patient management transactions to ensure synchronization with the Institutional HQ patient management system; extensive validation and testing for all of these processes.
3. Design and implementation of the "shadow test" concept that enables electronic receipt of Flow Cytometry and Molecular Diagnostics test orders for improved

patient care process. Prior to this, these test orders, linked to the Anatomic Pathology system, could not be managed by the PathNet system.

4. Hospital Lab Data Exchange (HLDE) planning activities to ensure quality; this was prompted by the request from hospital physicians to provide access by them to test results generated in competing regional and national reference laboratories.
5. Worked with various task forces to improve the document image solution for the enterprise whereby images of hardcopy send-out lab reports and complex internal lab reports can be accessed by physicians; this solution will also provide retrieval capabilities for all test requisitions.
6. Expanded the test dictionary and test menu for transmitting accurate lab test orders to our esoteric send-out reference labs, Mayo Medical and Specialty.
7. Enhanced the RALS software system which is used to interface PathNet to outside POCT instruments.
8. Provided extensive IT support for various laboratory projects including installation and activation of the Coulter robotics line in Hematology, the Bayer robotics line in Chemistry, the ProVue instrument activation in Blood Bank, the Flow Cyte activation in Flow Cytometry, and the BactiAlert activation in Microbiology.
9. Support for various MLabs initiatives including the evaluation, selection, installation, and configuration of the Atlas LabWorks web portal, the network upgrade for Toledo Promedica that provided enhanced connectivity, "unbundling" of send-out tests to improve the TAT for several tests, revised and implemented new "Call Back" processes with alert features, installation of a Formium server for forms management, support for Wired Contact, and a customer relationship management tool.
10. Developed and implemented a workflow tool that can be used in the laboratories for management of high volume repetitive order entry and result entry tasks; the tool is currently being used for cholesterol health screens and similar tests.

The 2005-2006 fiscal year was filled with challenges that were met with enthusiasm and provided us many opportunities to improve the service provided to our faculty, staff and patients. It has been a pleasure to conclude my leadership of this section with such a successful year.

RESEARCH INFORMATICS

Bioinformatics, which is the convergence of biology, information science, and computation will play a critical role in the future of cancer biology and translational science. The Department of Pathology, in collaboration with the University of Michigan Comprehensive Cancer Center (UMCCC), has multiple informatics and data resources that support clinical and basic research. Many of these resources were developed to meet the specific needs of individuals and were not designed to share data or to integrate with other information systems. In the past, informatics efforts have been spread across the Cancer Center without a unifying organizational structure. The presence of such an organizational structure allows for easier access to available resources and domain expertise. A robust informatics infrastructure is vital so that investigators can continue to focus on their work without being mired in the technical details necessary to run a data-intensive research operation. Recognizing this, the Cancer Center leadership established the UMCCC Bioinformatics Core in July of 2004. The recently established Division of Pathology Informatics (circa July 2005) has served

as the host for the Cancer Center Core for mutual integration and leveraging of assets and expertise.

The mission of the Core is to support the informatics needs of both clinical and basic science investigators by providing the technological infrastructure and informatics / regulatory (e.g., security, HIPAA) expertise to ensure the reliable and secure acquisition, storage, analysis, and application of biomedical data from both patients and biospecimens in order to promote the quality of peer-reviewed publications as well as faster translational (i.e., bench to bedside) medicine that will ultimately lead to novel discoveries and improved patient care.

The foundation of the Core is built upon UMCCC-developed bioinformatics assets including Oncomine, a cancer microarray compendium and data mining platform, Profiler, a web-based tissue biomarker evaluation system, and EMERSE, a web-based free-text search engine for the UM electronic medical record. In addition, the Core has supported the Clinical Outcomes Database/Registry (COD/R) which is an institutionally supported clinical research database system that now involves collaborative efforts with industry. Oncomine, Profiler, EMERSE, and the COD/R are applications already actively being used by UMCCC investigators. Tools and Services provided by this Core include 1. Support, integration and further development of Oncomine (e.g., myOncomine), Profiler, EMERSE, and COD/R, 2. Participation in and interface with the Cancer Biomedical Informatics Grid (caBIG) initiative, 3. Education/consultation with regards to bioinformatics applications, and 4. Data integration and annotation. As data-intensive research increases at the Department of Pathology and the Cancer Center, the Bioinformatics Core will continue to work towards expanding its capabilities and services in order to meet the growing demands of the investigators and also establish the Department and the UMCCC as a national leader in the field of cancer bioinformatics and its application to patient care.

The Bioinformatics Core has worked to support all of the initiatives as outlined above. A summary follows:

Oncomine/myOncomine

Oncomine (www.oncomine.org) is an internationally recognized and utilized bioinformatics infrastructure for cancer genomics research developed at the UMCCC using developmental funds from the UMCCC, the Department of Pathology and the Dean's Office. A biologist can come to the Oncomine website and ask basic questions such as: 1. What cancer or cancer subtypes is my gene of interest dysregulated in? 2. What are the top genes that distinguish metastatic cancer from clinically localized disease?, or 3. What genes may serve as biomarkers for a particular cancer or cancer sub-type? Results are generated with primary analytical methods such as hierachical clustering and statistically-based differential expression analysis, usually with careful consideration for multiple-hypothesis testing. The lead developer of this project is Daniel Rhodes who received his PhD in May 2006.

Oncomine has continued to add innovative and powerful features such as pathway analysis, interactome analysis and transcriptional motif and chromosomal region enrichment analysis. Oncomine has also continued to add new datasets to its compendium, now with over 140 datasets and 16,000 profiled tissue samples representing 49 distinct cancer types. The Oncomine programming team has also developed myOncomine, which contains all of the functionality of the regular version but

adds additional value for UMCCC investigators. It contains facilities for users to output their data in formats suitable for further statistical analyses in other software. This version allows for the private uploading, viewing, linking, and analysis of their own data and this highly automated process is being coordinated with the UMCCC Microarray Core Facility so that once it is up and running, gene expression data will be transferred seamlessly from the Microarray Core to myOncomine.

Profiler

Profiler is a web-based pathology, biomarker analysis, and tissue microarray evaluation/visualization system. The Profiler system works in conjunction with the UMCCC Tissue Core run by Dr. Thomas Giordano. The tissue core scans the images and transfers them electronically to the Profiler system, where investigators can log in remotely via the web interface and view and score the scanned images. Advantages of the system include the ability to view extremely high-resolution images on a computer screen as well as the ability for more than one pathologist to score the same sample, allowing differences in scoring between pathologists to be taken into consideration.

Work is underway to improve the functionality of Profiler so it can load images faster and handle more types of image formats. Also based on UMCCC investigator input, the Core is working with Dr. Celina Kleer (UMCCC Breast Cancer Program member) and Dr. Rajal Shah (Prostate SPORE Tissue Core) to incorporate automated semi-quantitative systems (e.g., Chromovision, AQUA) for the analysis of tissue biomarkers into the Profiler system.

In addition to supporting the current user base and adding more tissue types to support cancer center driven research, plans are currently underway to allow for the integration of Profiler data with that of other systems such as the COD/R so that investigators can merge patient-specific data from disparate databases. This plan is in line with the caBIG initiative and will serve as a foundation for our ability to later connect to the national grid, once in place.

Clinical Outcomes Database / Registry (COD/R) Systems

COD/R (currently known as Velos and the Cancer Registry) is an institutionally supported database system which will serve as a common platform for clinical research. In March 2005, the University made a strategic decision to end development of its own clinical outcomes database system (BioDBx) and purchase one provided by the commercial vendor Velos. Velos *eResearch* is a commercially available web-based application for managing clinical trials and outcomes research

Using this product should allow for data to be better shared between the COD/R and other Bioinformatics Core components, such as Profiler and myOncomine. Efforts are also underway to develop a standardized specimen inventory management system to better track the flow of samples. This effort also includes a barcoding initiative

Although currently contained in a separate database, the University of Michigan's hospital-based cancer registry is being enhanced by the Bioinformatics Core to move it from a simple database used for reporting to one that serves Cancer Center members for clinical outcomes research as well.

The registry is being brought up-to-date by replacing the paper-based abstracting method with a highly efficient informatics tool for case identification and data abstraction,

known as the Registry Case Finding Engine (CaFE). This will have several benefits. First, it will speed up the process of case identification dramatically. Second, it will free up time for the abstracters to focus more on data collection instead of patient identification. Third, it will remove the need for a person to read through all pathology reports unrelated to cancer, lessening the privacy concerns raised by HIPAA. We have gained programmatic access to our clinical data repository for this purpose. The ultimate goal is to transform the registry from one that has mainly served the UMCCC for the purposes of reporting to one that will provide reporting as well as data abstraction services for IRB-approved UMCCC investigator studies.

EMERSE (Electronic Medical Record Search Engine)

The Electronic Medical Record Search Engine (EMERSE) was built in order to address the need for searching the medical record for research and data abstraction. EMERSE is secure, maintains an audit trail, and has been approved for use by our Health System Privacy and Compliance Office. EMERSE provides an easy-to-use, intuitive user interface for constructing complex search queries and scanning context-sensitive search results. Results are displayed in a manner consistent with the structure of the medical record, including separate categories for the problem summary list, patient notes, and pathology and radiology reports. It offers powerful features, such as the ability to look for potential spelling errors in the documents as well as the ability to perform batch searches across multiple patients at once.

In the 6 months since EMERSE was first introduced, over 90 users have been registered and searches have been conducted on over 5800 unique patients in our health system. Feedback from EMERSE users has been overwhelmingly positive. The individual who has used the system the most, based on both number of logins and patients searched, has estimated that EMERSE provides for a roughly 3-fold increase in productivity. Additionally, EMERSE has potential applicability in the direct patient care environment where clinicians are increasingly pressed for time, and a rapid method for reviewing a patient's history for notable events of interest would be welcome.

PubMed Query Search Tool (QUEST)

PubMed Quest is an application that provides a simple, efficient, and standard way in which to track publications generated by the various cores at the Cancer Center. This tool, available from our website, allows for bulk searching of publications based on a list of investigators provided to the system. Features include the ability to restrict the search based on location (such as Ann Arbor), dates of publication, and journal titles, as well as topics. It can also automatically mark all publications that represent either intra- or inter-programmatic collaborations (or both) as well as highlighting the names of all Cancer Center members in each citation.

caBIG (Cancer Biomedical Informatics Grid)

The Cancer Biomedical Informatics Grid (caBIG) initiative seeks to provide the integration of data from Cancer Centers throughout the country. The Bioinformatics Core has been involved in the caBIG initiative in order to represent and promote the interest of investigators at the UMCCC. As the caBIG community develops new systems and tools, the Bioinformatics Core will become ever more needed to ensure the broad dissemination of this knowledge to the Cancer Center as well as planning UMCCC's strategic direction as future informatics initiatives should unfold in order to maintain caBIG compliance. In the near future, caBIG compliance may not only be an asset to research but may also be required in order to receive funding from the NIH.

Dr. Hanauer has been representing the UMCCC in caBIG and has been participating in both the Integrated Cancer Research (ICR) General Workspace and the Clinical Trials Management System (CTMS) Workspace meetings. He serves as the liaison from the CTMS to the ICR workspaces in order to facilitate greater knowledge transfer and collaboration across caBIG workspaces. We have also begun participating in the Tissue Banking and Pathology Tools (TBPT) workspace in order to gain a greater understanding of the events taking place in that domain and plan on becoming involved as a funded adopter of TBPT tools in the near future.

Publications

The following is a list of publications in 2005-2006 that have utilized at least one aspect of the tools provided by the Bioinformatics Core:

Tomlins SA, Rhodes DR, Perner S, Dhanasekaran SM, Mehra R, Sun XW, Varambally S, Cao X, Tchinda J, Kuefer R, Lee C, Montie JE, Shah RB, Pienta KJ, Rubin MA, Chinnaiyan AM. Recurrent fusion of TMPRSS2 and ETS transcription factor genes in prostate cancer. *Science*. 2005 Oct 28; 310(5748):644-8.

Hanauer DA, Chinnaiyan AM. PubMed QUEST: The PubMed Query Search Tool. An informatics tool to aid cancer centers and cancer investigators in searching the PubMed databases. *Cancer Informatics*. 2006 (2): 79-82.

Dhanasekaran SM, Dash A, Yu J, Maine IP, Laxman B, Tomlins SA, Creighton CJ, Menon A, Rubin MA, Chinnaiyan AM. Molecular profiling of human prostate tissues: insights into gene expression patterns of prostate development during puberty. *FASEB J* 19(2):243-5, 2005.

Ghosh D, Chinnaiyan AM. Covariate adjustment in the analysis of microarray data from clinical studies. *Funct Integr Genomics* 5(1):18-27, 2005.

Chinnaiyan A.M. ONCOMINE and caBIG Advance Cancer Bioinformatics. *The Scientist.* April 13, 2005, 19:6.

Rhodes DR, Kalyana-Sundaram S, Mahavisno V, Barrette TR, Ghosh D, Chinnaiyan AM. Mining for regulatory programs in the cancer transcriptome*. Nature Genetics*. 2005 Jun; 37(6):579-83.

Rhodes DR, Chinnaiyan AM. Integrative analysis of the cancer transcriptome. *Nature Genetics*. 2005 Jun; 37 Suppl:S31-7.

Loberg RD, Wojno KJ, Day LL, Pienta KJ. Analysis of membrane-bound complement regulatory proteins in prostate cancer. *Urology*. 2005 Dec ;66(6):1321-6.

Rhodes DR, Tomlins SA, Varambally S, Mahavisno V, Barrette T, Kalyana-Sundaram S, Ghosh D, Pandey A, Chinnaiyan AM. Probabilistic model of the human protein-protein interaction network. *Nature Biotechnology.* 2005 Aug;23 (8):951-9.

Hanauer DA, Chinnaiyan AM. Bioinformatics Approaches in the Study of Cancer. *Submitted to Current Molecular Medicine.*

Hanauer DA, Miela G, Chinniayn AM, Blayney DW. The Registry Case Finding Engine (CaFE): An automated tool to identify cancer cases from unstructured, free-text pathology reports and clinical notes. *Manuscript in preparation.*

Grant Applications

Cancer Center Support Grant (PI, M.Wicha), P30 CA46592, $3,434,955 direct costs, UMCCC Bioinformatics Core, $250K/direct costs/ yr (Director, A. Chinnaiyan).

caBIG, Funded in the Integrated Cancer Research Workspace and the Clinical Trial Management Workspace as well as the Tissue Banking and Pathology Tools Workspace.

Cancer Genome Characterization Centers (U24) (PI, A. Chinnaiyan). Pending.

Clinical Proteomic Technology Assessment for Cancer (U24) (PI, Phil Andrews). Pending. Core will be involved in overseeing caBIG-related compatibility initiatives.

Respectfully Submitted,

Bruce A. Friedman, M.D.
Director, Pathology Informatics
Director, Clinical Informatics

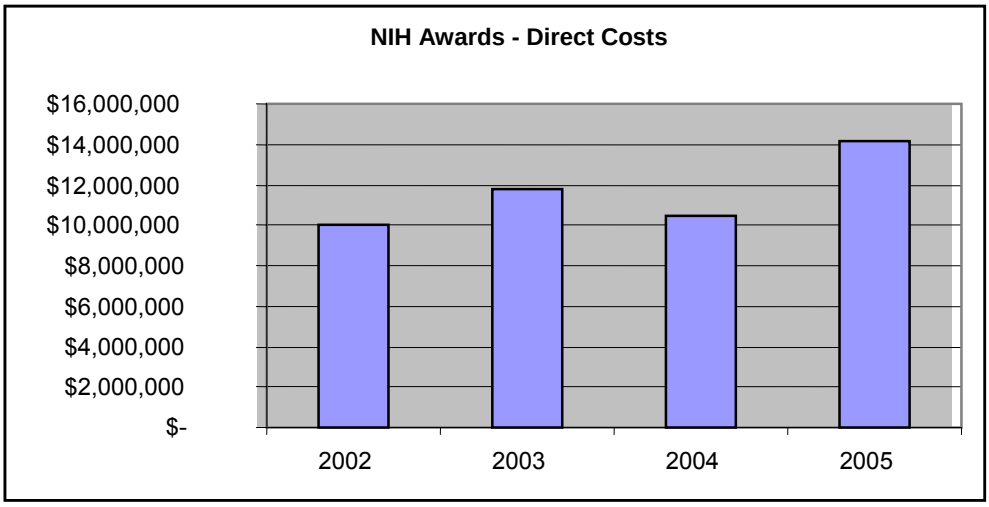
Arul M. Chinnaiyan, M.D., Ph.D.
Director, Pathology Research Informatics

Sponsored Programs

DIVISION OF SPONSORED PROGRAMS

Jay L. Hess, M.D., Ph.D.
Carl V. Weller Professor and Chair

This has been an extraordinary year for research in the Department of Pathology. In a difficult funding climate, the Department increased its NIH funding by nearly $4M dollars and moved to 15th from 20th in Pathology Department NIH rankings.



For the second time in five years, the Department won the Dean's award for Basic Science Research, which went to Dr. Arul Chinnaiyan. Dr. Chinnaiyan also won the United States and Canadian Academy of Pathology (USCAP) Benjamin Castlemen award for the best pathology paper published in 2005, which reported the discovery of chromosomal translocations in prostate cancer. Some of Dr. Chinnaiyan's work on autoantibody profiling in prostate cancer was featured on the ABC World News tonight and the Wall Street Journal among many other national publications. In addition, clinical residents and fellows presented 19 proferred papers at the USCAP and garnered many of their own awards including the Stowell-Orbison Award (Dr. Rohit Mehra) and the 2006 Young Investigator Research Grant from the Society for Pediatric Pathology (Dr. Jason Jarzembowski).

Eight of our researchers were relocated to the newly opened BSRB building, while two others were relocated to the MSRBI building. We currently have 29 researchers occupying 43,893 square feet of research space. As summarized in the table below, the Department's metrics for indirect and total funding per sq. foot easily surpass the mean for basic science departments, clinical sciences and the medical school as a whole.

Expenditures Per Square Foot Comparisons:

	Direct/Sq. Ft.	Indirect/Sq. Ft.	Total/Sq. Ft.
Pathology Department	$363	$150	$513
Basic Science Departments	$226	$89	$315
Clinical Departments	$363	$132	$495
Medical School	$303	$112	$415

96.6% of our faculty with research space have research support from federal or non-federal grants. Of the 29 researchers with research space, 100% of all assistant and associate professors currently have effort supported on grants. 91.7% of professors have effort on grants.

Of course, the most important metric is not grant dollars, but the quality of our work. The following is just a sampling of some of the high impact publications from the Department in 2005/2006:

1. Dou, Y., Milne, T.A., Tackett, A.J., Smith, E.R., Fukuda, A., Wysocka, J., Allis, C.D., Chait, B.T., Hess, J.L., Roeder, R.G.: Physical association and coordinate function of the H3K4 methyltransferase MLL1 and the H4 K16 acetyltransferase MOF. Cell 121(6): 873-885, 2005.

2. Franchi, L., Amer, A., Body-Malapel, M., Kanneganti, T.D., Ozoren, N., Jagirdar, R., Inohara, N., Vandenabeele, P., Bertin, J., Coyle, A., Grant, E.P., Nunez, G.: Cytosolic flagellin requires Ipaf for activation of caspase-1 and interleukin 1beta in salmonella-infected macrophages. Nat Immunol 7(6):576-582, June 2006.

3. Huber-Lang, M., Sarma, J.V., Zetoune, F.S., Rittirsch, D., Neff, T.A., McGuire, S.R., Lambris, J.D., Warner, R.L., Flierl, M.A., Hoesel, L.M., Gebhard, F., Younger, J.G., Drouin, S.M., Wetsel, R.A., Ward, P.A.: Generation of C5a in the absence of C3: a new complement activation pathway. Nat Med 12(6): 682-687, June 2006.

4. Kanneganti, T.D., Ozoren, N., Body-Malapel, M., Amer, A., Park, J.H., Franchi, L., Whitfield, J., Barchet, W., Colonna, M., Vandenabeele, P., Bertin, J., Coyle, A., Grant, E.P., Akira, S., Nunez, G.: Bacterial RNA and small antiviral compounds activate caspase-1 through cryopyrin/Nalp3. Nature 440(7081): 233-236, 2006.

5. Lin, J., Patel, S.R., Cheng, X., Cho, E.A., Levitan, I., Ullenbruch, M., Phan, S.H., Park, J.M., Dressler, G.R.: Kielin/chordin-like protein, a novel enhancer of BMP signaling, attenuates renal fibrotic disease. Nat Med. 11(4): 387-393, 2005.

6. Masumoto, J., Yang, K., Varambally, S., Hasegawa, M., Tomlins, S.A., Qiu, S., Fujimoto, Y., Kawasaki, A., Foster, S.J., Horie, Y., Mak, T.W., Nunez, G., Chinnaiyan, A.M., Fukase, K., Inohara, N.: Nod1 acts as an intracellular receptor to stimulate chemokine production and neutrophils recruitment in vivo. J Exp Med 203(1):203-213, 2006.

7. Milne, T.A., Dou, Y., Martin, M.E., Brock, H.W., Roeder, R.G., Hess, J.L.: MLL associates specifically with a subset of transcriptionally active target genes. Proc Natl Acad Sci USA 102(41): 14765-14770, 2005.

8. Mufti, A.R., Burstein, E., Csomos, R.A., Graf, P.C., Wilkinson, J.C., Dick, R.D., Challa, M., Son, J.K., Bratton, S.B., Su, G.L., Brewer, G.J., Jakob, U., Duckett, C.S.: XIAP is a copper binding protein deregulated in Wilson's disease and other copper toxicosis disorders. Mol Cell 21(6): 775-785, 2006.

9. Nepomnaschy, P.A., Welch, K.B., McConnell, D.S., Low, B.S., Strassmann, B.I., England, B.G.: Cortisol levels and very early pregnancy loss in humans. Proc Natl Acad Sci USA 103(10): 3938-3942, 2006.

10. Niederbichler, A.D., Hoesel, L.M., Westfall, M.V., Gao, H., Ipaktchi, K.R., Sun, L., Zetoune, F.S., Su, G.L., Arbabi, S., Sarma, J.V., Wang, S.C., Hemmila, M.R., Ward, P.A.: An essential role for complement C5a in the pathogenesis of septic cardiac dysfunction. J Exp Med 203(1): 53-61, 2006.

11. Tomlins, S.A., Rhodes, D.R., Perner, S., Dhanasekaran, S.M., Mehra, R., Sun, X.W., Varambally, S., Cao, X., Tchinda, J., Kuefer, R., Lee, C., Montie, J.E., Shah, R.B., Pienta, K.J., Rubin, M.A., Chinnaiyan, A.M.: Recurrent fusion of TMPRSS2 and ETS transcription factor genes in prostate cancer. Science 310 (5748): 644-648, 2005.

12. Varambally, S., Yu, J., Laxman, B., Rhodes, D.R., Mehra, R., Tomlins, S.A., Shah, R.B., Chandran, U., Monzon, F.A., Becich, M.J., Wei, J.T., Pienta, K.J., Ghosh, D., Rubin, M.A., Chinnaiyan, A.M.: Integrative genomic and proteomic analysis of prostate cancer reveals signatures of metastatic progression. Cancer Cell 8(5): 393-406, 2005.

13. Wang, X., Yu, J., Sreekumar, A., Varambally, S., Shen, R., Giacherio, D., Mehra, R., Montie, J.E., Peinta, K.J., Sanda, M.G., Kantoff, P.W., Rubin, M.A., Wei, J.T., Ghosh, D., Chinnaiyan, A. M.: Autoantibody signatures in prostate cancer. N Engl J Med 353(12): 1224-1235, 2005.

This year, Dr. Alexey Nesvizhskii joined the Department from Dr. Ruedi Abersold's laboratory at the Institute for Systems Biology, Seattle. His expertise is in Proteomic Data Analysis. Dr. Nesvizhskii will join the Informatics Division. Our recruits in the next few years will continue to strengthen Departmental research in Molecular Oncology, Proteomics and Informatics. Dr. Yali Dou, an expert biochemist from Dr. Robert Roeder's laboratory at Rockefeller University, will join the Department in September 2006.

We anticipate recruiting several additional faculty in molecular oncology and one in microbiology in the coming year. Many of our resources in Translational Pathology, including the new mass spectroscopy laboratory, flow cytometry, and molecular pathology, will be coming "on-line" this year with the expectation that this will further enhance our capabilities in doing cutting-edge research.

Jay L. Hess, M.D., Ph.D.
Director, Sponsored Research
Carl V. Weller Professor and Chair

Steven L. Kunkel, Ph.D.
Co-Director, Sponsored Research

Translational Research

DIVISION OF TRANSLATIONAL RESEARCH

Jay L. Hess, M.D., Ph.D.
Carl V. Weller Professor and Chair

The Division of Translational Research was established in 2005 to provide infrastructure for the rapidly evolving type of research that is required in contemporary pathology. We recruited Dr. Kojo Elenitoba-Johnson from the University of Utah to head up this new Division, beginning in September 2006. While it is still in its infancy, the plans for this Division include a mass spectroscopy facility, a microarray laboratory, a molecular pathology laboratory, and an analytic flow cytometry facility.

The Departmental Proteomics Laboratory, currently under the direction of Dr. Arul Chinnaiyan, and co-directed by Dr. Arun Sreekumar, will be absorbed into the new Translational Pathology Division. A detailed report for 2005-2006 follows. Space for the mass spectroscopy facility is being renovated on the 4th level of the Medical Sciences I building. Ultimately, we anticipate that we will have three mass spectrometers in this facility in support of a wide-range of different research activities. Considerable off-line HPLC capacity will be built in to maximize throughput. Some of the technologies that we expect will be available through this facility include phosphoprotein analysis, quantitative proteomics, and “Mud-Pit” analysis.

The Pathology Research Microarray Laboratory, under the Direction of Dr. Arul Chinnaiyan, is primarily focused on gene expression analysis in inflammation, apoptosis and cancer. A detailed report for 2005-2006 follows.

The Molecular Pathology laboratory, directed by Dr. Thomas Giordano, will provide a wide-range of molecular pathology services to investigators within the Department. A particular focus of this laboratory is the support of faculty in the Department who do not typically have access to research facilities. Some of the anticipated menu of techniques offered include PCR, quantitative PCR, laser capture microdisection, Immunohisto-chemistry, and in situ hybridization.

The Analytic Flow Cytometry facility will be lead by Dr. Lloyd Stoolman. A consultancy process, lead by Dr. Jonnie Moore, lead to the identification of the LSR-2 as the preferred instrument to support our analytic flow cytometry capabilities. A staff person will be funded through the Department in support of these flow cytometric activities.

We anticipate that additional capabilities such as protein microarray and high throughput FISH will be added into the Division as the needs become more clear.

Proteomics Laboratory

The Pathology Research Proteomics Laboratory was established in 2005 as part of the proteomics initiative at the Department of Pathology. The proteomics laboratory has

been using multidimensional protein separation, mass spectrometry and protein microarrays to profile various tumors. The many goals of the laboratory include studying the global proteomic alterations during tumor development, identifying circulating biomarkers for early tumor detection, characterization of fusion proteins and interrogating the interactome for various tumor markers. The group is an integral component of Proteomic Alliance for Cancer Research, which is a Cancer Research Initiative at the University of Michigan funded by the Michigan Economic Development Corporation. The laboratory has strong intradepartmental and interdepartmental collaborations, many of which have resulted in peer reviewed manuscripts or meeting abstracts. As Pathology is a discipline comprised of both scientific investigation and clinical diagnosis, the Proteomics group has been in the forefront to provide state-of art technology to enable the Department to play a role in both the above fields. The biomarker initiative of this group would boost the efforts of clinical pathologists in their search for new markers for detection of cancer and monitoring its progress. The primary focus of this facility is in two areas important in the study of human pathology including 1) inflammation and 2) cancer. These studies are accomplished using characterized animal models as well as with human specimens and cell lines.

While it is well known that proteins are the final denominators of cellular function, the study of protein alterations is still being optimized. The Proteomics group is lead by Dr. Arun Sreekumar, a Research Investigator in the department under the supervision of Dr. Arul Chinnaiyan. The facility has a Thermo Finnigan 2D linear ion trap (LTQ) that is extensively being used for various ongoing projects in the laboratory. As an evaluation laboratory, the group was also involved in contributing to the improvement of the multidimensional protein separation platform called PF2D, which is manufactured by Beckman Coulter. For Protein Microarrays, the laboratory has the state-of–art non-contact ink jet printer called the GeSim Nanoplotter2 and the GMS 417 microarrayer. The laboratory was one of the beta-testing groups for the Invitrogen recombinant protein microarrays.

As a part of its own research initiative in the field of prostate cancer, the group has employed a combination of multidimensional protein fractionation and mass spectrometry to identify proteomic alterations during prostate cancer development and progression. As a part of this project the group has completed analysis of one-third of the tumor proteome which involves identification of more 1000 proteins from benign, clinically localized and advanced prostate cancer. The overall objective of this project is to generate a compendium of proteomic alterations which would be combined with the gene expression and metabolite data available in the laboratory. A similar approach in combination with protein microarrays has been used to screen for autoantibody targets in the tumor proteome. This data is currently being submitted for publication. Also, the group has an active interest in the field of Androgen induced protein dysregulation in prostate cancer that is being interrogated using both qualitative MUD-PIT and quantitative I-TRAQ measurements. In the area of interactomics, the group has excelled in identification of potential interacting partners for tumor proteins. It has been complementing data from mass spectrometry and protein microarrays to interrogate the interactome. Among its own research initiatives, the group has identified interacting partners for various markers that were implicated in tumor development/progression based on earlier gene expression analysis. Many of these interactomes have helped in better understanding of the function of these tumor proteins.

The Proteomics group has also been involved in strong collaborations with various intradepartmental and interdepartmental groups in the area of interactome analysis. Among these collaborations include multiple studies with Dr. Jay Hess in the area of identification of interactomes for MLL fusion partners. A part of this study is being written up for publication. Similar collaborative interactome analyses have been done with Prof. Gabriel Nunez (Pathology), Prof. Kent Johnson (Pathology), Dr. Evan Keller (Urology), Dr. Thomas Wilson (Pathology) and Dr. Al Nawaz Rehemtulla (Radiation Oncology). The results provided to some of these collaborators are in the process of being incorporated into manuscripts. In addition, the laboratory has been actively training a Research Investigator affiliated to Dr. Kent Johnson's laboratory in proteomics of Vasculitis. Further, the proteomics laboratory has strong research ties with Dr. David Lubman from the Department of Surgery, in the area of glyco and phospho proteomics. As a part of this collaboration, both protein microarray and mass spectrometry expertise of this laboratory was used in a study involving the identification of phosphorylation profiles in breast cancer cell line treated with ERBB2 inhibitors, which was published in Analytical Chemistry. Further, the two groups have jointly filed patents for some of the data from the collaborative efforts and have received joint funding from the NIH. In addition, the proteomics group is an integral part of various collaborative proposals submitted by various faculties to the NIH. These include the two proposals submitted to NIH on the Integrated Center for Assessment of Proteome Technologies for Cancer (Philip Andrews, PI) and Differential Mapping of Posttranslational Modifications in Tumors Cells (David Lubman, PI).

Along with data generation, the group has devoted a substantial effort in the area of protein informatics. It has been working very closely with Dr. Alexey Nesvizhskii, in the area of mass-spectrometry data analysis. In addition, the group actively trained Barry Taylor, MS thesis student in the area of protein informatics. The proteomics group has been using various commercial and publicly available softwares like MASCOT, SEQUEST and X-Tandem. It has also successfully designed a downstream data analysis pipeline that incorporates PeptideProphet and ProteinProphet for mass spectrometry data curation. The group is actively involved in planning the setting up of the Clinical Translational Pathology facility in the department. The personnel of the Pathology Microarray Laboratory have:

1) Generated high-throughput proteomic data in prostate cancer.
2) Identified interactomes for various tumor markers.
3) Streamlined data analysis pipeline.
4) Been an integral part of various grant proposals submitted to the NIH.

Peer Reviewed Publications

The following is a list of publications and grants arising out of the use of the Proteomics Laboratory:

1. Manoj Pal, Allison Moffa, Arun Sreekumar, Stephen P. Ethier, Arul M. Chinnaiyan and David M. Lubman. Differential Phosphoprotein Mapping in Cancer Cells Using Protein Microarrays Produced From 2-D Liquid Fractionation Anal Chem. 2006 Feb 1;78(3):702-10.

2. Finn WG, Sreekumar A, Menon A, Utiger C, Chinnaiyan A. Trisomy 12-associated, t(11;14)-negative mature B-cell leukemia with gene expression profile resembling mantle cell lymphoma. Leuk Lymphoma. 2006 Jan; 47(1):121-7.

Abstracts, Book Reviews, Published Letters To The Editor, Miscellaneous Publications In Unrefereed Journals:

1. Sreekumar A, Taylor BS, Wang X, Lubman DM and Chinnaiyan AM. Humoral Response Profiling Using Protein Microarrays. In Functional Protein Microarrays: From Pathways to Drug Discovery, (Paul Predki ed) Taylor and Francis Group, USA, (In Press).

2. David M. Lubman , Yi Zhu , Yanfei Wang , Hye-yeung Kim , Manoj Pal , Rong Wu , Kathleen Cho, Arun Sreekumar, and Arul Chinnaiyan. Proteomics of prostate and ovarian tumor cells using multidimensional liquid separations and mass mapping at 230th ACS National Meeting: American Chemical Society, Washington, DC, August 28-September 1, 2005.

3. Manoj Pal, Allison Moffa, Arun Sreekumar, David M. Lubman, Stephen P. Ethier, Arul M. Chinnayan. Dye based Universal Phospho-sensor Array and MALDI-TOF MS in Large-scale High-throughput Detection and Identification of Protein Phosphorylations in Cellular Lysates, Presented at 53rd ASMS Conference, Jun 2005, San Antonio, Texas, US.

4. Manoj Pal, Arun Sreekumar, Arul M. Chinnayan, and David M. Lubman. Elucidating Humoral Response in Prostate Cancer using Protein Microarrays and Liquid Phase Fractionation of Tissue Lysates. Presented at 54rd ASMS Conference, Jun 2006, Seattle, Washington, US.

5. A. Vellaichamy, R. Zhao, C. Creighton, B. S. Taylor, S. M. Dhanasekaran, S. Varambally, A. Sreekumar, A. M. Chinnaiyan. (2005) Integrative Analysis of Androgen-regulated Proteome, Transcriptome, and Interactome in Prostate Cancer. Poster presentation at Cancer Research Symposium**,** 18 November 2005, University of Michigan Comprehensive Cancer Center.

6. Taylor, B.S., Cao, Q., Varambally, S., Zhao, R., Sreekumar, A., Chinnaiyan, A.M. Integrated Computational and Proteomic Profiling of a Metastatic Tumor Marker Interactome at Cancer Research Symposium, 18 November 2005, University of Michigan Comprehensive Cancer Center.

7. Barry S. Taylor, Arun Sreekumar, Manoj Pal, Jianjun Yu, Ronglai Shen, Rong Zhao, John T. Wei, Debashis Ghosh, David M. Lubman, Arul M. Chinnaiyan. Identification and Analysis of Differential Humoral Response Targets in Prostate Cancer.

Grant Support

1. R01 CA106402 Protein Microarrays for the Humoral Response of Cancer, PI- David Lubman.

2. Proteomics Alliance for Cancer Research, Michigan Technology Tri-Corridor Fund, PI- Gil Omenn.

3. Spore grant from University of Michigan Comprehensive Cancer Centre for project entitled Profiling Prostate Cancer Interactome using Protein Microarrays and Mass Spectrometry, PI-Arun Sreekumar.

Pending Grant Support

1. Differential Mapping of Posttranslational Modifications in Tumors Cells (PI: David Lubman), $200,000, 07/01/06 – 06/30/11.

2. Integrated Center for Assessment of Proteome Technologies for Cancer (PI: Philip Andrews), $227,740, 09/30/06 – 09/29/11.

3. RO1 - CA092251 Transcriptional Deregulation by MLL Fusion Proteins (PI: Jay Hess), $1,611,200, 4/1/2007 - 3/31/2012.

Patents Filed

1. UM2919: Differential phosphoprotein mapping in cancer cells using protein microarrays produced from 2D liquid phase fractionation.

Pathology Research Microarray Laboratory

The Pathology Research Microarray Laboratory was established in 1999-2000 as part of the larger Microarray Network at the University of Michigan Medical School. This array facility is in addition to the one in the Cancer Center, which is largely devoted to genetic analysis of solid tumors from humans. DNA microarray analysis is a powerful technology allowing for detailed gene expression studies of cell lines, animal models, and tissues (including pathologic specimens). With the sequencing of the human genome, it is now possible to monitor gene expression on a comprehensive, global scale as opposed to focusing on one gene at a time. Not only will this technology have an obvious application in the basic sciences, it has the potential of impacting the treatment and diagnosis of patients. As Pathology is a discipline comprised of both scientific investigation and clinical diagnosis, it is imperative that the Department play a role in the use and development of this technology. Clinical Pathology, in particular, has the opportunity of utilizing microarray technology to develop novel diagnostic and prognostic biomarkers.

The Pathology Research Microarray Laboratory functions to support the current and future research activities of the Department as well as Interdepartmental Programs. The primary focus of this facility is important in three areas in the study of human pathology including 1) inflammation, 2) apoptosis/cell death and 3) cancer. These studies are accomplished using characterized animal models as well as with human specimens and cell lines.

While DNA microarray analysis is a potent technique to explore complex and interlocking systems, it is clear that this technology is in its infancy and that there are formidable problems in dealing with the multitude of data generated. Dr. Arul Chinnaiyan has carefully developed our Research Microarray Laboratory, beginning in 1999 when he visited the Brown and Botstein laboratories at Stanford in order to talk with experts and determine the best microarray system to meet our needs. Our microarray methodology

is based primarily on techniques learned at the 1999 Cold Spring Harbor Workshop on DNA Microarrays.

Beginning October of 1999, the Lab has been assembling the equipment, clone sets, and supplies necessary to produce high-density cDNA microarrays including a robotic arrayer, microarray scanner, PCR machines, and liquid handling instrumentation. The Lab has successfully generated a 20K human cDNA chip, 10K rat cDNA chip and a 5K mouse cDNA chip. In 2005, we upgraded the robotic arrayer to 48 pins capacity and have been producing 32k human cDNA chips. In 2006, while we have been continuing to ues our in house produced cDNA arrays, we started testing the Agilent commercial arrays. After extensive research analysis on Agilent's different types of arrays, we successfully set up the Agilent array processing center in 5411 CCGC. The company offered to provide us with the microarray scanner, two hybridization ovens, and very competitive discount price for all the Agilent arrays, reagents, and equipment purchases. We can now process Agilent Human and Mouse Whole Genome Arrays, Human and Mouse Genome CGHs, and Human Promoter ChIP-on-chip arrays. Combined with our bioinformatics capability, the extensive microarray technology and methodologies developed in our lab are expected to continue providing significant contributions in cancer research.

During this reporting period the following investigators have utilized the Microarray facilities:

1. Drs. Peter Ward and Vidya Sarma (Pathology), studies on sepsis and c5a.
2. Dr. Sem Phan (Pathology), studies using in vivo fibrosis models.
3. Dr. Dan Remick (Pathology, protein microarrays), sandwich antibody microarrays.
4. Dr. William Finn (Pathology), Profiling of hematologic malignancies (CLL and MCL).
5. Dr. Kenneth Pienta (Internal Medicine), gene expression mediated by PAR1.
6. Dr. Andrew Lieberman (Pathology), gene expression mediated by androgen receptor variants.
7. Dr. Sofia Merajver (Internal Medicine) Gene expression mediated by Rho family members.
8. Dr. Steven Ethier (Radiation Oncology) Gene expression mediated by FGFR family inhibitors.
9. Dr. Joseph Holoshitz (Internal Medicine) Gene expression of studies in identical twins with and without rheumatogic disease.
10. Dr. Kent Johnson (Pathology) and Pfizer Corporation- Development of antibody microarrays.
11. Dr. Paul Harari (Univ. of Wisconsin, Radiation Oncology) Gene expression mediated by Tarceva.
12. Dr. Celina Kleer (Pathology) Gene expression mediated by WISP.
13. Dr. Theodora Ross (Internal Medicine) Gene expression mediated by HIF1.
14. Dr. Naohiro Inohara (Pathology) Mechanistic studies to understand signaling pathways involved in apoptosis and innate immunity.
15. Drs. Chinnaiyan, Varambally, and Sreekumar (Pathology and Urology). Gene expression profiles of prostate cancer and benign prostatic hyperplasia. Gene expression mediated by EZH2 and AMACR. Development of protein microarray technologies for antibody microarrays and antigen microarrays for humoral immune response.

In addition to establishing DNA microarrays in the laboratory, a large effort has also been placed on devising a system to monitor protein levels and activity in a high-throughput fashion. Much of this activity has been assimilated into the newly established Proteomics Laboratory. While various genome scale methodologies to identify variations in DNA and RNA exist, an analogous "biochip" to explore protein function has been difficult to implement for various reasons. In this Lab we plan to establish a platform for the massively parallel analysis of protein levels, interactions, and function. One area for which we will implement both DNA and protein microarray technology is the development of novel cancer and inflammation biomarkers. Drs. Dan Remick and Kent Johnson are both working with the Microarray Lab in order to fabricate and test protein/antibody microarrays for their respective areas of interest. The protein array platform has been successfully set up in Dr. Chinnaiyan's lab (Microarray Lab). We also purchased a new non-contact arrayer for protein chips. We are currently running both protein arrayers in their full capacity and produced protein arrays for different human cancers including: Prostate, Lung, Breast, Colon, and Bladder.

Publications

The following manuscripts include data made possible by the Microarray Lab:

1. Tomlins SA, Chinnaiyan AM., "Of mice and men: Cancer gene discovery using comparative oncogenomics". Cancer Cell. 2006 Jul;10 (1):2-4.
2. Haas CS, Creighton CJ, Pi X, Maine I, Koch AE, Haines GK 3rd, Ling S, Chinnaiyan AM, Holoshitz J. "Identification of genes modulated in rheumatoid arthritis using complementary DNA microarray analysis of lymphoblastoid B cell lines from disease-discordant monozygotic twins". Arthritis Rheum. 2006 Jun 27; 54(7):2047-2060 [Epub ahead of print].
3. Kuefer R, Day KC, Kleer CG, Sabel MS, Hofer MD, Varambally S, Zorn CS, Chinnaiyan AM, Rubin MA, Day ML. "ADAM15 Disintegrin Is Associated with Aggressive Prostate and Breast Cancer Disease". Neoplasia. 2006 Apr; 8(4):319-29.
4. Taylor BS, Varambally S, Chinnaiyan AM. "A systems approach to model metastatic progression". Cancer Res. 2006 Jun 1; 66(11):5537-9. Review.
5. Kumar-Sinha C, Chinnaiyan AM. "A SLAMS dunk for cancer regulators". Nat Biotechnol. 2006 May; 24(5):524-6.
6. Bradford TJ, Wang X, Chinnaiyan AM. "Cancer immunomics: using autoantibody signatures in the early detection of prostate cancer". Urol Oncol. 2006 May-Jun; 24(3):237-42.
7. Ding L, Erdmann C, Chinnaiyan AM, Merajver SD, Kleer CG. "Identification of EZH2 as a molecular marker for a precancerous state in morphologically normal breast tissues". Cancer Res. 2006 Apr 15; 66(8):4095-9.
8. Tomlins SA, Mehra R, Rhodes DR, Shah RB, Rubin MA, Bruening E, Makarov V, Chinnaiyan AM. "Whole transcriptome amplification for gene expression profiling and development of molecular archives". Neoplasia. 2006 Feb; 8(2):153-62.
9. Giordano TJ, Au AY, Kuick R, Thomas DG, Rhodes DR, Wilhelm KG Jr, Vinco M, Misek DE, Sanders D, Zhu Z, Ciampi R, Hanash S, Chinnaiyan A, Clifton-Bligh RJ, Robinson BG, Nikiforov YE, Koenig RJ. "Delineation, functional validation, and bioinformatic evaluation of gene expression in thyroid follicular carcinomas with the PAX8-PPARG translocation". Clin Cancer Res. 2006 Apr 1; 12(7 Pt 1):1983-93.
10. Creighton CJ, Cordero KE, Larios JM, Miller RS, Johnson MD, Chinnaiyan AM, Lippman ME, Rae JM. "Genes regulated by estrogen in breast tumor cells in vitro

are similarly regulated in vivo in tumor xenografts and human breast tumors". Genome Biol. 2006; 7(4):R28. Epub 2006 Apr 7.

11. Creighton CJ, Hilger AM, Murthy S, Rae JM, Chinnaiyan AM, El-Ashry D. "Activation of mitogen-activated protein kinase in estrogen receptor alpha-positive breast cancer cells in vitro induces an in vivo molecular phenotype of estrogen receptor alpha-negative human breast tumors". Cancer Res. 2006 Apr 1; 66(7):3903-11.
12. Tomlins SA, Mehra R, Rhodes DR, Smith LR, Roulston D, Helgeson BE, Cao X, Wei JT, Rubin MA, Shah RB, Chinnaiyan AM. "TMPRSS2:ETV4 gene fusions define a third molecular subtype of prostate cancer". Cancer Res. 2006 Apr 1; 66(7):3396-400.
13. Bismar TA, Demichelis F, Riva A, Kim R, Varambally S, He L, Kutok J, Aster JC, Tang J, Kuefer R, Hofer MD, Febbo PG, Chinnaiyan AM, Rubin MA. "Defining aggressive prostate cancer using a 12-gene model". Neoplasia. 2006 Jan; 8(1):59-68.
14. Pal M, Moffa A, Sreekumar A, Ethier SP, Barder TJ, Chinnaiyan A, Lubman DM. "Differential phosphoprotein mapping in cancer cells using protein microarrays produced from 2-D liquid fractionation". Anal Chem. 2006 Feb 1; 78(3):702-10.
15. Masumoto J, Yang K, Varambally S, Hasegawa M, Tomlins SA, Qiu S, Fujimoto Y, Kawasaki A, Foster SJ, Horie Y, Mak TW, Nunez G, Chinnaiyan AM, Fukase K, Inohara N. "Nod1 acts as an intracellular receptor to stimulate chemokine production and neutrophil recruitment in vivo". J Exp Med. 2006 Jan 23; 203(1):203-13. Epub 2006 Jan 17.
16. Kim R, Demichelis F, Tang J, Riva A, Shen R, Gibbs DF, Mahavishno V, Chinnaiyan AM, Rubin MA. "Internet-based Profiler system as integrative framework to support translational research". BMC Bioinformatics. 2005 Dec 19; 6:304.
17. Mehra R, Varambally S, Ding L, Shen R, Sabel MS, Ghosh D, Chinnaiyan AM, Kleer CG. "Identification of GATA3 as a breast cancer prognostic marker by global gene expression meta-analysis". Cancer Res. 2005 Dec 15; 65(24):11259-64.
18. Zeidler M, Varambally S, Cao Q, Chinnaiyan AM, Ferguson DO, Merajver SD, Kleer CG. "The Polycomb group protein EZH2 impairs DNA repair in breast epithelial cells". Neoplasia. 2005 Nov; 7(11):1011-9.
19. Kunju LP, Chinnaiyan AM, Shah RB. "Comparison of monoclonal antibody (P504S) and polyclonal antibody to alpha methylacyl-CoA racemase (AMACR) in the work-up of prostate cancer". Histopathology. 2005 Dec 4; 7(6):587-96.
20. Finn WG, Sreekumar A, Menon A, Utiger C, Chinnaiyan A. "Trisomy 12-associated, t(11;14)-negative mature B-cell leukemia with gene expression profile resembling mantle cell lymphoma". Leuk Lymphoma. 2006 Jan; 4 7(1):121-7.
21. Varambally S, Yu J, Laxman B, Rhodes DR, Mehra R, Tomlins SA, Shah RB, Chandran U, Monzon FA, Becich MJ, Wei JT, Pienta KJ, Ghosh D, Rubin MA, Chinnaiyan AM. "Integrative genomic and proteomic analysis of prostate cancer reveals signatures of metastatic progression". Cancer Cell. 2005 Nov 8; (5):393-406.
22. Tomlins SA, Rhodes DR, Perner S, Dhanasekaran SM, Mehra R, Sun XW, Varambally S, Cao X, Tchinda J, Kuefer R, Lee C, Montie JE, Shah RB, Pienta KJ, Rubin MA, Chinnaiyan AM. "Recurrent fusion of TMPRSS2 and ETS transcription factor genes in prostate cancer". Science. 2005 Oct 28; 310(5748):644-8.

23. Wang X, Yu J, Sreekumar A, Varambally S, Shen R, Giacherio D, Mehra R, Montie JE, Pienta KJ, Sanda MG, Kantoff PW, Rubin MA, Wei JT, Ghosh D, Chinnaiyan AM. "Autoantibody signatures in prostate cancer". N Engl J Med. 2005 Sep 22; 353(12):1224-35.
24. Fu Z, Kitagawa Y, Shen R, Shah R, Mehra R, Rhodes D, Keller PJ, Mizokami A, Dunn R, Chinnaiyan AM, Yao Z, Keller ET. "Metastasis suppressor gene Raf kinase inhibitor protein (RKIP) is a novel prognostic marker in prostate cancer". Prostate. 2006 Feb 15; 66(3):248-56.
25. Chinnaiyan P, Varambally S, Tomlins SA, Ray S, Huang S, Chinnaiyan AM, Harari PM. "Enhancing the antitumor activity of ErbB blockade with histone deacetylase (HDAC) inhibition". Int J Cancer. 2006 Feb 15; 118(4):1041-50.
26. Rhodes DR, Tomlins SA, Varambally S, Mahavisno V, Barrette T, Kalyana-Sundaram S, Ghosh D, Pandey A, Chinnaiyan AM. "Probabilistic model of the human protein-protein interaction network". Nat Biotechnol. 2005 Aug 23; (8):951-9.
27. Ghosh D, Chinnaiyan AM. "Classification and selection of biomarkers in genomic data using LASSO". J Biomed Biotechnol. 2005 Jun 30;(2):147-54.
28. Olle EW, Sreekumar A, Warner RL, McClintock SD, Chinnaiyan AM, Bleavins MR, Anderson TD, Johnson KJ. "Development of an internally controlled antibody microarray". Mol Cell Proteomics. 2005 Nov; 4(11):1664-72. Epub 2005 Jul 22.
29. Rubin MA, Bismar TA, Andren O, Mucci L, Kim R, Shen R, Ghosh D, Wei JT, Chinnaiyan AM, Adami HO, Kantoff PW, Johansson JE. "Decreased alpha-methylacyl CoA racemase expression in localized prostate cancer is associated with an increased rate of biochemical recurrence and cancer-specific death". Cancer Epidemiol Biomarkers Prev. 2005 Jun; 14(6):1424-32.
30. Witkiewicz AK, Varambally S, Shen R, Mehra R, Sabel MS, Ghosh D, Chinnaiyan AM, Rubin MA, Kleer CG. "Alpha-methylacyl-CoA racemase protein expression is associated with the degree of differentiation in breast cancer using quantitative image analysis". Cancer Epidemiol Biomarkers Prev. 2005 Jun; 14 (6):1418-23.
31. Rhodes DR, Chinnaiyan AM. "Integrative analysis of the cancer transcriptome". Nat Genet. 2005 Jun; 37 Suppl:S31-7. Review.
32. Rhodes DR, Kalyana-Sundaram S, Mahavisno V, Barrette TR, Ghosh D, Chinnaiyan AM. "Mining for regulatory programs in the cancer transcriptome". Nat Genet. 2005 Jun; 37(6):579-83.
33. Bradley SV, Oravecz-Wilson KI, Bougeard G, Mizukami I, Li L, Munaco AJ, Sreekumar A, Corradetti MN, Chinnaiyan AM, Sanda MG, Ross TS. "Serum antibodies to huntingtin interacting protein-1: a new blood test for prostate cancer". Cancer Res. 2005 May 15; 65(10):4126-33.
34. Chinnaiyan P, Huang S, Vallabhaneni G, Armstrong E, Varambally S, Tomlins SA, Chinnaiyan AM, Harari PM. "Mechanisms of enhanced radiation response following epidermal growth factor receptor signaling inhibition by erlotinib (Tarceva)". Cancer Res. 2005 Apr 15; 65(8):3328-35.
35. Thomas M, Yu Z, Dadgar N, Varambally S, Yu J, Chinnaiyan AM, Lieberman AP. "The unfolded protein response modulates toxicity of the expanded glutamine androgen receptor". J Biol Chem. 2005 Jun 3; 280(22):21264-71. Epub 2005 Mar 30.
36. Lippman ME, Benz C, Chinnaiyan A, Flockhart D, Harris A, Hudis C, Osborne CK, Press MF, Rae J, Sledge GW, Van't Veer L, Wicha M. Consensus statement: Expedition Inspiration 2004 Breast Cancer Symposium "Breast

Cancer--The Development and Validation of New Therapeutics". Breast Cancer Res Treat. 2005 Mar; 90(1):1-3. No abstract available.
37. Narla G, Difeo A, Reeves HL, Schaid DJ, Hirshfeld J, Hod E, Katz A, Isaacs WB, Hebbring S, Komiya A, McDonnell SK, Wiley KE, Jacobsen SJ, Isaacs SD, Walsh PC, Zheng SL, Chang BL, Friedrichsen DM, Stanford JL, Ostrander EA, Chinnaiyan AM, Rubin MA, Xu J, Thibodeau SN, Friedman SL, Martignetti JA. "A germline DNA polymorphism enhances alternative splicing of the KLF6 tumor suppressor gene and is associated with increased prostate cancer risk". Cancer Res. 2005 Feb 15; 65(4):1213-22.

Grant Applications

The Pathology Microarray Lab has supported the following grant applications by providing preliminary gene expression analyses:

1. "Molecular Classification of Prostate Cancer", American Cancer Society, RSG-02-179-01-MGO, 07/01/02 – 06/30/06, 15%, $180,000/yr; Principal Investigator (Chinnaiyan).
2. "Protective Effects of Anti-C5a in Sepsis", National Institute of Health, GM61656 12/01/01-11/30/06, 5%, $225,000/yr; (Principal Investigator: Ward).
3. R01, "Lung Injury by Oxygen Metabolites"; (Principal Investigator: P. Ward).
4. Microarray Supplement, "Sepsis Profiling", (Principal Investigator: P. Ward).
5. U of M SPORE in Prostate Cancer, Principal Investigator: K. Pienta.
6. DOD grant," Biological Differences between prostate cancer cells that metastasize to the bone versus soft tissue sites", (Principal Investigator: K. Pienta).
7. P01, Program Project on Prostate Cancer Bone Metastases; (Principal Investigator: E. Keller).
8. "The Role of Polycomb Group Proteins in Prostate Cancer", National Institute of Health, R01 CA97063, 07/01/02 – 06/30/07, 20%, $178,000/yr; Principal Investigator: Chinnaiyan.
9. Glue Grant, U54 GM64351 "Inflammation and the Host Response to Injury"; Principal Investigator: Remick.
10. Department of Defense, DOD PC020322; Principal Investigator: Chinnaiyan.
11. "Epitomic Biomarkers of Prostate Space, U01 CA111275, 09/30/04-09/29/09, NIH, 10%, $312,871/yr; Principal Investigator: Chinnaiyan.
12. Pfizer Sponsored Research Agreement (Ward).
13. Principal Investigator, "Discovery of Cancer Biomarkers using High Throughput Multi-Blotting", GMP Companies, Inc., 12/01/02-03/05, 0% effort, $168, 827/yr direct costs.

Arul M. Chinnaiyan, M.D., Ph.D.
Director, Pathology Research Microarray Laboratory
Director, Pathology Proteomics Laboratory

Arun Sreekumar, Ph.D.
Co-Director, Pathology Proteomics Laboratory

Jay L. Hess, M.D., Ph.D.
Acting Director, Division of Translational Research
Carl V. Weller Professor and Chair

MLabs

MLABS

Steven H. Mandell, M.D.
Assistant Professor and
Director, MLabs

MLabs, established in 1985, is the University of Michigan Health System's outreach laboratory program. Its role is to extend the Pathology Department's clinical laboratory services and faculty expertise to regional hospitals, clinics, physician offices and other healthcare settings; work that otherwise might be sent outside the region or state, to national reference laboratories. This model proved to be successful, capitalizing on the quality reputation of the University, the Health Care System, the Department, and the dedication and drive of several key individuals to guide and support the growth of the program. MLabs has continued to grow since its inception.

With competition in the marketplace and advances in laboratory automation and informatics, quality in clinical laboratory testing is now *assumed* by our clients and laboratory services are increasingly being viewed as a negotiable "commodity" with work going to the lowest bidder. As such, MLabs is able to distinguish itself from its competitors by offering specialty expertise, a testing menu, and university programs not available at local or regional levels from national reference laboratories.

MLabs is expected to grow and further enhance its services, capacity and operations and will do so sharing in the progress of the clinical laboratories. The Mission Statement below describes this intent and reflects the client advocate role that MLabs must play in the advancement of Departmental operations; it reflects MLabs continued commitment to respond and remain responsible to the competitive marketplace.

The MLabs Mission Statement:

1. To develop and enhance MLabs; to increase its scope and profitability.

2. To represent the "voice" of the outreach client and patient in seeking constant improvement in all University laboratory, clinical, administrative, informatics, compliance and business operations where they might impact MLabs services; to do the same when dealing with external vendors who provide support services to the Department that might impact MLabs services.

3. To maintain price competitiveness in our target markets; to ever seek improvement in the revenue/cost ratio for the MLabs test menu.

4. To enrich the academic mission of the Department by providing laboratory specimens of interest to the faculty, residents and students as well as

opportunities to expand the faculty's reputation and reach into the regions we serve as educators, experts, supportive colleagues and researchers.

5. To support the mission of the University of Michigan Health System (UMHS) by providing outpatient laboratory services to M-Care through a network (or networks) of hospitals' laboratories.

Faculty

Program Director	Steven H. Mandell, M.D., Assistant Professor (75% effort of full time appointment, decreased from 85% previously).
Associate Director	Rodolfo F. H. Rasche, M.D., Assistant Professor (74% effort of 80% part time, decreasing to 50% effort of 60% part time effective January 1, 2007).

Eugene Silverman, M.D., Associate Professor Emeritus, retired December 31, 2005.

Staff

These individuals represent the University of Michigan Health System and Pathology Department to the patients and clients we serve on a day-to-day basis and are by far our most prized and valuable resources. Victoria Clark, a former ward clerk at UM Hospital, brings her enthusiasm and expertise in client services to join our customer service staff this year. Our Division will add another FTE this year that will have a dual purpose of supporting Lab Web Portal Office implementations as well as office accounts and sales.

Program Manager	Susan Valliere, BS, MT (ASCP)	13 yrs with MLabs
Operations Supervisor	Deborah Moss, BS, MBA, MT (ASCP)SM	10 yrs with MLabs
Account Representative	Melissa Brown, MT (ASCP)	10 yrs with MLabs
Managed Care/Financial Analyst	Deirdre Fidler, MHSA, BS, MT (ASCP)	10 yrs with MLabs
Information Technology Support Specialist	Steve Goyette, BS, MT (ASCP)SC	1.5 yrs with MLabs
Customer Service Assistant, Senior	Steve Gregg	6 yrs with MLabs
Customer Service Assistant, Senior	Sandi Larson	9 yrs with MLabs
Customer Service Assistant, Intermediate	Denise White	5 yrs with MLabs
Customer Service Assistant, Intermediate	Leesa Stanislovaitis	4 yrs with MLabs
Customer Service Assistant, Intermediate	Chanin Kelly	2.5 yrs with MLabs
Customer Service Assistant, Intermediate	Victoria Clark	9 months with MLabs

Markets Served and Market Changes
The MLabs Program plays a significant role in providing reference laboratory services to the Michigan and Northern Ohio regions.

MARKET SEGMENTS SERVED	
Dermatology Drug Testing / Psychiatry and Drug Counseling General Surgery and Surgical Subspecialty Practices Hospitals – Full Coverage Hospitals – Reference and Esoteric Testing Independent Laboratories Industry Health Services Laboratory Networks Managed Care Medical and Medical Subspecialty Practices Medical Oncology	Multi-Specialty Clinics Neurology Obstetrics and Gynecology Ophthalmology Pathology Consultations Pediatrics Podiatry Research Industry - Commercial Specialty Clinics Visiting Nurse Associations

Non-Hospital Market

4% of business based on actual CP Billings and 9% by Test Activity. Market representation includes Industry Health Services, Commercial Research Facilities and Independent Laboratories.

Hospital Market

44% of business based on actual CP Billings and 53% by Test Activity. MLabs is the primary reference laboratory and provides full esoteric laboratory testing to 13 hospitals in Michigan and northern Ohio. MLabs provides specialty services, e.g., renal biopsy, flow cytometry, molecular diagnostics to an additional 20+ hospitals throughout the state. No significant hospitals were added to this market FY06.

Physician Office Market

52% of business based on actual CP Billings and 38% by Test Activity. Testing from these offices is billed to the third party payer at UMHS' 3rd party fee schedule. This segment represents laboratory testing provided to over 125 individual offices in the greater Washtenaw County service area.

Managed Care

M-CARE
In 1996, M-CARE and the Regents of the University of Michigan, through the Department of Pathology MLabs Program, established a capitated contract for the provision of outpatient laboratory services to M-CARE members. MLabs provides these services through a network of subcontracted laboratories throughout the State as well as directly by MLabs for physician offices locally. The MLabs/M-CARE laboratory agreement has made a significant contribution to the MLabs Program, allowing MLabs

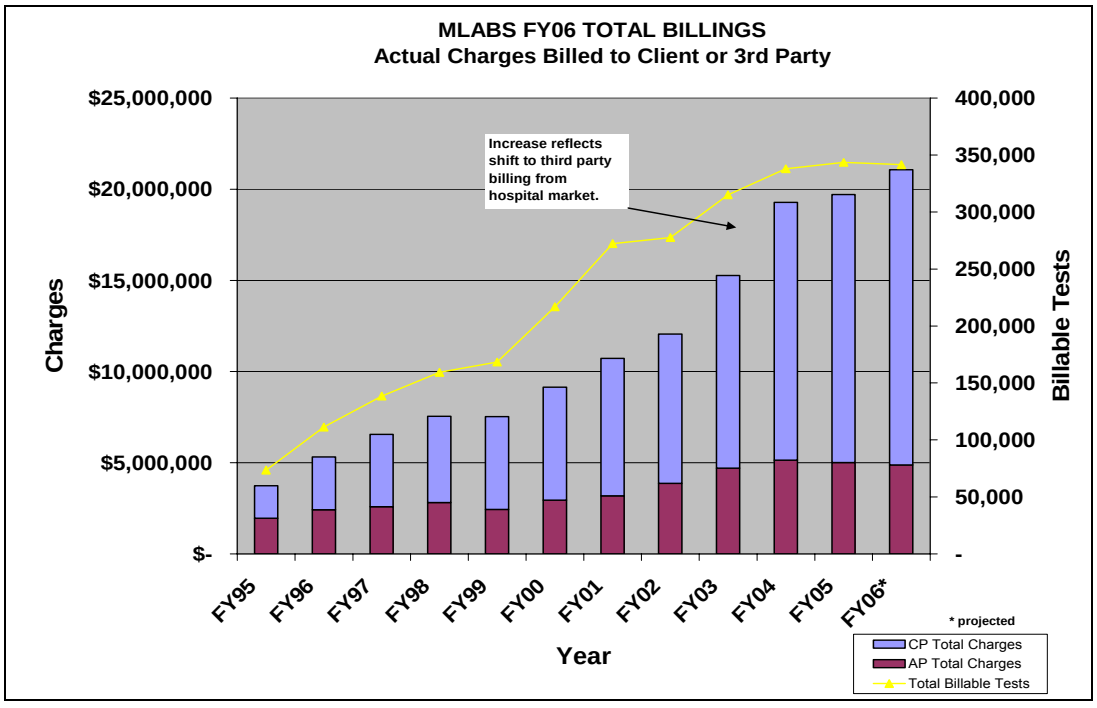
personnel the opportunity to gain valuable experience running a statewide laboratory network, negotiating managed care capitated contracts, and maintaining visibility and standing in the managed care arena.

Laboratory Networks

Joint Venture Hospital Laboratories (JVHL)
JVHL is the largest laboratory network in Michigan and is organized as a limited liability company in Michigan, equally owned by its hospital laboratory members. The University of Michigan Health System (MLabs) became an equity member of JVHL in 1997. MLabs personnel coordinate all of the Departmental issues pertaining to contractual obligations to JVHL (e.g., Quality Assurance and HEDIS reporting). The University is represented on JVHL's Executive Committee by Dr. Mandell and Mr. Eugene Napolitan (Department Administrator), and on the Quality Assurance, Operations, and Marketing Committees by Deirdre Fidler.

Great Lakes Laboratory Network (GLN)
MLabs became a member of GLN in 1996. MLabs does not participate in managed care contracts through GLN; our membership is primarily advisory through representatives on the Executive and Steering committees.

Financial Performance
MLabs Program demonstrated a slight increase in total gross billings and slight decrease in total # of tests.



Department-Wide Activities

Maintenance of the Department's Charge Master and MLabs Website
Managed by Deirdre Fidler.

Client Enrichment and Education
MLabs coordinates continuing medical education activities for its clients, including a popular Saturday Anatomic Pathology Symposium (includes informal lectures, lunch and slide reviews at a multi-headed projection scope), attendance at the Department's annual Blood Bank Conference, and other events. Client site training is also provided for a variety of in-service topics.

Client Services and Service Enhancements
Client retention was 100% this year. MLabs Client Services Office acts as liaison between Department and UMHS Health Center sites on all related lab issues. Client service assistants handled about 42,000 client calls this year. The evaluation, selection and implementation of ACT!/Wired Contact will be a web-based application and is designed to serve the needs of the entire Department's support and service staff.

Medical Directorship
Via MLabs contracts, Dr. Rasche serves as Medical Director and Dr. Mandell as his backup for both the University of Michigan Health Service and Forest Health Medical Center.

Outside Research / Community Testing / Health Fair Portal
Requests for this work come through the MLabs office and we facilitate the entire process from phone inquiry to specimen transport to result communication and account resolution.

Rockwell Phones
Client service calls are handled in many areas of the Department, but expertise for phone data management for handling a call center resides in MLabs. Knowledge of where Rockwell reports are deficient for our needs also resides in MLabs.

Support Informatics Conversions Affecting Client Workflows
Intermittently, PDS requires changes in PathNet or interfaces that require IS maintenance by our clients. These efforts are facilitated and coordinated by MLabs staff. Activities this past year include assisting interfaced clients with conversion of Specialty Laboratory Sendouts to specific orderables, labels and manifests; likewise for on-site AP-type clinical lab orders; converting XLABEL miscellaneous to specific laboratory locations on routing label, conversion of Mayo Miscellaneous sendout orders to specific orderables, labels and manifests in process.

Strategic Planning and Marketing
In consideration of the market advocacy role MLabs plays within the Department, we lead initiatives to:
1. Expand our brand identity and internal marketing opportunities.
2. Evaluate market needs and areas of potential future growth.
3. Establish test menus for market segments or disease groups.
4. Develop co-marketing opportunities with our clients or other UMHS programs.
5. Respond to requests for proposals for outreach services.

The success of our operations is dependent on many individuals in administration, the faculty, Pathology Data Systems, the clinical labs, health care center sites and central distribution who are too numerous to list here, but without whose contribution we would not succeed. Special mention, however, must be given to the Clinical Laboratory Department Administrator (Mr. Thomas Morrow) and the manager and applications' specialists in Pathology Data Systems, who are such integral contributors to our accomplishments and operations (Kathy Davis, Bill Hubbard, Stephen Marshall, Alan Machcinski, Kathryn Ferriell and Chris Gaunt).

Respectfully submitted,

Steven H. Mandell, M.D.
Director, MLabs

Ann Arbor VA Health System

ANN ARBOR VA HEALTH SYSTEM PATHOLOGY AND LABORATORY MEDICINE SERVICE

Stephen W. Chensue, M.D., Ph.D. Professor of Pathology and Chief of Path. and Lab. Medicine Service AAVHS

The VA Ann Arbor VA Healthcare System (VAAAHS) is a University of Michigan affilated tertiary health care provider for veterans. It is one of three tertiary medical centers in the Veterans Integrated Service Network (VISN) #11 serving the veteran population of Michigan, and portions of Ohio, Indiana and Illinois. The VAAAHS Pathology and Laboratory Medicine Service maintains a close relationship with the University Department of Pathology at every level. All pathologists in the VAAAHS have Medical School appointments and participate in University activities in a manner similar to other Departmental sections. Recruitment for VAAAHS pathologists is a joint activity and candidates are selected on the basis of academic performance and potential as well as professional competence similar to any Departmental candidate. There are currently four full-time pathology staff positions. Two and 1/2 resident training positions in the Department's program are supported with funds from the Department of Veterans Affairs. All residents serve monthly rotations in Surgical Pathology, Autopsy Pathology, with access to Diagnostic Electron Microscopy and special study programs in Surgical Pathology, Cytopathology and Digital Imaging. The VAAAHS laboratory retains full accreditation by the College of American Pathologists. The VAAAHS satellite laboratory at the Toledo Oupatient Clinic has been inspected by the JCAHO and is currently fully accredited. The medical center's Decentralized Hospital Computer System (***V****ist****A***) is recognized as the most fully integrated medical information system. It combines all of the clinical management of the patient and shifted to a computerized patient record system (CPRS) in the year 2000. Data storage for all components of pathology and the clinical laboratories contains full patient information for 2 decades. Digital images of selected patient surgical, cytopathology, autopsy and ultrastructural specimen are stored as part of the patient medical record and are accessible to clinicians within minutes of case review.

In addition to the Toledo Outpatient clinic, there are additional community based outpatient clinics (CBOCs) in Flint, Lansing and Jackson, Michigan. The VAAAHS Pathology and Laboratory Medicine Service (PALMS) provides specimen testing for these sites. The VAAAHS PALMS has successfully adapted to the shift to outpatient care and provides highest quality laboratory services in an environment of increasing demand. The VISN continues efforts toward an integrated health delivery system. Diagnostic Services will be a target for networking/consolidation among the current 8 independent facilities. This will result in additional sharing of service responsibilities, equipment standardization, VISN-wide reagent contracting, decreased cost of referred (send-out) testing to nonVA clinical labs and an increase in the workload in VAAAHS's anatomic pathology and the clinical labs. Due to overall testing volume, laboratory equipment standardization with blanket contracting promises to allow for substantial savings in laboratory costs. In May 2006, the VISN contracting office awarded a cost-

per-test contract for standardized chemistry analyzers throughout VISN and similar contracts for Microbiology and Hematology equipment are expected to be awarded in the 2006-2007 fiscal year.

Ann Arbor PALMS is currently performing all surgical pathology for the Battle Creek/Grand Rapid facilities and, in January 2006, began performing all anatomic pathology services for the Saginaw VA facility. In May 2006, initiatives to establish telepathology consultation services for the Fort Wayne/Marion, Indiana facilities were begun. The Ann Arbor PALMS also performs all gynecologic cytopathology for Battle Creek, Detroit, Toledo, Saginaw and affiliated CBOCs. A CARES review report issued by the VA Secretary in 2005 indicated that the VA Ann Arbor Healthcare System will likely be facing increasing demand and the need to expand services over the next two decades

ANATOMICAL PATHOLOGY

A. **Surgical Pathology**: 7,928 surgical cases were accessioned and reported during 2005, representing a 5.5 % increase over 2004 and continuing the trend of increasing workload. Greater than 95% of case diagnoses were reported in under 48 hr. The resident assigned to surgical pathology, usually a first-year resident in training, has the opportunity to examine all of the specimens grossly and microscopically under close one-to-one mentoring by the staff pathologists. The resident interacts with the clinical teams. Weekly Urology Case Review Conference is held by Dr. Murphy. The residents assigned to autopsy and surgical pathology are primary presenters in clinical conferences. The residents obtain a broad educational experience and aid in providing high quality medical care. There is an extensive quality improvement program within Anatomical Pathology, including regular consultations with the Armed Forces Institute of Pathology, University of Michigan, and other outside consultants. There is extensive quality assurance review with analyses of frozen sections, amended diagnoses, surgical appropriateness, turnaround times and follow-up of positive cancer diagnoses. Surgical and cytology readout stations are fully integrated into a hospital digital imaging system. Images are captured into the patient record for cases of interest and when needed for documentation purposes. These are particularly useful in presentations to clinical teams reviewing specimens from their patients with the pathology staff and residents.

B. **Autopsy Pathology:** 20 autopsies were performed during this year; a rate of approximately 18.5% of in-patient deaths. Assigned residents perform the autopsies, prepare the pathologic diagnosis, and present interesting cases for extended gross conferences. The resident cuts and otherwise prepares the tissue for the preparation of slides and then reviews them and makes a microscopic diagnosis. These steps are supervised by staff pathologists who permit a gradual increase in independence for the resident with increased experience. As noted, several autopsies performed at the VAAAHS are also presented at the extended Gross Conference at the University. The Department of Veterans Affairs maintains a policy to recognize the value of the autopsy and to encourage increased utilization. Currently, VHA policy does not establish a target autopsy rate but rather encourages performing a maximum number sufficient to examine a variety of diseases and clinical circumstances.

C. **Cytology:** 3,419 cases were examined and diagnosed during this period. This is a 4% increase over 2004. Most of the cytology specimens are of diagnostic type, however the VAAAHS performs all PAP screening cytologies for the northern tier of VISN 11. Although there is not a formal rotation in cytology within the VAAAHS, the cytological material is readily available and is used as correlative information for surgical and autopsy pathology. This laboratory is a VA "Center of Excellence" in cytology.

D. **Electron Microscopy**: 23 electron microscopy cases were processed in 2005. Ultrastructural diagnosis is provided through sharing agreements with several Michigan hospitals. Some of the University of Michigan pathology specimens are processed and reported. The unit also serves several VAAAHS research investigators. An elective rotation is available for pathology residents in electron microscopy. In other rotations, the electron microscope findings are used to complement surgical or cytopathology diagnoses. This VAAAHS is a "Center of Excellence" in electron microscopy and serves as consultant to other VA Medical Centers, to the University of Michigan Medical Center and to other hospitals by contract.

CLINICAL PATHOLOGY

During the period of this report, 1,454,668 clinical pathology procedures were performed in the Ann Arbor and its affiliated Toledo outpatient laboratory. In Chemistry, there were 1,020,938; in Hematology 104,177; in Urinalysis 19,822, in Microbiology 32,284 and in Blood Bank 22,053; the Toledo unit performed 129,913 tests. A total of 86,715 phlebotomies were performed. These figures represent productivity (billable) rather than weighted test numbers. Residents may participate or observe clinical pathology procedures when this activity is appropriate in relation to their rotations. Drs. Chensue, Utiger and Chamberlain oversee the clinical laboratory and make available interesting and pertinent clinical laboratory information to residents as desired. Clinical Pathology and medical historical data is available to pathology residents via CPRS for their information in surgical pathology, autopsy pathology, and elective rotations.

EDUCATION AND TEACHING

In surgical pathology, the staff pathologists provide one-to-one mentoring during the surgical sign out time. In addition, there is a surgical pathology conference approximately every other week and an autopsy conference with the entire staff following each autopsy. Residents are invited to join in continuing educational activities in histopathology and cytopathology from the AFIP, CAP, and ASCP. Because of the closeness of various sections of the laboratory there is frequent consultation among the pathologists and the residents are involved throughout. Since the VAAAHS is physically close to the University, the residents are expected to attend the appropriate teaching conferences at the University as well. The staff contribute to the laboratory and lecture portions of the second year medical students at the University of Michigan. In addition, Dr. Murphy designed and implemented pathology courses for graduate students (Path 585 and 586) in which VA staff participate as instructors. The VA staff also participates in other ad hoc lectures and in a moderate number of seminars for the resident staff, most often given at the University of Michigan. Both Drs. Chensue and Murphy have made presentations at international pathology conferences. Through his research

program, Dr. Chensue also mentors post-doctoral fellows, graduate students and undergraduate students.

