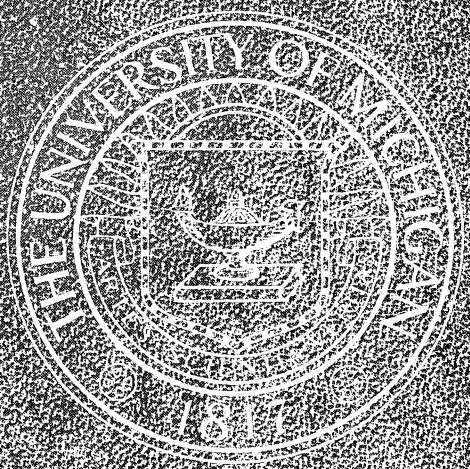
THE UNIVERSITY OF MICHIGAN

Department of Pathology

ANNUAL REPORT



1 July 1984 - 30 June 1985

THE UNIVERSITY OF MICHIGAN

Department of Pathology

ANNUAL REPORT

1 July 1984 - 30 June 1985

TABLE OF CONTENTS

List of Faculty

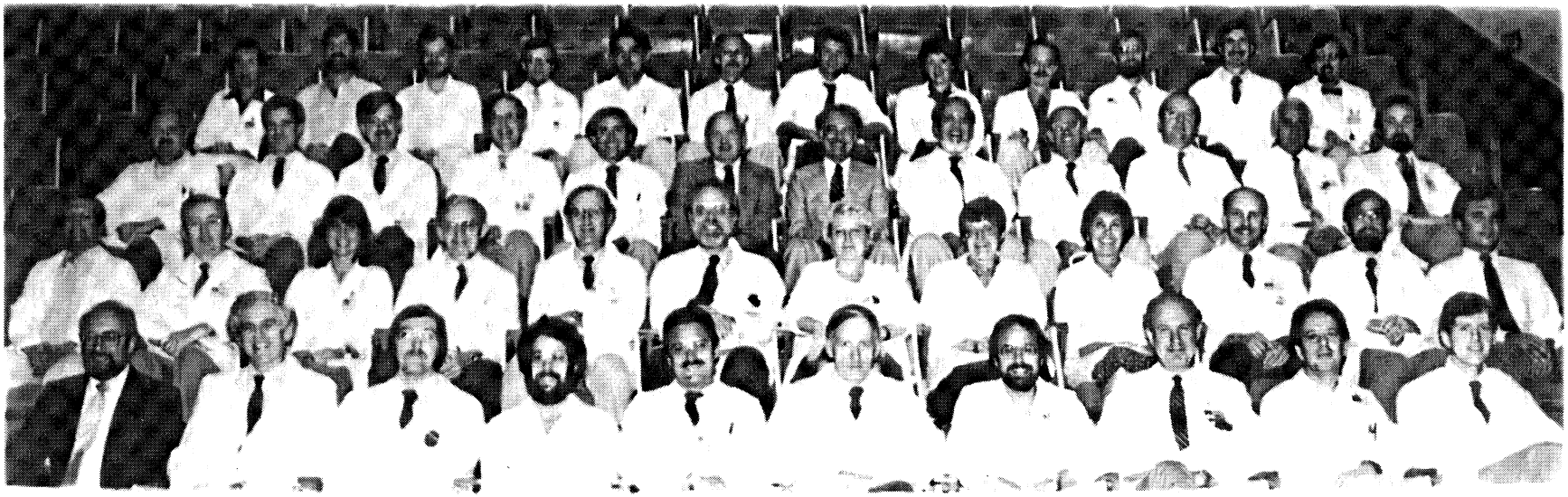
LIST OF FACULTY

Name	Rank	Institutional Affiliation
Abell, Murray R.	Professor Emeritus	The University of Michigan
Abrams, Gerald D.	Professor	The University of Michigan
Annesley, Thomas M.	Assistant Professor	The University of Michigan
Appelman, Henry D.	Professor and Director, Anatomic Pathology	The University of Michigan
Barnes, Barbara A.	Assistant Professor	The University of Michigan
Beals, Theodore F.	Assistant Professor	Veterans Administration Medical Center
Burkholder, Peter M.	Professor	Veterans Administration Medical Center
Capps, Rodney D.	Assistant Professor	The University of Michigan
Courtney, Richard M.*	Assistant Professor	The University of Michigan
D'Amato, Constance J.	Assistant Professor	The University of Michigan
de la Iglesia, Felix**	Adjunct Research Scientist	Warner-Lambert; Parke Davis
Duque, Ricardo	Assistant Professor	The University of Michigan
England, Barry G.	Associate Professor	The University of Michigan
Fantone, Joseph C.	Assistant Professor	The University of Michigan
Fine, Gerald***	Professor	Henry Ford Hospital
Flint, Andrew	Assistant Professor	The University of Michigan
Friedman, Bruce A.	Professor	The University of Michigan
Giacherio, Donald	Instructor	The University of Michigan
Gikas, Paul W.	Professor	The University of Michigan
Gluck, Sandra C.	Instructor	The University of Michigan

Name	Rank	Institutional Affiliation
Goldman, Robert T.‡	Assistant Professor	Wayne County General Hospital
Hanks, Carl T.*	Associate Professor	The University of Michigan
Hartsuff, Florence	Assistant Professor Emeritus	The University of Michigan
Headington, John T.	Professor	The University of Michigan
Heidelberger, Kathleen P.	Professor	The University of Michigan
Hendrix, Robert C.	Professor Emeritus	The University of Michigan
Hicks, Samuel P.	Professor Emeritus	The University of Michigan
Hinerman, Dorin L.	Professor Emeritus	The University of Michigan
Hudson, Jerry L.	Assistant Professor	The University of Michigan
Hyder, Dan M.	Instructor	Veterans Administration Medical Center
Johnson, Kent J.	Associate Professor	The University of Michigan
Judd, W. John	Associate Professor	The University of Michigan
Keren, David F.	Associate Professor	The University of Michigan
Kumar, Neelam B.	Assistant Professor	The University of Michigan
Kunkel, Steven L.	Assistant Professor	The University of Michigan
Landefeld, Thomas D.	Assistant Professor	The University of Michigan
Lloyd, Ricardo V.	Assistant Professor	The University of Michigan
Marasco, Wayne	Research Investigator	The University of Michigan
McClatchey, Kenneth D.	Associate Professor and Associate Chairman	University of Michigan
McCoy, J. Philip	Instructor	The University of Michigan
McKeever, Paul E.	Associate Professor	The University of Michigan
Midgley, A. Rees	Professor	The University of Michigan

Name	Rank	Institutional Affiliation
Naylor, Bernard	Professor	The University of Michigan
Oberman, Harold A.	Professor and Director, Clinical Laboratories	The University of Michigan
Phan, Sem H.	Assistant Professor	The University of Michigan
Pierson, Carl L.	Assistant Professor	The University of Michigan
Regezi, Joseph A.*	Associate Professor	The University of Michigan
Rowe, Nathanial H.*	Professor	The University of Michigan
Saeed, Sheikh M.***	Associate Professor	Henry Ford Hospital
Schmidt, Robert W.	Professor	Wayne County General Hospital
Schnitzer, Bertram	Professor	The University of Michigan
Shope, Thomas C.	Associate Professor++	The University of Michigan
Silverman, Eugene M.	Associate Professor	Wayne County General Hospital
Smolen, James E.	Associate Research Investigator	The University of Michigan
Stoolman, Lloyd	Assistant Professor	The University of Michigan
Till, Gerd O.	Associate Professor	The University of Michigan
Varani, James	Assistant Professor	The University of Michigan
Ward, Peter A.	Professor and Chairman	The University of Michigan
Weatherbee, Lee	Associate Professor	The University of Michigan
Wilson, Barry S.	Assistant Professor	The University of Michigan
Wolter, J. Reimer+	Professor	The University of Michigan

* Joint Appointment, Dental School
** Clinical Appointment, Warner-Lambert, Parke Davis
*** Clinical Appointment, Henry Ford Hospital
\+ Joint Appointment, Department of Pediatrics and Communicable Diseases
++ Joint Appointment, Department of Opthalmology



THE DEPARTMENT OF PATHOLOGY

FACULTY 1985 - 1986

General Statement

THE UNIVERSITY OF MICHIGAN MEDICAL SCHOOL
DEPARTMENT OF PATHOLOGY

ANNUAL REPORT FOR 1984/1985

It is now possible to view the past year's accomplishments as well as to look back on the past five years. In general, much has been accomplished and for that the entire faculty of the Department of Pathology can take pride. At the same time, changes in the Medical reimbursement area are occurring with great rapidity and momentum; it is now possible to discern a "ripple effect" of these changes on several aspects of Departmental activity, the consequences of which are briefly touched upon below.

The encouraging news is the progress the Department has made in achieving the chief goal established five years ago: to build a research program of excellence in the area of immunopathology with positive reinforcing impacts on the educational and service activities of the Department. The Department continues to develop strong research as well as clinical ties with other Clinical Departments in the Medical Center. Funded NIH research programs have close collaborative scientific ties with the Pulmonary Division (Department of Internal Medicine), the Department of Surgery, and the Pediatric Hematology/Oncology Division of the Department of Pediatrics and Communicable Disease. In early 1986, we will move into new, additional research space in the new Medical Science Research Building. As indicated in last year's Annual Report, a mark of success is the receipt of career development type awards by a substantial number of young faculty members: Research Career Development Award (NIH), Dr. B. Wilson; Clinical Investigator Awards, Drs. J.C. Fantone, K.J. Johnson and L. Stoolman; Established Investigator of the American Heart Association, Drs. S.L. Kunkel and S.H. Phan; and a New Investigator Award (NIH), Dr. R. Lloyd. This probably stands as a national record for an academic Department of Pathology. The substantial number of new research grant awards, together with already existing research grants (total direct and indirect cost for 1984-85, $2.3 million) are additional reflections of success in the burgeoning research activities in the Department of Pathology. Of special note is Dr. Ricardo Lloyd being named recipient of the Arthur Purdy Stout Award in Surgical Pathology, given yearly to a young surgical pathologist with the most outstanding evidence of productivity. It is a great honor for the Department to have one of its surgical pathologists (and NIH-funded research investigator) selected for this Award by the International Academy of Pathologists. It is also important to note that the research activities involving monoclonal technology and flow cytometric analysis have had direct and positive impacts in diagnostic service activities as reflected by publications involving both diagnostic pathologists as well as basic science research faculty of the Department. A research area which will unquestionably have secondary, positive impacts in diagnostic pathology and must be developed is molecular genetics. Using CDNA and other probes it will be possible to define the presence of certain gene products in cells and tissues. In the early Fall of 1985, the Department of Pathology will initiate recruitment efforts for the identification of well-trained investigators in the area of molecular genetics. Sources in this effort should position the Department for a tie with The University of Michigan Howard Hughes Medical Institute.

As part of the past strategy to gain a better perspective on the looming impacts of reimbursement changes, the Department has taken a highly conservative approach for replacements of retired or departed faculty. We have yet to replace the positions that were occupied by Drs. Hendrix, Hinerman, Zis and Kumar. With an increase in the past year in the volume of surgical pathology specimens of nearly 24%, a 7.5% increase in volume of clinical pathology tests, and the consolidation of many of the Special Limited Function Laboratory activities into the Pathology Laboratories, it is apparent that we will now have to cautiously renew recruitment activities. Consolidation of the Toxicology and Pediatric Laboratory functions now appears complete; over the Fall and Winter we expect to consolidate laboratory activities currently consigned to the Department of Internal Medicine. Despite the Hospitals' enforced Pathology Laboratories Expense Reduction Program of $500,000, the Pathology faculty have accommodated to these events and have increased the productivity and efficiency of their laboratories. The Pathology faculty have also initiated extramural activities with outside corporations; this began September 1st, 1984. For this, they deserve great credit.

Other aspects on service activities deserve note. The Aspiration Cytology Service, which is closely coordinated with other clinical departments, will increasingly become an important new diagnostic activity for the Department of Pathology. The availability of new monoclonal antibodies (from commercial sources as well as those developed in the Department's own research laboratories) has led to application of these antibodies to clinical biopsy specimens (as demonstrated by several publications of our surgical pathologists). Interestingly, this has resulted in a greatly reduced volume of electron microscopy (EM) specimens. Thus, the number of cases involving EM analysis of tumors has fallen significantly while the number of specimens subjected to immunoperoxidase analysis has increased sharply. Another case indicating shifts in the diagnostic approaches is related to the wide use of cyclosporin in transplant patients and the unexplained tendency of this drug to mask clinical signs of transplant rejection. This has led to a dramatic increase in the number of specimens processed by the Renal Biopsy Diagnostic Service. The changing technology and the clinical application of new drugs is accelerating this trend. With the expanding transplantation program and the commitment of the Department of Pathology to collaborative support for the Biological Response Modifiers Program, which is being developed by Drs. Foon and Wicha (Hematology/Oncology Division, Department of Internal Medicine), major new service and research demands will be placed upon our faculty.

In the educational area, the Department, under the leadership of Dr. Gerald Abrams, successfully revised teaching approaches in the Second Year Pathology Lecture and Laboratory series in order to make the process significantly more efficient. Utilizing the "team teaching" approach, subspecialty areas of pathology are taught by a small number of experts who provide instruction to all students. In addition, these individuals have the responsibility to develop common syllabus material and make kodachrome slides available to all instructors. This has greatly reduced the educational preparation time of faculty. Both students and faculty appear to be satisfied with these changes and there appears to be consensus that the quality of teaching has been improved. There has been substantial changes in the House Officer Program because of the sale of Wayne

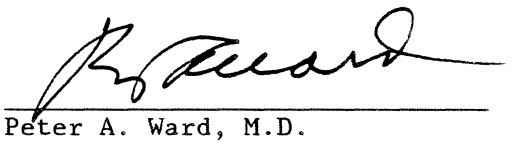
County General Hospital to private industry and the change in administration. The Westland Medical Center has subcontracted its Pathology Services to a private corporation resulting in our termination of faculty and residency appointments at the facility. Dr. Robert Schmidt will return to the Department full-time in the Fall of 1985 and three clinical faculty were notified of their final year of appointment. In Spring of 1985, the Board of Regents voted for discontinuation of the Medical Technology Program, which was initiated by Dr. C.V. Weller in the early 1950's. Although this program has been of high quality, its dependence upon financial subsidy from the University Hospitals and the phasing out of this subsidy because of changes in medical reimbursement have led to the difficult conclusion that the program could not be maintained without a significant infusion of new support from the General Fund. Based on all of these considerations, program discontinuance was decided upon. The program will be phased out over the next 24 months.