RESEARCH

The specific efforts of the pathology staff are included on individual reports. Dr. Stephen Chensue has strong funded research programs. He also participates in cooperative studies with other investigators at the University of Michigan. Dr. Murphy is also assigned a 50% research and academic effort. Drs. Murphy and Chensue have research laboratories in Research Building 31 of the VAAAHS. All staff participates in various clinical studies and collaborates with a variety of investigators. The laboratory in general serves the VAAAHS research program by providing considerable technical support for clinical research, and in some cases, for more basic research in both anatomic and clinical pathology.

ADMINISTRATION

Dr. Chensue has served as Chief of Service since March 2001. He serves on the VA/UM Dean's Committee as well as multiple other VA oversight committees. The staff pathologists at the VAMC serve in various capacities involving administrative tasks for the University of Michigan, such as the Resident Selection Committee, the Medical Student Admissions Committee, Graduate student preliminary exam and thesis committees, teaching faculty for second year medical students as well as teaching for other graduate courses in the medical school. At the VAAAHS, the pathology staff members serve on all major committees involved with institutional policies and procedures.

The VA's National Cytopathology Proficiency Program's administrative offices are located in the VAAAHS. All VA pathologists privileged in cytopathology are required to participate in a 16 glass slide comprehensive proficiency review annually.

The VAAAHS Pathology and Laboratory Medicine Service has become a major provider of Anatomic Pathology services for the northern tier of VISN 11. The primary goal of the Department is to provide high quality diagnostic services and appropriate care to the veteran patients. This is evidenced by continuing accreditation by external review agencies such as the College of American Pathologists (CAP), Joint Commission for the Accreditation of Hospitals Organization (JCAHO) and the Food and Drug Administration (FDA). There is close supervision of resident activities as they are involved with patient care. All staff members are privileged and evaluated in accordance with their training, experience, continuing education and participation in quality improvement activities. Within the service, there is an extensive quality improvement program that integrates with that of the Hospital as a whole. The affiliation with the University of Michigan serves to strengthen and improve the quality of patient care to our veterans. The teaching effort involving both residents and medical students is of benefit to the two institutions. The VAAAHS PALMS is positioned to continue delivery of high quality service to Veteran patients as demand for medical care continues to mount in the next decades.

Stephen W. Chensue, M.D., Ph.D.
Chief, Pathology and Laboratory Medicine Service
VA Ann Arbor Healthcare System

Finance and Administration

DIVISION OF FINANCE AND ADMINISTRATION

Eugene J. Napolitan
Department Administrator

INTRODUCTION

The Division of Finance and Administration is directed by Mr. Eugene J. Napolitan, Department Administrator, and is comprised of five units as follows:

- **ADMINISTRATIVE SUPPORT CENTER - PATHOLOGY LABORATORIES**
- **OFFICE OF ACADEMIC AND BUSINESS AFFAIRS - MEDICAL SCHOOL**
- **OFFICE OF THE CHAIRMAN**
- **PATHOLOGY PROFESSIONAL FEE BILLING OFFICE - KMS**
- **PATHOLOGY PHOTOGRAPHY AND IMAGING CENTER**

This Division and its sections are responsible for the business, administrative and fiscal affairs of the Department of Pathology as mandated by the policies of the Chair, University of Michigan Health System (Medical School and Hospitals) and the University.

In addition to directing this Division, including his many and varied duties, Mr. Napolitan serves on various Departmental, Health Systems and University Committees, several professional society committees, serves as the regional representative of the APC's Pathology Department Administrators Section (PDAS), and as a board member of several non-profit organizations.

Leadership provided by the Administrator included several new initiatives: Planning for construction of a new Pathology Building, for which Mr. Napolitan is a member of the lead team. This involved preparing data for the RFP, selecting a consultant (Burt Hill) for determining the size of the building and potential site locations. Their final report was submitted in October 2005. Planning has been initiated for the renovation of vacated space in the Pathology Building due to the relocation of faculty to the Biomedical Science Research Building. Major renovation planning includes the creation of an office for several informatics groups on the fourth level of the Pathology Building; and research laboratory space to house the Chair's research program and research programs for new faculty, on the 5th level of the Pathology Building. In addition, planning for the remodeling of the Chair's Office, support staff space, break room and restrooms was initiated. In response to a directive from the Dean, the 2nd and 3rd levels of the Pathology Building have been, or are in the process of being vacated. This mandate will allow the Dean to reassign this space to Nuclear Medicine, causing Pathology to relocate research and clinical laboratories to MSRBI, MSRBII and the Cancer Center. Other

initiatives for FY 2006 included the implementation of an automated Hematology diagnostic testing line (Beckman Coulter) and an automated line in Chemical Pathology (Bayer) to enhance turnaround time for laboratory testing. "Lean" process was developed and implemented for this automation to ensure increased productivity. Additional activities included a successful fundraising campaign for the establishment of an annual lecture in the name of Harold A. Oberman, M.D.; participation in the selection process for the replacement of the laboratory computer system; and negotiation of an extension of the contract for blood products with the American Red Cross.

In addition to the management of daily activities, each of the units have completed major projects which are summarized as follows:

ADMINISTRATIVE SUPPORT CENTER/PATHOLOGY LABORATORIES

This unit is directed by Mr. Thomas Morrow, Assistant Administrator, and is responsible for the business, operational and fiscal affairs of the Anatomic and Clinical Pathology Laboratories. This includes preparation and monitoring of all Hospitals laboratories revenue, expense and capital budgets. Gross revenue for FY 2006 exceeded budget by $9,800,000 and amounted to $324,330,000. For Fiscal Year 2006, the Pathology Laboratories expenditures reached $59,138,000. Additionally, the program for medical technology students from area universities, i.e., Ferris State University, Eastern Michigan University, Wayne State University, provided "on-site" internships and several of our open positions were filled from this group. Mr. Morrow served as the lead administrative representative in the implementation of a digital dictation system for the Department of Pathology; participated with the Section Chief for the implementation of the Hematology and Chemistry automated testing lines and played a key role in the selection of a web portal – Atlas. He will also participate with a select group to implement the laboratory portal which is important for us to meet the continuing growth of our Health Centers and MLabs Program. Another important initiative that he is leading is the positive ID wrist band bar coding project (Cerner), which is critical to the Hospitals implementation of Health Quest Care Link.

Administrative Coordinator: This position (currently open) assists with the coordination of intra- and inter-laboratory activities for the anatomic and clinical pathology laboratories, which include coordination of required proficiency tests; coordination of inspections required for continuing certification or licensure by the JCAH, CAP and MDPH; serving as Departmental representative on the Safety Committee, Disaster Committee and as United Way Chairperson. In addition, the Administrative Coordinator acts as the liaison with the Hospital for renovation projects and coordinates the publication of the Pathology Laboratories Handbook (including on-line version), and is responsible for all requisition modifications. This position also manages the Surgical Transcription Unit, the Faculty Office Suite in the Hospitals as well as the accessioning function in the Medical Science I Building.

Billing Coordinator: This individual, Ms. Nancy Coray, is responsible for processing and auditing all laboratory charges (gross charges of approximately $324,330,000 and 4,338,209 CDM billable tests, ensuring the accuracy of the daily billing files, correction of all errors with the appropriate Hospital departments and responding to all questions regarding interdepartmental, MLabs or Hospital patient billings (technical portion). This position is also responsible for our billing system related to the MLabs Program with assistance from MLabs and Front End Billing groups.

Human Resources Associate: This individual, Mrs. Beverly Smith, oversees the clerical support staff assigned to the Administrative Support Center and coordinates the Human Resources functions for Pathology Laboratories non-instructional staff (approximately 501.6 paid FTEs). She serves as lead for the Department's Orientation Program, coordinates the Medical Technology Internship Program and is a Departmental representative for the Health System's Diversity Task Force. In FY2006, Mrs. Smith was recognized for these efforts by receiving the Laurita Thomas Diversity Award.

OFFICE OF ACADEMIC AND BUSINESS AFFAIRS - MEDICAL SCHOOL

Administrative Director: Mr. David Golden and his staff are responsible for the Medical School all funds budget preparation (forecasting model), new funds allocation model (FAM), variance reporting; tracking of all Medical School expenditures, professional fee billing operations (front end); general funds and teaching and administration funds, and minor departmental renovation projects. The major accomplishment of this unit was the completion of the implementation process of a financial budgeting and monitoring system (UMS software) which resides on Departmental servers. He and his group presented to many University schools and colleges – including our Medical School departments - the benefits of this system. It now appears that many other Medical School and LSA departments will implement this program.

All business and administrative functions associated with our sponsored research and education programs, including coordination of the application process, receipt of grant awards, establishment of budgets, monitoring of expenditures and acting as liaison between the Principal Investigators, research sponsors and other University departments, are now performed by staff in this unit. In addition, Human Resources functions associated with non-instructional staff (Medical School paid), house officers and post-doctoral fellows are coordinated in this office.

Administrative Specialist: Mr. John Harris is responsible for oversight of the staff supporting our Research Programs and the daily management of the UMS system. Extramural sponsored expenditures for FY 2006 amounted to approximately $23,101,000 (direct and indirect costs).

Administrative Specialist: Mrs. Catherine Bearman is responsible for Human Resource issues for staff in the Medical School (approximately 193 FTEs) including our House Officer Program (34 FTEs), Postdoctoral Fellows (40 FTEs), and graduate students (19). This includes processing of visas for non-instructionala staff, graduate students and residents. She also provides administrative oversight for staff in the Pathology Education Office and the faculty support staff in the Pathology Building.

Administrative Specialist: Mr. Thad Schork is responsible for pre-award processing for grants and contracts, renovation and remodeling projects for the Hospital laboratories and Medical School space, including participating in the planning process. He also serves as the gift officer for the Department of Pathology.

OFFICE OF THE CHAIRMAN

Administrative Specialist: Mrs. Laura Blythe provides staff support to the Administrator, Mr. Eugene J. Napolitan. She also serves as the human resource specialist for faculty including processing of faculty appointments, posting positions, payroll, effort reporting and all other human resource functions, including processing of visa applications. She works directly with the Chair of our Departmental ACAPT and the Office of Faculty

Affairs for new appointment processing and with Medical Staff Services for new appointments and re-appointments to the Medical Staff, as well as with the International Center and approved attorneys in the processing of visas for faculty. In addition, she is an editor for the Department's website and supervises staff in the Office of the Chairman.

Executive Assistant: Mrs. Lynn McCain provides support to the Chair of the Department including management of his calendar, completing travel arrangements and preparation of manuscripts, abstracts, clinical consultations and all materials related to the search committees chaired by Dr. Hess. In FY2006, searches were completed for the Director of Anatomic Pathology, the Director for Clinical Informatics and the Director of Translational Research.

PATHOLOGY PROFESSIONAL FEE BILLING OFFICE

The combined Pathology/Radiology Billing Office is managed by Mrs. Janice Taylor. She oversees 26 FTE staff and is responsible for the accounts receivable management and collections of professional fees for services provided in the Department of Pathology. Gross professional fee billing amounted to $29,200,000 and net collections equaled $11,900,000. This group concentrated their effort in FY06 to improve the operation of the following areas – credit balances, patient pay, payment rejections, compliance, and extensive analysis of our pricing structure.

PATHOLOGY PHOTOGRAPHY AND IMAGING UNIT

Photographers: Mr. Mark Deming and Mrs. Elizabeth Walker are the photographers assigned to this service. They are responsible for a variety of photography and imaging services including those requested by our clinical and research faculty and house officer staff. Effective 1 August 2006 this unit will report to Ul Balis, M.D., Director of Pathology Informatics.

SUMMARY OF FINANCIAL DATA FOR FY 2005 & 2006:

		FY2005	FY2006
1.	Grants and Contracts and Other Accounts:		
	Active grants, contracts and other accounts	244	258
	Total Extramural Direct Expenditures:	$16,051,320	$16,601,679
	Indirect Extramural Research Expenditures:	$ 5,668,840	$ 6,499,181
	Total Sponsored Projects:	$21,720,160	$23,100,860
2.	Faculty Group Practice Plan – Pathology Associates:		
	Number of charge entries-[1]	205,366	196,640
	Gross Billings - Anatomic and Clinical Pathology:	$27,860,898	$29,223,260
	Net (FGP):	$11,215,927	$11,903,555
	Part A Payment – Laboratory & Administrative Supervision-[2]	$ 4,175,504	$ 4,260,842
3.	All Fund Expenditures – Medical School		
	Compensation & Benefits	$ 24,032,446	$25,872,049
	Commodities & Other Costs	$ 13,889,104	$14,353,956
	Total	$ 37,921,550	$40,226,005
	# of Funded Faculty	79.38	90.37
	# of Funded Residents & Clinical Fellows	31.00	34.00
	# of Funded FTE Research Staff (includes 19 graduate students, 40 post-doctoral fellows)	154.00	159.00
4.	Pathology Laboratories:		
	Number of billed tests reported by CDM	3,998,000	4,338,209
	Total Gross Revenue - Pathology Laboratories:	$286,573,138	$324,332,619
	Total Direct Expenses Pathology Laboratories:	$ 51,181,000	$ 59,138,311
	# of paid FTE Staff-	479.4	501.6

Notes:
1. Medicare mandated that we bundle Flow charges, and rule changes associated with consult cases.
2. Includes Hospital laboratory administration, GME, and Ph.D.
3. Paid FTE includes overtime hours and temporary staff

Respectfully submitted,

Eugene J. Napolitan
Administrator

Individual Faculty Reports

Gerald D. Abrams, M.D.
Professor Emeritus of Pathology

I. CLINICAL ACTIVITIES

A. PATHOLOGIST, CARDIAC TRANSPLANT TEAM. TRANSPLANT BIOPSIES – 2 WEEKS.

II. TEACHING ACTIVITIES

A. FRESHMAN MEDICAL CLASS
1. Course Co-director, Lecturer, General Pathology-Basic Concepts of Disease, in Patients and Populations Sequence and Cardiovascular-Respiratory Sequence- 8 lecture hours
2. Multidisciplinary Conferences - 2 contact hours.
3. Histopathology Sequence, Sequence Co-director, Lecturer, Lab Instructor-28 contact hours (4 lectures, 24 lab hours).
4. Production of CD-Rom and syllabus for Histopathology Lab sequence for M-1.
5. Production of website to accompany M-1 Pathology Lectures.

B. SOPHOMORE MEDICAL CLASS
1. Pathology Lab Instructor-all sequences. 50 contact hours.

C. HOSPITAL CONFERENCES
1. Cardiovascular Pathology Case Conference (with Cardiology Staff) – monthly.

D. COMMUNITY
1. Organizer and director of “Mini-Med. School”, a six-week course for the public, Spring 2006.

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY
1. Pathology of lesions produced by high intensity ultrasound, with Bioengineering staff and students.
2. Protection afforded by tetrathiomolybdate in toxic and immunologic injury, with G.J. Brewer, Human Genetics
3. COX-2 and myocardial infarction, with B.R. Lucchesi, Pharmacology.
4. Pathogenesis of aortic aneurysms and aortic dissection, with D. Williams, Radiology.

IV. ADMINISTRATIVE ACTIVITIES

A. INSTITUTIONAL

1. Member, Component I Committee.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS

1. , Modern Pathology.

B. INVITED LECTURES

1. Keynote Address, U of M Medical School White Coat Ceremony, August, 2005.
2. Panel Discussion The Role of Senior Faculty in Bringing About Institutional Change, May, 2006.

C. HONORS AND AWARDS

1. Distinguished Service Award, U of M Medical Center Alumni Society, October, 2005
2. Class of 2008 Preclinical Faculty Award, May, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN PEER REVIEWED JOURNALS

1. Seo J, Tran BC, Hall TC, Fowlkes JB, Abrams GD, O'Donnell M, Cain CA. Evaluation of Ultrasound Tissue Damage Based on Changes in Echogenicity in Canine Kidney. Transact Ultrasonics, Ferroelectrics, Freq Control 52 1111-1120, 2005.
2. Hou G, Dick, R, Abrams GD, Brewer GJ. Tetrathiomolybdate Protects Against Cardiac Damage by Doxorubicin in Mice. J Lab & Clin Med 146 299-303, 2005.
3. Williams DM, Cronin P, Narasimham D, Upchurch GR, Himanshu JP, Deeb, MG, and Abrams GD. Aortic Branch Artery Pseudoaneurysms Accompanying Aortic Dissection. Part I. Pseudoaneurysm Anatomy. J Vasc Interv Radiology 17 765-771, 2006.
4. Parsons JE, Cain CA, Abrams GD, Fowlkes JB. Pulsed Cavitational Ultrasound Therapy for Controlled Tissue Homogenization.Ultrasound in Med Biol 32 115-129, 2006

Thomas P. Annesley, Ph.D.
Professor of Pathology and Clinical Chemistry

I. CLINICAL ACTIVITIES

A. BIOCHEMISTRY SECTION, CLINICAL PATHOLOGY LABORATORIES.

B. LABORATORY DIRECTOR

1. Chelsea Family Practice, M-Care Facility.
2. Briarwood Medical Group, M-Care Facility.
3. Briarwood Family Practice Facility.
4. West Ann Arbor Health Care Facility.

II. TEACHING ACTIVITIES

A. HOUSE OFFICERS

1. Lecturer, Clinical Pathology Grand Rounds.
2. Lecturer, Clinical Pathology Didactic Lecture Series.
3. Sign-out and Interpretation of Laboratory Results.

III. RESEARCH ACTIVITIES

A. SPONSORED RESEARCH – None

B. PENDING – None

C. PROJECTS UNDER STUDY

1. Ionization Effects in Mass Spectrometry.
2. Pediatric Tacrolimus Pharmacokinetics Study (GCRC Study Number HUM00006037).

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Biochemistry Section, Clinical Pathology Laboratories.
2. Coordinator, Clinical Pathology Laboratory CME Program.

B. REGIONAL AND NATIONAL

1. President, National Academy of Clinical Biochemistry.
2. Board of Directors, National Academy of Clinical Biochemistry.
3. Board of Directors, American Association for Clinical Chemistry.
4. Chair, Michigan Section, American Association for Clinical Chemistry
5. Executive Committee/Journal Management Group, Clinical Chemistry Journal.

V. OTHER RELEVANT ACTIVITIES

A. JOURNAL EDITORSHIPS

1. Associate Editor, *Clinical Chemistry*.

B. EDITORIAL BOARDS AND REVIEWS
1. Editorial Board - *Clinical Chemistry*
2. Editorial Board. - *Therapeutic Drug Monitoring*
3. Editorial Board - *Clinical Chemistry and Laboratory Medicine*
4. Editorial Board - *Clinical Biochemistry*
5. Reviewer - *Clinical Chemistry*
6. Reviewer - *Biomedical Chromatography*
7. Reviewer - *Therapeutic Drug Monitoring*
8. Reviewer - *Clinical Biochemistry*
9. Reviewer - *Clinical Chemistry and Laboratory Medicine*
10. Reviewer - *Archives of Pathology and Laboratory Medicine*
11. Reviewer - *Journal of Chromatography Biomedical Applications*

C. MEMBERSHIP AND OFFICES IN PROFESSIONAL SOCIETIES
1. Member, Council of Scientific Editors.
2. Member, World Association of Medical Editors.
3. Member, National Academy of Clinical Biochemistry.
4. Member, Association of Clinical Scientists.
5. Member, American Society for Mass Spectrometry.
6. Member, International Association of Therapeutic Drug Monitoring and Clinical Toxicology.

D. INVITED LECTURES/SEMINARS
1. “Requirements for Mass Spectrometry Installation and Analysis”, William Beaumont Hospital, Royal Oak, Michigan, July 2005.
2. “Coexistence of Community and Diversity”, Gustavus Adolphus College, Saint Peter, Minnesota, December 2005.
3. “Principles and Clinical Applications of Mass Spectrometry”, Carolinas Clinical Connection, Asheville, North Carolina, April 2006.
4. “Management Considerations for Implementing Mass Spectrometry”, Carolinas Clinical Connection, Asheville, North Carolina, April 2006.

E. HONORS AND AWARDS:
1. Distinguished Scientist Award, American Association for Clinical Chemistry.
2. Presidential Citation, National Academy of Clinical Biochemistry.
3. Awardee, Marquis Who’s Who in America.
4. Clinical Chemist’s Recognition Award, American Association for Clinical Chemistry.
5. Food and Drug Administration Certificate of Appreciation.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN PEER REVIEWED JOURNALS
1. None

B. CHAPTERS IN BOOKS
1. Annesley, T.M., Rockwood, A., and Sherwood, N.: Mass Spectrometry. Fundamentals of Clinical Chemistry, Sixth Edition, C. Burtis, E. Ashwood, D. Bruns, eds. 2006.

Henry D. Appelman, M.D.
M.R. Abell Professor of Pathology

I. CLINICAL ACTIVITIES

A. GENERAL SURGICAL PATHOLOGY SERVICE – 1 MONTH.
B. GASTROINTESTINAL AND HEPATIC PATHOLOGY SERVICES - 7 MONTHS.

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
1. Pathology 600 - 2 full class lectures and laboratory 2-4 hours per week
2. Pathology 630 (dental) - one full class lectures.
3. Senior Elective in Pathology supervising during diagnostic signout

B. HOUSE OFFICERS
1. Surgical pathology diagnosing room instruction for assigned house officer - 4 months
2. Gastrointestinal and hepatic pathology tutoring - full time.
3. Lectures in gastrointestinal and liver pathology, 3 hours
4. Consult conferences, 4-5 hours

C. INTERDEPARTMENTAL
1. G-I Tumor Conference - 2-3 hours per month
2. Liver Biopsy Conference – 4 hours per year.
3. Gastroetnerology-Pathology conferences – 5 per year

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY
1. Clinical trial of difluoromethylornithine in Barrett's esophagus, with Dean Brenner of the U of Mich, Gary Stoner of Ohio State Univ, Stuart Spechler, and Edward Lee of University of Texas-Southwestern, and Anil Rustgi of Pennsylvania.
2. Anaplastic, lymphoma-like carcinoma arising in Barrett's mucosa, with BJ McKenna
3. The apoptotic form of microsopic colitis, with BJ McKenna
4. Are juvenile-like polyps in adults the same as in children? With Meryem Koker
5. What is the yield of significant microscopic disease in colorectal biopsies of adult patients with chronic diarrhea and normal endoscopic findings? With BJ McKennaG cells in the duodenal bulb and their response to therapy. With Wei Xin and Barbara McKenna
6. Marginal collagenous colitis does it exist? With BJ McKenna, W Xin, M Anderson and L Evans

7. The effects of loss of IL-10 and Familial adenomatosis polyposis-like genetic changes on the development of colorectal carcinomas in knock-out mouse models. With Emina Huang.
8. The prevalence of unsuspected invasive carcinomas in specimens resected for high-grade dysplasia in Barrett's mucosa and the gastric cardia. With Weijian Zhu, Barbara McKenna, Steven Ramsburgh, Joel Greenson and members of the Section of Thoracic surgery
9. The yield of significant microscopic findings in terminal ileal biopsies and their relation to indications for endoscopy and endoscopic findings, with Jon McHugh and Barbara McKenna
10. Calcium sensing receptors in colorectal carcinoma, with James Varani and colleagues

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
   1. Chairman, Advisory Committee on Appointments, Promotions and Tenure.
   2. Director, Gastrointestinal Pathology Fellowship Program

B. INSTITUTIONAL
   1. Member, Cancer Work Group, University Hospital.
   2. Co-Coordinator, Gastrointestinal Sequence for 2nd year medical students.

C. REGIONAL/NATIONAL/INTERNATIONAL
   1. President-Elect, International Organization for Statistical Studies of Diseases of the Esophagus, Paris, France.
   2. President, United States and Canadian Academy of Pathology
   3. Member, Lung and Esophagus Task Force, American Joint Committee on Cancer.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS
   1. Member - *Human Pathology.*
   2. Member - *Modern Pathology.*
   3. Member - *American Journal of Surgical Pathology.*

B. INVITED LECTURES/SEMINARS
   1. Gastrointestinal Pathology topics "What is dysplasia in the gut", "Neoplastic and non-neoplastic lesions of the gastroesophageal junction", "The role of the pathologist in the diagnosis and management of colitides". Pathology Update for Practicing Pathologists, American Society for Clinical Pathology, Chicago, IL, July, 2005.
   2. "Neoplasms of the Appendix and Anus the Two Ends of the Colon are Worlds Apart", "Polyps of the Gut with No Names or with Obscure Names What we can learn from things that we don't know what they are", Gastrointestinal Stromal Tumors are as Annoying in 2005 as they were in 2004, 2003, etc", presented at The Banff Pathology Course, Department of Pathology, University of Alberta, Banff, Alberta, Canada, September 7-8, 2005.
   3. "Indeterminate Colitis Pathology issues in sorting colitis" and Biopsies of the Neoterminal Ileum Post-op What is recurrence?",

World Congress of Gastroenterology, Montreal, Quebec, Canada, September 14, 2005.

4. "Dysplasia of the Gut Why we don't know how to diagnose it", Visiting Professor Lecture, SUNY, Syracuse, NY, September 28, 2005.
5. "Just Another Day on the GI Biopsy Service", with B.J McKenna, Annual Meeting, American Society for Clinical Pathology, Seattle, WA, October 9, 2005.
6. "The differential diagnosis of artifacts in gastrointestinal biopsies", Annual Meeting, American Society for Clincal Pathology, Seattle, WA, October 10, 2005.
7. "Mundane Cases in GI Pathology--Even the Non-Interesting Can Be Exciting". Microscopic tutorial, Annual Fall Meeting, American Society of Clinical Pathologists, Seattle, WA, Oct 2005.
8. "Dysplasia of the Gut Why we still don't know how to diagnose it". Grand Rounds, Department of Pathology, Memorial Sloan Kettering Cancer Center, New York, NY, October 27, 2005.
9. "Why is the Gastroesophageal Junction Such a Big Deal, When it is so Small?", Minneapolis Gut Club, Minneapolis, MN, February 23, 2006.
10. "Nothing Good can come from a Gastric Biopsy when Endoscopic Inflammation is Concerned" and "It is Easy to talk about Dysplasia in the Gut, but it is Impossible to Diagnose it". University of Nebraska Medical Center, Omaha NE, April 5, 2006 .
11. "Current Issues in Gastroenterology Pathology" with Donald Antonioli and Kenneth McQuaid, Spring Meeting of the South Bay Pathology Society, Monterey, CA, May 6, 2006.
12. "Just Another Day on the GI Consultation Service" with Barbara McKenna, 25th Annual Current Issues in Surgical Pathology, Dept of Pathology, University of Texas Southwestern Medical Center, Dallas TX, May 11, 2006.
13. "GEJ Cancer Pathologist's Dilemma" presented at the annual meeting of the Barrett's Study Group at DDW. Los Angeles, CA, May 21, 2006.
14. "A Nihilistic Approach to the Gastritides does it Matter What we Call Them?", Department of Pathology, University of Illinois, Chicago, IL, June 5, 2006.

C. HONORS AND AWARDS

1. 2006 ASCP H.P. Smith Award for Distinguished Pathology Educator
2. Visiting Professorships
    a. State University of Mew York at Syracuse, September, 2005
    b. University of Nebrska, April, 2006
    c. University of Illinois, Chicago, June, 2006

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Chakrabarty S, Wang H, Canaff L, Hendy GN, Appelman H, Varani J. Calcium sensing receptor in human colon carcinoma interaction with CA2+ and 1,25-dihydroxyvitamin D3. Cancer Res. 65(2) 493-8, 2005.

2. Hussain HK, Chenevert TL, Londy FJ, Gulani V, Swanson SD, Mckenna BJ, Appelman HD, et al. Hepatic fat fraction MR imaging for quantitative measurement and display—early experience. Radiology. 237 1048-1055, 2005.
3. Dang LH, Chen F, Ying C, Chun SY, Knock SA, Appelman HD, Dang DT. CDX2 has tumorigenic potential in the human colon cancer cell lines LOVO and SW48. Accepted for publication in Oncogene, October 2005.
4. Dang LH, Chen F, Knock SA, Huang EH, Feng J, Appelman HD, Dang DT. CDX2 does not suppress tumorigenicity in the human gastric cancer cell line MKN45. Accepted for publication in Oncogene, October 2005.
5. Huang EH, Park JC, Appelman HD, Weinberg AD, Logsdon CD, Schmidt AM. Induction of inflammatory bowel disease accelerates adenoma formation in MIN+/- mice. Accepted for publication in Surgery, December, 2005.
6. Groisman GM, Polak-Charcon S, Appelman HD. Fibroblastic polyp of the colon clinicopathologic analysis of 10 cases with emphasis on its common association with serrated crypts. Histopathology, 48 431-438, 2006.
7. McKenna BJ, Appelman HD. Primer histopathology for the clinicians—how to interpret biopsy information for gastritis. Nature Clinical Practice Gastroenterology & Hepatology. 3 165-171, 2006.

B. BOOKS AND CHAPTERS IN BOOKS - None

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Zhu W, Appelman HD, Greenson, JK, Ramsburgh SR, Orringer MC, Chang AC, Mckenna BJ. Barrett's/cardiac high grade dysplasia is not a strong marker for concurrent carcinoma, unless architectural changes suspicious for adenocarcinoma are also present. Mod Pathol (Suppl 1) 19 126A, 2006.

Mila Blaivas, M.D., Ph.D.
Associate Professor of Pathology

I. CLINICAL ACTIVITIES

A. SURGICAL NEUROPATHOLOGY
1. UMHS Muscle and Nerve biopsies
2. Consultation Services for outside facilities
3. Diagnostic EM

B. AUTOPSY SERVICE

II. TEACHING ACTIVITIES

A. RESIDENTS AND FELLOWS;
1. Muscle, Nerve and Brain Biopsies
2. Performing and reading-out autopsies.
3. Lectures on muscle, nerve and brain pathology
4. Neuropathology cases review with Pathology Residents.
5. Dr. Sindhu Ramchandren, Neurology Fellow in muscle and nerve biopsy interpretation (in preparation for certification)
6. Dr. James Dowling, Neurology Lecturer in muscle pathology

B. INSTITUTIONAL
1. Conferences on muscle and nerve cases with Neurology Department.
2. Weekly and monthly conferences with Neuromuscular staff.
3. Pediatric Oncology conferences for brain tumor cases.

III. RESEARCH ACTIVITIES

A. PENDING
1. Protein Interactions with CADASIL –Mutants of Notch 3. Principal Investigator, Michael M. Wang, M.D. 1R21 NS052681-01 A1, National Institute of Health. 7-01-06 through 6-30-2008. Mila Blaivas, M.D., Co-Investigator with 10% money effort. Budget $386,800.00. (Re-submitted).
2. Nanoparticle Enabled Intraoperative Imaging and Therapy. Principal Investigator, Raoul Kopelman, M.D., Co-Principal Investigators, Oren Sagher, M.D., Brian Ross, M.D., Alnawaz Rehemtulla, M.D., and Martin Philbert, M.D. Funding agency NIBIB. Grant mechanism Exploratory Grants (P20) for NIBIB Quantum Projects. Proposed dates of support 9-15-06 through 9-14-09. Proposed total budget, $2,760,336.00. Mila Blaivas, M.D., Consultant with no money effort assigned.
3. Nanobiophotonics Enabled Tumor Surgery and Intraoperative PDT. Principal Investigator, Raoul Kopelman, M.D., Co-Principal Investigators, Oren Sagher, M.D., Brian Ross, M.D., Alnawaz

Rehemtulla, M.D., Martin Philbert, M.D. Funding agency NCI. Grant mechanism R21/R33. Proposed dates of support 9-1-06 through 8-31-10. Proposed total budget, $2,453,808.00. Mila Blaivas, M.D., Consultant with no money effort assigned.

4. The Role of Mig-2 in Myogenesis, Muscle Maintenance and Childhood Myopathy., PA-05-051, Principal Investigator, James J. Dowling, Lecturer. Submitted to NIAMS. Dates of proposed support 12-01-06 through 11-30-11. Total budget costs $642,600.00. Mila Blaivas, M.D., Consultant with no money effort assigned.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
   1. Supervision of the muscle histochemistry and muscle and nerve biopsy handling.
   2. Continuing improvement of interdepartmental and interinstitutional coordination of muscle and nerve biopsy service.
   3. Improvements in immunoperoxidase stainings, expansion of anti-dystrophy workup.
   4. Daily monitoring muscle histochemistry group performance.

B. MEDICAL SCHOOL
   1. Member of the Admissions Committee.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARD AND REVIEWS
   1. Reviewer - *Archives of Pathology and Laboratory Medicine.*
   2. Reviewer - *Archives of Ophthalmology.*
   3. Reviewer - *Journal of Neurophthalmology.*
   4. Reviewer - *Journal of Neuropathology*
   5. Reviewer - *Experimental Neurology*

B. INVITED LECTURES/SEMINARS – None

C. MEMBERSHIP AND OFFICES IN PROFESSIONAL SOCIETIES
   1. Member, American Association of Neuropathologists,
   2. Member, World Muscle Society.
   3. Member, International Academy of Pathology
   4. Member, College of American Pathologists
   5. Member, Peripheral Nerve Society
   6. Member, European Federation of Neurological Societies
   7. Member, American Academy of Neurology

VI. PUBLICATIONS

A. ARTICLES SUBMITTED, PUBLISHED OR ACCEPTED FOR PUBLICATION IN PEER REVIEWED JOURNALS
   1. Moffat, BA, Chen, M, Kariaapper, MST, Bliavias, M, et al. Inhibition of vascular endothelial growth factor (VEGF) –A causes a paradoxical increase in tumor blood. Clinical Cancer Research 12(5), pp. 1525-1532 March 1, 2006.
   2. Mizarachi, BB-I, Hassan-Gomez, D, Blaivas, M, Trobe, JD Pitfalls in the diagnosis of mitochondrial encephalopathy with lactic acidosis and stroke-like episodes. Journal Neuro-Opthalmology 26 (1) pp38-43, 2006.

3. Little, AA, Gebarski, SS and Blaivas, M, Nontuberculous mycobacterial infection of a metastatic brain neoplasm in an immunocompromised patient. Archives of Neurology, 63 pp.763-765, May, 2006.
4. Gruis, KL, Teener, JW, and Blaivas, M, Pediatric macrophagic myofasciitis associated with motor delay. Clinical Neuropathology, In press.
5. Hirunwiwatkul, P, Trobe JD., and Blaivas, M, Lymphoplasmacyte-rich meningioma mimicking idiopathic hypertrophic pachymeningitis. Submitted to Journal of Neuro-Ophthalmology.

B. ABSTRACTS, BOOK REVIEWS PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Peltier AC, Teaner JW, Gruis K, Blaivas M. Polyglycosan body disease in a non-Jewish patient. Paper presented at the Biannual PNS meeting, IL Chicco, Italy, July 2005.

Priscilla Chamberlain, M.D.
Clinical Instructor In Pathology

I. CLINICAL ACTIVITIES

A. SURGICAL PATHOLOGY
   1. 12.5 weeks of coverage – primary sign out, frozen section coverage
   2. ~5% SP cases – Consultant, 2nd opinion and 10% review

B. CYTOLOGY
   1. 26 weeks GYN & Non GYN sign out
   2. 60 Fine Needle Aspirations performed with rapid evaluation
   3. 10% GYN Second Opinion & Negative Pap review
   4. >5% of NonGYN cases – Consultation & 2nd opinion

C. AUTOPSY
   1. Service - 13 weeks
   2. Off Hours (on call) coverage for the VA – AP / CP, 13 weeks

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
   1. M2 pathology lab – 28 hours (14 hrs lab + 14 preparation).

B. RESIDENTS AND FELLOWS
   1. Pathology residents SP – 500 hours - supervision & sign out
   2. Pathology residents Cytology – 25 hours
   3. Pathology resident Autopsy – 35 hours
   4. Lecture series for ENT residents – 25hours (20 hrs prep + 5 hrs lecture)
   5. Cytology lectures to pathology & surgical residents as needed – 5 hrs

C. PATHOLOGY GRADUATE COURSE – 20 hours

III. RESEARCH ACTIVITIES - None

IV. ADMINISTRATIVE ACTIVITIES

A. VA MEDICAL CENTER PATHOLOGY DEPARTMENT:
   1. Director of Cytopathology for VA Hospital
   2. High Grade pap clinical follow-up reporting
   3. QA review of concurrent SP cases
   4. Atypical pap review reporting
   5. Annual Cytology Report
   6. Cytopathology CME for all pathologists
   7. Medical Director Chemistry Laboratory
   8. Medical Director Microbiology/Immuno Laboratory
   9. Medical Director Ancillary Testing
   10. Medical Director Toledo Outpatient Laboratory
   11. Medical Director of Central Receiving

12. Pathologists' Scheduling

B. INSTITUTIONAL
   1. Medical School Admissions Committee
   2. Tumor Board
   3. Cancer Committee
   4. Safety Case Management Committee

V. OTHER RELEVANT ACTIVITIES – None**.**

VI. PUBLICATIONS – None.

Stephen W. Chensue, M.D., Ph.D.
Professor of Pathology and
Chief, Pathology and Laboratory Services
Ann Arbor VA Health Care System

I. **CLINICAL ACTIVITIES**

A. CHIEF, PATHOLOGY AND LABORATORY MEDICINE SERVICE, VA ANN ARBOR HEALTHCARE SYSTEM
   1. Laboratory supervision and administration
   2. Equipment and methodology evaluation
   3. Review and consultation regarding quality management programs
   4. Personnel evaluation, counseling and grievance procedures.

B. HEMATOLOGY
   1. Daily evaluation of pathologist referred blood smears, lymph nodes, bone marrow smears, VA Ann Arbor Healthcare System (6 months/year).

C. SURGICAL/FROZEN SECTION DIAGNOSIS (2.5 months/year).

D. SURGICAL CASE DIAGNOSIS VA ANN ARBOR HEALTHCARE SYSTEM (2.5 months/year).

E. AUTOPSY SERVICE, rotational basis, on call 13 weeks/year.

F. SPECIAL CHEMISTRY/IMMUNOLOGY
   1. Daily interpretation of protein electrophoreses and problem ligand studies (6/months/year), VA Ann Arbor Healthcare System.

G. BLOOD BANK,
   1. Consults and investigations, full time as needed, VA Ann Arbor Healthcare System.

II. **TEACHING ACTIVITIES**

A. MEDICAL STUDENTS, Pathology 600 laboratory.

B. GRADUATE STUDENTS, Pathology 585 lecture and laboratory

C. PATHOLOGY HOUSE OFFICERS, Surgical Pathology/Autopsy supervision and instruction.

D. TECHNOLOGISTS, TECHNICIANS AND HOSPITAL STAFF, ongoing continuing medical education instruction on clinical laboratory topics.

E. RESEARCH MENTORING for post-doctoral, graduate, undergraduate, and high school trainees.

III. **RESEARCH ACTIVITIES**

A. SPONSORED SUPPORT
   1. Principal Investigator, Chemokine Receptor Dynamics in Granuloma Formation, NIH AI43460 ($150,000 direct costs annually, 2003-2007).
   2. Coinvestigator, Effect of Aging on early events of pulmonary innate immune responses. AO4134, Am. Federation on Aging Research (60,000 annually 2004-2006).

3. Coinvestigator, Molecular Mechanisms of Lung Host Defense, VA REAP Grant (250,000 annually, 2006-2009).

B. PROJECTS UNDER STUDY
1. Regulation and participation of chemokine receptors during Th1 and Th2 immune and inflammatory responses.
2. Effect of aging on T cell activation, migration and recirculation.
3. Role of chemokine receptors in dendritic cell recruitment and activation and in vivo migration during innate stages of granuloma formation and Mycobacteria infection.
4. Role of chemokine receptors (CCR4, CCR6 and CXCR4) in Th1 and Th2 cell-mediated responses to lung infection.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Pathology Graduate Program Preliminary Exam Committee.
2. Member of graduate student thesis committees.
3. Interviewing and evaluation of residents and faculty.

B. MEDICAL SCHOOL/HOSPITAL
1. Dean's Committee, University of Michigan Medical School and VA Ann Arbor Healthcare System, voting member.
2. Clinical Executive Board, VA Ann Arbor Healthcare System, voting member.
3. Professional Standards Board, VA Ann Arbor Healthcare System, voting member.
4. Invasive Proceedures Committee, VA Ann Arbor Healthcare System, voting member.
5. Residency Review Board, VA Ann Arbor Healthcare System, voting member.
6. VHA VISN 11 Laboratory Equipment Standardization Committee.
7. Chief of Staff Advisory Committee, VA Ann Arbor Healthcare System, voting member.
8. Personnel employment and annual performance evaluations.
9. Anatomic Pathology Quality Assurance evaluation and reporting.
10. Editor, VALabs Newsletter and webmaster for VA Laboratory webpage.

C. REGIONAL/NATIONAL/INTERNATIONAL
1. Team leader for College of American Pathologists (CAP), Laboratory Accreditation Program, May 2006.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS
1. American Journal of Pathology
2. Journal of Immunology
3. Inflammation Research, Section Editor
4. American Journal of Respiratory Cell and Molecular Biology
5. Journal of Clinical Investigation
6. Journal of Leukocyte Biology
7. Infection and Immunity

B. INVITED LECTURES/SEMINARS
1. Invited reviewer for the Health Research Board of Ireland, 73 Lower Baggot St, Dublin 2, Ireland, October 2005.
2. Invited symposium speaker, Pulmonary Pathology Society Symposium: Macrophages and Lung Disease: New Insights into Pathogenetic

Mechanisms, “Chemokine determinants of lung dendritic cell function.” Experimental Biology Meetings, San Francisco April 1-7, 2006.

VI. **PUBLICATIONS**

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Stolberg, V.R., Chiu, B., Komuniecki, E., Freeman, C.M., and Chensue, S.W. Analysis of inducible costimulatory (ICOS) molecule participation during the induction and elicitation of granulomatous responses to mycobacterial and schistosomal antigens. Cell. Immunol. 2005, 237: 45-54.
2. Hu, J.S., Freeman, C.M, Stolberg, V.R., Chiu, B.C., Bridger, G. J., Fricker, S.P., Lukacs, N.W. and Chensue, S.W. AMD3465, a Novel CXCR4 Receptor Antagonist, Abrogates Schistosomal Antigen-elicited (Type-2) Pulmonary Granuloma Formation. Am. J. Pathol. 2006, in press.

B. BOOKS AND CHAPTERS IN BOOKS

1. Chensue, S.W. CXCL-1 (GRO-1)-CXCL3 (GRO3). In, Encyclopedia of Respiratory Medicine, G. Laurent, S. Shapiro, eds., Elsevier Limited: Oxford, UK, 2006, pp. 407-410.

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Freeman, C.M., Chiu, B., Stolberg, V.R., Hu, J.S., Lukacs, N.W., Kunkel S.L. and Chensue S.W. CC Chemokine Receptor 4 (CCR4) is required to establish mycobacterial (Th1) but not schistosomal (Th2) antigen-elicited anamnestic granuloma formation. Keystone Symposium, Snowbird, Utah Jan 15-20, 2006.
2. Freeman, C.M., Curtis, J. L. and Chensue, S. W. CCR5 and CXCR6 expression on lung CD8+ T cells correlates with COPD severity. FASEB J. 2006 Abstract# A458.

Arul M. Chinnaiyan, M.D., Ph.D.
S.P. Hicks Professor of Pathology
Associate Professor of Pathology
And Urology
Director of Research Informatics

I. CLINICAL ACTIVITIES

A. Board-Certified in Clinical Pathology (2002), Diplomate of the American Board of Pathology

II. TEACHING ACTIVITIES

A. GRADUATE AND MEDICAL STUDENTS

1. Mentor, Graduate/Medical Students: Scott Tomlins (MSTP, Pathology), Qi Cao (Pathology), Jianjun Yu (Bioinformatics), Daniel Rhodes (MSTP, Pathology), Julie Kim (Bioinformatics), Ronglai Shen (Biostatistics Masters Student), Barry Taylor (Bioinformatics), Chad Creighton (Bioinformatics), Jenna Vanliere (MSTP, Bioinformatics)
2. Pre-lim Committees
   a. Pre-lim committee for Bioinformatics Graduate Student, Lan Dai
   b. Thesis Committees
      (a) Daniel Rhodes, Bioinformatics Graduate Program (Co-Chair)
      (b) Chad Creighton, Bioinformatics Graduate Program (Chair)
      (c) Scott Tomlins, Pathology Graduate Program (Co-Chair)
      (d) Qi Cao, Pathology Graduate Program (Chair)
      (e) Julie Kim, Bioinformatics Graduate Program (Chair)
      (f) Jianjun Yu, Bioinformatics Graduate Program (Chair)
      (g) Meghan Brennan, Pathology Graduate Program
      (h) Lei Wang, Biochemistry Graduate Program
      (i) Dawei Liu, Biostatistics Graduate Program
      (j) Greg Gurda, Physiology Graduate Program
      (k) Jun Ma, Molecular Cellular and Developmental Biology Graduate Program
3. Instructor, Integrative Genomics, Physiol/Pharmacol/HumGen 555
4. Instructor, Cancer Biology 553
5. Instructor, Mini-Medical School
6. Interviewed prospective MSTP, PIBS, and Bioinformatics students
7. Ph.D. Awarded to Dan Rhodes (Bioinformatics) and Chad Creighton (Bioinformatics)
   RESIDENTS AND FELLOWS
8. Mentor, Clinical Fellows: Tim Bradford, MD (Urology), Rohit Mehra, MD (Pathology), Deborah Bradley (Hematology-Oncology), Bo Han (Pathology).

B. POSTDOCTORAL FELLOWS

1. Mentor, Postdoctoral Fellows: Jindan Yu, Bharathi Laxman, Adaikkalam Vellaichamy, George Wang, Nameeta Shah, T. Rajendrian.

C. JUNIOR FACULTY
   1. Mentor, Junior Faculty: David Hanauer, MD, MS (Pediatrics, Instructor), Sami Malek, MD (Assistant Professor, Internal Medicine), Soory Varmabally (Research Investigator, Pathology), Arun Sreekumar (Research Investigator, Pathology), Mohan Dhanasekaran (Research Investigator, Pathology)

D. OTHER TEACHING ACTIVITIES
   1. Mentor, Undergraduate Students: Nicole Kaper, CMB Student, Benjamin Briggs, Honors Math Major, Mithel Pandi, Kalamazoo College, Beth Helgeson, Biology
   2. Mentor, High School Students (Research Rotation): Pavan Ravipati (Novi High School), Rachel Sobel (Greenhills School), Santosh Shanmugam (Plymouth Canton High School)
   3. Instructor, SBUR Science Course, AUA Meeting.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
   1. Principal Investigator, "Molecular Classification of Prostate Cancer", American Cancer Society, RSG-02-179-01-MGO, 07/01/02 – 06/30/06, 15%, $180,000/yr.
   2. Principal Investigator, "The Role of Polycomb Group Proteins in Prostate Cancer", National Institute of Health, R01 CA97063, 07/01/02 – 06/30/07, 20%, $178,000/yr .
   3. Principal Investigator, "Dysregulation of the Corepressor CtBP in Prostate Cancer", Department of Defense, PC020322, 1/2/03- 12/31/05, 10%, $125,000/yr.
   4. Principal Investigator, "A Functional Genomics Approach to Cancer", PEW Charitable Trust, 07/01/02 – 06/30/06, 0%, $55,556/yr.
   5. Co-Investigator, "Protective Effects of Anti-C5a in Sepsis", National Institute of Health, GM61656 (PI: Ward)**,** 12/01/01-11/30/06, 5%, $225,000/yr.
   6. Co-Investigator, "Functional Genomics Approach to Lethal Metastatic Prostate Cancer", P50 CA69568 (PI: Pienta), 5/01/03 - 05/31/08, 10%, $144,578/yr, S.P.O.R.E. in Prostate Cancer, Project 3 (PI Chinnaiyan).Co-Investigator, Tissue/Informatics Core of the UM Prostate SPORE, NCI, SPORE in Prostate Cancer, A69
   7. 568 (PI: Pienta), 05/01/03- 05/30/08, 2.5%, $253,643/yr.
   8. Co-Investigator, DAMD17-03-2-0033 (PI: Simons, M.D.), Brigham and Women's Hospital (DOD), 04/01/03-03/31/06, 2.5%, $36,410/yr.
   9. Co-Investigator, "Molecular Changes Associated with Prostate Carcinoma (PCa) Bone Metastases", R01 CA102872-01, NIH, (PI: Pienta), 09/24/03-08/31/07, 10%, $173,280/yr.
   10. Co-Investigator, "Prostate Cancer Harbinger Genes", RO1 AG0214104-01 (PI: Rubin), 09/30/02–08/31/05, 2.5%, Brigham & Women's Hospital (NIH Prime), $53,595/yr.
   11. Principal Investigator, "Epitomic Biomarkers of Prostate Cancer, U01 CA111275, 09/30/04-09/29/09, NIH, 10%, $312,871/yr.
   12. Co-Investigator, "Protein Microarrays for the Humoral Response of Cancer", R01 CA106402 (PI: Lubman), NIH/NCI, 06/15/04-05/31/09, 2.5%, $83,694/yr.
   13. Principal Investigator, Clinical Scientist in Translational Research, Burroughs Welcome Foundation $150,000/yr direct costs, 6/01/06- 6/01/11.

14. Principal Investigator, 2006 Prostate Cancer Foundation Award, "The Role of Gene Fusions in Prostate Cancer", $100,000 1/01/06- 1/01/07.
15. Principal Investigator, Supplement to U01 CA111275, $95,666 direct costs, 9/01/05 - 8/31/06.
16. Principal Investigator, Supplement to U01 CA111275, $660,000 direct costs, 11/01/05 - 10/31/06.
17. Bioinformatics Core Director, 5 P30 CA46592 (PI: Wicha), Cancer Center Support Grant, $3,523,045, 6/01/01 - 5/31/06.
18. Principal Investigator, "Integrative Proteomic Genomic Analysis of Prostate Cancer Progression", Department of Defense W81XWH-06-1-0224, 12/01/05- 11/29/08, $627,451 Total Costs.
19. Co-Investigator, "XIAP as a molecular target for therapeutic intervention in prostate cancer", W81XWH-04-1-0891 (PI. Duckett), Department of Defense, 9/23/04-9/22/07, $516,299.
20. Mentor, "Tissue microarray assessment of prostate cancer biomarkers AMACR and EZH2 and immunologic response to them in African-American and Caucasian men", W81XWH-05-1-0173, Department of Defense, 3/7/05-3/6/08, $184,268.
21. Co-Investigator, "Statistical Methods for the Analysis of Functional Genomics Data", 5 RO1 GM072007 (PI. Ghosh), NIH, 9/1/04-8/31/09, $1,124,785.
22. Co-Investigator, "Role of EZH2 in Breast Cancer", 5 RO1 CA107469-01A1 (PI. Kleer), NIH, 2/1/05-1/31/10, $1,296,876.
23. Co-Investigator, "Control of Apoptosis and Signaling by XIAP",1 RO1 GM067827-01A2 (PI. Duckett), NIH, 4/1/05-3/31/10, $1,309,467.
24. Co-Investigator, National Center for Integrative Biomedical Informatics, 1 U54 DA021519-01A1 (PI. Athey), NIH, 9/25/05-7/31/10, $18,698,966.
25. Principal Investigator, Gen-Probe Sponsored Research Agreement, Development of a Gene-fusion based urine test for prostate cancer. $2,000,000 total costs for 5 years.

B. PENDING
1. Principal Investigator, RFA-CA-01-014, $8,702,613. total costs.
2. Principal Investigator, DOD Ear of Hope Scholar, ~ $3,750,000 total costs.
3. Principal Investigator, NIH Pioneer Award, ~ $3,750,000. total costs.
4. Co-Investigator, RFA U24 Proteomics (PI. Andrews), $10,998,999 total costs.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Director, Division of Research Informatics
2. Co-Director, Prostate SPORE Tissue-Informatics Core
3. Director of the Pathology Microarray Research Lab
4. Director, Pathology Proteomics Initiative
5. Search Committee for Director of Clinical Informatics

B. MEDICAL SCHOOL/HOSPITAL
1. Affiliated Faculty of the Bioinformatics Program.
2. Bioinformatics student interviews
3. Bioinformatics Faculty Search Committee
4. Director of Cancer Bioinformatics, Comprehensive Cancer Center
5. Bioinformatics Program Executive Committee, Member
6. Co-Director of the U of M Bioinformatics, Proteomics, and Functional Genomics Seminar Series.

7. Member, MSTP Career Advisory Panel
8. Faculty Candidate Interviews for the Department of Urology and the Cancer Center
9. MSTP student interviews
10. University of Michigan Medical School Conflict of Interest Board, Member
11. Career Development Committee, Dr. Sami Malek, Physician-Scientist, Assistant Professor
12. Tissue Usage Committee, Prostate SPORE
13. Member, Michigan Comprehensive Cancer Center.
14. Joint Appointment in the Department of Urology.
15. Member of the Faculty Search Committee for the Bioinformatics Program.
16. Member, Michigan Urology Center.
17. Member, Center for Computational Medicine and Biology.

C. REGIONAL/NATIONAL/INTERNATIONAL
1. Ad-hoc Member, Modeling and Analysis of Biological Systems (MABS) Study Section, NIH, 2005.
2. Scientific Review Board, 2005 Genome Canada.
3. American Cancer Society Canary Fund Peer-Review Committee, 2005.
4. National Cancer Institute, EDRN Associate Membership Review Committee, 2005.
5. Breast SPORE Advisory Committee, UCSF (PI, J. Gray).
6. Ovarian SPORE Advisory Committee, MD Anderson (PI, G. Mills).

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS
1. Reviewer - *Nature, PNAS, Nature Genetics, Nature Cancer Reviews, Nature Medicine, American Journal of Pathology, Journal of Biomedical Informatics, Cancer Research, Oncogene, Neoplasia, Cell Death & Differentiation, Cytokine, Clinical Cancer Research, Molecular Diagnosis, BMC Cancer, Urology, Cancer Cell, and the Journal of Biological Chemistry.*

B. PATENTS
1. U.S. Provisional Application Serial no. 60/309,581 filed 8/02/01 and U.S. Provisional Application Serial no. 60/334,468 filed 11/15/01, “Prostate Cancer Biomarkers”.
2. U.S. Patent Application No. 09/734,628 COMPOSITIONS AND METHODS FOR IN SITU AND IN VIVO IMAGING OF CELLS AND TISSUES; Filing Date: December 11, 2000; Attorney Docket No.: UM 07825 University of Michigan Filing No.: 1850.
3. U.S. Patent Application . University of Michigan, Using High-density Phage Epitope Microarray to Profile the Humoral Immune Response to Human Disease (filed June 9, 2004): PCT/US2005/20107.
4. U.S. Patent Application. University of Michigan, Identification of Recurrent Gene fusions in prostate cancer (filed September, 2005).
5. U.S. Patent Application. University of Michigan, Protein MicroArrays Using a Liquid Phase Fractionation of Cell Lysates (filed January, 2003): PCT/US04/00774.
6. U.S. Patent Application. University of Michigan, Differential Phosphoprotein Mapping in Cancer Cells Using Protein Microarrays Produced From 2-D Liquid Fractionation (filed March, 2005).
7. U.S. Patent Application. University of Michigan, Methods of Diagnosing Breast Cancer (filed June, 2005): PA 60/687,764.

8. U.S. Patent Application. University of Michigan, Urine Biomarker for Prostate Cancer (filed July, 2004): PCT/US05/27223.

C. COMMERCIALIZATION ACTIVITIES
1. Co-Founder of the University of Michigan spin-off company, Compendia Biosciences, Inc.
2. In collaboration with U of M Technology Transfer licensed prostate gene fusion technology to Gen-Probe, Inc. to develop a prostate cancer diagnostic.

D. INVITED LECTURES/SEMINARS
1. 13th SPORE Investigator's Workshop, "Integrative Molecular Analysis of Prostate Cancer Reveals Signatures of Metastatic Progression" Washington, D.C., July 9-12, 2005.
2. University of Pittsburgh, Invited Speaker, "Integrative Molecular Oncology: From Biomarkers to Biology", September 7, 2005.
3. US-Sweden Prostate Cancer Summit, First Annual Meeting, Invited Speaker. September 13-15, 2005.
4. Second International Conference on Tumor Progression. Invited Speaker, "Integrative Molecular Oncology: From Biomarkers to Biology", Boston, Massachusetts, September 18-20, 2005.
5. NCRI International Cancer Conference, Invited Speaker "Integrative Molecular Oncology: From Biomarkers to Biology". Birmingham, UK, October 2-5, 2005.
6. Broad Institute, Invited Speaker, "Integrative Molecular Oncology: From Biomarkers to Biology", Boston, Massachusetts, November 21, 2005.
7. MD Anderson Cancer Center, Invited Speaker, Bioinformatics Workshop, ""Integration of High throughput data. Meta Analysis of Microarray Data.", Houston, Texas, December 12, 2005.
8. Indian Institute of Sciences, Invited Speaker, "Integrative Molecular Oncology: From Biomarkers to Biology" Bangalore, India, January 6, 2006.
9. Tata Memorial Hospital, Invited Speaker, "Integrative Molecular Oncology: From Biomarkers to Biology", Mumbai, India, January 4, 2006.
10. Inter-Prostate SPORE, Keynote Speaker, "Gene Fusions in Prostate Cancer", Houston, Texas, February 4-6, 2006.
11. AACR Annual Meeting, Invited Speaker, "Autoantibody Signatures for the Diagnosis and Prognosis of Cancer", Washington D.C., April 3, 2006.
12. AACR Annual Meeting, Invited Speaker, "Gene Fusions in Prostate Cancer", Washington D.C., April 3, 2006.
13. Laval University, Invited Speaker, "Integrative Molecular Oncology: from Biomarkers to Biology", Quebec City, Quebec, Canada, April 7, 2006.
14. 2006 Cancer Symposium, Invited Speaker, "Re-defining the Molecular Basis of Carcinoma: Recurrent Gene Fusions in Prostate Cancer", Shatin, Hong Kong, April 28, 2006.
15. CPCRI Biomarkers in Prostate Cancer Workshop, Keynote Speaker, "Biomarkers in Prostate Cancer", Niagara-on-the-Lake, Ontario, Canada, May 12, 2006.
16. University of Michigan Cancer Center Fall Research Symposium presentation "Integrative Molecular Oncology: From Biomarkers to Biology", November 18, 2005.
17. Pediatric Hematology/Oncology Conference, Molecular Oncology: From Biomarkers to Biology, February 8, 2006.
18. AL Mann Advisory Board presentation, Invited speaker May 24, 2006.

E. MEMBERSHIPS AND OFFICES IN PROFESSIONAL SOCIETIES
1. 1992 – present Member, American Medical Association
2. 1999 – present Associate Member, American Association of Cancer Research
3. 1999 – present Member, College of American Pathologists
4. 1999 – present Member, American Society of Clinical Pathologists
5. 1999 – present Member, American Society of Investigative Pathologists (ASIP)
6. 2004 – present Member, Society of Basic Urological Research (SBUR)
7. 2004 – present Member, United States and Canadian Academy of Pathology (USCAP)
8. 2004 – present Member, Michigan Society of Pathologists (MSP)
9. 2005 – present Member, Association for Pathology Informatics (API)
10. 2005 – present Affiliate Member, American Urological Association (AUA)

F. HONORS AND AWARDS
1. November 2005 Basic Science Research Award, University of Michigan Medical School Dean's Office
2. February 2006 The Benjamin Castleman Award, United States and Canadian Academy of Pathology 2006
3. May 2006 Elected Member of the American Society for Clinical Investigation
4. May 2006 S.P. Hicks Endowed Professor of Pathology
5. May 2006 Burroughs Welcome Foundation Award for Clinical Translational Research
6. Pew Scholars Program in the Biomedical Sciences, Pew Charitable Trusts.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION
1. Rhodes DR, Tomlins SA, Varambally S, Kalyana-Sundaram S, Ghosh D, Pandey A and **Chinnaiyan AM**. (2005) Probabilistic model of the human protein-protein interaction network. *Nature Biotechnology*, Aug;23(8):951-9.
2. Rhodes DR, **Chinnaiyan AM** (2005) Integrative Analysis of the Cancer Transcriptome. *Nature Genetics*, 37, Suppl: S31- S37.
3. Wang X, Yu J, Sreekumar A, Varambally S, Ghosh D, Shen R, Giacherio D, Mehra R, Montie JE, Pienta KJ, Sanda MG, Kantoff PW, Rubin MA, Wei JT, **Chinnaiyan AM.** (2005) Autoantibody Signatures in Prostate Cancer. *New England Journal of Medicine*, 353:1224-35.
4. Tomlins SA, Rhodes DR, Perner S, Dhanasekaran SM, Mehra R, Sun X-W, Varambally S, Cao X, Tchinda J, Kuefer, R, Lee C, Montie JE, Shah RB, Pienta KL, Rubin MA, **Chinnaiyan AM**. (2005) Recurrent Fusion of TMPRSS2 and ETS Transcription Factor Genes in Prostate Cancer. *Science*, Vol 310, 5748: 644-648.
5. Varambally S, Yu J, Laxman B, Rhodes DR, Mehra R, Tomlins SA, Shah RB, Chandran U, Monzon FA, Becich MJ, Wei JT, Pienta KG, Ghosh D, Rubin MA, **Chinnaiyan AM.** (2005) Integrative Genomic and Proteomic Analysis of Prostate Cancer Reveals Signatures of Metastatic Progression. *Cancer Cell*. Nov;8(5):393-406 (2005).
6. Finn WG, Utiger C, Sreekumar A, Menon, A., **Chinnaiyan AM** (2005) Trisomy 12-Associated, t(11;14)-Negative Mature B-Cell Leukemia With Gene Expression Profile Resembling Mantle Cell Lymphoma. *Leukemia and Lymphoma,* 2006 Jan;47(1):121-7.

7. Lakshmi PK, **Chinnaiyan AM**, Shah RB. (2005) Comparison of monoclonal antibody (P504S) and polyclonal antibody to AMACR in the work-up of Prostate Cancer. *Histopathology*, In Press.
8. Olle EW, Sreekumar A, Warner RL, McClintock SD, **Chinnaiyan AM**, Bleavins MR. (2005) Development of an internally controlled antibody microarray. *Mol Cell Proteomics,* Nov;4(11):1664-72.
9. Ghosh D, **Chinnaiyan AM**. (2005) Classification and Selection of Biomarkers in Genomic Data Using LASSO. *J Biomed Biotechnol*, 2:147-54.
10. 10.Bradford TJ, Wang, X, **Chinnaiyan AM**. "Cancer Immunomics: Using autoantibody signatures in the early detection of prostate cancer". *Urologic Oncology*, Special Edition, In Press.
11. Mehra R, Varambally S, Ding L, Shen R, Sabel MS, Ghosh D, **Chinnaiyan AM***, Kleer CG*. (2005) Identification of GATA3 as a Breast Cancer Prognostic Marker by Global Gene Expression Meta-Analysis, *Cancer Res.* Dec 15;65(24):11259-64. *share senior authorship
12. Mathew JP, Taylor BS, Bader G, Pyarajan S, Daruwala RS, Antoniotti M, **Chinnaiyan AM,** Sander C, Burakoff SJ, Mishra B. (2006). "From Bytes to Bedside: Computational Biology for Biomedical Translational Research." PLoS Computational Biology [In Press].
13. Zeidler M, Varambally S, Cao Q, **Chinnaiyan AM,** Ferguson DO, Merajver SD, and Kleer CG. (2005) The Polycomb group protein EZH2 suppresses RAD51C and Impairs DNA Repair in Human Mammary Epithelial Cells. Neoplasia. Nov;7(11):1011-9.
14. Kim R, Demichelis F, Tang J, Riva A, Shen R, Gibbs DF, Mahavishno V, **Chinnaiyan AM**, Rubin MA. (2005) Internet-based Profiler system as integrative framework to support translational research. *BMC Bioinformatics*. Dec 19;6:304.
15. Kunju LP, **Chinnaiyan AM**, Shah RB. (2005) Comparison of monoclonal antibody (P504S) and polyclonal antibody to alpha methylacyl-CoA racemase (AMACR) in the work-up of prostate cancer. *Histopathology*. Dec;47(6):587-96.
16. Bismar TA, Demichelis F, Riva A, Kim R, Varambally S, He L, Kutok J, Aster JC, Tang J, Kuefer R, Hofer MD, Febbo PG, **Chinnaiyan AM,** Rubin MA. Defining aggressive prostate cancer using a 12-gene model. *Neoplasia*. 2006 Jan;8(1):59-68.
17. Masumoto J, Yang K, Varambally S, Hasegawa M, Tomlins SA, Qiu S, Fujimoto Y, Kawasaki A, Foster SJ, Horie Y, Mak TW, Nunez G, **Chinnaiyan AM,** Fukase K, Inohara N. (2006) Nod1 acts as an intracellular receptor to stimulate chemokine production and neutrophil recruitment in vivo. *J Exp Med*. Jan 23;203(1):203-13.
18. Fu Z, Kitagawa Y, Shen R, Shah R, Mehra R, Rhodes D, Keller PJ, Mizokami A, Dunn R, **Chinnaiyan AM**, Yao Z, Keller ET. (2006) Metastatic suppressor gene Raf kinase inhibitor protein (RKIP) is a novel prognostic marker in prostate cancer. *Prostate*, Feb 15;66(3):248-56.
19. Chinnaiyan P, Varambally S, Tomlins SA, Huang S, **Chinnaiyan AM** and Harari PM. (2006) Enhancing the anti-tumor activity of ErbB blockade with histone deacetylase (HDAC) inhibition. *International Journal of Cancer*, Feb 15;118(4):1041-50.
20. Pal M, Moffa A, Sreekumar A, Ethier SP, Barder TJ, **Chinnaiyan AM**, Lubman DM. (2006) Differential Phosphoprotein Mapping in Cancer Cells

Using Protein Microarrays Produced from 2-D Liquid Fractionation. *Anal Chem.* Feb 1;78(3):702-710.

21. Tomlins SA, Mehra R, Rhodes DR, Shah RB, Rubin MA, Bruening E, Makarov V, **Chinnaiyan AM**. Whole Transcriptome Amplification for Gene Expression Profiling and Development of Molecular Archives. *Neoplasia*. 2006 Feb;8(2):153-62.
22. Tomlins SA, Mehra R, Rhodes DR, Smith LR, Roulston D, Helgeson BE, Cao XC, Wei JT, Rubin MA, Shah RB, **Chinnaiyan AM**. TMPRSS2:ETV4 Gene Fusions Define a Third Molecular Subtype of Prostate Cancer, *Cancer Res*. 2006 Apr 1;66(7):3396-400.
23. Taylor BS, Varambally S, **Chinnaiyan AM**. Systems approach to Model Metastatic Progression. *Cancer Res.* 2006 Jun 1;66(11):5537-9.
24. Haas CS, Creighton CJ, PI X, Maine I, Koch AE, Haines GK III, Ling S, **Chinnaiyan AM**, Holoshitz J. Identification of genes modulated in rheumatoid arthritis using complementary DNA microarray analysis of lymphoblastoid B cell lines from disease-discordant monozygotic twins. *Arthritis Rheum*. 2006 Jun 27;54(7):2047-2060.
25. Bradford T, Wang G, **Chinnaiyan AM.** Cancer Immunomics: Using autoantibody signatures in the early detection of prostate cancer, *Seminars in Urologic Oncology* 2006 May-Jun;24(3):237-42.
26. Creighton CJ, Hilger A, Murthy S, **Chinnaiyan AM**, El-Ashry D. Activation of MAPK in ERa-positive breast cancer cells in vitro induces an in vivo molecular phenotype of ERa-negative human breast tumors. *Cancer Res.* 2006 Apr 1;66(7):3903-11.
27. Giordano TJ, Au AYM, Kuick R, Thomas DG, Rhodes DR., Wilhelm KG, Vinco M., Misek DE, Sanders D, Zhu Z, Ciampi R, Hanash S, **Chinnaiyan AM**, Clifton-Bligh R.J, Robinson BG, Nikiforov YE, Koenig RJ. Delineation, Functional Validation, and Bioinformatic Evaluation of Gene Expression in Thyroid Follicular Carcinomas with the *PAX8-PPARG* Translocation, *Clin Cancer Res*, 2006 Apr 1;12(7 Pt 1):1983-93.
28. Creighton CJ, Cordero KE, Larios JM, Miller RS, Johnson MD, **Chinnaiyan AM**, Lippman ME, Rae JM. Genes regulated by estrogen in breast tumor cells in vitro are similarly regulated in vivo in tumor xenografts and human breast tumors. *Genome Biol*. 2006 Apr 7;7(4):R28.
29. Ding L, Erdmann C, **Chinnaiyan AM**, Merajver SD, Kleer CG. Identification of EZH2 as a molecular marker for a precancerous state in morphologically normal breast tissues. *Cancer Res*. 2006 Apr 15;66(8):4095-9.
30. Kumar-Sinha C, **Chinnaiyan AM.** A SLAMS dunk for cancer regulators, *Nature Biotechnology* 2006 May;24(5):524-6.
31. Kuefer R, Day KC, Kleer CG, Sabel MS, Hofer MD, Varambally S, Zorn CS, **Chinnaiyan AM**, Rubin MA, Day ML. ADAM15 Disintegrin Is Associated with Aggressive Prostate and Breast Cancer Disease. *Neoplasia*. 2006 Apr;8(4):319-29.
32. Kumar-Sinha C, **Chinnaiyan AM**. A SLAMS dunk for cancer regulators. *Nat Biotechnol*. 2006 May;24(5):524-6.
33. Bradford TJ, Wang X, **Chinnaiyan AM**. Cancer immunomics using autoantibody signature in the early detection of prostate cancer. Urol Oncol. 2006 May-Jun;24(3):237-42.
34. Haas CS, Creighton CJ, Maine, I., Koch AE, Haines, GK, Ling, S, **Chinnaiyan, AM,** Holoshitz J. Identification of genes modulated in rheumatoid arthritis using complementary DNA microarray analysis of

lymphoblastoid B cell lines from disease-discordant monozygotic twins. Arthritis Rheum 2006 Jun 27; 54(7):2047-2060.

B. BOOKS AND CHAPTERS IN BOOKS
   1. Creighton C, **Chinnaiyan AM.** DNA Microarrays in Cancer. In Signal Transduction: A Systems Biology Approach. Editor, Pandey A. 1st Ed. In Press.
   2. Tomlins SA, Rubin MA., **Chinnaiyan AM.** Integrative Biology of Prostate Cancer Progression Annual Review of Pathology: Mechanisms of Disease Volume 1, January 2006.
   3. Tomlins SA, **Chinnaiyan AM.** Expression Profiling of Prostate Cancer Progression Prostate Cancer: Novel Biology, Genetics and Therapy. 2nd edition 2006.
   4. Tomlins, SA, Laxman, Bharathi, Yu, Jianjun, **Chinnaiyan, AM.** Biomarkers Identified by Differential Gene Expression Analysis and Their Application.

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS
   1. Several abstracts have been submitted from the Chinnaiyan Lab (during this period) to various national meetings including USCAP, American Association for Cancer Research (AACR), NCI S.P.O.R.E. meeting, and the Fall Research Symposium of the U of Michigan Cancer Center. Please refer to the published manuscripts that have resulted from these abstracts.

Kathleen R. Cho, M.D.
Professor of Pathology and Internal Medicine

I. CLINICAL ACTIVITIES

A. GYNECOLOGICAL PATHOLOGY CONSULTATION SERVICE (SIX MONTHS)

B. GYNECOLOGICAL PATHOLOGY CASE SIGN-OUT IN SURGICAL PATHOLOGY – 12 WEEKS

II. TEACHING ACTIVITIES

A. GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS.

1. Navneet Sangha, Ph.D. (postdoctoral fellow, 12 months).
2. Neali Hendrix (doctoral candidate, PIBS program, 12 months)

B. THESIS COMMITTEES

1. Scott Tomlins, (MSTP, A. Chinnaiyan lab), Co-mentor and Thesis Committee Chair
2. Karolyn Oetjen (MSTP, C. Duckett lab), Thesis Committee Member

F. UNDERGRADUATE STUDENTS

1. Jonathan Dunker (summer 2005)
2. Diane Fiander (summer 2006)

G. COURSE FACULTY,

1. PATHOLOGY 581 – two lecture hours
2. IMS-I (Dental School) – two lecture hours

H. HOUSE OFFICERS

1. Gynecologic pathology case sign-out (12 weeks)
2. Two staff consult case conferences (one hour each)
3. Didactic conference on ovarian borderline tumors (one hour)

I. INTERDEPARTMENTAL

1. Multidisciplinary Gynecologic Oncology tumor board – monthly

J. NATIONAL

1. Course Faculty and Co-organizer: Molecular Biology in Clinical Oncology Workshop, American Association for Cancer Research, The Given Institute, Aspen, Colorado.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Principal Investigator (22.5% effort), “Molecular Pathogenesis of Ovarian Endometrioid Adenocarcinomas”, NIH RO1 CA94172, $173,817 (plus $39,568 minority supplement) annual direct costs, February 1, 2002 – January 31, 2007.
2. Principal Investigator (20% effort), “Molecular Markers of Invasion in Cervical Cancer Progression” NIH 1P50CA98252-01 (SPORE in

Cervical Cancer, Program PI: T.C. Wu), $138,168 annual direct costs, September 30 2003 – August 31 2008.
3. Co-Investigator (5% effort), “Markers of Progression to Cervical Cancer in Rural India” NIH 1P50CA98252-01 (SPORE in Cervical Cancer, Program PI: T.C. Wu), $188,909 annual direct costs, September 30 2003 – August 31 2008.
4. Co-Investigator (7.5% effort), "The Role of β-Catenin/Tcf Pathway Defects in Cancer." NIH R01 CA85463 (Fearon), $191,250 annual direct costs, June 1 2000 – May 31, 2010.
5. Co-Investigator (7.5% effort), "CDX2 Tumor Suppressor Pathway Defects in Colon Cancer", NIH R01 CA82223 (Fearon), $202,500 annual direct costs, August 15, 1999 – March 31, 2009.
6. Co-Investigator (3% effort), “Liquid Proteomics for Marker Screening of Ovarian Cancer”, NIH RO1 CA100104 (Lubman), $178,000 annual direct costs, April 15 2003 – April 14, 2008.
7. Co-Investigator and mentor for New Investigator (2.5% effort), “Development and Characterization of a Murine Model of Ovarian Endometrioid Adenocarcinoma Induced by Tissue Specific Expression of Oncogenic β-Catenin”, Department of Defense, Ovarian Cancer Research Program: DAMD17-OC030117 (R. Wu), $100,000 annual direct costs, February 1 2004 – January 31 2007.

B. PENDING
1. Principal Investigator (20% effort), “Molecular Pathogenesis of Ovarian Endometrioid Adenocarcinomas”, NIH RO1 CA94172, competing renewal, $225,000 annual direct costs requested, February 1, 2007 – January 31, 2012.

C. PROJECTS UNDER STUDY
1. Molecular profiling of ovarian epithelial tumors using liquid proteomics and Affymetrix gene chip technologies.
2. Identification and characterization of molecular markers of ovarian carcinomas.
3. Identification of novel genes amplified in ovarian carcinomas.
4. Evaluation of the role of Wnt/ß-catenin/Tcf and PI3K/Akt/Pten pathway defects in the pathogenesis of ovarian endometrioid adenocarcinomas.
5. Development of murine models of ovarian cancer
6. Identification of genes involved in cervical cancer progression

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Department of Pathology, internal Advisory Committee on Appointments, Promotions and Tenure, 2002 – present.
2. Department of Pathology Graduate Student Admissions Committee, 2002 – present.
3. Department of Pathology, Projects in Anatomic Pathology Funding Committee, Committee Chair, 2006.
4. Department of Pathology Director of Anatomic Pathology Search Committee, 2005.
5. Section Head, Gynecological Pathology Service.

B. INSTITUTIONAL
1. Institutional Review Board, University of Michigan School of Medicine (IRB-MED), appointment from Feb 2001 – present.
2. PIBS applicant interviews.
3. MSTP applicant interviews.