Because of external forces, the Residency Training Program is an area of concern. With the drastic national impacts of reimbursement changes on revenue for pathology services, in the 1984-85 academic year there was nationally a 35% drop in the number of medical students applying for appointment in Pathology Residency Programs. For the 32 pathology residency slots in the State of Michigan listed in the National Residency Matching Program, only two slots were filled through the Matching Program. It has become evident that pathology is rapidly vanishing as an attractive career for medical graduates. In order to overcome these trends, the Department will more aggressively recruit and will emphasize the opportunities in the program for individuals interested in academic careers in Pathology. Based on last year's experience, it has also become apparent that we will have to guarantee applicants to our residency program a fifth year of training, since this is a new requirement recently imposed by the American Board of Pathology. Accommodation of this change will require reducing the number of slots available for entry-level residents.

The Postdoctoral Training Program in Immunopathology continues to be supported by a training grant from the NHLBI and is flourishing as a fellowship program. Currently there are ten postdoctoral fellows in the Department (four M.D.'s, four Ph.D.'s, and two D.V.M.'s) as well as approximately 12 undergraduate students involved in the research laboratories throughout the Department. Many of these undergraduate students (approximately half being medical students) are involved year-round in laboratory research activities.

We note with sadness the death on March 15, 1985, of Dr. A. James French, Professor-Emeritus of Pathology and Past Chairman. The Department dedicated the newly renovated A. James French Conference Room in October, 1984, before Dr. French became ill. Dr. French built the clinical clinical foundations of the Department, making progress of the past five years both feasible and possible. Accordingly, Dr. French's contributions will last long into the future.

Looking at what has been accomplished during the past five years, we can all be proud and look forward to the next five years with anticipation and eagerness.

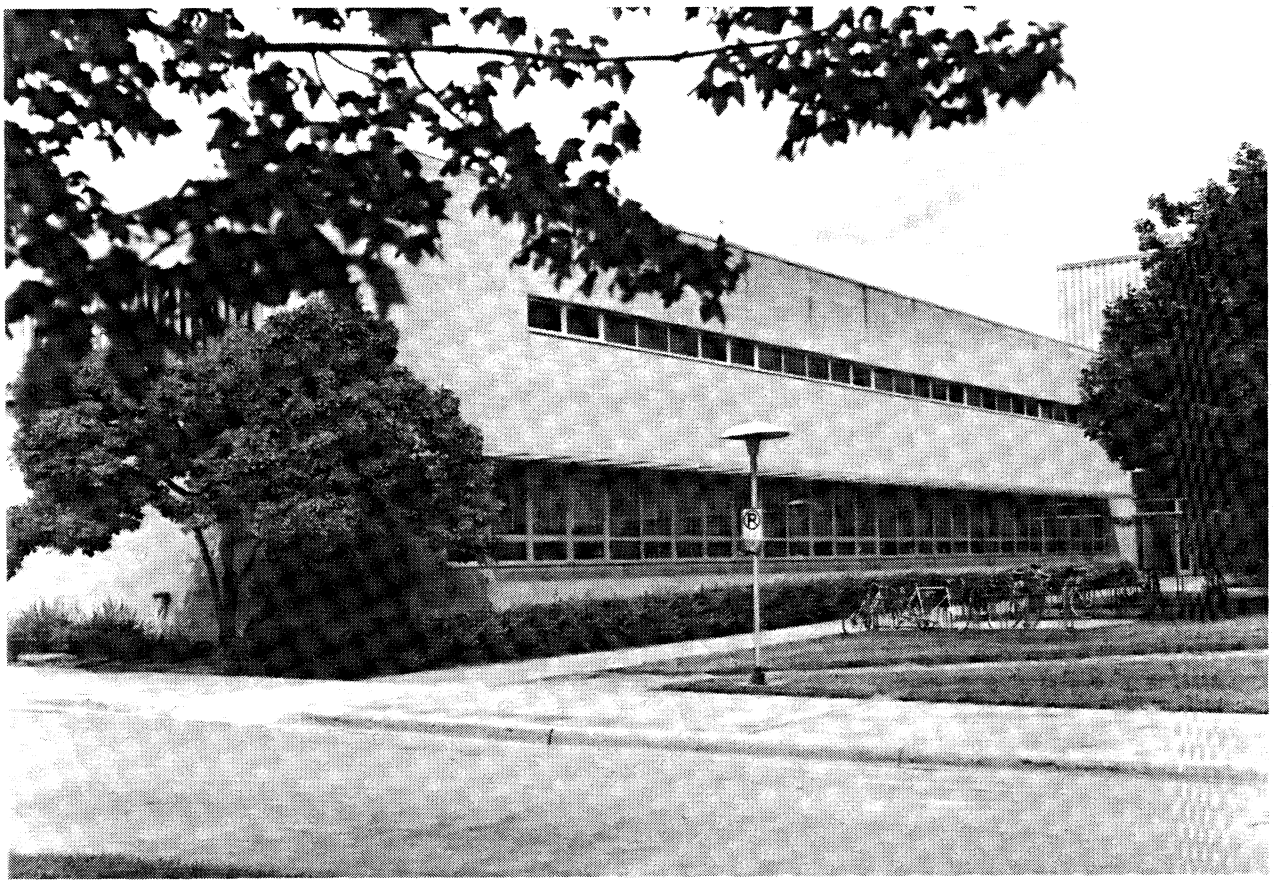


Peter A. Ward, M.D.
Professor and Chairman
16 August 1985

M Labs

Department of Pathology
University of Michigan
Medical Center

Pathology Section
of the
Medical Science I Building



Faculty Reports

GERALD D. ABRAMS, M.D.
PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Surgical Pathology Services - 33 weeks.
B. Necropsy Service - on call.
C. Pathologist, Cardiac Transplant Team.
D. Consultant For Gastrointestinal Pathology.
E. Consultant For Cardiovascular Pathology.
F. Consultant, Unit For Laboratory Animal Medicine.

II. TEACHING ACTIVITIES:

A. Freshman Medical Class:
   1. ICS 500, Sequence Coordinator and Lecturer, "Basic Concepts of Disease" - 20 contact hours.
   2. Histology 501 - Clinical Correlations - two contact hours.

B. Sophomore Medical Class:
   1. ICS 600, Clinico-pathologic Conferences - ten contact hours.
   2. Pathology 600, Lecture and Lab - 16 contact hours.
   3. Pathology 600 - Course Director.

C. Senior Medical Class:
   Coordinator for Senior Clerkships.

D. Hospital:
   1. Cardiovascular Pathology Conference - monthly.
   2. Gastrointestinal Surgical Pathology Conference - monthly.
   3. Internal Medicine CPC - monthly.
   4. Internal Medicine Necropsy Review - monthly.

E. College of LS & A.

F. Graduate School:
   1. Pathology 859, Lectures in General Pathology - 45 contact hours.
   2. Pathology 860, Laboratory in General Pathology - 30 contact hours.
   3. Doctoral Dissertation Committee, S. Mitsos (Pharmacology).

G. Postgraduate Education - Invited Lectures:
   1. Specialty Conference - GI Pathology - IAP, Toronto, March 1985.
   2. Family Practice Review - Towsley Center, March 1985.
   3. Michigan Society of Histotechnology, Ann Arbor, June 1985.
   4. Blood Bank Symposium, Towsley Center, June 1985.

H. House Officers:
   Training in Surgical and Necropsy Pathology.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Oxygen radicals in myocardial infarction (B.R. Lucchesi, Principal Investigator).
B. Pharmacologic studies on Ischemic Heart (B.R. Lucchesi, Principal Investigator).
C. Pharmacologic studies on Coronary Circulation (B.R. Lucchesi, Principal Investigator).
D. Pharmacologic/Toxicologic studies on Mitometh (D.E. Schteingart, Principal Investigator).

PROJECTS UNDER STUDY:

A. Pathogenesis and modification of myocardial infarction (with B.R. Lucchesi).
B. Nephrotoxicity of chemotherapeutic and antibiotic agents (with V. Schweitzer).
C. Histopathologic aspects of coronary angioplasty (with W. O'Neil, P. Lai, H. Glass).
D. Toxicity of Mitometh (with D.E. Schteingart).
E. Ascorbic acid and alcohol toxicity (with V. Zannoni).
F. Miscellaneous clinical-pathologic studies in cardiology and gastrointestinal pathology (in collaboration with Surgery, Radiology, and Internal Medicine).

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Educational Coordinator and Course Director.
B. Chairman, Departmental Advisory Committee on Appointments, Promotions, and Titles.

MEDICAL SCHOOL/HOSPITAL:

A. Basic Science Phase Promotion Board.
B. Clinical Phase Promotion Board.
C. Senior Year Counselor.
D. Academic Affairs Committee.
E. Artwork Committee, R.H.P.
F. Review and Search Committee, Medical and Biological Illustration.
G. LS & A Medical School Task Force to Evaluate Pre-Medical and Medical Education.

V. OTHER RELEVANT ACTIVITIES:

A. Deputy Medical Examiner, Washtenaw County.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Shea, M.J., Murtagh, J.J., Jolly, S.R., Abrams, G.D., Pitt, B. and Lucchesi, B.R.: Beneficial effects of nafazatron on ischemic reperfused myocardium. Eur. J. Pharm. 102:63-70, 1984
2. Werns, S.W., Shea, M.J., Driscoll, E.M., Cohen, C., Abrams, G.D., Pitt, B. and Lucchesi, B.R.: The independent effects of oxygen radical scavengers on canine infarct size: reduction by superoxide dismutase but not catalase. Circ. Res. 56:895-898, 1985
3. Li, K., Rabinovitch, M.A., Juni, J.E., Thrall, J.H., Pitt, B., Das, S.K., Abrams, G.D. and Helvie, M.: Scintigraphic characterization of amyloid cardiomyopathy. Clin. Nuc. Med. 10:156-159, 1985.
4. Jolly, S.R., Schumacher, W.A., Kunkel, S.L., Abrams, G.D., Pitt, B. and Lucchesi, B.R.: Platelet depletion in experimental myocardial infarction. Basic Res. Cardiol., in press.
5. Kern, S.E., Cowen, M.E. and Abrams, G.D.: Malignant fibrous histiocytoma of the heart presenting as unilateral pulmonary thromboembolism and infarct. Human. Path., in press.
6. Agha, F.P., Elta, G. and Abrams, G.D.: Ileal endometriosis presenting as acute small bowel obstruction. Mt. Sinai J. Med., in press

BOOKS AND CHAPTERS IN BOOKS:

1. Abrams, G.D.: Introduction to General Pathology: Mechanisms of Disease.

    Chapter 1. General Concepts of Disease
    Chapter 2. Heredity, Environment and Disease
    Chapter 3. Cellular Injury and Death
    Chapter 4. Inflammation and Repair
    Chapter 5. Immunologic Challenge
    Chapter 6. Infectious Agents
    Chapter 7. Disturbances of Circulation
    Chapter 8. Disturbances of Growth

    In, "Pathophysiology", Price, S.A., and Wilson, L.M., editors. 3rd edition, McGraw Hill, In Press, 1985.

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

1. Abrams, G.D.: Review of "Health and healing: Understanding conventional and alternative medicine", Weil, A. Quart. Rev. Biol. 60:121-122, 1985

THOMAS M. ANNESLEY, PH.D.
ASSISTANT PROFESSOR OF CLINICAL CHEMISTRY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Director, Drug Analysis and Toxicology Laboratory.
B. Associate Director, Section of Biochemistry.
C. Consultant to Veterans Administration Hospital, Ann Arbor, Michigan.
D. Consultant, MDS Laboratories.

II. TEACHING ACTIVITIES:

MEDICAL SCHOOL/HOSPITALS:

A. House Officers:
   1. Participant, Clinical Pathology Rounds.
   2. Lecturer, Clinical Pathology Didactic Lecture Series.
   3. Daily Sign-out and Interpretation of Laboratory Results.
B. Postgraduate Teaching:
   1. Planning Committee, Towsley Continuing Education Series in Clinical Chemistry and Immunology.
   2. Lectures on High Resolution Electrophoresis.
C. Medical Technology:
   1. Course Instructor, Medical Technology Program (Pathology 410). Areas include thyroid physiology, general endocrinology, RIA/immunochemical methods.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Co-Investigator: Smokeless Tobacco Research Council. "Significance of Immune Responses to Oral Carcinogens". D. Keren, Principal Investigator; (10% effort).

PROJECTS UNDER STUDY:

A. Immune Response to Oral Carcinogens, with D. Giacherio and D. Keren and D. Giacherio. "Immunogenicity of 2-AAF-Carrier protein conjugates following parenteral and mucosal immunization in rats and rabbits". D. Keren, L. Anselmi, P. Lincoln, T. Annesley, and D. Giacherio. Cancer Letters (submitted).
B. Centrifugal Analyzers, with Giacherio. "Simple automated procedure for the determination of urine iron in the presence of deferoxamine". D. Giacherio, T. Annesley, and R. Davenport. Clin.Chem. (submitted).

C. Characteristics of Cyclosporine in Blood, with D. Giacherio and C. Feldkamp. "Concentration dependent distribution of cyclosporine in blood". T. Annesley, D. Giacherio, and C. Feldkamp. Clin.Chem. (submitted).

D. Lactate Production During Cardiac Manipulation Studies, with J. Nicklas and F. Morady. "Effect of programmed ventricular stimulation on transmyocardial lactate extraction in patients with and without coronary artery disease". F. Morady, L. DiCarlo, R. Krol, M. DeBuitlier, J. Nicklas, and T. Annesley. Am.J.Cardiol. (submitted).

E. Lactate Dehydrogenase Isoenzymes Following Pulmonary Injury, with P. Ward and G. Till. "Cutaneous thermal burn and acute pulmonary injury. Appearance in serum of lung-related lactate dehydrogenase isoenzyme". T. Annesley, G. Till and W. Ward. J.Free Radicals Biol.Med. (submitted).

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Director, Drug Analysis and Toxicology Laboratory.

MEDICAL SCHOOL/HOSPITAL:

A. Standardization of Procedures Committee.

REGIONAL AND NATIONAL:

A. Executive Committee, Michigan Section, American Association for Clinical Chemistry.
B. Education Committee, Michigan Section, American Association for Clinical Chemistry.
C. Program Chairman, American Association for Clinical Chemistry.

V. OTHER RELEVANT ACTIVITIES:

AWARDS:

A. Clinical Chemist Recognition Award, American Association for Clinical Chemistry, 1985.
B. First Decade Award, Gustavus Adolphus College, 1985.
C. Outstanding Young Men of America Award, 1985.

INVITED LECTURES/SEMINARS:

1. "CK-MM Subisoenzymes". Research Medical Center, Kansas City Missouri, September, 1984
2. "Biochemical Characteristics of Cyclosporine". Creighton University, Omaha, Nebraska, March, 1985.
3. "Cyclosporine". Hyatt-Regency, Dearborn, Michigan, March, 1985.
4. "High-Resolution Electrophoresis of Urine". Towsley Center, University of Michigan, Ann Arbor Michigan, April, 1985.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Falck, R., Keren, D., Fine, L., Smith, R., McClatchey, K., England, B. and Annesley, T.: Protein excretion patterns in cadmium exposed individuals: high resolution electrophoresis. Arch. Environ. Health 39:69-73, 1984.
2. Annesley, T., Strongwater, S. and Schnitzer, T.: MM subisoenzymes of creatine kinase as an index of disease activity in polymyositis. Clin. Chem. 31:402-406, 1985.
3. D'Amato, C., Hicks, S., Glover, R. and Annesley, T.: Genetic prenatal aqueduct stenosis with hydrocephalus in rat. J. Neuropath. Exp. Neurol., accepted for publication.
4. Ward, P., Till, G., Hatherill, R., Annesley, T. and Kunkel, R.: Systemic complement activation, lung injury, and products of lipid peroxidation. J. Clin. Invest., accepted for publication.
5. Rocher, L., Annesley, T., and Giacherio, D.: Evaluation of chromatography methods for the determination of cyclosporine in blood. Transplant. Proc., accepted for publication.

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

1. Annesley, T.: Glycosylated hemoglobin. Selected analytes in clinical chemistry. AACC Press, J. Hicks, ed., 1984, pp. 33-37.
2. Giacherio, D. and Annesley, T.: Methods for therapeutic drug monitoring. Medilab 1:7-14, 1984.
3. Annesley, T. and Giacherio, D.: Diagnosis of myocardial infarction using serum enzymes. Medilab 1:43-49, 1984.
4. Giacherio, D. and Annesley, T.: Cyclosporine: promising new immunosuppressent for organ transplantation. Medilab 2:20-26, 1985.
5. Keren, D., Anselmi, L., Lincoln, P., Annesley, T. and Giacherio, D.: Hunoral immune response to parenteral immunization with protein conjugates of the carcinogen 2-acetyl aminofluorene. Fed. Proc. 44:963, 1985.
6. Dean, E., Annesley, T., Underwood, T. and Nicklas, J.: The oxygen comsumption paradox of stunned myocardium. American Federation for Clinical Research, in press.
7. Morady, F., DiCarlo, L., Krol, R., DeBuitlier, M., Nicklas, J. and Annesley, T.: Effect of programmed ventricular stimulation on transmyocardial lactate production. J. Amer. Heart Assn.
8. Baerman, J., Morady, F., DiCarlo, L., Annesley, T., Foley, M., Nicklas, J. and Crevey, B.: Interrelationships between serum levels of amiodarone, desethylamiodarone, and reverse T#, and amiodarone induced QT prolongation. J. Amer. Heart Assn.

HENRY D. APPELMAN, M.D.
PROFESSOR OF PATHOLOGY AND DIRECTOR OF ANATOMIC PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985
(Sabbatical leave, 1 July 84 - 31 December 84)

I. CLINICAL ACTIVITIES:

A. General surgical pathology two months.
B. Gastrointestinal and hepatic pathology consultation services - full time.
C. Dermatopathology - one month full time.
D. Pediatric surgical pathology - two weeks.

II. TEACHING ACTIVITIES:

MEDICAL SCHOOL/HOSPITALS:

A. Medical Students:
   1. Pathology 600: 8 full class lectures, teaching laboratory - four months.
   2. Senior medical student electives: two months instruction in surgical pathology in the reading rooms.
   3. Senior medical student elective in pathology rotation supervisor, one month.

B. House Officers:
   1. Surgical Pathology Conference - one hour per week.
   2. Autopsy service tutoring - 5 to 6 weekends and gross autopsy conference, approximately three and one-halfmonths, twice a year.
   3. Surgical pathology diagnosing room instruction for assigned house officer - three months.
   4. Gastrointestinal and hepatic pathology tutoring - full time.
   5. Mentor for six fourth-year house officers in gastrointestinal and liver pathology subspecialty - three months total.

C. Interdepartmental:
   1. Medical Gastrointestinal Pathology Conference, one and one-half hours weekly.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT: None

PROJECTS UNDER STUDY:

A. Lymphomas of the gastrointestinal tract, with S. Hirsch, B. Schnitzer, and W. Coon.
B. The significance of granulomas in Crohn's disease, with N.B. Kumar and J.A.P. Wilson.
C. The effects of hyperalimentation on the infantile liver, with K.P. Heidelberger and members of the division of pediatric surgery.

D. Inflammatory fibroid polyps of the gastrointestinal tract, with David Sadler.
E. The rectal biopsy diagnosis of acute self-limited colitis and its distinction from first attack chronic ulcerative colitis with N. B. Kumar and T. T. Nostrant.
F. Appendiceal epithelial neoplasia.
G. The effects of prostaglandins on collagen deposition in livers of rats fed a cirrhogenic diet, with and without ethanol, with K. S. Henley and investigators from the Upjohn Company, Kalamazoo, Michigan.
H. Peptic-associated gastritis and duodenitis with Grace Elta.
I. Gastric mucosal changes in patient with hepatic arterial chemotherapy pumps with J. Rossett, T. Nostrant and G. Abrams.
J. The anatomy of the gastroenteric anastomosis with M. Blaivas.
K. Cell markers in gastrointestinal stromal tumors with A. Pike and R. Lloyd.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Director, Division of Anatomic Pathology.
B. Member, Departmental Advisory committee on Appointments and Titles.
C. Member, Departmental Medical Service Plan Executive Committee.
D. Member, Departmental Executive Committee for Residency Training Program.

MEDICAL SCHOOL/HOSPITALS:

A. Member, Directors Advisory Council, University Hospital.
B. Member, Quality Assurance Committee, University Hospital.
C. Member, Cancer work Group, University Hospital.
D. Member, Surgical and Procedural Case Review Committee, University Hospital.

REGIONAL AND NATIONAL:

A. Co-editor of Newsletter, Gastrointestinal Pathology Club.
B. Member, Program Committee, Michigan Society of Pathologists.
C. Reviewer of papers for Archives of Pathology and Laboratory Medicine and Laboratory Investigation.
D. Book reviewer, Gastroenterology.
E. Chairman, Publications Committee, Gastrointestinal Pathology Club.

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES/SEMINARS:

1. Appelman, H.D.: Lectures for the Departments of Medicine and Pathology, University of Washington, Seattle, August, 1984.
   - Giant Folds and Polyps of the Stomach
   - Indeterminate Colitis

2. Appelman, H.D.: Giant folds and polyps of the stomach, including stump or gastroenterostomy changes, presented at the E.T. Bell Fall Pathology Symposium, Department of Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, November 9, 1984.
3. Appelman, H.D.: Indeterminate colitis, presented at the pathology seminar series, Department of Pathology, Henry Ford Hospital, Detroit, Michigan, December 5, 1984.
4. Appelman, H.D.: Moderator, Subspecialty Panel in Gastrointestinal Pathology, Annual Meeting, International Academy of Pathology, Toronto, March, 1985.
5. Appelman, H.D.: Indeterminate colitis, presented at Medical Grand Rounds, Creighton University School of Medicine, Omaha, Nebraska, April 17, 1985.
6. Appelman, H.D.: Gastric polyps and giant folds. Department of Pathology Creighton University School of Medicine, Omaha, Nebraska, April 17, 1985.
7. Appelman, H.D.: Assessment of dysplasia in inflammatory bowel disease. Nebraska Association of Pathology, Omaha, Nebraska, April 17, 1985.
8. Appelman, H.D.: Stromal tumors of the gastrointestinal tract. Presented at the Scientific Session of the Annual Meeting of the Arthur Purdy Stout Society of Surgical Pathologists, Toronto, Ontario, Canada, 10 March 1985.
9. Appelman, H.D.: Problems in gastrointestinal endoscopic biopsy interpretation, Department of Pathology, Mayo Clinic, Rochester, Minnesota, November 8, 1984.
10. Appelman, H.D.: Annual Tumor Seminar, Minnesota Society of clinical Pathologists, Bloomington, Minnesota, November 10, 1984.
11. Appelman, H .D.: Seminar on Neoplastic Diseases of the Intestine, American Society of Clinical Pathologists, Course on Surgical Pathology of the Gastrointestinal Tract, San Diego, California, June 19, 1985.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Keren, D.F., Appelman, H.D., Dobbins, W.O. et al.: Correlation of histopathologic evidence of disease activity with the presence of immunoglobulin-containing cells in the colons of patients with inflammatory bowel disease. Hum. Pathol. 15:757-763, 1984.
2. Kazmers, A., Zwolak, R., Appelman, H.D. et. al.: Pharmacologic interventions in acute mesenteric ischemia: improved survival with intravenous glucagon, methylprednisolone, and prostacyclin. J. Vasc. Surg. 1:472-481, 1984.
3. Fink, A.S., Appelman, H.D. and Thompson, N.W.: Hemorrhage into a hepatic adenoma and type Ia Glycogen Storage Disease. A case report and review of the literature. Surgery 97:117, 1985.
4. Appelman, H.D., Hirsch, S.H., Coon, W.W. and Schnitzer, B.: Clinicopathologic overview of gastrointestinal lymphoma. Am. J. Surg. Pathol. 9:71-83, 1985.

BOOKS AND CHAPTERS IN BOOKS:

1. Appelman, H.D.: Localized and extensive expansions of the gastric mucosa: Mucosal polyps and giant folds. Chapter 3 In, "Pathology of the Esophagus, Stomach and Duodenum", H. D. Appelman, Editor, Churchill Livingstone, New York, 1984.

2. Appelman, H.D.: Stromal tumors of the esophagus, stomach and duodenum. Chapter 7 In, "Pathology of the Esophagus, Stomach and Duodenum", H. D. Appelman, Editor, Churchill Livingstone, New York, 1984.
3. Appelman, H.D., Kalish, R.J., Clancy, P.E. and Orringer, M.B.: Distinguishing features of adenocarcinoma in Barrett's esophagus: Carcinoma of the gastric cardia, the major differential diagnosis. In, "Symposium on Barrett's Esophagus", S. J. Spechler, Editor. Elsevier Science Publishing Co. Inc., New York, 1985.
4. Appelman, H.D., Editor: "Pathology of the Esophagus, Stomach and Duodenum", Churchill Livingstone, New York, 1984.

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

1. Ruwart, M.J., Rush, B.D., Snyder, K.F., Peters, K.M., Appelman, H.D. and Henley, K.S.: 16,16-dimethylprostaglandin E2 (DMPG) reverses dietary fibrosis in rat liver, in spite of continued nutritional injury. Hepatology 5:1018, 1984.
2. Elta, G., Appelman, H., Behlar, E., et al: Absence of correlation between endoscopic and histologic diagnoses in gastroduodenitis. Gastroent. 88:1374, 1985.
3. Ruwart, M.J., Rush, B.D., Snyder, K., Peters, K.M., Appelman, H.D. et al.: Analogs of prostaglandin E protect rat liver from fibrosis induced by nutritional injury. Gastroent. 88:1690, 1985.
4. Appelman, H.D.: Book review: Pathology of the Esophagus by H. Enterline and J. Thompson; Gastroenterol. 87:983-984, 1984.
5. Appelman H.D.: Book review: Precursors of Gastric Cancer edited by S-C Ming; Gastroenterology 88:1085, 1985.

BARBARA A. BARNES, MT(ASCP) SBB
ASSISTANT PROFESSOR OF MEDICAL TECHNOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

Blood Banking Laboratory.
Coordinate Quality Assurance Activities.

II. TEACHING ACTIVITIES:

A. House Officers:
   1. Blood Banking Introductory Lecture Series.
   2. Blood Bank Laboratory and Seminar Course for House Officers, a nine session tutorial.

B. Medical Technology Students:
   1. Taught a new course for senior year students, Pathology 418 - Introduction to Blood Transfusion. This course, is composed of twelve lectures given once, eight two-hour conference sessions held twice, and eight three-hour laboratory sessions held twice.
   2. Revised and directed Pathology 449 (formerly Pathology 409). This course, which includes structured class assignments and clinical paracticum, was repeated for nine groups of students. With the advice and consent of Blood Bank Medical Directors, supervisors and administrative technologists, identified staff technologists willing and able to serve as clinical preceptors, provided objectives and discussed their implementation with the clinical preceptors on an ongoing basis.
   3. Taught a course for junior year students, Pathology 308 - Introduction to Immunohematology. This course consists of fourteen lectures given once and fourteen three-hour laboratory sessions taught twice.
   4. Lecture in Pathology 410.

C. Blood Bank Staff:
   1. Coordinate and present at weekly Continuing Education Conference.
   2. Instruct and supervise new employees in clinical laboratory.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT: None.

PROJECTS UNDER STUDY:

A. Predictive value of certain pre-transfusion test procedures.
B. Eliminating Nonmandatory Pretransfusion Tests: Autocontrol and/or Antiglobulin Crossmatch? Submitted for presentation at the 35th Annual Meeting of the American Association of Blood Banks, October, 1985

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. As a member of the Medical Technology Admissions Committee, make and implement policies, interview and evaluate applicants, and make recommendations for acceptance.

MEDICAL SCHOOL/HOSPITAL:

A. Participated in various committees responsible for communication and technical advice to the hospital Blood Bank.
B. Conducted individual courses of instruction for each of four new employees of the hospital Blood Bank.
C. Drafted and implemented a weekly schedule of in-service education for Blood Bank staff.
D. Designed and presented a preconference workshop at Towsley Center, June, 1985.

REGIONAL AND NATIONAL:

A. Inspector for the Inspection and Accreditation Program of the American Association of Blood Banks.
B. Immunology-Immunohematology Scientific Assembly Chairperson Michigan Society for Medical Technology.
C. Secretary of the Michigan Society for Medical Technology.
D. Member of the American Association of Blood Banks District Advisory Group.
E. Member of Michigan Technology Educator's Curriculum Task Force.

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES/SEMINARS:

1. Current Topics in Blood Banking Program, Department of Postgraduate Medicine, June, 1985.
   a. Workshop Director, "Up-to-Date Procedure Manuals"
   b. Session Moderator, "Technical Topics"
   c. Lecture to Medical Technology Class, Eastern Michigan University.
   d. Laboratory Professionals Spring Meeting
      1. Workshop Co-Director, "Nobody Likes Change"
      2. Judge, Advance medical Research Center Poster Competition

VI. PUBLICATIONS:

1. Judd, W.J., Barnes, B.A., Steiner, E.A., Oberman, H.A., Averill, D.B. and Butch, S.H.: The evaluation of a positive direct antiglobulin test (autocontrol) in pretransfusion testing revisited, accepted for publication in Transfusion.

THEODORE F. BEALS, M.D.
ASSISTANT PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Director, Diagnostic Electron Microscopy Unit, Veterans Administration Medical Center.
B. Cytopathology, Veterans Administration Medical Center.
C. Fine Needle Aspiration, Veterans Administration Medical Center.
D. Surgical/Autopsy Pathology, Veterans Administration Medical Center.
E. Tumor Conference, Veterans Administration Medical Center.
F. Deputy County Medical Examiner.
G. Consultant on diagnostic electron microscopy.
H. Pathology/Medicine Conference, Veterans Administration Medical Center.