C. REGIONAL AND NATIONAL

1. Subcommittee A – Cancer Centers IRG (NCI-A RTRB-R), Ad hoc member for review of the Dana Farber/Harvard Cancer Center 2P30CA006516-43, Boston, MA, June 2005.
2. Cellular and Molecular Pathology Scientific Review Group (ad hoc member for review of RO1 application), National Institutes of Health/National Cancer Institute, January 2006.
3. Integration Panel, Department of Defense, Ovarian Cancer Research Program, 2004-present.
4. Member, Publications Committee, American Association for Cancer Research, 2002-present.
5. Co-Organizer and course faculty member, Molecular Biology in Clinical Oncology Workshop, American Association for Cancer Research, 2000-2005.
6. Member, National Comprehensive Cancer Center Panel for establishment of endometrial and cervical cancer treatment guidelines, 1997-present.
7. Secretary, International Society of Gynecological Pathologists, elected to two year term beginning 2004, renewable for two additional terms, not to exceed six years.
8. Benjamin Castleman Award Committee, United States and Canadian Academy of Pathology (3 year appointment beginning 2005).
9. Councilor, American Society for Investigative Pathology (ASIP), elected to three year term beginning July, 2006.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS

1. Associate Editor, *Cancer Research*
2. Associate Editor, *Clinical Cancer Research*
3. Member, Editorial Board, *Human Pathology*
4. Member, Editorial Board, *International Journal of Gynecological Patholog*y
5. Member, Editorial Board, *Diagnostic Molecular Pathology*
6. Member, Editorial Board, *The Women's Oncology Review*
7. Ad hoc reviewer for several additional journals

B. INVITED LECTURES/SEMINARS 2005-2006

1. Molecular Pathology Seminar Series, Invited Speaker, "Gynecological Cancers: Clues to Pathogenesis from Molecular Profiling", Department of Pathology, The Johns Hopkins University School of Medicine, Baltimore, Maryland, February 2005.
2. Ovarian Cancer: Updates from Bench and Bedside, session co-chair and invited speaker, "Ovarian Cancer: Insights from RNA and DNA profiling", Annual Meeting of the American Association for Cancer Research, Anaheim, California, April, 2005.
3. First Annual Conference for Dual-Degree Osteopathic Medical Students: "How to Develop a Career as a Physician Scientist", Michigan State University, East Lansing, Michigan, June 2005.
4. Sixth Annual International Conference on Ovarian Cancer, Invited Speaker, "Synchronous vs. Metastatic Ovarian and Endometrial Cancers", Memorial Sloan Kettering Cancer Center, New York, New York, November, 2005.
5. Department of Pathology Grand Rounds, Invited Speaker, "Ovarian Cancer: Insights from Molecular Profiling", Stanford University, Palo Alto, California, January, 2006.

6. 5th Spring Seminar of the Korean Pathologists Association of North American, Invited Speaker, "Molecular Analysis of Gynecological Cancers", Atlanta, Georgia, February, 2006.
7. Vanderbilt-Ingram Cancer Center Seminar Series, Invited Speaker, "Of Mice and (Wo)men: Tales of Ovarian Cancer Pathogenesis", Vanderbilt University, Nashville, Tennessee, May, 2006.
8. Molecular Pathology Seminar Series, Invited Spearker, "Of Mice and (Wo)men: Tales of Ovarian Cancer Pathogenesis", Johns Hopkins University School of Medicine, Baltimore, Maryland, June, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Chamorro MN, Schwartz DR, Vonica A, Brivanlou AH, Cho KR, and Varmus HE. FGF20 and DKK1 are transcriptional targets of β-catenin and FGF20 is implicated in cancer and development. EMBO J 24:73-84, 2005.
2. Shedden K, Chen W, Kuick R, Ghosh D, Macdonald J, Cho KR, Giordano TJ, Gruber SB, Fearon ER, Taylor JM, Hanash S. Comparison of seven methods for producing Affymetrix expression scores based on False Discovery Rates in disease profiling data. BMC Bioinformatics 6:26, 2005.
3. Shedden KA, Kshirsagar MP, Schwartz DR, Wu R, Yu H, Misek DE, Hanash S, Katabuchi H, Ellenson LH, and Cho KR. Histological type, organ of origin, and Wnt pathway status: Impact on gene expression profile in ovarian and uterine carcinomas. Clinical Cancer Research 11:2123-31, 2005.
4. Levin AM, Ghosh D, Cho KR, Kardia SLR. A model-based scan statistic for identifying extreme chromosomal regions of gene expression in human tumors. Bioinformatics, 21:2867-74, 2005.
5. Zhai Y, Hotary KB, Nan B, Bosch FX, Muñoz N, Weiss SJ, and Cho KR. Expression of membrane-type 1 matrix metalloproteinase is associated with cervical carcinoma progression and invasion. Cancer Research 65:6543-50, 2005.
6. Wang Y, Wu R, Cho KR, Shedden KA, Barder TJ, and Lubman DM. Classification of cancer cell lines using an automated 2-D liquid mapping method with hierarchical clustering techniques. Molecular & Cellular Proteomics 5:43-52, 2006.
7. Hendrix, N, Wu R, Kuick R, Schwartz DR, Fearon ER, and Cho KR. FGF9 has oncogenic activity and is a downstream target of Wnt signaling in ovarian endometrioid adenocarcinomas. Cancer Research 66:1354-62, 2006.

Judith M. Connett Ph.D
Research Assistant Professor of Pathology

I. CLINICAL ACTIVITIES None

II. TEACHING ACTIVITIES

A. Oversee the projects of 2 summer students
   1. Jacquelyn Godin
   2. Melinda Maile

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
   1. University of Michigan Dean's Research Initiative (PI: Dan Remick). Title: Development of a Rapid Diagnostic Test for Sepsis. The major goal of this project is to develop a rapid, accurate bedside diagnostic test for sepsis.

B. PENDING
   1. Michigan Economic Development Corporation, 21st Century Jobs Fund (PI: Dan Remick) (Judith Connett, Project Director) Title: Development and Manufacture of a Rapid Test for Sepsis. In collaboration with Assay Designs Inc. (ADI) of Ann Arbor, Michigan, we will 1) develop a rapid, point of care diagnostic test for sepsis and 2) license the manufacture of this test to Assay Designs for sale and distribution to medical centers throughout the country and the world.

C. PROJECTS UNDER STUDY
   1. Development of a Rapid Diagnostic Test for Sepsis
   2. Sequential ELISA Quantitation of Cytokine Expression in Tissue Homogenates in a Porcine Model of Hemorrhagic Shock.
   3. Assessment of Multiple Organ Failure in a Murine Cecal Ligation and Puncture Model of Sepsis.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
   1. Web Site Manager for laboratory
   2. Program Project Grant Coordinator
   3. Grant Writer and Manuscript Editor
   4. Coordinated the writing and assembly of the Michigan Economic Development Corporation, 21st Century Jobs Fund Grant proposal and helped develop the collaboration with Assay Designs, Inc.
   5. Coordinated the "Immunopathology of Sepsis" Program Project Grant Site Visit and Information Packets for the reviewers.

6. Help with editing Remick lab manuscripts and abstracts for submission.
7. Manage the Immunopathology of Sepsis Joint Group lab meetings and arrange for speakers to address these groups.

V. OTHER RELEVANT ACTIVITIES – None

VI. PUBLICATIONS: None

Laura Cooling, MD, MS
Assistant Professor of Pathology
Director, Blood Bank

I. CLINICAL ACTIVITIES

A. ASSOCIATE MEDICAL DIRECTOR, TRANSFUSION MEDICINE

1. Blood Bank, clinical coverage and administration
2. Bone Marrow/Peripheral Stem Cell Collection and Processing
3. Clinical Consultation/Management, Special Product Requests
4. Clinical Coverage, Therapeutic Apheresis

II. TEACHING ACTIVITIES

A. RESIDENT EDUCATION

1. Responsible/Share didactic teaching activities for the following:
    a. Blood Component Therapy
    b. Transfusion Reaction Evaluation
    c. Evaluation and management of platelet refractoriness
    d. Fundamentals of Clinical Apheresis (with nursing staff)
    e. Evaluation and Management of Therapeutic Apheresis Requests
    f. Administrative Issues on-call
2. Clinical Teaching
3. Supervision Resident/ Fellow Activities (12 mo/yr)
    a. Morning Report
    b. Transfusion reaction sign-out
    c. Clinical apheresis requests/patient management
    d. Special product request evaluation and clinical follow-up
    e. Case-based informal teaching
4. Other Clinical Teaching: non-pathology housestaff
5. Resident Applicant Interviews.

B. MEDICAL STUDENTS

1. Medical school admissions interviews

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY

1. The Regulation and Biology of Globo-Series Glycosphingolipids.
2. Molecular basis and regulation of □1,3 galactosyltransferase V on globo- and lacto, and neolacto-antigen expression.
3. Globo/lacto antigens in infectious disease, development and cancer.
4. Molecular/biochemical analysis of globo-glycotypes.
5. Clinical Research
    a. Factors effecting stem cell collection and engraftment

b. Platelet immunology, role in transfusion therapy

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Associate Director, Transfusion Medicine
2. Director, Stem Cell Processing

B. INSTITUTIONAL
1. Transfusion Subcommittee
2. Data Analysis Council
3. Medical School Admissions Committee

C. REGIONAL/NATIONAL/INTERNATIONAL
1. Board, Michigan Association of Blood Banks
2. Scientific Section Coordinating Committee (SSCC), American Assn of Blood Banks
3. Secretary, SSCC
4. American Association of Blood Banks Abstract Review
5. National Blood Foundation Grant Review
6. AABB-Fenwal Scholarship Review

V. OTHER RELEVANT ACTIVITIES

A. MANUSCRIPT REVIEW:
1. *Blood*
2. *European Journal of Biochemistry*
3. *Transfusion*
4. *Immunohematology*
5. *Vox Sanguinis*

B. INVITED LECTURES/SEMINARS
1. Headlines in Transfusion Medicine: New Options for Platelet Storage. “Extreme makeover: Can we improve platelet concentrates?” American Association of Blood Banks Annual Meeting, Seattle, WA, 10/2005.
2. A New Platform for Platelet Transfusion Safety. “Pre-pooled platelet concentrates: A hospital transfusion perspective.” Pall Industry Workshop, American Association of Blood Banks Annual Meeting, Seattle, WA, 10/2005.
3. National Blood Foundation Lecture, American Association of Blood Banks Annual Meeting, Seattle, WA. “Embryonic” studies in blood group glycomics: □3GalT5 as a glycotype regulator of globo- and lacto-family antigens, 10/2005.
4. American Association of Blood Banks Annual Meeting, Seattle, WA. Upregulation of LKE by □1,3galactosyltransferase V and 5’azacytidine, 10/2005 .
5. American Association of Blood Banks Annual Meeting, Seattle, WA. Regulation of Lewis and LKE antigens by □1,3galactosyltransferase V, 10/2005.
6. Clinical Pathology Grand Rounds, University of Michigan. Drugs that (positively) impact the blood bank, 5/2006.
7. Drugs that impact the blood bank. Current Topics in Blood Banking, University of Michigan, Ann Arbor, MI, 6/2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN PEER REVIEWED JOURNALS

1. Shu L, Murphy HS, **Cooling L**, Shayman JA. An in vitro model of Fabry disease. J Sm Soc Nephrol 2005; 16:2636-2645.
2. Curtis RB, Aster RH, **Cooling LL**. Expression of ABH antigens on platelets. Blood 2006; 107:842-843.

B. BOOKS/CHAPTERS IN BOOKS

1. **Cooling L**. Thrombotic thrombocytopenia purpura. In Conn's Current Therapy 2006, eds RE Rakel and ET Bope. Saunders Elsevier, Philadelphia, PA. 2006: pp524-527.
2. Beading W, **Cooling LW**. Chapter 34, Immunohematology. In Henry's Clinical Diagnosis and Management by Laboratory Methods, 21st Edition, ed. McPherson, Pinkus. WB Saunders, Philadelphia, PA: pp 619-669.
3. AABB Scientific Section Coordinating Committee, Contributors: Steiner A, Cosina T, **Cooling L**. Technical Guidance for Antibody Identification, American Association of Blood Banks Press. Bethseda, MD. *In Press*.

C. ABSTRACTS

1. **Cooling L**. Q&A: ABO and platelet transfusions. AABB News 2006; 7(5): 38-39.
2. Habib L, **Cooling L**. Q&A: Blood transfusion support for ECMO. AABB News June 2006; 8-9.
3. **Cooling L**. Extreme makeover: Can we improve platelet concentrates? New York State Association of Blood Banks Newsletter. Fall, 2005.
4. **Cooling L**. New horizons in platelet biology and storage. Michigan Association of Blood Banks Newsletter. Spring 2006.
5. Woloskie S, **Cooling L**. Plasmapheresis to prevent pigment nephropathy: Two case studies. J Clin Apheresis 2005; 20:13.
6. Judd JW, **Cooling L**, Dake LR, Davenport RD, Ellis S, Haverty D, Mullis N. Clinically significant anti-LKE-nonreactive in prewarmed tests. Transfusion 2005;45 (3S):SP319.
7. **Cooling LW**, Hwang D, Shayman JA. Co-regulation of Lewis^{a}, Lewis^{b} and galactosylgloboside by ß1,3 galactosyltransferase V. Transfusion 2005; 45(S3):S63-040.
8. **Cooling LW**, Hwang D, Shayman JA. Upregulation of Luke (LKE) by ß1,3 galactosyltransferase V (ß3GalT5) and 5'azacytidine. Transfusion 2005; 45(3S):S12-030.
9. **Cooling L,** Hwang D, Shayman JA. The ß1,3 galactosyltransferase V promoter region contains several hematopoietic transcription factor binding sites and is species-specific. Submitted.

Robertson D. Davenport, M. D.
Associate Professor of Pathology
Director of Blood Bank and Transfusion Services

I. CLINICAL ACTIVITIES

A. MEDICAL DIRECTOR, BLOOD BANK AND TRANSFUSION SERVICE.
B. CYTOPATHOLOGY STAFF.

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
   1. M2 Hematology sequence, Blood Transfusion
B. RESIDENTS/FELLOWS
   1. Daily teaching rounds for pathology house officers assigned to the blood bank.
   2. Cytopathology sign-out with pathology house officers and cytopathology fellows.
   3. Current Topics in Blood Banking Conference, Towsley Center for Continuing Medical Education.
   4. Hematology fellows, blood transfusion.
   5. Blood banking/transfusion medicine core lecture series for residents and fellows

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
   1. Co-Investigator. Otsuka America Pharmaceutical, Inc. “A Prospective, Open-Label Study to Evaluate the Adacolumn Apheresis System for the Treatment of Moderate to Severe Ulcerative Colitis.” $47,375. 1/1/05 - 12/31/06
   2. Co-Investigator. Otsuka America Pharmaceutical, Inc. “A Prospective, Randomized, Double-Blinded, Placebo (Sham)-Controlled Study to Evaluate the Safety and Effectiveness of the Adacolumn Apheresis System for the Treatment of Moderate to Severe Crohn’s Disease.” $37,500. 5/1/06 – 12/31/06.
B. PROJECTS UNDER STUDY
   1. Apheresis in the treatment of inflammatory bowel disease
   2. Cefotetan induced immune hemolysis.
   3. Prediction of clinical significance of red cell antibodies
   4. Prevalence of pre-operative anemia

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
   1. Director, Fellowship Program in Blood Banking/Transfusion Medicine

B. INSTITUTIONAL
   1. Transfusion Committee.

C. REGIONAL, NATIONAL AND INTERNATIONAL
   1. Committee membership
      a. Program Committee, Michigan Association of Blood Banks.
      b. Medical Advisory Committee, American Red Cross Southeastern Michigan Region.
      c. Board of Directors, American Red Cross Southeastern Michigan Region.
      d. Editorial Board, Transfusion.
      e. AABB Clinical Transfusion Medicine Committee
      f. Grant review
      g. National Institutes of Health, Erythrocyte and Leukocyte Biology Study Section, Ad hoc member

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/MANUSCRIPT REVIEW
   1. Reviewer - *Transfusion*
   2. Reviewer – *Chest*

B. INVITED LECTURES/SEMINARS
   1. The Rational Use of Blood Components. Hackley Hospital, Muskegon, MI. May 22, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN PEER-REVIEWED JOURNALS
   1. Judd WJ, Dake LR, Davenport RD. On a much higher than reported incidence of anti-c in R1R1 patients with anti-E. Immunohematology 2005; 21 94-96.
   2. Zhou L, Thorson JA, Nugent C, Davenport RD, Butch SH, Judd WJ. Non-Invasive Prenatal RHD Genotyping by Real-Time PCR Using Plasma from D-negative Pregnant Women. Am J Obstet Gynecol 2005;193 1966-71.
   3. Yazer MH Judd WJ Davenport RD Dake LR Lomas-Francis C Hue-Roye K, Powell V, Reid M. Case Report and Literature Review Transient Inab Phenotype and an Agglutinating Anti-IFC in a Patient with a Gastro-Intestinal Problem. Transfusion (in press).

B. BOOKS/CHAPTERS IN BOOKS
   1. Davenport RD, Mintz PD. Transfusion Medicine. In Hutchinson R (ed) Henry's Clinical Diagnosis and Management by Laboratory Methods, 21st Edition. Elsevier, Philadelphia, PA (in press).

C. ABSTRACTS
   1. Yazer MH, Judd WJ, Davenport RD, Dake LR, Lomas-Francis C, Jue-Roye K, Powell VI, Reid ME. Transient Inab phenotype and an aggultinating anti-IFC in a patient with a gastro-intestinal problem. Transfuison 2005; 45 122A
   2. Judd WJ, Cooling LW, Dake LR, Davenport RD, Ellis S, Haverty D, Mullis N. clinicall significant anti-LKE nonreactive in prewarmed tests. Transfusion 2005; 45 122A.

Gregory R. Dressler, Ph.D.
Associate Professor of Pathology

I. CLINICAL ACTIVITIES -None.

II. TEACHING ACTIVITIES

A. PRE-DOCTORAL STUDENTS - Marc Prindle, CMB

B. POST-DOCTORAL TRAINEES
1. Yi Cai, M.D., Ph.D.
2. Sanj Patel, M.D.
3. Doyeob Kim, Ph.D.
4. Ming Feng, Ph.D.

C. PH. D. THESIS COMMITTEE
1. Brian Gummow, CMB
2. Collen Doyle, Dept. of Genetics
3. Ira Weiner, CMB
4. Rob Ward, CMB
5. Jennifer Linn, CDB
6. Sara Monroe, Pathology

D. COURSE LECTURES - Path 581, 7.5 h

E. UROP, Undergraduate Student - Andrea Hsu

F. MEDICAL SCHOOL/HOSPITALS
1. First Year Medical Students – Renal Section 2 h, Endocrine Section 1h.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
1. Principal Investigator (30% effort), “PAX2 Interacting Proteins in Development and Disease”, NIH/ NIDDK 1 R01 DK54740-05, Annual Direct Costs $174,000, 1/1/03 – 3/31/07.
2. Principle Investigator (30% effort), “Cell Signaling in Developing Epithelia”, NIH/NIDDK R01 DK62914-01, $174,000, 9/1/03 – 6/30/07.
3. Principal Investigator (10% effort), “Differentiation of ES cells into renal epithelia”, NIH/NIDDK 1R21 DK069689-01, $100,000, 4/1/05 – 3/31/07.
4. Co-Investigator (5% effort) “Novel SAPK activating kinase in renal epithelial stress”, NIH/NIDDK R01 DK52886, 8/1/98-7/31/07.
5. Co-Investigator, (7.5% effort), “Molecular Genetics of Hox Genes and Kidney Development”, Deneen Wellik, P.I.; NIH/NIDDK R01 DK071929, $208,000, 5/1/06- 4/30/11.

B. PROJECTS UNDER STUDY

1. The identification of co-factors required for Pax protein mediated transcription activation.
2. The development of novel methods for identifying genes regulated by Pax proteins.
3. The role of PTIP in histone methylation and differentiation.
4. The GDNF/RET signaling pathway in the developing kidney.
5. The role of novel TGF-beta inhibitors in renal development and disease.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Dept. of Pathology - Curriculum Committee.
2. Center for Organogenesis - Interim Co-Director, Steering Committee, Training Grant Review Committee, Advisory Committee, Seminar Committee (Chair).
3. CMB preliminary Exam Coordinator.

B. REGIONAL/NATIONAL/INTERNATIONAL

1. NIDDK, MAGUD Advisory Board
2. NIDDK Special Emphasis Panel, PKD P30
3. Developmental Dynamics, Editorial Board

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Manuscript reviewer
    a. *Developmental Cell*
    b. *Nature Genetics*
    c. *Science*
    d. *Development*
    e. *Proceedings of the National Academy of Sciences*
    f. *Developmental Dynamics*
    g. *Journal of the American Society of Nephrology*
    h. *American Journal of Physiology*
    i. *Journal of Clinical Investigation*
    j. *Molecular and Cellular Biology*
    k. *Genes & Development*
    l. *Kidney International*
    m. *Journal of Cell Biology*
    n. *American Journal Pathology.*

B. INVITED LECTURES/SEMINARS

1. Dept. of Biochemistry & Biophysics, Oregon State Univ., Corvallis
2. Dept. of Biology, Purdue University Indianapolis, IN.
3. Division of Nephrology, Brigham and Women's Hospital, Boston, MA.
4. Plenary lecture, American Society of Nephrology Annual Meeting, Philadelphia, PA.
5. ICOS Corporation, Bothel, WA.Maine Medical Center Research Institute, Portland, ME.
6. Dep. of Pediatrics, Hospital for Sick Children, Toronto, Canada
7. Ottawa Health Research Institute, Ottawa, Canada.

C. MEMBERSHIP AND OFFICES IN PROFESSIONAL SOCIETIES
1. Membership in the American Society of Nephrology
2. Membership in Society for Developmental Biology
3. Membership in University of Michigan Comprehensive Cancer Center
4. Membership in the Center for Organogenesis, University of Michigan

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
1. Lin, J., Patel, S.R., Cheng, X., Cho, E. A., Levitan, I., Ullenbruch, M., Phan, S.H., Park, J.M. and Dressler, G.R. (2005) Kielin/Chordin-like protein (KCP), a novel enhancer of BMP signaling attenuates renal fibrotic disease. Nature Medicine 11, 387-393 (featured in news and views p.373).
2. Kim, D. and Dressler, G.R. (2005) Nephrogenic factors promote differentiation of mouse embryonic stem cells into renal epithelia. J. Am. Soc. Nephrol. 16, 3527-3534.
3. Patel, S. R. and Dressler, G. R. (2005) BMP signaling in renal development and disease. Trends Mol. Medicine 11, 512-518.
4. Lin, J., Patel, S. R., Wang, M. and Dressler, G.R. (2006) The cysteine rich domain protein KCP suppresses TGF-□/Activin signaling in renal epithelia. Mol. Cell. Biol., 26, 4577-4585.
5. Dressler, G. R. (2006) The cellular basis of kidney development. Ann. Rev. Cell Dev. Biol. in press.
6. Self, M., Lagutin, O., Bowling, B., Hendrix, J., Cai, Y., Dressler, G. R. and Oliver, G. (2005) The six2 gene is required for suppression of inductive signals and progenitor cell renewal in the developing kidney. EMBO J., in press.

B. BOOKS AND CHAPTERS IN BOOKS
1. Dressler, G. R. (2006) Cell lineages and stem cells in the embryonic kidney. In Essentials of Stem Cell Biology (R. Lanza, ed.) Elsevier Science, San Diego, CA, p227-236.
2. Dressler, G.R. (2006) Stem cells in kidney development and regeneration. In Prog. Tissue Eng., in press.

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS
1. Dressler, G. R. (2005) Proposed changes to biomedical funding. Science 310, 5752.

Colin S. Duckett, Ph.D.
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES – None

II. TEACHING ACTIVITIES

A. RESEARCH MENTOR
1. John Wilkinson, Ph.D., Postdoctoral Fellow, 2002 - present.
2. Casey Wright, Ph.D., Postdoctoral Fellow, 2003 - present.
3. Arjmand Mufti, M.D., Fellow, Department of Internal Medicine, 2003 - present.
4. Clara Hwang, M.D., Fellow, Department of Internal Medicine, 2004 - present.
5. Julie Rumble, Graduate Student, Immunology Program, 2004 – present.
6. Rebecca Csomos, Graduate Student, Pathology Program, 2004 - present.
7. Karolyn Oetjen, MSTP Student, Pathology Program, 2004 – present.
8. Graham Brady, MSTP Student, Pathology Program, 2005 – present.

B. CO-MENTORING FACULTY MEMBER
1. Matthew Dimagno, M.D., Fellow, Department of Internal Medicine.

C. THESIS COMMITTEE/EXAMINER
1. Katie Johnson, Immunology Graduate Program.
2. Brian Rudd, Pathology Graduate Program.
3. Malinda Schaefer, Immunology Graduate Program.
4. Michael Khodadoust, Cellular and Molecular Biology Program.
5. Brendan Looyenga, Cellular and Molecular Biology Program.
6. Cynthia Coffill, University of Ottawa Biochemistry Program.
7. Laura Delbridge, Microbiology and Immunology Graduate Program.

D. Teaching
1. Pathology 852
2. Pathology 581
3. Course Director, Immunology 815
4. Postdoctoral Research Training Program
5. Immunology 851
6. Co-Director, Cancer Biology Training Program

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. PI (30%), "Control of Apoptosis and Signaling by XIAP," R01 GM067827-01 (NIGMS). $175,770 per annum, $883,080 total direct costs, 2005-2010.
2. PI (15%), “XIAP as a molecular target for therapeutic intervention in prostate cancer.” USARMC Prostate Cancer IDEA Award $124,832 per annum, $374,499 total direct costs, 2004-2007.
3. Co-PI with K. Cooney (15%), “Prostate cancer aggressiveness genes in hereditary prostate cancer,” USARMC Prostate Cancer IDEA Award, $92,961 per annum, $278,884 total direct costs, 2004-2007.
4. Co-Investigator (2.5%), “Prevention of Mammary Cancer in Her-2neu Transgenic Mice,” R01, $183,582 per annum, $931,164 total direct costs, 2003-2008.
5. Co-Investigator (15%), “SCF in eosinophilic airway inflammation”, R01, (NIAID). $195,300 per annum, $790,600 total direct costs, 2004 – 2008.
6. Mentor, “Role of the XIAP/AIF axis in the development and progression of prostate cancer.” CDMRP Department of Defense Prostate Cancer Research Program, Postdoctoral Training Award to John Wilkinson, Ph.D., $58,565 per annum, $115,740 total direct costs, 2004-2006.
7. Mentor, “Characterization of a novel interacting partner of XIAP.”American Gastroenterological Association Research Scholar Award to Ezra Burstein, M.D. $65,000 per annum, $195,000 total direct costs, 2003-2006.
8. Mentor, “CD30-mediated p100/NF-KB2 processing and activation.” NHLBI Postdoctoral Training Grant to Casey Wright, Ph.D. $283,056 per annum, $1,458,972 total direct costs, 2005-2006.
9. Mentor, “Research Training in experimental immunopathology.” NIAID Immunology Training Grant to Julie Rumble. $353,775 per annum, $1,770,787 total direct costs, 2005-2006.
10. Mentor, “Training for research in gastroenterology.” NIDDK Postdoctoral Training Award to Arjmand Mufti, M.D. $258,270 per annum, $1,291,350 total direct costs, 2005-2007.
11. Mentor, “Understanding the roles of IAPs and TRAFs in CD30 malignancies.” NCI Cancer Biology Predoctoral Training Grant to Rebecca Csomos. $272,412 per annum, 2005-2007.
12. Mentor, “The role of X-linked Inhibitor of Apoptosis in Breast Cancer.” DOD Breast Cancer Predoctoral Traineeship Award BC051269 Predoctoral Award to Karolyn Oetjen. $30,000 per annum, $90,000 total direct costs, 2005-2007.

B. PROJECTS UNDER STUDY

1. Role of X-linked IAP (XIAP) in TGF-ß signal transduction pathways, in collaboration with Dr. Anita Roberts, National Cancer Institute.
2. Analysis of the protective effects of XIAP in caspase-dependent and -independent cell death, in collaboration with Dr. Larry Boise, University of Miami.
3. Characterization of VIAF, a novel IAP-associated factor, in collaboration with Dr. Pam Schwartzberg, National Human Genome Research Institute.

4. Interaction of XIAP with Murr1, a factor whose gene is mutated in an inherited copper deficiency, in collaboration with Dr. Marty Mayo, University of Virginia, Drs. Cisca Wijmenga and Leo Klomp, University Medical Center, Utrecht, and Dr. George Brewer, University of Michigan.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Pathology graduate program prelim committee

B. INSTITUTIONAL
1. Immunology graduate program prelim committee
2. Immunology graduate program graduate student affairs committee
3. Cellular and Molecular Biology graduate program prelim committee (chair)
4. Immunology graduate program curriculum review committee
5. Co-director, Cancer Biology Training Course
6. Associate Director, Molecular Mechanisms of Disease Program

C. REGIONAL/NATIONAL/INTERNATIONAL
1. Scientific Advisory Board, Aegera Therapeutics
2. Permanent Reviewer, NIH Cellular and Molecular Immunology -B Study Section
3. Permanent Reviewer, American Cancer Society CCG Study Section
4. *Ad hoc* Reviewer, British Biotechnology and Biological Sciences Research Council (BBSRC).
5. *Ad hoc* Reviewer, The Wellcome Trust.
6. *Ad hoc* Reviewer, Italian Association for Cancer Research (AIRC)
7. *Ad hoc* Reviewer, Australian National Health and Medical Research Council (NHMRC)

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS AND REVIEWS
1. Editorial Board *Journal of Biological Chemistry*, 2002 – 2007
2. Associate Editor *Biochemical Journal*, 2003 – present
3. Reviewer (selected journals shown)
   a. *Cancer Cell*
   b. *Cell*
   c. *Cell Death and Differentiation*
   d. *Current Biology*
   e. *Developmental Cell*
   f. *EMBO Journal*
   g. *EMBO Reports*
   h. *Genes and Development*
   i. *Immunity*
   j. *Journal of Clinical Investigation*
   k. *Molecular Cell*
   l. *Nature Cell Biology*
   m. *Nature Reviews Cancer*
   n. *Nature Reviews Molecular Cell Biology*
   o. *Oncogene*
   p. *Proceedings of the National Academy of Sciences USA*
   q. *Science*

B. INVITED LECTURES/SEMINARS
1. Beatson Institute, Glasgow, Scotland, UK (2005).
2. Duke University, NC (2005).
3. Rutgers University, NJ (2006).
4. Institute for Defense Analyses/Defense Science Study Group, VA (2006).
5. ExL Pharma Conference on Apoptosis Research and Drug Development (chair), CA (2006).
6. Gordon Research Conference on Metals in Medicine, Oxford, UK (2006).
7. University of Utah Symposium on Metals in Biology, UT (2006).

C. HONORS AND AWARDS
1. 2002 – 2005 Biomedical Scholar Award, University of Michigan
2. University of Miami Sylvester Comprehensive Cancer Center Distinguished Lectureship.
3. 2006 – 2007 Selected Member of the 2004-2005 Defense Science Study Group (DSSG) administered by the Institute for Defense Analyses (IDA), sponsored by the Defense Advanced Research Projects Agency (DARPA).

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Rudd, B.D., Burstein, E., **Duckett, C.S.,** Li, X and Lukacs, N.W. A differential role for TLR3 in RSV induced chemokine expression. *J. Virol.* **79** 3350-3357 (2005).
2. Kamradt, M.C., Lu, M., Werner, M.E., Kwan, T., Chen, F., Strohecker, A., Oshita, S., Wilkinson, J.C., Yu, C., Oliver, P.G., **Duckett, C.S.**, Buchsbaum, D.J., Lobuglio, A.F., Jordan, V.C. and Cryns, V.L. The small heat shock protein αB-crystallin is a novel inhibitor of TRAIL-induced apoptosis that suppresses the activation of caspase-3. *J. Biol. Chem* **280** 11059-11066 (2005).
3. Burstein, E., Hoberg, J.E., Wilkinson, A.S., Rumble, J.M., Csomos, R.A., Komarck, C.M., Maine, G.N., Wilkinson, J.C., Mayo, M.W. and **Duckett, C.S.** COMMD proteins: a novel family of structural and functional homologs of MURR1. *J Biol. Chem* **280** 22222-22232 (2005).
4. **Duckett, C.S.** IAP proteins: Sticking it to Smac. *Biochem. J.* **385** e1-e2 (2005).
5. Kucharczak, J.F., Simmons, M.J., **Duckett, C.S.** and Gélinas, C. Constitutive proteasome-mediated turnover of Bfl-1/A1 and its processing in response to TNF receptor activation in FL5.12 Pro- B cells convert it into a pro-death factor. *Cell Death Diff.* **12** 1225-1239 (2005).
6. Wright, C.W. and **Duckett, C.S.** Re-awakening the cellular death program in neoplasia through the therapeutic blockade of IAP function. *J. Clin. Invest.* **115** 2673-2678 (2005).
7. Xia, Y., Novak, Lewis, J., **Duckett, C.S.** and Phillips, A.C. Xaf1 can cooperate with TNF-α in the induction of apoptosis, independently of interaction with XIAP. *Mol. Cell. Biochem.*, in press (2006).

8. Mufti, A.R., Burstein, E., Csomos, R.A., Graf, P.C.F., Wilkinson, J.C., Dick, R.D., Challa, M., Son, J.-K., Bratton, S.B., Su, G.L., Brewer, G.J., Jakob, U. and **Duckett, C.S.** XIAP is a copper binding protein deregulated in Wilson's Disease and other copper toxicosis disorders. *Mol. Cell* **21** 775-785 (2006).
9. De Bie, P., van de Sluis, B., Burstein, E., Duran, K. J., Berger, R., **Duckett, C.S.,** Wijmenga, C. and Klomp, L.W. Characterization of COMMD protein-protein interactions in NF-κB signalling. *Biochem. J.,* in press.

Victor M. Elner, MD, PhD
Professor of Ophthalmology
Professor of Pathology

I. CLINICAL ACTIVITIES

A. EYE PLASTIC, ORBITAL, AND FACIAL COSMETIC SURGERY, DEPARTMENT OF OPHTHALMOLOGY – full year

B. OPHTHALMIC PATHOLOGY, DEPARTMENT OF PATHOLOGY – full year

II. TEACHING ACTIVITIES

A. STUDENT TEACHING (e.g., undergraduate, graduate, medical)

1. Clinical, surgical, research, and gross pathology settings

B. HOUSE OFFICERS, FELLOWS, TECHNICIANS, OR PHYSICIANS

1. Pathology lectures, grossing, research

C. STUDENTS, HOUSE OFFICERS, FELLOWS, AND TECHNICIANS

1. Ophthalmology teaching in clinic, operating room, lectures, research lab/writing,

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Principal Investigator (20%), "RPE-Mo Binding Ca++- & O_2-Dependent AMD Responses", Department of Health and Human Services, Public Health Service, National Institutes of Health, National Eye Institute. $2,474,840, Project Period 12/1/03-11/30/2008.
2. Co-Investigator (5%), "Expression Profile Approach to Glaucoma Gene Detection." Department of Health and Human Services, Public Health Service, National Institutes of Health, National Eye Institute. $3,105,653 total, 4/1/01-3/31/06.
3. Research to Prevent Blindness, Senior Scientific Investigator Award. $65,000 total, 1/1/05-12/15/07.
4. Translational Research Program, University of Michigan, Metabolic Imaging for Diabetic Retinopathy. $74,946 total, 8/1/05-7/31/06.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Department of Pathology None
2. Department of Ophthalmology
    a. Reimbursement Committee
    b. Peer-Review Committee
    c. Space Committee

B. REGIONAL/NATIONAL/INTERNATIONAL
1. NIH Grant reviewer for
    a. NEI SBIR Study Section 2004-2006
    b. NIDCR Sjogren's Syndrome RFA Review 2006
    c. NEI Uveitis Panel Autoimmune Retinitis 2006

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS
1. Manuscript reviewer
    a. *Archives of Ophthalmology*, 1999-present
    b. *Current Eye Research*, 1988-present
    c. *Experimental Eye Research,* 1988-present
    d. *Investigative Ophthalmology & Visual Science*, 1988-present
    e. *Journal of Immunology,* 1994-present
    f. *Journal of Leukocyte Biology,* 1994-1999
    g. *Molecular Vision*, 2004-present
    h. *Ophthalmology,* 1988-present
    i. *Ophthalmic Plastic & Reconstructive Surgery*, 1988-present

B. INVITED LECTURERS/SEMINARS
1. Edward W. Purnell, Lecturer, New Methods for the Treatment of Eyelid Retraction, Case Western Reserve, Cleveland, Ohio, 2005.
2. Conjunctival and Anterior Orbital Myxoid Malignant Fibrous Histiocytoma in a 24-year-old woman, Eastern Ophthalmic Pathology Society, Boston, MA, 2005.
3. Rhabdomyosarcoma in Li-Fraumeni Syndrome, Combined Ophthalmic Pathology Meeting, Philadelphia, PA, 2006.
4. Canadian Ophthalmologic Society, Featured Lecturer Retinal cell signaling implication for disease mechanisms, Toronto, Ontario, 2006
5. Canadian Ophthalmic Pathology Society, Invited Lecturer, Retinoblastoma with CNS extension, Toronto, Ontario, 2006.

C. MEMBERSHIP AND OFFICES IN PROFESSIONAL SOCIETIES
1. American Association of Ophthalmic Pathologists Board of Governors
2. American Association of Ophthalmic Pathologists USCAP Correspondent

D. HONORS AND AWARDS
1. 1998-2006, Best Doctors of America.
2. 2004-2006, Consumers' Research Council of America - Top Ophthalmologists.
3. 2006, Research to Prevent Blindness, Senior Science Investigator Award.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
1. Hassan AS, Clouthier SG, Ferrara JLM, Stepan A, Mian SI, Ahmad AZ, Elner VM. Lacrimal gland involvement in graft versus host disease A murine model. Invest Ophthalmol Vis Sci, 2005; 46:2692-7.

2. Hassan AS, Frueh BR, Elner VM. Muellerectomy for the treatment of upper lid retraction and Lagophthalmos due to facial nerve palsy. Arch Ophthalmol 2005; 123:1221-5.
3. Hassan AS, Elner VM. Orbital peripheral T-cell lymphoma in a child. Ophthal Plast Reconstr Surg 2005; 21:385-87.
4. Elner SG, Petty HR, Elner VM, Yoshida A, Bian Z-M, Yang D, Kindzelskii AL. TLR4 mediates human retinal pigment epithelial (HRPE) endotoxin binding and cytokine expression. Invest Ophthalmol Vis Sci, 2005; 46:4627-33.
5. Elner VM, Mintz R, Demirci H, Hassan AS. Local corticosteroid treatment of eyelid and orbital xanthogranuloma. Trans Am Ophthalmol Soc, 2005;103:69-74.
6. Elner SG, Petty HR, Elner VM, Yoshida A, Bian Z-M, Yang D, Kindzelskii AL. TLR4 mediates human retinal pigment epithelial endotoxin binding and cytokine expression. Trans Am Ophthalmol Soc, 2005 103:126-137.
7. Elner VM, Hassan AS, Frueh BR. Transconjunctival Mueller muscle recession with levator disinsertion for correction of eyelid retraction associated with thyroid-related orbitopathy. Am J Ophthalmol 2006;141:233-4.
8. Elner VM, Mintz R, Demirci H, Hassan AS. Local corticosteroid treatment of eyelid and orbital xanthogranuloma. Ophthal Plast Reconstr Surg, 2006; 22:36-40.
9. Rozsa FW, Reed DM, Scott KM, Pawar H, Moroi SE, Kijek TG, Krafchak CM, Othman MI, Vollrath D, Elner VM, Richards JE. Gene expression profile of human trabecular meshwork cells in response to long-term dexamethasone exposure. Mol Vis 2006; 12:125-41.
10. Elner SG, DelMonte DW, Bian Z-M, Lukacs NW, Elner VM. Differential expression of retinal pigment epithelium (RPE) IP-10 and IL-8. Exp Eye Res (Epub ahead of print).
11. Krafchak CM, Pawar H, Moroi SE, Sugar A, Lichter PR, Mackey DA, Mian S, Nairus T, Elner VM, Schteingart MT, Downs CA, Kijek TG, Trager EH, Rozsa FW, Mandal NA, Epstein MP, Vollrath D, Ayyagari R, Boehnke M, Richards JE. “Mutations in TCF8 Cause Posterior Polymorphous Corneal Dystrophy and Ectopic Expression of COL4A3 by Corneal Endothelial Cells” by Am J Hum Genet (In Press)
12. Elner VM, Mintz R, Demirci H, Hassan AS. Local corticosteroid treatment of eyelid and orbital xanthogranuloma. Trans Am Ophthalmol Soc (In Press).
13. Elner SG, Petty HR, Elner VM, Yoshida A, Bian Z-M, Yand D, Kindezlskii AL. TLR4 mediates human pigment epithelial (HRPE) endotoxin binding and cytokine expression. Trans Am Ophthalmol Soc (In Press).
14. Demirci H, Hassan AS, Reck SD, Frueh BR, Elner VM. Full-Thickness anterior blepharotomy for correction of upper eyelid retraction of diverse etiology. Ophthalmic Plas Reconstr Surg (In Press).
15. Elner VM, Demirci H, Morton AD, Elner SG, Hassan AS. Transcaruncular medial canthal ligament placation for repair of lower eyelid malposition. Arch Ophthalmol (In Press).

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Yang D, Elner SG, Lin L-R, Reddy VN, Elner VM. Mechanisms of macrophage-induced apoptosis in mouse retinal pigment epithelial cells. Invest Ophthalmol Vis Sci 47 (Suppl) 1372, 2006.
2. Elner SG, Yang D, Bian Z-M, Elner VM. Pro-inflammatory cytokines increase retinal pigment epithelial cell reactive oxygen species production through mitochondria and NADPH oxidase. Invest Ophthalmol Vis Sci 47 (Suppl) 2072, 2006.
3. Bian ZM, Elner SG, Elner VM. Synergistically induced VEGF expression by thrombin and TGF-beta 2 in human retinal pigment epithelial cells. Invest Ophthalmol Vis Sci 47(Suppl) 4906, 2006.
4. Tandon A, Parker MG, Bruno CA, Elner VM. Histopathology of endoscopic cyclophotocoagulation (ECP). Invest Ophthalmol Vis Sci 47 (Suppl) 5469, 2006.
5. Elner VM, Hassan AS, Frueh BR. Transconjunctival Muller muscle recession with levator disinsertion for correction of eyelid retraction associated with thyroid-related orbitopathy.Am J Ophthalmol. 141 233, 2006 (Letter).

Joseph C. Fantone III, M.D.
Godfrey D. Stobbe Professor in Pathology Education
Associate Dean for Medical Education

I. CLINICAL ACTIVITIES

A. AUTOPSY SERVICE.

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS

1. Laboratory Instructor; M1 Histopathology.
2. Laboratory Instructor; M2 Pathology Labs.
3. Lecturer and small group leader; M1 Immunology Course.
4. Lecturer, Dental Pathology Course
5. Small group leader, M1 & M2 Longitudinal Cases
6. Medical Student Advisor (3rd and 4th year).

B. RESIDENTS AND HOUSE OFFICERS

1. Autopsy service.
2. Course Director; Pathology Teaching Laboratories.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Co-Investigator, “University of Michigan Integrative Curriculum for Medicine and Allied Health.” National Institutes of Health. R25-AT00812-01 (2001-2006).
2. Co-investigator, “Comprehensive Programs to Strengthen Physicians’ Training in Geriatrics.” The Donald Reynold’s Foundation. (2001-2005).

B. PROJECTS UNDER STUDY

1. Outcomes measures of undergraduate medical education.
2. Curriculum development in medical student education.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Director, Anatomic Pathology.
2. Director, Pathology Educational Programs.
3. Director, Resident Training Program.
4. Chairman's Advisory Committee.
5. Department ACAPT Committee.
6. Faculty Sexual Harassment Contact Person.

B. MEDICAL SCHOOL/HOSPITAL

1. Associate Dean for Medical Education.
2. CD/ACD Education Committee (Chair).

3. Curriculum Policy Committee (Chair).
4. Medical Student Basic Science Academic Review Board (Chair).
5. Medical Student Clinical Academic Review Board (Chair).
6. Medical School Academic Hearing Committee (Chair).
7. Faculty Group Practice, Finance Committee.

C. REGIONAL/NATIONAL /INTERNATIONAL

1. USMLE, Step 1 IRC Test Committee.
2. USMLE, Strategic Planning Committee.
3. USMLE Stemmler Fund Review Committee.
4. ACGME Pathology Residency Review Committee.
5. ACGME Molecular Genetic Pathology Review Committee (Chair)
6. Pathology Resident Directors Committee (PRODS)

V. OTHER RELEVANT ACTIVITIES

A. INVITED LECTURES/SEMINARS

1. Invited Speaker, Effect of Pass-Fail grading on Student Motivation and Learning. AAMC Annual Meeting, Washington, D.C., 2005.

VI. PUBLICATIONS - None

Eric R. Fearon, M.D., Ph.D.
Emanuel N. Maisel Professor of Oncology, Professor of Internal Medicine, Human Genetics, & Pathology, Associate Director and Deputy Director for Basic Science, UM Comprehensive Cancer Center

I. CLINICAL ACTIVITIES - None

II. TEACHING ACTIVITIES

A. GRADUATE STUDENTS

1. Micro/Immuno/Path 554 (Cancer Biol) – October 6, 2005 (1.5hr/lecture).
2. Human Genetics 542 – February 13 and 22, 2006 (1 hr/lecture).
3. Mentor for Andrew Kaczorowsk – PIBS rotation student (6-week Spring term rotation).

B. UNDERGRADUATE STUDENTS

1. Mentor Huseyin Kadikoy, LSA Cell and Molecular Biology Student.
2. Deanna Sikorsky, both LSA Cell and Molecular Biology Student.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Basic Science Director and Department Director, (25%), "University of Michigan Comprehensive Cancer Center Core Grant", NIH/NCI 5 P30 CA46592-18; PI – Wicha, $3,434,995, (Fearon, salary support only) 6/1/01-5/31/06.
2. Program Co-Leader (5%), "University of Michigan Comprehensive Cancer Center Core Grant", NIH/NCI 5 P30 CA46592-18; PI – Wicha, $03,434,995, (Fearon, salary support only),6/1/01-5/31/06,
3. PI (25%), “CDX-2 Tumor Suppressor Pathway Defects in Colon Cancer”, NIH/NCI1RO1 CA82223-08, Year 8 direct costs - $197,741, 08/15/99-05/31/09.
4. PI (20%), "The Role of ß-catenin/Tcf Pathway Defects in Cancer”, NIH/NCI 1 RO1 CA85463-06, Year 6 direct costs $191,250, 06/01/00-05/31/10.
5. Co-Investigator (2.5%) “Molecular Pathogenesis of Ovarian Endometrioid Adenocarcinomas (OEAs)”, NIH/NCI R01 CA94172-04, Year 5 direct costs $178,000 (Fearon salary support only), 02/01/02 – 01/31/07.
6. Co-Investigator (2.5%) “Development and Characterization of a Murine Model of Endometrioid Adenocarcinoma Induced by Tissue Specific Expression of ß-Catenin”, Dept. of Defense OCRP OC030117, $100,000 annual direct costs (Fearon – salary support only), 02/01/04 - 01/31/07

7. Co-Investigator (5%) "Molecular Epidemiology of Colorectal Cancer", NIH/NCI 1RO1 CAS1488-08, $772,892 (Fearon salary support only), 01/01/99-03/31/09.

B. PENDING

1. Co-Investigator (5%) “Molecular Pathogenesis of Ovarian Endometrioid Adenocarcinomas”, NIH/NCI 2R01 CA094172-06, 02/01/07 - 01/31/12
2. Co-Investigator (10%) “Snail-Dependent Regulation of EMT in Cancer”, NIH/NCI 1R01 C116516-01A1, 09/01/06 – 08/31/11.
3. Basic Science Director (25%), “University of Michigan Comprehensive Cancer Center Core Grant”, NIH/NCI 2 P30 CA046592-19, 6/1/01-5/31/06.
4. Co-Leader of the Cancer Genetics Program (5%) " University of Michigan Comprehensive Cancer Center Core Grant”, NIH/NCI 2 P30 CA046592-19, 6/1/01-5/31/06.

IV. ADMINISTRATIVE ACTIVITIES

A. INSTITUTIONAL

1. Admissions Committee, University of Michigan School of Medicine
2. Admissions Executive Committee, University of Michigan School of Medicine
3. Chair, University of Michigan Biological Sciences Program Search Committee

B. REGIONAL/NATIONAL /INTERNATIONAL

1. President, American Society for Clinical Investigation

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Associate Editor, *Cancer Research*
2. Senior Editor, *Molecular Cancer*
3. Editorial Board, *Current Biology*
4. Editorial Board, *Journal of Clinical Investigation*
5. Editorial Board, *Genes, Chromosomes & Cancer*
6. Editorial Board, *Neoplasia*
7. Editorial Board, *Journal of Biological Chemistry*

B. INVITED LECTURES/SEMINARS

1. New York Academy of Sciences, New York, NY; Symposium on Therapeutic Opportunities of the Wnt Signaling Pathway in Cancer; “Beta-catenin Dysfunction in Intestinal Tumorigenesis”, October 25, 2005.
2. 3rd Annual DSR Sarma Lectureship in Oncologic Pathology, University of Toronto Faculty of Medicine, Department of Laboratory Medicine & Pathology; “Molecular Insights into Colorectal Cancer Pathogenesis and Implications for Clinical Management”, November 14, 2005.
3. Vanderbilt-Ingram Cancer Center Grand Rounds, Vanderbilt University School of Medicine; “Contribution of Beta-catenin Defects to Cancer”, December 1, 2005.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Rozek LS, Lipkin SM, Fearon ER, Hanash S, Giordano TJ, Greenson JK, Kuick R, Misek DE, Taylor JM, Douglas JA, Rennert G, Gruber SB. CDX2 polymorphisms, RNA expression, and risk of colorectal cancer. Cancer Res 2005, 65 5488-92.
2. Hendrix ND, Wu R, Kuick R, Schwartz DR, Fearon ER, Cho KR. FGF9 has oncogenic activity and is a downstream target of Wnt signaling in ovarian endometrioid adenocarcinomas. Cancer Res 2006, 66 1354-1362.

B. BOOKS/CHAPTERS IN BOOKS

1. Bommer GT, Fearon ER. Developmental Signaling Networks, Wnt/ß-catenin Signaling in the Gastrointestinal Tract. In Physiology of the Gastrointestinal Tract. 4th Edition. Elsevier, 2006, pp 247-270.

David O. Ferguson, M.D., Ph.D.
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES – None

II. TEACHING ACTIVITIES

A. STUDENTS AND POST DOCTORAL FELLOWS

1. Yipin Wu Ph.D. (Postdoctoral fellow)
2. Todd Festerling (graduate student - Toxicology)
3. Brian Theissen (U of M undergraduate)
4. Rotating Graduate students
    a. Esther Choi (Immunology)(3months)
    b. Sara Monroe (Pathology)(1.5 months)
5. Thesis committee member
    a. Yunfang Man (Pathology)
    b. Phillip Palmbos (MSTP-CMB)
    c. Sandra Durkin (Genetics)
    d. Fred Derheimer (CMB)
    e. Kyunghee Burkitt (Toxicology)
    f. Rebecca Csomos (Pathology)
    g. Ryan Ragland (Genetics)
6. Preliminary exam committee member - Pathology program
    a. Graham Brady

B. LECTURES

1. Pathology 581 (1 hour)
2. Human Genetics 542 (1 hour)
3. Pathology graduate student seminar "feedback teaching" (2 contact hours total).

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Ferguson, PI (50% effort), "Roles of Mre11 in lymphocyte development and DNA repair" R01 HL079118-01. $250,000/year direct ($1,000,000/4 years direct), 4/1/2005 - 3/31/2009.
2. Ferguson, PI (75% until 8/31/2005), "Roles of Mre11 in lymphocyte development and DNA repair" (training grant) K08 HL067580-05, $125,000/year direct, $607,500/5 years direct 9/1/00 - 8/31/05. completed.
3. Ferguson, PI (0% - Lab support only), "Genomic Instability in Cancer Mechanisms of Gene Amplification and Roles of Mre11", SKF-04-

089 Sidney Kimmel Cancer Research Foundation. $90,870/year direct, $181,740/2 years direct. 7/1/04 - 6/29/06.

4. Ferguson, PI (0% - Lab support only), "Roles of the MRN complex in endoreduplication and breast cancer". John and Suzanne Munn Endowed Research Fund of the University of Michigan Comprehensive Cancer Center. $25,000/year direct - one year. 3/1/05 - 2/28/06. completed.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Member - Pathology graduate program student qualifying exam committee.
2. Pathology student recruitment activities (lunch, dinners, poster sessions, meetings).
3. Faculty candidate interviews and recruitment.

B. INSTITUTIONAL

1. Member - Graduate program in Cellular and Molecular Biology.
2. Member, MSTP Advisory Panel.
3. Faculty candidate interviews and recruitment (Medicine, Genetics).
4. PIBS student recruiting activities.
5. Member, Comprehensive Cancer Center, Division of Cancer Genetics

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARD/REVIEWS

1. Reviewer – *Nature*
2. Reviewer – *Cell*
3. Reviewer - *Nature Cell Biology*

B. INVITED REVIEWS

1. Sekiguchi JM, Ferguson DO. DNA double-strand break repair a relentless hunt uncovers new prey. Cell. 2006 Jan 27; 124(2) 260-2.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Zhong H, Bryson A, Eckersdorff M, Ferguson DO. Rad50 depletion impacts upon ATR dependent DNA damage responses. Human Molecular Genetics. 2005, Sept 15. 14(18): 1-9.
2. Zeidler M, Varambally S, Cao Q, Chinnaiyan AM, Ferguson DO, Merajver SD, Kleer CG. The Polycomb group protein EZH2 impairs DNA repair in breast epithelial cells. Neoplasia. 2005 Nov; 7(11): 1011-9.
3. Yilmaz OH, Valdez R, Theisen BK, Guo W, Ferguson DO, Wu H, Morrison SJ. Pten dependence distinguishes haematopoietic stem cells from leukaemia-initiating cells. Nature. 2006 May 25; 441(7092): 475-82.
4. Shen RR, Ferguson DO, Renard M, Hoyer KK, Kim U, Hao X, Alt FW, Roeder RG, Morse Iii HC, Teitell MA. Dysregulated TCL1 requires the germinal center and genome instability for mature B cell transformation. Blood. 2006, May 25 [Epub ahead of print].

William G. Finn, M.D.
Associate Professor of Pathology
Director of Hematopathology
Associate Director, Clinical Pathology Laboratories

I. CLINICAL ACTIVITIES

A. DIAGNOSTIC HEMATOPATHOLOGY SERVICE
   1. Interpretation of Bone marrow biopsies,lymph nodes, blood smears, body fluids.

B. CLINICAL FLOW CYTOMETRY SERVICE.

C. HEMATOPATHOLOGY CONSULTATION CASES (INCLUDING M-LABS).

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
   1. M-2 Hematology Sequence Section leader for laboratory sessions (12 hours).
   2. M-2 Hematology sequence “Pathology and Classification of Lymphoma” (1 hour of Lecture).

B. RESIDENTS AND FELLOWS
   1. Interim director, hematopathology fellowship program.
   2. Sign-out of bone marrow biopsies, aspirates, blood smears, and body fluids in Hematology Laboratory.
   3. Sign-out of lymph node biopsies and review of hematopathology consultation material.
   4. Flow Cytometry sign-out.
   5. Hematopathology and Clinical Pathology teaching.
   6. Leukemia conference/biweekly.
   7. Lymphoma conference/weekly.
   8. Hematology conference/biweekly.

C. LECTURES
   1. Clinical Pathology Grand Rounds (3 hours of Lecture).
   2. Clinical Pathology Case Conference/weekly.
   3. Clinical Pathology Management Series (1 hour of Lecture).

D. DENTAL AND GRADUATE STUDENTS
   1. Pathology 580/630 “Pathology of White Blood Cells” (1 hour of Lecture).

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY
   1. Collaborating with Al Hero, Ph.D. (Electrical Engineering and Computer Science) in the application of dimensionality reduction and

shape recognition algorithms to interpretation of clinical flow cytometry data.
2. Collaborating with Steven Kunkel, Ph.D. in the study of the effect of inflammatory disease states on growth, maturation, and gene expression patterns of bone marrow derived cells.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Associate Director of Clinical Pathology
2. Director, Hematopathology Section.
3. Departmental Advisory Committee on appointment, promotion, and tenure (ACAPT) (pathology) (Henry Appelman, M.D., Chair.)
4. Departmental Residency Selection Committee (Joseph Fantone, M.D., Chair).
5. Pathology Quality Assurance Committee (Jeffrey Warren, M.D., Chair).
6. A. James French Society of Pathologists – Member Board of Directors – Secretary/Treasurer 2004-2005.

B. INSTITUTIONAL
1. Member, Hospital Credentialing Committee.

C. REGIONAL/NATIONAL/INTERNATIONAL
1. Editor-in-Chief, Laboratory Hematology (Journal of the International Society for Laboratory Hematology).
2. Associate Editor, Cytometry Part B Clinical Cytometry.
3. Assistant Editor, Laboratory Medicine (ASCP)
4. American Society for Clinical Pathology, Check Path Planning Committee (Hematopathology).
5. Vice-Chair, College of American Pathologists Hematology and Clinical Microscopy Resource Committee.
6. Society for Hematopathology, ASCP Companion Program Committee.
7. American Society for Clinical Pathology, Hematology Resource Council.
8. International Society for Laboratory Hematology Board of Directors.
9. American Society for Clinical Pathology Annual Meeting Committee.
10. President-Elect, Michigan Society of Pathologists.
11. Board of Trustees, Michigan Society of Pathologists.
12. Member-at-Large, Executive Committee, Society for Hematopathology.
13. American Society for Clinical Pathology “Future of Pathology” Task Force.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS
1. Ad hoc Editorial Reviewer
    a. *Blood*
    b. *Human Pathology*
    c. *American Journal of Clinical Pathology*
    d. *Archives of Pathology & Laboratory Medicine*
    e. *Leukemia & Lymphoma*
    f. *Clinical and Laboratory Haematology.*

B. INVITED LECTURES/SEMINARS

1. Adventures in Flow Cytometry," A. James French Society of Pathologists 9th Scientific Meeting. Ann Arbor, MI, October 1, 2005.
2. Advances in the Application of Ancillary Techniques to Diagnostic Hematopathology." Moderator of Society for Hematopathology companion session, American Society for Clinical Pathology annual meeting. Seattle, WA, October 7, 2005.
3. "The Future of Laboratory Hematology Practice." International Society for Laboratory Hematology XIXth International Symposium on Technological Innovations in Laboratory Hematology. Amsterdam, The Netherlands, April 26, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Finn WG, Sreekumar A, Chinnaiyan A Trisomy 12-associated, t(11;14)-negative mature B-cell leukemia with gene expression profile resembling mantle cell lymphoma. Leuk Lymphoma 47(1) 121-127, 2006.
2. Bakshi NA, Ross CW, Finn WG, Valdez R, Ruiz R, Koujok K, Schnitzer B ALK-positive anaplastic large cell lymphoma with primary bone involvement in children. Am J Clin Pathol 125(1) 57-63, 2006.
3. Habib LK, Finn WG. Unsupervised immunophenotypic profiling of chronic lymphocytic leukemia. 70B 124-135, 2006.

B. BOOKS AND CHAPTERS IN BOOKS

1. Finn WG, Macon WR. Mature T-Cell and NL Cell Leukemias. In Hsi ED (ed.) Foundations in Diagnostic Pathology Hematopathology. Churchill-Livingstone, in press.

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Sun WM, Chotiprasidhi P, Finn W At the focal point mantle cell lymphoma. Gastrointest Endosc 61(7) 875, 2005.
2. Finn WG New challenges, new directions (editorial). Lab Hematol 12 1, 2006.

Andrew Flint, M.D.
Professor of Pathology

I. CLINICAL ACTIVITIES

A. SURGICAL PATHOLOGY ROTATIONS

1. July (3/4), August (2/4), September (2/4); October (2/4), November (2/4), December (2/4); January (2/4); February (2/4); April (1/4); May (1/4), June (2/4).

B. OPHTHALMIC PATHOLOGY SERVICE, 52 weeks/year.

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS

1. Pathology 600 Lectures
2. Obstructive Lung Disease – September 2005
3. Pulmonary Neoplasms – September 2005
4. Tissue Reactions to Infectious Agents - September 2005
5. Cardiovascular Pathology Review, September, 2005
6. Pulmonary Pathology Review, September, 2005.
7. Gastrointestinal Pathology Review, January, 2006
8. Endocrine Pathology Review, March, 2006
9. Reproductive Pathology Review, March, 2006
10. Musculoskeletal Pathology Review, November, 2005
11. Introduction to Musculoskeletal Pathology, November, 2005
12. Medical Students Question and Answer sessions, October, 2005 - April, 2006.
13. USMLE Pathology Review, March, 2005
14. M4 student elective mentor, July 2005 - May,
15. 2006 Radiology - Pathology Correlation elective for M4 students, Course Co-Director, April, 2006
16. Course Director, M-4 Student Pathology Clerkships, 2005-2006

B. LABORATORY INSTRUCTOR, August, 2005 - March, 2006

C. RESIDENCY TRAINING

1. Diseases of the Chest I - January, 2006
2. Diseases of the Chest II - January, 2006
3. Consultant's Conferences (2) - March, 2006

D. OTHER EDUCATIONAL ACTIVITIES

1. Participant, Teaching with Technology Institute, May, 2006
2. Provost's Seminar on Teaching, "New Bridges to New Knowledge Instructional Technology and Collaboration", the University of Michigan, May, 2006.

3. Seminars, Center for Research on Teaching and Learning, the University of Michigan, May, 2006.
4. "Virtual Microscopy" seminar, IAMSE, May, 2006.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Co-Investigator, A Murine Model of Graft-Vs-Host Disease Lacrimal Gland Inflammation and Destruction Histopathology, Immunopathology, and Intervention (Midwest Eye-Banks and Transplantation Center).
2. Co-Investigator, Lung Image Database Consortium (IU01 CA91099-01).
3. Consultant, Fibroproliferation in Bronchiolitis Obliterans Syndrome, National Institutes of Health/NHLBI; K23HL077719-01.

B. PROJECTS UNDER STUDY

1. Histologic predictors of obliterative bronchiolitis in lung transplant patients.
2. "M2 Pathology", web-based learning of pathology for medical students in the context of cultural and social issues.
3. Clinico-pathologic correlations of interstitial lung diseases.
4. Ophthalmic manifestations of the systemic vasculitides.
5. "Pathology and the Patient", web-based learning and teaching for medical students.
6. Concept Maps as an assessment tool for learning.

IV. ADMINISTRATIVE ACTIVITIES – None

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS AND REVIEWS

1. Reviewer, *American Journal of Respiratory and Critical Care Medicine* (2006).

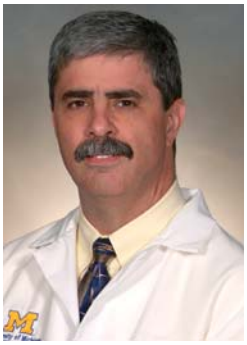
B. INVITED LECTURES/SEMINARS

1. "Concept Maps - application to Medical Student teaching", Teaching with Technology Institute, the University of Michigan, May, 2006
2. "Thoracic Pathology for Thoracic Surgeons", University of Michigan, June. 2006.

VI. PUBLICATIONS

A. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Lama VN, Smith L, Badri L, Flint A, Toews GB, Peters-Golden M, Martinez FJ, Thannickal VJ Non-hematopoietic origin of mesenchymal cells isolated from bronchoalveolar lavage of lung transplant recipients. Proc Am Thorac Soc 2006; 3 A830.
2. Lama VN, Harada H, Badri L, Flint A, Hogaboam CM, McKenzie A, Martinez FJ, Toews GB, Pinsky DJ Role of Interleukin-13 in development of bronchiolitis obliterans. Proc Am Thorac Soc 2006; 3 A538.



Douglas R. Fullen, M.D.
Associate Professor of Pathology and Dermatology
Director of Histology

I. CLINICAL ACTIVITIES

A. DERMATOPATHOLOGY SERVICE – 12 months
B. DERMATOPATHOLOGY CONSULTATION SERVICE – 12 months
C. IMMUNOFLUORESCENCE EVALUATION OF SKIN BIOPSIES

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
   1. Dermatopathology laboratory instructor, MS II Dermatology Sequence
   2. Dermatopathology, Pathology Clerkship, MS IV
   3. Dermatopathology, Dermatology Clerkship, MS IV

B. RESIDENTS AND FELLOWS
   1. Dermatopathology sign-out (dermatology and pathology sign-out)
   2. Review of dermatopathology consultation material
   3. Dermatopathology teaching conference (pathology residents – weekly)
   4. Dermatopathology teaching conference (dermatology residents – weekly)
   5. Anatomic Pathology Grand Rounds (one lecture)
   6. Dermatopathology lectures for dermatology residents (two lectures)
   7. Review of immunofluorescence on skin biopsies (interesting cases)
   8. Diagnostic Conference, Department of Dermatology (weekly)

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY
   1. BRAF and NRAS mutations in Spitz nevi, atypical Spitz tumors and Spitz-like melanoma (S. Gruber, M.D., J. Poynter, T. Johnson, M.D., J. Elder, M.D.)
   2. University of Michigan (UMMC 2000-0713) Molecular, biochemical and cellular basis of melanoma and other melanocytic lesions Tissue Bank (T. Johnson, M.D., T. Wang, M.D., J. Schwartz, M.D., J. Voorhees, M.D., A. Dlugosz, M.D., L. Lowe, M.D., L. Su, M.D., C. Bradford, M.D., V. Cimmino, M.D.)
   3. Patient examination with Mela Find TM System developed by Electro-Optical Sciences, Inc., (EOS), 2001 (J. Schwartz, M.D., T. Johnson, M.D., T. Wang, M.D., D. Karimipour, M.D., J. Orringer, M.D., L. Lowe, M.D., L. Su, M.D., C. Bichakjian, M.D., M. Rabe, R.N.)

4. Clusterin expression in CD30-positive lymphoproliferative processes of the skin (B. Schnitzer, M.D.)
5. Telomerase expression in sebaceous lesions of the skin (L. Su, M.D.)
6. CD13 and CD14 staining in fibrohistiocytic lesions (D. Lucas, M.D.)
7. G.COL1A1-PDGFB fusion transcripts in dermatofibroasarcoma protuberans and related lesions (J. Thorson, M.D.)

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Director of Histology Laboratory, Department of Pathology
2. Director, Dermatopathology Fellowship Program
3. Anatomic Pathology Project Funding Committee Member

B. INSTITUTIONAL
1. University of Michigan Medical School Admissions Committee Member

C. REGIONAL/NATIONAL/INTERNATIONAL – None

V. OTHER RELEVANT ACTIVITIES

A. EDITORAL BOARDS/REVIEWS
1. Ad hoc manuscript reviewer, *Journal of Cutaneous Pathology*
2. Ad hoc manuscript reviewer, *Journal of the American Academy of Dermatology*
3. Ad hoc reviewer, *Cancer*
4. Ad hoc reviewer, *Archives of Pathology and Laboratory Medicine*
5. Ad hoc reviewer, *Medical Science Monitor*

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
1. Fullen DR, Zhu W, Thomas D, Su LD HTERT expression in melanocytic lesions: an immunohistochemical study on paraffin-embedded tissues. J Cutan Pathol 32: 680-684, 2005.
2. McHugh J, Fullen DR. Atypical compound nevus arising in mature cystic ovarian teratoma. Med Sci Monit. 12:CS34-37, 2006.
3. Poynter JN, Elder JT, Fullen DR, Nair RP, Soengas M, Johnson TM, Redman B, Thomas N, Berwick M, Gruber SB BRAF and NRAS mutations in melanoma and melanocytic nevi. Melanoma Res (in press).
4. Olsen S, Su, LD, Thomas D, Fullen DR. Telomerase expression in sebaceous lesions of the skin. J Cutan Pathol (in press).
5. Fullen DR, Poynter JN, Lowe L, Su LD, Elder JT, Nair RP, Johnson TM, Gruber SB. BRAF and NRAS mutations in spitzoid melanocytic lesions. Mod Pathol (accepted for publication)

B. BOOKS/CHAPTERS IN BOOKS
1. Fullen DR. Cysts and Sinuses. In Busam KJ, Goldblum JR (eds) Foundations in Diagnostic Pathology series (Dermatopathology) (Philadelphia, PA, Elsevier, Inc.) (in press).
2. Haefner HK, Johnson TM, Rosamilia LL, Fullen DR. Pigmented lesions of the Vulva. (in press).

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Olsen S., Su, LD, Thomas D, Fullen DR. Telomerase expression in sebaceous lesions of the skin. Accepted for poster presentation at the American Society of Dermatopathology 42nd annual meeting, October, 2005.
2. Wu AJ, Thomas DG, Fullen DR, Lucas DR. Cluster Analysis of Immunohistochemical Profiles in Melanoma and MPNST Phenotypic Continuum and Diagnostic Strategy. Accepted for presentation at the United States and Canadian Academy of Pathology meeting.

Jason E. Gestwicki, Ph.D.
Assistant Professor of Pathology
Research Assistant Professor, Life Sciences Institute

I. CLINICAL ACTIVITIES – None

II. TEACHING ACTIVITIES

A. UNDERGRADUATE STUDENTS
1. Nick White (Perrigo Fellow)

B. POSTDOCTORAL AND GRADUATE STUDENTS
1. Postdoctoral Fellow, Susanne Wisen, Ph.D.
2. Graduate Students:
    a. Paul Marinec (Pathology)
    b. Srikanth Patury (Pathology)
    c. Christopher Evans (Chemical Biology)

C. STUDENT ROTATIONS
1. Jody Lancia (Chemical Biology)
2. Kari Anderson (Biological Chemistry)
3. Jerome Quintero (Biophysics)
4. Caleb Joseph (Medicinal Chemistry)

D. LECTURES
1. ChemBio 502, 1 lecture
2. ChemBio 602, 1 lecture
3. MCDB 408, 2 lectures

E. PH.D. AND M.S. GUIDANCE COMMITTEES
1. Candidacy Committees
    a. Jonathan Mortison (Chemistry)
    b. Steve Kawamoto (Medicinal Chemistry)
    c. Ryan Casey (Chemistry)
    d. Yousong Ding (Medicinal Chemistry)
    e. Shengying Li (Medicinal Chemistry)
2. Thesis Committees
    a. Karolyn Oetjen (MSTP, Pathology)
    b. Daniel Ruges (Microbiology)

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
1. Co-Investigator, “Recruitment of heat shock proteins to amyloid oligomers” Alzheimers Disease Research Center Pilot Project Grant 5 P50 AG08671, $35,000, 1/1/06 – 12/31/07.

B. PENDING
1. PI, “Synthetic multivalent probes for the detection of amyloid oligomers”, Alzheimer’s Association New Investigator Grant, $100,000, 8/1/06 – 7/31/08.
2. PI, “Accelerated clearance of amyloids by stimulation of physiological protective mechanisms”, Ellision Medical Foundation New Scholar in Aging, $200,000, 8/1/06 – 7/31/10.

IV. ADMINISTRATIVE ACTIVITIES

A. INSTITUTIONAL
1. Member, Faculty Search Committee (LSI - Department of Chemistry)
2. Member, LSI Equipment Task Force
3. Member/Chair, Selection Committee for Pfizer Awards in Chemistry and Chemical Biology
4. Member, Center for Chemical Genomics (CCG) Committee Appointed to Chemical Biology Ph.D. Program and IDP in Medicinal Chemistry
5. Appointed as Faculty Trainer in PSTP and CBTP

B. REGIONAL/NATIONAL/INTERNATIONAL
1. Grant Reviewer, Research Corporation (Cottrell College Science Awards)
2. Industrial Consultant, Amplyx Pharma (Palo Alto, CA)

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS
1. Reviewer, *ACS Chemical Biology*
2. Reviewer, *Journal of the American Chemical Society*
3. Reviewer, *Biomacromolecules*

B. INVITED LECTURES/SEMINARS
1. University of Michigan Pathology Seminar Series (Nov. 2005)
2. University of Michigan Pharmacology Seminar Series (Nov. 2005)
3. University of Michigan Medicinal Chemistry Seminar Series (Dec. 2005)
4. University of Michigan Life Sciences Institute Colloquium (Dec. 2005)
5. University of Michigan Nephrology Interest Group (Feb. 2006)
6. University of Michigan Gerontology Seminar Series (April 2006)
7. University of Michigan Chemistry-Biology Interface (CBI) Symposium (May 2006)

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
1. Bayle, J. H.; Grimley, J. S.; Stankunas, K.; Gestwicki, J. E.; Wandless, T. J.; Crabtree, G. R. “Rapamycin analogs with differential binding specificity permit orthogonal control of protein activity” Chem. Biol. 2006, 19:99-107.
2. Wisen, S. and Gestwicki, J. E. “Tuning the protein refolding machinery with small molecules” (in preparation).

B. BOOKS AND CHAPTERS IN BOOKS

1. Crabtree, G. R.; Liu, K.; Gestwicki, J. E. “Small molecule approaches to controlling protein stability” in Analysis of Growth Factor Signaling in Embryos Whitman, M. and Sater, A. Eds.; CRC Press (in press).

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Kiessling, L. L.; Gestwicki, J. E.; Strong, L. E. “Synthetic ligands as probes of signal transduction” Angew. Chem. Int. Ed. 2006, 45:2348-2368.
2. Wisen, S. and Gestwicki, J. E. “Tuning protein refolding with small molecules” Chaperones and the Heat Shock Response, Cold Spring Harbor, NY 2006.
3. Wisen, S. and Gestwicki, J. E. “Small molecule regulators of heat shock proteins” Bioorganic Chemistry Gordon Conference, Oxford, UK 2006.
4. Geda, P.; Bharucha, N.; Dobry, C. J.; Gestwicki, J. E.; Kumar, A. “Small molecule directed protein mislocalization” Society for Developmental Biology Meeting, Ann Arbor, MI 2006.
5. Gestwicki, J. E. “Reclamation of proteins from the cellular scrap heap” (Point of View) ACS Chem. Biol. 2006 1(4):201-203.
6. Gestwicki, J. E. “Target identification for a promising anti-lupus drug (Preview)” Chem. Biol. 2005 12:414-415.

Donald A. Giacherio, Ph.D.
Associate Professor
Director of Clinical Chemistry

I. CLINICAL ACTIVITIES

A. DIRECT/OVERSEE CLINICAL OPERATIONS

1. Direct the operation of blood gas/electrolyte analyzers, coagulation testing meters and hematology analyzers in the University Hospital Emergency Department and in the operating rooms of Main, Mott, and, Kellogg Hospitals.
2. Direct the workgroup overseeing the quality assurance programs for bedside blood glucose testing in the Medical Center.
3. Planning group for the approval and establishment of alternate site testing programs.
4. Technical Director for laboratories at four U-M Health Center off-site clinics (East Ann Arbor Health Center, Brighton Health Center, Canton Health Center, and Livonia Surgery Center).
5. Oversee performance of intraoperative-PTH testing at University Hospital and East Ann Arbor Surgery Center.

B. CASE SIGN OUTS

1. Review and sign out of Quad Marker Prenatal Screen results from maternal serum testing.
2. Sign out and interpretation of lipoprotein electrophoresis results.

II. TEACHING ACTIVITIES

A. RESIDENTS AND FELLOWS

1. Pathology House Officers
2. Clinical Pathology Grand Rounds (2 lectures)
3. Coordinator, Pathology House Officer rotation through Chemistry Section Labs
4. Review sign-out and interpretation of electrophoresis results.
5. Review of selected topics in Clinical Chemistry with Block B residents.