II. TEACHING ACTIVITIES:

A. Pathology House Officer monthly elective: Diagnostic Electron Microscopy, seven months.
B. Diagnostic EM Case Conference, bi-weekly.
C. Pathology 600, Laboratory.
D. Pathology House Officers, fine needle aspiration technique and interpretation.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Principal Investigator: Immunologically Active Cell Populations in First Set Liver Grafts, VAMC Merit Review ($81,300 annual) 1985-88.
B. Co-Investigator: In Vitro Chemotherapy Assays (R. Natale, principal investigator).
C. Co-Investigator: Adjuvant Chemotherapy in Laryngeal Cancer (G. Wolf, Principal Investigator).
D. Co-Investigator: Pharmacologic Modification of Vascular Graft Patency (J. Cronenwett, Principal Investigator).
E. Co-Investigator: VA Cooperative Study #268. A New Strategy to Preserve the Larynx in the Treatment of Advanced Laryngeal Cancer.

PROJECTS UNDER STUDY:

A. Clinical Relevance of Ultrastructural Characteristics of Small Cell Carcinoma of Lung (with R. Green).
B. Evaluation of Monoclonal antibodies in the Diagnosis and Treatment of Small Cell Carcinoma of Lung (with M. Stya).
C. Role of Plastic Embedded Cell-block and Electron Microscopy in Fine Needle Aspiration.

D. Paneth Cell Culture (with S. Kern).
E. Ultrastructure of Natural Killer Cell Function (with J. Hiserodt).
F. Morphometric Analysis of Cells using Scanning Light Microscopy (with R. Davenport).
G. Automatic Scanning Light Mircoscopy in Morphometric Analysis of Labeled Cells in Histological Sections.
H. Surface Markers for Antigen Localization in Scanning Electron and Transmission Electron Microscoped (with D. Hyder and J. Hiserodt).
I. Effect of Laminin on the Morphology of Cell Lines Grown in Soft-agar Culture (with M. Gennis).
J. Transbronchial Fine Needle Aspiration in the Deliniation of Pulmonary Neoplasms (with J. Hammersley).
K. Growth of Cells on Microcarriers (with J. Varani).
L. Characterization of Procoagulant Activity in Urine and Kidneys of Rabbits with Nephrotoxic Nephritis (with R. Wiggins).

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Electron Microscope Committee.

MEDICAL SCHOOL/HOSPITAL:

A. Tissue Committee, chair, Veterans Administration Medical Center.
B. Electron Microscopy Committee, chair, Veterans Administration Medical Center.
C. Human and Financial Resources Committee, Veterans Administration Medical Center.
D. Medical Records Review Committee, Veterans Administration Medical Center.
E. Coordinated introduction of Anatomic Pathology Automatic Data System, VAMC.

REGIONAL AND NATIONAL:

A. Veterans Administration Central Office Electron Microscopy Review Group.
B. Practice of Pathology Committee, Michigan Society of Pathologists.

V. OTHER RELEVANT ACTIVITIES:

1. Electron Microscopy and Diagnostic Cytology, Guest Lecture, Pathological Society of Great Britain and Ireland, Leeds
2. Cases in Diagnostic Electron Microscopy, Seminar, Pathological Society of Great Britain and Ireland, Leeds
3. Electron Microscopy for Exfoliative Cytology and Fine Needle Aspiration. Seminar, Annual Meeting Electron Microscopy Society of America
4. Applications of Plastic-embedded Sections and Electron Microscopy to Fine Needle Aspiration, Workshop, College of American Pathology/American Society of Clinical Pathologists, New Orleans.

5. Aspiration Biopsy Cytology of Intrathoracic Lesions, American Society of Cytology, Workshop, (with N.B. Kumar and B. Naylor).
6. Diagnostic Electron Microscopy, Workshop, Pathological Society of Great Britain and Ireland, Leeds.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFERRED JOURNALS:

1. Beals, T.F.: Substrate-dependent differences in growth and biological properties of fibroblasts and epithelial cells grown in microcarrier culture. J. Biol. Stand. 13:67-76, 1985.
2. Silverman, A.K., Ellis, C.N., Beals, T.F. and Woo, T.Y.: Continual skin peeling syndrome. An electron microscopy study, accepted for publication in Arch. Derm.

BOOKS AND CHAPTERS IN BOOKS:

1. Hiserodt, J.C. and Beals, T.F.: Ultrastructural analysis of human NK-target interactions leading to target cell lysis. In, Mechanisms of Cytotoxicity by NK Cells, R.B. Herberman, editor. Academic Press, 1985 pp. 195-204.

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

1. Knaus, D.B. and Beals, T.F.: Interesting case. Cytotechnologist's Bull. XXI:68-70, 1984.
2. Beals, T.F.: Electron microscopy for exfoliative cytology and fine needle aspiration. Micron 16:1985 (abstract).

RODNEY D. CAPPS
ASSISTANT PROFESSOR OF MEDICAL TECHNOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Clinical Laboratories Engineering Support, instrumentation and automated analytical equipment.
   1. Design.
   2. Modifications implementation.

II. TEACHING ACTIVITIES:

A. Instrumentation Lecture Series, Medical Technology Program.
B. Lecturer, Technicon Seminar, Pittsburgh, Pennsylvania.
C. Lecturer, Conference on Current Topics in Clinical Chemistry and Immunology.

III. RESEARCH ACTIVITIES:

A. Special device for centrifugal preparation of sweat chloride for direct analysis by Beckman ASTRA.
B. Reconfiguration of K+ ISE on Technicon SMAC II for improved sensitivity and flow characteristics.
C. Development of an airborne Emergency Analysis System.
D. Mechanization of ELISA techniques with moving film technology.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Assistant Director, Clinical Laboratories

MEDICAL SCHOOL/HOSPITAL:

A. Program Coordinator: Design and renovation of 2nd level Laboratories (Hematology and Chemical Pathology).

V. OTHER RELEVANT ACTIVITIES:

A. Advisor, Technicon RA1000 System Development.
B. Advisor, Macomb Instrument Development Division.

VI. PUBLICATIONS: None.

RICHARD MITCHELL COURTNEY, D.D.S.
PROFESSOR OF DENTISTRY
DEPARTMENT OF ORAL PATHOLOGY
ASSISTANT PROFESSOR OF ORAL PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985
(Sabbatical Leave 1 January 1985 - 30 June 1985)

I. CLINICAL ACTIVITIES:

A. Oral Pathology Biopsy Service, Dental School.
B. Consultant in Oral Pathology for Veterans Administration Hospital.
C. Consultant in Dentistry for patients with head and neck malignancies, The University of Michigan Hospitals.

II. TEACHING ACTIVITIES:

GRADUATE DENTISTRY:

A. Oral Pathology 690 - Seminar on current cases stressing clinical - microscopic characteristics (Fall and Winter terms) (one credit hour each term).
B. Oral Pathology 691 - Seminar on diseases which affect the dental pulp and periapical tissues (Fall term - two sections) (one hour credit).
C. Oral Pathology 694 - Lectures on head and neck pathology (Fall term) (two hours credit).
D. Oral Pathology 697 - Seminar on diseases which involve the periodontium (Fall term) (one hour credit).
E. Oral Pathology 698 - Advanced seminar for graduate students in oral pathology (Fall and Winter terms) (two hours each term).

D.D.S. PROGRAM:

A. Pathology 631 - Microscopic general pathology for sophomore dental students (Fall term) (three hours credit).
B. Oral Pathology 816 and 818 - Lectures and discussions on oral pathology for senior dental students (Fall and Winter terms) (one hour each term).

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Evaluation of polymer dental implants in dogs. (Kerr-Sybron).

PROJECTS UNDER STUDY:

A. Odontogenic tumors and oral malignancies.

IV. ADMINISTRATIVE ACTIVITIES:

DENTAL SCHOOL:

A. Chairman, Department of Oral Pathology.
B. Departmental Chairmen Committee.
C. Graduate Studies Committee.
D. Member of several Master's degree thesis committees.

MEDICAL SCHOOL/HOSPITAL:

A. Hospital Dentistry Department.

REGIONAL AND NATIONAL:

A. Director, American Board of Oral Pathology.
B. Past President, American Academy of Oral Pathology.
C. Editorial Board, Journal of Dental Research.
D. Consultant to the American Dental Association on graduate oral pathology programs.
E. Consultant to the American Dental Association on Hospital Dentistry programs.

V. OTHER RELEVANT ACTIVITIES: None

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Regezi, J.A. and Courtney, R.M.: Diagnostic oral pathology: A guide to clinical oral pathology. The Univerity of Michigan, Medical School, 273 pages, August, 1980.
2. Regezi, J.A., Courtney, R.M. and Batsakis, J.D.: Cysts of the jaws. Head and Neck Surg. 4:48-57, 1981.

CONSTANCE J. D'AMATO, B.S.
ASSISTANT PROFESSOR OF NEUROBIOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Work daily with house officers and staff in Pathology and other departments in their gross and microscopic examination and diagnosis of brains at the autopsy and from autopsies, at University Hospital.
B. Attend and participate in the removal of brains from all autopsies at University Hospital.
C. Work in a similar way with the people in "A" on autopsy brain material sent for consultative study from University-associated hospitals, other hospitals, and institutions.
D. Plan and participate in weekly Brain Cutting Conference with house officers, students and staff, for diagnosis and demonstration of diagnostic methods, and teaching, using selected cases in A and B.
E. Plan and participate in monthly Brain Cutting Conference for Neurology, Neurosurgery, and Neuroradiology Departments.
F. Continuous review of quality control of diagnostic techniques, autopsy and surgical neuropathology, and search for improved and new methods.

II. TEACHING ACTIVITIES:

A. Neural and Behavioral Sciences 600 (NBS 600), Neuropathology for second year medical students, 20 hours, lectures and brain cutting sessions. Sequence leader for NBS 600, Neuropathology: responsible for implementing general plan of course, selection of much of the teaching material, coordination and integration of the lectures and brain cutting sessions of the course with other instructors.
B. Neuropathology for Pathology house officers. This exercise is integrated with Clinical Activities A, C, D, and E.
C. Neuropathology 858. Intensive laboratory-lecture course for house officers in Pathology, and in the several clinical services concerned with the nervous system, graduate students, and faculty. Annual, 16 - 18 hours. One credit hour elective.
D. Neuropathology for house officers from the several clinical services concerned with the nervous system, and senior medical students who take an elective rotation in Neuropathology.
E. Teach laboratory techniques and basic neuroanatomy and neuropathology to our laboratory technologists.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. USPHS Grant NS 19825-01, "Recovery or Malformation After Fetal Injury."
B. Action of USPHS application, "The Role of Glutamate in Alzheimer's Disease", (5% Effort, with Anne Young and John Penney, Dept. of Neurology) pending.

PROJECTS UNDER STUDY:

A. Recovery or malformation after fetal radiation, mutant gene or other injuries of the developing nervous system.
Emphasis this year has been on basal lamina, and on oxygen free radical produced in phagocytes in the rat fetus cephalic neural tube and their relation to malformation and recovery of the fetus in genetic and radiation injury.
Early embryos from our recessive mutant, homozygous for hydrocephalus, and controls were used to find the optimal fixation conditions to show the ultrastructural appearance of the basal region of the neuroepithelium. Unlike the smooth appearance of the basal surface in the control embryo, the mutant neuroepithelial cells are highly disorganized and there is an incomplete and pulled-away basal lamina subajacent to the neuroepithelium. Immunocytochemical studies of the carbohydrate constituents of the neuroepithelial basal lamina, such as laminin, fibronectin or collagen IV were initiated. To date, interestingly, there is a delay in formation of collagen IV in the mutant hydrocephalic embryo.
A successful search for the optimal tissue culture media was found to grow neuroepithelial cells from normal, mutant hydrocephalic, and irradiated rat embryos for determining how they respond to discrete components of the basal lamina and mesenchymal extracellular matrix.
X-irradiation (200R) kills numerous primitive cells in rat fetuses early in development, and this is met within a few hours by myriad of macrophages in certain parts of the nervous system but not in others. Coinciding with the appearance of the macrophages which are engulfing dead cells 4 to 6 hours after irradiation, we found that cells form the fetal brains show a marked increase in production of superoxide anion compared with normals and this continues at least through 24 hours. These macrophages may add to damage that radiation and other agents produce, as they do in other tissues.
(This work was done in collaboration with K.S. O'Shea, J. Varani, K.J. Johnson, J.P. McCoy, P.E. McKeever, R.V. Lloyd, R.A. Glover, T.M. Annesley, and S.P. Hicks).

B. The pathologic examination of human autopsy brains from patients with clinical diagnosis of Alzheimer's, Huntington's, Pick's and other dementing diseases is being done in collaboration with Drs. A.B. Young and J.B. Penney, who are examining the brains biochemically. The clinical diagnoses need to be confirmed by pathologic diagnosis.

C. Growth, spread and antigenicity of ENU-induced gliomas in rats, in collaboration with Paul E. McKeever, M.D., Ph.D.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Anatomic Pathology Committee.

MEDICAL SCHOOL/HOSPITAL:

A. Neural and Behavioral Sciences Curriculum Committee (Medical School).
B. Neural and Behavioral Sciences Examinations Committee.
C. Preprofessional Counselor, premedical and health-related students.

REGIONAL AND NATIONAL:

A. Reviewer of research grant applications for National Science Foundation Neurobiology Program.
B. Reviewer of journal manuscripts, Teratology, Experimental Neurology, and Science.

V. OTHER RELEVANT ACTIVITIES: None.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Miller, F. DeW., Hicks, S.P., D'Amato, C.J. and Landis, J.R.: A descriptive study of neuritic plaques and neurofibrillary tangles in an autopsy population. Amer. J. Epidemiology 120:331-341, 1984.
2. Greenamyre, J.T., Penney, J.B., Young, A.B.. D'Amato, C.J., Hicks, S.P. and Shoulson, I.: Alterations in L-glutamate binding in Alzheimer's and Huntington's Diseases. Science 227:1496-1499, 1985.
3. Fligiel, S.E.G., Varani, J., D'Amato, C.J., O'Shea, K.S., Hicks, S.P. and Johnson, K.J.: Superoxide anion production in CNS cells after fetal radiation injury. (In preparation).
4. D'Amato, C.J., O'Shea, K.S., Hicks, S.P., Glover, R.A. and Annesley, T.M.: Genetic prenatal aqueduct stenosis with hydrocephalus in rat. Accepted for publication with revision, J. Neuropath. and Exper. Neur., 1985.

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

1. Glover, R.A., D'Amato, C.J. and Hicks, S.P.: Neuroepithelial-mesenchymal relations in the morphogensis of eye abnormalities in a mutant and radiation induced aqueduct stenosis-hydrocephalus syndrome. Soc. for Neurosci. Abstr. 10:953, 1984.
2. Young, A.B., Greenamyre, J.T., Penney, J.B., D'Amato, C.J., Hicks, S,P. and Shoulson, I.: Altered patterns of L-[^{3}H] glutamate binding in Alzheimer's disease and Huntington's disease. Soc. for Neurosci. Abstr. 10:890, 1984.
3. O'Shea, K.S., D'Amato, C.J. and Hicks, S.P.: Immunocytochemistry of neuroepithelial basal lamina alterations in rat embryos with genetic hydrocephalus. (Accepted for poster and abstract, Society for Neuroscience Meeting, October, 1985, Dallas).