B. MEDICAL TECHNOLOGY STUDENTS AND STAFF

1. Review of lipid testing and lipoprotein electrophoresis with Medical Technology students.
2. Medical Technologists – 2 continuing education lectures

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Chemistry Core Lab Director (5%), Measurement Core of the Michigan Diabetes Research and Training Center, NIH 5P60

DK20572 , Measurement Core $127,696/yr.,($713,000 / 5 yr), 12/1/02 –11/30/07, MDRTC $ 1,229,000 / yr ($ 6,071, 400 / 5 yr).

B. PROJECTS UNDER STUDY
   1. Implementation of chemistry / immunoassay automation system
   2. Evaluation of automated, multiplex chemiluminescent immunoassay technology for the performance of antinuclear antibody testing (ANA) and testing for antibodies to extractable nuclear antigens (ENA).
   3. Evaluation and implementation of an EIA assay for anti beta-2-glycoprotein 1.
   4. Evaluation of an automated analyzer for 25-hydroxy-Vitamin D analysis.
   5. Pancreatic function testing in patients with chronic pancreatitis and impaired glucose tolerance (with M DiMagno and C Piraka)
   6. Relationship of obesity, sex hormone levels, and PSA in screening for prostate cancer (with J Beebe-Dimmer, K Wojno)

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
   1. Quality Assurance Committee
   2. Director, Chemistry Laboratory
   3. Director, Point of Care Testing

B. INSTITUTIONAL
   1. Michigan Diabetes Research and Training Center Prevention and Control Division Executive Committee

C. REGIONAL/NATIONAL /INTERNATIONAL
   1. Program Chair, Michigan Section AACC.
   2. Executive Committee, Michigan Section AACC
   3. Ad hoc reviewer, Clinical Chemistry.
   4. Abstract review committee, AACC National Meeting 2006

V. OTHER RELEVANT ACTIVITIES

A. INVITED LECTURES/SEMINARS
   1. “Instrument Acquisition Decisions in the Clinical Laboratory”, Clinical Pathology Grand Rounds, September 2005.
   2. “Lipoprotein Subclass Analysis”, Clinical Pathology Grand Rounds, September 2005.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
   1. Zhou L, Giacherio D, Cooling L, and Davenport RD. Use of B-natriuretic peptide (BNP) as a diagnostic marker in the differential diagnosis of transfusion-associated circulatory overload. Transfusion 2005; 45 1056-1063.
   2. Wang X, Yu J, Sreekumar A, Varambally S, Shen R, Giacherio D, Mehra R, Montie JE, Pienta KJ, Sana MG, Kantoff PW, Rubin MA, Wei JT, Ghosh D, Chinnaiyan AM Autoantibody signatures in prostate cancer. N Engl J Med 2005; 353 1224-1235.

Paul W. Gikas, M.D.
Emeritus Professor of Pathology

I. CLINICAL ACTIVITIES

A. AUTOPSY SERVICE, December 26-30, 2005.

II. TEACHING ACTIVITIES

A. Histopathology Lab Section for M1 medical students – 14 hours.

III. RESEARCH ACTIVITIES - None.

IV. ADMINISTRATIVE ACTIVITIES - None

V. OTHER RELEVANT ACTIVITIES - None.

VI. PUBLICATIONS - None

Thomas J. Giordano, M.D., PH.D.
Associate Professor of Pathology

I. CLINICAL ACTIVITIES

A. SURGICAL PATHOLOGY

1. Room 1, BE, GU, and GYN – 17 weeks
2. Endocrine Surgical Pathology, Departmental and Outside Consultation - 12 months
3. Image Analysis Service for Breast Carcinoma - 9 months
4. M-Labs Surgical Pathology Consultation - 12 months
5. Frozen section call – 5 weeks

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS

1. Sequence Co-Coordinator – Component II Endocrine Sequence
2. Component II Endocrine Sequence - 2 lectures on Endocrine Pathology
3. Endocrine Pathology Laboratories – 2 laboratories

D. RESIDENTS AND FELLOWS

4. General Surgical Pathology - 4 months
5. Endocrine Surgical Pathology - 12 months
6. Consultation Conference
7. Endocrine Pathology lecture

E. INTERDEPARTMENTAL

8. Endocrine Conference, Department of Surgery – monthly
9. Adrenal Tumor Board – weekly
10. Lecture to Genetic Counseling Students, "Pathology of Cancer"
11. Lecture to Molecular Biology Graduate Students, “Pathology of Cancer”

F. GRADUATE STUDENTS

12. Thesis Committee Member, Scott Tomlins, MSTP Program

VII. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

13. Tissue Core Director, 10% effort, “Cancer Center Support Grant”, National Institutes of Health, 5 P30 CA46592, $3,349,509 annual directs, 6/01/01-5/31/06. *Budget of renewal awaiting NCI approval*
14. Principal Investigator, 5% effort, “Improved Clinical Evaluation of Thyroid Nodules by Molecular Profiling”, Internal University of Michigan Funding, AACR Clinical Research Initiatives, $75,000 total directs, 05/01/06 to 05/01/07.

15. Co-Investigator, 5% effort, “Molecular Epidemiology of Colorectal Cancer”, National Institutes of Health-National Cancer Institute 5R01CA081488-08 $761,843 annual directs, 4/1/99-3/31/2009.
16. Co-investigator, 5% effort, “Apoptosis in Thyroiditis”, National Institutes of Health-NIAID 2 RO1 AI 37141-09A1, $225,000 annual directs, 5/01/04 to 4/30/2009.
17. Co-Investigator/Modality Chair, 2% effort, “Southwest Oncology Group” National Institutes of Health-National Cancer Institute 2 U10 CA027057-25 $116,406 direct (9 months), 4/1/04 to 12/31/2006.
18. Co-Investigator, 5 % effort, “Lung Tissue Research Consortium”, National Institutes of Health-NHLBI N01-HR-46162, $413,032 annual directs, 02/01/04 to 01/31/09.
19. Co-Investigator, 4% effort, “Wnt Signaling in Adrenocortical Development and Cancer”, American Cancer Society, RSG DDC-106870 $600,000 total direct costs, 07/01/04 to 06/3008.
20. Co-Investigator, 3.5% effort, “Role of SEPT9 in cell proliferation and oncogenesis”, National Institutes of Health- National Cancer Institute, 2RO1 CA072877-07A1, $250,000 annual directs, 12/1/2005-11/30/2010.
21. Principal Investigator, 5% effort, “Pfizer Tissue Bank”, Pfizer Inc., $300,000 annual directs, 1/1/04 to 12/31/07.

B. PROJECTS UNDER STUDY

22. Principal Investigator, "Molecular Studies of Adrenal Cortical Neoplasms".
23. Principal Investigator, "Molecular Studies of Thyroid Neoplasms".
24. Principal Investigator, "Moleuclar Studies of Adrenomedullary Neoplasms".
25. Co-Investigator with Dr. Jim Baker, “Molecular Studies of Thyroiditis".
26. Co-Investigator with Dr. David Beer, “Molecular Studies of Lung and Esophageal Neoplasms”.
27. Co-Investigator with Drs. Steve Gruber, Eric Fearon, and Joel Greenson “Molecular Studies of Colorectal Carcinoma”.
28. Co-Investigator with Drs. Larry Baker and Dafydd Baker, "Molecular Studies of Soft Tissue Sarcomas".
29. Co-Investigator with Drs. Frank Worden and Ron Keonig, “Clinical Trial of Gleevec for Anaplastic Thyroid Carcinoma”.

VIII. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

30. Pathology House Officer Candidate Interviews
31. Pathology Faculty Candidate Interviews
32. Sequence Co-Coordinator – Component II Endocrine Sequence
33. Director, Tissue Procurement Service
34. Director, Frozen Tumor Bank
35. Director, Laser Capture Microdissection CorelI.
36. Co-Director, Histology/Immunoperoxidase Service
37. Department of Pathology, Director of Clinical Informatics Search Committee
38. Member, Anatomic Pathology Funding Review Committee

B. INSTITUTIONAL

39. Medical Institutional Review Board (IRB-Med), *ad hoc* member
40. MSTP Career Advisory Panel

C. REGIONAL/NATIONAL/INTERNATIONAL

41. Grant Reviewer, National Institutes of Health, S-10 Shared Instrumentation Grants, Microscopes Subcommittee

IX. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

42. Editorial Board, *Endocrine Pathology*
43. Ad hoc manuscript reviewer for
    a. *Journal of Clinical Endocrinology and Metabolism*
    b. *Journal of Molecular Diagnostics*
    c. *Nature Clinical Practice Endocrinology & Metabolism*
    d. *Endocrine Pathology*
    e. *Proteomics*
    f. *Clinical Cancer Research*
    g. *PLOS Computational Biology*

B. INVITED LECTURES/SEMINARS

44. Invited Speaker, "Expression profiling of thyroid cancer", Veridex Inc., Warren, NJ.
45. Invited Speaker, "Advances in thyroid cancer by molecular profiling", University of Pittsburgh Medical Center, Pittsburgh, PA.
46. Invited Speaker, "Molecular Biology of Adrenal Cortical Tumors: Separating Adenomas and Carcinomas," Endocrine Pathology Society Companion Meeting, USCAP Annual Meeting, Atlanta, GA.
47. Invited Speaker, "Molecular Dissection of thyroid Cancer", Weill Medical College at Cornell University, New York, NY.
48. College of American Pathologists, Molecular Pathology: Principles and Practice, "Introduction to Gene Expression Arrays and Their Potential in Pathology", Chicago, IL.
49. Guest Faculty, CME Course, "Current Concepts in the Management of Thyroid and Parathyroid Neoplasms", Sponsored by M.D. Anderson Cancer Center, Santa Fe, NM.
50. College of American Pathologists Webcast (sponsored by U.S. Labs), "Microarrays and Predictive Pathology".
51. United States and Canadian Academy of Pathology, 95th Annual Meeting, 2006 Special Course, Introductory Molecular Pathology, "Introduction to Proteomics", Atlanta, GA.
52. Lecturer, 24th M-Labs Symposium, "Thyroid Nodules The Clinician's Side and Pathologic Diagnosis", Lecture entitled "The Pathology of the Thyroid Nodule".

C. HONORS AND AWARDS

53. External Advisory Board, Lung SPORE, Memorial Sloan Kettering Cancer Center (did not receive funding).
54. Best Doctors in America 2005-2006.

X. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN PEER-REVIEWED JOURNALS

55. Rozek LS, Lipkin SM, Fearon ER, Hanash S, **Giordano TJ**, Greenson JK, Kuick R, Misek DE, Taylor JMG, Douglas JA, Rennert

G, Gruber SB. CDX2 polymoprhisms, RNA expression, and risk of colorectal cancer. Cancer Res 2005 65; 5488-92.

56. **Giordano TJ**, Kuick R, Thomas DG, Misel DE, Vinco M, Sanders D, Zhu Z, Ciampi R, Roh M, Shedden K, Gauger P, Doherty G, Thompson NW, Hanash S, Koenig RJ, Nikiforov YE. Molecular classification of papillary thyroid carcinoma: distinct *BRAF*, *RAS*, and *RET/PTC* mutation-specific gene expression profiles discovered by DNA microarray analysis. Oncogene 2005 6:6646-6656.
57. Hughes PM, Thomas DG, **Giordano TJ**, McDonagh, Baker LH. Essential *erbB* family phosphorylation in osteosarcoma as a target for CI-1033 inhibition. Pediatr Blood Cancer 2006 46:614-623.
58. Zeng Q, Li S, Chepeha DB, **Giordano TJ**, Li J, Zhang H, Polverini PJ, Nor J, Kitajewski J, Wang CY. Crosstalk between tumor and endothelial cells promotes tumor angiogenesis by MAPK activation of Notch signaling. Cancer Cell 2005 8:13-23.
59. Chen G, Bhojani MS, Heaford AC, Chang DC, Laxman B, Thomas DG, Griffin LB, Yu J, Coppola JM, **Giordano TJ**, Lin L, Adams D, Orringer MB, Ross BD, Beer DG, Rehemtulla A. Phosphorylated FADD induces NF-kB, perturbs cell cycle, and is associated with poor outcome in lung adenocarcinomas. Proc Natl Acad Sci USA 2005 102:12507-12512.
60. Schteingart DE, Doherty GM, Gauger PG, **Giordano TJ**, Hammer MT, Worden F. Management of patients with adrenal cancer recommendations of an international consensus conference. Endocrine-Related Cancer 2005 12:667-680.
61. Miller CT, Lin L, Casper AM, Lim J, Thomas DG, Orringer MB, Chang A, Chamber AF, **Giordano TJ**, Glover TW, Beer DG. Genomic amplification of MET with boundaries with fragile site FRA7G and up-regulation of MET signaling pathways in esophageal adenocarcinomas. Oncogene 2006 25:409-418.
62. Connett JM, Badri L, **Giordano TJ**, Connett WC, Doherty GM. Interferon regulatory factor 1 (IRF-1) and interferon regulatory factor 2 (IRF-2) expression in breast cancer tissue microarrays. J Interferon Cytokine Res 2005 15:587-594.
63. Stasik CN, **Giordano TJ**, Gauger PG. Ganglioneuroma presenting as an incidental adrenal mass in an adult with turner's syndrome. Endocrine Practice 2005 11:382-384.
64. Lin L, Wang Z, Prescott MS, van Dekken H, Thomas DG, **Giordano TJ**, Chang AC, Orringer MB, Gruber SB, Moran JV, Glover TW, Beer DG. Multiple froms of genetic instability within a 2-Mb chromosomal segment of 3q26.3-q27 are associated with development of esophageal adenocarcinoma. Genes Chromosomes Cancer 2006 45:319-31.
65. Adeniran AJ, Zhu Z, Gandhi M, Steward DL, Fidler JP, **Giordano TJ**, Biddinger PW, Nikiforov YE. Correlation between genetic alterations and microscopic features, clinical manifestations, and prognostic characteristics of thyroid papillary carcinoma. Am J Surg Path 2006 30:216-222.
66. **Giordano TJ**. Molecular profiling and personalized predictive pathology: Challenge to the academic surgical pathology community. Am J Surg Path 2006 30:402-4.

67. Nosowsky R, **Giordano TJ**. The Health Insurance Portability and Accountability Act of 1996 (HIPAA) Privacy Rule: Implications for Clinical Research. Annu Rev Med 2006 57:575-590.
68. **Giordano TJ**, Au A.T.M., Kuick R, Thomas DG, Rhodes DR, Wilhelm Jr KG, Vinco M, Misek DE, Sanders D, Zhu Z, Ciampi R, Hanash S, Chinnaiyan A, Clifton-Bligh RJ, Robinson BG, Nikiforov YE. Koenig RJ. Delineation, functional validation, and bioinformatic evaluation of gene expression in thyroid follicular carcinomas with the *PAX8-PPARG* translocation. Clin Cancer Res 2006 12:1983-93.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFERRED JOURNALS

69. **Giordano TJ**. Morphologic and molecular classification of human cancer. In Cancer Epidemiology & Prevention (3rd edition), In press.
70. Vinco M, Thomas DG, Sanders D, Koenig R, **Giordano TJ**. A six-gene multiplex quantitative RT-PCR assay for the accurate discrimination of benign and malignant thyroid tumors. *J Mol Diagn* 2005 7:ST22.
71. **Giordano TJ**, Kuick R, Thomas DG, Vinco M, Sanders D, Misek DE, Hanash S, Koenig R, Nikiforov YE. Delineation of novel diagnostic markers of papillary thyroid carcinoma by molecular profiling. Mod Pathol 2006 19:93A.
72. Wilson AM, Kuick R, Thomas DG, Vinco M, Sanders D, Misek DE, Hanash S, Koenig R, Nikiforov YE, **Giordano TJ**. Overall molecular classification of thyroid tumors as defined by DNA microarray analysis. Mod Pathol 2006 19:99A.
73. Au A, Koenig RJ, **Giordano TJ**, Learoyd DL, Robinson BG, Clifton-Bligh RJ. PAX8-PPARg activation of PPARg target genes in follicular thyroid cancer. Submitted to Endocrine Society Annual Meeting.
74. Ryder M, Smith EP, Mesa C, **Giordano T**, Knauf JA, Fagin JA. Papillary thyroid cancers and the innate immune response: RET and BRAF induce expression of macrophage chemoattractants in vitro and in vivo. Submitted to the American Thyroid Association Annual Meeting.

David Gordon, M.D.
Professor of Pathology
Associate Dean for Diversity and Career Development,
University of Michigan Medical School

I. CLINICAL ACTIVITIES

A. AUTOPSY SERVICE ATTENDING

B. CARDIOVASCULAR PATHOLOGIST FOR THE DEPARTMENT

1. Cardiac biopsies
2. Cardiovascular consultant for surgical and autopsy pathology
3. Referral cases from outside our institution

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS

1. Cardiovascular Sequence lecturer (4 cardiovascular pathology lectures) for M2 medical students
2. Co-developer of the cardiovascular pathology teaching laboratories for the M2 medical student Cardiovascular Sequence (work with Andy Flint)
3. Instructor for M2 medical student Pathology teaching laboratories

B. LECTURES

1. Lecturer for the Pathology Department Graduate Student course on general pathology (one lecture and teaching laboratory session)
2. Lecturer for the Dental School Pathology Course (2 lectures)
3. Occasional lecturer on cardiovascular pathology for our pathology residents (1-2 times a year)
4. Congenital heart pathology conference organizer and presenter for the monthly Pediatric Cardiology/Pathology Conference.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Morphology Core Director (10%), “Molecular Genetics Coagulation Disorders”, NIH PO1 HL57346, Direct costs $99,717/year, 7/1/03 – 6-30-08.
2. Director of the Minority Health Research Program (5%), “General Clinical Research Center, NIH National Center for Research Resources M01-RR00042, $5.8 Million, 3/01/2006 – 2/28/2011.

B. PROJECTS UNDER STUDY

1. Morphology Core support for projects focusing on the interaction between coagulation factors and vascular pathobiology.
2. Ways to improve the participation of minority groups in clinical research.

IV. ADMINISTRATIVE ACTIVITIES

A. Pathology Department – None

B. Medical School Dean's Office

1. Associate Dean for Diversity and Career Development Overseeing several programs for diversity promotion, health disparities education, and increasing the number of health professionals from minority and disadvantaged backgrounds.
2. Assistance with Faculty Affairs.
3. Assistance with Student Programs.
4. Work with UMHS Human Resources on leadership development and diversity.

C. INSTITUTIONAL

1. Chair, University of Michigan Diversity Council
2. Member of the National Center for Institutional Diversity

V. OTHER RELEVANT ACTIVITIES – None

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Shen Y, Bodary PF, Vargas FB, Homeister JW, Gordon D, Ostenso KA, Shayman JA, and Eitzman DT. α-Galactosidase A deficiency leads to increased tissue fibrin deposition and thrombosis in mice homozygous for the Factor V Leiden mutation." Stroke 2006 37: 1106 – 1108.

Joel K. Greenson, M.D.
Professor of Pathology

I. CLINICAL ACTIVITIES

A. GASTROINTESTINAL AND HEPATIC PATHOLOGY – 16 weeks
B. GENERAL SURGICAL PATHOLOGY (Room 1) – 2 weeks.
C. GASTROINTESTINAL AND HEPATIC PATHOLOGY CONSULTATION SERVICES – 18 weeks.
D. SURGICAL PATHOLOGY CALL– 4 weeks
E. LIVER TRANSPLANT CALL – 16 weeks

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
   1. GI Pathology Sequence, In charge of sequence exam (ten contact hours).
   2. GI Pathology Sequence, 2 hours full class lecture, 2 hours of lab instruction

B. DENTAL STUDENTS
   1. Pathology 630-631 one full class lecture (one contact hour).

C. RESIDENTS AND FELLOWS
   1. Surgical pathology diagnosing room instruction for house officers – 16 weeks.
   2. One didactic lecture on gastrointestinal pathology - April, 2006.
   3. Gastrointestinal and hepatic pathology tutoring – 18 weeks.
   4. Two consultation conferences.

D. INTERDEPARTMENTAL
   1. Liver biopsy conference - one hour every 3 months.
   2. Multidisciplinary GI tumor board – 1.5 hour every third week.
   3. GI pathology teaching sessions with GI fellows/residents - one hour/month.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
   1. Co-Investigator (5%), “Molecular Epidemiology of Colorectal Cancer”, NIH R01CA81488-01, $4,547,772 April 2004 – March 2009.
   2. Co-Investigator (8%), “Hepatitis C Clinical Trial”, NIH N01-DK-9-2323 $1,433,559, July 2000 – June 2008.

B. PROJECTS UNDER STUDY
   1. Study of fatty liver and steatohepatitis with Hari Conjeevaram in Division of Gastroenterogy.
   2. NIH study of HCV with Anna Lok in Division of Gastroenterology.

3. NIH study of the Molecular Epidemiology of Colon Cancer in Israel (grant renewed for 5 more years).
4. Study of molecular classification of tumors with Stephen Gruber and Thomas Giordano.
5. Study of molecular genetic changes in pancreas and colon cancer in Egypt with Amr Soloman (New grant submitted).
6. Study of Yersinia and Crohn's disease with Laura Lamps at the University of Arkansas.
7. Study of UC dysplasia grading with GI Study Group.
8. Study of small bowel biopsies with Barbara McKenna and Chris Golembeski.
9. Study of Barrett's dysplasia with Weijian Zhu.
10. Study of Anal Carcinomas with Scott Owens.
11. Study of focally enhanced gastritis in children with Jonathon McHugh and Robert Ruiz.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Director, Surgical Pathology Fellowship Program (until 3/06).
2. Quality Assurance Officer for Surgical Pathology
3. Member, Residency Selection Committee
4. Member, Departmental Incentive Committee
5. Member AP research funding committee

B. INSTITUTIONAL

1. Member, University Hospital Tissue Committee
2. Member, Medical School Admissions Committee

C. REGIONAL/NATIONAL/INTERNATIONAL

1. Chairperson, Program Committee of Arthur Purdy Stout Society.
2. American Board of Pathology, Test Question Committee.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Reviewer, *Cancer.*
2. Reviewer, *Archives of Pathology and Laboratory Medicine*.
3. Reviewer, *Gastroenterology*.
4. Reviewer and Editorial Board member, *Human Pathology.*
5. Reviewer and Editorial Board member, *American Journal of Surgical Pathology.*
6. Reviewer, *American Journal of Pathology.*
7. Reviewer, *Modern Pathology*
8. Reviewer, *Cancer Research*
9. Reviewer, *American Journal of Gastroenterology*
10. Reviewer, *British Journal of Cancer*
11. Reviewer, *Journal of Clinical Oncology*
12. Reviewer, *Histopathology*
13. Reviewer and editorial board member, *American Journal of Clinical Pathology*

B. INVITED LECTURES/SEMINARS

1. **I**nvited Speaker, California Society of Pathology, Annual CME coursed, San Diego, CA Dec. 2005.

2. Moderator, Arthur Purdy Stout Society Companion Meeting, USCAP Meeting, Atlanta, Georgia, Feb. 2006.
3. Moderator, GI Specialty Conference. USCAP Meeting, Atlanta, Georgia, Feb. 2006.
4. Faculty Member, ASCP Workshop – Surgical Pathology of the Gastrointestinal Tract, Kiawah Island, SC. April 2006.
5. Invited Speaker, GI Pathology Course, Universita Autonoma de Barcelona Medical School, Barcelona, Spain, January, 2006.
6. Visiting Professor, University of Virginia Medical School, Department of Pathology, May 2006.
7. Invited Speaker, GI Pathology Course, Anatomic Pathology Society of Spain (Spanish IAP Meeting), Madrid, Spain, May 2006.

C. HONORS AND AWARDS

1. One of America's Top Doctors
2. One of America's Top Cancer Doctors

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Rozek LS, Lipkin SM, Fearon ER, Hanash S, Giordano TJ, Kuick R, Misek DE, Taylor JMG, **Greenson JK**, Rennert G, Gruber SB. *CDX2* polymorphisms, RNA expression, and risk of colorectal cancer. Cancer Res 65 5488-92, 2005.
2. Fryzek JP, Schenk M, Kinnard M, **Greenson JK**, Garabrant, DH. The association of body mass index and pancreatic cancer in residents of southeastern Michigan, 1996-1999. Am J of Epidemiology 162(3) 222-8, 2005.
3. Robert ME, Washington MK, Lee JR, Goldenring JR, Bronner MP, Goldblum JR, **Greenson JK**, Haber MM, Hart JA, Lamps LW, Lauwers GY, Lewin D, Lazenby AJ, Montgomery E, and Crawford JM. Rab11a immunohistochemistry does not distinguish between indefinite, low- or high-grade dysplasia in barrett esophagus. Am J Clin Pathol 124 519-527, 2005.
4. Fontana RJ, Shakil AO, **Greenson JK**, Boyd I, Lee WM. Acute liver failure due to amoxicillin and amoxicillin/clavulanate. Dig Dis Sci. 50(10) 1785-90, 2005.
5. Choi SW, Islam S, **Greenson JK**, Levine J, Hutchinson R, Yanik G, Teitelbaum D, Ferrara JLM, Cooke KR. The use of laparoscopic liver biopsies in pediatric patients with hepatic dysfunction following allogeneic hematopoietic stem cell transplantation. Bone Marrow Transplant. 36 891-6, 2005.
6. Hussain HK, Chenevert TL, Londy FJ, Gulani V, Swanson S, McKenna BJ, Appelman HD, Adusumilli S, **Greenson JK**, Conjeevaram H. Hepatic fat fraction MR Imaging for Quantitative Measurement and Display – Early Experience. Radiology 237 1048-1055, 2005.
7. Shulman HM, Kleiner D, Lee SJ, Morton T, Pavletic SZ, Farmer E, Moresi JM, **Greenson JK**, Janin A, Martin PJ, McDonald G, Flowers MED, Turner M, Atkinson J, Lefkowitch J, Washington MK, Prieto VG, Kim S, Argenyi A, Diwan AH, Rashid A, Hiatt K, Couriel D, Schultz K, Hymes S, Vogelsang GB. Histopathologic diagnosis of

chronic graft –versus- host disease. NIH consensus development project on criteria for clinical trials in chronic graft-versus-host disease II. Pathology working group report. Biol Blood Marrow Transplant. 12 31-47, 2006.

8. Zhang L, Chenwei L, Mahmood R, van Golen K, **Greenson JK**, Li G, D'Silva NJ, Li X, Burant CF, Logsdon CD, Simeone DM. Identification of a putative tumor suppressor gene Rap1GAP in pancreatic cancer. Cancer Research 66 898-906, 2006.
9. Rennert G, Almog R, Tomsho LP, Low M, Pinchev M, Chaiter Y, Bonner JD, Rennert HS, **Greenson JK**, Gruber SB. Colorectal polyps in carriers of the *APC* I1307K polymorphism. Accepted to Diseases of the colon and rectum.
10. Schneider EN, Havens JM, Goldblum JR, **Greenson JK**, Shaffer RA, Scott MA, Lamps LW. Molecular detection of Campylobacter infection in cases of focal active colitis. Accepted to American Journal of Surgical Pathology
11. Kang H, **Greenson JK**, Omo JT, Chao C, Peterman D, Anderson L, Foess-Wood L, Sherbondy M, Conjeevaram HS. Metabolic syndrome is associated with greater histologic severity, higher carbohydrate and lower fat diet in patients with NAFLD. Accepted to Am J of Gastroenterol.
12. Owens SR, **Greenson JK**. Immunhistochemical Staining for p63 is Useful in the Diagnosis of Anal Squamous Cell Carcinomas. Accepted to Am J Surg Pathol.

B. BOOKS AND CHAPTERS IN BOOKS

1. **Greenson JK.** Inflammatory/Descriptive Colitides, In Gastrointestinal and Liver Pathology. First Edition. Ed Iacobuzio-Donahue C, Montgomery E. Elsevier, Philadelphia, PA. 2005, p.327-344.
2. Dahl J, **Greenson JK**. The Colon, In Sternberg's Histology for Pathologists. Third edition. Ed Stacey Mills. Lippincott, Williams & Wilkins, Philadelphia, PA. In Press.
3. **Greenson JK**, Lauwers G, Wang H, Odze Rd. Atlas of Tumor Pathology Tumors of the Esophagus and Stomach (AFIP Fascicle) Series 4. Armed Forces Institute of Pathology, Washington D.C., In preparation.
4. Lewin KJ, Riddell R, Weinstein W. Gastrointestinal Pathology and its Clinical Implications. First edition. Igaku-Shoin, New York 1992. Preparing second edition with Henry Appelman and many other editors.

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Bronner, MP, Walker E, Burgart L, Goldblum JR, **Greenson JK**, Haber M, et al. Diagnostic Accuracy in Ulcerative Colitis Neoplasia. Poster presentation at USCAP 2006, Mod Pathol 19 103A, 2006.
2. McHugh JB, Ruiz RE, **Greenson JK**. Significance of Focally Enhanced Gastritis in the Pediatric Population. Platform presentation at USCAP 2006, Mod Pathol 19 113A, 2006.
3. Owens SR, **Greenson JK**. Immunhistochemical Staining for p63 is Useful in the Diagnosis of Anal Squamous Cell Carcinomas. Platform presentation at USCAP 2006, Mod Pathol 19 116A, 2006.

4. Zhu W, Appelman HD, **Greenson JK**, Ramsburgh SR, Orringer MB, Chang AC, McKenna BJ. Barretts/Cardiac High-Grade Dysplasia is not a strong marker for Concurrent Carcinoma, Unless Architectural Changes Suspicious for Adenocarcinoma are also present. Poster presentation at USCAP 2006, Mod Pathol 19 126A, 2006.

Renfeng Guo, M.D.
Research Assistant Professor of Pathology

I. CLINICAL ACTIVITIES – None

II. TEACHING ACTIVITIES

A. UNDERGRADUATE STUDENTS

1. Kevin Shi

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Co-Investigator; Inflammatory Cells and Lung Injury, NIH/NHLBI RO1-HL31963 $225,000/yr.; 02/01/05 – 01/13/10; $225,000 per year.

B. PENDING

1. Principal-Investigator, (50%), "The Role of C5a in SARS-CoV infection", NIH RO1 $225,000/year for 5 years.

IV. ADMINISTRATIVE ACTIVITIES – None

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS

1. Journal "Recent Patents Reviews on Anti-Infective Drug Discovery" by Bentham Publisher

B. INVITED LECTURES/SEMINARS

1. Invited Lecturer, "Role of C5a in acute lung inflammation", Beijing Institute of Radiation Medicine, Beijing, P.R. China, June 27th, 2005.
2. Invited Lecturer, "Role of C5a in acute lung inflammation", Beijing Institute of Epidemiology and Microbiology, Beijing, P.R. China, June 28th, 2005.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Guo RF (corresponding author), Sun Lei, Gao H, Reubin JS, Ward PA. Mechanism of priming of lung for CXC chemokine production during sepsis. Journal of Immunology, 2006; in press.
2. Lei Sun, Gao H, Sarma V, Guo RF (corresponding author), Ward PA. In vivo silencing of C5aR in mouse lung. Journal of Biomedicine and Biotechnology. 2006; volume: 1-6.

3. Guo RF (corresponding author) and Ward PA. C5a, a therapeutic target in sepsis. Recent Patents on Anti-Infective Drug Discovery, 2006, (1): 57-65.
4. Guo RF (corresponding author) and Ward PA. Role of C5a in inflammatory responses. Ann. Rev. Immunol. 2005; 23:821-52.
5. Neff TA, Guo RF (co-first author), Neff SB, Sarma JV, Speyer CL, Gao H, Bernacki KD, Huber-Lang M, McGuire S, Hoesel LM, Riedemann NC, Beck-Schimmer B, Zetoune FS, Ward PA. Relationship of acute lung inflammatory injury to Fas/FasL system. Am J Pathol. 2005; 166(3):685-94.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN NONREFEREED JOURNALS

1. Abstract: Guo RF, et al. “The role of C5a in neutrophil apoptosis during sepsis”. FASEB meeting, 2006, San Francisco April 1-5.

Jay L. Hess, M.D., Ph.D.
Carl V. Weller Professor
Chair of Pathology

I. CLINICAL ACTIVITIES

A. PERSONAL HEMATOPATHOLOGY CONSULTATION CASES – 12 months.

B. ADMINISTRATIVE OVERSIGHT OF ALL CLINICAL LABORATORIES – 12 months

II. TEACHING ACTIVITIES

A. GRADUATE STUDENTS

1. Sara Monroe (PIBS, Ph.D. candidate)
2. Brendan Crawford (CMB, M.D./Ph.D. candidate)
3. Aaron Udager (rotating, M.D./Ph.D. candidate)

B. POSTDOCTORAL FELLOWS

1. Kajal Sitwala, M.D., Ph.D.
2. Mohamad El-Osta, Ph.D.
3. James Mangan, M.D., Ph.D.

C. LECTURES

1. "Cancer Genetics", University of Michigan Medical School Mini-Med Lecture, May 3, 2006.

III. RESEARCH ACTIVITIES

A. SPONSORED RESEARCH

1. PI (20%) – "Mechanisms of *Hox* gene regulation by MLL", NIH R01 CA78815-07, $211,500 annual costs, 7/1/98 – 6/30/2008.
2. PI (10%) – "The SWI/SNF complex as a therapeutic target in acute leukemia", Leukemia and Lymphoma Society of America SCOR, Project #8, $108,500 annual direct costs, 7/1/2001 – 6/30/2006.
3. PI (20%) – "Transcriptional Deregulation by MLL Fusion Proteins", NIH R01 CA92251-01, 4/1/2002-02/30/2007.

B. PENDING

1. PI (20%) – Mechanisms of Hox Protein Mediated Transformation, NIH RO1 CA116570-01A1, 7/1/2006 – 6/30-2011. (scored in the 5th percentile) pending award notification.

C. PROJECTS UNDER STUDY

1. Mechanisms of transcriptional regulation and transformation by the mixed-lineage leukemia protein, MLL.
2. Mechanisms of stem cell expansion and transformation by Hoxa9 and Meis1.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Chair, Department of Pathology
2. Chair, Director of Anatomic Pathology Search Committee
3. Chair, Director of Clinical Informatics Search Committee
4. Director, Division of Sponsored Research, Department of Pathology
5. Acting Director, Division of Translational Research, Department of Pathology

B. INSTITUTIONAL
1. University of Michigan Comprehensive Cancer Center Executive Committee
2. VA Dean's Advisory Committee Member
3. Endowment for the Basic Sciences Initiative in Protein Chemistry, Committee Member
4. Senior Leadership Council Member
5. Dean's Advisory Committee Member
6. Medical Scientist Training Program Policy Committee
7. Biomedical Sciences Scholars Program Selection Committee
8. Faculty Group Practices Board – Voting Member
9. Medical School Executive Committee

C. REGIONAL/NATIONAL/INTERNATIONAL
1. NIH Cancer and Molecular Pathobiology Study Section, (ad hoc June 2006).
2. American Society of Hematology Abstract Review Committee
3. American Association for Cancer Research (AACR) Program Committee.
4. Association of Pathology Chairs Research Committee

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARD/REVIEWS
1. Editorial Board, *American Journal of Clinical Pathology*
2. Reviewer
   a. *Proceedings of the National Academy of Sciences, U.S.A.*
   b. *Blood*
   c. *Cancer Investigation*
   d. *Leukemia*
   e. *EMBO Journal*
   f. *Cancer Cell*
   g. *Genes, Chromosomes and Cancer*
   h. *Modern Pathology*
   i. *Human Pathology*
   j. *American Journal of Clinical Pathology*
   k. *Expermimental Hematology*
   l. *DNA and Cell Biology*
   m. *Oncogene*
   n. *Gene*
   o. *Molecular and Cellular Biology*
   p. *Nature Cell Biology.*

B. INVITED LECTURES/SEMINARS

1. "Mechanisms of Transformation by MLL: Insights from Fruit Flies, Mice, and Microarrays", University of Michigan Medical School, Department of Pathology Research Seminar, September 8, 2005.
2. Mechanisms of Transformation by MLL: Insights from Fruit Flies, Mice, and Microarrays", University of Michigan Medical School, Pediatric Hematology/Oncology Conference, September 14, 2005.
3. "Transcriptional Regulation of the Histone Methyltransferase MLL", 4th Annual Pathology Research Symposium, University of Michigan Medical School, November 4, 2005.
4. Mechanisms of Transformation by MLL: Insights from Fruit Flies, Mice, and Microarrays", University of Michigan Medical School, Division of Endocrinology Research Seminar, January 5, 2006..
5. Mechanisms of Transformation by MLL: Insights from Fruit Flies, Mice, and Microarrays", University of Michigan Medical School, Cancer Center Stem Cell Seminar Series, January 12, 2006.
6. "Cancer Genetics", University of Michigan Medical School, Mini-Med Lecture, May 3, 2006.
7. "Transformation by MLL", Third Annual ICH/GOSH Paediatric Haematology-Oncology Symposium: Molecular Basis for Childhood Leukemia, London, England, March 23, 2006.
8. "Building Research Infrastructure", Association of Pathology Chairs Annual Meeting, Colorado Springs, CO, July 14, 2006.

C. OTHER

1. Harvard School of Public Health Program for Clinical Chiefs, Boston, MA, January 18-28, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Milne, T.A., Hughes, C.M., Lloyd, R., Yang, Z., Rozenblatt-Rosen O., Dou, Y., Schnepp, R., Krankel, C., Livolsi, V.A., Gibbs, D., Hua, X., Roeder, R.G., Meyerson, M., Hess, J.L.: Menin and MLL cooperatively regulate cyclin-dependent kinase inhibitor expression. Proc Natl Acad Sci U.S.A. 102:749-754, 2005.
2. 44. Wang, J., Iwasaki, H., Krivtsov, A., Febbo, P.G., Thorner, A.R., Ernst, P., Anastasiadou, E., Kutok, J.L., Kogan, S.C., Zinkel, S.S., Fisher, J.K., Hess, J.L., Golub, T.R., Armstrong, S.A., Akashi, K., Korsmeyer, S.J.: Conditional MLL-CBP targets GMP and models therapy-related myeloproliferative disease. EMBO J. 24:368-81, 2005.
3. Zeisig, D.T., Bittner, C.B., Zeisig, B.B., García-Cuéllar, M. -P., Hess, J.L., Slany, R.K.: The eleven-nineteen leukemia protein ENL connects nuclear MLL fusion partners with chromatin. Oncogene 24(35):5525-32, 2005.
4. Dou, Y., Milne, T.A., Tackette, A.J., Smith, E.R., Fukuda, A., Wysocka, J., Allis, C.D., Chait, B.T., Hess, J.L. Roeder, R.G.: Physical Association and Coordinate Function of the H3 K4

Methyltransferase MLL1 and the H4 K16 Acetyltransferase MOF. Cell 121:873-885, 2005.

5. Milne, T.A., Dou, Y., Martin, M.E., Brock, H.W., Roeder, R.G., Hess, J.L.: MLL associates specifically with a subset of transcriptionally active target genes. Proc Natl Acad Sci U.S.A. 102(41):14765-14770, 2005 (featured on cover and subject of a review).
6. Tarakonova, V.L., Suarez, F., Jacoby, M.A., Tibbetts, S.A., Weck, K.E., Hess, J.L., Speck, S.H., Virgin IV, H.W.: Association of Murine γHerpesvirus 68 with Lymphoproliferative Disorders in β2 microglobulin deficient mice. J Virology 79:14668-14679, 2005.
7. Milne, T.A., Martin, M.E., Allman, D., Brock, H.W., Slany, R.K., Hess, J.L.: Leukemogenic MLL Fusion Proteins Bind across a Broad Region of the *Hox a9* Locus, Promoting Transcription and Multiple Histone Modifications. Cancer Research 65:11367-11374, 2005.
8. Chen, Y., Yan, J., Keeshan, K., Tubbs, A.T., Wang, H., Silva, A., Brown, E.J., Hess, J.L., Pear, W.S., Hua, X.: The tumor suppressor menin regulates hematopoiesis and myeloid transformation by influencing *Hox* gene expression. Proc Natl Acad Sci U.S.A. 103(4):1018-1023, 2006.
9. Hess, J.L., Bittner, C.B., Zeisig, D.T., Bach, C., Fuchs, U., Borkhardt, A., Frampton, J., Slany, R.K.: c-Myb is an essential downstream target for homeobox mediated transformation of hematopoietic cells. Blood 108(1): 297-304, 2006.

B. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN NON-PEER REVIEWED JOURNALS

1. Hess, J.L.: MLL: Deep Insight. Atlas Genet Cytogenet Oncol Haematol, Jan 2006. URL: www.infobiogen.fr/services/chromcancer/Genes/Deep/MLLdeepID20005.html. electronic media.

C. BOOKS AND CHAPTERS IN BOOKS

1. Zutter, M.M., Hess, J.L.: The hematopoietic system: Bone marrow. In Dehner, L.P., ed.: Pediatric Surgical Pathology, Third Edition. Baltimore, Williams and Wilkins (in press).
2. Choi, J.K., Hess, J.L. Blood and Marrow Morphology. In Young, N.S., Gerson, S.L., High, K.A. Eds. Clinical Hematology. Philadelphia, Elsevier 2006, pp. 1290-1309.

D. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS

1. Hess, J.L.: Stanley J. Korsmeyer 1950 – 2005. Nat Cell Biol 7(6): 556, 2005.
2. Hess, J.L., Yang, Z., Wang, H., Chen, Y., Milne, T.A., Martin, M.E., Slany, R.K., Hua, X. Interaction of MLL amino terminal sequences with menin is required for transformation. Blood 106 (Suppl. 1): 196A, 2005. (presented at American Society of Hematology, Atlanta, GA 2005).
3. Slany, R.K., Bittner, C.B., Zeisig, D.T., Bach, C., Hess, J.L. c-Myb is an essential downstream target for homeobox mediated transformation of hematopoietic cells. Blood 106 (Suppl. 1): 196A-197A, 2005. (presented at American Society of Hematology, Atlanta, GA 2005).

4. Sitwala, K.V., Hess, J.L. Structured basis of multimer-mediated mayhem. Cancer Cell 9:241-242, 2006.

Cory M. Hogaboam, Ph.D.
Associate Professor of Pathology

I. CLINICAL ACTIVITIES - None.

II. TEACHING ACTIVITIES

A. UNDERGRADUATE STUDENTS
1. Daniel Fong

B. GRADUATE STUDENTS
1. Dissertation Committees, University of Michigan
    a. Betsy Pierce (Graduate Immunology Program)
    b. Tobias Rodriguez (Graduate Immunology Program)
    c. Haitao Wen (Pathology Department)
    d. Esther Choi (Graduate Immunology Program)
    e. Andrew Shreiner (Graduate Immunology Program)
    f. Matt Schaller (Graduate Immunology Program) Ph.D. defense – March 20, 2006.
    g. Shikha Auora (Graduate Immunology Program) Ph.D. defense – November 18, 2005.
2. External PhD Examiner
    a. Tim Olynych. Dalhousie University, Halifax NS, Canada.
3. PIBS Graduate Student Laboratory Rotations, University of Michigan
    a. Seth Thacker.
    b. Preliminary Examiner for Ph.D. Programs: Pathology and other Graduate Programs, University of Michigan
        a. Graham Brady (Pathology Department)
        b. John Oliva (Microbiology & Immunology Department)

C. POSTDOCTORAL FELLOWS
1. Traci Ness, Ph.D.
2. Karen Buckland, Ph.D.
3. Alessia Meneghin, M.D.
4. Ana Coelho, Ph.D.
5. Amrita Joshi, Ph.D.
6. Tracy Raymond, Ph.D.
7. Glenda Trujillo, Ph.D.

D. FORMAL TEACHING
1. Pathology 581: Toll-like receptors in Innate Immunity. U of Michigan
2. Course Organizer: Pathobiology of Inflammation. Fiocruz Institute, Rio de Janeiro, Brazil. GLOBAL outreach supported. December 03-12, 2005.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Principal Investigator (20%), *Specialized Centers of Research - Pathobiology of Fibrotic Lung Disease.* Project 1: Chemokines and chemokine receptors in IPF. P50 HL56402-08, $186,210 per annum for Project 1, 12/01/01-11/30/06.
2. Co-investigator (5%), *Monocyte/Macrophage Signals in Lung Granuloma.* R01 HL35276, $162,578 per annum, 07/01/01 - 06/30/06.
3. Co-investigator (5%), *SCF in Liver Repair after Hepatectomy or Toxic Injury*. R01 DK58106, $225,000 per annum, 07/01/02-11/30/07.
4. Co-investigator (5%), *The role of CC chemokines in eosinophil airway inflammation.* R01 AI3602-06, $200,000 per annum, 07/01/02-06/30/07.
5. Principal Investigator (25%), *Therapeutic Targeting of RANTES/CCL5 during Chronic Fungal Asthma,* R01 HL69865, $175,000 per annum, 08/15/03 - 07/31/07.
6. Co-investigator (5%), *Specialized Center for Clinically Orientated Research (SCCOR) Project 1: Dynamic effects of chemokines on systemic inflammation.* P50 HL-074024-01, $200,000 per annum. 10/01/03 - 09/30/08.
7. Principal Investigator (25%), *IL-13 fusion cytotoxin as a targeted therapeutic for IIP.* R01 HL073728-01, $225,000 per annum, 10/01/03 - 09/30/07.
8. Co-investigator (5%), *Lung Tissue Research Consortium: Clinical Centers*. RFP-HR-04-08, Total amount of Contract: $3,060,407.00. 01/30/04-01/29/09.
9. Co-investigator (5%), *Program Project - Inflammatory Cells and Lung Injury.* P01HL31963-25, $225,000 per annum. 12/01/04-11/30/09.
10. Principal Investigator, *Targeting IL-4 and IL-13 responsive cells in pulmonary silicosis.*Global REACH and the University of Michigan. $10,000 per annum. 07/01/05-06/30/06.
11. Principal Investigator, *Biomarkers in Idiopathic Interstitial Pneumonia.* Centocor Research and Development, Inc. $120,238.00 per annum. 01/01/06-12/31/06.
12. Principal Investigator, *Identification and validation of novel therapeutic targets and biomarkers for idiopathic pulmonary fibrosis.* Novartis Institute for Biomedical Research. $515,898.00 per annum. 02/01/06-01/31/09.
13. Principal Investigator, *Target validation of novel anti-fibrotic strategies in a novel model SCID model of human IIP.* Centocor Research and Development, Inc. $115,545.00 per annum. 06/01/06-15/31/07.
14. Principal Investigator, *Target validation in a chronic fungal asthma model characterized by persistent airway hyperreactivity, inflammation and remodeling, .*Centocor Research and Development, Inc. $155,000.00 per annum. 06/01/06-05/31/08.

B. PROJECTS UNDER STUDY

1. Role of chemokines in airway remodeling due to allergic airway disease and asthma.

2. Role of chemokine receptors in airway remodeling due to allergic airway and asthma.
3. Role of chemokines and chemokine receptors in human interstitial fibrotic disease.
4. Novel approaches to targeting IL-4 and IL-13 in chronic allergic airway disease.
5. Role of IL-4 and IL-13 in chronic interstitial fibrotic disease.
6. Novel approaches to targeting IL-4 and IL-13 in human interstitial fibrotic disease.
7. Regulation of fibroblast activities during idiopathic interstitial pneumonias.
8. Role of chemokines and SCF in liver regeneration.
9. Role of CC chemokines in acute and chronic pulmonary inflammation.
10. Role of IL-4 and IL-13 in pulmonary silicosis.
11. Role of bone marrow-derived macrophages in chronic allergic airway and asthma.
12. Identification of novel pattern recognition receptors involved in pulmonary antifungal responses.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Member, Graduate Program in Immunology
2. Member, Graduate Student Affairs Committee (GSAC), Graduate Program in Immunology, University of Michigan Medical School.
3. Member, Preliminary Examination Committee (Department of Pathology)
4. Member, Committee on Student Biomedical Research (CSBR), University of Michigan Medical School.

B. INSTITUTIONAL
1. Grant Peer Reviewer: University of Michigan, Office of the Vice President for Research.

C. REGIONAL/NATIONAL/INTERNATIONAL
1. Grant peer-review
    a. National Institutes of Health, National Heart, Lung and Blood Institute.
    b. Department of Veterans Affairs, Merit Review.
    c. Canadian Institutes for Health Research.
    d. The Wellcome Trust.
    e. British Lung Foundation
    f. Wayne State School of Medicine
    g. Center for Scientific Review, ZRG1 IMB (01)
    h. Fellowship (F32) and R15 Review.
2. Course Organizer – Pathobiology of Inflammation. Oswaldo Cruz Institute, Rio de Janeiro, Brazil.
3. American Thoracic Society, San Diego, CA. Chair of Mini-Symposium: '*Novel molecular mechanisms in pulmonary fibrosis.*'
4. American Association of Immunologists, Boston, MA. Chair of Symposium: '*Chemokines and chemokine receptors in host immunity*'.

5. Federation of the American Society for Experimental Biology, San Francisco, CA.
6. Chair of ASIP Minisymposium session: '*Regulating Inflammation: chemokines,cytokines and other mediators*.'

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Journal peer-review
    a. *Journal of Immunology (Section Editor - July 1, 2004 – July 1, 2008)*
    b. *American Journal of Physiology*
    c. *American Journal of Pathology*
    d. *Journal of Clinical Investigation*
    e. *Journal of Leukocyte Biology*
    f. *Journal of Clinical Immunology*
    g. *American Journal of Respiratory Cell and Molecular Biology Infection and Immunity*
    h. *Blood*
    i. *Journal of Experimental Medicine*
    j. *Nature*
    k. *Trends in Microbiology*
    l. *Clinical Cancer Research*
    m. *Arthritis and Rheumatism*
    n. *Nature Medicine*
    o. *Critical Care Medicine*
    p. *Respiratory Research*
    q. *Clinical and Diagnostic Laboratory Immunology*
    r. *International Archives of Allergy and Immunology*
2. Editorial Boards
    a. Member*American Journal of Respiratory and Critical Care Medicine*
    b. Editorial Board Member, Current Immunology Review (2004-present).
    c. Editorial Board Member, BMC Immunology (2004-present).

B. PATENTS

1. Materials and methods for treating chronic fibrotic disease. Disclosed Sept 21, 2005. Filed December 23, 2005. Patent rights licensed to Novartis Biomedical Research Institute, April 17, 2006.

C. INVITED LECTURES/SEMINARS

1. *Chemokine receptor antagonists in airway remodeling.'* ATS symposium: Intracellular or extracellular strategies for controlling asthma/COPD remodeling: which is best? San Diego, CA.
2. *'Chemokines and chemokine receptors in Idiopathic Interstitial Pneumonia.'* Department of Pathology, University of Michigan Medical School.
3. *'Chemokines and chemokine receptors in Idiopathic Interstitial Pneumonia.'* UCLA, Los Angeles, CA.
4. *'Chemokines and chemokine receptors in Idiopathic Interstitial Pneumonia.'* University of Pittsburgh Medical Center, Pittsburgh, PA.

5. *'Chemokines in Bacterial Sepsis.'* Wayne State University. Detroit, MI.
6. *'Inflammatory versus homeostatic chemokines in idiopathic interstitial pneumonias.'* NIBR, Novartis Pharmaceuticals, Horsham, UK.
7. *'Innate immune mechanisms regulate the airway remodeling response during chronic fungal asthma.'* IRA/PRG Joint Symposium, Cambridge, MA.
8. *'Idiopathic Interstitial Pneumonia: biomarkers, etiopathogenesis, and host defense.'* Centocor. Philadelphia, PA.
9. *'Following the link between the innate and acquired immunity: novel role for CC chemokine receptor 4 (CCR4).* Dalhousie University, Halifax, NS.

D. MEMBERSHIP AND OFFICES IN PROFESSIONAL SOCIETIES

1. Membership in Professional Associations
2. American Association of Immunologists (AAI)
3. American Society for Investigative Pathology (ASIP)
4. American Thoracic Society (ATS)

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICAITON IN REFERRED JOURNALS

1. **Hogaboam C.M.**, Carpenter K.J., Schuh J.M., Proudfoot A.E.I., Bridger G., Buckland K.F. *The therapeutic potential in targeting CCR5 and CXCR4 receptors in infectious and allergic pulmonary disease.* **Pharmacol. Ther**, July 8 Epub ahead of print, 2005.
2. Zhou F., Ajuebor M.N., Beck P., Le T., **Hogaboam C.M.**, Swain M.G. *CD154 expressing CD4+ T cells drive murine T cell mediated hepatitis via a novel cytokine-apoptotic cascade.* **Hepatology**, Jul 15;42(2):372-380, 2005.
3. Lukacs N.W., **Hogaboam C.M.**, Kunkel S.L. *Chemokines and their receptors in chronic pulmonary disease.* **Curr Drug Targets Inflamm Allergy** 4(3): 313- 317, 2005.
4. Hogaboam C.M., Carpenter K.J., Schuh J.M., Buckland K.F. *Aspergillus and asthma – any link?* **Med. Mycol.** 43 Suppl 1: S197-202, 2005.
5. **Hogaboam C.M.**, Carpenter K.J., Evanoff H., Kunkel S.L. *Approaches to evaluation of fibrogenic pathways in surgical lung biopsy specimens.* **Methods Mol. Med.** 117: 209-222, 2005.
6. White E.S., Atrasz R.G., Hu B., Phan S.H., Stambolic V., Mak T.W., **Hogaboam C.M.**, Flaherty K.R., Martinez F.J., Kontos C.D., Toews G.B. *Negative regulation of myofibroblast differentiation by phosphatase and tensin homologue deleted on chromosome 10.* **Am. J. Respir. Crit. Care Med.**, 173(1): 112-121, 2006. Sept 22 Epub ahead of print, 2005.
7. Carpenter K.J., **Hogaboam C.M.** Immunosuppressive effects of CCL17 on pulmonary anti-fungal responses during invasive pulmonary Aspergillosis. **Infect. Immun.**, 73(11): 7198-7207, 2005.
8. Carpenter K.J., Buckland K.F., Xing Z., **Hogaboam C.M.** Intrapulmonary, adenovirus-mediated overexpression of

KARAP/DAP-12 enhances fungal clearance during invasive Aspergillosis. **Infect. Immun.**, 73(12): 8402-6, 2005.

9. Matsukawa A., Maeda T., Sano G., Lukacs N.W., **Hogaboam C.M.**, Kunkel S.L., Lira S.A. *Absence of CC chemokine receptor 8 enhances innate immunity during septic peritonitis.* **FASEB J.**, 20: 302-304, 2006. Epub Dec. 29, 2005.
10. Choi E.S., Pierce E.M., Jakubzick C., Carpenter K.J., Kunkel S.L., Evanoff H., Martinez F.J., Flaherty K.R., Moore B.B., Toews G.B., Colby T.V., Kazerooni E.A., Gross B.H., Travis W.D., **Hogaboam C.M.** *Focal interstitial CC chemokine receptor-7 (CCR7) expression in idiopathic interstitial pneumonia.* **J. Clin. Pathol.**, 59: 28-39, 2006.
11. Sugiura H., Liu X., Kobayashi T., Togo S., Ertl R.F., Kawasaki S., Kamio K., Wang X.Q., Mao L., Shen L., **Hogaboam C.M.**, Rennard S.I. *Reactive nitrogen species augment fibroblast-mediated collagen gel contraction, mediator production, and chemokines.* **Am. J. Resp. Cell Mol. Biol.**, Epub Jan. 6, 2006.
12. Katano H., **Hogaboam C.M.** *Herpes virus-associated pulmonary hypertension?* **Am. J. Respir. Crit. Care Med.**, 172(12): 1485-1486, 2005.
13. Denning D.W., O'Driscoll B.R., **Hogaboam C.M.**, Bowyer P., Niven R.M. *The link between fungi and asthma: a summary of the evidence.* **Eur. Respir. J.**, 27(3): 615-626, 2006.
14. Berlin A.A., **Hogaboam C.M**., Lukacs N.W. Inhibition of SCF attenuates peribronchial remodeling in chronic cockroach allergen-induced asthma. **Lab. Invest.**, Epub April 10, 2006.
15. Wen H., **Hogaboam C.M.**, Gauldie J., Kunkel S.L. Severe sepsis exacerbates the pulmonary granulomatous response due to an altered cytokine synthetic profile in dendritic cells. **Am. J. Pathol.**, 168: 1940-1950, 2006.
16. Ness T.L., Kunkel S.L., **Hogaboam C.M.** *Chemokines: central mediators of the innate immune response to sepsis.* **Current Immunology Reviews**, 1(3): 237-260, 2006.
17. Lama V.N., Harada H., Badri L., Flint A., **Hogaboam C.M.**, McKenzie A., Martinez F.J., Toews G.B., Moore B.B., Pinsky D.J. *Obligatory role for IL-13 in obstructive lesion development in airway allografts.* **Am. J. Pathol.** in press, 2006.
18. Henke P.K., Pearce C.G., Moaveni D.M., Moore A.J., Lynch E.M., Longo C., Varma M., Dewyer N.A., Deatrick B., Upchurch G.R., Wakefield T.W., **Hogaboam C.**, Kunkel S.L. *Targeted deletion of CCR2 impairs DVT resolution in a mouse model.* **J. Immunol.**, in press, 2006.

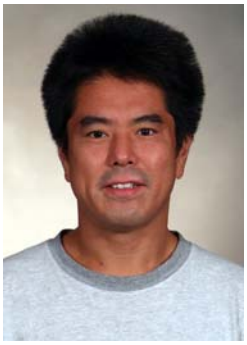
B. BOOKS AND CHAPTERS IN BOOKS

1. Buckland K.F., Hogaboam C.M. *Cytokine and chemokine responses in fungal allergy.* In: **Research Signpost: Mold Allergy, Biology and Pathogenesis.** Ed: V. Kurup. In press, 2005.
2. Ness T.L., Hogaboam C.M., Kunkel S.L.*Chemokines, CC: TARC (CCL17).* In: **Encyclopedia of Respiratory Medicine**. Ed: Geoffrey J. Laurent and Steven D. Shapiro. Elsevier Ltd., pp 380-384, 2006.

3. Buckland, K.F., Hogaboam C.M.,*Chemokines, CC: TECK (CCL25).* In: **Encyclopedia of Respiratory Medicine**. Ed: Geoffrey J. Laurent and Steven D. Shapiro. Elsevier Ltd., pp 385-389, 2006.

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFFEREED JOURNALS

1. Lama V.N., Harada H., Badri L., Flint A., Hogaboam C.M., McKenzie A., Martinez F.J., Toews G.B., Pinsky D.J. **Proc Am Thorac Soc** *Role of Interleukin-13 in Development of Bronchiolitis Obliterans.* 3: A380, 2006.
2. Meneghin A., Choi E.S,. O'Connor E.C., Evanoff H.L., Martinez F.J., Flaherty K.R., Toews G.B., Hogaboam C.M. *TLR9 activation promotes chemokines and collagen production in human pulmonary fibroblasts pretreated with Th2 cytokines.* **Proc Am Thorac Soc** 3: A801, 2006.
3. Choi E.S., Meneghin A., Jakubzick C., Kunkel S.L., Evanoff H., Martinez F.J., Flaherty K.R., Toews G.B., Colby T.V., Kazerooni E.A, Gross B.H., Travis W.D. Puri R.K., Hogaboam C.M. *Idiopathic interstitial pneumonia transbronchial biopsy (TBB)-derived fibroblasts exhibit similar proliferative and synthetic properties compared with surgical lung biopsy (SLB)-derived fibroblasts.* **Proc Am Thor Soc** 3:A104, 2006.
4. Pierce B., Carpenter K.J., Jakubzick C., Kunkel S.L., Flaherty K.R., Martinez F.J., Toews G.B., Hogaboam C.M. *CCL21 induces phosphorylation of ERK in Usual Interstitial Pneumonia fibroblasts.* **J. Immunol.** 176, A44.7, 2006.
5. Grunig G., Daley E., Robinson K., Kurup V., Taraseviciene-Stewart L., Hogaboam C.M., Voelkel N. *IL-13 – an inducer of pulmonary vascular remodeling*. **J. Immunol.** 176, A44.9, 2006.
6. Ajuebor M.N., Hogaboam C.M., Le T., Swain M.G. *CCR5 deficiency unmasks a potent effector role for NK cells in T cell mediated hepatitis.* **J. Immunol.**, 176: A43.9, 2006.



Naohiro Inohara, M.D.
Research Assistant Professor of Pathology

I. CLINICAL ACTIVITIES – None

II. TEACHING ACTIVITIES

A. POSTDOCTORAL FELLOWS
1. Mizuho Hasegawa
2. Kangkang Yang

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
1. PI, "Nod1: An Apaf-like Activator of Apoptosis and NF-κB", National Institute of Health R01 GM60421-01A2; 07/01/2001 to 06/30/2006.
2. "The Functional Role of Nod Proteins in Innate and Acquired Immune Responses", Yamanouchi USA Foundation, 11/01/2004 to 5/31/2006.

B. PROJECTS UNDER STUDY
1. Analysis of the role of Nod proteins in the host/bacteria interaction.
2. Analysis of the role of Nod proteins in allergic disease development.

IV. ADMINISTRATIVE ACTIVITIES – None

V. OTHER RELEVANT ACTIVITIES

A. INVITED LECTURES AND SEMINARS
1. The 2005 Annual Meeting of American Academy of Allergy, Asthma and Immunology 22 March 2005.
2. The 75th Congress of Japanese Society of Bacteriology (Tokyo, JPN) 4 April, 2005.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNAL
1. Synthesis of peptidoglycan fragments and evaluation of their biological activity. Inamura S, Fujimoto Y, Kawasaki A, Shiokawa Z, Woelk E, Heine H, Lindner B, Inohara N, Kusumoto S, Fukase K. Org Biomol Chem. 4:232-42. Dec 6 (2006).
2. Peptidoglycan signaling in innate immunity and inflammatory disease. McDonald C, Inohara N, Nunez G. J Biol Chem. 280:20177-80. Epub (2005).

3. NOD1 variation, immunoglobulin E and asthma. Hysi P, Kabesch M, Moffatt MF, Schedel M, Carr D, Zhang Y, Boardman B, von Mutius E, Weiland SK, Leupold W, Fritzsch C, Klopp N, Musk AW, James A, Nunez G, Inohara N, Cookson WO. Hum Mol Genet. 14:935-41. Epub Feb (2005).
4. ASC-mediated NF-kappaB activation leading to interleukin-8 production requires caspase-8 and is inhibited by CLARP. Hasegawa M, Imamura R, Kinoshita T, Matsumoto N, Masumoto J, Inohara N, Suda T. J Biol Chem. 280:15122-30. Epub (2005).
5. Nod2-dependent regulation of innate and adaptive immunity in the intestinal tract. Kobayashi KS, Chamaillard M, Ogura Y, Henegariu O, Inohara N, Nunez G, Flavell RA. Science. 307:731-4 (2005).

Kent J. Johnson, M.D.
Professor of Pathology

I. CLINICAL ACTIVITIES

A. RENAL PATHOLOGY.
B. DIRECTOR, MORPHOLOGY CORE.
C. AUTOPSY COVERAGE.

II. TEACHING ACTIVITIES

A. LECTURES
1. Lecturer Genitourinary Pathology - Second Year Pathology Course.
2. Lectures on Renal Pathology - Nephrology Fellows.
3. Lectures on Renal and Skin Immunopathology - Pathology Residents.
4. Lectures on Genitourinary Pathology - Dental Pathology Course.
5. Lecturer Genitourinary Pathology – Second Year Pathology Course, Michigan State University Medical School

B. LABORATORY INSTRUCTION
1. Laboratory Instructor - Second year Pathology Course.
2. Laboratory Instructor-First year Pathology Course.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
1. Principal Investigator, "Inflammatory Cells and Lung Injury", Core C, National Institutes of Health, $299,985 annual. 02/1/05-01/31/10.
2. Co-Principal Investigator, “Mechanisms of MMP-Involvement in Acute Inflammatory Lung Injury” with Jim Varani. RO1, NIH. $775,000, $225,000 annual. 6/01/03-12/31/06.
3. Principal Investigator “Studies on Biomarkers of Animal and Human Vasculitis” Pfizer, Inc. $160,149.00 annual. 7/01/03-12/31/06.
4. Principal Investigator “Development of Human and Mouse Microarrays”. Pfizer, Inc. $534,040.00 1/15/06-1/15/08.
5. Principal Investigator “Application of Protein Expression Technologies to Identify Biomarkers of Disease”. Pfizer, Inc. $592,500.00. 1/15/06/1/15/08.
6. Principal Investigator “Biological Samples from Patients with Cancer or Inflammatory Diseases”. DNAX, Inc. $133,267.00. 1/25/06-12/31/06.

B. PENDING
1. Co- Investigator, “Mechanisms of MMP Involvement in Acute Lung Injury” NIH.

C. PROJECTS UNDER STUDY
1. Proteomic studies in biofluids of patients with inflammatory diseases.
2. Oxidant and protease interaction in inflammation.
3. Pathogenesis of vasculitis.
4. Pathogenesis of viral pneumonitis.
5. Pathogenesis of pancreatitis and pancreatitis induced ARDS.
6. Adhesion molecules and cytokines in inflammation.
7. Cyclosporin-induced nephrotoxicity.
8. Role of heme oxygenase in renal injury.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Director, Immunopathology Fellowship Program.
2. Director, Morphology Core.
3. Renal Pathology Conference - Biweekly.
4. Space Utilization Committee.
5. Stobbe Funds Committee.

B. REGIONAL/NATIONAL/INTERNATIONAL
1. Associate Editor - Laboratory Investigation. Consultant/Grant reviewer for the Veteran's Administration.
2. NIH NHLBI Study Section.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS
1. Reviewer for the following journals
   a. *American Journal of Pathology.*
   b. *American Review of Respiratory Diseases.*
   c. *American Journal of Respiratory Cell and Molecular Biology*

B. INVITED LECTURES/SEMINARS
1. Invited Speaker-Department of Pathology Seminal Series
2. Invited Speaker Pfizer Research and Development
3. Invited Speaker-Metamolomic Conference, University of Alberta

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
1. McCune, W.J., Saluja, M., Johnson, K.J., Bhat, S., Lange, L.A., and Holzman, L.: Correlation of membranous glomerular ultrastructural changes with disease severity and outcome in lupus patients initiating cyclophosphamide therapy. Lupus. 2005 14:426-433.
2. Olle, E.W., Sreekumar, A., Warner, R.L., McClintock, S.D., Chinnaiyan, A.M., Bleavins, M.R., Anderson, T.D., Johnson, K.J.: Development of an internally controlled antibody microarray. Mol. Cell Proteomics. 2005:4:1664-72.
3. Olle, E.W., Messamore, J., Depgracias, M.P., Anderson, T.D., Johnson, K.J.: Comparison of antibody array substrates and the effect of glycerol on spot morphology. Exp. Mol. Pathol. 2005. 79:206-9.
4. Thompson, J.F., Man, M., Johnson, K.J., Wood, L.S., Lira, M.E., Lloyd, D.B., Banerjee, P., Milos, P.M., Myrand, S.P., Paulauskis, J., Milad, M. A., Sasiela, W.J.: An association study of 43 SNP's in 16

candidate genes with atorvastatin response. Pharmacogenomics J. 2005. 5:353-8.

5. Thompson, J.F., Man, M., Johnson, K.J., Wood, L.S., Lira, M.E., Lloyd, D.B., Banerjee, P., Milos, P., Myrand, M., Paulauskis, J., Milad, M.A., Sasiela, W.J.: An association study of 43 SNPs in 16 candidate genes with atorvastin response. Pharmacogenomics Journal. 2005. 5(6):352-8.
6. Fligiel, S.E., Standiford, T., Fligiel, H.M., Tashkin, D., Strieter, R.M., Warner, R.L., Johnson, K.J., Varani, J.:Matrix metalloproteinases and matrix metalloproteinase inhibitors in acute lung injury. Human Pathology 2006. 37(4):1664-72.
7. Olle, E.W., Ren, X., McClintock, S., Warner, R.L., Deogracias, M.P., Johnson, K.J., Colletti, L.: Matrix metalloproteinase-9 (MMP-9) is a critical factor in hepatic regeneration following partial hepatectomy. Hepatology, In Press.
8. Ayashi, L., Johnson, K.J., Ratanatharathorn, V., Silver, S., Reddy, P.: Nephrotic syndrome associated with chronic graft-versus-host disease after allogeneic stem cell transplantation. Bone Marrow Transplantation. In Press.
9. McClintock, S.D., Barron, A.D., Olle, E.W., Deogracias, M.P., Opp, M., Johnson, K.J.: Role of interleukin-6 in immune complex induced models of vascular injury. inflammation. In Press.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Bagnoli, P., Tredici, S., Bull, J.L., Brant, D.O., Johnson, K., Costantino, M.L., Hirschl, R.B.: Effect of repeated induced airway collapse during total liquid ventilation. 2005 Moses Gunn Research Conference.
2. LaFayette, N., Bagnoli, P., Tredici, S., Seetharamaiah, R., Bull, J.L., Brant, D.O., Johnson, K., Costantino, M.L., Hirschl, R.B.: Effects of repeated induced collapse on rabbit airways during total liquid ventilation. 2005 ASAÏO Conference (American Society for Artificial Internal Organs).
3. Barron, A.G., Warner, R.L., Johnson, K.J., Varani, J.:Development of an enzyme-linked immunosorbent assay for human tropoelastin. Experimental biology. 2006. Abstract #3672. 691.5.
4. McClintock, S.D., Barron, A,G., Deogracias, M.P., Olle, E.W., Warner, R.L., Paulauskis, J., Johnson, K.J.: Involvement of IL-6 in a glucan model of vascular injury. Experimental Biology. 2006. Abstract #3636. 417.25.
5. Deogracias, M.P., Olle, E.W., Ren, X., McClintock, S., Warner, R.L., Colletti, L., Johnson, K.J.: Matrix metalloproteinase-9 influences markers of angiogenesis following partial hepatectomy. Experimental biology 2006. Abstract#416.10.
6. Warner, R.L., Kamalaker, C., McClintock, S.D., Barron, A.G., Johnson, K.J., Varani, J.:Role of matrix metalloproteinase-3 (MMP-3) in remodeling following bleomycin-induced injury in rats. Experimental Biology 2006. Abstract #3726. 688.1.
7. Olle, E.W., Deogracias, M., Messamore, J., Anderson, T.D., Johnson, K.J. Development and optimization of small semi-

quantitative antibody arrays. Experimental biology 2006. Oral Presentation. Minisymposium #879. “Pathobiology of Liver Regeneration and Xenobiotic Metabolism”.

8. Lasky, T.L., Olle, E.W., McClintock, S., Deogracias, M., Barron, A., Warner, R.L., Johnson, K.J.: Effect of resuscitation fluids on cytokine expression in a rodent model of hemorrhagic shock. Experimental Biology 2006. #903.23.
9. Olle, E.W., Ren, X.S., McClintock, M.P., Deogracias, M.P., Barron, A.G., Warner, R.L., Colletti, L., Johnson, K.J.: The role of metalloproteine-9 in liver regeneration following partial hepatectomy. Experimental Biology 2006. #886.1.
10. Lasky, T.M., Olle, E.W., McClintock, S.D., Deogracias, M.P., Barron, A., Johnson, K.J.: Cytokine and apoptotic effects of resuscitation fluids in the lungs of a rodent hemorrhagic shock model. Experimental Biology 2006. #903.24.

W. John Judd, F.I.B.M.S., M.I.BIOL.
Professor of Pathology
Director, Blood Bank Reference Laboratory

I. CLINICAL ACTIVITIES

A. DIRECTOR, BLOOD BANK REFERENCE LABORATORY

B. CONSULTANT, VETERAN'S ADMINISTRATION MEDICAL CENTER, ANN ARBOR.

II. TEACHING ACTIVITIES

A. PATHOLOGY RESIDENTS

1. Coordinator and Instructor, Core-Lectures in Blood Banking for six 1st-year Pathology Residents.
2. Responsible for Immunohematology teaching during the current academic year for the following residents:
    a. Bryan Coffing, MD
    b. Jon Cutlan, MD
    c. Julie Jorns-Gradzwielwski, MD
    d. Julianne Purdy, MD
    e. Corah Mankey, MD
    f. Lindsay Schmidt, MD
    g. Angela Wu
    h. Diane Hall
    i. Kajal Sitwala, MD, PhD
    j. Jason Jarzembowski, MD, PhD
    k. Jason Carvahlo. MD
    l. Kristen Curlett, MD
    m. Malti Kshirsagar, MD
    n. Chris Przybicin, MD
    o. Amir Lagstein, MD
    p. Blood Bank Fellow
3. Responsible for Immunohematology teaching during the current academic for Luzette Habib, MD, MPH.

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY

1. Drug-induced immune hemolytic anemia associated with Zosyn.
2. Molecular analysis of Rh typing discrepancies.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Blood Bank Daily Rounds.

2. Weekly Blood Bank Communication Meetings.
3. Program Director, Clinical Pathology Grand Rounds: CME Accredited Program 10016.
4. Program Coordinator, Anatomical Pathology Conferences: CME Accredited Program 10004.
5. Program Coordinator Clinical Pathology Case Study Conference: CME Accredited Program 10021.
6. Program Director: Management Lecture Series for Pathology Residents.
7. Monthly Clinical Pathology Faculty Meetings.
8. Program Director, Current Topics in Blood Banking Conference, Towsley Center for Continuing Medical Education.

B. REGIONAL/NATIONAL/INTERNATIONAL

1. Michigan Association of Blood Banks: Member, Annual Meeting Program Committee.
2. International Society of Blood Transfusion: Treasurer, Committee on Blood Group Nomenclature.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Editorial Board
   a. *Transfusion*
   b. *Immunohematology*

2. Manuscript Reviews
   a. Transfusion
   b. Immunohematology
   c. Transfusion Medicine
   d. *Vox Sanguinus*

3. Respondent to web-based forums
   a. American Association of Blood Banks
   b. California Blood Bank Society

B. INVITED LECTURES

1. Why do we do what we do? American Association of Blood Banks Annual Meeting, Seattle, WA, October 2005.
2. Sex and the Blood Bank. American Association of Blood Banks Annual Meeting, Seattle, WA, October 2005.
3. Transfusion of patients with multiple alloantibodies. Illinois Association of Blood Banks Annual Meeting, Chicago, IL, October 2005.
4. Transfusion of patients with multiple alloantibodies. Institute for Transfusion Medicine, Pittsburgh, PA, November 2005.
5. Why do we do what we do? Institute for Transfusion Medicine, Pittsburgh, PA, November 2005.
6. Cases and images in immunohematology. Houston Area Antibody Club, Houston, TX, February 2006.
7. The top 10 reasons why blood group serology is fun. University of Texas Medical Branch, Galveston, TX, February 2006.
8. Validating your life away. Annual Meeting of the New York Blood Bank Supervisors Association, New York, April 2006
9. Validating your life away. California Blood Bank Society, Annual Meeting, Lake Tahoe, CA, April 2006.

C. HONORS AND AWARDS

1. Jean Stubbins Memorial Award, University of Texas Medical Branch, Galveston, February, 2006.
2. Keynote Speaker: Kentucky Association of Blood Banks Annual Meeting, March, 2006.
3. Ronald Dubin Memorial Award, NY Association of Blood Bank Supervisors, New York, April 2006.
4. Suzanne Leiden Memorial Award, California Blood Bank Society, April 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Judd WJ, Dake LR, Davenport RD. On a much higher than reported incidence of anti-c in R1R1 patients with anti-E. Immunohematology 2005; 21:94-6.
2. Judd WJ, Moulds M, Schlanser G. Reactivity of FDA-approved anti-D reagents with partial D red blood cells. Immunohematology 2005; 21:146-8.
3. Zhou L, Thorson J, Nugent C, Davenport RD, Butch S, Judd WJ. Non-invasive prenatal RHD genotyping by real-time PCR using plasma from RhD-negative pregnant women. Am J Obstet Gynecol 2005; 193:966-71.
4. Judd WJ. How I manage cold agglutinins. Transfusion 2006; 46:324-6.
5. Yazer M, Judd WJ, Davenport RD, et al. Case Report and Literature Review: Transient Inab Phenotype and an Agglutinating Anti-IFC in a Patient with a Gastro-Intestinal Problem. Transfusion: Accepted.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Guidelines for prenatal and perinatal immunohematology. Bethesda, MD: American Association of Blood Banks, 2006.
2. Blood groups. In: McGraw-Hill Encyclopedia of Science and Technology, ed 10. New York: McGraw-Hill, 2006.
3. Judd WJ, Dake LR, Denomme GA. Confounding serological and molecular data in the investigation of Rh typing discrepancies. Transfusion 2005, 45(S):130.

Evan T. Keller, Ph.D.
Professor of Comparative Medicine and Pathology

I. CLINICAL ACTIVITIES – None

II. TEACHING ACTIVITIES

A. TRAINEES

1. Meghan Brennan
2. Scott Patyon

III. RESEARCH ACTIVITIES

A. SPONSORED RESEARCH

1. PI (0%), “Efficacy of SAHA as an adjuvant to docetaxel in prostate cancer”, Merck, Direct Annual Costs $77,929.
2. PI (0%), “E6070 in prostate cancer in vitro study addendum”, Eisai, Direct Annual Costs $13,800.

B. PENDING

1. PI (25%), “Crosstalk between prostate cancer and the tumor microenvironment (U54)”, NIH, Direct Annual Costs $995,152.
2. Mentor (0%), “A causal role of dickkopf-1 (DKK-1) in prostate cancer skeletal metastasis”, DOD, Direct Annual Costs. $92,000.
3. Co-Investigator (10%), “Regulation of metastasis suppressor gene RKIP in prostate cancer”, DOD, Direct Annual Costs Subcontract $15,465.
4. PI (0%), “Utilizing microfluidics technology to identify and characterize prostate cancer stem cells in metastasis”, NIH, Direct Annual Costs $117,630.

IV. ADMINISTRATIVE ACTIVITIES

A. INSTITUTIONAL

1. Member, Michigan Comprehensive Cancer Center.
2. Chair: Urology Research Advisory Committee.
3. Urology Chair Search Committee.
4. Co-Director, Cell Biology Program, UM Cancer Center.
5. Faculty, Graduate Program in Cellular and Molecular Biology.
6. Faculty, Graduate Program in Immunology.
7. Member, Multipurpose Arthritis and Musculoskeletal Disease Center.
8. Director, Nathan Shock Center Mutant & Transgenic Rodent Core.

B. REGIONAL/NATIONAL/INTERNATIONAL

1. ACVIM Oncology Residency Training Committee.

2. National Scientific Advisory Council, American Federation Aging Research.
3. Scientific Advisory Board, Institute for Advanced Studies in Immunology and Aging.
4. Network of Healthcare Advisors, Editorial Board of Current Cancer Drug Targets.
5. Chair, Bone Metastasis Session, InterProstate SPORE meeting, Houston, TX.
6. Organization Committee: Prouts Neck Prostate Cancer Meeting, 2006.
7. Member Bone Health Education Initiative.
8. External Scientific Grant Reviewer, VA Merit Review Board, Department of Veterans Affairs
9. Ad hoc reviewer, U.S. Army Osteoporosis Grants
10. American Federation for Aging Research
11. Department of Defense Section C Review Panel: Osteoporosis Grants
12. Department of Defense Pathology B: Prostate Cancer Grants
13. Tumor Microenvironment Study Section, NIH.
14. Army Prostate Cancer Grants Internet Review Panel
15. Ibandronate Prostate Cancer Advisory Board; Roche, Atlanta, GA 2006.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Editorial Board member, Journal of Cellular Biochemistry
2. Editorial Board member, Current Cancer Drug Targets
3. Ad hoc reviewer, *Journal Veterinary Internal Medicine*
4. Ad hoc reviewer, *Journal of Gerontology: Biological Sciences*
5. Ad hoc reviewer, *Cancer Research*
6. Ad hoc reviewer, *Hormone and Metabolic Research*
7. Ad hoc reviewer, *Urology*
8. Ad hoc reviewer, *The Prostate*
9. Ad hoc reviewer, *Journal of Clinical Investigation*
10. Ad hoc reviewer, *Clinical Cancer Research*
11. Ad hoc reviewer, *Neoplasia*
12. Ad hoc reviewer, *Molecular Cancer Research*
13. Ad hoc reviewer, *Journal Bone Mineral Research*
14. Ad hoc reviewer, *Nature Clinical Practice Oncology*

B. INVITED LECTURES/SEMINARS

1. “Bone morphogenetic protein-6 and osteoblastic prostate cancer metastases” InterProstate SPORE meeting, Houston, TX, January, 2005.
2. “Targeting bone metastases” TEM study section, Washington, DC, February, 2005.
3. “Targeting interleukin-6 in prostate cancer” Centocor Advisors Board Meeting. Montpellier, France, September, 2005.
4. “The biology of prostate cancer bone metasases” University of Massachusetts, Boston, Massachusetts, October, 2005.
5. “The biology of prostate cancer bone metasases” Wayne State University, Detroit, Massachusetts, November, 2005.

6. Discussion Leader: Poster Discussion Session on Prostate Pathobiology, ASCO Meeting, Atlanta, GA 2006.

C. HONORS AND AWARDS

1. Top 10 downloaded article for 2005 for the journal Comparative Biochemistry and Physiology. "Keller ET, Murtha JM. The use of mature zebrafish (Danio rerio) as a model for human aging and disease Compar Biochem Physiol 138(3): 335-341, 2004."
2. Oral Presentation. Am Assoc Cancer Res. 2006. Hall, C. L., Bafica, A., Aaronson, S., and Keller, E. T. Dickkopf-1 Promotes Prostate Cancer Cell Growth within the Bone. Proc. Am. Assoc. Cancer Res., 47: 3978A, 2006. (Minisymposium/Tumor Biology 26, 97th annual meeting of the American Association for Cancer Research, Washington, DC, 04/2006.)
3. Plenary Poster Am. Assoc. Bone Min. Res. 2005. Hall, C. L., Bafica, A., Dai, J., Aaronson, S., and Keller, E. T. Prostate cancer cells promote osteoblastic bone metastases through Wnts. 2005.
4. Young Investigator Award, 4th annual meeting on Skeletal Complications of Malignancy, 2005. Hall, C. L. and Keller, E. T. Human PC-3 prostate cancer cells inhibit osteoblast-mediated mineralization through Dickkopf-1 (DKK-1).

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Keller ET, Fu Z, Brennan M. The biology of a prostate cancer metastasis suppressor protein: Raf kinase inhibitor protein. J Cell Biochem 94(2): 273-278, 2005.
2. Sun Y, Schneider A, Jung Y, Wang J, Dai J, Wang J, Cook K, Osman N, Liang Z, Koh-Paige A, Shim H, Pienta K, Keller E, McCauley L, and Taichman RS. Skeletal localization and neutralization of the SDF-1 (CXCL12)/CXCR4 axis blocks prostate cancer metastasis and growth in osseous sites in vivo. J Bone Min Res 20(2): 318-329, 2005.
3. Schneider A, Kalikin LM, Mattos AC, Keller ET, Allen MJ, Pienta KJ, McCauley LK. Bone turnover mediates preferential localization of prostate cancer in the skeleton. Endocrinology 2005; 146(4):1727-1736.
4. Quinn JE, Brown LG, Zhang J, Keller ET, Vessella RL, Corey E. Comparison of Fc-osteoprotegerin and zoledronic acid activities suggests that zoledronic acid inhibits prostate cancer in bone by indirect mechanisms. Prostate Cancer Prostatic Dis 2005; 8(3): 253-259.
5. Hall CL, Bafico A, Dai J, Aaronson SA, and Keller ET. Prostate cancer cells promote osteoblastic bone metastases through Wnts. Priority Report. Cancer Res 2005; 65(17): 7554-7560.
6. Miwa S, Mizokami A, Keller ET, Taichman R, Zhang J, Namiki M. The bisphosphonate YM529 inhibits osteolytic and osteoblastic changes and CXCR-4-induced invasion in prostate cancer. Cancer Res. 2005 Oct 1; 65(19):8818-25.
7. Dai J, Keller JM, Zhang J, Lu Y, Yao Z, Keller ET. Bone morphogenetic protein-6 promotes osteoblastic prostate cancer bone

metastases through a dual mechanism. Cancer Res 2005; 65(18): 8274-85.
8. Loberg RD, Logothetis CJ, Keller ET, and Pienta KJ. Pathogenesis and Treatment of Prostate Cancer Metastases: Targeting the Lethal Phenotype. J Clin Oncol 2005; 23(32): 8232-41.
9. Kitagawa Y, Dai J, Zhang J, Keller JM, Nor J, Yao Z, Keller ET. Vascular endothelial growth factor contributes to prostate cancer-mediated osteoblastic activity. Cancer Res, 2005; 65(23): 10921-10929.
10. Hall C, Kang S, MacDougald OA, and Keller ET. Role of Wnts in prostate cancer bone metastases. J Cellular Biochem, 2006; 97(4): 661-672.
11. Fu Z, Kitagawa Y, Shen R, Shah R, Mehra R, Rhodes D, Keller PJ, Mizokami A, Dunn RL, Chinnaiyan AM, Yao Z, Keller ET. The metastasis suppressor gene Raf kinase inhibitor protein (RKIP) is a novel prognostic marker in prostate cancer. Prostate, 2006; 66(3): 248-256.
12. Ershler WB, Artz AS, and Keller ET. Issues of aging and geriatric medicine: Relevance to cancer treatment and hematopoietic reconstitution. Biol Blood Marrow Transplant, 2006; 12(1): 100
13. Cher ML, Towler DA, Rafii S, Rowley D, Donahue HJ, Keller E, Herlyn M, Cho EA, and Chung LWK. Cancer interaction with the bone microenvironment. Amer J Pathology, 2006; 168(5): 1405-1412.

B. BOOKS AND CHAPTERS IN BOOK

1. Keller ET, Keller JM, Gillespie G. The use of mature zebrafish (Danio rerio) as a model for human aging and disease. In: Conn PM, ed. Handbook of Models for Human Aging, Burlington, MA, Elsevier Publications, 309-316, 2006.

Paul D. Killen, M.D., PhD.
Associate Professor of Pathology

I. CLINICAL ACTIVITIES

A. CHIEF RENAL CONSULTANT.
B. DIAGNOSTIC RENAL BIOPSY SERVICE (30 WEEKS).
C. DIRECTOR, ELECTRON MICROSCOPY SERVICE.
D. IMMUNOPATHOLOGY SERVICE
E. ENDOMYOCARDIAL BIOPSY SERVICE.
F. AUTOPSY SERVICE.

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
   1. M2 Pathology Lecture - Renal Sequence (9 hours).
   2. M2 Pathology Laboratory- Renal Sequence (12 hours).
   3. Co-Coordinator - Renal Sequence (80 hours).

B. RESIDENTS AND FELLOWS
   1. Renal Pathology for Pathology Residents (5 hours).
   2. Renal Pathology for Nephrology Fellows Lectures (6 hours).

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
   1. Core Director (5%), Morphology Core, Biology of the Glomerular Podocyte, NIH-P50-DK39225, $129,949/year, 07/01/03-06/30/08.
   2. Co-Investigator (5%), “Mouse Models of Diabetic Nephropathy and Neuropathy”, RFA-DK-01-009, $545,421 direct costs/year, 9/30/01-9/30/06.
   3. Co-Investigator (10%), "The Glomerular Podocyte", NIH RO1-DK46073, $225,000 direct costs/year, 4/1/02-3/30/06.
   4. Co-Investigator (3%), Impact of an Expedited Allocation Sytem and Pulsatile Preservation Upon the Transplantation of Kidneys from Extended Criteria Donors, 1H39 OT00123, $246,919, direct costs/year, 10/01/02-09/30/05.

B. PROJECTS UNDER STUDY
   1. Glomerular podocyte reaction to injury.
   2. Predictors of renal progression.

3. Transcriptome analysis in archival renal biopsy specimens.

IV. ADMINISTRATIVE ACTIVITIES – None

V. OTHER RELEVANT ACTIVITIES – None

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Ohkita M, Wang Y, Nguyen, NDT, Tsai YH, Williams SC, Wiseman RC, Killen PD, Li S, Yanagisawa M, Gariepy CE. Extrarenal ETB Plays a Significant Role in Controlling Cardiovascular Responses to High Dietary Sodium in Rats. Hypertension, 45:940-946, 2005.
2. Nakashima E, Pop-Busui R, Towns R, Thomas RP, Hosaka Y, Nakamura J, Greene DA, Killen PD, Schroeder J, Larkin DD, Stevens MJ. Regulation of the human taurine transporter by oxidative stress in retinal pigment epithelial cells stably transformed to overexpress aldose reductase. Antioxidants & Redox Signaling. 7:1530-1542, 2005.
3. Denny MF, Chandaroy P, Killen PD, Caricchio R, Lewis EE, Richardson BC, Lee KD, Gavalchin J, Kaplan MJ. Accelerated macrophage apoptosis induces autoantibody formation and organ damage in systemic lupus erythematosus. Journal of Immunology. 176:2095-2104, 2006.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Leichtman AB, Rennke HG, Killen PD, Christensen LL, O'Connor K, Pietroski RE, Chen JQ, Schaubel DE, Merion RM, Port FK, Lipkowitz GS, Stoff J, Luskin R, Delmonico FL. Pre-placement fresh frozen kidney biopsies are poor preditors of percent glomerular obsolescence. World Transplant Congress, accepted 2006.
2. Shayman JA, Killen PD: Fabry Disease. In Molecular and Genetic Basis of Renal Disease, Mount DB and Pollak M, eds. Elsevier Saunders, Philadelphia, 2006 in press.

Celina G. Kleer, M.D.
Associate Professor of Pathology

I. CLINICAL ACTIVITIES

A. BREAST PATHOLOGY

1. Sign out sessions 11 weeks per year. This session involves signing out in-house and transfer cases from other institutions and teaching residents and fellows.
2. Breast pathology consult cases, approximately 5-6 hours per week / year.
3. Review of in-house and transfer breast cancer cases to be presented in the Breast Care Multidisciplinary Conference – Every Monday for approx.18 weeks/year.

B. SURGICAL PATHOLOGY

1. On-call - Six weeks/year (3 pm – 8 am).

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS

1. Mentor for 4-6 M4 students for 1 month.
2. Mentor for Iris Wei, M2, who rotated in my laboratory for the summer (3 months). Iris focused on “Promoter methylation as a cause WISP3/CCN6 down-regulation in the development of inflammatory breast cancer”, which she presented as a poster at the U of Michigan Medical School Research Meeting.

B. PATHOLOGY HOUSE OFFICERS AND FELLOWS

1. Breast pathology diagnostic room instruction for house officers – 11weeks.
2. Two slide conferences on interesting cases in breast pathology – 2 contact hours.
3. One didactic lecture on breast pathology – 2 contact hours.
4. Mentoring of breast pathology fellows Anthony Kubat and Masood Siddiqui (6 months each) during diagnostic sign out, preparation for Breast Care Conference, and during sign out of consultation cases.

C. GRADUATE PROGRAM

1. Member of the Thesis Dissertation Committee for Neali Hendrix (Pathology Ph.D. candidate). Mentor: Kathleen Cho, Pathology Dept.
2. Member of the Thesis Dissertation Committee for Lisa Privette (Human Genetics Ph.D. candidate). Mentor: Liz Petty, Human Genetics Dept.
3. Preliminary Examination Committee, Barry Taylor, Mentor: Arul Chinnaiyan, Bioinformatics Dept.

4. Preliminary Examination Committee, Yuan Zheng, Mentor: Debashis Ghosh, Biostatistics Dept.

D. INTER-DEPARTMENTAL
1. Breast Care Clinic Multidisciplinary Conference (weekly) – 18 weeks/year.
2. Breast Care Educational Forum (1 lecture/year).

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
1. PI (80%), "Role of LIBC (WISP3) in the Development of the Inflammatory Breast Cancer Phenotype", NIH/NCI K08 CA090876-01A2, $676,800, 9/30/03-8/31/08.
2. PI (30%), “Role of EZH2 in Breast Cancer Progression”, NIH/NCI RO1 CA107469-01, $1,296,876, 2/01/05-1/31/10, concurrent with K08.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Director, Breast Pathology Subspecialty Sign-out, involved in the planning and coordination of the breast pathology service, and quality assurance.
2. Director, Breast Pathology Fellowship.
3. Member of the Breast Care Center Task Force.
4. Member of the Medical School Admissions Committee.
5. Pathology Graduate Program Executive Committee.

B. REGIONAL/NATIONAL/INTERNATIONAL
1. Grant Reviewer, Department of Defense Breast Cancer Research Program, Cell Biology Study Section.
2. Grant Reviewer, NIH, National Institute of General Medical Sciences, Minority Biomedical Research Excellence Program (MBRS).
3. Abstract Reviewer, Society for Molecular Imaging.
4. Abstract Reviewer, United States and Canadian Academy of Pathology (IAP-USCAP).
5. Member of the Michigan Cancer Consortium Breast Cancer Advisory Committee, Michigan.
6. Department of Community Health.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS
1. Reviewer - *Breast Cancer Research.*
2. Reviewer - *Breast Cancer Research and Treatment.*
3. Reviewer - *Modern Pathology.*
4. Reviewer - *Cancer Research*
5. Reviewer – *Neoplasia*
6. Reviewer - *Experimental Cell Research.*

B. INVITED LECTURES/SEMINARS
1. “Inflammatory Breast Cancer: Pathology, Epidemiology and Molecular Genetics” Mayo Clinic Department of Pathology and Laboratory Medicine Centennial Celebration. Mayo Clinic, Rochester, MN. October 1st-2nd, 2005.

2. "Inflammatory Breast Cancer: Pathology and Molecular Determinants" Fourth Annual Pathology Research Symposium, University of Michigan League, November 4th, 2005.
3. "The role of CCN6 (WISP3) in breast tumorigenesis" The Burroughs Wellcome Fund, NC, February 8th, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Witniewicz, A., Shen, R., Lnu, S., Mehra, R., Chinnaiyan, A.M., Sabel, M.S., Rubin, M.A., and Kleer, C.G. Alpha Methyl acyl-CoA Racemase (AMACR) Protein Expression is Associated with the Degree of Differentiation in Breast Cancer Using Quantitative Image Analysis. Cancer Epidemiology, Biomarkers, and Prevention 14(6):1418-23, 2005. Cover Article.
2. Khan, A., Sabel, M.S., Nees, A., Diehl, K.M., Cimmino, V.M., Kleer, C.G., Schott, A.F., Hayes, D.F., Chang, A.E., and Newman, L.A. Comprehensive Axillary Evaluation in Neoadjuvant Chemotherapy Patients with Ultrasonography and Sentinel Lymph Node Biopsy. Annuals of Surgical Oncology 12(9):1-8, 2005.
3. Schott, A.F., Roubidoux, M.A., Helvie, M.A., Hayes, D.F., Kleer, C.G., Newman, L.A., Pierce, L.J., Griffith, K.A., Murray, S., Hunt, K.A., Paramagul, C., and Baker, L.H. Clinical and Radiologic Assessments to Predict Breast Cancer Pathologic Complete Response to Neoadjuvant Chemotherapy. Breast Cancer 92(3):231-8, 2005.
4. Kleer, C.G., Griffith, K., Sabel, M.S., Van Golen, K.L., Gallagher, G., Wu, Z.F., and Merajver, S.D. RhoC-GTPase is a Novel Tissue Biomarker Associated with Biologically Aggressive Carcinomas of the Breast. Breast Cancer Research and Treatment 93(2):101-10, 2005.
5. Pan, Q., Bao, L.W., Kleer, C.G., Sabel, M., and Merajver, S.D. Protein Kinase C is Elevated in High Grade Breast Cancer and a Novel Target for RNA interference Anticancer Therapy. Cancer Research 65(18):8366-71, 2005.
6. Zeidler, M., Varambally, S., Cao, Q., Chinnaiyan, A.M., Ferguson, D.O., Merajver, S.D., and Kleer, C.G. The Polycomb Group Protein EZH2 Impairs DNA Repair in Human Mammary Epithelial Cells. Neoplasia 7(11):1011-9, 2005. Featured article and Cover.
7. Zhang, Y., Pan, Q., Zhong, H., Merajver, S.D., and Kleer, C.G. Inhibition of CCN6 (WISP3) Expression Promotes Neoplastic Transformation and Enhances the Effects of IGF-1 on Breast Epithelial Cells. Breast Cancer Research 7(6):R1080-9, 2005.
8. Mehra, R., Varambally, S., Shen, R., Ding, L., Sabel, M.S., Ghosh, D., Chinnaiyan, A.M.*, and Kleer, C.G*. Identification of GATA3 as a Breast Cancer Prognostic Marker by Global Gene Expression Meta-Analysis. Cancer Research 65(24):11259-64, 2005.
9. Krop, I., März, A., Carlsson, H., Li, X., Bloushtain-Qimron, N., Hu, M., Gelman, R., Sabel, M.S., Schnitt, S., Ramaswamy, S., Kleer, C.G., Enerbäck, C., and Polyak, K. A Putative Role for Psoriasin in

Breast Tumor Progression. Cancer Research 65(24):11326-34, 2005.

10. Ben-David, M.A., Kleer, C.G., Paramagul, C., Griffith, K.A., and Pierce, L.J. Is LCIS a Component of Breast Cancer a Risk Factor for Local Failure Following Breast- Conserving Therapy? Results of a Matched Pair Analysis. Cancer 106(1):28-34, 2006.
11. O'Malley, F.P., Mohsin, S.K., Badve, S., Bose, S., Collins, L.C., Ennis, M., Kleer, C.G., Pinder, S.E., and Schnitt, S.J. interobserver Reproducibility in the Diagnosis of Flat Epithelial Atypia of the Breast. Modern Pathology 19(2):172-9, 2006.
12. Newman, E.L., Kahn, A., Diehl, K.M., Cimmino, V.M., Kleer, C.G., Chang, A.E., Newman, L.A., and Sabel, M.S. Does the Method of Biopsy Affect the Incidence of Sentinel Lymph Node Metastases? The Breast Journal 12(1):53-57, 2006.
13. Ding, L., Erdmann, C., Chinnaiyan, A.M., Merajver, S.D., and Kleer, C.G. Identification of EZH2 as a Molecular Marker for a Precancerous State in Morphologically Normal Breast Tissues. Cancer Research 66(8):4095-9, 2006. Selected as a Cancer Research Highlight.
14. Hird, R.B., Chang, A., Cimmino, V., Diehl, K., Sabel, M., Kleer, C.G., Helvie, M., Schott, A., Young, J., Hayes, D., Newman, L. Impact of estrogen receptor expression and other clinico pathologic features on tamoxifen use in ductal carcinoma in situ. Cancer 15; 106:2113-8, 2006.
15. Kuefer, R., Day, K.C., Kleer, C.G., Sabel, M.S., Hofer, M.D., Varambally, S., Zorn, C.S., Chinnaiyan, A.M., Rubin, M.A., Day, M.L. The ADAM15 disintegrin is associated with aggressive prostate and breast cancer disease. Neoplasia 8(4): 319-329, 2006.
16. Kleer, C.G., Teknos, T.N., Islam, M., Marcus, B., Lee, J.S.J., Pan, Q., and Merajver, S.D. RhoC-GTPase Expression as a Potential Marker of Lymph Node Metastasis in Squamous Cell Carcinomas of the Head and Neck. Clinical Cancer Research, in Press.
17. Maturen, K.E., Paramagul, C.P., Roubidoux, M.A., Kleer, C.G., Weadock W.J., Abate, S.A. Interactive Computer Teaching Module for Radiologic-Pathologic Correlations in Breast Imaging. MedEdPORTAL, in Press.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Zhang, Y., Monroe, S., Merajver, S.D., and Kleer, C.G. Inhibition of WISP3 (CCN6) Promotes the Neoplastic Transformation and Enhances the Effects of IGF-1 on Breast Epithelial Cells. Era of Hope Meeting, Department of Defense Breast Cancer Research Program, Poster presentation, Philadelphia, PA, June 8-11, 2005.
2. Zhang, Y., Pan, Q., Zhong H., Merajver, S.D., and Kleer, C.G. Inhibition of WISP3 (CCN6) Promotes a Mesenchymal Phenotype and Enhances the Effects of IGF-1 on Breast Epithelial Cells. Epithelial Mesenchymal Transition (EMT) Conference. Vancouver, BC, Canada, October 1-3, 2005. Poster Presentation.
3. Wei, I.*, Pu, R.*, Zhang, Y., Merajver, S.D., and Kleer, C.G. Analysis of WISP3 Promoter Methylation in Inflammatory Breast

Cancer. Student Biomedical Research Forum, University of Michigan Medical School, Ann Arbor, MI, Nov. 2005.

4. Hayes, M.J. and Kleer, C.G. Expression of the Undifferentiated Cell Marker P63 in Primary invasive Carcinomas of the Breast and Their Nodal Metastases. Laboratory Investigation 86(1): 29A. Presented at USCAP meeting, Atlanta, GA, Feb. 2006.
5. Kunju, L.P. and Kleer, C.G. Significance of Flat Epithelial Atypia (FEA) on Mammotome Core Needle Biopsy: Should It Be Excised? Laboratory Investigation 86(1): 32A. Presented at USCAP meeting, Atlanta, GA, Feb. 2006.
6. Zeidler, M., Varambally, S., Cao, Q., Chinnaiyan, A.M., Ferguson, D.O., Merajver, S.D., and Kleer, C.G. The Polycomb Group Protein EZH2 Impairs DNA Repair in Human Mammary Epithelial Cells. AACR meeting, April 1-5, 2006, Washington DC. Poster Presentation.

L. Priya Kunju, M.D.
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES

A. GENERAL SURGICAL PATHOLOGY (Room 1): Two weeks.

B. GENITO-URINARY PATHOLOGY
1. Diagnostic Service: Eighteen weeks.
2. Consultation Service: Fourteen weeks.
3. Review of Urology cases to be presented at Multidisciplinary Tumor Conference, (every other conference, biweekly).
4. Rapid warm autopsy coverage for advanced prostate cancer: Back-up coverage, 12 months.

C. BREAST PATHOLOGY SERVICE: Four weeks.

D. INTRA-OPERATIVE CONSULTATION – On-call: Five weeks.

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
1. Lecturer and Laboratory Instructor, M-2 GU Pathology Lab Sequence (2 contact hours)
2. Senior Elective in Pathology: Supervising during diagnostic sign-out

B. DENTAL STUDENTS
1. Didactic full class lecture “Pathology of Male reproductive system” (328), IMS III, School of Dentistry (one contact hour)

C. HOUSE OFFICERS AND FELLOWS
1. General Surgical, Breast and GU Pathology Diagnostic Room Instruction for HO & Fellows: 6 months
2. Pathology Residents GU Path Slide (Consult) Conferences: Two

D. INTERDEPARTMENTAL
1. Multidisciplinary Urology Tumor Conference: 1 hour, biweekly

III. RESEARCH ACTIVITIES

A. PENDING SUPPORT
1. Co-Investigator: (5%),”Characterization of Neoadjuvant Paclitaxel, Carboplatin and Gemcitabine Response in Locally Advanced Bladder Cancer”. American cancer Society (ACS), $540,000/3yr, 01/01/07- 12/31/09.

B. PROJECTS UNDER STUDY
1. Co-Investigator- Characterization of Neoadjuvant Paclitaxel, Carboplatin and Gemcitabine Response in locally advanced bladder cancer.

2. Partial Atrophy In Prostate Needle Biopsies: Incidence, Morphological Characteristics, and Immunophenotype.
3. Incidence and Significance of HGPIN and Atypical Small Acinar Proliferation (ASAP) in era of extended needle biopsies: Experience from a single high- volume institution.
4. Assessment of Lympho-vascular invasion (LVI) in TURBT specimens: How do they compare with LVI status in Cystectomy specimens?
5. Renal cell carcinoma in children and young adults: Clinical, pathological and Immunohistochemical spectrum with emphasis on Xp11 translocation associated renal cell carcinomas.
6. Morphologic Characteristics of Tubular carcinoma and Invasive Ductal Carcinoma, Bloom Richarson grade 1: Emphasis on presence, extent and types of Flat epithelial atypia (FEA).
7. Evaluation of GATA 3 expression in ER-positive, node- negative breast carcinoma with known Oncotype DX Recurrence Score.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Faculty Candidate Interviews
2. Surgical Pathology Fellow Candidate Interviews
3. Pathology Residency Program Candidate Interviews

V. OTHER RELEVANT ACTIVITIES

A. INVITED LECTURES/SEMINARS

1. Significance of Flat Epithelial Atypia on Mammotome core Needle Biopsy: Should it be Excised? LP Kunju and CG Kleer. Poster presentation at 95th United States and Canadian Academy of Pathology Meeting, Atlanta, GA, Feb 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFERRED JOURNALS

1. Prostate Specific Antigen (PSA), High Molecular Weight Cytokeratin (clone 34βE12) and/or p63: An Optimal Immunohistochemical Panel to Distinguish Poorly Differentiated Prostate Adenocarcinoma from Urothelial Carcinoma. LP Kunju, R Mehra, M Snyder, RB Shah. American J of Clin Pathol, 2006; 125:675-681.
2. Image-Guided Biopsy in the Evaluation of Renal Mass Lesions in Contemporary Urologic Practice: Indications, Adequacy, Clinical Impact and Limitations of the Pathologic Diagnosis. RB Shah, N Bakshi, KS Hafez, DP Wood Jr. and LP Kunju. Human Pathology, 2005; 36: 1309-1315.
3. Comparison of Monoclonal Antibody (P504S) and Polyclonal Antibody to α-Methylacyl-CoA-Racemase (AMACR) in the Work-up of Prostate Cancer. LP Kunju, A Chinnaiyan, RB Shah. Histopathology, 2005; 47: 587-596.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO EDITOR, MISCELLANEOUS PUBLICATIONS IN NON-REFEREED JOURNALS.

1. Significance of Flat Epithelial Atypia on Mammotome core Needle Biopsy: Should it be Excised? LP Kunju and CG Kleer. Mod Pathol 2006:19(1): 32A (135).
2. Stathmin is over-expressed in Metastatic Prostate Cancer: Implications in Prostate Cancer Progression. R Mehra, S Varambally, S Tomlins, LP Kunju, D Ghosh, A Chinnaiyan and RB Shah. Mod Pathol 2006:19(1): 149A (689).
3. Urothelial Carcinoma with Mixed Histology: Incidence, Clinicopathologic Spectrum and Biological Significance. M Wasco, T Braun, C Przybycin, LP Kunju, C Lee and RB Shah. Mod Pathol 2006:19(1): 168A (774).

Steven L. Kunkel, Ph. D.
Endowed Professor of Pathology
Research
Co-Director of Sponsored Research

I. CLINICAL ACTIVITIES - None.

II. TEACHING ACTIVITIES

A. UNDERGRADUATE STUDENTS
1. Ted Martens
2. Jillian Ewing
3. Shelby Lincoln
4. Pavel Godfrey
5. Ellen Walsh
6. Ally Knight
7. Dan Fong

B. MEDICAL STUDENTS
1. Host Defense Sequence, First Year Medical School
2. Case Reports First Year Medical Students
3. Grand rounds: Pediatrics

C. GRADUATE STUDENTS
1. Thesis Committee - Haitao Wen (Pathology)
2. Thesis Committee - Chinh Tran (Immunology)
3. Thesis Committee - Andrea Waite (CMDB)
4. Thesis Committee - Betsy Pierce (Immunology)

D. POSTDOCTORAL FELLOWS
1. Thesis Committee - Tracy Raymond
2. Thesis Committee - Traci Ness
3. Thesis Committee - Ana Lucia Coelho
4. Thesis Committee - Amrita Joshi
5. Thesis Committee - Alessia Meneghin
6. Thesis Committee - Karen Cavassani De Souza

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
1. PI (18%), “Macrophage/Monocyte Signals in Lung Granuloma Formation”; NIH HL-RO1-35276, MERIT Grant, $162,578, 7/1/01 – 6/30-06.
2. PI (12%), “Monokine Gene Expression/Regulation in Lung Injury”, NIH HL-RO1-31237, Annual Direct Costs $200,000, 03/01/04 – 02/28/08.

3. PI (Project II 20%, Core A 5%), "Inflammatory Cells and Lung Injury"; NIH Program Project HL-31963, $1,254,252 (Project II $246,911, Core A $66,834) 02/01/05 – 01/31/10.
4. PI, Project 3 (20%), "SCOR Occupational and Immunological Lung Disease", NIH/NHLBI P50HL-46487, Annual Direct Costs $199,356, 12/1/01 – 11/30/06.
5. PI (20%), Project 3, "SCOR in Acute Lung Injury", NIH/NHLBI P50HL60289, Annual Direct Costs $225,000, 09/01/03 – 06/30/08.
6. PI (3%), "Research Training in Experimental Immunology" Training Grant, Annual Direct Costs $363,055, 09/03 – 08/08.

B. PROJECTS UNDER STUDY

1. Role of cytokines in acute and chronic inflammation.
2. Regulation of chemokine gene expression.
3. Macrophage-lymphocyte interactions in the initiation, maintenance, and resolution of chronic inflammation.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Co-Director Division of Sponsored Research.
2. Operating committee Pathology graduate program.
3. Interview candidates for graduate program.
4. Member, Department of Pathology ACAPT committee.
5. Member, Pathology graduate program committee.
6. Director, Research Training in Experimental Immunology Training Program (Pathology).
7. Member, Lung Immunopathology Post-doctoral Training Program (Pathology).

B. INSTITUTIONAL

1. Associate Dean for Interdisciplinary Programs, Rackham Graduate School.
2. Director, Immunology Program (BSRB).
3. Member, Committee on medical student research.
4. Medical scientist training program interviewer.
5. Member, Provost Committee on Appointments and Promotion.
6. MMP Microbiology Molecular Mechanisms in Microbial Pathogenesis Training Program.
7. Member, Michigan Cancer Center.
8. Grant reviewer, Biomedical Research Council.
9. Member, Advisory Committee Cancer Center Animal Core.
10. CMB Advisory Committee.
11. Member, BSRB ART Committee.
12. Operating committee Graduate Program in Immunology.
13. Member, Pulmonary Cellular and Molecular Biology Training Program.
14. Member, Pediatric Training Grant "Cellular and Molecular Biology in Pediatrics".
15. Member, Systems and Integrative Biology Training Program (Physiology).
16. Member, Hematology Training Grant.
17. Member, Multidisciplinary Training Program in Lung Disease.
18. Member, Graduate Teaching Award Review Committee.

19. Academic Advisor, Immunology graduate program.
20. Medical School Selection Tuition Selection Committee.

C. REGIONAL/NATIONAL/INTERNATIONAL

1. Grant Reviewer, The Arthritis Society.
2. Grant Reviewer, Veterans Administration.
3. National Institutes of Health Study Section, Program Project Review.
4. Chair, Publications Committee American Society of Investigative Pathology.
5. Counselor, American Society of Investigative Pathology.
6. Co-Chair, National Institute of Allergy and Infectious Diseases (NIH-NIAID). Board of Scientific Counselors.
7. Member, NHLBI-NIH, Strategic Planning Committee.
8. External Science Advisory Board, Drew University.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Associate Editor, *Experimental and Molecular Pathology*
2. Associate Editor, *Shock*
3. Editorial board, *Mediators of Inflammation*
4. Reviewer for the following journals:
    a. American Journal of Pathology
    b. American Review of Respiratory Disease
    c. Circulation
    d. Infection and Immunity
    e. Laboratory Investigation
    f. Science
    g. Journal of Immunology
    h. American Journal of Respiratory Cell and Molecular Biology

B. INVITED LECTURES/SEMINARS

1. Invited Speaker, American Thoracic Association, San Diego, CA April 2005.
2. Invited Speaker, Pharmacopeia, Princeton, NJ, May 2005.
3. Invited Speaker, New Infectious Diseases, Los Angeles, CA June 2005.
4. Invited Speaker, New Horizons for Idiopathic Pulmonary Fibrosis, Chicago, IL August 2005.
5. Visiting Professor, Department of Pathology University of Iowa, Iowa City, IA, August 2005.
6. Invited Speaker, Department of Immunology, University of Iowa, Iowa City, IA, August 2005.
7. Invited Speaker, Acute Lung Injury, San Francisco, CA, September 2005.
8. Invited Speaker, American Pancreaeic Association, Chicago, IL November 2005.
9. Invited Speaker, Conference on Interstitial Lung Disease, Horsham, England November 2005.
10. Visiting Professor, Department of Pathology, Northwestern University, Chicago, IL, December 2005.
11. Invited Speaker, Keystone Conference on Chemokines, Utah, January 2006.

12. Visiting Professor, Department of Microbiology, University of Maryland, Baltimore, MD February 2006.
13. Invited Speaker, American Association of University Pathologist, Bahama February 2006.
14. Invited Speaker, NIH-Perinatal Division, Wayne State University, Detroit, MI April 2006.
15. Invited Speaker, International Conference on Chronic Obstructive Pulmonary Disease, Vilnius, Lithuania, June 2006.
16. Invited Speaker, Conference on Mucosal and Innate Immunity, Baltimore MD June 2006.
17. Invited Speaker, Conference on Diffuse Lung Disease, WASOG, Catania, Italy June 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Coelho AL, Hogaboam CM, Kunkel SL. Chemokines provide the sustained inflammatory bridge between innate and acquired immunity. Cytokine Growth Factor Rev. 2005 Dec; 16(6):553-60.
2. Kasama T, Miwa Y, Isozaki T, Odai T, Adachi M, Kunkel SL. Neutrophil-derived cytokines: potential therapeutic targets in inflammation.Curr Drug Targets Inflamm Allergy. 2005 Jun; 4(3):273-9.
3. Lukacs NW, Hogaboam CM, Kunkel SL. Chemokines and their receptors in chronic pulmonary disease. Curr Drug Targets Inflamm Allergy. 2005 Jun; 4(3):313-7.
4. Hogaboam CM, Carpenter KJ, Evanoff H, Kunkel SL. Approaches to evaluation of fibrogenic pathways in surgical lung biopsy specimens. Methods Mol Med. 2005; 117:209-21.
5. Zeng X, Moore TA, Newstead MW, Deng JC, Kunkel SL, Luster AD, Standiford TJ. Interferon-inducible protein 10, but not monokine induced by gamma interferon, promotes protective type 1 immunity in murine Klebsiella pneumoniae pneumonia. Infect Immun. 2005 Dec; 73(12):8226-36.
6. Huaux F, Gharaee-Kermani M, Liu T, Morel V, McGarry B, Ullenbruch M, Kunkel SL, Wang J, Xing Z, Phan SH. Role of Eotaxin-1 (CCL11) and CC chemokine receptor 3 (CCR3) in bleomycin-induced lung injury and fibrosis.Am J Pathol. 2005 Dec; 167(6):1485-96.
7. Matsukawa A, Kudoh S, Sano G, Maeda T, Ito T, Lukacs NW, Hogaboam CM, Kunkel SL, Lira SA. Absence of CC chemokine receptor 8 enhances innate immunity during septic peritonitis. FASEB J. 2006 Feb;20(2):302-4.
8. Choi ES, Pierce EM, Jakubzick C, Carpenter KJ, Kunkel SL, Evanoff H, Martinez FJ, Flaherty KR, Moore BB, Toews GB, Colby TV, Kazerooni EA, Gross BH, Travis WD, Hogaboam CM. Focal interstitial CC chemokine receptor 7 (CCR7) expression in idiopathic interstitial pneumonia. J Clin Pathol. 2006 Jan; 59(1):28-39.
9. Henke PK, Varma MR, Deatrick KB, Dewyer NA, Lynch EM, Moore AJ, Dubay DA, Sukheepod P, Pearce CG, Upchurch GR Jr, Kunkel SL, Franz MG, Wakefield TW. Neutrophils modulate post-thrombotic

vein wall remodeling but not thrombus neovascularization. Thromb Haemost. 2006 Feb; 95(2):272-81.
10. Rectenwald JE, Deatrick KB, Sukheepod P, Lynch EM, Moore AJ, Moaveni DM, Deywer NA, Luke CE, Upchurch GR Jr, Wakefield TW, Kunkel SL, Henke PK. Experimental pulmonary embolism: effects of the thrombus and attenuation of pulmonary artery injury by low-molecular-weight heparin. J Vasc Surg. 2006 Apr; 43(4):800-8.
11. Wen H, Hogaboam CM, Gauldie J, Kunkel SL. Severe sepsis exacerbates cell-mediated immunity in the lung due to an altered dendritic cell cytokine profile. Am J Pathol. 2006 Jun; 168(6):1940-50.

Andrew P. Lieberman, M.D., Ph.D.
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES

A. DIAGNOSTIC SURGICAL NEUROPATHOLOGY, 6 weeks

B. AUTOPSY

1. Evaluation of brains submitted to the Michigan Alzheimer's Disease Research Center.

II. TEACHING ACTIVITIES

A. UNDERGRADUATE STUDENTS

1. Youyou Duanmu, Columbia University
2. Akshay Lohitsa, Harvard University

B. GRADUATE STUDENTS

1. Thesis committee member
    a. Mary Heng, Neuroscience Graduate Program
    b. Yunfang Man, Pathology Graduate Program
    c. Scott Tomlins, Pathology Graduate Program
2. Preliminary examination committee member
    a. Graham Bradley, Pathology Graduate Program
    b. Gustavo Patino, Neuroscience Graduate Program
3. David Rousso, Neuroscience Graduate Program, Rotating Student

C. POSTDOCTORAL FELLOWS

1. Monzy Thomas, Ph.D.
2. Zhigang Yu, M.D.
3. Christopher Pacheco (thesis student)

D. MEDICAL STUDENTS

1. Lecturer and laboratory instructor, M2 Pathology, Neuroscience Sequence
2. Instructor, Pathology/Radiology elective for M4 students
3. Course director and instructor, "Introduction to neuropathology", Pathology 858
4. Lecturer, "Triplet repeat disorders", Pathology 581
5. Lecturer and laboratory instructor, "Neuropathology", Pathology 586

E. RESIDENTS AND FELLOWS

1. Slide conference on neurodegenerative disease, pathology house officers

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Principal InvestigatorN (75%), “Modifiers of polyglutamine toxicity”, Paul Beeson Career Development Award in Aging Research, NIH and American Federation for Aging Research, K08 AG024758, $200,000/yr ($600,000/3 yr), 8/1/04 – 5/31/07.
2. Principal Investigator (0%), “Understanding the neuropathology of Niemann-Pick C through mouse models”, Atorvastastin Research Award, Pfizer, $45,000/yr ($90,000/2 yr), 7/1/04 – 6/30/06.
3. Core Principal Investigator (15%), “Neuropathology Core”, Michigan Alzheimer’s Disease Research Center, NIH, P50 AG08671, $47,034/yr, 6/1/99 – 5/31/10.
4. Principal Investigator (5%), “A knock-in mouse model of Kennedy’s disease”, Muscular Dystrophy Association, $90,000/yr ($270,000/3yr), 7/1/04 – 6/30/07.
5. Sponsor/Mentor (0%), (Christopher Pacheco, Principal Investigator), “Understanding Niemann-Pick C with cell and mouse models”, NIH, F31 NS51143, $35,248/yr ($140,992/4yr).
6. Principal Investigator (0%), AP Project, “A conditional knock-in model of Kennedy disease”, $20,000/yr, 6/1/06 – 5/31/07.

B. PROJECTS UNDER STUDY

1. Mechanism of neurodegeneration in Kennedy disease.
2. Mechanism of neurodegeneration in Niemann-Pick C.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Chair, Pathology Graduate Program Admissions Committee.
2. Member, Pathology Graduate Program Preliminary Examination Committee.
3. Member, Anatomic Pathology Project Review and Funding Committee.
4. Pathology residency training program and faculty candidate interviews.

B. INSTITUTIONAL

1. Member, Neuroscience Graduate Program.
2. Director, Neuropathology Core, Michigan Alzheimer’s Disease Research Center.
3. Member, Medical Scientist Training Program Advisory Committee.
4. PIBS student interviews.

C. REGIONAL/NATIONAL/INTERNATIONAL

1. Grant review for Alzheimer’s Association.
2. Member, Scientific Review Board, Kennedy’s Disease Association.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Manuscript Review – *Brain*
2. Manuscript Review - *Brain Research*
3. Manuscript Review - *International Journal of Biochemistry and Cell Biology*
4. Manuscript Review - *Journal of Neuropathology and Experimental Neurology*

5. Manuscript Review - *Neurobiology of Aging*

B. INVITED LECTURES/SEMINARS
1. "Triplet repeat disorders", Michigan State University Neuropathology Course, East Lansing, MI, October, 2005.
2. "Androgen receptor toxicity in Kennedy disease", Winter Conference on Brain Research, Steamboat Springs, CO, January, 2006.
3. Discussant, Kennedy's Disease Association sponsored on-line chat, June, 2006.

C. HONORS AND AWARDS
1. Paul Beeson Career Development Award in Aging Research, NIH and American Federation for Aging Research.
2. Mentored Student - Christopher Pacheco: Gordon Research Conference Carl Storm Underrepresented Minority Fellowship.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
1. Yu Z, Dadgar N, Albertelli M, Scheller A, Albin RL, Robins DM, Lieberman AP. Abnormalities of germ cell maturation and Sertoli cell cytoskeleton in androgen receptor 113 CAG knock-in mice reveal toxic effects of the mutant protein. Am J Pathol, 168, 195-204, 2006.
2. Thomas M, Harrell JM, Morishima Y, Peng HM, Pratt WB, Lieberman AP. Pharmacologic and genetic inhibition of hsp90-dependent trafficking reduces aggregation and promotes degradation of the expanded glutamine androgen receptor without stress protein induction. Hum Mol Genet, 15, 1876-1883, 2006.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS
1. Thomas M, Harrell JM, Plane J, Peng H-M, Pratt WB, Lieberman AP. Expression of the hsp90 cochaperone p23 inhibits steroid hormone receptor trafficking and production of aggregates by the expanded glutamine androgen receptor of Kennedy disease. Annual meeting of Beeson Scholars, La Jolla, CA, June, 2005.
2. Yu Z, Dadgar N, Albertelli M, Scheller A, Robins DM, Lieberman AP. Abnormalities of germ cell maturation and Sertoli cell cytoskeleton in androgen receptor 113 CAG knock-in mice. Gordon Research Conference on CAG Triplet Repeat Disorders, South Hadley, Massachusetts, July, 2005.
3. Pacheco CD, Dadgar N, Lieberman AP. Generation of an Npc1 conditional null allele in mice. Gordon Research Conference on the Molecular and Cellular Biology of Lipids, Waterville Valley, New Hampshire, July, 2005.
4. Thomas M, Harrell JM, Plane J, Peng H-M, Pratt WB, Lieberman AP. Expression of the hsp90 cochaperone p23 inhibits steroid hormone receptor trafficking and production of aggregates by the expanded glutamine androgen receptor of Kennedy disease. Society for Neuroscience meeting, Washington, DC, November, 2005.

5. Merry D, Lieberman A, Poletti A, Diamond M. Steroids, polyglutamine toxicity, and motor neuron degeneration. Winter Conference on Brain Research, Steamboat Springs, CO, January 2006.
6. Pacheco CD, Dadgar N, Lieberman AP. Generation of an Npc1 conditional null allele in mice. ARA Summit Meeting, Salt Lake City, Utah, February, 2005.
7. Lieberman AP, Yu Z, Albertelli M, Gruis K, Dadgar N, Jordan C, Robins DM. Androgen-dependent pathology demonstrates myopathic contribution to the Kennedy disease phenotype in a mouse knock-in model. Annual meeting of Beeson Scholars, Fort Myers, FL, June, 2006.
8. Yu Z, Albertelli M, Gruis K, Dadgar N, Robins DM, Lieberman AP. Androgen receptor 113 CAG knock-in mice demonstrate myopathic contribution to the Kennedy disease phenotype. International Congress of Neuropathology, San Francisco, CA, September, 2006.

Richard W. Lieberman, M.D.
Assistant Professor of Pathology and Obstetrics & Gynecology

I. CLINICAL ACTIVITIES

A. GYNECOLOGIC PATHOLOGY
   1. Consultation - twelve months.
   2. Semimonthly Tumor Planning Conference - twelve months.

B. AUTOPSY SERVICE – twelve months (14 weeks, 6 weekends).

C. GYNECOLOGIC ONCOLOGY
   1. Colposcopy Clinic, one half day/week, twelve months.

D. PLACENTAL PATHOLOGY – twelve months.

II. TEACHING ACTIVITIES

A. Residents and Fellows
   1. Sign-out - Gynecologic Pathology, Placentas, and Autopsy cases.
   2. Review cases and supervise presentation of semimonthly Gynecologic Oncology Tumor Planning Conference – twelve months.
   3. Instruction in the Gross Examination, frozen section diagnosis, and processing of Gynecologic Surgical specimens and Placentas, July-September 2002.
   4. Instruction and supervision in the performance, presentation and sign-out of autopsy cases.
   5. Teaching Conferences- lecture in Gyn Pathology, Jan 2002.
   6. Consult Case Conference - two/year.
   7. Miscellaneous resident evening conferences in Gyn Path
   8. Resident resource web page in Gyn Pathology (http://gynonc.path.med.umich.edu – Web access to Gyn Pathology Grossing Manual, lecture slides, "Blue Book" Online guide to Gynecologic Oncology, and other resources.
   9. Morbidity and Mortality Conferences – Internal Medicine, General Surgery, and Obstetrics & Gynecology.

B. MEDICAL STUDENTS
   1. M2, Obstetrics & Gynecology Sequence: Five hours Gynecologic Pathology lectures; preparation of examination questions.
   2. M2, Obstetrics & Gynecology Sequence: Laboratory instruction.
   3. M2 resource web page in Gyn Pathology (- – Web access to Gyn Pathology laboratory, lecture slides, and other resources.
   4. M3 – Teaching during weekly Colposcopy Clinic.

C. OB/GYN RESIDENTS AND GYNECOLOGIC ONCOLOGY FELLOW
   1. Semimonthly Tumor Planning Conference – twelve months.

D. OTHER
1. Colposcopy clinic staff – one-half day per week (twelve months).
2. Operating Room Instruction – one-half day per week.
3. Lectures in Gynecologic Pathology to Gyn Oncology Service – two/year.
4. Gyn Pathology Rotation for 3rd year Gyn Oncology Fellow – one month.
5. Placental Pathology Lectures – two hours.
6. University of Michigan Dental School – D2 Reproductive Sequence – two hours.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT – None

B. PROJECTS UNDER STUDY
1. Digital Imaging for Web-based Review of Tumor Histopathology for Rapid Confirmation Eligibility in a GOG Protocol; Addendum to GOG 207 and Subsequent GOG Studies Direct Sponsor: The Gynecologic Oncology Group. $10,000 for administrative support
2. Spindle Cell Alteration of Endometrial Stroma as a Predictor of Plasma Cell Infiltration. IRB# HUM00000968. Siddiqui M, Habib L, Lieberman RW.
3. Determination of Biomarker Expression in Uterine Sarcomas and Uterine Papillary Serous Tumors. IRB# HUM00001698. Rhodes J, Lieberman R, Liu J.
4. A Retrospective Review of Pathological Stage I Endometrial Carcinoma in Patients with Lower Uterine Segment Involvement. IRB# HUM00004251. Burke W, Richards B, Lieberman R.
5. The potential role of human papillomavirus in mediating the inflammatory process in endometriosis. IRB# HUM00003403. Lebovic D, Lieberman R, Kavoussi S, Mueller M, Shah D.
6. Correlation of colposcopic stereoscopic photography (colpography) and Hyperspectral Diagnostic Imaging (HSDI, developed by STI-Medical: Science and Technology International) with the underlying cervical LEEP histopathology.
   Pending IRB Approval (as of June 2005)

C. SOFTWARE DEVELOPMENT
1. PathView Image Database – Software Disclosure (U of Michigan 2000).
2. Profiler, Tissue Microarray & Genomics DB Module (under PathView) – Disclosure July 2002.
3. Placental Imaging Project – Imaging and Bar Code Schema for Image Capture.
4. PathView for use in On-line pathology review (see below)

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Member, Pathology Bioinformatics, Department of Pathology.
2. Director of Telepathology, Department of Pathology.

B. INSTITUTIONAL
1. Member, Picture Archiving and Communication System Committee.

C. REGIONAL/NATIONAL:/INTERNATIONAL
1. Member, Medical Informatics Committee, Gynecologic Oncology Group.
2. Member, Pathology Committee, Gynecologic Oncology Group.
3. Member, Tissue Utilization Committee, Gynecologic Oncology Group.
4. Member, National Comprehensive Cancer Network (NCCN) Cervical/Endometrial Cancer Screening Panel.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS
1. Editorial Reviewer, *Obstetrics and Gynecology.*
2. Editorial Reviewer, *Cancer*.

B. INVITED LECTURES/SEMINARS
1. "Placental Pathology at the University of Michigan" Grand Rounds in Obstetrics & Gynecology. University of Michigan Department of Ob/Gyn, September 22, 2005.
2. "Basic Colposcopy Course", American Society of Colposcopy and Cervical Pathology, Miami, Florida, October19-23, 2005.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
1. Yang H, Yang K, Khafagi A, Tang Y, Carey TE, Opipari A, Lieberman RW, Oeth PA, Lancaster W, Klinger HP, Kaseb AO, Metwally A, Khaled H, Kurnit DM. Sensitive detection of human papillomavirus in cervical, head/neck, and schistosomiasis-associated bladder malignancies. Proceedings of the National Academy of Sciences of the United States of America. 102(21):7683-8, 2005 May 24.
2. Advincula AP, Hernandez JC, Lieberman RW. Images in Reproductive Medicine. Fertility and Sterility. 84(5):1505-7, 2005 Nov.
3. Jarzembowski JA., Lieberman RW. Pediatric sex cord-stromal tumor with composite morphology: a case report. Pediatric and Developmental Pathology. 8(6):680-4, 2005 Nov-Dec.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS:
1. Vulva: Benign and Inflammatory Conditions. Haefner, H (editor), Lieberman, R (Web Editor/developer), et al. http://www.asccp.org/edu/practice/vulva.shtml.
2. Vulva: HPV and VIN. Haefner, H (editor), Lieberman, R (Web Editor/developer), et al. http://gynonc.path.med.umich.edu/ASCCP/HPV_VIN/default.htm.
3. Vulva: HPV and VIN. Haefner, H (editor), Lieberman, R (Web Editor/developer), et al. http://gynonc.path.med.umich.edu/ASCCP/HPV_VIN/default.htm.
4. On-line Gynecologic Pathology Manual. GOG Pathology Committee: Benda J (Chair), Lieberman R (Web Editor) http://www.gog.org.

Lori Lowe, M.D.
Professor of Pathology and Dermatology
Director of Dermatopathology

I. CLINICAL ACTIVITIES

A. DERMATOPATHOLOGY SERVICE – 12 months.

B. DERMATOPATHOLOGY CONSULTATION SERVICE - 12 months.

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS

1. Lecturer, MS II Dermatology Sequence.
2. Dermatopathology laboratory director and instructor, MS II Dermatology Sequence.
3. Dermatopathology, Pathology Clerkship, MS I and MS IV students.
4. Dermatopathology, Dermatology Clerkship, MS IV students.

B. DENTAL STUDENTS

1. Lecturer, Skin Integument Model, “Introduction to Clinical Dermatology with Histopathologic Correlates, Parts I and II

C. HOUSE OFFICERS AND FELLOWS

1. Dermatopathology sign-out (Pathology and Dermatology Residents).
2. Review of dermatopathology consultation material.
3. Dermatopathology teaching conference.
4. Diagnostic Conference, Department of Dermatology.
5. Director of Diagnostic Conference, Department of Dermatology.

D. HOSPITAL CONFERENCES

1. Multidisciplinary Melanoma Conference.

III. RESEARCH ACTIVITIES

A. PENDING SUPPORT

1. Co-Investigator (0%), “The Unfolded Protein Response in Melanoma Progression and Chemoresistance” . NIH RO1. $1,832,610, Submission 1/26/06. (12/1/06-11/30/11).

B. PROJECTS UNDER STUDY

1. Phase I, Double-Blind, Randomized, Placebo-controled, Multicenter Study Evaluating the Safety and Tolerability of a Multidose Regimen of G-024856 Topically Applied to Superficial or Nodular Basal Cell Carcinoma. Protocol number: THA3435g. Sponsor: Genentech, Inc. Local principal investigator: Sewon Kang, M. D., Co-Investigator: Lori Lowe, M.D. (2/2006 – ongoing).
2. University of Michigan (UMCC 2005-130): Multicenter Selective Lymphadenctomy Trial II (MSLT-II). Local principal investigator:

Michael Sabel, M.D., Co-Investigator: Lori Lowe, M.D. (2006-ongoing).

3. University of Michigan (UMMC 2000-0713): Molecular, biochemical, and cellular basis of melanoma and other melanocytic lesions: Tissue Bank. Principal Investigator: Timothy M. Johnson, M.D., Co-Investigator: Lori Lowe, M. D.
4. University of Michigan (UMCC 2-15): A phase III randomized double-blind pivotal trial of immunotherapy with BCG plus a polyvalent melanoma vaccine, CancerVaxTM vaccine versus BCG plus a placebo as a post-surgical treatment for Stage III melanoma. Principal Investigator: Michael Sabel, M.D.
5. NIH/NIDDK Grant DK59169. Topical Retinoids for Diabetic Foot Ulcers. Member, NIDDK Data and Safety Monitoring Plan. Principal Investigator: James Varani, Ph.D. 2003-ongoing.
6. IRB 2006-0452. Protocol No. 20031 Pilot Roll-in Study: Evaluation of Pigmented Skin Lesions with MelaFind® System. Principal Investigator: Jennifer L. Schwartz, M. D.
7. IRBMED #2006-04577. Analysis of cell survivial and cell death factors in human pigmented lesions. Principal Investigator: Maria Soengas, Ph.D.
8. IRBMED #2004-04163. CD23, a new marker for cutaneous adnexal neoplasms. Principal Investigator: Linglei Ma, M.D., Ph.D.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Director, Dermatopathology Service, Department of Pathology, University of Michigan.
2. Member, Advisory Committee on Appointments, Promotions, and Tenure (ACAPT), Department of Pathology, University of Michigan.
3. Member, Residency Review Committee, Department of Dermatology, University of Michigan.
4. Coordinator, QA/QC program (Mohs surgery slides), Cutaneous Surgery and Oncology Program, Department of Dermatology, University of Michigan.
5. Interviewer, Pathology House Officer Candidates.
6. Interviewer, Dermatology House Office Candidates.

B. NSTITUTIONAL

1. Member, Melanoma Tissue Core Distribution Committee (IRBMED #2004-0618).
2. Member, Multidisciplinary Melanoma Program, University of Michigan Comprehensive Cancer Center.

C. REGIONAL/NATIONAL:/INTERNATIONAL

1. Member, North American Melanoma Pathology Study Group.
2. Member, American Medical Women's Association Mentorship Program.
3. Member, American Academy of Dermatology's Minority Medical Student Mentor Program.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Editorial Board, Skin Section Editor, *CANCER*

2. Member, Editorial Board, *Journal of the American Academy of Dermatology*
3. Ad hoc manuscript reviewer, *Journal of Cutaneous Pathology*
4. Ad hoc manuscript reviewer, *Dermatologic Surgery*
5. Ad hoc manuscript reviewer, *Human Pathology*
6. Ad hoc manuscript reviewer, *Archives of Dermatology*

B. INVITED LECTURES/SEMINARS

1. Lecture, "Dermatopathology and Skin Cancer," at Emerson School, Ann Arbor, MI, March 2006.
2. Self-Assessment of Dermatopathology, faculty, Summer Academy '05 Meeting, Chicago, IL, July, 2006.
3. "The Many Faces of Melanoma: Practical Considerations and Potential Pitfalls", invited seminar, The A. James French Society of Pathologists 9th Scientific Meeting, Ann Arbor, MI, October 1, 2005.
4. "The Many Faces of Melanoma – A Histopathologic Perspective: Practical Considerations and Diagnostic Dilemmas, invited seminar, Dermatology Foundation: Clinical Symposia, Naples, Florida, January, 2006.

C. HONORS AND AWARDS

1. Listed in 2005-2006 Manchester Who's Who Among Executive and Professional Women "Honors Edition".
2. Listed in Best Doctors in America 2005-2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Arora A, Lowe L, Su L, Rees, R, Bradford C, Cimmino VC, Chang AE, Johnson TM, Sabel MS: Wide excision without radiation for desmoplastic melanoma. Cancer 104: 1462-1467, 2005.
2. Schmalbach CE, Lowe L, Teknos TN, Johnson TM, Bradford CR: Reliability of sentinel lymph node biopsy for regional staging of head and neck Merkel cell carcinoma. Arch Otolaryngol Head Neck Surg 131: 610-614, 2005.
3. Cho S, Lowe L, Hamilton TA, Fisher GJ, Voorhees JJ, Kang S: Long term treatment of photoaged human skin with topical retinoic acid improves epidermal cell atypia and thickens collagen band in the papillary dermis. J Am Acad Dermatol 53: 769-774, 2005.
4. Constantino D, Lowe, L, Brown DL: Basosquamous carcinoma- An under-recognized, high risk cutaneous neoplasm: Case study and review of the literature. Br J Plast Surg 59: 424-428, 2005.
5. Rosamilia LL, Schwartz JL, Lowe L, Gruber SB, Quint EH, Johnson TM, Reynolds RK, Haefner HK: Vulvar melanoma in a 10 year old child in association with lichen sclerosus. J Am Acad Dermatol 54: S52-53, 2006.
6. Robson K, Maughan J, Deramo S, Petersen M, Haefner, Lowe L. Erosive papulonodular dermatosis associated with topical benzocaine: A report of two cases and evidence that granuloma gluteale, pseudoverrucous papules and Jacquet's erosive dermatitis are a disease spectrum. J Am Acad Dermatol (in press).

7. Jejurikar SS, Borschel GH, Johnson TM, Lowe L, Brown DL. Simultaneous excision and optimal reconstruction of facial lentigo maligna and lentigo maligna melanoma utilizing staged, “square” total peripheral margin control. Plastic and Reconstructive Surg (in press).
8. Shors AR, Kim S, White E, Barnhill RL, Lowe L (member, North American Dysplastic Nevus Panel), Piepkorn, MW. Nevi with moderate to severe histologic atypia: a risk factor for melanoma. Br J Dermatol (in press).
9. Fullen DR, Pynter JN, Lowe L, Su LD, Elder JT, Nair RP, Johnson TM and Gruber SB. BRAF and NRAS mutations in spitzoid melanocytic lesions. Mod Pathol (in press).
10. Orringer JS, Hammerberg C, Lowe L, Kang S, Johnson TM, Karimipour DJ, Hamilton T, Voorhees JJ, Fisher GJ. The effects of laser-mediated hair removal in the immunohistochemical staining properties of follicular stem cells. J Am Acad Dermatol (in press).

B. BOOKS AND CHAPTERS IN BOOKS

1. Marder W, Lath V, Crofford L, Lowe L, McCune WJ: Systemic lupus erythematosus, scleroderma and myositis. In: Atlas of Rheumatology, 4th edition. Hunder G (ed). Current Medicine LLC, Philadelphia, PA. 2005.
2. Lowe L: Deposition Disorders. In: Dermatology Secrets in Color 3rd edition. 2006 Fitzpatrick JE, Morelli J (eds). Elsivier, Philadelphia, PA. (in press).

David R. Lucas, M.D.
Associate Professor of Pathology

I. CLINICAL ACTIVITIES

A. SURGICAL PATHOLOGY - 26 weeks.
B. BONE AND SOFT TISSUE PATHOLOGY CONSULTATION – 52 weeks.
C. SARCOMA TUMOR BOARD – 52 weeks.

II. TEACHING ACTIVITIES

A. MEDICAL/DENTAL STUDENTS
   1. Pathophysiology 540 - 100 PGY-1 dental students, 3 lecture hours.
   2. Pathology mentorship- 2 PGY-4 medical students, 1 month rotation.

B. HOUSE OFFICERS AND FELLOWS
   1. Surgical pathology sign-out – 26 weeks.
   2. Bone and soft tissue pathology elective – 9 house officers, 1 month each.
   3. Lectures in bone and soft tissue pathology – 4 hours.
   4. Consultant conferences – 4 hours.

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY
   1. RTOG 0330, A pilot phase II study of pre-operative radiation therapy and thalidomide (IND 48832; NSC 66847) for low grade primary soft tissue sarcoma or pre-operative MAID/thalidomide/radiation therapy for high/intermediate grade primary soft tissue sarcoma of the extremity or body wall.
   2. Radomized trial of neoadjuvant adriamycin/ifosfamide vs. gemcitabine/taxitol in high-grade soft tissue sarcoma (U of M trial).
   3. Erbitux treatment in refractory high-grade soft tissue sarcoma (U of M trial).
   4. SWOG S0346, Phase II study of trastuzumab (NSC-688097), celecoxib or the combination in treatment of recurrent synovial sarcoma.
   5. RTOG 0006, A phase II trial of image guided radiotherapy for primary soft tissue sarcomas of the extremity or body wall. Evaluation of CD13 and CD14 in normal skin and histiocytic/fibrohistiocytic infiltrates of the skin.
   6. Clinicopathological, immunohistochemical, molecular study of angiosarcoma

7. Clinicopathological and immunohistochemical study comparing uterine and extra-uterine leiomyosarcoma.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
   1. Search committee, Director of Anatomic Pathology.
   2. Pathology residency and fellowship training programs and faculty candidate interviews.
   3. Anatomic Pathology Funding Committee.

B. INSTITUTIONAL
   1. Medical Director, Immunohistochemistry Laboratory.

C. REGIONAL/NATIONAL/INTERNATIONAL
   1. Abstract Review Board, Bone and soft tissue pathology, USCAP.
   2. Moderator, Bone and soft tissue platform session, USCAP, 95th Annual Meeting, Atlanta.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS
   1. Manuscript reviewer, *Archives of Pathology and Laboratory Medicine.*
   2. Manuscript reviewer, *Journal of Surgical Oncology.*
   3. LABORATORY TEST DEVELOPMENT
      a. RT-PCR for synovial sarcoma, Ewing sarcoma, desmoplastic small round cell tumor, alveolar rhabdomyosarcoma in paraffin (all billable clinical tests as of 5/1/06) with Dr. John Thorson.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
   1. Chuba PJ, Hamre MR, Yap J, Severson RK, Shamsa F, Lucas DR, Amr A. Bilateral risk for subsequent breast cancer after lobular carcinoma in situ: analysis of SEER data. J Clin Oncol 23(24):5534-41, 2005.
   2. Chughtai A, Cronin P, Kelly AM, Lucas DR, Pagani FD, Kazerooni EA. Cardiac pseudosarcomatous fibromyxoid tumor: a review of the literature. J Comput Assist Tomogrv 29(6):749-751, 2005.
   3. Al-Abbadi MA, Saleh HA, Lucas DR, Tabaczka PM. Differential expression of HER-2/neu receptor of invasive mammary carcinoma between Caucasian and African American patients in the Detroit metropolitan area. Correlation with overall survival and other prognostic factors. Breast Cancer Res Treat. 97(1):3-8, 2006.
   4. Kraybill W, Spiro I, Harris J, Ettinger D, Trotti A, Lucas DR, Blum R, Eisenberg B, RTOG 95-14: Phase II study of neoadjuvant chemotherapy and radiation therapy compared with radiation therapy in the management of high-risk, high-grade soft tissue sarcomas of the extremities and body wall. J Clin Oncol 24:549-51, 2006.
   5. Rhode MG, Lucas DR, Krueger CH, Pu RT. Fine needle aspiration of spinal osteoblastoma in a patient with lymphangiomatosis. Diag. Cytopathol 16; 34(4):295-297, 2006.

6. Olsen SH, Thomas DG, Lucas DR. Cluster analysis of immunohistochemical profiles in synovial sarcoma, malignant peripheral nerve sheath tumor, and Ewing sarcoma. Mod Pathol 19:659-68, 2006.
7. Thorson JA, Weigelin HC, Ruiz RE, Howard JK, and Lucas DR. Detection and genotypic characterization of SYT-SSX transcripts from synovial sarcomas using RT-multiplex PCR and capillary electrophoresis. Mod Pathol 19:641-7, 2006.
8. Morag Y, Jacobson J, Lucas DR, Miller B, Brigido M, Jamadar D. Sonographic appearance of the rotator cuff cable with histologic correlation: preliminary results. Radiol (In Press).
9. McHugh JB, Thomas DG, Herman JM, Ray ME, Baker LH Adsay NV, Rabah R, Lucas DR. Primary versus radiation-associated craniofacial osteosarcoma: biologic and clinicopathologic comparison. Cancer (In Press).

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Herman J, Ray M, Lucas DR, McHugh J, Thomas D, Baker L. Radiation associated angiosarcoma: A single institution case series and tissue microarray, ASTRO, 47th Annual Meeting, Denver.
2. McHugh JB, Thomas DG, Herman JM, Ray ME, Baker LH, Lucas DR. Sporadic vs radiation-associated angiosarcoma: biologic and clinicopathologic comparisons. Mod Pathol 19 (sup 1):15A, 2006.
3. Przybycin CG, Thomas DG, Baker LH, Lucas DR. Myxoid/round cell liposarcoma: beyond the round cell paradigm. Mod Pathol 19 (sup 1):17A, 2006.
4. Wu AJ, Thomas DG, Fullen DR, Lucas DR. Cluster analysis of immunohistochemical profiles in melanoma and MPNST: Phenotypic continuum and diagnostic strategy. Mod Pathol 19 (sup 1):19A, 2006.
5. Kshirsagar MP, Baker LH, Biermann JS, Lucas DR. Histologic response to neoadjuvant chemotherapy: a poor predictor of outcome in high grade extremity soft tissue sarcomas. Mod Pathol 19 (sup 1):13A, 2006.
6. Magliocca KR, Leung EM, Ward BB, Lucas DR, Helman JI. Use of Carnoy's solution in management of odontogenic keratocysts. American Association For Dental Research, 35th Annual Meeting, Orlando.
7. Ray ME, Murphy J, Feng M, Griffith KA, Baker LH, Sondak VK, Lucas DR, McGinn C. Outcomes after combined modality treatment of retroperitoneal sarcomas. ASTRO, 48th Annual Meeting, Philadelphia.

Peter C. Lucas, M.D., Ph.D.
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES

A. SURGICAL PATHOLOGY
   1. Diagnostic surgical pathology (room BE); 18 weeks.
   2. Diagnostic surgical pathology (extramural consultations); 8 weeks.

B. INTERDISCIPLINARY BREAST CARE CONFERENCE
   1. Pathology Representative, weekly, 23 weeks.

C. AUTOPSY PATHOLOGY; 2 days.

II. TEACHING ACTIVITIES

A. MEDICAL SCHOOL
   1. M2 Pathology Laboratory Instructor (Respiratory, Reproductive Sequences); 8 labs (approx 16 hours).

B. DENTAL SCHOOL
   1. Integrated Medical Sciences-III Course Instructor, 1 lecture (1 hour).

C. RESIDENTS AND FELLOWS
   1. Mentoring of breast pathology fellow; 18 weeks.
   2. Room BE sign-out of breast pathology, with resident instruction; 18 weeks.
   3. Autopsy supervision and sign-out (2 days).
   4. Lecture in AP Grand Rounds series (1 hour).

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
   1. Principal Investigator (70% effort), "NF-κB Signaling and the Molecular Pathogenesis of MALT Lymphoma" (Mentored Career Development Award), National Institutes of Health (NCI) K08 CA094920, $136,900 direct costs/yr ($684,500/5 yrs); 7/1/02 – 6/30/07.
   2. Principal Investigator (5% effort), "A Novel Signaling Pathway Mediating Hypertension- and Obesity-dependent Insulin Resistance", Michigan Diabetes Research and Training Center (MDRTC) Pilot/Feasibility Study Grant. $45,000 direct costs/yr; 12/1/05-11/30/06.

B. PENDING
   1. Principal Investigator (25% effort), "Angiotensin II Signaling Through a Novel NF-κB Pathway", NIH R01 HL082914, National Heart/Lung Institute. $250,000 direct costs/yr ($1,250,000/5 yrs); 12/01/06 – 11/30/11.
   2. Co-Investigator (10% effort), "Multiple Roles of the API2 Moeity in API2-MALT1-mediated Lymphomagenesis", NIH R01 CA124540,

National Cancer Institute (McAllister-Lucas, PI). $250,000 direct costs/yr ($1,250,000/5yrs); 12/01/06-11/30/11.

C. PROJECTS UNDER STUDY
1. Characterization of signaling pathways involved in Angiotensin II dependent vascular inflammation.
2. Characterization of signaling pathways mediating obesity and hypertension related insulin resistance.
3. Molecular mechanisms responsible for MALT lymphoma tumorigenesis.
4. Biochemical properties of the API2-MALT1 fusion protein, the product of a t(11;18) translocation in MALT lymphoma.

D. CLINICAL TRIALS
1. Co-Investigator: ACOSOG Z-1031 Breast Cancer Trial.
2. Co-Investigator: UMCC 2006.010 Evaluation of an Imaging Biomarker for Early Detection of Treatment Efficacy during Breast Cancer Neoadjuvant Chemotherapy.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL:
1. Quality assurance for the breast pathology service.
2. Pathology residency training program candidate interviews.
3. Surgical pathology fellow candidate interviews.

B. INSTITUTIONAL
1. Career Advisory Panel, Medical Scientist Training Program.
2. PIBS applicant interviewer.
3. Member; Michigan Comprehensive Cancer Center
4. Member; Michigan Cancer Consortium (MCC), Breast Cancer Advisory Committee.

V. OTHER RELEVANT ACTIVITIES

A. INVITED LECTURES/SEMINARS
1. Invited speaker; Daryl K. Granner Research Symposium, Vanderbilt University Medical School, Nashville TN (October 2005), “NF-kB Signaling; Parallel Pathways in Neoplasia and the Metabolic Syndrome”.
2. Department of Pathology Research Seminar Series, (November 2005), “A Novel NF-κB Signaling Pathway, From Lymphoma to Atheroma”.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
1. Williams, J., Lucas, P.C., Griffith, K.A., Choi, M., Fogoros, S., Hu, Y.Y., and Liu, J.R. (2005) Expression of Bcl-xL in ovarian carcinoma is associated with chemoresistance and recurrent disease. **Gynecol. Oncol.,** 96:287-295.
2. Degnim, A.C., Reynolds, C., Pantvaidya, G., Zakaria, S., Hoskin, T., Barnes, S., Roberts, M.V., Lucas, P.C., Oh, K., Koker, M., Sabel, M.S., and Newman, L.A. (2005) Nonsentinel node metastasis in breast cancer patients: assessment of an existing and a new predictive nomogram. **American Journal of Surgery,** 190:543-550.

3. Rivers, A.K., Griffith, K.A., Hunt, K.K., Degnim, A.C., Sabel, M.S., Diehl, K.M., Cimmino, V.M., Chang, A.E., Lucas, P.C., and Newman, L.A. (2006) Clinicopathologic features associated with having four or more metastatic axillary nodes in breast cancer patients with a positive sentinel lymph node. **Annals Surg. Oncol.**, 13:36-44.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS:

1. McAllister-Lucas, L.M., Kuffa, P., MacDonald, C., Siu, K., Lucas, P.C., and Nunez, G. (2005) The role of homo-oligomerization in API2-MALT1-mediated oncogenesis. **18th Annual Meeting of the American Society of Pediatric Hematology and Oncology**, Washington, D.C.
2. Lucas, P.C., Kuffa, P., Kohrt, D., Gu, S., Kim, D., McAllister-Lucas, L.M. (2006) A dual role for the API2 moiety in API2-MALT1 fusion protein-mediated lymphomagenesis. **2nd International Symposium on Chilhood, Adolescent and Young Adult Non-Hodgkin's Lymphoma**. New York, N.Y.
3. Lucas, P.C., Kuffa, P., Kohrt, D., Gu, S., Kim, D., and McAllister-Lucas, L.M. (2006) A dual role for the API2 moiety in API2-MALT1 fusion protein-mediated oncogenesis. **Doris Duke Charitable Foundation Clinical Research Symposium**. New Jersey.