FELIX A. DE LA IGLESIA, M.D.
ADJUNCT RESEARCH SCIENTIST
DEPARTMENT OF PATHOLOGY
ADJUNCT PROFESSOR OF TOXICOLOGY
SCHOOL OF PUBLIC HEALTH

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES: None.

II. TEACHING ACTIVITIES:

A. Graduate School:
   1. EIH 637, Advanced Topics in Toxicology: Xenobiotic Metabolism, Instructor.
   2. EIH 536, Fundamentals of Electron Microscopy, Instructor.
   3. EIH 646, Advanced Topics in Toxicology, Instructor and Course Coordinator.
   4. EIH 610, Research in Toxicology, Instructor.

B. Co-Chairman, Doctoral Committee and Research Mentor, EIH.

C. Postgraduate Seminar, Department of Pharmacology and Toxicology, Michigan State University.

III. RESEARCH ACTIVITIES:

PROJECTS UNDER STUDY:

My research activities are focused in three areas:

A. Quantitative morphologic and biochemical correlates of subcellular organelle injury:
   1. Quantitative microscopic changes within rat hepatocytes during the induction of hypertrophic hypofunctional smooth endoplasmic reticulum membranes.
   2. Progesterone derivative-induced changes in fatty acid from phosphatidycholine and phosphatidylethanolamine fractions of the hepatic endoplasmic reticulum in the rat.
   3. Quantitative microscopic assessment of the hepatic endoplasmic reticulum and bile caniculus in rats given contraceptive steroids and protein-restricted diets.
   4. Acute alterations of tissue calcium and letal tubular cell injury during HcC12 nephrotoxicity.
   5. The pathogenesis of trimethyltin chloride-induced nephrotoxicity: Neurotoxic implications.

B. Mechanisms of carcinogenesis and pharmacotoxic effects of antineoplastic agents:
   1. Mammary carcinomas and systemic toxicity in rats fed the fluorophenyl amino dimethyl pyrazole, FP-1.
   2. Induction of mammary gland neopasia in rats with fluorophenyl amino dimethyl pyrazoles.

3. Mutagenic, chromosomal and carcinogenic effects of aziridinyl-benzoquinone in genotoxicity assays and the strain A moust lung adenoma bioassay.

C. Comprehensive toxicity testing of new pharmacologic agents for the development of safety evaluation standars for therapeutic use:
   1. Experimental studies on reproduction with the lipid regulating agent Gemcadiol.
   2. Parkinson-like syndrome in nonhuman primates receiving a tetra-hydropyridine derivative.
   3. Evaluation of chronic toxicity and carcinogenesis in rodesn with the synthetic analgestic, Tilidine Fumarate.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Consultant to Drs. Ward and Johnson in quantitative microscopy applications.

REGIONAL AND NATIONAL:

A. Consultant, NIH-NIC.
B. External Consultant, Medical Research Council of Canada.
C. Member, Environmental Sciences Review Committee, NIEHS.
D. Official Expert, Ministry of Health (France).
E. Member, Pharmacology-Morphology Scientific Advisory and Fellowship Committee, PMA Foundation.
F. Council Executive Member, Society of Toxicologic Pathologists.
G. President, Michigan Chapter, Society of Toxicology.

V. OTHER RELEVANT ACTIVITIES:

A. Editor, Toxicologic Pathology.
B. Member, Editorial Board, Toxicology and Applied Pharmacology.
C. Member, Editorial Board, Toxicology.
D. Member, Editorial Board, Drug Metabolism Reviews.
E. Reviewed manuscripts for a variety of journals.

V. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. de la Iglesia, F.A., Lake, R.A., Fitzgerald, J.E., Bueding, E. and Brusick, D.: Bacterial mutagenesis and cell transformation assays of pyrvinium pamoate (POVAN), and Antiparasitic Agent. J. Am. Coll. Toxicol. 3:285-294, 1984.
2. Martin, R.A., Daly, A., DiFonzo, C.J. and de la Iglesia, F.A.: Randomization of animals by computer program for toxicity studies. J. Am. Coll. Tox. 3:1-11, 1984.

3. de la Iglesia, F.A., Fitzgerald, J.E., McGuire, E.J., Kim, S.N., Heifetz, C.L. and Stoner, G.D.: Bacterial and mammalian cell mutagenesis, sister-chromatid exchange and mouse lund adenoma bioassay with the antineoplastic ccridine derivative amsacrine. J. Tox. and Env. Health 14:667-681, 1984.
4. Kropko, M.L., Fitzgerald, J.E. and de la Iglesia, F.A.: Lack of in vivo and in vitro genotoxicity with the non-steroid, antiinflammatory agent sodium meclofenamate. Teratog. Carcinog. Mutag. 4:329-340, 1984.
5. Petrere, J.A., Humphrey, R.R., Sakowski, R., Fitzgerald, J.E. and de la Iglesia, F.A.: Two-phase teratology study with the synthetic prostaglandin, ONO-802, given intravaginally to rabbits. Teratog. Carcinog. Mutag. 4:233-243, 1984.
6. Petrere, J.A., Humphrey, R.R., Sakowski, R., Fitzgerald, J.E. and de la Iglesia, F.A.: Teratology study with the synthetic prostaglandin, ONO-802, given intravaginally to rabbits. Teratog. Carcinog. Mutag. 4:225-231, 1984.
7. Barsoum, N.J., Hanna, W., Gough, A.W., Smith, G.S., Sturgess, J.M. and de las Iglesia, F.A.: Histiocytic sarcomas in wistar rats: A light microscopic, immunohistochemical and ultrastructural study. Arch. Path. Lab. Med. 108:802-807, 1984.
8. Gough, A.W., Barsoum, N.J., Renlund, R.C., Sturgess, J.M. and de la Iglesia, F.A.: Fine structural changes during reparative phase of canine drug-induced arthropathy. Vet. Path. 22:82-84, 1985.
9. Martin, R.A. and de la Iglesia, F.A.: Carcinogenesis testing updated. Editorial. Toxicol. Path. 12:2, 1984.
10. Gray, R.H. and de la Iglesia, F.A.: Quantitative microscopy comparison of peroxisome by the lipid-regulating agent gemfibrozil in several species. Hepatology 4:520-530, 1984.
11. Fitzgerald, J.E., de la Iglesia, F.A. and McGuire, E.J.: Carcinogenicity studies in rodents with ripazepam, a minor tranquilizing agent. Fund. Appl. Tox. 4:178-190, 1984.
12. Barsoum, N.J., Gough, A.W., Sturgess, J.M. and de la Iglesia, F.A.: Morphologic features and incidence of spontaneous hyperplastic and neoplastic mammary gland lesions in wistar rats. Toxicol. Pathol. 12:26-38, 1984.
13. Kim, S.N., Fitzgerald, J.E. and de la Iglesia, F.A.: Study of spermatocytic seminoma in the rat. Toxicol. Path. 13:In Press, 1985.
14. Kim, S.N., Watkins, J.R., Jayasekara, U., Anderson, J.A., Fitzgerald, J.E. and de la Iglesia, F.A.: Cardiotoxicity study of amsacrine in rats. Toxicol. Appl. Pharmacol. 77:369-373, 1985.
15. Lumb, G., Mitchell, L. and de la Iglesia, F.A.: Reversibility of pathologic changes induced by the long-term administration of contraceptive steroids to rodents. Toxicol. Path. 13: In Press, 1985.
16. Watkins, J.R., Kim, S.N., Jayasekara, U., Anderson, J.A., Fitzgerald, J.E. and de la Iglesia, F.A.: Preclinical toxicity of the new antineoplastic agent, ametantrone acetate, in mice and dogs. Fund. Appl. Toxicol. In Press, 1985.
17. Petrere, J.A., Anderson, J.A., Humphrey, R.R., Fitzgerald, J.E. and de la Iglesia, F.A.: Studies on peproduction in rats with meclofenamate sodium, a nonsteroidal anti-inflammatory agent. Fund. Applied Tox. 5:665-671, 1985.

18. Barsoum, N.J., Gough, A.W., Sturgess, J.M. and de la Iglesia, F.A.: Morphofunctional investigation of spontaneous pituitary tumors in wistar rats. Toxicol. Path. 13: In Press, 1985.
19. Martin, R.A., Barsoum, N.J., Stirgess, J.M. and de la Iglesia, F.A.: Leukocyte and bone marrow effects of a thiomorpholine quinazosin anti-hypertensive agent. Tox. Appl. Pharmacol. In Press, 1985.

BOOKS AND CHAPTERS IN BOOKS:

1. Yakatan, G.J. and de la Iglesia, F.A.: Toxicokinetics - A role in drug discovery and development. In, Experimental and Clinical Toxicokinetics. A. Tacobi and H. Barry, editors. American Pharmaceutical Association and Academy of Pharmaceutical Sciences. Chapter 2, p. 9-26, 1984.
2. Feuer, G. and de la Iglesia: Molecular Biochemistry of Human Disease. CRC Press, Volume I, 1985, PP. 1-220.
3. Feuer, G. and de la Iglesia, F.A.: Molecular Biochemistry of Human Disease. Volume II, CRC Press, Boca Raton, FL, In Press, 1985.

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

1. DiFonzo, C.J., Barsoum, N.J., Gracon, S.I., Fitzgerald, J.E., Kim, S.M., Martin, R.A., Sturgess, J.M. and de la Iglesia, F.A.: Acute and subacute oral toxicity of the anticancer agent amsacrine in mice and dogs. Proc. Am. Assn. Cancer Res. 25:299, 1984.
2. Gracon, S., DiFonzo, C., Fitzgerald, J., Sturgess, J. and de la Iglesia, F.A.: Oral toxicity evaluation of a novel cardiotonic. The Toxicologist, 4:7, 1984.
3. Aust, A.E., de la Iglesia, F.A. and Heifetz, C.: Comparative analysis of the mutagenic potential of two neuroleptic compounds that are carcinogenic in rats. Mutation Research, 1984.
4. McGill, G.E., Barsoum, N.J., DiFonzo, C.J., Smith, G.S., Sturgess, J.M. and de la Iglesia, F.A.: Systemic toxicity of an anticonvulsant agent. Fed. Proc. 43:575, 1984.
5. McGuire, E.J., de la Iglesia, F.A., DiFonzo, C.J., Martin, R.A., and Fitzgerald, J.E.: Carcinogenesis studies with tilidine, a potent synthetic analgesic. Fed. Proc. 43:365, 1984.
6. Fitzgerald, J.E., Anderson, J.A., Jayasekara, U., Watkins, J.R. and de la Iglesia, F.A.: Preclinical toxicological evaluation of an angiotensin II converting enzyme inhibitor of the tetra-hydroquinoline series. Fed. Proc. 43:733, 1984.
7. Stoner, G.D., McGuire, E.J., Heifetz, C.L. and de la Iglesia, F.A.: Mutagenic, chromosomal and carcinogenic effects of the antineoplastic compound diazaquone. Fed. Proc. 43:950, 1984.
8. Stoner, G.D., de la Iglesai, F.A., Fitzgerald, J.E., Jayasekara, M.U., Kim, S.N., McGuire, E.J., Watkins, J.R. and Greisiger, E.A.: Amsacrine does not induce lung adenomas in strain A/J. Cancer Res. 29:305, 1984.
9. Robertson, D.G., Gray, R.H., Richardson, R. and de la Iglesia, F.A.: Effects of trimethyltin chloride (TMTC) on acetylcholinesterase (AchE) staining in the hippocampus of rat brain. The Toxicologist 4:118, 1984.

10. Robertson, D.G., Gray, R.H., Kim, S.N. and de la Iglesia, F.A.: Nephrotoxicity of trimethyltin chloride (TMCT) in rats. The Toxicologist, 4:33, 1984.
11. DiFonzo, C.J., Gebhart, A.M., Gracon, S.I., Fitzgerald, Sturgess, J.M. and de la Iglesia, F.A.: Intravenous toxicology of a novel cardiotonic agent. The Toxicologist, 4:6, 1984.
12. DiFozno, C.J., Barsoum, N.J., Garcon, S.I., Smith, G.S., Sturgess, J.M. and de las Iglesia, F.A.: Chronic toxicity and carcinogenicity evaluation of the nonsteroidal antiinflammatory agent meclomen in mice. The Toxicologist, 4:7, 1984.
13. Watkins, J.R., Fitzgerald, J.E., Anderson, J.A. and de la Iglesia, F.A.: Evaluation of chronic health effects in rats and dogs with the antiarrhythmic agent pirmenol CHl. The Toxicologist 4:6, 1984.
14. Martin, R., DiFonzo, C., Sturgess, J., Feuer, G. and de la Iglesia, F.A.: Drug-induced membrane changes in the rough endoplasmic reticulum of rat liver. The Toxicologist, 4:103, 1984.
15. Gray, R.H., Robertson, D.G., Deshmukh, D. and de la Iglesia, F.A.: Asprin effects on ferrets used as a model for Reye's syndrome. The Toxicologist 4:79, 1984.
16. Barsoum, N.J., Tausch, J., Sturgess, J.M. and de la Iglesia, F.A.: Pathophysiological response of the juxtaglomerular apparatus to a novel angiotensin converting enzyme inhibitor. Fed. Proc. 43:761, 1984.
17. Gracon, S.I., DiFonzo, C.J., McGill, G.E., Stokes, J.R., Barsoum, N.J., Sturgess, J.M. and de la Iglesia, F.A.: Acute and subacute toxicity evaluation of a novel anticholinergic bronchodilator. The Toxicologist 4:6, 1984.
18. Gough, A.W., Barsoum, N.J., Smith, G.S., Sturgess, J.M. and de la Iglesia, F.A.: Early development of mammary gland carcinomas in rats induced by a neuroleptic agent. Fed. Proc. 43:592, 1984.
19. Gough, A.W., Barsoum, N.J., Smith, G.S., Sturgess, J.M. and de la Iglesia, F.A.: Pathologic changes in rats following subchronic oral administration of a novel neuroleptic agent. Fed. Proc. 43:575, 1984.
20. Smith, G.S., Barsoum, N.J., DiFonzo, C.J., Gough, A.W., Gracon, S.I., McGill, G.E., Martin, R.A., Sturgess, J.M. and de la Iglesia, F.A.: Acute and subacute oral toxicity evaluation of an anxiolytic agent. The Toxicologist 4:168, 1984.
21. Fitzgerald, J.E., McGuire, E.J., Andrews, L.K., Watkins, J.R., Anderson, J.A. and de la Iglesia, F.A.: Structure-activity relationship study on mammary gland neoplasia induced by neuroleptic compounds in rats. Fed. Proc. 43:592, 1984.
22. McGuire, E.J., Lucas, J.A., Gray, R.H. and de la Iglesia, F.A.: Comparative study of peroxisome proliferation by gemfibrozil in two strains of hamsters. Fed. Proc. 43:384, 1984.
23. Petrere, J.A., Wise, L.D., Anderson, J.A., Fitzgerald, J.E. and de la Iglesia, F.A.: Teratology study in rabbits with calcium valproate. Teratology 29:50A, 1984.
24. DiFonzo, C.J., Barsoum, N.J. Gracon, S.I., Gough, A.W., Martin, R., Sturgess, J.M. and de la Iglesia, F.A.: Chronic toxicity and carcinogenicity evaluation of prosthetic intraocular lens materials after long-term intramuscular implantation in rats. The Toxicologist 5:224, 1985.