Nicholas W. Lukacs, Ph.D.
Associate Professor of Pathology

I. CLINICAL ACTIVITIES - None.

II. TEACHING ACTIVITIES

A. DENTAL SCHOOL
1. 1rst year students.
2. Lectures on Inflammation, cytokines and Chemokines

B. POST-DOCTORAL FELLOWS
1. Barb Steffes
2. Jetse Smit
3. Dennis Lindell
4. Vladislav Dolgachev, Robert

C. GRADUATE STUDENTS
1. Matt Schaller (Ph.D. December, 2005)
2. Brian Rudd (Ph.D., April, 2006)
3. Rotation Students- Rupak Neupene, Lara Kelley

D. LECTURES
1. Immunology 850, Course Director and instructor, Fall 2005.
2. Pathology 581, Graduate Students. Lectures on Inflammation and Immune responses.
3. Pathology 643, Course Director, Immune mechanisms of Disease, Fall 2005.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
1. PI (20%), “Role of chemokines in eosinophil airway inflammation”, RO1 AI36302-07, Direct Costs $200,000/yr., 8/1/96-7/30/06.
2. PI (20%), “Role of SCF in airway eosinophil inflammation”, RO1 HL59178-05, Direct Costs $225,000/yr., 5/1/98-4/30/08
3. PI, Project IV (20%), “Cockroach allergen-induced airway inflammation”, NIH Program Project PO1 HL, Direct Costs, $225,000/yr., 3/1/99-2/28/10
4. Co-Investigator, Project 3 (5%), "Fibrotic cytokine phenotypes in interstitial lung disease", NIH Special Centers of Research (SCOR) Grant P50 HL 56402-12/1/96-11/30/06.
5. Co-Investigator (10%), "Acute Lung Injury", Project 2, NIH Special Centers of Research (SCOR) grant, P50 HL60289, 12/01/98-11/30/08.
6. Co-Investigator (10%), “Targeting of RANTES/CCL5 during chronic fungal asthma”, RO1 HL69865, 8/15/03-7/30/07.

7. Co-Investigator (5%), "Control of Apoptosis and Signaling by XIAP", RO1 GM067827-01A2, 4/05-3/10.
8. Co-Investigator (10%), "Rhinovirus and airway epithelial cell responses", NIH RO1, 4/06-3/10.
9. Co-Investigator Training Grants (T32-Faculty Mentor)
    a. Associate Director, Pathology pulmonary training grant. Peter A. Ward, PI.
    b. Pediatric Training grant. Janet Gilsdorf, PI.
    c. Pulmonary and Critical Care Medicine Fellows Training grant. Galen Teows, PI.
    d. Immunologic Sciences Training Grant. Steven Kunkel, PI.
    e. Rheumatology Training Grant. David Fox, PI.

B. PROJECTS UNDER STUDY

1. Role of chemokines and their receptors in pulmonary T cell immune responses (allergic and viral).
2. Viral activation of TLRs in determining the pulmonary immune environment and pathophysiology.
3. The role of stem cell factor (SCF) and c-kit in the development of chronic pulmonary disease.
4. The signal transduction of chemokine and toll-like receptors on immune and non-immune cell populations.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Director of Molecular and Cellular Pathology Graduate Program (January 1, 2006).
2. Departmental representative- Curriculum Committee for Graduate program, PIBS.
3. Admissions Committee- Immunology Graduate Program in PIBS.
4. Curriculum Committee for Pathology Graduate Program.
5. Director of Preliminary exam committee for Molecular and Cellular Pathology Graduate Program.

B. INSTITUTIONAL

1. 2003-present - Immunology Training Grant T-32 (NIAID) Steering committee.
2. 2004-present -Institutional Biosafety Committee (IBC).
3. 2004-2007 -Advisory Committee on Appointments, Promotions, and Tenure (ACAPT).
4. 2004-present -Associate Chairs of Research Committee for the Medical School.

C. REGIONAL/NATIONAL/INTERNATIONAL

1. Ad hoc grant Reviewer for NIH special emphasis committee June 22nd, 2006.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Section Editor - *Journal of Interferon & Cytokine Research*
2. Editorial Board
    a. Laboratory Investigation
    b. *American J. of Pathology*

3. Reviewer for the following Journals
    a. *Journal of Immunology*
    b. *American Journal of Pathology*
    c. *American Journal of Respiratory Cell and Molecular Biology*
    d. *Infection and Immunity*
    e. *Immunology Today*
    f. *European Respiratory Journal*
    g. *Journal of Experimental Medicine*
    h. *Hepatology*
    i. *Shock*
    j. *Journal of Leukocyte Biology*
    k. *Cellular Immunology*
    l. *BLOOD*
    m. *Journal of Clinical Investigation*
    n. *Journal of Allergy and Clinical Immunology*
    o. *Science*
    p. *Nature Journals*
    q. *Immunity*

B. INVITED LECTURES/SEMINARS

1. SCF and chronic asthma and pulmonary disease. Genomics Institute of the Novartis Research Foundation. San Diego, CA, August 19, 2005.
2. Chemokines and their receptors in chronic lung inflammation. UC Irvine, Program in Immunology. Irvine, CA. October 27th, 2005.
3. Innate and Acquired Immune responses in pulmonary disease. U of Toledo. Molecular and Medicinal Chemistry Department. November 10th, 2005.
4. Chemokine receptors in chronic airway disease. Keystone Symposium. Snowbird, UT. January 17, 2006.
5. Chemokines and cytokines in innate and aquired pulmonary respones. University of Minnesota. MinnCrest program. Minneapolis, MN. May 21, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFERREED JOURNALS

1. Ziegelbauer, K., Gantner, F., Lukacs, N.W., Berlin, A., Fuchikami, K., Niki, T, Sakai, K., Inbe, H., Takeshita, K., Ishimori, M., Komura, H., Murata, T., Lowinger, T., and Bacon, K.B. A selective novel low-molecular weight inhibitor of IkappaB kinase-beta (IKK-beta) prevents pulmonary inflammation and shows broad anti-inflammatory activity. Br. J. Pharmac. 2005 145:178-92.
2. Chen, G.H., McDonald, R.A., Wells, J.C, Huffnagle, G.B., Lukacs, N.W., and Toews, G.B. The gamma interferon receptor is required for the protective pulmonary inflammatory response to Cryptococcus neoformans. Infect. Immun. 73:1788-96, 2005.
3. Benjamim, C.F., Lundy, S.K., Lukacs, N.W., Hogaboam, C.M., and Kunkel, S.L. Reversal of long-term sepsis-induced immunosuppression by dendritic cells. Blood 105:3588-95, 2005.

4. Steven K. Lundy, Aaron A. Berlin, and Nicholas W. Lukacs. Regulatory B cells: dysregulation of helper T cell survival and cytokine output after repeated cockroach allergen challenge in XID mice. Inflam. Res. 54:514-521, 2005.
5. Brian D. Rudd, Jetse J. Smit, Richard A. Flavell, Lena Aleopoulou, Matthew A. Schaller, Achim D. Gruber, Aaron A. Berlin, and Nicholas W. Lukacs. Deletion of TLR3 alters the pulmonary immune environment and mucus production during RSV infection. J. Immunol. 176: 1937-1942, 2006.
6. Matsukawa A, Kudoh S, Sano GI, Maeda T, Ito T, Lukacs NW, Hogaboam CM, Kunkel SL, Lira SA. Absence of CC chemokine receptor 8 enhances innate immunity during septic peritonitis. FASEB J. 2005.
7. Bianchi LM, Daruwalla Z, Roth TM, Attia NP, Lukacs NW, Richards AL, White IO, Allen SJ, Barald KF. Immortalized Mouse Inner Ear Cell Lines Demonstrate a Role for Chemokines in Promoting the Growth of Developing Statoacoustic Ganglion Neurons. J Assoc Res Otolaryngol. 2005 Oct 21:1-13.
8. Allison L. Miller, Craig Gerard, Matthew A. Schaller, Achim D. Gruber, Allison A. Humbles, and Nicholas W. Lukacs. Deletion of CCR1 attenuates pathophysiologic responses during RSV infection. 2006. J. Immunol. 176(4):2562-7.
9. Aaron A. Berlin, Cory M. Hogaboam, and Nicholas W. Lukacs. In hibition of SCF attenuates peribronchial remodeling in chronic cockroach allergen-indeuced asthma. Lab Invest. 2006 86(6):557-65.
10. Jetse J. Smit, Brian D Rudd, and Nicholas W. Lukacs. Plasmacytoid Dendritic cells modulate the pulmonary immune response and clearance of respiratory syncytial virus. J. Exp. Med. 2006. 203:1153-9.
11. Smit JJ, Lukacs NW. A closer look at chemokines and their role in asthmatic responses. Eur J Pharmacol. 2006. 533(1-3):277-88.

B. BOOKS AND CHAPTERS IN BOOKS

1. Lukacs, N.W., C.M. Hogaboam, and S.L. Kunkel. Chemokines and their receptors in chronic pulmonary disease. Curr. Drug Targets Inflamm Allergy 3:313-17, 2005.
2. Molly S. Thomas, Allison L. Miller, and Nicholas W. Lukacs. Chemokine and chemokine receptors in Pulmonary Disease. IN: Chemokines, Chemokine receptors, and Disease. Ed. Lisa M. Schwiebert. Current topics in Membranes Vol 55:189-211, 2005.
3. Nicholas W. Lukacs and Matthew Schaller. Lymphocyte trafficking and chemokine receptors during pulmonary disease. IN: Lymphocyte trafficking in health and disease. Ed. R. Badolato and S. Sozzani. Progress in Inflammation Research. Birkhauser Verlag AG. (In Press).
4. Nicholas W. Lukacs and Peter A. Ward. Leukocyte accumulation in pulmonary disease. IN: Fishman's Pulmonary Diseases and Disorders, 4th Edition. Ed. AP Fishman, JA Elias, JA Fishman, MA Grippi, LR Kaiser, and RM Senior. McGraw-Hill. (In Press).

Linglei Ma, M.D., Ph.D.
Assistant Professor of Pathology and Dermatology

I. CLINICAL ACTIVITIES

A. DIAGNOSTIC DERMATOPATHOLOGY
1. University Hospital cases
2. Transfer cases
3. M-Labs consultation service

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
1. Medical students on their elective rotation, Dermatopathology.
2. Instructor in medical student laboratories, M2 Pathology, Dermatopathology.

B. RESIDENTS AND FELLOWS
1. Rotating Dermatology and Pathology residents (Dermatopathology daily sign-out and interesting case reviews).
2. Dermatology residents --- Dermatopathology Teaching conference (1 per month).
3. Pathology residents --- Dermatopathology Teaching conference (4 per year).
4. Dermatology residents --- Dermatology Core Conference (1 per year).
5. Pathology residents --- Anatomic Pathology Core Conference (1 per year).
6. Annual Michigan Dermatological Society Case Presentations-(1 per year).
7. Dermatology Diagnostic Conference (1 per month).

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
1. University of Michigan (UMMC 2000-0713): Molecular, biochemical, and cellular basis of melanoma and other melanocytic lesions: Tissue Bank. Johnson TM, Wang TS, Schwartz JL, Voorhees JS, Dlugosz A, Lowe L, Su LD, Fullen DR, Ma L, Bradford C, and Cimmino V.
2. Secondary preceptor, NIH T32 training grant.

B. PROJECTS UNDER STUDY
1. Principal Investigator, “The expression of CD23 in cutaneous adnexal neoplasms”, Carvalho J, Lowe L, Fullen DR, Su LD, Ma L.

2. Principal Investigator, “The role of MUM1 in cutaneous CD30 postive lymphoproliferative disorder”, Wasco M and Ma L.
3. Principal Investigator, “DNA checkpoint machinery in malignant melanoma”, Ma L and Pu R.
4. Co-investigator, “Activation of mTOR signaling pathway in skin cancer”, Li Y, Ma L, Fisher G.
5. Co-investigator, “Role of gadolinium contrast agents in nephrogenic fibrosing dermopathy”, Cowper SE, Su LD, and Ma L.

IV. ADMINISTRATIVE ACTIVITIES – None

V. OTHER RELEVANT ACTIVITIES

A. INVITED LECTURES/SEMINARS

1. Invited speaker and conference coordinator, 2nd Investigative Pathology Symposium, “The expression of CD23 in cutaneous adnexal tumors”, Cleveland, OH, June, 2006.
2. Invited speaker, “Clinicopathological correlation of skin diseases”, 11th Association of Chinese American Physicians Convention, New York, NY, June, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Hutchin M, Chenoweth C, Ma L, McClean K. Auricular Erythema with Nodules and Scale. Accepted for publication in Archives of Dermatology.

Steven H. Mandell, M.D.
Assistant Professor of Pathology
Director, M-Labs Program
Director, Reference Laboratory Sendouts and Central Distribution

I. CLINICAL ACTIVITIES

A. MLABS SURGICAL PATHOLOGY AND CONSULTATIONS, MLabs, 26 weeks

B. MEDICAL DIRECTOR

1. MLabs Division
2. Central Distribution
3. Sendouts (Reference Laboratory Testing)
4. Coverage for Dr. Rasche at Forest Health Medical Center
5. Coverage for Dr. Rasche at The University Health Services Laboratory

II. TEACHING ACTIVITIES

A. RESIDENTS AND FELLOWS

1. Laboratory for pathology house officers and faculty
2. Autopsy slide TAT (Lindsay Schmidt)
3. Resident evaluation processes (Jonathan Cutlan)
4. Six Sigma Project Facilitator for pathology house officers

B. LECTURES

1. Lecturer on Lean Six Sigma, Laboratory Compliance, Laboratory Management, and Managing a Sendout Lean Lecturer on MLabs and Customer Service Initiatives for medical technology students.
2. The Outreach Laboratory Industry and Strategic Partnerships – Weekend MBA Course, Ross School of Business, University of Michigan, Consultant, 2/1- 2/11/2006, for Professor Paul Clyde and MBA students.
3. Lean Value Stream Mapping Workshops.
4. CD/Heme automation specimen processing workflow (CD/Heme Leadership)

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY

1. Microscale Integrated Diagnostics.

2. Integrated, chip-based clinical laboratory diagnostics for point-of-care algorithmic evaluation. Primary Investigator: Mark Burns, UM Professor of Engineering. NIH P-01 grant submitted June 2, 2006, 181 page document requesting a total of $9,586,138 including cost sharing. Dr. Mandell, 5% effort for support of correlative laboratory testing, biomaterials support, and determination of clinical applicability and future directions. Review scheduled for November 2006.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Departmental Division Directors' Meeting.
2. Laboratory Personnel, Operations and Improvements Meetings, MLabs, Sendouts, Central Distribution.
3. Laboratory Quality Assurance Committee.
4. New Lab Web Handbook Implementation Committee.
5. LIS Selection Committee.
6. Client Resource Management Application Selection Committee.
7. Atlas Lab Web Portal Implementation Committee.
8. Departmental Embedded Lean Coach.
9. Lean Consultants, Selection, Assessment and Implementation Coordinator.
10. Heme/CD Specimen Flow Lean Value Stream Map Workshop, Lead.
11. Mayo Medical Laboratories, Reference Lab, Rochester, MN, Site Visit Lead.
12. Surgical Pathology Director Selection.
13. Michigan Ross School of Business, Multidisciplinary Actions Proposal for MLabs.
14. MLabs Audit, Assessment, Response, Implementation and Follow Up.
15. Evaluating Process Excellence for Call Centers at the University of Michigan Health System for Departmental Applications.
16. Surgical Pathology Consensus Conference.
17. Client Services Module Evaluation and Selection (Act / Web Connect) for Department-Wide Applications.

B. INSTITUTIONAL

1. Clinical Computing Advisor Committee, Member.
2. Lean Workshop – Internal Results Delivery, Process Owner and Implementation Section Lead.
3. Joint Venture Hospital Laboratories, UMHS Delegate.

C. REGIONAL/NATIONAL/INTERNATIONAL

1. Michigan Department of Community Health's Michigan Cancer Consortium, Lexicon Project.
2. Michigan Society of Pathologists, Representative to the Michigan Department of Community Health's Michigan Cancer Consortium.

V. OTHER RELEVANT ACTIVITIES

A. INVITED LECTURES/SEMINARS

1. "Six Sigma and Lean." Laboratory Management Lecture Series, University of Michigan Department of Pathology, Ann Arbor, MI, Part I 23 August 2005, Part II 26 August 2005.

2. "Strategic Planning and Marketing – MLabs as a Model." Laboratory Management Lecture Series, University of Michigan Department of Pathology, Ann Arbor, MI, 30 August 2005.
3. "Leveraging Software for Lean, Six Sigma, Marketing and Business Analysis in Your Outreach Laboratory." Invited speaker and panel discussant, Lab InfoTech Summit, Las Vegas, 2 March, 2006.
4. "Lean Six Sigma for the Laboratory." Invited speaker, Michigan Society of Histotechnologists' Annual Scientific Meeting, Novi, MI, 6 May 2006,
5. "Lean Principles and the Transfusion Service." Invited presenter and panel discussant, 33rd Annual Current Topics in Blood Banking, University of Michigan, Department of Pathology, Ann Arbor, MI, 9 June 2006.

B. COMMUNITY SERVICE

1. Performed with The Choral Connection for UMHS "Gifts of Art" program, 11 May, 2006.
2. Department Lead Physician, "Bring Your Child to Work Day 2006,"

VI. PUBLICATIONS

A. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN NON-REFEREED JOURNALS.

1. S. Mandell, K. Sitwala. "Laboratory Testing for Myasthenic and Paraneoplastic Syndromes." MLabs Spectrum, Vol. 19, No. 3, July 2005.
2. S. Mandell. "MLabs Celebrates 20 Years of Service." MLabs Spectrum, Vol. 20, No. 1, Jan 2006.
3. S. Mandell. "Lean Lessons from Life - Inspiration For Physician Offices and Clinical Laboratories" Submitted for MLabs Spectrum, Vol. 20, No. 3, June 2006.

Paul E. McKeever, M.D., Ph.D.
Professor of Pathology

I. CLINICAL ACTIVITIES

A. SURGICAL NEUROPATHOLOGY

1. Daily weekday and weekend 24 hour surgical neuropathology call.
2. Individual case follow up, immunohistochemical and special stains, and electron microscopic neuropathology; weekly.
3. Brain Tumor Board, review of neurosurgical, neuroradiologic, neuropathologic and clinical-pathologic correlation, 28 weeks.
4. Diagnostic neuropathology consultant, Veterans Administration Hospital.
5. Examination of all University Hospital autopsy neuropathologic material – brain cutting, sampling, microscopic examination, and special stains.

B. GENERAL AUTOPSIES, 26 days.

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS

1. Neuroscience Sequence, Neuropathology for Second Year Medical Students.
    a. Prepared two laboratories and two lectures on brain tumors; toxic, metabolic, demyelinating and infectious diseases.
    b. Taught four laboratories.
2. Senior Medical Student Neuropathology electives
    a. M4 Mentoring: Bret Mobley, Shaun Smart,
    b. Review laboratory techniques with UMMC Histologists.
3. Clinical Mentor, Medical Scientist Training Program.
4. Three lectures per year to Dental Students on Neuropathology.

B. RESIDENTS AND FELLOWS

1. Brain cutting, sampling, microscopic examination and special stain instruction of pathology and clinical House Officers.
2. Individual instruction of Pathology, Neurology, Anad Gundakaram, M.D, and other House Officers on neurosurgical biopsy material, 28 weeks.
3. Review neurosurgically removed material in the hospital in CME-approved Thursday Specialty Conferences rotated with other faculty monthly conference, 27 weeks.
4. Invited presentations of neuropathologic observations at various clinical conferences and CPC conferences.

5. Pathology Resident's Tuesday AP Conference rotated with other faculty.
6. One month House Officer Electives.
7. Autopsy call, and Pathology Gross Conference.
8. Surgical Pathology Fellows – neurosurgical biopsies.

C. GRADUATE STUDENTS
1. Johanna Buchstaller, Ph.D. from laboratory of Sean Morrison, Ph.D.
2. Nancy Joseph, M.D., Ph.D. student, from laboratory of Sean Morrison, Ph.D.

D. LECTURES/OTHER
1. Faculty: Brain Tumor Board
2. CPC
3. Other Conferences.
4. Individual instruction of Dr. Gaurang Shah, Neuroradiology.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
1. Co-Investigator (5%), "Isolation and characterization of neural cancer stem cells" with Dr. Sean Morrison, $9,494 in direct costs for Pathology.

B. PENDING
1. Co-Director (10%), "Tumor proliferation and apoptosis in transgenic mice" with Drs. Brian D. Ross and Thomas Chenevert, P-01 grant has received a score of 1.3, and this should reap about $19,000 in direct costs for Pathology.

C. PROJECTS UNDER STUDY
1. Study of pituitary adenoma hypophyseal stroma with Drs. Jason Jarzembowski and Ricardo V. Lloyd.
2. Mechanisms of glioma and medulloblastoma formation in p53 genetically altered mice with Dr. Yuan Zhu.
3. Correlation of MIB-1 and tumor progression of resected meningiomas with Dr. Byron Greg Thompson.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Chief, Section of Neuropathology.
2. Director, Neuropathology Residency Training.
3. Faculty of Graduate Program of Department of Pathology.

B. INSTITUTIONAL
1. Organization and scheduling of Pathology, Neurology, Neuroradiology and Neurosurgery House Officer Neuropathology teaching conferences, individual instruction and consultation review.
2. Organization of call logistics, specimen handling, and schedules for coverage of diagnostic neuropathology by staff.
3. Interaction with Chiefs and Staff of other clinical services, particularly Neurosurgery, Neurology, Nuclear Medicine, Radiation Oncology, Neuro-oncology and Neuroradiology.
4. Quality control of microscopic, ultrastructural and immunodiagnostic neuropathology. This included various ad hoc reviews requested by faculty and staff.

C. INSTITUTIONAL
1. Primary Review Pathologist, Children's Cancer Study Group CCG 9897 nationwide study of childhood low grade gliomas.
2. Member, Brain Tumor/EMF Study Scientific Advisory Panel, National Cancer Institute, Jonathan Samet, Chairman.
3. M-Labs Neuropathology Services.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWERS
1. Editorial Board - *Journal of Neuropathology*
2. Editorial Board - *Experimental Neurology*
3. Reviewer
   a. *Journal of Neuropathology*
   b. *Experimental Neurology*
   c. *Journal of Histochemistry and Cytochemistry.*
   d. *American Journal of Pathology.*
   e. *Archives of Pathology and Laboratory Medicine.*

B. INVITED LECTURES/SEMINARS
1. "New Methods of Brain Tumor Analysis": AFIP Kenneth M. Earle Memorial Neuropathology Reviews, Armed Forces Institutes of Pathology, Rockville, Maryland, February 2006.
2. "Gliomas", Neurology Department, Michigan State University, October 2006.

C. MEMBERSHIP AND OFFICES IN PROFESSIONAL SOCIETIES

D. Member, U.S. & Canadian Academy of Pathology, 1972 --present.

E. Member, Alpha Omega Alpha, Eta Chapter, 1972 -- present.

F. Member, American Association of Neuropathologists, 1978 -- present.
1. Member, Constitution Committee, 2000 -- present.
2. Committee Chair, 2004-2005.

G. Member, Society of Neuroscience, 1983 -- present.

H. Member, Children's Cancer Study Group, 1985 -- present.
1. Pathology Committee, 1989 -- present.

I. Member, Histochemical Society, 1989 -- present.
1. Constitution Advisor 1996 -- Make certain that Council functions in accord with constitution.

J. Lieutenant Colonel, U.S. Army Reserve Medical Corps, 1997 -- present.
1. Duty station AFIP, 1997-2005
2. Duty station Pathology Dept., Walter Reed Army Medical Center, 2005 – present.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
1. Isaacson B, Telian SA, McKeever PE, Arts HA: Hemangiomas of the geniculate ganglion. Otology & Neurology 26(4):796-802, 2005.
2. Moffat BA, Chenevert TL, Meyer CR, McKeever PE, Hall, DE, Hoff BA, Johnson TD, Rehemtulla A, Ross BD. The functional diffusion map: an imaging biomarker for the early prediction of cancer treatment outcome. Neoplasia 8(4):259-267, 2006.

3. Mobley BC, Roulston D, Shah, GV, Bijwaard KE, and McKeever PE: Peripheral PNET/Ewing sarcoma in the craniospinal vault: case report and review. Human Pathology 37(7):845-853, 2005.
4. Meyer CR, Moffat BA, Kuszpit KK, Bland PL, McKeever PE, Johnson TD, Chenevert TL, Rehemtulla A, Ross BD. A methodology for registration of a histological slide and in vivo MRI volume based on optimizing mutual information. Mol Imaging 5(1):16-23, 2006.

B. BOOKS AND CHAPTERS IN BOOKS

1. McKeever PE: Immunohistochemistry of the nervous system. In: Diagnostic Immunohistochemistry, 2nd edition. Dabbs DJ (Ed). Churchill Livingstone, Philadelphia, PA 2006, pp. 746-816.
2. McKeever PE: New Methods of Brain Tumor Analysis. American Registry of Pathology Syllabus, Washington, DC 2006, pp. 1-51 & illus. pp. 1-29.
3. McKeever PE: Glial cell pathology. In: Encyclopedia of Neuroscience, Elsevier Science, 3rd edition. Smith BH and Adelman A, eds., (in press).

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATION IN UNREFEREED JOURNALS

1. McKeever PE, Mobley BC, Shah GV, Roulston D, Bijwaard KE: Peripheral PNET/Ewing sarcoma of the craniospinal vault: Two case reports and review of similar cases. XVI International Congress of Neuropathology, 2006 (in press).

Barbara J. McKenna, M.D.
Associate Professor of Pathology

I. CLINICAL ACTIVITIES

A. GENERAL SURGICAL PATHOLOGY, 1 mo.
B. GASTROINTESTINAL AND HEPATIC PATHOLOGY SERVICES, 5 mo.
C. CYTOLOGY SERVICES, 2.5 months.
D. GASTROINTESTINAL AND LIVER CONSULTATION SERVICES, 4 mo.
E. ANATOMIC PATHOLOGY ON CALL, 1 mo.

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
   1. Pathology 600 - laboratory 2-4 hours per 5 weeks.
   2. Senior Elective in Pathology: supervising during diagnostic signout.

B. HOUSE OFFICERS
   1. Surgical pathology diagnosing room instruction for assigned house officer – 6 months.
   2. Cytopathology service, cytopathology fellows and resident instruction—2.5 months.
   3. Gastrointestinal and hepatic pathology tutoring - full time.
   4. Lectures in gastrointestinal and liver pathology, 2 hours.
   5. Consult conferences, 4-5 hours.
   6. Cytology conferences, 3 hours.

C. INTERDEPARTMENTAL
   1. G-I Tumor Conference - (2-3 hours per month).
   2. Liver Biopsy Conference – 4 hours per year.

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY
B. Anaplastic, lymphoma-like carcinoma arising in Barrett's mucosa, with HD Appelman.
C. The apoptotic form of microscopic colitis, with HD Appelman.
D. Marginal collagenous colitis: does it exist? With HD Appelman, W Xin, M Anderson and L Evans.
E. The prevalence of unsuspected invasive carcinomas in specimens resected for high-grade dysplasia in Barrett's mucosa and the gastric cardia. With Weijian Zhu, HD Appelman, Steven Ramsburgh, Joel Greenson and members of the Section of Thoracic surgery.
F. The yield of significant microscopic findings in terminal ileal biopsies and their relation to indications for endoscopy and endoscopic findings, with Jon McHugh and HD Appelman.

G. The yield of significant microscopic findings in duodenal biopsies with the clinical suspicion of celiac diseases, with C Golembeski and J Greenson.
H. Comparison of routine cytologic evaluation and molecular analysis of pancreatic EUS-guided FNA, with M Anderson.
I. A trial of fenofibrate therapy for nonalcoholic fatty liver disease, with H Conjeevaram.
J. The underlying pathophysiology of hepatitis C and hepatic steatosis, with C Burant, H Conjeevaram and H Hussain.
K. MR Imaging for the Assessment of Treatment Response after Radiofrequency Ablation of Hepatocellular Carcinoma, with H Hussain.
L. Magnetic Transference (MT) MRI as a non-invasive method of assessing fibrotic intestinal strictures in Crohn's Disease, with E Zimmerman.
M. Accuracy of MR Imaging for the Detection of Hepatocellular Carcinoma in Patients with Cirrhosis: Correlation with the Whole Explanted Liver, with H Hussain.
N. Diagnostic yield and alternate diagnoses in patients suspected of GVHD, with M Wasco.
O. Prevalence and Characterization of Non-alcoholic Fatty Liver Disease in Patients with Polycystic Ovary Syndrome, with H Kang.
P. Nonalcoholic steatohepatitis: is leptin deficiency an etiological factor with E Oral.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Residency committee.
2. Director, Surgical Pathology Fellowship.

B. REGIONAL/NATIONAL/INTERNATIONAL
1. Ambassador, United States and Canadian Academy of Pathology.
2. Board of Directors, American Society for Clinical Pathology.
3. Chair, Commission on Assessment, American Society for Clinical Pathology.
4. Chair, ASCP Resident Inservice Examination (RISE) Committee.
5. Chair, ASCP Maintenance of Certification Committee.
6. Co-Director for AP and Lecturer, ASCP Resident Review Course.
7. Chair, Membership Committee and Member, Executive Committee, the Roger Haggitt Gastroinestinal Pathology Society.
8. Bylaws Committee, American Society for Clinical Pathology.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS
1. Editorial Board, *Human Pathology*
2. Editorial Board, *Modern Pathology*

B. INVITED LECTURES/SEMINARS
1. Panelist, CAP Residents Forum, September 10, 2006, Chicago, IL.
2. "RISE and be counted: an interactive encounter with self-assessment" ASCP Annual Meeting, October, 2005, Seattle, WA.
3. "Just Another Day on the GI Biopsy Service", with HD Appelman, Annual Meeting, American Society for Clinical Pathology, Seattle, WA, October, 2005.

4. "Troublesome Gastrointestinal Biopsies" Microscopic Tutorial, Annual Fall Meeting, American Society of Clinical Pathologists, Seattle, WA, October 2005.
5. Panelist "How to get a job", ASCP Residents Symposium, ASCP Annual Meeting, Seattle, WA, October, 2006.
6. "The ASCP Resident Inservice Examination (RISE), What have we learned?", Hematopathology Fellowship Directors Meeting, at USCAP Annual Meeting, March, 2006.
7. "Liver Pathology" and "Selected Cases in GI and Liver Pathology" at ASCP Resident Review Course, Hoffman Estates, Illinois, April, 2003, April 2004, May, 2005, April 2006.
8. "Just another day on the GI consultation service" with HD Appelman, University of Texas Southwestern University, May 11, 2006.
9. "The ASCP Resident Inservice Examination (RISE): What does it tell us about resident training?" Annual Meeting of the Academy of Clinical Laboratory Physicians and Scientists, June 3, 2006, Chicago, IL.
10. "The Most Common GI Consult Cases: An Audience-directed Discussion", with Elizabeth Montgomery, MD, accepted for presentation at USCAP Annual Meeting, 2007.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. McKenna BJ, Appelman HD. Histopathology for the clinician - how to interpret biopsy information: gastritis. Nature Clinical Practice, Gastroenterology and Hepatology 2006; 3:165-171.

B. BOOKS AND CHAPTERS IN BOOKS

1. McKenna BJ, Appelman HD, Neoplasms of the small intestine, in Quigley EE and Marsh MN, eds.: The Small Intestine, Blackwell Scientific, Cambridge, MA, in press.

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN NON-REFEREED JOURNALS

1. Zhu W, Appelman HD, Greenson, JK, Ramsburgh SR, Orringer MC, Chang AC, Mckenna BJ. Barrett's/cardiac high grade dysplasia is not a strong marker for concurrent carcinoma, unless architectural changes suspicious for adenocarcinoma are also present. Mod Pathol (Suppl 1) 19:126A, 2006.
2. Rha SE, Hussain HK, Adusumilli S, Weadock WJ, McKenna B, Marrero JA Accuracy of MR imaging for the detection of hepatocellular carcinoma in patients with cirrhosis: Correlation with the whole explanted liver—submitted for 2006 Radiologic Society of North America meeting.
3. Rha SE, Hussain HK, McKenna B, Adusumilli S, Weadock WJ, Nghiem HV, Higgins, E, Marrero JA MR imaging for the assessment of treatment response after radiofrequency (RF) ablation of hepatocellular carcinoma: Correlation with explant liver pathology--submitted for 2006 Radiologic Society of North America meeting.

Claire W. Michael, M.D.
Associate Professor of Pathology
Director of Cytopathology

I. CLINICAL ACTIVITIES

A. CYTOPATHOLOGY
1. Service - Eighteen weeks.
2. Consultation Service, Department of Pathology - twelve months.
3. Breast Cancer Clinic – twelve months.
4. Thoracic Multidiscipline Conference – twelve months
5. Review all ductal lavage specimens – twelve months.

B. NECROPSY SERVICE - two weekends.

II. TEACHING ACTIVITIES

A. MEDICAL SCHOOL STUDENTS
1. Mentor for medical students' senior clerkship – six weeks.

B. RESIDENTS AND CYTOPATHOLOGY FELLOW
1. Sign out; Gynecologic & Non-Gynecologic Cytology cases (18 wks)
2. Instruction in the performance and interpretation of fine needle aspirates (9 wks).
3. Cytopathology Resident Conference (4/year).
4. Weekly Cytopathology Fellowship Conference.
5. Consult Case Conference (2/year).
6. Anatomic Pathology Conference: 2/year-Review of Cytopathology.

C. OTHER EDUCATION ACTIVITIES
1. Developing slide and written test for competency evaluation of residents and fellows.
2. Cytotechnologists - Cytopathology Slide Conferences (2/year).

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
1. Co-Investigator/Project Pathologist (5%), "Loss of BRG1 and BRM in non-small cell lung cancer:-An alternate mechanism to disrupt the retinoblastoma pathway", American Lung Association, $35,000/year-direct cost, January 2004 – December 2005.
2. Co-Investigator (0%), "Alterations of the SWI/SNF Complex in bronchoalveolar carcinoma", Joan's Legacy Research Grant, February 2006 – December 2007.
3. Co-Investigator (0%), "Understanding the Clinical Impact of SWI/SNF Complex in Human Cancers", Fight Attendants Medical Research Institute Clinical Innovator Award, January 2005 – December 2008.

4. Co-Investigator/Project Pathologist, (0%), "Investigation of surrogate biomarkers of breast cancer risk and evidence of chemoproventive agent activity using ductal lavage samples", Daniel F. Hayes Breast Cancer Gift Fund, October 2001 – July 2007.
5. Co-Investigator/Project Pathologist (0%), "A pilot study to correlate change in mammographic density and to determine safety of tetratrismolyhdate chemoprevention in women at high risk for breast cancer", Daniel F. Hayes Breast Cancer Gift Fund, October 2001 – July 2007.
6. Co-Investigator/ Project Pathologist (0%), "Feasibility Study of evaluating Breast Cancer patients with Ductal Lavage", NSABP Minority Investigator Award. October 2003 – December 2006.
7. Co-Investigator (0%), "Sensitive and specific detection of Human Papilloma Virus (HPV) associated with cervical malignancies and dysplasia determined by MASS Array Method", Michigan Eduction Development Corporation. Michigan Tri Technology Corridor. National Institute of Health. January 2005 – December 2007.
8. Co-Investigator (0%), "Improved Clinical Evaluation of Thyroid Nodules by Molecular Profiling", Internal University of Michigan Funding/AARC Clinical Initiatives, $75,000 total directs, May 2006 – May 2007.

B. PENDING
1. Co-Investigator (5%), "Studying genomic profiles of advanced lung, and head and neck cancers that will correlate with response to chemotherapy".

C. PROJECTS UNDER STUDY
1. Pang Y and Michael CW. Evaluation of Podoplanin, a h-caldesmon, in the diagnosis of mesothelioma on cytology specimens.
2. Wamsteker E-J. Evaluation of common bile duct brushes by ploidy analysis. (Completed pathology portion.)
3. Stanchina D and Michael CW. Evaluating the diagnostic ability of cytology in the work-up of malignant mesothelioma versus squamous cell carcinoma and adenocarcinoma.
4. Hasteh F and Michael CW. The Use of immunohistochemistry in distinguishing reactive from neoplastic mesothelium in effusions.
5. Reisman D and Michael CW. The epigenetic silencing of BRM and it's targeted re-expression. (Manuscript near completion.)
6. Reisman D and Michael CW. Inactivation of BRG1 promotes tumor development. (manuscript near completion)
7. Reisman D and Michael CW. Alterations to the SW1/SNF complex in head/neck tumors. (Manuscript near completion)

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Director, Cytopathology Laboratory.
2. Director, Cytopathology Fellowship.
3. Member, Residency Review Board.

B. INSTITUTIONAL - None.

C. REGIONAL/NATIONAL/INTERNATIONAL
1. Secretary, Papanicolaou Society of Cytopathology.

2. Member, American Society of Clinical Pathologists, Non-Gynecologic Star Program.
3. Member, American Society of Cytopathology, Scientific Committee.
4. Chairperson, Educator of the Year Award Task Force, Papanicolaou Society of Cytopathology.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Member, Editorial Board, *Diagnostic Cytopathology.*
2. Reviewer, *Diagnostic Cytopathology.*
3. Reviewer, *Cancer Cytopathology.*
4. Reviewer, *European Journal of Oncology.*
5. Reviewer, *Medical Science Monitor.*
6. Reviewer, *Archives of Laboratory Medicine*.
7. Reviewed, *Cytopathology*.

B. INVITED LECTURES/SEMINARS

1. "Fine needle aspiration of the thyroid". Grand Rounds, Department of Endocrinology, The University of Michigan. September 9, 2006.
2. "Neuroendocrine neoplasms of the lung: A spectrum in search of criteria". As part of "Bridging cytomorphology and molecular biology: Recent advances in cancer of the lung and pleura" Presented with Carlos CW Bedrossian (USA), Ben Davidson (Norway), Koutselini H (Greece). Satellite Symposium. European Congress of Cytology. Paris, France. October 2005.
3. "ThinPrep and TriPath Preps: Which one is more suitable for my laboratory?" Panel Luncheon Seminar presented at the American Society of Cytopathology Annual Scientific meeting, Nov 5, 2005.
4. "Look-alikes in effusion cytology: Review of diagnostic challenges". Teleconference Network of Texas, April 23, 2006.
5. "Fine needle aspiration of thyroid gland: Immediate assessment, number of cells and other questions". Invited speaker, Department of Radiology, The University of Michigan. May 12, 2006.
6. "Interpretation of fine needle aspiration in liquid-based preparations". Part of Satellite Symposium on "Fine Needle Aspirates". Montebello Conference. Norway. June 16, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFERRED JOURNALS

1. Dai Y, Bedrossian CWM, Michael CW. The expression pattern of Beta-Catenin in mesothelial proliferative lesions and its diagnostic utilities. Diagn Cytopathol 2005; 33:320-324.
2. Li Q, Bavikatty N, Michael CW. The role of Immunohistochemistry in distinguishing squamous cell carcinoma from mesothelioma and adenocarcinoma in pleural effusion (in press, Sem in Diag Path.)
3. Filho, AL, Baltazar F, Bedrossian C, Michael CW, Schmitt FC. Distribution of VEGFR-3 immunohistochemical expression in mesothelioma. (In press, Sem in Diag Path – Summer Issue).
4. Bedrossian CWM, Michael CW, Guttoso PM. Pathologic diagnosis of malignant mesothelioma: Common and uncommon variants. (In press, Sem in Diag Path; Summer Issue.)

5. Pu RT, Yang J, Wasserman PG, Bhuiya T, Griffith KA, and Michael CW. Does Hurthle cell lesion/neoplasm predict malignancy more than follicular lesion/neoplasm on thyroid fine needle aspiration? Diagn Cytopathol. 2006;34:330-334.
6. Siddiqui MA, Su L, Michael CW, Pu RT. Synchronous ordinary lipoma and spindle-cell lipoma diagnosed by fine needle aspiration. Diagn Cytopathol 2006; 34(6):455-456.

B. BOOKS AND CHAPTERS IN BOOKS

1. Michael CW, Bedrossian CWM, and Chhieng D. "Effusion Cytology". Papanicolaou Society of Cytopathology Monography Series, Michael CW (ed.). New York, NY: Cambridge University Press. (in progress).
2. Michael CW. "Body Fluids." Differential Diagnosis in Cytopathology, Guttuso, Reddy and Massood, eds. New York, NY: Cambridge University Press. (in progress).
3. Michael CW. "Exfoliative Pulmonary Cytology." Differential Diagnosis in Cytopathology, Guttuso, Reddy and Massood, eds. New York, NY: Cambridge University Press. (in progress).
4. Michael CW. "Fine needle aspiration of thyroid prepared by ThinPrep." Thyroid: Guides to Clinical Aspiration Biposy, Kini S (ed.). Philadelphia: J.B. Lippincott Company. (in progress).

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN NON-REFEREED JOURNALS

1. Michael CW. Neuroendocrine neoplasms of the lung: A spectrum in search of diagnostic criteria. Cytopathology 2005; 16:1A(0004).
2. Bedrossian CWM, Davidson B, Michael CW. The molecular differentiation of carcinoma of the ovary and peritoneal mesothelioma. Acta Cytologica:2005; 683A.
3. Michael CW, Pang Y, Pu R, Hasteh F, Griffith K. Cellular adequacy for thyroid aspirates prepared by ThinPrep: How many cells are needed?. Mod Path 2006,19:292A. Presented as a Proffered paper at USCAP Annual meeting, Atlanta Georgia, 2006.
4. Hasteh F, Michael CW. The use of Immunohistochemistry in distinguishing reactive from neoplastic mesothelium in cytologic effusions. Submitted to American Society of Cytopathology.
5. Pang Y., Smola B, Kern K, Pu R., Michael CW. Reprocessing hypocellular unsatisfactory ThinPrep Pap test specimens containing microscopic red blood cells. Submitted to American Society of Cytopathology.
6. Siddiqui M., Michael CW. and Pu R. Tumor Size as the Main Limiting Factor in Diagnosing Papillary Thyroid Carcinoma on Fine Needle Aspiration. Submitted to American Society of Cytopathology.
7. Pu R. and Michael CW. Utility of WT-1, p63, and MOC31 Immunostains in Differentiating Malignant Mesothelioma, Squamous Cell Carcinoma, and Adenocarcinoma in Effusions. Submitted to American society of Cytopathology.
8. Hasteh F, Pang Y, Pu R, Michael CW. Do we need more than one ThinPrep to obtain adequate cellularity in fine needle aspirates. Submitted to American Society of Cytopathology.

Richard A. Miller, M.D., Ph.D.
Professor of Pathology
And Research Scientist,
Ann Arbor VA Medical Center

I. CLINICAL ACTIVITIES - None.

II. TEACHING ACTIVITIES

A. GRADUATE STUDENTS

1. Tim Hale (thesis student, Epidemiology and Public Health).
2. Scott Berger (thesis student, Biological Chemistry).
3. Adam Salmon (thesis student, Cellular and Molecular Biology).
4. Scott Leiser (thesis student, Cellular and Molecular Biology).
5. Adam Gobetti (thesis student, Cellular and Molecular Biology).
6. Mike Steinbaugh (thesis student, Cellular and Molecular Biology),
7. Rotating graduate students
    a. Jolie Hoffman, PIBS-I.
    b. Larry “Rob” Peters, PIBS-I.
8. Thesis committee member
    a. Omer Yilmaz, Cellular and Molecular Biology.
    b. Lynn Kamen, Immunology Program.
    c. Phil Lapinski, Immunology Program.

B. POSTDOCTORAL FELLOWS, AND JUNIOR FACULTY MEMBERS

1. Amir A. Sadighi-Akha (postdoctoral fellow).
2. Scott Maynard (postdoctoral fellow).
3. Kyoko Yasumura (postdoctoral fellow).
4. Oge Arum (postdoctoral fellow).
5. James Harper (Research Investigator, Pathology).
6. Gonzalo Garcia (Research Investigator, Pathology).
7. Ricky Malhotra (Research Assistant Professor, Internal Medicine).

C. LECTURES/OTHER

1. Pathology 581, Cellular and Molecular Basis of Disease.
2. M1 Human Growth and Development course.
3. Division of Geriatric Medicine residency training program.
4. Pediatric Endocrinology residency training program.
5. Unit for Laboratory Animal Medicine residency training program.
6. Member, Immunology Graduate Program.
7. Member, Cellular and Molecular Biology Graduate Program.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Principal Investigator, "Laboratory for Anti-Geric Testing, Evaluation and Research," NIH/NIA U01-AG022303-03, $378,998 direct costs/year ($1,996,000/5 yr), 7/03-6/08.
2. Principal Investigator, "Biomedical Research Training in the Biology of Aging," NIH/NIA T32 AG000114-21, $378,495 direct costs/year ($1,892,075/5 yr), 5/05-4/10.
3. Project Director, "A Consortium to Study the Genetics of Longevity," NIH/NIA U19-AG023122-01A1, $200,420 direct costs/year ($1,000,000/5 yr), 10/1/04-6/30/09.
4. Principal Investigator, "Wild Derived Mouse Stocks: New Models for Aging Research." NIH/NIA R01-AG13711-07, $225,000 direct costs/year ($1,000,000/5 yr), 9/1/00 – 8/31/05.
5. Principal Investigator, "Genetic Control of Longevity in Mice." NIH/NIA R01-AG11687-10, $298,784 direct costs/year ($1,575,757/5 yr), 9/1/04 8/30/09.
6. Principal Investigator, "Activation Defects in T Cells of Aged Mice," NIH/NIA R01-AG19619-04, $250,000 direct costs/year ($1,250,000/5 hr), 9/30/00 – 8/31/05.
7. Principal Investigator, "Genetics of Age-Sensitive Traits in Mice," NIH/NIA P01-16699-05 direct costs/year: $637,739, 5/1/99–8/31/05. Core A (Administrative), $31,575 ($155,000/5 yr). Core C (Animal), $26,671 ($150,000/5 yr). Project 1 (Immunology), $60,486 ($300,000/5 yr).
8. Program Director, "Research Training in Experimental Immunology," NIH T32-AI-07413-11, $312,412 direct costs/year ($1,832,000/5 yr), 9/15/98 – 8/31/08.
9. Core Director, "Claude D. Pepper Older Americans Independence Center," NIH P30-AG08808-16, $146,000 direct costs/year, 9/1/04-7/31/09. R. A. Miller serves as (a) Director, Core Facility for Aged Rodents, direct costs/year $63,097 ($325,000/5 yr); (b) Director, Pilot and Experimental Studies Core, $60,154 direct costs/year ($300,000/5 yr). (Program PI: Jeffrey Halter, University of Michigan.
10. Project Director, "Gene Expression and Biomarkers in Dwarf Mice," SIU Subcontract 02-17, component of R01-AG19899-03, $32,894 direct costs/year ($125,000/5 yr), 9/1/01–8/31/06 Principal Investigator: Andrzej Bartke, Southern Illinois University.
11. Project Director, "Mechanisms of Aging in the Long-Lived Naked Mole Rat." R01-AG022891-02, $25,237 direct costs/year ($125,000/5 yr), 9/30/03-8/31/08. Principal Investigator, R. Buffenstein, CCNY.
12. Project Director, "Genetic Analysis of Hearing Loss, Stress, and Age-Sensitive Traits in Mice." NIH P01-AG025164, $180,253 direct costs/year ($900,000/5 yr), 9/1/2005 – 7/31/2010. Principal Investigator, Jochen Schacht, University of Michigan.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Director, Experimental Immunology Training Program (ended 8/1/2005).

2. Director, Biomedical Research Training in Aging Program (from 8/1/2005).

B. INSTITUTIONAL
1. Director, Core Facility for Aging Rodents.
2. Member, Cancer Biology Training Program.
3. Member, Cell and Molecular Biology Training Program.
4. Member, Rheumatology Training Program.
5. Associate Director for Research, Geriatrics Center.
6. Preliminary examination co-ordinator, Cellular and Molecular Biology Program.
7. Faculty search committee: Ophthalmology.
8. Internal Advisory Board: Nathan Shock Center for the Biology of Aging.
9. Member: T-FORE Task Force.

C. REGIONAL/NATIONAL/INTERNATIONAL
1. Board of Scientific Advisors, Buck Center for Research on Aging.
2. Chair, Research Committee, American Federation for Aging Research.
3. Vice-President, American Federation for Aging Research.
4. Board of Scientific Advisors, Lankenau Institute for Medical Research.
5. Board of Directors, American Aging Association (AGE).
6. Board of Advisors, Vaccine and Gene Therapy Institute (Portland, OR).

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS
1. Joint Editor-in-Chief: *Aging Cell*.
2. Editorial Board: *Aging: Clinical and Experimental Research.*
3. Editorial Board: *Mechanisms of Aging and Development.*
4. Editorial Board: *Experimental Gerontology.*
5. Editorial Board: J*ournal of Gerontology: Biological Sciences.*
6. Editorial Board: *AAAS Science of Aging Knowledge Environment (SAGE-KE)*.
7. Reviewer: *Science.*
8. Reviewer: *Nature.*
9. Reviewer: *Journal of Immunology.*
10. Reviewer: *Public Library of Science.*

B. INVITED LECTURES/SEMINARS
1. American Federation for Aging Research Media Briefing, New York, NY. “Extending Human Life Span: Scientific Progress, Political Obstacles, Ethical Concerns.” July 20.
2. University of Michigan, Biogerontology Training Course, Ann Arbor. (a) “How to Give a Scientific Presentation” (b) “Introduction to Aging Research” (c) “Animal Models in Aging Research.” September 5, 12, and 19.
3. University of Michigan, T-FORE Committee presentation, Ann Arbor. “Size Counts: Stress and Aging at Michigan.” September 19.
4. NIA Conference on Signal Defects in Aging, Potomac, MD. “Age-Dependent Defects in T Cell Activation: Synapse and Cytoskeleton.” October 24.

5. Centegra Health Systems Symposium on Aging, Crystal Lake, IL. "Extending Life Span: Scientific Progress and Political Obstacles." October 26.
6. University of Michigan Pathology Research Symposium, Ann Arbor, MI. "Size, Stress, and Aging: Why do Big Dogs Die Young?" November 4.
7. Interscience Conference on Anti-microbial Agents and Chemotherapeutics, Washington, DC. "T Cells in Aging Mice: What Goes Wrong, How to Fix It, and Why Bother?" December 16.
8. Department of Immunology, Baylor College of Medicine, Houston, TX. "Genetics and Cell Biology of T Cell Aging in Mice." January 22.
9. Oregon Health Sciences University, Portland, OR. "Activation Defects in Aging T Cells: What Goes Wrong and How to Fix It." March 6.
10. World Forum, James Martin Institute, Oxford University, Oxford, England. "Extending Human Life Span: Scientific Prospects and Political Obstacles." March 15.
11. NIA Conference on Protective Factors in Youth, Potomac, MD. "Cellular Stress Resistance: Links Between Development and Aging." March 22.
12. Claude Pepper Centers Annual Retreat, Bethesda, MD. "8 Career Tips for Biological Scientists." April 24.
13. Department of Neurology, Johns Hopkins University School of Medicine, Baltimore, MD. "T Cell Aging in Mice: What Goes Wrong, Is It Important, and How to Fix It." April 26.
14. Department of Biochemistry, Molecular Biology and Biophysics, University of Minnesota, Minneapolis, MN. 2006 Bollum Symposium in Molecular Biology. "Size, Stress, and Aging: Lessons from Dwarf Mice." May 3.
15. Radcliffe Institute for Advanced Study, Cambridge, MA. Biomarkers of Reproductive Aging Exploratory Seminar. "Biomarkers of Aging: A Mouse-Eye View." May 6.
16. University of Rochester Aging Research Day, Rochester, NY. Keynote lecture: "Size, Stress, and Aging: Lessons from IGF-I Mutant Mice." May 11.
17. North Shore Hospital, Great Neck, NY. Grand Rounds: "Extending Human Life Span." May 18.
18. Feinstein Institute for Medical Research, Manhassett, NY. "Stress Resistance and Activation Processes in T Cells and Fibroblasts from Aged Mice." May 18.
19. Long Island Jewish Hospital, Great Neck, NY. Helen and Payne Whitney Lecture: "Extending Human Life Span." May 19.

C. HONORS AND AWARDS

1. Helen and Payne Whitney Lectureship, North Shore-Long Island Jewish Medical Center.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Harper, J. M., S. J. Durkee, M. Smith-Wheelock and R. A. Miller. 2005. Hyperglycemia, impaired glucose tolerance and elevated glycated hemoglobin levels in a long-lived mouse stock. Experimental Gerontology 40: 303- 314.
2. Berger, S. B, A. A. Sadighi Akha, and R. A. Miller. 2005. A glycoprotein endopeptidase enhances calcium influx and cytokine production by CD4+ T cells of old and young mice. International Immunology 17:983-991.
3. Maynard, S. P., and R. A. Miller. 2006. Fibroblasts from long-lived Snell dwarf mice are resistant to oxygen-induced cell growth arrest in vitro. Aging Cell 5: 89 – 96.
4. Yuan, R., K. Flurkey, R. Van Aelst-Bouma, W. Zhang, B. King, S. Austad, R. A. Miller, and D. E. Harrison. 2006. Altered growth characteristics of skin fibroblasts from wild-derived mice, and genetic loci regulating fibroblast clone size. Aging Cell 5: 203-212.
5. Harper, J. M., S. J. Durkee, R. C. Dysko, S. N. Austad and R. A. Miller. Genetic modulation of hormone levels and life span in hybrids between laboratory and wild-derived mice. J. Gerontol. Biol. Sci., in press.
6. Hulbert, A. J., S. C. Faulks, J. M. Harper, R. A. Miller, R. Buffenstein. Extended longevity of wild-derived mice is associated with peroxidation-resistant membranes. Mechanisms of Ageing and Development, in press.
7. Hanlon, P., A. Lorenz, Z. Shao, J. Harper, A. T. Galecki, R. A. Miller, and D. T. Burke. Three-locus and four-locus QTL interactions influence mouse insulin-like growth factor-I. Physiological Genomics, in press.
8. Sadighi Akha, A. A., S. B. Berger, R. A. Miller. Enhancement of CD8 T cell function through modifying surface glycoproteins in young and old mice. Immunology, in press.
9. Harper, J. M., A. B. Salmon, Y. Chang, M. Bonkowski, A. Bartke and R. A. Miller. Stress resistance and aging: Influence of genes and nutrition. 2006. Mech. Ageing Dev., in press.
10. Berger, S. B., A. A. Sadighi Akha, R. A. Miller, and G. G. Garcia. CD43-independent augmentation of mouse T cell function by glycoprotein cleaving enzymes. Immunology, in press.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN NON-REFEREED JOURNALS

1. Miller, R. A. 2005. The anti-aging sweepstakes: catalase runs for the ROSes. Science 308:1875-1876.
2. Sadighi Akha, A., and R. A. Miller. 2005. Signal transduction in the aging immune system. Current Opinion in Immunology 17:486 – 491.
3. Miller, R. A. 2005. Evaluating evidence for aging. Science 310:441.
4. Warner, H., J. Anderson, S. Austad, E. Bergamini, D. Bredesen, R. Butler, B. A. Carnes, B. F. C. Clark, V. Cristofalo, J. Faulkner, L. Guarente, D. Harrison, T. Kirkwood, G. Lithgow, G. Martin, E.

Masoro, S. Melov, R. A. Miller, S. J. Olshansky, L. Partridge, O. Pereira-Smith, T. Perls, A. Richardson, J. Smith, T. von Zglinicki, E. Wang, J. Y. Wei, and T. F. Williams. 2005. Science fact and the SENS agenda: What can we reasonably expect from ageing research? EMBO Reports 6:1006-1008.

5. Olshansky, S. J., D. Perry, R. A. Miller, R. N. Butler. 2006. In pursuit of the longevity dividend: what should we be doing to prepare for the unprecedented aging of humanity? The Scientist, March, 2006, pp 28 – 25.

C. BOOKS AND CHAPTERS IN BOOKS

1. Miller, R. A., and S. N. Austad. 2006. Growth and aging: why do big dogs die young? Handbook of the Biology of Aging, 6th Edition. E. J. Masoro and S. N. Austad, Eds. Academic Press, NY. Chapter 19, pages 512 – 533.
2. Miller, R. A. 2006. Principles of animal use for gerontological research. In: Handbook for Models of Human Aging. P. M. Conn, ed. New York: Elsevier. Chapter 3, pages 21 – 31.

Hedwig S. Murphy, M.D., PhD.
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES

A. SURGICAL PATHOLOGY AND FROZEN SECTION DIAGNOSIS (17 weeks/year).
B. FROZEN SECTION DIAGNOSIS (17 weeks/year).
C. AUTOPSY SERVICE, rotational basis, on call 13 weeks/year.
D. CLINICAL ELECTRON MICROSCOPY (52 weeks/year).

II. TEACHING ACTIVITITES

A. MEDICAL STUDENTS
   1. Laboratory Instructor, pathology 600 (M2 pathology course, 4 sessions, 10 contact hrs).

B. GRADUATE STUDENTS
   1. Course Director, Histopathologic Basis of Disease, Pathology 585, 2 credits.
   2. Lecturer. Histopathologic Basis of Disease, Pathology 585. 12 Lectures and labs. 30 contact hours.
   3. Course Director Histopathologic Basis of Disease, Pathology 586, 2 credits.
   4. Lecturer. Histopathologic Basis of Disease, Pathology 586. 8 Lectures and labs. 20 contact hours
   5. Lecturer: Cellular and Molecular Basis of Disease Pathology 581, 2 Lectures: 2.5 contact hours.
   6. Thesis Committee. Christine Freeman, PhD candidate, The Molecular and Cellular Pathology Graduate Program.

C. PATHOLOGY HOUSE OFFICERS
   1. Autopsy supervision and instruction (13 weeks /year).
   2. Instruction in gross examination, processing and frozen section processing and diagnosis (17 weeks/ year).
   3. Surgical Pathology supervision and instruction, (17 weeks/year).

D. UROLOGY HOUSE OFFICERS
   1. Conferences: case presentation and discussion (weekly, 278 cases reviewed)
   2. Lectures for Urology residents (~8/year).

E. CONTINUING MEDICAL EDUCATION
   1. Director, “Topics in Pathology”. AMA approved CME category 1. Lecture series in Pathology.

2. Web-Based Teaching
    a. Pathology 585, UM ctools.
    b. Pathology 586, UM ctools.
    c. Urologic Pathology Online Review: a web-based board review course for Urology residents.
3. Other Presentations
    a. Case presentations at Tumor Board.
    b. Case presentations at Morbidity and Mortality Conferences.
    c. Case presentations at Urologic Pathology Conferences.
    d. Tissue evaluation for clinical researchers.

III. RESEARCH ACTVITIES

A. SPONSORED SUPPORT

1. Co-Investigator, "Pulmonary Innate Immunity in the Pathogenesis of Tobacco-induced Lung Diseases", Department of Veterans Affairs Research Enhancement Award Program (REAP), $1,125,000 total direct costs, renewal years 05-10.
2. Prinicpal Investigator "Hormones and Dendritic cells" Veterans Education and Research Association of Michigan (VERAM), $25,000. 07/2003-2005.

B. PROJECTS UNDER STUDY

1. Gender-specific effects of hormones in autoimmunity: Hormone regulation of cytokine expression by microvascular endothelial cells.
2. Hormones regulation of dendritic cell activation and T cell function.
3. Reactive oxygen species in lung microvascular endothelial cells in inflammation.
4. The role of endothelial cell derived oxidants in signaling and cell injury.
5. Repertoire of endothelial cell derived cytokines: role in inflammation.
6. C11-Acetate imaging of Prostate and Renal tumors.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Member, Curriculum Committee, The Molecular and Cellular Pathology Graduate Program.
2. Member of graduate student thesis committee, Christine Freeman, The Molecular and Cellular Pathology Graduate Program.

B. INSTITUTIONAL

1. Member, Admissions committee of the University of Michigan Medical School, 1999- present.
2. Chief, Histopathology, Pathology and Laboratory Medicine, VAAHS, 2001-present.
3. Chief, Clinical Electron Microscopy, Pathology and Laboratory Medicine, VAAHS, 2001-present.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Manuscript Review, *Clinical Immunology and Immunopathology.*
2. Manuscript Review, *Biochemical Pharmacology*
3. Manuscript Review, *Shock*
4. Manuscript Review, *Free Radical Biology and Medicine*

5. Manuscript Review, *American Journal of Pathology*
6. Manuscript Review, *Microvascular Research*

B. INVITED PRESENTATIONS
1. Speaker: "What makes women so special: Estrogen and Autoimmunity" Schering-Plough Biopharma, Palo Alto, CA. 2006.
2. Invited Lecturer. Urology Residents Conference, "Pathology of the Prostate: The Good the Bad and The Ugly".2006.

C. MEMBERSHIP AND OFFICES IN PROFESSIONAL SOCIETIES
1. American Association for the Advancement of Science (1991-present).
2. New York Academy of Science (1991-present).
3. American Society for Investigative Pathology (Fellow, 1995-present).
4. American Society of Clinical Pathologists (Fellow, 1995-present).
5. American Association of University Women (199-present).
6. The A. James French Society of Pathologists (1996-present).
7. Society for Experimental Biology and Medicine (2000-present).
8. The Oxygen Society (2001-present).
9. Society for Free Radical Research International (2001-present).
10. The Nitric Oxide Society (2001-2005).
11. American Heart Association (1997-present).

D. HONORS AND AWARDS
1. Dept of Veterans Affairs: Recognition of High level Performance, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
1. Park, P, Gala, V C, Choksi, V R,Murphy, H S, Ramnath, S. Well-circumscribed, Minimally Enhancing Glioblastoma Multiforme of the Trigone: Case Report and Review of the Literature. American Journal of Neuroradiology. 26(6):1475-8, 2005.
2. Mo, R., Chen, J., Grolleau-Julius, A., Murphy, H.S., Richardson, B.C., Yung, R.L. Estrogen Regulates CC Chemokine Receptor Gene Expression and Function in T Lymphocytes. J. Immunol. 174:6023-6029, 2005.
3. Piotrowski, M. Bessette, R., Chensue, S. Cutler, D., Kachalia, A., Roseborough, J. W., Saint, S., Underwood, W., Murphy, H.S. learning to Improve Safety: False Positive Pathology Report Results in Wrongful Surgery. Joint Comm J. Quality and Safety 31:123-131, 2005.
4. Shu L. Murphy HS. Cooling L. Shayman JA. An in vitro model of fabry disease. J. Am. Soc. Nephrol. 16:2636-45, 2005.
5. Ray D. Wu A. Wilkinson JE. Murphy HS. Lu Q. Kluve-Beckerman B. Liepnieks JJ. Benson M. Yung R. Richardson B. Aging in heterozygous Dnmt1-deficient mice: effects on survival, the DNA methylation genes, and the development of amyloidosis. Journals of Gerontology Series A-Biological Sciences & Medical Sciences. 61(2):115-24, 2006.

B. BOOKS AND CHAPTERS IN BOOKS
1. Murphy, HS. "Inflammation" in Rubin's Pathology, R. Rubin (ed) 5th ed.2006.

2. Murphy, H. S., J. Varani and P. A. Ward. “Biology of Endothelial Cells: Role of the Endothelium in Lung Inflammation”. Middleton's Allergy: Principles and Practice. N. F. Adkinson. Mosby St Louis. Expected 2007.

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. M E. Murphy, Sun, Q., Richardson, B.C., Murphy, H.S. Estrogen Enhances IL-4 Mediated MCP-1 Expression in Endothelial Cells. Steroids. 70: 477. 2005.

Jeffrey L. Myers, M.D.
A. James French Professor and Director, Division of Anatomic Pathology

I. CLINICAL ACTIVITIES

A. DIAGNOSTIC SURGICAL PATHOLOGY (Room 1), 3 weeks.
B. DIAGNOSTIC BREAST PATHOLOGY, 1 week.
C. M-LABS CONSULTATION CASES, 313 (May, YTD).

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
   1. Laboratory instructor, M1 Histopathology (May 11, 2006)
B. RESIDENTS AND FELLOWS
   1. Elective in pulmonary pathology (1 month)
   2. Jonathan McHugh

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT – None.
B. PROJECTS UNDER STUDY
   1. Comparison of lung biopsy findings in hypersensitivity pneumonia and usual interstitial pneumonia.
   2. Prospective analysis of diagnostic value of transbronchial lung biopsies in patients suspected of having idiopathic pulmonary fibrosis.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
   1. Director, Division of Anatomic Pathology.
   2. Faculty recruitment.
B. INSTITUTIONAL
   1. Member, Executive Committee on Clinical Affairs (effective July 1, 2006).
C. REGIONAL/NATIONAL/INTERNATIONAL
   1. Chair, Education Committee, United States and Canadian Academy of Pathology.
   2. Member, Program Planning Committee, XXVI Congress of the International Academy of Pathology – IAP 2006 Montreal.
   3. Member, Executive Advisory Board, Archives of Pathology and Laboratory Medicine.
   4. Primary author of pulmonary pathology journal club blog (www.pulmpathrev.typepad.com).

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Member, Editorial Board
    a. *Human Pathology*
    b. UpToDate in Pulmonary and Critical Care Medicine
    c. *Advances in Anatomic Pathology.*
2. Manuscript Review
    a. American Journal of Respiratory and Critical Care Medicine
    b. Chest
    c. Human Pathology
    d. Archives of Pathology and Laboratory Medicine
    e. *Modern Pathology*

B. INVITED LECTURES/SEMINARS

1. Invited Speaker and Faculty, 31ST Annual Review and Recent Practical Advances in Pathology, University of Miami, Miami, FL, February 2006.
2. Invited Speaker, "How we (. . . can we?) educate administrators about pathology", Annual meeting of the Association of Directors of Anatomic and Surgical Pathology, Atlanta, GA, February 2006.
3. Invited Speaker and Faculty, 4th Annual UCLA Pulmonary and Critical Care Update, University of California at Los Angeles, Santa Monica, CA February 2006.
4. Invited Speaker and Faculty, 2006 American Thoracic Society Clinical State-of-the-Art Course, Chicago, IL, March 2006.
5. Invited Speaker, 1st Annual Miami IPF Symposium, Miami, FL, April 2006.
6. Invited Speaker, annual Spring meeting of the Houston Society of Clinical Pathologists, Houston, TX, April 2006.
7. Invited Speaker, Clinical, Radiologic, Pathological Correlations (Fellows Conference), ATS 2006 San Diego, Annual American Thoracic Society International Conference, San Diego, CA, May 2006.
8. Invited Speaker, Update on the Diagnosis and Management of Pulmonary Vasculitis (Clinical Topics in Pulmonary Medicine), ATS 2006 San Diego, Annual American Thoracic Society International Conference, San Diego, CA, May 2006.

C. HONOR AND AWARDS

1. A. James French Professor of Diagnostic Pathology.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Atkins S, Turesson C, Myers J, Tazelaar H, Ryu J, Matteson E, Bongartz T. Morphologic and quantitative assessment of CD20+ B cell infiltrates in rheumatoid arthritis-associated nonspecific interstitial pneumonia and usual interstitial pneumonia. Arthrit Rheum 2006; 54: 635-41.
2. Visscher D, Myers J. Bronchiolitis: The pathologist's perspective. Proc Am Thorac Soc 2006; 3: 41-7.

3. Daniels C, Myers J, Utz J, Markovic S, Ryu J. Organizing pneumonia in patients with hematologic malignancies: A steroid-responsive lesion. Respir Med, Published Online First: 15 May 2006. doi:10.1016/j.rmed.2006.03.035
4. Visscher D, Myers J. Histologic spectrum of idiopathic interstitial pneumonias. Proc Am Thorac Soc 2006; 3: 322-9.
5. Bongartz T, Cantaert T, Atkins S, Harle P, Myers J, Turesson C, Ryu J, Baeten D, Matteson E. Citrullination in extra-articular manifestations of rheumatoid arthritis. Rheumatol, Published Online First: 16 June 2006. doi:10.1093/rheumatology/kel202.
6. Myers J. How safe is safe enough? Ask a patient. (invited, peer-reviewed editorial) Arch Pathol Lab Med 2006 (in press).
7. Myers J, Katzenstein A-L. Fibroblasts in focus. (invited, peer-reviewed editorial) Am J Respir Crit Care Med 2006 (in press).

Alexey Nesvizhskii, Ph.D.
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES – None

II. TEACHING ACTIVITIES

A. GRADUATE STUDENTS

1. Ying Ding, Biostatistics (co-mentored with D. Ghosh, Biostatisics).
2. Hyung Won Choi, Biostatistics (co-mentored with D. Ghosh, Biostatistics).
3. Thesis committee member
    a. Peter Ulintz, Bioinformatics.
    b. Damian Fermin, Bioinformatics.
4. Preliminary examination committee member
    a. Dai Lai, Bioinformatics.
5. Examination Committee Member, doctoral student (Ph.D.)
    a. Lennart Martens, Ghent University, Belgium.

B. LECTURES/OTHER

1. Protein Informatics, Bioinformatics 551.
2. Member, Bioinformatics Graduate Program.

III. RESEARCH ACTIVITIES

A. PENDING

1. Principal Investigator (30%), “Analysis and Statistical Validation of Proteomic Datasets”, National Institutes of Health, R01, $250,000/yr (1,250,000/5 yr), 9/26/06 – 9/25/11.
2. Co-Investigator (10%), “Clinical Proteomics Technology Assessment Center Focused on Therapeutic Response”, U24, (PIs: Loo and Ogden), Cedars-Sinai Medical Center (NIH), $75,000/yr ($375,000/5 yr), 9/26/06 – 9/25/11.
3. Co-Investigator (15%), “Michigan Clinical Proteomics Assessment Consortium”, NIH, U24 (PI: Andrews), $72,765/yr ($363,825/5 yr), 9/26/06 – 9/25/11.
4. Principal Investigator (15%), “Computational Analysis of MS Data on Protease Products”, The Burnham Institute (NIH), administrative supplement to U54 RR020843 “Center for Proteolytic Pathways” (PI: Smith), $75,000/yr ($75,000/1 yr). 8/1/06-7/31/07.
5. Co-Investigator (10%), “Markers of Gastrointestinal Cancers in Serum Using a Glycoproteomic Approach”, State of Michigan Economic Development Corporation, 9/06 – 9/09.

6. Co-Investigator (20%), “Detection of Autoantibody Signature and Early Detection Markers in Colon Cancer”, Fred Hutchinson Cancer Research Center (NIH), 03/06-03/07.

B. PROJECTS UNDER STUDY

1. Development of computational methods and tools for analysis of mass spectrometry-based proteomic data
2. Analysis of protein microarray data.
3. Integrative analysis and mining of proteomic dataset.

IV. ADMINISTRATIVE ACTIVITIES

A. INSTITUTIONAL

1. Member, Curriculum Development Committee, Bioinformatics program.

B. REGIONAL/NATIONAL/INTERNATIONAL

1. Grant review for
    a. National Sciences and Engineering Research Council of Canada (NSERC)
    b. Strategic Project Program Dutch Cancer Society.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Editorial Board
    a. *Practical Proteomics* (published by WILEY-VCH Verlag).
2. Manuscript review
    a. Nature Biotechnology
    b. Bioinformatics
    c. BMC Bioinformatics
    d. Molecular and Cellular Proteomics
    e. Proteomics
    f. Journal of Proteome Research
    g. Analytical Chemistry
    h. BMC Genomics
    i. *Drug Discovery Today*

B. INVITED LECTURES/SEMINARS

1. Invited speaker and panel discussant, Standards, Methods, Assays, Reagents and Technologies (SMART) For Early Cancer Detection and Diagnosis. A National Institute of Standards and Technology (NIST) and the Early Detection Research Network Joint Workshop. NIST, Gaithersburg, Maryland, August, 2005.
2. Invited speaker and instructor, Proteomics Software Course at the Institute for Systems Biology, Seattle, WA, February, 2006.
3. Invited speaker, “Computational Analysis of Proteomic Data”, Faculty of Medicine and Health Sciences, Ghent University, Rommelaere Institute, Ghent, Belgium, June, 2006.
4. Invited speaker, “Interpretation of Quantitative Shotgun Proteomic Data”, Beyond Genome 2006 Conference, San Francisco, CA, June, 2006.
5. Invited panel discussant, “Measurement Challenges in Proteomics” workshop, organized by the National Institute of Standards and Technology, Boston, MA, March, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Martens L, Nesvizhskii AI, Hermjakob H, Adamski M, Omenn GS, Vandekerckhove J, Gevaert K. Do we want our data raw? Including binary mass spectrometry data in public proteomics data repositories. Proteomics 5, 3501-5 (2005).
2. Deutsch EW, Eng JK, Zhang H, King NL, Nesvizhskii AI, Lin B, Lee H, Yi EC, Ossola R, Aebersold R. Human Plasma PeptideAtlas. Proteomics 5, 3497-500 (2005).
3. Martin DB, Eng JK, Nesvizhskii AI, Gemmill A, Aebersold A. Investigation of neutral loss during collision-induced dissociation of peptide ions. Anal Chem 77, 4870-82 (2005).
4. Nesvizhskii AI, Aebersold, R. Interpretation of shotgun proteomic data: The protein inference problem. Molecular and Cellular Proteomics 4, 1419-1440 (2005).
5. Desiere F, Deutsch EW, King NL, Nesvizhskii AI, Mallick P, Eng J, Chen S, Eddes J, Loevenich SN, Aebersold R. The PeptideAtlas Project. Nucleic Acids Res. 34, D655-8 (2006).
6. Nesvizhskii AI, Roos FF, Grossmann J, Vogelzang M, Eddes JS, Gruissem W, Baginsky S, Aebersold R. Dynamic spectrum quality assessment and iterative computational analysis of shotgun proteomic data: Toward more efficient identification of post-translational modifications, sequence polymorphisms and novel peptides. Molecular and Cellular Proteomics, 5, 652-670 (2006).
7. Malmström J, Lee H, Nesvizhskii AI, Shteynberg D, Brunner E, Weber G, Eckerskorn C, Aebersold R. Advances in peptide separation by free-flow electrophoresis. J Proteome Res, in press.

B. BOOKS AND CHAPTERS IN BOOKS

1. Nesvizhskii AI. Protein identification by tandem mass spectrometry and sequence database searching. In Methods in Molecular Biology, vol. 367: Mass spectrometry data analysis in proteomics (R. Matthiesen, ed) Humana Press Inc., Totowa, NJ, pp 87-119.

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Nesvizhskii AI, Roos FF, Grossmann J, Vogelzang M, Eddes JS, Gruissem W, Baginsky S, Aebersold R. Dynamic Spectrum Quality Assessment and Iterative Computational Analysis of Shotgun Proteomic Data, 2nd US HUPO meeting, Boston, MA, March, 2006.
2. Nesvizhskii AI, Eddes JS, Aebersold R. Reanalysis of Unassigned High Quality Spectra from Published Datasets Can Provide Biologically Interesting New Insights, American Society for Mass Spectrometry meeting, Seattle, WA, May, 2006.
3. Shteynberg D, Nesvizhskii AI, Aebersold R. Incorporating Theoretical Peptide pI Information in PeptideProphet to Improve Validation of MS/MS Samples Separated by Isoelectric Focusing, American Society for Mass Spectrometry meeting, Seattle, WA, May, 2006.
4. King NL, Deutsch EW, Eng J, Ranish J, Raught B, Eddes J, Nesvizhskii AI, Mallick P, Martin DB, Flory M, Lee H, Lam H,

Aebersold R. Annotation of the Yeast proteome with PeptideAtlas, American Society for Mass Spectrometry meeting, Seattle, WA, May, 2006.

5. Deutsch EW, King NL, Eng J, Nesvizhskii AI, Vitek O, Aebersold R. Human plasma PeptideAtlas, American Society for Mass Spectrometry meeting, Seattle, WA, May, 2006.

Duane W. Newton, Ph.D.
Assistant Professor of Pathology
Director, Clinical Microbiology/Virology Laboratory

I. CLINICAL ACTIVITIES

A. DIRECTOR, CLINICAL MICROBIOLOGY/VIROLOGY LABORATORIES.

B. COORDINATOR, INFECTIOUS DISEASE MICROBIOLOGY LABORATORY ROUNDS.

C. TECHNICAL CONSULTANT - M-LABS.

D. LABORATORY DIRECTOR, UMHS OUTPATIENT LABORATORIES
1. Dominoes Farms
2. Livonia Health Center
3. Saline Health Center
4. Ypsilanti Family Practice)

E. CLINICAL TEST DEVELOPMENT, VERIFICATION AND IMPLEMENTATION.
1. Evaluation of automated Identification/Antibiotic Susceptibility Testing systems (in progress).
2. Evaluation of real-time PCR instrumentation for in-house testing for Enterovirus and Bordetella pertussis (in progress).
3. Implementation of automated sample processing for CMV viral load testing (completed).
4. Verification of methods for in vitro susceptibility testing of selected yeasts (in progress).
5. Implementation of EBV viral load testing (in progress).
6. Evaluation of Galactomannan assay for detection of invasive aspergillosis (completed).
7. Negotiated contract for upgraded automated blood culture instrumentation (completed).
8. Negotiating contract for additional automated nucleic acid extraction instrumentation (in progress).
9. Negotiated contract for microbiology media and reagents supplier (completed).
10. Implemented new FDA procedures for stem cell sterility testing to support Blood Bank stem cell processing (complete).

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
1. Preceptor for M-4 elective in Pathology.

B. RESIDENTS AND FELLOWS
1. Instructor, Pathology House Officer Microbiology/Virology Program.

2. Coordinator, Clinical Microbiology/Virology In-service Program.
3. Instructor, Infectious Disease Laboratory Rounds.
4. Coordinator, Clinical Microbiology Journal Club
5. Preceptor for Pharmacy Resident rotation in Clinical Microbiology and Virology.

C. LECTURES/OTHER

1. EPID 525, Clinical and diagnostic microbiology, UM School of Public Health, Winter term, 2006 (developed course, wrote lectures, presented lectures 2x/week for entire term).
2. Epidemiology 680, "Hospital Epidemiology," School of Public Health Assistant Professor, Department of Epidemiology, School of Public Health.
3. Clinical Pathology Grand Rounds, UM Dept. of Pathology.
    a. "Microbiology testing in CNS infections." Grand Rounds presentation, Clinical Pathology Division, Department of Pathology, University of Michigan Medical Center. 10/11/05.
    b. "The ABCs of hepatitis testing—part 1." Grand Rounds presentation, Clinical Pathology Division, Department of Pathology, University of Michigan Medical Center. 10/25/05.
    c. "The ABCs of hepatitis testing—part 2." Grand Rounds presentation, Clinical Pathology Division, Department of Pathology, University of Michigan Medical Center. 11/1/05.
    d. "Microbiology case presentations." Grand Rounds presentation, Clinical Pathology Division, Department of Pathology, University of Michigan Medical Center. 11/8/05.
4. Continuing Education Lecturer, UM Dept. of Pathology.
    a. "Molecular biology for the molecularly challenged." Continuing Education Seminar, Department of Pathology, University of Michigan Medical Center. 12/07/05.
    b. "Influenza virus: What's the big deal?" Brown-bag lunch seminar for Medical Technology students, Department of Pathology, University of Michigan Medical Center. 03/08/06.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Co-investigator (20%), "Comparative Study of Influenza Vaccines in Adult", R01 NIH Grant AI057853-01A1, $28,204 (Salary = $14,180, Benefits = $4,254, Indirect Costs = $9,770).

B. PROJECTS UNDER STUDY

1. Risk factors for infections with MRSA with reduced susceptibility to Vancomycin at UMHS (Newton, DePestel, PIs).
2. Surveillance for carbepenemase producing Enterobacteriaceae at UMHS (Newton, DePestel, PIs, collaborating with CDC).Epidemiology of human metapneumovirus in Michigan (Newton, Lukacs, Monto, PIs).
3. Providing support (sterility testing) for several clinical trials including Human Applications Lab, KeraCure, and Aastrom.
4. Risk factors for ESBL+ Enterobacteriaciae in hospitalized patients (DePestel/Chenoweth, PIs).
5. Identification of factors affecting quorum sensing in Enterobacteriaciae isolated from blood and urine (Younger, PI).

6. Molecular methods for detection of fungal pathogens in culture negative specimens (Rogers, PI).
7. Use of the HandyLab bedside PCR device for detecting Streptococcus agalactiae during pregnancy (Wu, PI).
8. Antimicrobial nanoemulsions as therapy for recurrent cold-sores (Peters, PI).

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL:
1. Clinical Pathology Laboratory Directors Committee.
2. Quality Assurance Committee.
3. Clinical Microbiology/Virology Senior Staff committee.
4. Clinical Pathology Training Program Review Committee.
5. Laboratory Infection Control Committee, Chairman.

B. INSTITUTIONAL
1. Hospital Infection Control Committee.
2. Antimicrobial Use Subcommittee of the Pharmaceutical & Therapeutics Committee.
3. Pediatric Virus Prevention Program Committee, Infection Control & Epidemiology.
4. SARS Preparedness Planning Working Group.
5. Pandemic Influenza Planning Committee.

C. REGIONAL/NATIONAL/INTERNATIONAL
1. Corporate Liaison Co-chair, South Central Association for Clinical Microbiology.
2. Director-at-Large, South Central Association for Clinical Microbiology.
3. Rabies Working Group, Michigan Department of Community Health.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS
1. Ad hoc reviewer, *Journal of Clinical Microbiology*
2. Ad hoc reviewer, *Morbidity and Mortality Weekly Report*

B. INVITED LECTURES/ SEMINARS
1. "Molecular for Dummies the molecularly challenged." Michigan Branch Fall Meeting, South Central Association for Clinical Microbiology, Brighton, MI. 09/14/05.
2. "Microbiology testing in CNS infections." Weekly division conference, Division of Infectious Diseases, Department of Pediatrics, University of Michigan Medical School. 09/29/05.
3. "Microbiology testing in CNS infections." Monthly business meeting, Division of Infectious Diseases, Department of Internal Medicine, University of Michigan Medical School. 09/29/05.
4. "Influenza virus: diagnostic dilemmas and pandemic potential." A. James French Society of Pathologists Annual Meeting, Ann Arbor, MI. 10/1/05.
5. "Influenza virus—clinical and laboratory issues." Avian Influenza Symposium, Eastern Michigan University, Ypsilanti, MI. 11/30/05.
6. "Influenza virus: diagnostic dilemmas and pandemic potential." Pulmonary research conference, University of Michigan Medical School. 02/16/06.

7. "Blood culture contamination issues." Infection Control Committee Meeting, University of Michigan Health System. 05/15/06.

C. MEMBERSHIP AND OFFICES IN PROFESSIONAL SOCIETIES
1. American Society for Microbiology.
2. Infectious Disease Society of America.
3. South Central Association for Clinical Microbiology.
4. Pan American Society for Clinical Virology.

VI. PUBLICATIONS

A. ABSTRACTS, BOOK REVIEWS, LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. J.K. Rasheed, L. Washer, C. Chenoweth, J. Perrin, D.W. Newton, and J.B. Patel. 2005. The carbapenem-hydrolyzing KPC-2 enzyme produced by a clinical isolate of Citrobacter freundii. Poster presented at the 45th annual Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), Washington, DC.
2. P.L. Carver, S. Lin, D.W. Newton, and D.D. DePestel. 2005. Impact of mecA gene testing and pharmacist (RPh) intervention on the time to optimal antimicrobial therapy (t-OAT) for Staphylococcus aureus bacteremia (SAB). Poster presented at the 45th annual Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), Washington, DC.
3. D.W. Newton and W.D. LeBar. 2006. Digene Hybrid Capture 2 HPV: Is repeat testing of equivocal zone results worth it? Poster presented at the 22nd Annual Clinical Virology Symposium and Annual Meeting of the Pan American Society for Clinical Virology, Clearwater, FL.
4. C. Brenke, D.D. DePestel, and D.W. Newton. 2006. Comparison of Etest and JustOne for the Detection of MRSA Isolates with Reduced Susceptibility to Vancomycin. Poster presented at the 106th General Meeting of the American Society for Microbiology, Orlando, FL.

Gabriel Nuñez, M.D.
Paul H. De Kruif Professor of Pathology

I. CLINICAL ACTIVITIES

A. AUTOPSY SERVICE (two weeks and one weekend on-call).

II. TEACHING ACTIVITIES

A. POST-DOCTORAL FELLOWS

1. Christine McDonald
2. Luigi Franch, M.D.
3. Amal Amer, M.D.
4. Mathilde Body-Malapel
5. Thirumala-Devi Kanneganti
6. Jong-Hwan Park
7. Grace Chen, M.D.
8. Michael Shaw
9. Neomi Marima-Garcia
10. Yungi Kim

B. GRADUATE STUDENTS

1. Graham Brady
2. Jolie Hoffman
3. Florence Filippetto-Manon
4. Raul Munoz-Planillo.
5. Sara Monroe, Thesis Committee
6. Pete Beemiller, Thesis Committee
7. Sarah Bradley, Thesis Committee
8. Kevin Nickerson, Thesis Committee

C. LECTURES

1. Department of Pathology, Graduate Program Course 581, University of Michigan, Ann Arbor, Michigan, (2 lectures).
2. Instructor, Microbiology and Immunology 553, Cancer Biology Training Program, University of Michigan, (1 lecture).
3. Instructor, Cell Biology Course 530 for Graduate Students, University of Michigan (1 lecture).

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Principal Investigator, “Ciper: a novel NF-kappa B-activating gene involved in Cancer” National Institutes of Health, $175,000, (total direct costs) 07/01/00-06/31/05.

2. Principal Investigator, "Nod2: A Susceptibility Gene for Crohn's Disease" National Institutes of Health, $200,000, (total direct costs) 07/01/02-06/30/07.
3. Principal Investigator, "Peptidoglycan signaling in Crohn's disease", National Institutes of Health, $250,000, (total direct costs) 08/01/04-07/30/09.
4. Principal Investigator, "Role of Ipaf in Inflammation and Host Defense" National Institutes of Health, $250,000, (total direct costs) 05/15/05-04/30/10.
5. Principal Investigator, "Cryoppyrin Signaling in Inflammation and Innate Immunity" National Institutes of Health, $212,500 (total direct costs) 05/01/05-01/31/10.
6. Principal Investigator, "Role of ASC signaling Pathway in Inflammatory Disease", National Institutes of Health, $250,000 (total direct costs) 02/01/06-07/30/11.

B. PROJECTS UNDER STUDY
1. Role of Nod Family in Innate Immunity and Inflammatory Disease.
2. Role of inflammation in intestinal cancer.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Member, Comprehensive Examination Committee, Pathology Graduate Program, University of Michigan, Ann Arbor, MI.
2. Member, Admissions Committee, Molecular and Cellular Biology, Graduate Program, University of Michigan, Ann Arbor, MI.

B. INSTITUTIONAL
1. Co-Director, Cell Biology Program, University of Michigan Cancer Center.
2. Member, Faculty Search Committee, Rheumatology Division, and Department of Microbiology/Immunology.
3. Reviewer, Departmental Grants and Summer Student Scholarship Program.
4. Member, Biomedical Research Core Facilities (BRCF), University of Michigan, Ann Arbor, Michigan.
5. Member, Biomedical Research Council, University of Michigan, Ann Arbor, Michigan.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS
1. Reviewer, *American Journal of Pathology*
2. Reviewer, *Cancer Research*
3. Reviewer, *Cell*
4. Reviewer, *Cell Death and Differentiation*
5. Reviewer, *Immunity; Journal of Biological Chemistry*
6. Reviewer, *Journal of Cell Death and Differentiation*
7. Reviewer, *Journal of Immunology*
8. Reviewer, *Oncogene*
9. Reviewer, *Journal of Cell Biology*
10. Reviewer; *Laboratory Investigation*
11. Reviewer, *Proceedings of National Academy of Science USA*
12. Reviewer; *Science*

13. Reviewer, *Nature Cell Biology.*

B. INVITED LECTURES/SEMINARS

1. Invited Speaker, “Role of NOD protein family in Innate Immunity and Inflammatory Disease”, Nephrology Seminar Series, University of Michigan, March 29,2005.
2. Invited Speaker “The NOD-LRR Protein Family: Role in Innate Immunity and Disease”, Pathology Research Seminar Series, University of Michigan, January 26, 2006.
3. Invited Speaker “Nod2 is expressed in Paneth cells and regulates innate immunity to intracellular bacteria in the intestinal tract”, Third Annual Broad Medical Research Investigator Meeting, Los Angeles, California, February 24, 2005.
4. Invited Speaker “Nod Protein Family: Role in Innate Immunity and Disease” University of California San Francisco, San Francisco, California, April 11, 2005.
5. Invited Speaker “Nod Protein Family: Role in Innate Immunity and Disease” Genentech Inc., San Francisco, California, April 12, 2005.
6. Invited Speaker “Nod Family Protein: Role in Innate Immunity and Disease”, Harvard Medical School Immunology Seminar, April 27, 2005.
7. Invited Speaker, “Nod Protein Family: Role in Innate Immunity and Disease” Immunology Seminar Series, Stanford University, Palo Alto, California, May 6, 2005.
8. Invited Speaker, “The NOD Protein Family: Role in Innate Immunity and Inflammatory Disease,” MSTP Annual Summer Retreat, Case Western Reserve, Ohio, July 29, 2005.
9. Invited Speaker, “The NOD Protein Family: Role in Innate Immunity and Inflammatory Disease,” MedImmune, Inc. Conference, Gaithersburg, Maryland, August 9, 2005.
10. Invited Speaker “NOD2 function in inflammatory bowel disease,” FASEB Summer Research Conference, Gastrointestinal Tract XI, Snowmass, Colorado, August 14, 2005.
11. Invited Speaker “Role of NOD Proteins in Peptidoglycan Recognition and Disease”, Staphylococcal Diseases, Salve Regina University, Newport, Rhode Island, August 23, 2005.
12. Invited Speaker and Session chair “Functional relevance of NOD2 on cellular signaling in Crohn’s disease”, Inflammatory Bowel Disease: Research Drives Clinics, Muenster, Germany, September 2, 2005.
13. Invited Speaker “Role of NOD Proteins in Innate Immunity and Disease” 38th Annual Meeting of the Society for Leukocyte Biology, Sir William Dunn School of Pathology, Oxford, England, September 22, 2005.
14. Invited Speaker “NOD Family Proteins: Role in Innate Immunity and Disease”, Special Seminar, Case Western Reserve University, Cleveland, Ohio, October 12, 2005.
15. Invited Speaker “The molecular basis of host defense-an overview” Innate Immunity and is Modulation in Inflammatory Bowel Disease-European Crohn’s and Colitis Foundation, Stuttgart, Germany, Nov 4, 2005.

16. Invited Speaker and Co-Chair " Caspase-1 Activation Pathways" FMF and Beyond, the Fourth International congress on Systemic Autoinflammatory Disease, Bethesda, Maryland, Nov 7, 2005.
17. Invited Speaker, Kangos Memorial Lecture, "NOD-LRR Protein Family: Role in Innate Immunity and Disease", University of Pittsburgh-Children's Hospital, Pittsburgh, Pennsylvania, Dec 8, 2005.
18. Invited Speaker, "NOD-LRR Protein Family: Role in Innate Immunity and Disease", Columbia University, Seminar HHSC 301, New York City, New York, January 12, 2006.
19. Invited Speaker "NOD-LRR Protein Family: Role in Innate Immunity and Disease" Stonybrook University, Life Science Seminar, Stonybrook, New York, January 13, 2006.
20. Invited Speaker and Session Chair "NOD-LRR Protein Family: Role In Innate Immunity and Disease" Keystone Innate Immunity Symposium, Banff, Alberta, Canada, Feb 12, 2006.
21. Invited Speaker "NOD-LRR Protein Family: Role in Innate Immunity and Disease", 26th European Workshop for Rheumatology Research, Herakilion, Crete, Greece, Feb 25, 2006.
22. Invited Speaker "NOD-LRR Protein Family: Role in Innate Immunity and Disease" Toll 2006, Salvador, Brazil, March 7, 2006.
23. Invited Speaker, "Microbial Signaling via NODs- Implication for Microbial Defense and the Activation of Mucosal Inflammatory Responses" American Gastroenterology Association, Digestive Health and Disease, Marina del Ray, California, March 25, 2006.
24. Invited Speaker and Session Leader- Bacterial Host Interaction" 4th International Meeting on Inflammatory Bowel Diseases, Capri, Italy, April 10, 2006.
25. Invited Speaker, "NOD-LRR Protein Family: Role in Innate Immunity and Disease" Duke University, Durham, North Carolina, April 25, 2006.
26. Invited Speaker "Role of NOD Family Proteins in Innate Immunity and Disease" University of Texas-Southwestern, Dallas, Texas, May 10, 2006.
27. Invited Speaker "Inflammatory bowel disease and sarcoidosis: too much NOD" American Association of Immunologists Annual Meeting, Boston, Massachusetts, May 14, 2006.
28. Invited Speaker "The NOD-LRR Protein Family: Role in Innate Immunity and Disease", Immunology (IAG) Seminar Series, Scripps Research Institute, La Jolla, California, May 25, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFERRED JOURNAL

1. Kobayashi KS, Chamaillard M, Ogura Y, Henegariu O, Inohara N, Nuñez G*, Flavell RA*. Nod2-dependent regulation of innate and adaptive immunity in the intestinal tract. Science. 307:731-4 (2005). (*share senior authorship).
2. Song W, Sun Q, Dong Z, Spencer DM, Nuñez G, Nor JE. Antiangiogenic gene therapy: disruption of neovascular networks

mediated by inducible caspase-9 delivered with a transcriptionally targeted adenoviral vector. Gene Ther. 4:320-9 (2005).

3. Suzuki T, Nakanishi K, Tsutsui H, Iwai H, Akira S, Inohara N, Chamaillard M, Nuñez G, Sasakawa C. A novel caspase-1/Toll-like receptor 4-independent pathway of cell death induced by cytosolic Shigella in infected macrophages. J Biol Chem. 280: 14042-14050 (2005).
4. Hysi P, Kabesch M, Moffatt MF, Schedel M, Carr D, Zhang Y, Boardman B, von Mutius E, Weiland SK, Leupold W, Fritzsch C, Klopp N, Musk AW, James A, Nuñez G, Inohara N, Cookson WO. NOD1 variation, Immunoglobulin E, and asthma. Hum Mol Genet. 14: 935-941 (2005).
5. McDonald C, Chen FF, Ollendorff V, Ogura Y, Marchetto S, Lecine P, Borg JP, Nuñez G. A role for erbin in the regulation of NOD2-dependent NF-kappa B signaling. J Biol Chem. 280:40301-40309. (2005).
6. Karl E, Warner K, Zeitlin B, Kaneko T, Wurtzel L, Jin T, Chang J, Wang S, Wang CY, Strieter RM, Nuñez G, Polverini PJ, Nor JE. Bcl-2 acts in a proangiogenic signaling pathway through nuclear factor-kappaB and CXC chemokines. Cancer Res. 65:5063-5069 (2005).
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8. Kanneganti T-D, Özören N, Body-Malapel M, Amer A, Park J-P, Franchi L, Whitfield J, Barchet W, Colonna M, Vandenabeele P, Bertin J, Coyle A, Grant EP, Akira S, Núñez G. Bacterial RNA and Small Antiviral Compounds Activate Caspase-1 Through Cryopyrin/Nalp3. Nature 440:233-236 (2006).
9. Özören N, Masumoto J, Franchi L, Kanneganti T-D, Body-Malapel M, Ertürk I*, Jagirdar R, Zhu L, Inohara N, Bertin J, Coyle A, Grant EP, and Núñez G. Distinct Roles of TLR2 and the Adaptor ASC in IL-1β/IL-18 Secretion in response to Listeria monocytogenes. J. Immunol 176:4337-4342 (2006).
10. Nishito Y, Hasegawa M, Inohara N and Núñez G. MEX is a testis-specific E3 ubiquitin ligase that promotes death receptor-induced apoptosis. Biochem J. Mar 7; [Epub ahead of print] 396:411-417(2006).
11. Boughan PK, Argent RH, Body-Malapel M, Park JH, Ewings KE, Bowie AG, Ong SJ, Cook SJ, Sorensen OE, Manzo BA, Klein NJ, Núñez G., Atherton JC, Bajaj-Elliott M. Nucleotide-binding oligomerisation domain-1 (NOD-1) and epidermal growth factor receptor (EGFR): Critical regulators of beta -defensins during helicobacter pylori infection. J Biol Chem. 281:11637-11648 (2006).
12. Franchi L, Amer A, Body-Malapel M, Kanneganti TD, Ozoren N, Jagirdar R, Inohara N, Vandenabeele P, Bertin J, Coyle A, Grant EP, Núñez G. Cytosolic flagellin requires Ipaf for activation of caspase-1 and interleukin 1beta in salmonella-infected macrophages. Nat Immunol. 7:576-582 (2006).

B. ABSTRACTS BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN NON-REFEREED JOURNALS

1. Inohara N, Chamaillard M, McDonald C, Nuñez G. NOD-LRR proteins: role in host-microbial interactions and inflammatory disease. Annu Rev Biochem. 74:355-383 (2005).
2. McDonald C, Inohara N, Nuñez G. Peptidoglycan signaling in innate immunity and inflammatory disease. J. Biol Chem. 280: 20177-20180 (2005).
3. Inohara, Chamaillard, McDonald C, Nuñez G. NOD-LRR proteins: role in host-microbial interactions and inflammatory disease. Annu Rev Biochem. 74:355-83 (2005).

Yijun Pang, M.D., Ph.D.
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES

A. DIAGNOSTIC CYTOPATHOLOGY, 23 weeks.

B. DIAGNOSTIC GYN SURGICAL PATHOLOGY, 4 weeks.

II. TEACHING ACTIVITIES

A. RESIDENTS AND FELLOWS

1. Instruction to residents and fellows in sign-out sessions.
2. Lectured on cytopathology to pathology house officers
    a. The Bethesda system in Pap test.
    b. Cytology of salivary glands.

B. LECTURES/OTHER

1. Slide sessions with cytotechnologists.

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY

1. The clinical significance of the detection for HPV viral integration RAI 3, a potentially significant gene in the development of cervical cancer.

IV. ADMINISTRATIVE ACTIVITIES - None.

V. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Pang Y, von Turkovich M, Wu H, Mitchell J, Mount S, Taatjes D, Cooper K. The binding of thyroid transcription factor-1 and hepatocyte paraffin 1 to mitochondrial proteins in hepatocytes: a molecular and immunoelectron microscopic study. Am J Clin Pathol. 2006 May;125(5):722-6.
2. Svensson AM, Pang Y, Moore NJ, Tindle BH Cystic tumor of the cerebellum with megaloblastic erythropoiesis. Hemangioblastoma with megaloblastic hematopoiesis. Arch Pathol Lab Med. 2006 Jun;130(6):886-9.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN NON-REFEREED JOURNALS

1. Michael CW, Pang Y, Pu RT, Hasteh F, Griffith KA. Cellular Adequacy for thyroid aspirate prepared by ThinPrep: How many cells

are needed? 2006, USCAP annual meeting, Atlanta, Georgia, Session 292.

2. Yijun Pang, Brian Smola, Kristine Kern, Robert Pu and Claire Michael. Reprocessing hypocellular unsatisfactory ThinPrep Pap test specimens containing microscopic red blood cells. Submitted to 2006 American Society of Cytopathology. Toronto, Canada.
3. F Hasteh, Y pang, PT Pu, CW Michael. Do we need more than one Thin Prep to obtain adequate cellularity in fine needle aspiration? Submitted to 2006 American Society of Cytopathology Annual Meeting. Toronto, Canada.

Sem H. Phan, Ph.D., M.D.
Professor of Pathology

I. CLINICAL ACTIVITIES

A. AUTOPSY SERVICE.

II. TEACHING ACTIVITIES

A. GRADUATE STUDENTS
1. Member, Pathology Graduate Program thesis committees.
2. Pathology graduate program student counseling.
3. Supervise Undergraduate Research Opportunities Program (UROP) student projects.

B. RESIDENTS AND FELLOWS
1. House officer training in autopsy service.

C. POSTDOCTORAL FELLOWS
1. Training of postdoctoral fellows

D. LECTURES
1. Lecturer, Pathology 581

III. RESEARCH ACTIVITES

A. SPONSORED SUPPORT
1. Principal Investigator (25% effort), “Mechanisms of pulmonary fibrosis,” NIH, R37, HL28737 MERIT Award. ($175,000 annual direct costs).
2. Principal Investigator (20% effort), ”Myofibroblasts in pulmonary fibrosis,” NIH, R01, HL 52285 ($225,000 annual direct costs)..
3. Principal Investigator (20% effort), “A novel telomerase expressing lung fibroblast phenotype,” NIH, R01, HL77297 ($250,000 annual direct costs).
4. Principal Investigator (5% effort), ”Bone marrow progenitor cells in airway remodeling,” The Sandler Family Supporting Foundation ($250,000 annual direct costs).
5. Project Leader (20% effort), Project III, “Lung FIZZ1 expression and its regulation in fibrosis,” NIH, PO-1, HL 31963 ($230,000 annual direct costs).
6. Co-investigator (5% effort), SCOR in Human idiopathic pulmonary fibrosis, NIH, P-50 HL 56402 ($194,985 annual direct costs).

B. PROJECTS UNDER STUDY
1. Mechanisms of lung injury and fibrosis.
2. Bone marrow precursor cells as extrapulmonary sources of lung fibroblasts.

3. Molecular regulation of the α-smooth muscle actin, telomerase reverse transcriptase and FIZZ1 promoter and gene expression.
4. Myofibroblast differentiation and its regulation by cytokines.
5. Microarray analysis of lung gene expression in lung fibrosis.
6. Induction and regulation of telomerase expression in lung fibrosis.
7. Eosinophil recruitment, activation and role in pulmonary fibrosis.
8. Characterization of FIZZ1 and FIZZ2 and its role in myofibroblast differentiation.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Director, Pathology Graduate Program (until 12/31/05).
2. Member, Graduate Program Committee (until 12/31/05).
3. Member, Pathology House Officer Selection Committee.

B. INSTITUTIONAL
1. Member, Medical Scientist Training Program Operating Committee (until 12/31/05).
2. Member, Program in Biomedical Sciences Admissions Committee (until 12/31/05).

C. REGIONAL/NATIONAL/INTERNATIONAL
1. Associate Editor, American Journal of Pathology.
2. Reviewer/site visitor for NIH Program Project/Study Sections and VA grant proposals.

V. OTHER RELEVANT ACTIVITIES

A. Reviewer for the following journals
1. *American Journal of Respiratory and Critical Care Medicine.*
2. *American Journal of Pathology.*
3. *Journal of Immunology.*
4. *American Journal of Physiology.*
5. *American Journal of Respiratory Cell and Molecular Biology.*
6. *Journal of Clinical Investigation,*
7. *Experimental Cell Research.*
8. *Journal of Applied Physiology.*
9. *Journal of Experimental Medicine*

B. INVITED LECTURES/SEMINARS
1. “Lung injury and bone marrow cell recruitment to the lung”, 3rd Siena International Conference on Animal Models of COPD, Siena, Italy, 2005.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFERRED JOURNALS
1. Huaux, F., Gharaee-Kermani, M., Liu, T., Morel, V., McGarry, B., Ullenbruch, M., Kunkel, S.L., Wang, J., Xing, Z., and Phan, S.H.: Role of Eotaxin-1 (CCL11) and CC chemokine Receptor 3 (CCR3) in bleomycin-induced lung injury and fibrosis. Am. J. Pathol. 2005; 167:1485-96.
2. Hu, B., Tack, D.C., Liu, T., Wu, Z., Ullenbruch, M.R., and Phan, S.H.: Role of Smad3 in the regulation of rat telomerase reverse transcriptase by TGFβ. Oncogene. 2006; 25:1030–41.

3. White, E.S., Atrasz, R.G., Hu, B., Phan, S.H., Stambolic, V., Mak, T.W., Hogaboam, C.M., Flaherty, K.R., Martinez, F.J., Kontos, C.D., and Toews, G.B.: Negative regulation of myofibroblast differentiation by phosphatase and tensin homologue deleted on chromosome ten. Am. J. Respir. Crit. Care Med. 2006; 173:112-21.
4. Liu T, Hu B, Ullenbruch M, Jin H, and Phan SH: Telomerase regulation of myofibroblast differentiation. Am. J. Respir. Cell Mol. Biol. 2006; 34:625-33.

B. BOOKS/CHAPTERS IN BOOKS/REVIEWS

1. Phan, S.H.: FIZZy alveolar epithelial cells induce myofibroblast differentiation, in, Chaponnier C., Desmouliere A., Gabbiani, G. (Eds.) Tissue repair, contraction and the myofibroblast, Landes Bioscience, Georgetown, TX, 2006; pp. 68-73.
2. Lama, V.N., Phan, S. H.: The extrapulmonary origin of fibroblasts. Stem/progenitor cells and beyond. Proc. Am. Thoracic Soc. 2006; 3:373-6.

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Hu B, Tack DC, Liu T, Wu Z, Ullenbruch MR, Phan SH: Role of Smad3 in the regulation of rat telomerase reverse transcriptase by TGFβ. FASEB J. 2006; 20:A78.
2. Liu T, Ullenbruch M, Jin H, Phan SH: Over-expressed FIZZ1 promotes bleomycin-induced lung fibrosis. FASEB J. 2005; 19:A1092.

Robert T. Pu, M.D., Ph.D.
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES

A. CYTOLOGY
1. Cytology sign out 21 weeks
2. Cytology consultation for TS cases, M-lab cases, and from other service
3. Cytopathology QA/QC program

B. SURGICAL PATHOLOGY
1. GU surgical pathology sign out 6 weeks.
2. Autopsy service: 2 weekends.
3. Fine needle Aspirations performance at Cancer Center Clinic and hospital wards.
4. F. On site evaluation for specimen adequacy at Taubman Endocrine Clinic, Medical Procedure Unit, Ultrasound and CT-guided aspirations performed by clinical colleagues.
5. Daily surgical pathology consensus conference participation.

II. TEACHING ACTIVITIES

A. RESIDENTS, FELLOWS, AND MEDICAL STUDENTS:
1. Daily sign out sessions.
2. Teaching of FNA at FNA clinic.
3. Three 1-hour lectures on cytopathology.
4. Weekly interesting fellow cytology case conference.
5. Monthly cytopathology conference
6. Mentoring a Summer Research Program student from medical school, Iris Wei.

B. LECTURES/OTHER
1. Cytotechnologist:Slide conference (1 hour each x 2).
2. M-Labs Symposium Lecture on “Approaches to thyroid FNA”.

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY
1. Methylation profile of mesothelioma vs. benign mesothelial cells in effusion fluid. Pu, R., Shen, M., Michael, C., Rhode, M., and O’Leary, T.
2. Mechanism of WISP3 down-regulation in inflammatory breast cancer: promoter methylation? Wie, I., Zhang, Y., Kleer, C. and Pu, R.

3. Tumor Size as the Main Limiting Factor in Diagnosing Papillary Thyroid Carcinoma on Fine Needle Aspiration SIddiqui, M., Michael, C. and Pu, R.
4. Utility of WT-1, p63, and MOC31 Immunostains in Differentiating Malignant Mesothelioma, Squamous Cell Carcinoma, and Adenocarcinoma in Effusions Pu, R. and Michael,C.
5. Cellular Adequacy for Thyroid Aspirates Prepared By ThinPrep: How Many Cells Are Needed? Michael, Pang, Pu, et al.
6. PCR detecting follicular lymphoma translocation using cytological smear. Smith, L,, Pu, R. and Thorson. J.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Interviewing Resident, Fellow, and Faculty candidates (8-10).
2. Evaluation of Fellows and Residents.
3. Committee Member, Cytopathology Fellowship Program.

B. INSTITUTIONAL
1. Co-director, Cancer Center Tissue Core (5% effort, Cancer Center Support Grant-5 P30 CA46592. PI: M.S. Wicha, M.D) 6/01/01-5/31/06 National Institute of Health $3,523,045 annual directs.

C. REGIONAL/NATIONAL:/INTERNATIONAL
1. Member of Research Committee, Papanicuolua Society of Cytopathology.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS
1. Reviewer, Archives of Pathology & Laboratory Medicine.
2. Reviewer, Endocrine Related Cancer
3. Reviewer, Current Medical Literature
4. Reviewer, ACTA Cytologica
5. Reviewer, CytoJournal

B. INVITED LECTURES/SEMINARS
1. Visiting Professor, “Introduction of the Bethesda System-nomenclature and criteria” and “Respiratory Cytopathology” at Dept. of Pathology, Kunming Medical School, Kunming, China. 8/2005.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
1. Rhode, M., Lucas, D., Krueger, C., and Pu, RT. (2006) FNA diagnosis of spinal osteoblastoma of a patient with lymphangiomatosis. Diagnostic Cytopathology 34 (4): 295-297.
2. Pu, R.T., Yang, J., Wasserman, P., Bhuiya, T., Griffith, K. and Michael. C.W. (2006) Does Hurthle Cell Lesion/Neoplasm Predict Malignancy More Than Follicular Lesion/Neoplasm on Thyroid Fine Needle Aspiration? Diagnostic Cytopathology 34 (5): 330-334.
3. Siddiqui, M, Su, L; Michael, CW; and Pu, R.T. (2006) Synchronous ordinary lipoma and spindle cell lipoma diagnosed by FNA. Diagnostic Cytopathology 34(6): 455-456.

4. Robert T. Pu, Lauren E. Laitala, and Douglas P. Clark, M.D. Methylation Profiling of Urothelial Carcinoma in Bladder Biopsy and Urine. In Press, ACTA Cytologica.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Pu, R. and Michael, CW. Does Hurthle Cell Lesion/Neoplasm Predict Malignancy More Than Follicular Lesion/Neoplasm on Thyroid Fine Needle Aspiration? (Presentation at 4th Asia-Pacific IAP congress in Beijing 2005).
2. C W Michael, Y Pang, RT Pu, F Hasteh, and KA Griffith. Cellular Adequacy for Thyroid Aspirates Prepared By ThinPrep: How Many Cells Are Needed? USCAP Meeting, 2006 Atlanta.
3. Robert T. Pu, Iris Wei, Yanhong Zhang, Sofia D. Merajver, and Celina G. Kleer DNA Methylation as a Mechanism of WISP3 (CCN6) Loss in a Subset of Breast Cancers, accepted for 2006 IAP meeting.

Stephen R. Ramsburgh, M.D.
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES

A. GENERAL SURGICAL PATHOLOGY – 30 weeks

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS

1. M2 Pathology Lab – 70 hours.
2. Applied Clinical Anatomy Musculoskeletal System – 4 hours.
3. M-1 Histopathology Lectures – 6 hours.
4. M-1 Histopathology Lab –16 hours.

B. RESIDENTS AND FELLOWS

1. General Surgical Pathology – 30 weeks.
2. Resident Teaching Conference – 65 hours.
3. Consultation Conferences – 4 hours.
4. Intraoperative consultation – 70 hours.
5. Surgical Pathology Elective for senior level residents – 80 hours.

III. RESEARCH ACTIVITIES – None

IV. ADMINISTRATIVE ACTIVITIES – None

V. OTHER RELEVANT ACTIVITIES

A. HONORS AND AWARDS

1. Resident Teaching Award – 2000 and 2003.

VI. PUBLICATIONS

A. BOOKS/CHAPTERS IN BOOKS

1. Surgical Pathology: A Reference (ASCP publication pending Fall 2006).

Rodolfo F.H. Rasche, M.D.
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES

A. SURGICAL PATHOLOGY
   1. Coverage of M-Labs cases, including most from the following hospitals/clinical practices
      a. Forest Health Medical Center, Ypsilanti.
      b. University of Michigan Health Service.
      c. Livonia SurgiCenter and other University of Michigan Clinics and satellite sites.
      d. Other clients such as clinics outside of Washtenaw County.

B. CYTOPATHOLOGY
   1. Provide coverage in gynecologic, non-gyn and FNA services (performance of aspirate/interpretation) at U of M Hospitals for 10-14 weeks.

C. AUTOPSY SERVICE
   1. University Hospitals, for weekdays and weekends.
   2. Forest Health Medical Center, Ypsilanti.

D. CLINICAL PATHOLOGY
   1. Outside stat consults to a growing list of pathologists.
   2. Review peripheral smears at Forest Health Hospital and University of Michigan Health Service.
   3. Clinical Pathology consults for M-Labs client hospitals.

II. TEACHING ACTIVITIES

A. RESIDENTS AND FELLOWS
   1. Supervise performing of autopsies by residents and sign out M-Labs and University of Michigan cases.
   2. Sign-out in cytopathology, with residents, fellow and, occasionally with medical students.

B. LECTURES/OTHER
   1. Organize and lecture at the M-labs Symposium (24th Symposium in April 2006), a one day-long event with lectures and case presentations for pathologists (most are M-Labs clients). CME credits are provided. Held twice a year (October/April).
   2. In-service teaching to laboratory staff at the University of Michigan health Service (UHS).
   3. Monthly colposcopy meetings with the Gyn medical staff at UHS.

III. RESEARCH ACTIVITIES – None

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Associate Director, M-Labs: (for more details, see M-Labs' Annual Report).
    a. Participate in planning, marketing and implementation of M-Labs programs.
2. Medical Director of the University of Michigan Health Service Laboratory, and Forest Health Medical Center in Ypsilanti.
    a. Active medical staff member at Forest Health Medical Center (FHMC) and Community Health Center of Branch Co (Coldwater). Attend FHMC medical staff meetings.
3. Intra-departmental meetings (e.g., Cytopathology).

B. REGIONAL/NATIONAL/INTERNATIONAL

1. IInspector, for the CAP Accreditation Program. Recent inspections outside the U.S.

V. OTHER RELEVANT ACTIVITIES – None.

VI. PUBLICATIONS - None

Daniel G. Remick, M.D.
Professor of Pathology
Director, Autopsy Service
Assistant Dean for Admissions

I. CLINICAL ACTIVITIES

A. AUTOPSY SERVICE

1. Director, Autopsy Service.
2. Supervision of Autopsies- 15 days and 2 weekends.
3. Coordinator, Trauma/burn autopsy conference monthly.
4. Coordinator of Senior Staff Autopsy Call Schedule.
5. Deputy Medical Examiner, Washtenaw County.
6. Sign our microscopic slides for Medical Examiner Cases, 30-40 cases.

II. TEACHING ACTIVITIES

A. UNDERGRADUATE STUDENTS

1. Lisa Abernathy
2. Alan Commet
3. Vince McKeon
4. Jacquelyn Godin
5. Julia Sun

B. GRADUATE STUDENTS

1. Devin Horton, Program in Cell and Molecular Biology.
2. Sudha Natarajan, Department of Pathology.

C. MEDICAL STUDENTS

1. Longitudinal Case Studies, Provided written critiques of student autopsy write-ups (200).
2. Laboratory Instructor, Pathology 600 (M2 pathology course), year long.

D. RESIDENTS AND FELLOWS

1. Coordinator, Biweekly Pathology Gross Conference.
2. Lectures to Pathology House Officers in Anatomic and Clinical Pathology.

E. POSTDOCTORAL FELLOWS

1. Thesis Committee - Yoko Kamotani, College of Engineering.
2. Thesis Committee - Sudha Natarajan, Pathology
3. Thesis Committee - Devin Horton, Cell and Molecular Biology Program.
4. Hong Yan Xiao, M.D.
5. Michelle Law, Ph.D., M
6. Marcin Osuchowski, D.V.M., Ph.D. Winner Shock 2006 Young Investigator Award.

F. MENTORED RESEARCH FOR FACULTY
1. Jean Nemzek, D.V.M. (Unit for Lab Animal Medicine).
2. Saman Arbabi, M.D., Department of Surgery.
3. Rebecca Minter, M.D., Department of Surgery.
4. Mark Hemilla, M.D., Department of Surgery.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
1. PI (25%), Project #1 Role of cytokines in Sepsis and Trauma, NIH/NIGMS P01 GM067189-01A2, $157,486 – Project Leader; PI (5%) "Immunopathology of Sepsis Core B Cytokine Measurement Core, $191,091, 05/15/05 – 04/30/08.
2. Co-Investigator, (1%) Core E: "Inflammation and the Host Response to Inury", NIH U54 GM62119-01A1, $19,600, 09/30/01 – 09/29/06.
3. PI (20%), "Regulation of Ongoing Inflammation", NIH/NIGMS 5 R01 GM050401, $225,000, 12/01/05 – 11/30/10.

B. PENDING
1. PI (10%), "Endotoxin, Allergens and Pollutants in Asthma", NIH R01 ES0113538-01, $304,945, 04/01/06 – 03/31/11.t This grant scored at the 7th percentile in the October 2005 review.

C. PROJECTS UNDER STUDY
1. Regulation of gene expression of soluble mediators of inflammation using the following models:
2. Endotoxin-stimulated human whole blood.
3. Endotoxin injection in mice.
4. Cecal ligation and puncture.
5. 2-hit model of acid aspiration induced lung injury.
6. Toxic effects of immunomodulators.
7. Pathophysiology of septic shock.
8. Quantitation of mediators in septic shock.
9. Cloning, sequencing, and expressing cytokines including mTNF, hTNF, mIL-6, hIL-8, mIL-18, mIL-1ra.
10. Oxident regulation of chemokine gene expression.
11. Chemokines in the pathogenesis of murine asthma.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Director - Autopsy Service.
2. Interviewer - Candidates for faculty, house officer, postdoctoral, and graduate student positions.
3. Co-ordinator of call schedule, both weekend and weekday, autopsy service.

B. INSTITUTIONAL
1. Assistant Dean for Admissions, Medical School – 25% appointment.
2. Member, Biomedical Research Council Undergraduate Research Council.
3. Reviewer, Biomedical Research Council grants.
4. Representative for Pathology to Program in Biomedical Sciences (PIBS) Admissions Committee.
5. Member, Program in Cell and Molecular Biology.

C. REGIONAL/NATIONAL/INTERNATIONAL
1. Executive Committee, Michigan Association of Medical Examiners.
2. Deputy Medical Examiner for Washtenaw County.

3. Member, American Society of Investigative Pathology Education Committee.
4. Member, Michigan Coalation on Donation.
5. Program Chair, Shock Society Annual Meeting, 2006, Broomfield CO.
6. Chair, NIH Special Emphasis Panel
    a. Jul 2005
    b. Nov 2005
    c. Jan 2006
    d. Jun 2006
7. Chair, NIH Program Project Review Panel
    a. Jul 2005
    b. Nov. 2005
8. On Site Reviewer Oklahoma Medical Research Foundation NIH U19 grant, June 2006.
9. Reviewer, National Science Foundation, Veterans Administration Merit grants.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Associate Editor, *Shock.*
2. Associate Editor, *Journal of Infectious Diseases.*
3. Guest Editor, *Methods*, Volume 38, number 4, April 2006, Methods for Analyzing Cytokines.
4. Executive Editor, *Cross Section* (Official Newsletter of the Michigan Association of Medical Examiners).
5. Editorial Board, *Journal of Investigative Surgery.*
6. Editorial Board, *Shock.*
7. Reviewer
    a. *American Review of Respiratory Disease.*
    b. *Laboratory Investigation.*
    c. *Journal of Immunology.*
    d. *Infection and Immunity.*
    e. *Journal of Leukocyte Biology.*
    f. *American Journal of Pathology.*
    g. *American Journal of Physiology.*
    h. *Journal of Clinical Investigation.*
    i. *Circulation.*
    j. *Annals of Internal Medicine.*
    k. *Blood.*
    l. *Cytokine.*
    m. *Critical Care Medicine.*

B. INVITED LECTURES/SEMINARS

1. Visiting Professor, Mayo Clinic, Rochester, MN, Understanding the Inflammatory Response in Sepsis, 2005.
2. Invited Panelist, American Association of Medical Colleges, Washington D.C., Forging Relationships Between Admission Offices and Development Officers, 2005.
3. Invited Speaker, American Association of Medical Colleges, Washington D.C, Using Internet Chat Rooms to Communicate with Medical School Applicants, 2005.
4. Invited Speaker, Society of Critical Care Medicine, San Francisco, Interleukin 6 Serves as a Sensitive and Specific Biomarker of Sepsis, 2006.

5. Site reviewer Daniel Traber, Ph.D., NIH Program Project Pathophysiology of Lung Injury by Smoke Inhalation, University of Texas Medical Branch Galveston, 2006.
6. Site reviewer for Paul Knight, M.D., Ph.D., SUNY – Buffalo, SCOR grant on lung injury, 2006.
7. Visiting Professor, Oklahoma Medical Research Foundation, The Complex Immunopathology of Sepsis, 2006.
8. Keynote Speaker, Wound Healing Society, Phoenix, AZ, Quantitative Protein Chip Microarrays, 2006.
9. Invited Speaker, Shock Society, Broomfield CO, Six at Six, 2006.

C. MEMBERSHIP AND OFFICES IN PROFESSIONAL SOCIETIES

1. Member, Michigan Association of Medical Examiners.
2. Member, Shock Society.
3. Member, American Association of Immunologists.
4. Member, A. James French Society.
5. Member, American Society of Investigative Pathologists.
6. Member, United States-Canadian Academy of Pathology

VI. PUBLICATIONS

A. ARTICLES PUBLISHED AND ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Zeng, X. K., Y. F. Guan, D. G. Remick, and X. Wang. 2005. Signal pathways underlying homocysteine-induced production of MCP-1 and IL-8 in cultured human whole blood. Acta Pharmacol Sin 26:85-91.
2. Xiao, H., and D. G. Remick. 2005. Correction of perioperative hypothermia decreases experimental sepsis mortality by modulating the inflammatory response. Crit Care Med 33:161-167.
3. Su, G. L., K. Q. Gong, M. H. Fan, W. M. Kelley, J. Hsieh, J. M. Sun, M. R. Hemmila, S. Arbabi, D. G. Remick, and S. C. Wang. 2005. Lipopolysaccharide-binding protein modulates acetaminophen-induced liver injury in mice. Hepatology 41:187-195.
4. Cobb, J. P., M. N. Mindrinos, C. Miller-Graziano, S. E. Calvano, H. V. Baker, W. Xiao, K. Laudanski, B. H. Brownstein, C. M. Elson, D. L. Hayden, D. N. Herndon, S. F. Lowry, R. V. Maier, D. A. Schoenfeld, L. L. Moldawer, R. W. Davis, R. G. Tompkins, H. V. Baker, P. Bankey, T. Billiar, B. H. Brownstein, S. E. Calvano, D. Camp, I. Chaudry, J. P. Cobb, R. W. Davis, C. M. Elson, B. Freeman, R. Gamelli, N. Gibran, B. Harbrecht, D. L. Hayden, W. Heagy, D. Heimbach, D. N. Herndon, J. Horton, J. Hunt, K. Laudanski, J. Lederer, S. F. Lowry, R. V. Maier, J. Mannick, B. McKinley, C. Miller-Graziano, M. N. Mindrinos, J. Minei, L. L. Moldawer, E. Moore, F. Moore, R. Munford, A. Nathens, G. O'Keefe, G. Purdue, L. Rahme, D. Remick, M. Sailors, D. A. Schoenfeld, M. Shapiro, G. Silver, R. Smith, G. Stephanopoulos, G. Stormo, R. G. Tompkins, M. Toner, S. Warren, M. West, S. Wolfe, W. Xiao, and V. Young. 2005. Application of genome-wide expression analysis to human health and disease. Proc Natl Acad Sci U S A 102:4801-4806.
5. Copeland, S., H. S. Warren, S. F. Lowry, S. E. Calvano, and D. Remick. 2005. Acute inflammatory response to endotoxin in mice and humans. Clin Diagn Lab Immunol 12:60-67.
6. Zeng, X. K., Y. F. Guan, D. G. Remick & X. Wang. 2005. Signal pathways underlying homocysteine-induced production of MCP-1

and IL-8 in cultured human whole blood. Acta Pharmacol Sin, 26:85-91.
7. Xing, L., Remick, D.G., 2005 Mechanisms of dimethyl sulfoxide augmentation of IL-1 beta production. J Immunol, 174, 6195-202.
8. Remick, D. G., G. Bolgos, S. Copeland & J. Siddiqui. 2005. Role of interleukin-6 in mortality from and physiologic response to sepsis. Infect Immun, 73, 2751-7.
9. Osuchowski, M. F., J. Siddiqui, S. Copeland & D. G. Remick. 2005. Sequential ELISA to profile multiple cytokines from small volumes. J Immunol Methods, 302, 172-81.
10. Hemmila, M. R., M. H. Fan, J. Kim, J. M. Sun, L. Steinstraesser, K. Q. Gong, S. Arbabi, R. M. Minter, D. G. Remick, G. L. Su & S. C. Wang. 2005. Improved survival in mice given systemic gene therapy in a gram negative pneumonia model. J Trauma, 58, 1110-8; discussion 1118.
11. De A.K, Miller-Graziano C.L., Calvano, S.E., Laudanski, K., Lowry, S.F., Moldawer L.L., Remick, D.G., Rajicic N., Schoenfeld D., Tompkins R.G. 2005. Selective activation of peripheral blood T cell subsets by endotoxin infusion in healthy human subjects corresponds to differential chemokine activation. J Immunol, 1:175(9):6155-62.
12. El-Sawy, T., J. A. Belperio, R. M. Strieter, D. G. Remick & R. L. Fairchild. 2005. Inhibition of polymorphonuclear leukocyte-mediated graft damage synergizes with short-term costimulatory blockade to prevent cardiac allograft rejection. Circulation, 112, 320-31.
13. Steinstraesser, L., O. Burkhard, M. H. Fan, F. Jacobsen, M. Lehnhardt, G. Su, A. Daigler, H. U. Steinau, D. Remick, and S. C. Wang. 2005. Burn wounds infected with Pseudomonas aeruginosa triggers weight loss in rats. BMC Surg 5:19.
14. McKinley, L., J. Kim, G. L. Bolgos, J. Siddiqui, and D. G. Remick. 2005. CXC chemokines modulate IgE secretion and pulmonary inflammation in a model of allergic asthma. Cytokine 32(3-4):178-85.
15. Remick, D.G., Ward P.A. 2005. Evaulation of endotoxin models for the study of sepsis. Shock, Dec;24 Suppl 1:7-11.
16. Granger, J., and D. Remick. 2005. Acute pancreatitis: models, markers, and mediators. Shock 24 Suppl 1:45-51.
17. Minter, R. M., M. H. Fan, J. Sun, A. Niederbichler, K. Ipaktchi, S. Arbabi, M. R. Hemmila, D. G. Remick, S. C. Wang, and G. L. Su. 2005. Altered Kupffer cell function in biliary obstruction. Surgery 138(2):236-45.
18. Scumpia, P. O., P. F. McAuliffe, K. A. O'Malley, R. Ungaro, T. Uchida, T. Matsumoto, D. G. Remick, M. J. Clare-Salzler, L. L. Moldawer, and P. A. Efron. 2005. CD11c+ dendritic cells are required for survival in murine polymicrobial sepsis. J Immunol 175(5):3282-6.
19. Granger, J., J. Siddiqui, S. Copeland, and D. Remick. 2005. Albumin depletion of human plasma also removes low abundance proteins including the cytokines. Proteomics 5(18):4713-8.
20. Remick, D.G., Xioa, H. 2006. Hypothermia and sepsis. Front Biosci Jan 1, 11:1006-13.
21. Kim J, McKinley L, Natarajan S, Bolgos GL, Siddiqui J, Copeland S, Remick DG. 2006. Anti-tumor necrosis factor-alpha antibody treatment reduces pulmonary inflammation and methacholine hyper-

responsiveness in a murine asthma model induced by house dust. Clin Exp Allergy 36(1):122-132.

22. Osuchowski, M.F., and Remick, D.G. 2006. The repetitive use of samples to measure multiple cytokines: The sequential ELISA. Methods 38:304-311.
23. Brownstein, B.H., Logvinenko, T., Lederer, J.A., Cobb, J.P., Hubbard, W.J., Chaudry, I.H., Remick, D.G., Baker, H.V., Xiao, W., and Mannick, J.A. 2006. Commonality and differences in leukocyte gene expression patterns among three models of inflammation and injury. Physiol Genomics 24:298-309.

B. ABSTRACTS BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN NON-REFEREED JOURNALS

1. Remick, D. G. 2005. What's new in Shock, November 2005, Shock 24(5):405-6.
2. Remick, D. G. 2005. Interleukin-8. Crit Care Med 33:S466-467.
3. Remick, D. G. 2006. What's new in Shock, April 2006, Shock 25:319-320.
4. Remick, D. G. 2005. What's new in shock, December 2005, Shock 24:503-504.
5. Remick, D. G., and J. I. Granger. 2006. Methods for analyzing cytokines. Methods 38:235-236.

Charles W. Ross, M.D.
Associate Professor of Pathology
Director of Clinical Flow Cytometry Laboratory

I. CLINICAL ACTIVITIES

A. DIRECTOR, CLINICAL FLOW CYTOMETRY LABORATORY.
B. DIAGNOSTIC SURGICAL PATHOLOGY
   1. Hematopathology.
   2. Hematopathology Consultation Cases (including M-Labs and Veterans Administration Hospital)
C. CLINICAL HEMATOLOGY LABORATORY.
D. ELECTRON MICROSCOPY (PLATELET ULTRASTRUCTURE).

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS AND DENTAL STUDENTS
   1. Lecturer, M2 Hematology Sequence.
   2. Laboratory Instructor, M2 Hematology Sequence.
   3. Lecturer, Dental School Pathology 630.
   4. Laboratory Instructor, M1 Histopathology Course.
B. RESIDENTS AND FELLOWS
   1. Sign-out of bone marrow biopsies, aspirates, blood smears, and body fluids in Hematology Laboratory.
   2. Sign-out of lymph node biopsies and review of hematopathology consultation material.
   3. Flow Cytometry sign-out.
   4. Hematopathology case conferences.
   5. Hematopathology lecturer.
   6. Hematopathology teaching:
   7. Leukemia conference/biweekly.
   8. Lymphoma conference/weekly.
   9. Hematology conference/biweekly.
   10. Pathology Grand Rounds.
   11. Clinical Pathology Case Conference/weekly.
   12. Cutaneous Lymphoma Conference/monthly.
   13. Multiple myeloma conference/biweekly.
   14. Hematology/Oncology Morbidity and Mortality Conference.
C. CONTINUING MEDICAL EDUCATION FOR CLINICAL LABORATORY STAFF.

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY

1. High density single nucleotide polymorphism chip analysis to detect recurrent genomic aberrations in follicular lymphoma (Principle investigator with Sami Malek, M.D.).
2. Histopathology and immunophenotyping of mast cell disease (co-investigator with Cem Akin, M.D. and Douglas Fullen, M.D.).
3. Early response assessment in patients with diffuse large B cell lymphoma using FDG-PET (co-investigator with Rebecca Elstrom, M.D.).
4. The morphologic and immunophenotypic spectrum of diffuse aggressive lymphomas harboring the t(8;14)(q24;32) or equivalent translocations(co-investigator with Michael Hayes, M.D. and William Finn, M.D.).
5. A pilot study of combination therapy with VELCADE, Doxil, and Dexamethasone (VDd) in relapsed multiple myeloma (co-investigator with Andrzej Jakubowiak, M.D., Ph.D.).
6. A phase II study of combination of VELCADE® , Doxil, and Dexamethasone (VDd) as first line therapy for multiple myeloma (co-investigator with Andrzej Jakubowiak, M.D., Ph.D.).

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Director, Clinical Flow Cytometry Laboratory.
2. Oversight of CAP proficiency testing, hematology laboratory.
3. Interviewer of residency candidates.

B. REGIONAL/NATIONAL/INTERNATIONAL

1. American Society for Clinical Pathology, CheckPath Expert Review Panel, Hematopathology.
2. Advisor, American Society of Hematology Fellowship Career Development program, ASH annual meeting, December 2005.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Reviewer, *Clinical Cytometry.*
2. Reviewer, *Archives of Pathology and Laboratory Medicine.*

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Bakshi NA, Ross CW, Finn WG, Valdez R, Ruiz R, Koujok K, Schnitzer B: ALK-Positive Anaplastic Large Cell Lymphoma (ALCL) with Primary Bone Involvement in Children. Am J Clin Pathol 125:57-63, 2006.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS:

1. Ross CW. Hepatosplenic T-cell lymphoma. Society for Hematopathology, Case of the Quarter.
2. Ross CW, Roulston D, Smith LR, Schnitzer B, Finn WG, Valdez R, Thorson JA. Peripheral T-cell lymphoma, unspecified. Presented at

Society for Hematopathology/European Association for Haematopathology 2005 Workshop – Progress in T-cell and NK-cell malignancies: classification and molecular pathogenesis. MD Anderson Cancer Center, Houston, October 2005.

3. Finn WG, Valdez R, Thorson J, Schnitzer B, Ross C. Clonal T-cell large granular lymphocyte proliferation following allogeneic peripheral stem cell transplant. Presented at Society for Hematopathology/European Association for Haematopathology 2005 Workshop – Progress in T-cell and NK-cell malignancies: classification and molecular pathogenesis. MD Anderson Cancer Center, Houston, October 2005.
4. Hayes MJ, Ross CW, Valdez R. Angioimmunoblastic T-cell lymphoma. Presented at Society for Hematopathology/European Association for Haematopathology 2005 Workshop – Progress in T-cell and NK-cell malignancies: classification and molecular pathogenesis. MD Anderson Cancer Center, Houston, October 2005.
5. Valdez R, Ross CW. Enteropathy-associated T-cell lymphoma. Presented at Society for Hematopathology/European Association for Haematopathology 2005 Workshop – Progress in T-cell and NK-cell malignancies: classification and molecular pathogenesis. MD Anderson Cancer Center, Houston, October 2005.
6. Valdez R, Finn WG, Ross CW. T-cell prolymphocytic leukemia. Presented at Society for Hematopathology/European Association for Haematopathology 2005 Workshop – Progress in T-cell and NK-cell malignancies: classification and molecular pathogenesis. MD Anderson Cancer Center, Houston, October 2005.

Diane Roulston, Ph.D.
Associate Professor of Pathology
Director, Cytogenetics Laboratory

I. CLINICAL ACTIVITIES

A. DIRECTOR, CLINICAL CYTOGENETICS LABORATORY

II. TEACHING ACTIVITIES

A. HOUSE OFFICERS AND FELLOWS

1. Rotations in Cytogenetics.
2. Pathology residents (N=5).
3. Hematology/Oncology fellow (N=1).
4. Maternal-Fetal Medicine fellow (N=1).
5. Clinical Cytogenetics teaching.
6. Cytogenetics Technical Conference and Case Review: for technologists, residents, fellows, and faculty.
7. Leukemia Conference (Biweekly).
8. Medical Genetics Conference (Monthly).
9. Clinical Pathology Grand Rounds
    a. Cytogenetics and FISH in the Diagnosis and Management of Multiple Myeloma".
    b. "Clinical Cytogenetics" Human Genetics 641 Applied Clinical Genetics.

B. GRADUATE STUDENTS

1. Rotations in Cytogenetics: Genetic Counseling graduate students (N=6).

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY

1. Systemic mastocytosis: cytogenetics and hematopathologic correlates Burkitt lymphoma and diffuse large B-cell lymphoma: cytogenetics and FISH.
2. Multiple myeloma response to Velcade: correlations with cytogenetics and FISH.
3. Automated screening for genomic rearrangements by FISH in prostate cancer.
4. Breast cancer cell lines: detection of gene rearrangements by FISH.
5. Minimal residual disease tracking by hematopathology, flow cytometry, FISH and cytogenetics.
6. Cytogenetic analysis of human embryonic stem cells for the U-M Center for HES Cell Research.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Director, Clinical Cytogenetics Laboratory.
2. Faculty Search, Cytogenetics Laboratory Assistant Director.
3. Interviewer, Hematopathology Fellow Candidates.

B. INSTITUTIONAL
1. Interviewer, Pediatrics-Genetics Residency/Fellowship Candidates.

C. REGIONAL/NATIONAL/INTERNATIONAL
1. American Board of Medical Genetics.
2. Fellow, American College of Medical Genetics.
3. Maintenance of Certification 2005.
4. American College of Medical Genetics
5. Guidelines for Cancer Cytogenetics, Reviewer
6. Peer Review: Blood
7. Children's Oncology Group (COG).
8. Cytogenetics Committee member: review cases for national study group.
9. Director of an Approved Laboratory; submit clinical cases for review.
10. Cytogenetics Committee Workshop: educating laboratory directors to attain Approved Laboratory status.
11. Pilot laboratory for use of FISH for treatment stratification in COG.
12. Southwest Oncology Group (SWOG).
13. Special Member, Cytogenetics Review Committee, Spring 2006.
14. Director of an Approved Laboratory for SWOG Cytogenetics studies.
15. Member: American Society for Human Genetics, American Association for the Advancement of Science.

V. OTHER RELEVANT ACTIVITIES

A. INVITED LECTURES
1. "How to improve your success rate with COG studies" COG Cytogenetics Workshop, August 26-27, 2005, Chicago, IL.
2. "Cytogenetics: What it is" Chemical Engineering and Pathology Retreat, University of Michigan, March 10, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
1. Tomlins, SA, Mehra R, Rhodes DR, Smith LR, Roulston D, Helgeson BE, Cao S, Wei JT, Rubin MA, Shah RB, Chinnaiyan AM. TMPRSS2:ETV4 gene fusions define a third molecular subtype of prostate cancer. Cancer Res 2006; 66 (7):3396-3340.
2. Mobley BC, Roulston D, Shah GV, Bijwaard KE, McKeever PE. Peripheral PNET/Ewing sarcoma of the craniospinal vault: case reports and review. (Human Pathology, in press)

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN NON-REFEREED JOURNALS
1. Ross CW, Roulston D, Smith LR, Schnitzer B, Finn WG, Valdez R, Thorson JA. Unusual clinical and pathologic presentation of a peripheral T-cell lymphoma. Case report, Society for Hematopathology/EAHP Workshop, October 20-22, 2005.

Robert E. Ruiz, M.D., Ph.D.
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES

A. SURGICAL PATHOLOGY
   1. Consultant, pediatric surgical pathology, full time.
   2. Surgical pathology signout, Room 1, 10 weeks.
   3. Surgical pathology frozen section call, 5 weeks.

B. AUTOPSY SERVICES
   1. Consultant, pediatric autopsy pathology, full time.
   2. Autopsy pathology, 12 days plus 2 weekends.

C. Consultant, Teratology histopathology, full time.

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
   1. M2 Pathology Laboratory (~20 contact hours).
   2. M4 Pathology Elective, October 2005 (~8 contact hours).
   3. M4 Pathology Elective, Problem based learning, June 2006 (experimental course design, ~10 contact hours).

B. RESIDENTS AND FELLOWS
   1. Pathology Teaching Conferences (8 hours).
   2. Pediatric Pathology mentoring, Jason Jarzembowski (3 hours per week).
   3. Pediatric Autopsy Pathology cases and signout (variable).
   4. Pediatric Surgical Pathology Cutting Manual revision (ongoing).

C. INTERDEPARTMENTAL
   1. Medical Education Scholars Program 2005-2006.
   2. Teratology histopathology signout (1 hour per month).
   3. Pediatric GI Pathology Case Conference (2 hours per month).
   4. Pediatric GI Pathology Teaching Conference (2 hours per month).
   5. Pediatric Hematology Oncology Tumor Board (2 hours per month).
   6. Pediatric Surgery, Radiology, Pathology Conference (1.5 hours per month).
   7. Pediatric Uroradiology Conference (up to 1 hour per month).
   8. Pediatric Otolaryngology Conference (1 hour per quarter).
   9. Pediatric Pulmonology Conference (variable).
   10. Pediatric Morbidity & Mortality Conference (variable).
   11. Pediatric Hematology Oncology Fellow Pathology Tutorials (variable).
   12. Pediatric Hematology Oncology Wednesday Morning Teaching Conference (variable).

13. Pathology contributor for Pediatric Surgery, Radiology, Pathology Conference teaching case web presentations, Pediatric Surgery internal website (www.surgery.med.umich.edu/i/peds/Internal_site.htm).

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY

1. Collaboration with Dr. Mason Barr on lymphocytic thyroiditis in Down syndrome case report.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Medical Director, Special Studies Laboratory (until May 1, 2006).
2. Pathology coordinator, Children's Oncology Group cases.

B. INSTITUTIONAL

1. Mott Executive Committee.

V. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Chao MM, Levine JE, Ruiz RE, Kohlmann WK, Bower MA, Petty EM, Mody RJ. Malignant triton tumor in a patient with Li-Fraumeni syndrome and a novel TP53 mutation. Pediatric Blood and Cancer 2005 Dec 6. [Epub ahead of print].
2. Bakshi NA, Ross CW, Finn WG, Valdez R, Ruiz R, Koujok K, Schnitzer B. ALK-positive anaplastic large cell lymphoma with primary bone involvement in children. American Journal of Clinical Pathology 125:57, 2006.
3. Thorson JA, Weigelin HC, Ruiz RE, Howard JK, Lucas DR. Identification of SYT-SSX transcripts from synovial sarcomas using RT-multiplex PCR and capillary electrophoresis. Modern Pathology, 19:641, 2006.
4. Jarzembowski JA, Ruiz RE. Squamous cell carcinoma arising in a pediatric intra- and para-vertebral teratoma. Pediatric and Developmental Pathology, in press.

J. Vidya Sarma, Ph.D.
Research Assistant Professor of Pathology

I. CLINICAL ACTIVITIES – None.

II. TEACHING ACTIVITIES

A. UNDERGRADUATE STUDENTS
1. Elizabeth Bacon (undergraduate student)
2. Daniella Musaka (undergraduate student)
3. Brian Nadeau (undergraduate student)
4. Matthew Pianko (undergraduate student)
5. Jeffrey Crawford (undergraduate student)

B. MEDICAL STUDENTS
1. Stephanie McGuire (M4 student

C. POSTDOCTORAL FELLOWS
1. Marco Hoesel, M.D. (postdoctoral fellow)
2. Daniel Rittirsch, M.D. (postdoctoral fellow)
3. Michael Flierl, M.D. (postdoctoral fellow)
4. Hongwei Gao, M.D., Ph.D. (postdoctoral fellow)
5. Firas Zetoune, B.S., M.B.A., (Research associate)

D. LECTURES/OTHER
1. Instructor, PIBS 503.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
1. Co Investigator: (40%), “Protective Effects of Anti-C5a in Sepsis”, NIH R01-GM061656, $204,700/YR, 01/01/02 - 05/31/06.
2. Co Investigator: (10%), “C5a in defense against murine Gram-negative pneumonia”, NIH RO1 GM069438-01A1 $200,000/yr, 07/01/04 – 06/30/09.
3. Co Investigator (30%), “Lung injury by Oxygen Metabolites”, RO1-GM029507 $312,396/yr. 07/01/01 – 06/30/09.

B. PENDING
1. Co Investigator (30%), “C5a and Sepsis”, (RO1 submitted March 1st, 2006)-(30%).

C. PROJECTS UNDER STUDY
1. Role of Complement fragment 5a and it’s receptors in sepsis and lung inflammation.
2. Role of cytokines and chemokines in sepsis and lung inflammation.
3. Complement activation pathways.

IV. ADMINISTRATIVE ACTIVITIES

A. INSTITUTIONAL

1. UROP undergraduate and prospective post-doctoral interviews.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Manuscript review for
   a. *American journal of Pathology .*
   b. *Critical care medicine.*
   c. *FASEB journal.*
   d. *Journal of Clinical Investigation.*
   e. *Journal of Experimental Medicine.*
   f. *Journal of Immunology.*
   g. *Nature.*
   h. *Nature medicine.*
   i. *Nature biotech*nology.
   j. Shock.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. 1. Huber-Lang, M.*, Sarma, J.V.*, Zetoune, F.S.*, Rittirsch, D., Neff, T.A., McGuire, S.R., Lambris, J.D., Warner, R.L., Flierl, M.A., Hoesel, L.M., Gebhard, F., Younger, J.G., Drouin, S.M., Wetsel, R.A., Ward, P.A. Generation of C5a in the Absence of C3: A New Complement Activation Pathway *Authors contributed equally. Nat Med. 2006 12:682-687. Published online: 21 May 2006.
2. Nozaki, M., Raisler B.J., Sakurai, E., Sarma, J.V., Barnum, S.R., Lambris, J.D., Chen, Y., Zhang, K., Ambati, B.K., Baffi, J.Z., Ambati, J. Drusen complement components C3a and C5a promote choroidal neovascularization. PNAS 2006 103:2328-2333.
3. Niederbichler, A.D., Hoesel, L.M., Westfall, M.V., Gao, H., Ipaktchi, K.R., Sun, L., Zetoune, F.S., Su, G.L., Arbabi, S., Sarma, J.V., Wang, S.C., Hemmila, M.R., and Ward, P.A. An essential role for complement C5a in the pathogenesis of septic cardiac dysfunction. JEM. 2005, 203(1): 53-61.
4. Hoesel, L.M.*, Neff, T.A.*, Neff, S.B., Younger, J.H., Olle, E.W., Gao, G., Pianko, M.J., Bernacki, K.D., Sarma, J.V., and Ward, P.A. Harmful and protective roles of neutrophils in sepsis. SHOCK 2005 24:40-47. *The two first authors contributed equally.
5. Gao, H., Neff, T.A., Guo, R.F., Speyer, C.L., Sarma, J.V., Tomlins, S., Man, Y., Riedemann, N.C., Hoesel, L.M., Younkin, E.M., Zetoune, F.S., and Ward, P.A. Evidence for a functional role of the second C5a receptor, C5L2. FASEB J. 2005 19:1003-1005.

Bertram Schnitzer, M.D.
Professor of Pathology

I. CLINICAL ACTIVITIES

A. SURGICAL PATHOLOGY/HEMATOPATHOLOGY

1. Diagnostic Surgical Pathology, Hematopathology (12 months).
2. Diagnostic Hematopathology Consultant, Veterans Administration Hospital.
3. Diagnostic Hematopathology of M-Labs clients.
4. Consultant for external and transfer Hematopathology cases.
5. Review of lymphoma cases entered into Children's Cancer Study Group protocols.

II. TEACHING ACTIVITIES

A. RESIDENTS AND FELLOWS

1. Daily sign-out of bone marrow biopsies and aspirates.
2. Daily review of blood smears and body cavity and joint fluids in the Hematology Laboratory.
3. Daily review of in-house and consultation hematopathology cases and correlation with flow cytometry data and immunoperoxidase studies.
4. Daily review of outside consultation cases.
5. House Officer Conferences in Hematopathology, Clinical Pathology Grand Rounds.
6. Lectures to house officers/fellows on lymphomas and benign lymphadenopathies.

III. RESEARCH ACTIVITIES – None

IV. ADMINISTRATIVE ACTIVITIES

A. REGIONAL/NATIONAL/INTERNATIONAL

1. Member, American Society of Clinical Pathology Commission on Assessment.
2. Chair, Hematology Check-Path Planning Committee, American Society of Clinical Pathology.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Reviewer, *Human Pathology.*
2. Reviewer*American Journal Clinical Pathology.*

B. INVITED LECTURES/SEMINARS

1. "A Practical Approach to Diagnostic Hematological Problems," ASCP Educational Course, Lectures given included a) Classification of Non-Hodgkin's Lymphomas. b) Hodgkin's Disease; c) Extranodal Lymphomas. Las Vegas, NV, November 2005.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Gesk S, Gascoyne RD, Schnitzer B, Bakshi N, Janssen D, Klapper W, Martin-Subero JI, Parwaresch R, Siebert R. ALK-positive diffuse large B-cell lymphoma with ALK-Clathrin fusion belongs to the spectrum of pediatric lymphomas. Leukemia. 2005 Oct;19(10):1839-40.
2. Bakshi NA, Ross CW, Finn WG, Valdez R, Ruiz R, Koujok K, Schnitzer B. ALK-positive anaplastic large cell lymphoma with primary bone involvement in children. Am J Clin Pathol. 2006 Jan.,125(1):57-63.

B. BOOKS AND CHAPTERS IN BOOKS

1. Hsi ED, Schnitzer B. Benign Lymphadenopathies. In Jaffe ES, Harris NL, Vardiman J (eds). Diagnostic Hematopathology. Harcourt Health Sciences, 2006.
2. Schnitzer, B. Hodgkin's Lymphoma – In Hsi ED (ed). Foundations in Diagnostic Pathology. Hematopathology. Churchill-Livingstone, 2006.

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Simon NE, Schnitzer B, Rawal A, Schapiro BL, Cotton JP. Intravascular T-cell lymphomam presenting as bilateral pulmonary infiltrates and macular rash on chest and abdomen. American Society of Dermatopathology 42nd Annual Meeting, Seattle, WA, October 2005.
2. Ross CW, Roulston D, Smith LR, Schnitzer B, Finn WG, Valdez R, Thorson JA. Peripheral T0cell lymphoma, unspecified. Presented at the Society for Hematopathology Annual Meeting, Houston, TX, October 2005.

Rajal B. Shah, M.D.
Assistant Professor of Pathology
Director of Genitourinary Pathology
Director of Prostate SPORE Tissue Core

I. CLINICAL ACTIVITIES

A. SURGICAL PATHOLOGY
   1. Room #1 General Surgical Pathology sign-out, 3 weeks/year.

B. GENITOURINARY PATHOLOGY
   1. GU surgical subspecialty sign-out, 18 weeks/year.
   2. Genitourinary transfer cases (TS), 18 weeks/year.
   3. GU consultation service, daily, 12 months.
   4. Participation in Urology Tumor Board and Grand Rounds, weekly, 12 months.

C. AUTOPSY SERVICE
   1. Rapid warm autopsies for men with advanced prostate cancers, 24/7 availability 12 months.

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
   1. M2-Renal Sequence and Reproductive Sequence Lectures, 3/year.

B. RESIDENTS AND FELLOWS
   1. Residents didactic Monday evening Anatomic Pathology Lectures, 2/year.
   2. Residents Wednesday Consultation Conferences. 3/year.
   3. GU clinical pathology resident teaching, 18 weeks.
   4. General surgical pathology resident teaching, 4 weeks.
   5. Urology resident pathology lectures, 4/year.

C. POSTDOCTORAL FELLOWS
   1. Rohit Mehra, 12 months.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
   1. PI/Core Director (20%), University of Michigan Prostate SPORE (Specialized Program for Research Excellence) Tissue Core Grant (Principal Investigator and director June, 2004 to present; Co-director 7/03-5/04 tissue core), P50 CA69568, $251,033, 07/01/03-05/31/08.
   2. Co-Investigator (5%), “Molecular Changes Associated with Prostate Carcinoma”, NIH/NCI 1 R01 CA102872-01, $222,500, 09/24/03-08/31/07.
   3. Co-Investigator (2.5%), “Molecular profiling of the prostate cancer”,W81XWH-05-1-0173, $61,858, 03/07/05-03/06/08.

4. Co-Investigator (2%), "Prostate Cancer Imaging for Radiation", NIH/NCI P50 CA069568, $40,286, 07/01/03-05/31/08.
5. Co-Investigator (5%), "Evaluation & Development of Non-Peptide MDM-2 inhibitors for the treatment of metastatic hormone refractory prostate cancer", NIH/NCI P50 CA069568, $150,000.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Director, Prostate SPORE tissue core laboratory.
2. Section head, Urological Pathology.
3. Director, GU fellowship program.
4. House officer, GU fellowship and faculty Candidate Interviews.
5. Director, Tissue core, Prostate SPORE, 2 months.
6. Translational research/pathology consultant for Genitourinary research, 12 months.