25. DiFonzo, C.J., Barsoum, N.J., Gracon, S.I., Gough, A.W., Sturgess, J.M. and de la Iglesia: Evaluation of intraocular lens materials after long-term implantation in the eye of monkeys. The Toxicologist 5:51, 1985.
26. Kim, S.N., Petrere, J.A., Anderson, J.A., Fitzgerald, J.E. and de la Iglesia, F.A.: Teratology studies of ametantrone acetate in pregnant rats and rabbits. Teratology 29:41A, 1984.
27. Barsoum, N.J., Smith, G.S., Gough, A.W., Sturgess, J.M. and de la Iglesia, F.A.: Preclinical toxicology of a novel synthetic angiotensin converting enzyme inhibitor. Fed. Proc. 44:519, 1985.
28. Jayasekara, M.U., Anderson, J.A., Fitzgerald, J.E., Kim, S.N., McGuire, E.J., Watkins, J.R. and de la Iglesia: F.A.: Mouse tumorigenesis studies with the beta-adrenoceptor blocking agent bevantolol. The Toxicologist, 5:93, 1985.
29. Kim, S.N., de la Iglesia, F.A. and Fitzgerald, J.E.: Subcellular myocardial changes following amsacrine in fats. J. Mol. Cell. Cardiol. 16:(suppl. 1)21, 1984.
30. Anderson, J.A., Andrews, L.K., Fitzgerald, J.E. and de la Iglesia, F.A.: Preliminary toxicological evaluation of a non sulfhydryl angiotensin Converting enzyme inhibitor (CI-925). The Toxicologist 5:111, 1985.
31. McGuire, E.J., Lucas, J.A., Gray, R.H. and de la Iglesia, F.A.: Peroxisome inducing potential of a lipid regulating agent, phenylene (oxy)bis 2, 2-dimethylpentanoic acid, in rat hepatocytes. The Toxicologist 5:156, 1985.
32. Fitzgerald, J.E., Pegg, D., Jayasekara, U., Watkins, J., Anderson, J., McGuire, E. and de la Iglesia, F.A.: Preliminary toxicologic evaluation of CI-926, a new antihypertension agent. The Toxicologist, 5:9, 1985.
33. McGuire, E.J., Fitzgerald, J.E., Anderson, J.A., Watkins, J.R., Andrews, L.K. and de la Iglesia: Systemic toxicity, evaluation of phenylene (Oxy)bix 2, 2-dimethylpentanoic acid, a lipid regulating agent. The Toxicologist 5:94, 1985.
34. DeWit, R.H., Peter, G.K., Fitzgerald, J.E. and de la Iglesia, F.A.: Preliminary toxicologic evaluation of a novel cardiotonic. The Toxicologist 5:94, 1985.
35. Gough, A.W. and de la Iglesia, F.A.: Pathology of canine drug-induced arthropathy. Fed. Proc. 44:519, 1985.
36. Smith, G.S., Barsoum, N.J., DiFonzo, C.J., Gracon, S.I., Martin, R.A., de la Iglesia, F.A. and Sturgess, J.M.: Subacute oral roxicity evaluation of an anxiolytic agent. The Toxicologist 5:227, 1985.
37. Rogers, S.C., Barsoum, N.J., DiFonzo, C.J., Gracon, S.I., Houston, B.J., Martin, R.A., Smith, G.S., Sturgess, J.M. and de la Iglesia, F.A.: Intravenous toxicology of a new cardiotonic agent. The Toxicologist 5:111, 1985.
38. Gracon, S.I., DiFonzo, C.J., Barsoum, N.J., McGill, G.E., Martin, R.A., Rogers, S.C., Smith, G.S., Sturgess, J.M. and de la Iglesia, F.A.: Short-term oral toxicology profile of a novel antihypertensive agent. The Toxicologist 5:8, 1985.
39. Gracon, S.I., Barsoum, N.J., DiFonzo, C.J., Gough, A.W., McGill, G.E., Martin, R.A., Sturgess, J.M. and de la Iglesia, F.A.: Intravenous toxicologic evaluation of the antibacterial agent enoxacin. The Toxicologist 5:11, 1985.
40. Gough, A.W., Gracon, S.I., DiFonzo, C.J., Watson, B.S.B., Sturgess, J.M. and de la Iglesia, F.A.: Spontaneous neoplasia of CF1 mice. Fed. Proc. 44:519, 1985.

41. Kim, S.N., Peter, G.K., Paradiso, L.P., Fitzgerald, J.E. and de la Iglesia, F.A.: Cardiotoxicity study of amsacrin and adriamycin in a subacute rat model. J. Molec. Cell. Cardiol. 17:(suppl.), 1985.
42. Aust, A., Andrews, L. and de la Iglesia, F.A.: Mechanism by which three pyrazole amines cause cancer. Proc. Am. Assn. Cancer Rs. 26:92, 1985.
43. Robertson, D.G., French, J., Gray, R.H. and de la Iglesia, F.A.: Cholinergic mechanism in trimethyltin chloride (TMT) toxicity to the hippocampus. The Toxicologist 5:85, 1985
44. Ghoshal, A., Gracon, S.I., Stuhne-Sekalec, L., Roomi, W.H., Cameron, R.G. and de la Iglesia, F.A.: Effects of nile acids on progesterone binding in rat liver microsomes. The Toxicologist 5:172, 1985.
45. Walker, R., Martin, R.A., DiFonzo, C.J., Sturgess, J.M. and de la Iglesia, F.A.: Lack of hepatotoxic interaction between anticonvulsant drugs in the rat. Fed. Proc. 44:1115, 1985.
46. Peter, G.K., Wise, L.D., Anderson, J.A., Schardein, J.L. and de la Iglesia, F.A.: Teratology studies of an antihypertensive agent. Teratology, in press, 1985.
47. de la Iglesia, F.A.: Factors influencing short and long-term studies on the carcinogenesis evaluation of lipid regulating agents. Toxicol. Path. 13 (In Press - 1985).
48. Feuer, G., DiFonzo, C.J., Gracon, S., Dhami, M.S.I., Sturgess, J.M. and de la Iglesia, F.A.: Changes in drug metabolism by steroid treatments of female rats. In Press - 1985.
49. Ghoshal, A., Gracon, S., Roomi, M., Cameron, R., Sturgess, J., de la Iglesia, F.A. and Feuer, G.: Effects of bile acids on microsomal progesterone receptor binding and cytochrome P-450. In press, 1985.
50. Gracon, S.I., DiFonzo, C.J., Gough, A.W., Sturgess, J.M. and de la Iglesia, F.A.: Evaluation of carcinogenesis potential in CF1 mice receiving vidarabine. The Toxicologist 5:19, 1985.
51. Andrews, L., Watkins, J.R., McGhee, C., Anderson, J.A., Fitzgerald, J.E. and de la Iglesia, F.A.: Preclinical toxicological evaluation of the chemotherapeutic agent trimetrexate. Proc. Am. Assn. Cancer Res. 26:370, 1985.

RICARDO E. DUQUE, M.D.
ADJUNCT RESEARCH INVESTIGATOR
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Clinical Immunopathology: three months.
B. Surgical Pathology (Room 4): two weeks.
C. Autopsy Service: five weeks.
D. Flow Cytometry Laboratory: nine months.
E. Consultant in Pathology, Chelsea Community Hospital: three weeks.

II. TEACHING ACTIVITIES:

A. Pathology House Officers:
   1. Clinical Immunopathology.
   2. Flow Cytometry/Hematopathology.
   3. Autopsy Service.
B. Graduate Students:
   1. Graduate Student Research Projects (Advisor).
C. Post-Doctoral Fellow:
   1. Dr. Paul Robinson.

III. RESEARCH ACTIVITIES:

A. Development of and refinement of Flow Cytometric methodology to examine neutrophils from different compartments for the evaluation of their functional status.
B. Application of the methods stated in IIIa to clinical screening of patients with disorders of neutrophil function.
C. Development of methodology to detect the presence of antineutrophil and antimonocyte and antiplatelet antibodies by indirect immunofluorescence in Flow Cytometric Systems; clinical application of this test has been established.

SPONSORED SUPPORT:

A. Dental Research Institute, University of Michigan School of Dentistry; Co-Investigator Dr. Walter Loesche. "Interactions Between Periodontopathic Bacteria and Neutrophils". April 1, 1985, February 29, 1986.

PROJECTS UNDER STUDY:

A. Interactions Between Peiodontopathic Bacteria and Neutrophils. Co_-Investigator, Dr. Walter Loesche.
B. Functional Kinetics of Circulating Neutrophils from Arterial and Coronary Sinus Blod in Myocardial Ischemia. Co-Investigator, Dr. Michael Shea.
C. Systemic Complement Activation, Neutrophils and Lung Injury. Co-Investigators, Drs. Peter A. Ward and Gerd O. Till.

ARTICLES SUBMITTED FOR PUBLICATION:

1. Duque, R.E., Robinson, J.P., Hudson, J.L., Till, G.O. and P.A.: Differences in oxidative metabolism between blood and peritoneal rat neutrophils established by flow cytometry.
2. Duque, R.E., Phan, S.H., Fantone, J.C. and Marasco, W.A.: Effects of p-bromophenacyl bromide on stimulus response coupling in rat neutrophils.

IV. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES/SEMINARS:

1. Invited Faculty, "An Introduction to Flow Cytometry and Microbiological Applications." 85th Annual Meeting, American Society for Microbiology. Las Vegas, Nevada, March 2, 1985.
2. Participant, Physiology of Phagocytic Cells (Minisymposium) 69th Annual Meeting Anaheim, California. Federation of American Societies for Experimental Biology (FASEB) April, 1985.

V. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Duque, R.E., Phan, S.H., Hudson, J.L., Till, G.O. and Ward, P.A.: Functional defects in phagocytic cells following thermal injury: Applications of flow cytometric analysis. Am. J. Pathol. 118:116-127, 1985.
2. Marak, G.E., Rao, N.A., Scott, J.M., Duque, R.E. and Ward, P.A.: Antioxidant modulation of phacoanaphylactic endophthalmitis. Ophth. Res., in press.
3. Fantone, J.C., Duque and Phan, S.H.: Prostaglandin modulation of formyl-methionyl-leucyl-phenylalanine induced transmembrane potential changes in rat neutrophils. Biochem. Biophys. Acta. 804:265-274, 1984.

BOOKS AND CHAPTERS IN BOOKS:

1. Hudson, J.L., Duque, R.E. and Lovett, E.J.: Applications of flow cytometry. In, Immunotoxicology of the Immune System. Dean, Munson, Luster, editors. Raven Press, N.Y.
2. Marak, G.E., Rao, N.A., Scott, J.M., Duque, R.E. and Ward, P.A.: Free radicals and phacoanaphylaxis. In, Immunology and Immunopathology of the Eye. O'Conner, C.R. and Chandler, editors. Masson Publishers, New York, pp. 144-145, 1985.

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

1. Duque, R.E., Robinson, J.P., Hudson, J.L., Till, G.O. and Ward, P.A.: Metabolic differences between circulating and elicited rat neutrophils established by flow cytometry. Fed. Proc. 44(4):907(A), 1985

BARRY G. ENGLAND, PH.D.
ASSOCIATE PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Director, Ligand Assay Laboratory.

II. TEACHING ACTIVITIES:

A. Pathology House Officers laboratory rotation.
B. Medical Technology Student laboratory rotation.
C. Medical Technology Student mini-course (two week) on radioimmunoassay techniques.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. New England Nuclear Corporation: Research Grant, Study of Reproductive Endocrinology and Ligand Assay Techniques; Principal Investigator, $15,000/yr, 1976 to present.
B. USPHA (NIAMDD) AM20572: Michigan Diabetes Research and Training Center; Director, Ligand Assay Core Facility, $117,000/yr, 1983-1988.
C. NICHHD: Reproductive Endocrinology Program; Co-Director, Standards and Reagents Core Facility, $93,211/yr, 1979-1984.
C. NICHHD: Training Program in Reproductive Endocrinology, Faculty Member, $150,914/yr, 1980-1985.
D. Ford Foundation: Training Program in Reproductive Endocrinology, Faculty Member, $120,000/yr, 1981-1984.

PROJECTS UNDER STUDY:

A. Hexasaccharide-substituted Human Chorionic Gonadotropin: A Specific Marker for hCG secreting Neoplasms. B.G. England and L. Cole.
B. Direct Radioimmunoassays for Estradiol-17B and Estrone. B.G. England.
C. A Sensitive and Specific HPLC Assay Methodology For The Catecholamines. B.G. England and S. Grauds.
D. Ovine Follicular Development Compared Between the Breeding and Anestrous Seasons. B.G. England and R. Webb.
E. Growth of Bovine Follicles Following Lutectomy and Follicular Removal by Electrocautery. B.G. England, L.W. Schappa, and R.B. Staigmiller.
F. Gonadotropin Receptor, Steroidogenesis and Prostaglandin Synthesis in Ovine Follicles. B.G. England and H. Shaw.
G. Mutant Forms of Insulin in Mature Onset Diabetes of the Young. B.G. England, A. Vinik, S. Fajans, and L. Reeves.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Director, Ligand Assay Laboratory.

MEDICAL SCHOOL/HOSPITAL:

A. Director, Ligand Assay Core Facility, Diabetes Research and Training Center.
B. Co-Director, Standards and Reagents Core Facility, Reproductive Endocrinology Center.

REGIONAL AND NATIONAL:

A. Society for the Study of Reproduction, National Education Committee Chairman.
B. Clinical Ligand Assay Society, National Awards Committee Chairman.
C. Midwest Radioassay Society, Nominations Committee Chairman.

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES/ACTIVITIES:

1. Invited Lecture, Scatchard Plot Analysis, Seminar at the Quarterly Meeting, Midwest Radioassay Society, October 18, 1984.
2. Participant, Site Visit of the Diabetes Research and Training Center, Vanderbilt University, April 24 - 26, 1985.

VI. PUBLICATIONS:

1. Griffin, B.F., Bajpai, P.K. and England, B.G.: The effect of adriamicin on the reproductive system of the male pre-puberal rat. J. Andrology, in press.
2. Nordblom, G.D., Counsell, R.E. and England, B.G.: A specific radioimmunoassay for androstenedione with reduced bridge-binding. Steroids, in press.

JOSEPH C. FANTONE, M.D.
ASSISTANT PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Autopsy service.
B. Occasional surgical pathology interpretation.

II. TEACHING ACTIVITIES:

A. Sophomore medical student pathology laboratory (alternate years).
B. Sequence Coordinator and Lecturer - Sophomore Medical Students (ICS-600) Immunopathology.
C. Pulmonary Pathology Conference (monthly to Pulmonary Division - Internal Medicine).
D. Lecturer - Clinical Immunology Series for House Officers.
E. Lecturer - Microbiology and Immunology 624.
F. Lecturer - Immunobiology 414.
G. Lecturer - Medical Student Research Forum.
H. Coordinator - Interphase lecture series on Immunopathology.
I. Preceptor - Undergraduate and medical student research.
J. Direct graduate student Ph.D. thesis.

III. RESEARCH ACTIVITIES:

A. Regulation of neutrophil dependent tissue injury.
B. Mechanisms of oxygen metabolite mediated tissue injury.

SPONSORED SUPPORT:

A. Clinical Investigator Award - Lung Inflammation (NIH-HL-00905; 1981-1986).
B. Principal Investigator: Modulation of Immune Complex Lung Injury (NIH-RO1-HL 32024; 1985-1990).
C. Principal Investigator: Phagocytic Cells and Acute Lung Injury (American Heart Assoc. Grant in Aid; 1985-1988).

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Interview resident applicants.
B. MSP Executive Committee.

MEDICAL SCHOOL/HOSPITAL:

A. Medical student advisor (3rd and 4th years).
B. MSTP Review Committee.
C. ICS - Executive Committee.
D. Associate Director of Sophomore Medical Student ICS Course (ICS-600-601).
E. Graduate Student(2) Ph.D. Thesis Committee.

REGIONAL AND NATIONAL:

A. NIH - Study Section: RFA on Atherosclerosis and Inflammation.
B. Reviewer for: J. Clin. Invest., J. Immunol., Science, Am. J. Pathol., Lab. Invest., Prostaglandins, J. Biol. Chem., Clin Immunol. Immunopathol., Am. Rev. Resp. Dis.

VI. PUBLICATIONS:

1. Fantone, J.C., Duque, R.D. and Phan, S.H.: Prostaglandin modulation of N-formyl-methionyl-leucyl-phenylalanine induced transmembrane potential changes in rat neutrophils. Biochem. Biophys. Acta. 804:265-274, 1984.
2. Schrier, D., Gibertsen, R.B., Lesch, M. and Fantone, J.C.: The role of neutrophils in type II collagen induced arthritis. Am. J. Pathol. 177:26-29, 1984.
3. Lee, E.C., Rui, S.T., Fantone, J.C. and Varani, J.: Functional responses of tumor cells to phorbol esters: Role for prostaglandins. Oncology 41:210-216, 1984.
4. Ando, D.G., Lynch, J.P. and Fantone, J.C.: Sarcoid myopathy with elevated creatine phosphokinase. Amer. Rev. Resp. Dis. 131:298-300, 1985.
5. Lynch, J.P., Flint, A. and Fantone, J.C.: Noncaseating pulmonary granulomas associated with small cell carcinoma of the lung. Am. J. Med. 78:691-696, 1985.
6. Mitsos, S., Fantone, J.C., Gallagher, K.P., Walden, K.M., Simpson, P.J., Abramd, G.G., Schork, M.A. and Lucchesi, B.R.: Canine myocardial reperfusion injury. Protection by a free radical scavenger N-2-mercaptopropionyl glycerol. Pharmacology, in press.

BOOKS AND CHAPTERS IN BOOKS:

1. Fantone, J.C.: Mechanisms of chemotatic factor stimulation of polymorphonuclear leukocytes. In, Modulation by Prostaglandins in Inflammatory Mediators, G.A. Higgs and T.J. Williams, editors. McMillan Press LTD, 1985.
2. Fantone, J.C. and Ward, P.A.: Oxygen derived radicals and their metabolites: Relationship to Tissue Injury. Current Concepts Series. Upjohn Pharmaceuticals, Kalamazoo, Michigan, 1985.
3. Fantone, J.C. and Ward, P.A.: III. Mechanisms of lung parenchymal injury. In Hunninghake, G.W., editor, State-of-the-art. Pathogenesis of Granulomatous Lung Disease. Amer. Rev. Resp. Disease 130:484-491, 1984.

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

1. Driscoll, E.M., Werns, S.W., Shea, M.J., Mitsos, S.E., Fantone, J.C. and Lucchesi, B.R.: Effect of allopurinol on canine myocardial ischemia. FASEB, 1985.
2. Fantone, J.C., Phan, S.H. and Kunkel, S.L.: Regulation of rat neutrophil phospholipase A_2 activity and arachidonic acid metabolixm by PGE_1 and cyclic AMP. FASEB, 1985.
3. Phan, S.H., Hurtado, S., Fantone, J.C. and Kramer, C.: The mechanism of diisopropylphosphofluoridate inhibition of neutrophil stimulation. FASEB, 1985.
4. Langweiler, M., Fantone, J.C., Standig, L. and Davis, B.H.: Fluid pinocytosis in human neutrophils (PMN): Chemotactic peptide, but not phorbol ester, stimulation is inhibited y prostaglandins and aachidonic acid metabolism inhibitors. FASEB, 1985.
5. Mitsos, S., Lucchesi, B. and Fantone, J.C.: Modulation of hemoprotein-H_2O_2 mediated peroxidation reactions by sulfhydryl compounds. Relation to myocardial infarction. FASEB, 1985.
6. Fantone, J.C., Duque, R.E. and Phan, S.H.: The effects of 3-deaza-adenosine on Formyl-methionyl-leucyl-phenylalanine (FMLP) induced human neutrophil membrane potential changes and superoxide anion (O_2^-) Production. Fed. Proc., 1984.
7. Schrier, D., Gilbertsen, R.B., Lesch, M. and Fantone, J.: Type II collagen-induced arthritis in rats: The role of neutrophils. Fed. Proc., 1984.
8. Fantone, J.C. and Phan, S.H.: Effects of bleomycin on the secretion of prostaglandins by rat lung fibroblasts. Amer. Thor. Soc., 1984.

ANDREW FLINT, M.D.
ASSISTANT PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Surgical Pathology Rotation: July (2/3), August (2/4), September (2/4), January-February (2/4), April (2/4), June (1/4).
B. Cytopathology Rotation: July (2/4), August-September (2/4), December (4/4), February (2/4), March-April (2/4), May (2/4).

II. TEACHING ACTIVITIES:

A. ICS Lectures:
   1. Diffuse Lung Disease (one hour).
   2. Inhalational and Occupational Lung Disease (one hour).
   3. Group Leader: M4 student elective, March, 1985.

INVITED LECTURES/SEMINARS:

1. Fine Needle Biopsy Aspiration Cytology, Departments of Pathology and Otolaryngology, University of Western Ontario, June, 1985.
2. Flow Cytometric Analysis of DNA Content of Solid Tumors: Clinical Applications, Department of Pathology and Otolaryngology, University of Western Ontario, June, 1985.
3. Flow Cytometry, Basic Principles and Clinical Applications, Departments of Pathology and Otolaryngology, University of Western Ontario, June, 1985.
4. Fine Needle Biopsy Aspiration Cytology of Head and Neck Tumors, Grand Rounds, Department of Otolaryngology, University of Western Ontario, June, 1985.
5. Pulmonary Pathology Didactic Seminars - Department of Pathology, University of Michigan.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Flow Cytometric of Abnormal Cervical-Vaginal Epithelial Cells: Correlation with Morphological Findings. Cancer Research Committee Grant, Andrew Flint, M.D., Principal Investigator.
B. Pathology Consultant, Morphologic Studies of Diffuse Interstitial Lung Diseases, A Multi-institution Project, Rueben M. Cherniakm M.D., National Jewish Hospital, Program Director.
C. Pathology Consultant, A Comparative Study Using Conventional Radiography, Conventional Tomography, Computed Tomography, and Nuclear Magnetic Resonance Imaging, Gary N. Glazer, M.D., Principal Investigator.

D . Flow Cytometric Analysis of DNA Content of Basal Cell Carcinomas, J. Philip McCoy, Ph.D., Principal Investigator.
E. Pathology Consultant, Prospective Investigation of Pulmonary Embolism Diagnosis, John G. Weg, M.D., Principal Investigator.

PROJECTS UNDER STUDY:

A. Flow Cytometric DNA Analysis of Breast Carcinomas. A Prospective Study Correlating Ploidy Analysis with Subsequent Surgical Findings and Clinical Outcome.
B. Flow Cytometric DNA Analysis of Squamous Cell Carcinomas of Head and Neck: Does Ploidy Analysis Predict Tumor Recurrence?
C. Flow Cytometric DNA ANalysis of Urinary Bladder Carcinomas: Correlation of Ploidy Analysis with Radioresponsiveness and Clinical Outcome.
D. Flow Cytometric DNA Analysis of Transitional Cell Carcinomas of the Urinary Bladder: Correlation of Ploidy Patterns and Histologic Grade and Clinical Outcome.
E. DNA Analysis of Ovarian Tumors of So-called Borderline Malignancy: Correlation with Clinical Behavior.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Member, Task Force for Alternate Revenue Sources.
B. Member, Executive Committee, MSP.
C. Pathology Consultant, MDS Laboratories.
D. Pathologist-in-Chief, Chelsea Medical Laboratories.
E. Coordinator, Senior Staff service rotations.
F. Coordinator for implementation of new technical/operating procedures for Surgical Pathology Laboratories.
G. Author, Anatomic Pathology Services Directory.
H. Residents' Teaching Conference Coordinator.

MEDICAL SCHOOL/HOSPITAL: None.

REGIONAL AND NATIONAL:

A. Member, Legislative Affairs Committee, Michigan Society of Pathologists.

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES/SEMINARS:

1. Course Director, "Applications of Flow Cytometry to Diagnostic Cytology", American Society of Cytology, Atlanta, Georgia, November, 1984.
2. Participant in Symposium, "Flow Cytometry and Diagnostic Pathology", International Academy of Pathology, XV International Congress, September, 1984.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Flint, A., Lovett, E.J., Stoolman, L.M. et al: Flow cytometric analysis of DNA in diagnostic cytology. Am. J. Clin. Path., in press.
2. Flint, A., Gikas, P.W. and Roberts, J.A.: Alveolar soft part sarcoma of the uterine cervix. Gynecol. Oncol., in press.
3. Laufe, R., Simon, R. and Flint, A.: The occurrence of adult respiratory distress syndrome in neutropenic patients. Am. J. Med., in press.
4. Whitcomb, C.C., Crissman, J.D., Flint, A. et al: Reproducibility and morphologic classification of non-Hodgkin's lymphomas using the Luke-Collins system. Am. J. Clin. Path., 82:383-388, 1984.

BOOKS AND CHAPTERS IN BOOKS:

1. Flint, A.: The Pathology of the interstitial lung diseases. In, The Interstitial Lung Diseases, Schwartz and King, editors, Marcel B. Dekker.

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

1. Flint, A., Lloyd, R.V. and Wilson, B.S.: Pulmonary histiocytosis X: Immunoperoxidase staining for Ia-like antigens in paraffin-embedded tissues. Presentation at International Academy of Pathology Meeting, Toronto, Canada, 1985.
2. Flint, A. Lampe, H.B., McClatchey, K.D. et al.: The prognostic value of flow cytometric DNA measurements in squamous cancers of the aerodigestive tract. Presentation at International Academy of Pathology, Totonto, Canada, 1985.
3. Mervak, T., Flint, A., Beckwith, A.L. et al.: Flow cytometric DNA analysis of paraffin-embedded tissues: Analysis of factors which affect ploidy determination. Presentation at American Society of Clinical Pathology, 1985.
4. Flint, A.: Aspiration biopsy cytology, Medilab. In Press.

BRUCE A. FRIEDMAN, M.D.
PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Director, Pathology Data Systems.
(LDC and DEC Systems)
B. Director, Phlebotomy Team/Central Distribution
C. Associate Director, Blood Bank

II. TEACHING ACTIVITIES:

MEDICAL SCHOOL/HOSPITALS:

A. Course Director of a postgraduate seminar held in the Towsley Center and entitled "Clinical Laboratory Computers: Symposium 1895"

III. RESEARCH ACTIVITIES:

PROJECTS UNDER STUDY:

A. The impact of prospective reimbursement systems on the quality of medical care in conjunction with faculty members of the Department of Medical Care Organization, School of Public Health.
B. Friedman, B.A.: Some Personal Observations of Differing Goals and Objectives in the Planning of Hospital Information Systems. Accepted for presentation at the Symposium on Computer Applications in Medical Care, November 12, 1985.
tion at a symposium in November 1985
C. Friedman, B.A., Liberman-Lampear, A., and Morrow, T: Designing a Set of Laboratory Test Requisitions. Accepted for publication in the October issue of Medical Laboratory Observer.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Task Force to design and implement a new set of laboratory test requisitions.
B. Director of RHP Activation for the Department of Pathology.
C. Microcomputer Steering Committee (Chairman).
D. Advisory Committee on Appointments, promotions, and Titles.
E. Coordinator for the RHP Campaign.

MEDICAL SCHOOL/HOSPITAL:

A. Medical Record Work Group (Chairman).
B. Physicians' Committee on Medical Informatics (Chairman).
C. Physicians' Liaison Council (Chairman).
D. Hospital Information System Advisory Committee.
E. Quality Assurance Committee.
F. Quality Assurance Steering Committee.
G. Medical School Grievance Board.

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES AND SEMINARS:

1. "Trends in Transfusion Practice." A lecture delivered to the Departments of Medicine and Pathology at the Michigan State College of Human Medicine, East Lansing, Michigan, December 12, 1984..
2. "Pathologists and the Laboratory Database." A lecture delivered to the Department of Pathology, Wayne State University Medical School, Detroit, Michigan, February 6, 1985.
3. "Is It Possible to Reduce Blood Bank Testing and Blood Transfusions Without Sacrificing Quality?" A lecture delivered at the Marion F. Beard Scientific Seminar, Louisville, Kentucky, May 16, 1985.
4. "Ownership and Control of the Laboratory Database." A lecture delivered at "Clinical Laboratory Computers: Symposium 1985", Ann Arbor, Michigan, May 14, 1985.

VI. PUBLICATIONS:

1. Friedman, B.A.: Containing costs in the blood bank by reducing unnecessary crossmatching. Pathologist July, 1984, pp. 405-410.
2. Friedman, B.A.: The clinical laboratory computer as a communications link in a teaching hospital. Medical Electronics July 1984, pp. 77-83.
3. Friedman, B.A.: Should hospital blood banks begin to draw blood again? Pathologist May, 1985, pp. 62-67.

DONALD A. GIACHERIO, PH.D.
INSTRUCTOR IN PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Director, General Chemistry laboratory.
B. Consultant, MDS Laboratories.
C. Daily sign-out and interpretation of electrophoresis results.