V. OTHER RELEVANT ACTIVITIES

A. HONORS AND AWARDS

1. Short course faculty, United States and Canadian Academy of Pathology.
2. Abstract review board, United States and Canadian Academy of Pathology.
3. Marquis, Who's Who in Medicine and Healthcare.

B. INVITED PRESENTATIONS/SEMINARS

1. "Contemporary issues in the surgical pathology of prostate cancer" – French Society Annual meeting, October 1, 2005.
2. "What is up and what is down in prostate pathology: New frontiers in pathology practices of genitourinary pathology" – Guest speaker, companion meeting, American Society of Clinical Pathology (ASCP): Pathology Today meeting, Seattle WA, October 7, 2005.
3. "Interpretation of prostate needle biopsies: Critical issues and emerging markers" – Visiting Professor, Cleveland Clinic Foundation, October 11, 2005.
4. "Contemporary classification of renal epithelial neoplasms: Critical issues" – Guest Speaker, Association of Pathologist and Microbiologist, Gujarat Chapter, India, December 20, 2005.
5. E-Cadherin Protein Expression of Prostate Adenocarcinoma Independently Predicts Salvage Radiotherapy Outcomes, The US and Canadian Academy of Pathology, Atlanta, GA, February 14, 2006.
6. Neurovascular Tissue Thickness on Prostatectomy Specimens is Less Predictive of Quality of Life Outcomes than Surgeon's Description of Nerve Sparing Procedure. The US and Canadian Academy of Pathology, Atlanta, GA, February 15, 2006.
7. High Carbonic Anhydrase (CA) IX Protein Tissue Expression Predicts Response to Interleukin (IL)-2 based Therapy for Advanced Renal Cell Carcinoma Patients. The US and Canadian Academy of Pathology, Atlanta, GA, February 14, 2006.
8. "University of Michigan, Prostate Tissue and Database Core" – Urology research retreat, Palmer Commons, March 30, 2006.

9. High Carbonic Anhydrase (CA) IX Protein Tissue Expression Predicts Response to Interleukin (IL)-2 based Therapy for Advanced Renal Cell Carcinoma Patients. The American Urology Association meeting, Atlanta, GA, May 22, 2006.
10. Defining Prostate Cancer Progression by Molecular Profiling of Laser Capture Microdissected Prostate Tissues. The American Urology Association meeting, Atlanta, GA, May 21, 2006.
11. Urothelial Carcinomas with Mixed Histology: Incidence, Clinicopathological Spectrum, and Biological Significance. The American Urology Association meeting, Atlanta,GA, May 22, 2006.
12. "Select Diagnostic Difficulties in urologic Pathology". Case presentations and review. Visiting Professor, Cleveland Clinic Foundation. 11/11/05.
13. "Interpretation of Prostate Needle Biopsies: Critical Issues and Emerging Markers". Short course, Course Director, US and Canadian Academy of Pathology, Atlanta, GA. (4-year term), 02/15/06.
14. "Contemporary Issues in Prostate, Urinary Bladder, and Renal Pathology" – Weekends in Pathology, American Society of Clinical Pathologists (ASCP), Las Vegas NV, 02/26/06

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Khaira H, Shah RB and Wolf S, Jr. Laproscopic and Open Surgical Nephrectomy for Xanthogranulomatous Pyelonephritis. Journal of Endourology, 19(7):813-17, 2005.
2. Siu W, Dunn RL, Shah RB, and Wei JT. Use of Extended Pattern Technique for Initial Prostate Biopsy. J Urol; 174(2):505-9, 2005.
3. Kunju L, Chinnaiyan A, and Shah RB. Comparison of Utility of Polyclonal and Monoclonal Antibody to alpha Methyl Acyl Co A Racemase (AMACR) in Work-up of Prostate Cancer. Histopathology; 47(6); 587-96, 2005.
4. Fu Z, Kitagawa Y, Shen R, Shah RB, Mehra R, Rhodes D, Keller P, Mizokami A, Dunn R, Chinnaiyan AM, Yao Z, Keller ET. The metastasis suppressor gene Raf Kinase inhibitor (RKIP) is a novel prognostic marker in prostate cancer. The Prostate, 66:248-256, 2006.
5. Ray M, Wojno K, Goldstein NS, Olson KB, Shah RB and Cooney K. Clonality of Sarcomatous and Carcinomatous Elements in Sarcomatoid Adenocarcinoma of the Prostate. Urology 67:423e5-423e8, 2006.
6. Tomlins SA, Rhodes DR, Perner S, Dhanasekaran SM, Mehra R, Sooryanarayana V, Cao X, Kuefer R, Lee C, Montie J, Shah RB, Pienta KJ, Rubin MA and Chinnaiyan AM. Recurrent gene fusion of TMPRSS2 to ETS family members of prostate cancer. Science; 130:644-48, 2005.

7. Varambally S, Yu Jianjun, Laxman B, Rhodes D, Mehra R, Tomlins S, Shah RB, Chandan U, Monson FA, Bechich MJ, Wei JT, Pienta KG, Ghosh D, Rubin MA and Chinnaiyan AM. Integrative Genomic and Proteomic Analysis of Prostate Cancer Reveals Signatures of Metastatic Progression. Cancer Cell; 8:393-406, 2005.
8. Shah RB, Bakshi N, Hafez KS, Wood DP, Jr, and Kunju LP. Image-Guided Biopsy in the Evaluation of Renal Mass Lesions in Contemporary Urologic Practice: Indications, Adequacy, Clinical Impact and Limitations of Pathologic Diagnosis. Hum Pathol, 36, 1309-1315, 2005.
9. Begley L, Monteleon C, Shah RB, MacDonald JW, and Macoska JA. CXCL12 Over-Expression and Secretion by Aging Fibroblasts Enhances Human Prostate Epithelial Proliferation In Vitro. Aging Cell, 4, 291-298, 2005..
10. Tomlins SA, Mehra R, Rhodes DR, Shah RB, Rubin MA, Bruening E, Makarov V and Chinnaiyan AM. Whole Transcriptome Amplification for Gene Expression Profiling and Development of Molecular Archives. Neoplasia, 8 (2), 153-62, 2006.
11. Kunju LP, Mehra R, Snyder M and Shah RB. Utility of a Novel Immunohistochemical (IHC) Panel (PSA, High Molecular Weight Cytokeratin and/or p63) in the differentiation of Poorly differentiated Prostate Adenocarcinoma (PCa) from Urothelial Carcinoma (UC). Am J Clin Pathol, 125(5):675-81, 2006.
12. DeMarzo A, Platz E, Epstein JI, Ali T, Billis A, Chan T, Cheng L, Datta M, Egevad L, Ertoy-Baydar D, Farre X, Fine S, Iczkowski K, Ittmann M, Knudsen B, Loda M, Lopez-Beltran A, Magi-Galluzzi C, Mikuz G, Montironi R, Rubin M, Samartunga H, Sebo T, Sesterhenn I, Shah RB, Signoretti S, Simko J, Tronscoso P, Tsuzuki T, van Leenders G, Yang X, Zhou M, Figg W, Hoque A, Lucia MA. Working Group Classification of Focal Prostate Atrophy Lesions. In press, Am J Surg Pathol.
13. Ray ME, Mehra R, Sandler HM, Daignault S and Shah RB. E-Cadherin Protein Expression Predicts Salvage Radiotherapy Outcomes for Prostate Cancer. In press, J Urol.
14. Datta MW, Hernandez AM, Schlicht MJ, Kahler AJ, Degueme AM, Dhir R, Shah RB, Farach-Carson MC, Barrett A and Datta S. Perlecan, a candidate gene for the CAPB locus, regulates prostate cancer cell growth via the Sonic Hedgehog pathway. Mol Cancer, 5: 9, 2006.
15. Tomlins SA, Mehra R, Rhodes DR, Smith LR, Roulston D, Helgeson BE, Cao X, Wei JT, Rubin MA, Shah RB and Chinnaiyan AM. TMPRSS2:ETV4 Gene Fusions define third molecular subtype of prostate cancer. Cancer Res, 66: (7); 3396-3400, 2006.
16. Shah RB, Ghosh D and Elder JT. Epidermal Growth Factor Receptor (ErbBl) Expression in Prostate Cancer Progression: Correlation with Androgen Independence. The Prostate, June 1 2006 (Epub ahead of print).

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS

1. Ray M, Chinnaiyan AM, Wei JT, Mehra R, Sandler HM, Faruzzi S, Wojno KF and Shah RB. Strategies for Prostate Cancer Biomarker Studies in Radiation Therapy Patients. 13th SPORE National Meeting, Biomarkers Session II, Washington, DC, July 11, 2005.
2. Mehra R, Tomlins SA, Rhodes DR, Cao X, Chinnaiyan A and Shah RB. Defining Prostate Cancer Progression by Molecular Profiling of Laser Capture Microdissected Prostate Tissues. Modern Pathol, 19(1): 149A, January 2006. (Recipient of Storbell Orbison Award and International Society of Urological Pathology Best Abstract Award presented by a Trainee (R Mehra) at the US and Canadian Academy of Pathology (USCAP), Atlanta, GA, 2006).
3. Ray M, Mehra R, Sandler H, Daignault S and Shah RB. E-Cadherin Protein Expression of Prostate Adenocarcinoma Independently Predicts Salvage Radiotherapy Outcomes. Modern Pathol, 19(1): 157A, January 2006.
4. Mehra R, Poisson L, Varambally S, Tomlins S, Kunju L, Ghosh D, Chinnaiyan A and Shah RB. Stathmin is Over Expressed in Metastatic Prostate Cancer: Implications in Prostate Cancer Progression. Modern Pathol, 19(1):149A, January 2006.
5. Shah RB, Weizer A, Dunn R, Bakshi N, Wei J, Wojno K, Montie J and Wood D. Neurovascular Tissue Thickness on Prostatectomy Specimens is Less Predictive of Quality of Life Outcomes than Surgeon's Description of Nerve Sparing Procedure. Modern Pathol, 19(1):160A, January 2006.
6. Shah RB, Amin A, Mehra R, Braun T and Redman B. High Carbonic Anhydrase (CA) IX Protein Tissue Expression Predicts Response to Interleukin (IL)-2 based Therapy for Advanced Renal Cell Carcinoma Patients. Modern Pathol, 19(1):160A, January 2006.
7. Wasco M, Braun T, Przybycin C, Kunju L, Lee C and Shah RB. Urothelial Carcinomas with Mixed Histology: Incidence, Clinicopathological Spectrum, and Biological Significance. Modern Pathol, 19(1):168A, January 2006.
8. Weizer A, Shah RB, Gilbert SB, Daignault S, Lee CT, Montie JE and Wood DP. Presence, Location and Significance of Prostate Cancer in Patients Undergoing Radical Cystoprostatectomy: Feasibility of Prostate Capsule Sparing Cystectomy. J. Urol, 175(4), 1234A, 2006.
9. Mehra R, Tomlins SA, Rhodes DR, Cao X, Chinnaiyan A and Shah RB. Defining Prostate Cancer Progression by Molecular Profiling of Laser Capture Microdissected Prostate Tissues. J Urol, 175(4), 990A, 2006.
10. Shah RB, Wasco M, Braun T, Przybycin C, Kunju L and Lee C. Urothelial Carcinomas with Mixed Histology: Incidence, Clinicopathological Spectrum and Biological Significance. J Urol, 175(4), 990A, 2006.
11. Shah RB, Amin A, Mehra R, Braun T and Redman B. High Carbonic Anhydrase (CA) IX Protein Tissue Expression Predicts Response to

Interleukin (IL)-2 based Therapy for Advanced Renal Cell Carcinoma Patients. J Urol, 175(4), 725A, 2006.

12. Hafez K, Wood DP, Jr, Nghiem HV, Higgins E, Shah RB, Daignault S and Wolf SJ. Success of Radiofrequency Ablation (RFA) as Assessed by Radiographic and Histologic Criteria. J Urol, 175(4), 1122A, 2006.
13. Macoska JA, Begley L, Monteleon C, MacDonald JW and Shah RB. CXCL12 Over-Expression and Secretion by Aging Fibroblasts Stimulates Human Prostate Epithelial Proliferaiton in vitro. J Urol, 175(4), 1442A, 2006.

C. BOOK AND CHAPTERS IN BOOKS

1. Shah RB and Amin MB. "Disorders of Penis, Urethra, and Scrotum", Pathology of the genitourinary Tract. Foundations in Diagnostic Pathology. Elsevier Science, in press.
2. Weizer AZ, Gilbert SM, Shah RB and Wood DP, Jr. "Management and Controversies of HGPIN and ASAP on Prostate Biopsy. In: Prostate Biopsy: Indications, Techniques and Complications. Humana Books Contemporary Clinical Urology Series, in press.

Lisa R. Smith, Ph.D
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES

A. Assistant Director, Cytogenetics Laboratory

II. TEACHING ACTIVITIES

A. HOUSE OFFICERS AND FELLOWS
1. Rotations in Cytogenetics
2. Pathology Residents (N=5, 2 weeks)
3. Hematology/Oncology Fellows (N=2, 2 weeks)
4. OB/GYN Fellow (N=1, 2 weeks)

B. GRADUATE STUDENTS
1. Rotations in Cytogenetics
2. Genetic Counseling Students (N=6, 2 weeks)

C. LECTURES/OTHER
1. HG643: Reproductive Genetics
2. Clinical Pathology Grand Rounds, “The Cytogenetics of Non-Hodgkin Lymphomas”
3. Abnormal Cytogenetics Case Conference (Biweekly)--- technologists, residents, and fellows
4. Leukemia Conference (Biweekly)
5. Hematology Conference (Biweekly)
6. Pediatric Genetics Post-clinic Conference (Weekly)
7. Teratology Conference (Weekly)
8. Joint Genetics Conference (Monthly)

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY
1. Set-up PET FISH in the clinical lab for study of lymphomas
2. Paraffin-embedded tissue fluorescence in situ hybridization (PET FISH)
3. Set-up research PET FISH on prostate and breast cancer tissues--- assisted Chinnaiyan lab
4. FISH on prostate cancer cell lines--- assisted Chinnaiyan lab

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL
1. Assistant Director, Clinical Cytogenetics Laboratory
2. Interpretation and sign-out of bone marrow, solid tumor, prenatal, and constitutional blood samples; including FISH.

3. Assist in lab management.
4. Interviewer for Pathology Residency Candidates.
5. Interviewer Hematopathology and Cytogenetic Candidates.

V. OTHER RELEVANT ACTIVITIES - None

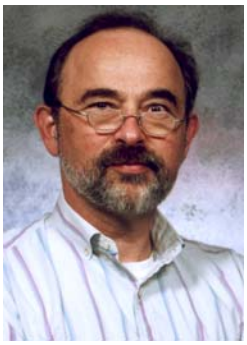
VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. S.A. Tomlins, R. Mehra, D.R. Rhodes, L.R. Smith, D. Roulston, B.E. Helgeson, X. Cao, J.T. Wei, M.A. Rubin, R. Shah, A. Chinnaiyan. TMPRSS2:ETV4 Gene Fusions Define a Third Molecular Subtype of Prostate Cancer. Cancer Research. 2006. 66(7):3396-3400.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN NON-REFEREED JOURNALS

1. Lama V.N., Smith L.R., Badri L., Peters-Golden M., Martinez F.J., Thannickal V.J. Non-hematopoeitic origin of mesenchymal cells isolated from bronchoalveolar lavage of lung transplant recipients. Proceedings from the American Thoracic Society, 2006.
2. C.W. Ross, D. Roulston, L.R. Smith, B. Schnitzer, W.G. Finn, R. Valdez, J.A. Thorson. Progress in T-cell and NK-cell Malignancies: Classification and Molecular Pathogenesis. Society for Hematopathology, M.D. Anderson Cancer Center. October, 2005.



Lloyd M. Stoolman, M.D.
Professor of Pathology

I. CLINICAL ACTIVITIES

A. FLOW CYTOMETRY DIAGNOSTIC SERVICE
   1. 25% coverage thru 1/1/2006
   2. 35% coverage 1/1/2006 – 1/4/2006
   3. 60% coverage 1/4/2006 – present

B. AUTOPSY SERVICE (weekend and holiday coverage)

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS
   1. Co-director, lecturer and seminar leader, M2 Hematology Sequence (10th year).
   2. Administrative oversight increased due to departure of course director.
   3. Authored the 9th generation of The Virtual Microscope-Hematopathology Interactive Syllabus (http://141.214.6.12/virtualheme99). Unique software provides access to interactive case-presentations and high-resolution "virtual slides" covering the pathophysiology, diagnosis and treatment of the hematologic disorders. This award-winning site promotes independent learning and receives strong student support.
   4. Lecturer and Seminar leader M1 Host Defense Sequence (10th year).

B. RESIDENTS AND FELLOWS
   1. Flow cytometry service, with emphasis on technical aspects of procedures and analytic tools.
   2. Autopsy service, piloted high-resolution digital slide scans for case presentations.

C. RESEARCH EDUCATION AND TRAINING:
   1. Supervised research activities of post-graduate (2) and undergraduate (3) investigators.
   2. Provided consultation services to faculty, fellows, residents and research investigators using Flow Cytometry and Digital Slide Scanning Core laboratories.
   3. Instructor in Pathology 581 Course.
   4. Thesis committees (5) in the Immunology Program (3 graduates).

III. RESEARCH ACTIVITIES

A. Principal Investigator- "T Cell Trafficking in Adoptive Cellular Immunotherapy"; NIH, R01CA73059, $196,000 (annual, direct); April 2001 -Mar 2007 (no-cost extension, re-submission pending).

B. Principal Investigator- "Lymphoma/leukemia therapies using dendritic cells engineered to overexpress lymph-node homing receptors". The Leukemia & Lymphoma Society Translational Research Program. $130,000 (direct + indirect, annual); Oct 2003-Sept 2006.

C. Co-investigator (5%)-"T-cell Activation for Cancer Immunotherapy"; NIH R01CA82529, $211,282 (annual, direct); Jul 2004-June 2008.

D. Co-investigator on Project 2 and Co-director of the Immunology Core (13%)– "Cellular Vaccines for Cancer Immunotherapy", NIH P01CA59327, $1,000,000 (annual, direct); June 2001-April 2006.

E. Co-investigator (10%) – "T-Cell Therapy of Human Renal Cell Cancer"; NIH R01CA69102, $250,000 (annual, direct), April 2001 -Mar 2006.

F. Principal Investigator (5%, no salary support)- Research Training in Translational Tumor Immunology; NIH/NCI, T32 CA 88784, $321,306 (annual, direct); supports 2 pre-doctoral students and 4 post-doctoral students; Feb 2001-Jan 2006.

G. Trainer on four funded pre-/post-doctoral training grants: Translational Immunology (L. Stoolman, PI); Surgery Oncology Research (A.E. Chang, PI), Immunopathology (R. Miller, PI) and Vascular Biology Training Grant (T. Wakefield, PI).

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Director Flow Cytometry Core and Co-Director Clinical Flow Cytometry Laboratory.
2. Director, Pathology Digital Microscopy Core Laboratory.
3. Faculty Coordinator for Technology in the Medical Education.
4. Member, Graduate Student Administrative Committee, Immunology Training Program.
5. Co-Director, M2 Hematology Sequence - see educational activities.

B. INSTITUTIONAL

1. Medical School Representative to Faculty Senate.

V. OTHER RELEVANT ACTIVITIES

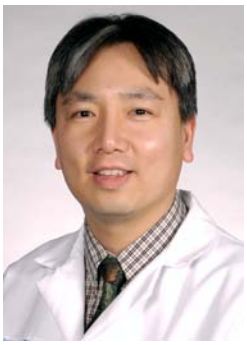
A. INVITED LECTURES/SEMINARS

1. Aperio Users Conference, Invited Lecturer, "Targeting tumor-antigen pulsed dendritic cells and tumor antigen-specific T-cells to lymph nodes for immunotherapy of lymphomas", L.M. Stoolman, M.D., R.N. Knibbs, Ph.D., K. McDonagh, M.D., E. Gatza, Ph.D. and C. Okata, M.D. Leukemia & Lymphoma Society Meeting, New York, N.Y. OCT. 2005.
2. Invited Lecture, "Digital Slides in Education and Research at the University of Michigan Medical School", L.M. Stoolman, M.D., K.L. Thompson and R. Craig, Ph.D. - San Diego, CA. NOV. 2005.

VI. PUBLICATIONS

A. ABSTRACTS, BOOK REVIEWS, LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN NON-REFEREED JOURNALS

1. LM Stoolman. 1998-2006 (updated annually). The Virtual Microscope- Interactive web-based syllabus for medical student (M2) Hematopathology laboratory. Major update with inclusion of virtual slides (full slide scans) for all laboratory content. URL= http://141.214.6.12/virtualheme99/.
2. LM Stoolman. 1998-2006 (updated annually). The Virtual Microscope- Interactive web-based syllabus for General and Organ systems pathology for dental students. URL= http://141.214.6.12/cyberscope631/.



Lyndon D. Su, M.D.
Associate Professor of Pathology and Dermatology

I. CLINICAL ACTIVITIES

A. DERMATOPATHOLOGY SERVICE

1. University Hospital and Transfer cases – 12 months.
2. Consultation Service (including personal and M-Labs consultations) – 12 months.

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS

1. Medical students – (on elective rotation in dermatopathology).
2. Instructor in medical student laboratories.

B. RESIDENTS AND FELLOWS

1. Dermatopathology daily sign-out (rotating dermatology and pathology residents).
2. Review of interesting dermatopathology consultation material and transfer cases (with rotating dermatology and pathology residents).
3. Dermatopathology Teaching conference – (dermatology residents-1 per month).
4. Dermatopathology Teaching conference – (pathology residents-4 per year).
5. Dermatology Core Conference- (1 per year).
6. Anatomic Pathology Core Conference – (1 per year).
7. Anatomic Pathology Consultation Conference – (2 per year).
8. Annual Michigan Dermatological Society Case Presentations-(1 per year).
9. Diagnostic Conference, Department of Dermatology – (1 per month).
10. Cutaneous T-Cell Lymphoma Conference—(1 per month).

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY

1. EZH2 expression in melanocytic nevi and melanoma. McHugh JB, Fullen DR, Ma L, Kleer CG, and Su LD.
2. Role of gadolinium contrast agents in nephrogenic fibrosing dermopathy. Cowper SE, Su LD, and Ma L.
3. University of Michigan (UMMC 2000-0713): Molecular, biochemical, and cellular basis of melanoma and other melanocytic lesions: Tissue Bank. Johnson TM, Wang TS, Schwartz JL, Voorhees JS, Dlugosz A, Lowe L, Su LD, Fullen DR, Bradford C, and Cimmino V.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Co-director, Dermatopathology Service.
2. Co-director, Dermatopathology Fellowship Program.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Ad hoc manuscript reviewer
    a. *Journal of Cutaneous Pathology.*
    b. *Journal of the Academy of Dermatology*
    c. *Cancer*
    d. *Journal of Pediatrics*
    e. *American Journal of Dermatopathology*
    f. *Applied Immunohistochemistry and Molecular Morphology*

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Arora A, Lowe L, Su L, Rees R, Bradford C, Cimmino VC, Chang AE, Johnson TM, Sabel MS.Wide excision without radiation for desmoplastic melanoma. Cancer. 2005 Oct. 1; 104(7):1462-7.
2. Fullen DF, Zhu W, Thomas D, Su LD. HTERT Expression in melanocytic lesions: An immunohistochemical study on paraffin-embedded tissue. J Cutan Pathol. 2005 Nov; 32 (10):680-684.
3. Siddiqui MA, Su L, Michael C, Pu RT. Synchronous ordinary lipoma and spindle-cell lipoma diagnosed by fine needle aspiration. Diag Cytopathol. 2006 June; 34(6):455-6.
4. Maghocca KR, Rand M, Su LD, Helman JI: Melanoma in-situ of the oral cavity: a case report. Accepted in Oral Oncology.
5. Mchugh JL, Su L, Griffith KA, Cimmino V, Chang AE, Johnson TM, Sabel MS. Significance of multiple lymphatic drainage basins in truncal melanoma patients undergoing sentinel lymph node biopsy. Accepted for publication in Annals of Surgical Oncology.
6. Olsen SH, Su LD, Thomas D, Fullen DR. Telomerase expression in sebaceous lesion of skin. Accepted for publication in Journal of Cutaneous Pathology.
7. Fullen DR, Poynter JN, Lowe L, Su LD, Elder JT, Nair RP, Johnson TM, Gruber SB. BRAF AND NRAS mutations in Spitzoid melanocytic lesions. Accepted for publication in Modern Pathology.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN NONREFEREED JOURNALS

1. Neuschler N, Su, L. “A child with blue nodules on the trunk and extremities: multiple cutaneous familial glomangioma.” Oral case presentation at the American Academy of Dermatology 64th Annual Meeting, Gross and Microscopic Session, March 3-7, 2006.
2. McHugh, JL, Su, L, Griffith KA, Cimmino, V, Chang AE, Johnson, T, Sabel, MS. “Significance of Multiple lymphatic drainage basins in truncal melanoma patients undergoing sentinel lymph node biopsy.” Accepted for poster presentation at the Society of Surgical Oncology.

John A. Thorson, M.D., PH.D.
Assistant Professor of Pathology
Director, Molecular Diagnostics Laboratory

I. CLINICAL ACTIVITIES

A. Director, Molecular Diagnostics Laboratory

B. Clinical Immunology Laboratory; sign out of cases (3 weeks/year)

II. TEACHING ACTIVITIES

A. RESIDENTS AND FELLOWS

1. Coordinator, Pathology House Officer rotation through Clinical Molecular Diagnostics Laboratory.
2. Review of selected topics in Molecular Diagnostics with Block E residents.
3. Fellowship mentor, Molecular Genetic Pathology (Michael Rhodes, M.D.).
4. Coordinator, Hematopathology fellows' rotation in Molecular Diagnostics.

B. LECTURES/OTHER

1. Clinical Pathology Conference, "Quantitative Molecular Diagnostics" (3/7/06).
2. "Pharmacogenomics" (3/14/06).
3. Lecturer, Advanced Clinical Concepts in Medical Genetics course (HG 649).

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY

1. Alternative splicing of BCRABL transcripts in CML.
2. Use of insertion/deletion polymorphisms to assess bone marrow transplant engraftment status.
3. High throughput multiplex PCR assays for detection of BCL2 and BCL1 translocations in formalin fixed tissue specimens.
4. Multiplex real time PCR assay for blood group antigen genotyping.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Director, Molecular Diagnostics Laboratory
2. House Officer Candidate interviews
3. Pathology Fellowship Candidate interviews
4. Faculty Candidate interviews

B. INSTITUTIONAL
1. MSTP Career Advisory Panel

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS
1. Ad hoc manuscript reviewer, *Thrombosis and Haemostasis.*

B. INVITED LECTURES/SEMINARS
1. "Quantitative Assessment of BCRABL Transcripts", invited presentation, Leukemia Conference, University of Michigan Dept of Internal Medicine July 20, 2005, Ann Arbor, MI.

C. MEMBERSHIP AND OFFICES IN PROFESSIONAL SOCIETIES
1. American Society of Clinical Pathologists.
2. College of American Pathologists.
3. United States and Canadian Academy of Pathology.
4. Academy of Clinical Laboratory Physicians and Scientists.
5. American Association for Clinical Chemistry.
6. Association for Molecular Pathology.
7. American Society of Human Genetics.

D. OTHER ACTIVITIES
1. Participant, NIH Consensus Meeting for Molecular Monitoring in CML, Bethesda, MD, October 25- 26, 2005.
2. Consultant, Consultants in Laboratory Medicine, Toledo, OH.
3. College of American Pathologists, Clinical Laboratory Inspector.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
1. Zhou L, Thorson JA, Nugent, C, Davenport, RD, Butch, SH, and Judd WJ. 2005. Non-invasive prenatal RHD genotyping by real-time PCR using plasma from D-negative pregnant women. The American Journal of Obstetrics & Gynecology 193(6):1966-71.
2. Thorson JA, Weigelin HC, Ruiz RE, Howard JK, and Lucas DR. 2006. Identification of SYT-SSX transcripts from synovial sarcomas using RT-multiplex PCR and capillary electrophoresis. Modern Pathology 19(5):641-647.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS
1. Weigelin HC, Zhou L, Howard JK and Thorson JA. 2005 Development and validation of a micro-volume real time RT-PCR assay for the comprehensive detection and quantification of BCRABL transcripts in clinical samples. Poster presentation at the Association for Molecular Pathology Annual Meeting, Scottsdale, AZ, Nov. 11 – 13, 2005.
2. Bergendahl JM, Howard JK and Thorson JA. 2005. Evaluation of the InPlex CFTR ASRs for use in cystic fibrosis testing. Poster presentation at the Association for Molecular Pathology Annual Meeting, Scottsdale, AZ, Nov. 11 – 13, 2005.
3. Rhode MG, Howard JK and Thorson JA Ultra sensitive detection of mixed chimerism in post-BMT patients using real time PCR analysis of insertion deletion polymorphisms. Platform presentation at the

United States and Canadian Academy of Pathology Annual Meeting, Atlanta, GA, Feb 11 – 17, 2006. Mod Pathol 19 Suppl 1 p.243A, Abs # 1129.

4. Thorson JA, Weigelin HC, Zhou L, and Howard JK. Development/validation of a comprehensive high throughput quantitative assay for BCRABL transcripts. Platform presentation at the United States and Canadian Academy of Pathology Annual Meeting, Atlanta, GA, Feb 11 – 17, 2006. Mod Pathol 19 Suppl 1 p. 335A, Abs # 1563.

James Varani, Ph.D.
Professor of Pathology, Microbiology and Immunology

I. CLINICAL ACTIVITIES - None.

II. TEACHING ACTIVITIES

A. UNDERGRADUATE, GRADUATE AND MEDICAL STUDENTS IN THE LABORATORY

1. Diana Spahlinger – 3rd year undergraduate, Kenyon College (June 2005-September 2005).
2. Kevin Fay – 4rd year undergraduate, University of Michigan (June 2004-present).
3. Andrew Hanosh – 4th year undergraduate/U of M graduate (January 2006-present).
4. Monica Demming – 1st year undergraduate, Michigan State University (June 2006-present).
5. Sid Goyal – 1st year undergraduate, Kalamazoo College (June 2006–present).

B. POST-DOCTORAL STUDENTS IN THE LABORATORY

1. Kamalakar C. Nerusu, M.D. (April 2002-present).
2. Mohammad Nadeem Aslam, M.D. (June 2002-present).
3. Mehandranth Reddy (April 2004-Present).

C. RESEARCH FACULTY IN THE LABORATORY

1. Narasimharao Bhagauathula, Ph.D. (April 2000-present).

D. OTHER TEACHING ACTIVITIES

1. Course director, Path. 581: Tissue, cellular and molecular basis of disease.
2. Instructor, Path. 581: Tissue, cellular and molecular basis of disease.
3. Instructor, Interdisciplinary Dental School course.
4. Instructor, Path. 582: Tissue, cellular and molecular basis of disease – Part II.
5. Instructor, Path, 553: Cancer Biology.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Retinoids for diabetic foot ulcers. NIH DK59169. 04/01/01 – 03/31/06.
2. MMP-3 and acute lung injury. NIH NHLBI 70979. 07/01/03 – 12/31/06.
3. New topical therapies for psoriasis NIH AR50330. 06/01/05 – 12/31/05.

4. Co-polymer microcarrier culture system for human influenza vaccine production NIH AI 50315. 09/01/03 – 08/30/05.
5. Microcarriers designed for protein and serum-free media. NIH 05/01/05 – 04/30/07.
6. Non-irritating retinoids for treatment of aging. NIH AR49621. 04/01/05 – 03/31/07.
7. Epidermal growth control in aged mice (development project). Older Americans Independence Center NIH AG024824 (P30) 09/01/04 – 08/30/07.
8. Wound-healing properties of a non-irritating novel 9-cis retinoic acid derivative. NIH GM77724. 07/01/06 – 06/30/07.
9. A comparison of whole skin organ culture with human skin equivalent for in vitro evaluation of corrosivity/irritancy and contact sensitization. Pfizer Inc., Ann Arbor, MI. 06/01/05 – 12/31/06.
10. Evaluation of GMP-1000 in the human skin – scid mouse transplant model. GMP Companies. 9/21/05- 5/31/06.
11. Lung-derived matrix metalloproteinases and disease progression. U of M Translational Research Initiative Grants. 07/01/06 – 006/30/07.

B. PROJECTS UNDER STUDY

1. The biology of collagen destruction and repair in diabetic skin.
2. Role of MMP-3 in acute and chronic lung injury.
3. Topical PPAR-γligands for treatment of psoriasis.
4. Development of a non-irritating retinoid for replacement of RA in therapy of skin aging and as a wound-healing agent.
5. Use of ex vivo approaches to distinguish irritant dermatitis from contact dermatitis.
6. Development of microcarriers with synthetic collagen surface.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Member, Department of Pathology Advisory Committee on Appointments, Promotions and Tenure.
2. Member, Department of Pathology Graduate Program Committee.
3. Member and Chairman – Pathology Graduate Program Curriculum Revision Committee.

B. INSTITUTIONAL

1. Member of Medical School Institutional Review Board (IRBMED).
2. Member of Medical School Institutional Review Board task force on adverse event reporting.
3. Member, Program in Biomedical Sciences (PIBS) Steering Committee.
4. Member, Program in Biomedical Sciences (PIBS) Curriculum Committee.
5. Member, Department of Dermatology Research Training Grant Steering Committee.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Editorial Board, *Expert Review of Dermatology.*
2. Manuscript Review
    a. *American Journal of Pathology.*

b. Cancer Research.
c. *Journal of Investigative Dermatology.*

B. INVITED LECTURES/SEMINARS

1. Invited speaker: Pfizer, Inc., Ann Arbor, MI, July 27, 2005.
2. Invited speaker: Williamsburg Bioprocessing Foundation Symposium: Biological Products Development and Safety. Tysons Corner, VA, August 10, 2005.
3. Invited speaker: Molecular Design International, Memphis, TN, February 22, 2006.
4. Invited speaker. PCITX Product Development Conference, New York City, NY, April 18, 2006.
5. Invited speaker. PCITX Product Development Conference, New York City, NY, September 13, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFERRED JOURNALS

1. Varani J, Lateef H, Fay K, Elder JT. Antagonism of epidermal growth factor receptor tyrosine kinase ameliorates the psoriatic phenotype in organ-culture skin. Skin Pharm. Physiol 18:123-31, 2005.
2. Aslam MH, Fligiel H, Lateef H, Fisher GJ, Ginsburg I, Varani, J. PADMA 28: A multicomponent herbal preparation with retinoid-like dermal activity but without epidermal effects. J. Invest Dermatol. 124:524-529 2005.
3. Aslam MN, Lansky EP, Varani J. Pomegranate fractions: Differential effects on human epidermal keratinoycte and human dermal fibroblast function. J. Ethnopharmacol. 103:311-318, 2006.
4. Lateef H, Stevens M, Varani J. Topical pretreatment of diabetic rats with all-trans retinoic acid improves healing of subsequently-induced superficial wounds. Diabetes 54:855-861, 2005.
5. Bhagavathula N, Nerusu KC, Fisher GJ, Liu G, Landolfi N, Voorhees JJ, Varani J. Amphiregulin and epidermal hyperplasia: Amphiregulin is required to maintain the psoriatic phenotype of human skin grafts on SCID mice. Amer. J. Pathol. 166:1009-1016, 2005.
6. Varani J, Bhagavathula N, Nerusu KC, Sherzer H, Fay K, Boitano AE, Glick GD, Johnson KJ, Kang S, Opipari AW, jr. A novel benzodiazepine selectively inhibits keratinocyte proliferation and reduces retinoid-induced epidermal hyperplasia in organ-cultured human skin. J. Pharmacol. Exp. Therapeut. 313:56-63, 2005.
7. Chakrabarty S, Wang H, Canaff L, Hendy GN, Appelman H, Varani J. Calcium sensing receptor in human colon carcinoma: Interaction with Ca2+ and 1, 25-dihydroxyvitamin D3. Cancer Res 65:499-506, 2005.
8. Monhian N, Jewett BS, Baker SR, Varani J. Matrix metalloproteinase expression in normal skin associated with basal cell carcinoma and in distal skin from the same patients. Arch. Facial & Plastic Surg. 7:238-43. 2005.
9. Lateef M, Aslam MN, Stevens MJ, Varani J. Treatment of rats with lipoic acid improves healing of subsequently-induced superficial skin wounds in diabetic rats. Arch. Dermatol. Res. 297:75-83, 2005.

10. Yucel T, Mutnal A, Fay K, Fligiel SEG, Wang T, Johnson T, Baker SR, Varani J. Matrix metalloproteinase expression in basal cell carcinoma: Relationship between enzyme profile and collagen fragmentation pattern. Exp. Molec. Pathol. 79: 151-160, 2005.
11. Fligiel SEG, Standiford T, Fligiel SEG, Strieter RW, Tashkin D, Warner RL, Johnson KJ, Varani J. Matrix metalloproteinases (MMPs) and MMP Inhibitors in acute lung inflammation. Human Pathol. 37:422-430, 2006.
12. Bhagavathula N, Nerusu K, Reddy M, Ellis CN, Chittiboyina A, Avery M, Pershadsingh HA, Kurtz TW, Varani J. BP-1007: A novel synthetic thiazoladinedione that inhibits epidermal hyperplasia in psoriatic skin – SCID mouse transplants following topical application. J. Pharmacol. Exp. Therapeut. 315:996-1004. 2005.
13. Bhagavathula N, Kelley EA, Reddy M, Nerusu KC, Leonard C, Fay K, Chakrabarty S, Varani J. Up-regulation of calcium sensing receptor and mitogen-activated protein kinase signaling in the regulation of growth and differentiation in colon cancer. Brit. J. Cancer. 93:1364-71. 2005.
14. Varani J, Dame MK, Rittie L, Fliigiel SEG, Kang S, Fisher GJ, Voorhees JJ. Decreased collagen production in chronologically-aged skin: Roles of age-dependent alterations in fibroblast function and defective mechanical stimulation. Amer. J. Pathol. 168:1861-1868, 2006.
15. Rittié L, Varani J, Kang S, Fisher GJ, Voorhees JJ: Retinoid-induced epidermal hyperplasia is mediated by epidermal growth factor receptor activation via specific induction of its ligand heparin binding-EGF and amphiregulin in human skin in vivo. J. Invest. Dermatol. 126:732-739 2006.
16. Bhagavathula N, Nerusu KC, Hanosh A, Appelman H, Chakrabarty S, Varani J. Regulation of E-cadherin and□-catenin by Ca2+ in colon carcinoma is dependent on calcium-sensing receptor expression and function. Cancer Res. (in press) 2006.

B. BOOKS AND CHAPTERS IN BOOKS

1. Varani J. Retinoids and wound healing. Hormone Metabol. Res. (in press) 2006.
2. Varani J. Ex vivo methods for the preclinical evaluation of potential anti-psoriatic therapeutics. Bioprocess. J. (in press) 2006.
3. Varani J, Bhagavathula N, Ellis CN, Pershadsingh HA. Thiazolidinediones as potential therapeutics for the treatment of psoriasis. Exp. Opinion Drug Develop. (in press) 2006.

C. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN NON-REFEREED JOURNALS

1. Bhagavathula N, Nerusu KC, Chakrabarty S, Varani J. Role of Calcium Sensing Receptor in promoting differentiation in colon carcinoma cells. AACR 2006.
2. Nerusu KC, Bhagavathula N, Chakrabarty S, Varani J. . Calcium induced differentiation in colon carcinoma: Altered b-catenin production and distribution. AACR 2006.

Peter A. Ward, M.D.
Godfrey D. Stobbe Professor of Pathology

I. CLINICAL ACTIVITIES - None.

II. TEACHING ACTIVITIES

A. UROP UNDERGRADUATE STUDENTS
1. Matthew Pianko.
2. Brian Nadeau.
3. Elizabeth Bacon.
4. Daniella Musaka.

B. UNDERGRADUATE STUDENTS
1. Jeff Crawford, 2nd Year Undergrad (Calvin College)

C. POST-DOCTORAL FELLOWS (2005-06)
1. Jayne Reuben, Ph.D.
2. Hongwei Gao, Ph.D.
3. Laszlo Marco Hoesel, M.D.
4. Yong Han, M.D.
5. Daniel Rittirsch, M.D.
6. Michael Flierl, M.D.
7. Julia Schäfer, M.D.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT
1. Principal Investigator (5%), “Lung Immunopathology” (Training Grant) HL07517, $227,536/yr., 06/01/96 - 05/31/06.
2. Principal Investigator (25%), “Inflammatory Cells and Lung Injury” NIH/NHLBI PO1-HL31963, (Project 1), $264,827 /yr. 02/01/05 - 01/31/10.
3. Principal Investigator (20%); “Lung Injury by Oxygen Metabolites (MERIT) RO1- GM29507 NIH/NIGMS, $312,396/yr, 07/01/05 - 06/30/09.
4. Principal Investigator (20%), “Protective Effects of Anti-C5a in Sepsis,” NIH/NIGMS RO1- GM61656, $204,700/yr; 01/01/02 - 05/31/06.
5. Principal Investigator (5%), “Mechanisms and Prevention of Lung Injury Caused by Exposure to Mustard Gas” DAMD 17-03-2-0054 USAMRMC, $1,932,000 total, 08/15/03 – 08/31/06.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Godfrey D. Stobbe Professor, Department of Pathology.

B. INSTITUTIONAL

1. Medical School Executive Committee.
2. Michigan Eye Bank Research Review Committee.
3. Undergraduate Research Opportunity Program, University of Michigan.
4. Russel Awards Advisory Committee.
5. Conflict of Interest Advisory Committee for the University of Michigan.

C. REGIONAL/NATIONAL/INTERNATIONAL

1. American Association of Immunologists.
2. American Society for Clinical Investigation.
3. American Society for Investigative Pathology, representative to FASEB Board.
4. Association of American Physicians.
5. American Thoracic Society.
6. American Heart Association, Fellow.
7. Association of Pathology Chairmen.
8. American Association of University Pathologists.
9. A. James French Society of Pathologists, 1988-present.
10. Institute of Medicine, National Academy of Sciences, July, 1990-present.
11. Michigan Society of Pathologists.
12. Committee on Recognition and Alleviation of Distress in Laboratory Animals. Chair, 2006-present.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS

1. *American Journal of Pathology*, Editorial Board, 1982-present.
2. *American Review of Respiratory Diseases*, Consulting Editor, 1977-present.
3. *Free Radical Biology & Medicine*, Editorial Board, 1995-present.
4. *Journal of Clinical Investigation*, Consulting Editor, 1995 - present.
5. *Journal of Experimental and Molecular Biology*, 1999 – present.
6. *Toxicologic Pathology*, Editorial Board, 1988-present.
7. Special Editor, Biological Perspective, *American Journal of Pathology*, 2005-present.

B. INVITED LECTURES/SEMINARS

1. Invited Speaker, “Harmful Role of Complement Activation Products in Sepsis”, MedImmune, Inc., Gaithersburg, MD, August 3, 2005.
2. Invited Speaker, “Harmful Engagement of C5a and C5aR in Sepsis”, 10th European Meeting on complement in Human Disease, Heidelberg, Germany, September 9, 2005.
3. Invited Lecturer, “Role of Complement System in Mediating Vascular Damage”, Pfizer Vasculitis Seminar, Groton CT, September 27, 2005.
4. Invited Speaker, “Molecular mechanisms of sepsis”, Dept of Pathology Annual Retreat, Yale University School of Medicine, Groton, CT, April 21, 2006.

5. Invited Lecturer, "How to live comfortably in the total absence of C3", Tri-Institutional Immunology & Microbial Pathogenesis, Graduate Program in Immunology at Cornell University, Groton, CT, April 24, 2006.
6. Invited Speaker, "C5a, C5aR and the cardiomyopathy of sepsis", 4th International Innate Immunity Conference, Corfu, Greece, June 5, 2006.
7. Invited Expert, Respiratory National Therapeutic Expert forum (Merck & Co), Chicago, IL, June 15, 2006

C. HONORS AND AWARDS

1. Senior Fellow, Association of Pathology Chairs, in recognition of long term contributions as Chair and in leadership in APC, 2005.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Guo, R.F., and Ward, P.A.: Role of C5a in inflammatory responses. Annu Rev Immunol. 2005, 23:821-852.
2. Remick, D.G., and Ward, P.A.: Evaluation of endotoxin models for the study of sepsis. SHOCK, 2005 24(1):7-11.
3. Niederbichler, A.D., Hoesel, L.M., Westfall, M.V., Gao, H., Ipaktchi, K.R., Sun, L., Zetoune, F.S., Su, G.L., Arbabi, S., Sarma, J.V., Wang, S.C., Hemmila, M.R., and Ward, P.A.: An essential role for complement C5a in the pathogenesis of septic cardiac dysfunction. JEM. 2005, 203(1): 53-61.
4. McClintock, S.D., Hoesel, L.M., Das, S.K., Till, G.O., Neff, T., Kunkel, R.G., Smith, M.G., and Ward, P.A.: Attenuation of half sulfur mustard gas-induced acute lung injury in rats. J Appl Toxicol. 2006, 26:126-311.
5. Neff, S.B., Z'graggen, B.R., Neff, T.A., Jamnicki-Abegg, M., Suter, D., Schimmer, R.C., Booy, C., Joch, H., Pasch, T., Ward, P.A., and Beck-Schimmer, B.: Inflammatory response of tracheobronchial epithelial cells to endotoxin. Am J Physiol Lung Cell Mol Physiol, 2006 290:L86-L96.
6. Wang, X., Adler, K.B., Chaudry, I.H., and Ward, P.A.: A better understanding of organ dysfunction requires proteomic involvement. J. Proteome Res. 2006 5:1060-1062.
7. Huber-Lang, M.*, Sarma, J.V.*, Zetoune, F.S.*, Rittirsch, D., Neff, T.A., McGuire, S.R., Lambris, J.D., Warner, R.L., Flierl, M.A., Hoesel, L.M., Gebhard, F., Younger, J.G., Drouin, S.M., Wetsel, R.A., Ward, P.A.: Generation of C5a in the Absence of C3: A New Complement Activation Pathway *Authors contributed equally. Nat Med. 2006 12:682-687. Published online: 21 May 2006.
8. Gao, H., Hoesel, L.M., Guo, R.F., Rancilio, N.J., Sarma, J.V. and Ward, P.A.: Adenoviral-mediated overexpression of SOCS3 enhances IgG immune complex-induced acute lung injury. J. Immunol. 2006 177:612-620.
9. Guo, R.F., Riedemann, N.C., Sun, L., Gao, H., Reuben, J.S., Sarma, J.V., Zetoune, F.S., and Ward, P.A.: Divergent signaling pathways in leukocytes during sepsis. Accepted. J Immunol. 2006.

10. Guo, R.F. (correspondent author), Sun, Lei, Gao, H., Shi, K., Reuben, J.S., Ward, P.A. Mechanism of Priming of Lung for CXC Chemokine Production during Sepsis. J Immunol, 2006; in press.
11. Sun, L., Gao, H., Sarma, J.V., Guo, R.F., and Ward, P.A.: Adenovirus-mediated in vivo silencing of anaphylatoxin receptor C5aR. Accepted J Biomed Biotechnol. 2006.
12. Ishida-Okawara, A., Nagi-Miura, N., Oharaseki, T., Takahashi, K., Okumra, A., Tachikawa, H., Kashiwamura, S., Okamura, H., Ohno, N., Okada, H., Ward, P.A., Suzuki, K.: Neutrophil activation and induce by C. albicans water-soluble mannoproteins-β-glucan complex (CAWS). Accepted Exp. Molecul. Path. 2006.

Roscoe L. Warner, Ph.D.
Research Assistant Professor of Pathology

I. CLINICAL ACTIVITIES – None.

II. TEACHING ACTIVITIES

A. GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

1. Research Investigator, Thekkelnaycke Rajendiran Ph.D.
2. Postdoctoral Fellow, Eric Ollie, Ph.D.
3. Research Assistant
    a. Shannon McClintock, B.S.
    b. Adam Barron, B.S.
    c. Mike Deogracias, B.S.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Co-Investigator (50%), “Mechanisms of MMP-3 Action in Acute Lung Injury”, R01 HL07097, $225,000/Year ($675,000/3 yr.), 07/01/03 – 06/31/06.
2. Principle Investigator (5%) “Hemostatic ability of a unique protein isolate”, QRxPharma Pty. Ltd., $101,000/year (101,000/1 yr.), 07/01/04 – 06/30/05.
3. Co-Investigator (10%), “Protein Carbohydrate Interactions”, 2R01 GM 29470-38A1, $225,000/Year ($900,000/4 yr.), 10/01/04 - 9/31/08.

B. PROJECTS UNDER STUDY

1. Determination of Biomarkers in Human Vasculitis and Rodent Models of Vasculitis.
2. Mechanisms of MMP-3 Action in Acute Lung Injury.
3. Protein Carbohydrate Interactions.
4. Use of Marasmius oreades lectin in a model of microangiopathic injury in mice.
5. Mechanisms of MMP-3 Action in Bleomycin induced Airway Thickening.
6. Mechanisms of Action of a Benzodiazepine Derivative in Rodent Models of LUPUS.
7. Development of Human and Rat Antibody Microarrays.

IV. ADMINISTRATIVE ACTIVITIES

A. INSTITUTIONAL

1. SACUA; Research Policies, 9-1-03 - 8-31-06.
2. SACUA; Governmental Affairs, 9-1-03 - 8-31-06.

V. OTHER RELEVANT ACTIVITIES – None.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Olle EW. Sreekumar A. Warner RL. McClintock SD. Chinnaiyan AM. Bleavins MR. Anderson TD. Johnson KJ. (2005) Development of an internally controlled antibody microarray. Molec. Cell. Proteom. 4(11):1664-1672.
2. Fligiel SE. Standiford T. Fligiel HM. Tashkin D. Strieter RM. Warner R.L. Johnson KJ. Varani J. (2006) Matrix metalloproteinases and matrix metalloproteinase inhibitors in acute lung injury. Human Pathology. 37(4):422-430.
3. Olle, E.W., Ren, X., McClintock, S.D., Warner, R.L., Deogracias, M.P., Johnson, K.J. and Colletti, L.M. (2006) Matrix metalloproteinase-9 (MMP-9) is an important factor in hepatic regeneration following partial hepatectomy, Hepatology (Accepted).
4. McClintock, S.D., Barron A.G., Olle, E.W., Deogracias, M.P., Warner, R.L., Opp, M., Johnson, K.J. (2006) Role of interleukin-6 in immune complex induced models of vascular injury. Inflammation (Accepted).

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN NONREFEREED JOURNALS

1. Development of an Enzyme-Linked Immunosorbent Assay for Human Tropoelastin. Adam G. Barron, Roscoe L. Warner, Kent J. Johnson and James Varani. Department of Pathology, University of Michigan Medical School, Ann Arbor, Michigan, 48109. Experimental Biology, April 2006. San Francisco CA. Abstract Number: 3672.
2. Involvement of IL-6 in a Glucan Model of Vascular Injury. Shannon D. McClintock, Adam Barron, Michael P. Deogracias, Eric W. Olle, Roscoe L. Warner, Joseph Paulauskis and Kent J. Johnson. Department of Pathology, University of Michigan Medical School, Ann Arbor, MI 48109 Experimental Biology, April 2006. San Francisco CA. Abstract Number: 3636.
3. Matrix Metalloproteinase-9 Influences Markers of Angiogenesis Following Partial Hepatectomy. Michael P. Deogracias1, Eric W. Olle1, Xiaodan Ren2, Shannon McClintock1, Roscoe L. Warner1, Lisa Colletti2 and Kent J. Johnson1. Departments of Pathology1 and Surgery2, University of Michigan Medical School, Ann Arbor, MI 48109. Experimental Biology, April 2006. San Francisco CA. Abstract Number.
4. Role of Matrix Metalloprotease-3 (MMP-3) in Remodeling Following Bleomycin-Induced Injury in Rats. Roscoe L. Warner, Kamalakar C. Nerusu, Narasimharao Bhagavathula, Shannon D. McClintock, Adam G. Barron. Kent J. Johnson and James Varani. Department of

Pathology, University of Michigan Medical School, Ann Arbor, Michigan, 48109. Experimental Biology, April 2006. San Francisco CA. Abstract Number: 3726.

5. Hemostatic Properties of Topically Applied Q8009 a Snake Venom Protease. Roscoe L. Warner, Shannon D. McClintock, Adam G. Barron. Department of Pathology, University of Michigan Medical School, Ann Arbor, Michigan, 48109. Experimental Biology, April 2006. San Francisco CA. Abstract Number: 4206.

Jeffrey S. Warren, M.D.
Aldred S. Warthin Endowed Professor and Director of Clinical Pathology

I. CLINICAL ACTIVITIES

A. DIRECTOR, DIVISION OF CLINICAL PATHOLOGY/CLINICAL LABORATORIES, May 1993-present.

B. DIRECTOR, CLINICAL IMMUNOPATHOLOGY SERVICE; September 1989-present.

C. MICROBIOLOGY LABORATORY; review of peripheral blood parasite smears; July 1996-present.

D. MOLECULAR DIAGNOSTICS LABORATORY; signout of cases (3 weeks/year); July 1997-present.

E. DIRECTOR, PATHOLOGY PHLEBOTOMY SERVICE, July 2001-present.

II. TEACHING ACTIVITIES

A. MEDICAL STUDENTS, RESIDENTS AND FELLOWS

1. "Current Topics in Immunopathology" journal club series: pathology residents, M4 students (29 contact hours).
2. Clinical Pathology Grand Rounds: “Renal complications of Bence Jones proteinuria” (12/13/05).
3. Immunopathology signout: pathology residents, M-4 medical students, medical technology students (three times/week; 48 weeks/year).
4. Immunopathology component of Block E (Clinical Pathology); ad hoc topical reviews: pathology residents (64 contact hours).

B. SUPERVISION OF RESEARCH ACTIVITIES

1. Anjali Desai, Ph.D., Research Investigator; 6/15/96-present.
2. Biofluid Repository Laboratory (Kun Li, M.D.)

III. RESEARCH ACTIVITIES

A. PROJECTS UNDER STUDY

1. Modulation of proatherogenic endothelial and smooth muscle cell functions by erythropoietin, reactive oxygen intermediates, and reactive nitrogen intermediates.
2. Role of erythropoietin in accelerated atherogenesis in ApoE (-/-) mice with drug-induced chronic renal disease.
3. Measurement of NO production by endothelial cells using a chemical sensor. (Collaboration with Michael Meyerhoff, Ph.D., Department of Chemistry, University of Michigan).

4. Pathophysiologic role of oxidants in uremia and its complications (collaboration with Rajiv Saran, M.D., Department of Internal Medicine, University of Michigan Medical School).

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Interviewer, Pathology residency candidates, 1989-present.
2. Chairman, Laboratories Communications Committee, 1993-present.
3. Chairman, Department of Pathology Quality Assurance Committee, 1993-present.
4. Clinical Associate and Advisory Committee for Medical Technology Program, Eastern Michigan University, 1993-present.
5. Chairman, Category Risk II Faculty Salary Planning Committee, Department of Pathology, 1996-2005.

B. INSTITUTIONAL

1. Member, Steering Committee; Orders Management Project, University of Michigan Health System (25% effort funded).
2. Professional Billing Compliance Committee, University of Michigan Medical School, 1999-present.
3. Member, Center for Genetics in Health and Medicine Steering Committee, University of Michigan, 2005-present.
4. Promotion Reader, University of Michigan Provost, 2006.

C. REGIONAL/NATIONAL/INTERNATIONAL

1. Member, Test Committee for Clinical Pathology, American Board of Pathology, 1999-2005.
2. Member, Council for Diagnostic Immunology and Molecular Pathology, American Society of Clinical Pathologists, 1998-present.
3. Member, Diagnostic Immunology Resource Committee, College of American Pathologists, 2000-present.
4. Member, Test Committee for Molecular Genetic Pathology; American Board of Pathology, 2006.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Ad hoc referee for
    a. *American Journal of Pathology.*
    b. *Laboratory Investigation.*
    c. *Human Pathology.*
    d. *Journal of Applied Physiology.*
    e. *Lung.*
    f. *Blood.*
    g. *Journal of Laboratory and Clinical Medicine.*
    h. *Pediatric Research.*
    i. *Journal of Leukocyte Biology.*
    j. *American Review of Respiratory Disease.*
    k. *Chest.*
    l. *Journal of Pharmacology and Experimental Therapeutics.*
    m. *Circulation.*
    n. *Ophthalmology.*
    o. *American Journal of Respiratory Cell and Molecular Biology.*
    p. *Clinical Immunology and Immunopathology.*

q. Circulation Research.
r. Journal of Immunology.
s. Surgery.
t. Reviews of Infectious Diseases.
u. Infection and Immunity.
v. Experimental Lung Research.
w. Journal of Rheumatology.
x. Clinical Infectious Diseases.
y. Journal of Clinical Investigation.
z. Cytometry.
aa. Biological Signals.
bb. Metabolism.
cc. Molecular Medicine Today.
dd. American Journal of Respiratory and Critical Care Medicine.
ee. The Cancer Journal.
ff. British Journal of Pharmacology.
gg. *Kidney International*

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Desai A, Zhao Y, Lankford H, Warren JS: Nitric oxide suppresses EPO-induced monocyte chemoattractant protein-1 in endothelial cells: implications for atherogenesis in chronic renal failure. Lab Invest 86:369-379, 2006.

B. BOOKS AND CHAPTERS IN BOOKS

1. Warren JS: Immunopathology, in Rubin E (ed.) Pathology, 4th Edition, Lippincott-Williams and Wilkins, Philadelphia, PA, 119-163, 2005.
2. Warren JS, Ward PA: The inflammatory response, in Lichtman MA, et. al. (eds.) Williams Hematology, 7th Edition, McGraw-Hill, New York, NY, 221-230, 2006.
3. Warren JS: Immunoglobulin Quantification and Viscosity Measurement, in Keren DF (ed) Manual of Molecular and Clinical Laboratory Immunology, 7th Edition, American Society of Microbiology Press, Washington, DC, 69-74, 2006.

Thomas E. Wilson, M.D., Ph.D.
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES

A. ASSISTANT DIRECTOR OF THE MOLECULAR DIAGNOSTICS LABORATORY.
   1. Performed signout coverage in the Director's absence.
   2. Consultation in the implementation of new procedures.

II. TEACHING ACTIVITIES

A. MENTOR, UNDERGRADUATE STUDENTS
   1. Renee Vander Laan (completed honors thesis)
   2. Brian Renard (completed honors thesis)
   3. Mary Dent
   4. Deniz Campbell-Cecen

B. MENTOR, POSTDOCTORAL FELLOWS
   1. Anandi Karumbati (graduated to new fellowship)
   2. Rajashree Deshpande
   3. Dongliang Wu

C. MENTOR, GRADUATE STUDENT FELLOWS
   1. Phillip Palmbos (MSTP, CMB)
   2. James Daley (CMB)

D. MENTOR, ROTATION STUDENT
   1. Tricia Velting (PIBS)

E. MEMBER, THESIS COMMITTEES
   1. Marc Prindle (CMB)
   2. Sandra Durkin (Human Genetics)
   3. Rebecca Hausler (Biological Chemistry)
   4. Matthew Pratt-Hyatt (Biological Chemistry)
   5. Jessica O'Konek (Pharmacology)

F. MEMBER, PRELIMINARY EXAMINATION COMMITTEES
   1. Grant Rowe (Cellular and Molecular Biology)
   2. Troy Lionberger (Cellular and Molecular Biology)
   3. Graham Brady (Pathology)

G. LECTURES/OTHER
   1. Path 581, 1 lecture and Neoplasia section master.
   2. Path 850, Coursemaster, research seminar for graduate students.
   3. CMB Short Course on Genome Stability and Repair, Coursemaster.
   4. CME coordinator for physicians, Pathology Research Seminar.

5. University of Michigan Physician Postdoctoral Research Training Program: Two week full-time course in molecular biology and DNA repair for physician fellows.

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Principal Investigator (30%), "Systematic Genetic Analysis of Yeast NHEJ", NIH/NCI 1 R01 CA102563-01, $157,500/current year ($787,500/five years), 8/1/2004-7/31/2009.
2. Principal Investigator (0% effort; research funding only, no salary support), "Mechanism(s) of Resection at Double-Stranded Chromosome Breaks", University of Michigan OVPR Faculty Grants and Awards Program, $15,000 direct costs over one year, 12/1/2005-11/30/2006.
3. Principal Investigator (0% effort; research funding only, no salary support), "Mechanism(s) of Resection at Double-Stranded Chromosome Breaks", University of Michigan Rackham Faculty Grant, $15,000 direct costs over one year, 4/1/2006-3/31/2007.
4. Mentor, University of Michigan Cancer Biology Training Grant Predoctoral Fellowship, Phillip L. Palmbos, 9/1/2004-8/31/2005.
5. Mentor, University of Michigan Rackham Predoctoral Fellowship, James M. Daley, 5/1/2005-4/30/2006.
6. Mentor, University of Michigan Summer Biomedical Research Fellowship, Renee M. Vander Laan, 5/1/2005-8/31/2005.
7. Mentor, University of Michigan Summer Biomedical Research Fellowship, Brian M. Renard, 5/1/2005-8/31/2005.

B. PENDING

1. Principal Investigator, "Mechanisms of mutagenesis during nonhomologous end joining", NIH/NIGMS, R01 submitted 6/1/2006 (35% effort), $225,000/year ($1,125,000/five years), 4/1/2007-3/31/2012.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Chair and organizer, Pathology Research Seminar Series.
2. Member, Pathology Graduate Program Curriculum Committee.
3. Member, Pathology Graduate Program Preliminary Examination Committee.
4. Pathology student recruitment activities.

B. INSTITUTIONAL

1. Member, committee for reorganization of residency training in Clinical Pathology.
2. Member, MSTP Career Advisory Panel.
3. MSTP student interviews.
4. Faculty candidate interviews/recruitment.
5. Member, Cellular and Molecular Biology Program Steering Committee.
6. PIBS student interviews and recruitment dinners.
7. Biological Sciences Scholars Program, University of Michigan.
8. Member, Michigan Comprehensive Cancer Center.
9. Member, Cellular and Molecular Biology Training Program.

C. REGIONAL/NATIONAL/INTERNATIONAL

1. Ad hoc grant review: NIH Molecular Genetics B (MGB, Oct. 2005), National Science Foundation, United States-Israel Binational Science Foundation.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Manuscript Review:
   - *a. Molecular and Cellular Biology*
   - *b. Genetics*
   - *c. Molecular Cell*
   - *d. Nature*
   - *e. DNA Repair*
   - f. *Journal of Bacteriology*

B. INVITED LECTURES/SEMINARS

1. "Nonhomologous end joining of chromosome breaks: Universal solutions to making ends meet." Biochemistry seminar, Wayne State University, March 24, 2006.
2. "The influence of protein interactions and DNA joint structures on outcomes of yeast nonhomologous end joining". Mutagenesis Gordon Research Conference, Salve Regina University, Rhode Island, August, 2006.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS

1. Daley JM, Vander Laan RL, Suresh A, Wilson TE. DNA joint dependence of Pol X family polymerase action in nonhomologous end joining. J Biol. Chem. 280: 29030-7 (2005).
2. Palmbos PL, Daley JM, Wilson TE. Mutations of the Yku80 C-terminus and Xrs2 FHA domain specifically block yeast nonhomologous end-joining. Mol. Cell. Biol. 25: 10782-90 (2005).
3. Pratt-Hyatt MJ, Kapadia1 KM, Wilson TE, Engelke DR. Increased recombination between active tRNA genes. DNA and Cell Biology. in press (2006).

B. BOOKS AND CHAPTERS IN BOOKS

1. Daley JM, Palmbos PL, Wu D, Wilson TE. Nonhomologous end joining in yeast. Annual Review of Genetics 39: 431-51 (2005).
2. Wilson TE. Nonhomologous end joining: mechanisms, conservation, and relationship to illegitimate recombination. Current Topics in Genetics, Recombination. In press.

Anuska Andjelkovic-Zochowska, M.D., Ph.D.
Assistant Professor of Pathology

I. CLINICAL ACTIVITIES – None

II. TEACHING ACTIVITIES

A. GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

1. Svetlana Stamatovic, MD, Ph.D. (postdoctoral fellow).
2. Oliver Dimitrijevic, M.D. (postdoctoral fellow).
3. Muhammad Alghanem (undergraduate student, UROP project).

III. RESEARCH ACTIVITIES

A. SPONSORED SUPPORT

1. Principal Investigator (70%), "Chemokine effects on blood-brain barrier permeability" Agency: National Institute of Neurological Disorders and Stroke; NIH R01 (NS 044907), $241,434/yr ($735,970/3yr) 12/1/2003-11/30/2006.
2. Co-principal Investigator (30%), "Endothelial preconditioning and ischemic brain injury" Agency: National Institute of Neurological Disorders and Stroke; NIH R01 (NS 34709), $290,098.6/yr (1,450,493/5yr) 6/1/2003-5/31/2008.

B. PROJECTS UNDER STUDY

1. Molecular mechanism of CNS inflammation.
2. Inflammatory mediators and glioma metastasis.

IV. ADMINISTRATIVE ACTIVITIES

A. DEPARTMENTAL

1. Member, Pathology Graduate Program.

B. INSTITUTIONAL

1. Member, Neuroscience Graduate Program.
2. PIBS student interviews.

C. REGIONAL/NATIONAL/INTERNATIONAL

D. Grant review for Republic of Serbia Ministry of Science and Environmental Protection.

V. OTHER RELEVANT ACTIVITIES

A. EDITORIAL BOARDS/REVIEWS

1. Manuscript Review
    a. *Journal of Neuroscience.*
    b. *Journal of Neurochemistry.*
    c. *Journal of Applied Physiology.*

d. *European Journal of Cell Biology.*
e. *European Cytokine Networks.*
f. *Atherosclerosis.*
g. *Brain Research.*
h. *Experimental neurology.*

B. HONORS AND AWARDS
1. December 2005- Visitor professor University of Nis, Nis Serbia.

C. INVITED LECTURES/SEMINARS
1. "Chemokines in Brain Inflammation: The Role of Chemokines in Modulation of Blood-Brain Barrier Permeability" Gordon Research conference; Barriers in the CNSs, June 27-July 2, 2004.
2. "Stroke and inflammation: New insights into the role of chemokines and their receptors" University Of Michigan, Department of Neurology, May 6, 2005.
3. "Effect of MCP-1 on Blood brain barrier permeability and brain edema formation" 13th International Symposium on Brain Edema and Conference on Intracerebral Hemorrhage, Ann Arbor May 31-June 4 2005.
4. "The effect of chemokine on brain endothelial cells" Department of Physiology, University of Michigan, Ann Arbor, December 4, 2005.

VI. PUBLICATIONS

A. ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS
1. Stamatovic SM, Shakui P, Keep RF, Moore BB, Kunkel SL, van Rooijen N, Andjelkovic AV (2005): Monocyte chemoattractant protein-1 regulation of blood brain barrier permeability. J Cerebral Blood flow and metabolism. 25(5):593-606.
2. Keep RF, Andjelkovic AV, Stamatovic SM, Shakui P, Ennis SR. (2005) Ischemia-induced endothelial cell dysfunction. Acta Neurochir Suppl. 2005; 95:399-402.
3. Dimitrijevic O, Stamatovic SM, Keep RF, Andjelkovic AV (2006): Effects of the chemokine CCL2 on blood-brain barrier permeability during ischemia-reperfusion injury. J Cerebral Blood flow and metabolism. 26 (6)797-810.
4. Stamatovic SM, Keep RF and Andjelkovic AV (2006 Protein kinase Calpha-RhoA cross-talk in CCL2-induced alterations in brain endothelial permeability. J Biol. Chem. 281(13):8379-88.
5. Stamatovic SM, Dimitrijevic OB, Keep RF, Andjelkovic AV. (2006) Inflammation and brain edema: new insights into the role of chemokines and their receptors. Acta Neurochir Suppl. 2006; 96:444-50.
6. Stamatovic SM Keep RF and Andjelkovic AV: (2006) CCL2 regulates angiogenesis via activation of Ets-1 transcription factor. J.Immunology 177 (4) in press.

B. ABSTRACTS, BOOK REVIEWS, PUBLISHED LETTERS TO THE EDITOR, MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS
1. Stamatovic SM, Dimitrijevic O, Keep RF, Andjelkovic AV: The critical role of CCL2/CCR2 axis in murine glioma invasion, Society for Neuroscience meeting, Washington, DC, November, 2005.

2. Dimitrijevic O, Stamatovic SM, Keep RF and Andjelkovic AV: Absence CCR2 has protective role in developing postischemic inflammation, Society for Neuroscience meeting, Washington, DC, November, 2005.
3. Andjelkovic AV, Stamatovic SM, Dimitrijevic OB and Keep RF, Mechanism of CCL2 induced internalization of brain endothelial tight junction proteins Keystone Symposia Chemokines (A4) Jan 15 - Jan 20, 2006, Snowbird Resort, Snowbird, Utah.
4. Dimitrijevic O, Stamatovic SM, Keep RF and Andjelkovic AV: Absence of Ccr2 has protective role in developing postischemic inflammation. Keystone Symposia Chemokines (A4) Jan 15 - Jan 20, 2006, Snowbird Resort, Snowbird, Utah.
5. Stamatovic SM, Dimitrijevic OB, Keep RF, Kunkel SL and Andjelkovic AV: Chemokine CCL2 causes redistribution of junctional adhesion molecule (JAM-B) in brain endothelial cells, Keystone Symposia Chemokines (A4) Jan 15 - Jan 20, 2006, Snowbird Resort, Snowbird, Utah.
6. Andjelkovic AV, Dimtrijevic O, Stamatovic SM, Keep RF: Specific role of monocyte chemoattractant protein-1 in brain inflammation after cerebral ischemia. International Stroke Conference 2006, February 16- February 18, 2006, Gaylord Palms, Kissimmee, Florida.

Research Investigators

Research Investigators

Narasimharao Bhagavathula, Ph.D. ..... J. Varani Laboratory

Research Focus: The four primary areas of research include:

1. Role of Calcium sensing receptor in colon cancer.
2. Role of MMP-3 in acute and chronic lung injury.
3. Topical PPARϱ-ligands for treatment of psoriasis.
4. Development of a non-irritating retinoid for replacement of RA in therapy of skin aging and as a wound-healing agent.

Corrado Caslini, Ph.D..... J. Hess Laboratory

Research Focus: Targeting of MLL-menin interaction as therapeutic strategy for MLL-mediated leukemia; functional characterization of MLL binding with telomeric and centromeric heterochromatin and BMI1-mediated silencing of differentiation-determining *GATA* genes in ovarian cancer.

Bo-Chin Chiu, Ph.D. ..... S. Chensue Laboratory

Research Focus: Understanding of the innate immune response in the respiratory system in old age using the mouse model. The goal is to enhance protective immunity in the elderly by mobilizing the innate immune response through intranasal vaccination.

Anjali Desai, Ph.D. .....J. Warren Laboratory

Research Focus: The primary research efforts being undertaken include:

1. Effect of recombinant human erythropoietin on the development of atherosclerosis in apo E-knockout mice.
2. Role of alpha-tocopherol (vitamin E) in reducing oxidative stress, endothelial dysfunction and advanced glycosylation end products in chronic renal insufficiency.
3. Mechanism of the antiapoptotic activity of erythropoietin in vascular endothelial and smooth muscle cells.
4. Effect of erythropoietin on nitric oxide bioavailability

Mohan Dhanasekaran, Ph.D. ..... A. Chinnaiyan Laboratory

Research Focus: Genomic profiling studies utilizing microarray profiling.

Gonzalo G. Garcia, Ph.D. .....R. Miller Laboratory

Research Focus: Immunosenescence. Molecular mechanism of age-related changes in immunofunction. Age-related declines in the T lymphocytes signal transduction and T cell function.

James M. Harper, Ph.D.....R. Miller Laboratory

Research Focus: Role of early postnatal undernutrition in the determination of stress resistance and life span in mice, pharmacological manipulation of the GH/IGF axis as a modulator of stress resistance and aging in mice, and caloric restriction, stress resistance, and life span in macrophage migration inhibitory factor (MIF) knockout mice

Thirumala-devi Kanneganti, Ph.D. .....G. Nuñez Laboratory
Research Focus: Understanding the role of NALPs (pyrin domain containing nucleotide binding oligomerization (NOD) family members) in mediating differential responses to distinct pathogen classes. These studies have implications to the investigations on infectious diseases, autoimmunity, and vaccine development.

Jiyoun Kim, Ph.D. .....D. Remick Laboratory
Research Focus: The study of molecular mechanisms of pulmonary inflammation, traditional and novel anti-inflammatory treatments in a novel mouse model of asthma induced by house dust extract.

Randall N. Knibbs, Ph.D. .....L. Stoolman Laboratory
Research Focus: Trafficking of antigen loaded dendritic cells to lymph nodes in adoptive immunotherapy and transduction of tumor specific T-cells with alpha-4 integrin or L-selectin to direct trafficking to tumor vasculature in adoptive immunotherapy.

Tianju Liu, M.D., Ph.D..... S. Phan Laboratory
Research Focus: A novel telomerase expressing lung fibroblast phenotype, lung FIZZ1 expression and role in fibrosis and notch signaling in myofibroblast differentiation

Christine McDonald, Ph.D. .....G. Nuñez Laboratory
Research Focus: Nod2 is an intracellular protein that functions as a sensor of bacteria. Stimulation of Nod2 by its bacterial ligand results in the activation of pro-inflammatory signaling pathways. Genetic variations in the NOD2 gene, which result in altered function of Nod2, are associated with the development of inflammatory diseases, such as Crohn's Disease and Blau Syndrome. The focus of my research involves characterizing the mechanisms of activation and regulation of Nod2 signaling.

Thekkelnaycke Rajendiran, Ph.D. .....K. Johnson Laboratory
..... A. Chinnaiyan Laboratory
Research Focus: Identifying biomarkers for Human serum vasculitis: Conduct research to identify serum biomarkers for vasculitis. Proteins that are solely associated with vasculitis serum would be identified using LC-MS-MS analysis. The overall goal would be to multiplex the biomarkers to achieve high sensitivity and specificity in detection of vasculitis. A similar approach would be concurrently used to study serum biomarkers in prostate cancer.

Arun Sreekumar, Ph.D. ..... A. Chinnaiyan Laboratory
Research Focus: Proteomics of Prostate Cancer using Protein Microarrays, Multidimension Protein Separation and Mass Spectrometry. This includes, Biomarker Discovery, Interactome Profiling, Quantitative and Qualitative Profiling Proteomic alterations during cancer development/progression and AutoAntibody Profiling.

Sooranarayana Varambally, Ph.D. ..... A. Chinnaiyan Laboratory
Research Focus: The role of polycomb group proteins in prostate and breast cancer progression, integrative proteomic and genomic analysis of prostate cancer, and the role of CtBP1 in prostate cancer.

George Xiaoju Wang, Ph.D. ..... A. Chinnaiyan Laboratory

Research Focus: Cancer development and progression, as well as biomarker discovery, using proteomic and bioinformatic approaches, with a primary focus on prostate cancer. The long term goals would be to study alterations in levels of various biomarkers identified in serum samples from patients with different cancer, by multiplexing the biomarkers to identify cancer patients from control subjects.

Rong Wu, M.D. ..... K. Cho Laboratory

Research Focus: Development and characterization of a murine model of endometrioid adenocarcinoma induced by tissue specific expression of ß-catenin. oncogene activation in ovarian cancer pathogenesis studies on the molecular pathogenesis of ovarian endometrioid adenocarcinomas, and screening for protein markers in ovarian carcinoma using a liquid separation/mass mapping method

Liyu Xing, Ph.D. .....D. Remick Laboratory

Research Focus: Regulation of on-going inflammation:

1. HMG-1 protein expression in mouse and human monocytes;
2. The role of anti-oxidants in the regulation of cytokine and chemokine expression in response to inflammatory stimulation.