II. TEACHING ACTIVITIES:

A. Medical Students:
   1. Two contact hours Path 600:
      a. Cyclosporine in organ transplantation.
      b. Liver function tests.
B. Pathology House Officers:
   1. Participant, Clinical Pathology Rounds.
   2. Lecturer, Clinical Pathology Didactic Lecture Series.
   3. Daily sign-out and interpretation of electrophoresis results.
   4. Review of selected topics in Clinical Chemistry.
C. Postgraduate Teaching:
   1. Course Faculty, Towsley Continuing Education Symposia on Electrophoresis and Immunofixation.
D. Medical Technology:
   1. Lecturer, Path 410, three hours on steroid chemistry.
   2. Three contact hours per week during lab rotation on electrophoresis and centrifugal analyzers.
   3. Program Director, Continuing Education Series for Medical Technologists (weekly).

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Co-Investigator (10% effort): Smokeless Tobacco Research Council Grant, "Significance of Immune Response to Mucosal Carcinogens".

PROJECTS UNDER STUDY:

A. Immune responses to orally administered carcinogens in rats: "Immunogenicity of 2-AAF-carrier protein conjugates following parenteral and mucosal immunization in rats and rabbits". D.F. Keren, L.J. Anselmi, P. Lincoln, T.M. Annesley, and D.A. Giacherio. (Submitted, Cancer Letters).

B. Characteristics of the distribution of cyclosporine in blood: "Concentration dependent distribution of cyclosporine in blood. T.M. Annesley, D.A. Giacherio, and C. Keldkamp. (Submitted, Clin. Chem).
C. Adaptation of assays to centrifugal analyzers: "Simple automated procedure for the determination of urine iron in the presence of deferoxamine". D. Giacherio, T. Annesley, and R. Davenport. (Submitted, Clin. Chem.).
D. Adaptation of immunoassays for apolipoproteins A and B to the Cobas-Bio centrifugal analyzer.
E. "Performance characteristics of an optimized kinetic assay for ceruloplasmin on the Cobas-Bio centrifugal analyzer". D. Giacherio and T. Annesley. (In preparation).
F. Determination of CK-BB levels in the serum and CSF of anoxic neonates.
G. Abnormal levels of CK-MB in patients whose total CK activity is within the normal range: Case reports. D. Giacherio and R. Davenport. (In preparation).
H. Unexplained transient elevations of alkaline phosphatase in children: Case reports. S. Kern and D. Giacherio (In preparation).

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Director, General Chemistry Laboratory.

REGIONAL AND NATIONAL:

A. Coordinator, College of American Pathologists Clinical Chemistry Standards Assay Laboratory.

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES/SEMINARS:

1. "Electrophoresis vs. Immunoassay for Cardiac Enzymes". Towsley Center Symposia on Electrophoresis and Immunofixation.
2. "Laboratory to Cardiology: Confirming Earlier Diagnosis of Myocardial Infarction". Roche Diagnostic Systems Symposia, Kansas City, Missouri.
3. "Validity and Reliability of Laboratory Tests". Northville Regional Psychiatric Hospital CME Program, Northville, Michigan.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Rocher, L.L., Giacherio, D. and Annesley, T.: Refinement in HPLC analysis for cyclosporine: Comparison of octyl and octadecyl columns. Transplant Proc., accepted for publication.

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

1. Giacherio, D. and Annesley, T.: Methods for therapeutic drug monitoring. MediLab 1:7-14, 1984.
2. Annesley, T. and Giacherio, D.: Diagnosis of myocardial infarction using serum enzymes. MediLab. 1:43-49, 1984.
3. Keren, D.F., Anselmi, L., Lincoln, P., Annesley, T. and Giacherio, D.: Humoral immune response to parenteral immunization with protein conjugates of the carcinogen 2-acetylamiofluorene. Fed. Proc. 44:963, 1985.
4. Viscardi, R., Donn, S., Giacherio, D. and Goldstein, G.: Serum creatine kinase brain specific isoenzyme (CK-BB) in term asphyxiated infants. Ped. Res. 19:396A, 1985.
5. Giacherio, D. and Annesley, T.: Cyclosporine: Promising new immunosuppressant for organ transplantation. MediLab 2:20-25, 1985.
6. Rocher, L.L., Giacherio, D. and Annesley, T.: Evaluation of two columns for the HPCL determination of cyclosporine in whole blood

PAUL W. GIKAS, M.D.
PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Necropsy Service - four weeks.
B. Surgical Pathology - twenty-two weeks.
C. Cytopathology - two weeks plus sporadic assignment to cover when regular staff is away.
D. Diagnostic EM - share nephropathology work with Dr. Johnson - tumor diagnosis.
E. Consultation service for Uropathology.
F. Conduct monthly conference in Urologic Pathology with Urology Section.
G. Conduct monthly biopsy conference with Arthritis Section.
H. Participate in weekly Renal Biopsy Conference with Dr. Johnson.

II. TEACHING ACTIVITIES:

A. Lectures to Sophomore Pathology Class:
   1. Tubulo-interstitial renal disease.
   2. Prostatic and penile lesions.
   3. Testicular lesions.
   4. Death certification and forensic pathology.
   5. Pathogenesis of highway injuries.
B. Lectures to:
   1. Allergy Seminar, Department of Internal Medicine.
   2. Forensic Anthropology Course 567.
C. Guest Faculty for Evidence Seminar in Law School.
D. Faculty for Post Graduate Seminar of North Central Section of American Urologic Association.
E. Faculty for Post Graduate Medicine, Northern Michigan Summer Conference.

III. RESEARCH ACTIVITIES:

PROJECTS UNDER STUDY:

A. Collaborate with Urology Staff on projects from time to time.
B. Collaborate with Diagnostic Radiology Staff in correlation of imaging with pathologic findings in urologic lesions.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Director of Necropsy Service.

MEDICAL SCHOOL/HOSPITAL:

A. Hospital Medical-Legal Committee.

UNIVERSITY:

A. Faculty Representative to Big Ten Intercollegiate Conference and NCAA.
B. Chairman, Big Ten Intercollegiate Conference.

REGIONAL AND NATIONAL:

A. Board of Directors, Physicians for Automotive Safety.
B. Board of Directors, Public Citizen, Inc. (Ralph Nader, initial Chairman and Founder).
C. Deputy Medical Examiner, County of Washtenaw.

V. OTHER RELEVANT ACTIVITIES: None.

VI. PUBLICATIONS:

1. Grossman, H.B., Sonda, L.P., Lloyd, R.V. and Gikas, P.W.: Carcinosarcoma of bladder. Evaluation of electron microscopy and immunohistochemistry. Urology 24:387-389, 1984.

SANDRA C. GLUCK, M.S.,M.T.(ASCP)CLS
INSTRUCTOR OF MEDICAL TECHNOLOGY
PROGRAM DIRECTOR, MEDICAL TECHNOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES: None.

II. TEACHING ACTIVITIES:

MEDICAL SCHOOL/HOSPITALS:

A. Planned, coordinated, and implemented Pathology 411, 431, and 441 lecture courses for Medical Technology students. Identified topics and scheduled guest lecturers. Carried sole responsibility for some topics and student exercises.

III. RESEARCH ACTIVITIES:

A. Submitted "Laboratory Hiring Trends and MT Education: Where Do We Go From Here?", MLO Journal.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Administration of Medical Technology program:
   1. Direct teaching staff, coordinate curriculum.
   2. Act as problem-solver with teaching staff and students.
   3. Identify program and curriculum needs and directions.
   4. Plan and implement graduation party and laboratory staff party.

B. Liaison with LSA and Medical School:
   1. Counseled all students interested in MT curriculum.
   2. Managed all student records; revised and updated all published program information.
   3. Maintain contact with Admissions Office, LSA, and Medical School faculty and staff involved with program and students.

C. Public relations:
   1. Recruitment, program publicity, and admission of students.
   2. Plan and implement laboratory tour program for undergraduates.
   3. Plan and implement Laboratory Week poster display in Hospital.
   4. Prepare defense and defend program in discontinuance procedures for University Executive Officers and Board of Regents. Handle student and parents' concerns related to discontinuance decision.

MEDICAL SCHOOL/HOSPITAL:

A. Participate in Hospital Allied Health Education Program Directors' meetings.
B. Participate in Laboratory Communications Committee meetings.

REGIONAL AND NATIONAL:

A. Critique self-studies of other Medical Technology programs for the National Accrediting Agency for Clinical Laboratory Science (NAACLS).
B. Program Committee for September 1984 Region IV ASMT meeting.

V. OTHER RELEVANT ACTIVITIES:

A. Participate in biannual meetings of Michigan Medical Technology program directors.
B. Attend regional and national professional meetings.
C. Participate in variety of continuing education programs.

VI. PUBLICATIONS: None.

CARL T. HANKS, D.D.S., Ph.D.
PROFESSOR OF DENTISTRY
DEPARTMENT OF ORAL PATHOLOGY
ASSOCIATE PROFESSOR OF ORAL PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES: None.

II. TEACHING ACTIVITIES:

D.D.S. LEVEL

A. Oral Pathology 625. Oral Pathology Laboratory (one credit). (Laboratory teaching two afternoons per week, with one hour of lecture one of those afternoons). (Winter term, sophomore year).
B. Pathology 631. General Pathology Laboratory for Dental Students (three credits).

DENTAL HYGIENE

A. Oral Pathology 293. General and Oral Pathology Lectures (two credits). (Course director and principal lecturer - 28 of 32 lectures.) (Winter term, junior year.)
B. Oral Pathology 323. Clinical Oral Pathology Lectures (two credits). (Course director and principal lecturer - 16 out of 26 lectures.) (Fall term; senior year.)

GRADUATE LEVEL

A. Dental Hygiene 684. Seminars in General and Oral Pathology (one credit). (Course director; runs nine out of 13 seminars.) (Fall term.)
B. Oral Pathology 698. Graduate seminar in Oral Pathology (one credit). Histopathology seminar, two hours, participant.) (Fall and Winter term.)
C. Oral Pathology 694. Graduate Core course in Advanced Oral Pathology (two credits). (One or two, two hour lectures.) (Fall term.)

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Sybron/Kerr - Electromagnetic Stimulation of Bone and Connective Tissue Growth: Tissue Culture Studies. 1979-1985.

B. Biomedical Research Committee, The University of Michigan Dental School - "In Vitro Synthetic Bone Matrix for Repair of Alveolar Bone Defects." (C.T. Hanks and R. Fonseca, Chairman of Oral Surgery, Co-Investigators). This is funding for a pilot project for a longer grant application to the N.I.H. 1983-1985.
C. Biomedical Research Committee, The University of Michigan, School of Dentistry--"Autoradiographic Study of Electromagnetic Stimulation of Cells in Culture". (C.T. Hanks, Principal Investigator, 1 September 1984 - 31 December 1985.
D. NIH Application (RO1), "Effects of Electromagnetic Fields on Cell Function". Submitted June 30, 1984. (Approved, but not funded; will be resubmitted.)

PROJECTS UNDER STUDY:

A. Morphogenesis, differentiation and function as it occurs and varies in embryogenesis, regeneration (and repair), hyperplasia and neoplasia. Tissues which have been studied in this respect are salivary glands, integumental epithelium, dermis and bone.
B. Biocompatibility of synthetic materials (prosthetic materials, bioengineered devices) with living tissue. This includes cytotoxicity testing in cell and organ culture, mutagenesis, carcinogenesis as well as inflammatory events such as chemotaxis, vasoactivity, and immune responses such as lymphocyte transformation.
C. Effects of Electromagnetic Stimulation Upon Cell Growth and Differentiation in Vitro and in Vivo.

IV. ADMINISTRATIVE ACTIVITIES:

SCHOOL OF DENTISTRY AND DEPARTMENT OF ORAL PATHOLOGY:

A. Master's Degree Thesis Committee for Dr. Byron Scott, Department of Orthodontics.
B Master's Degree Thesis Committee for Dr. Bjorn Stephenson, Department of Periodontics.
C. Master's Degree Thesis Committee for Dr. Jeff Smith, Department of Periodontics.
D. Master's Degree Thesis Committee for Ann Rathbun, Department of Dental Materials.
E. Electron Microscope Facility Advisory Committee, School of Dentistry and Institute of Dental Research.

MEDICAL SCHOOL/HOSPITAL:

A. Library Advisory Council (SACUA).
B. Biomedical Research Council (BMRC).
C. Scientific Advisory Committee, Dental Research Institute.
D. University Senate Assembly.
E. University Committee on Use and Care of Animals.

V. OTHER RELEVANT ACTIVITIES:

PROFESSIONAL ORGANIZATIONS:

A. International Association for Dental Research.
B. American Academy of Oral Pathology.
C. American Association for Advancement of Science.
D. Omicron Kappa Upsilon.
E. Tissue Culture Association (Nation).
F. Michigan Biomedical Materials and Prosthetic Group.
G. Bioelectrical Repair and Growth Society.
H. New York Academy of Sciences.

REVIEWER FOR JOURNALS:

A. Journal of Dental Research.
B. Journal of the American Dental Association
C. Session organizer for International Workshop on Pulp Biology to be held at the University of North Carolina (Charlotte campus) in June, 1984. The session is entitled Cells and Extracellular Matrix of the Dental Pulp.
D. Organizing committee and participant: "International workshop on Biocompatability of Wrought and Cast Alloys (Toxicity, Hypersensitivity, and Clinical Reactions)", University of Michigan, June, 1985.

VI. PUBLICATIONS:

1. Hanks, C.T., Kim, J.S. and Makhmali, M: PDGF and FGF stimulates DNA and early protein synthesis in cultured rat calvarium psteoblasts. Submitted to Clacified Tissue International. (Being Revised.)
2. Hanks, C.T., Kim, J.S., Makhmali, M., Moswa, J., Geister, D. and Avery, J.K.: Electromagnetic stimulation of DNA and protein synthesis in vitro. J. Dent. Res. 64:280, 1985. (Presentation to 63rd General Meeting of International Association for Dental Research.)
3. Fear, D.W., Hanks, C.T., Bruce, R.A., Kim, J.S. and Fonseca, R.J.: Comparison of various in vitro implants in rat mandibles. J. Dent. Res. 64:285, 1985. (Presentation to 63rd General Meeting of International Association for Dental Research.)
4. Hanks, C.T. and Parkinson, W.C.: Response of primary and transform manimalian cells to pulsed electromagnetic stimulation. (Presentation to 29th Annual Meeting of the Biophysical Society, February, 1985.)

JOHN T. HEADINGTON, M.D.
PROFESSOR OF PATHOLOGY AND DERMATOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Clinical Dermatology.
B. Dermatopathology, private consultations.
C. Dermatopathology, MDS.
D. Dermatopathology, UMH.
E. Dermatopathology, tuitorials.

II. TEACHING ACTIVITIES:

A. Medical Students: (second year):
   1. Dermatopathology lectures.
B. Pathology and Dermatology House Officers:
   1. Dermatopathology.
C. Dermatology House Officers:
   1. Clinical Dermatology.

III. RESEARCH ACTIVITIES:

PROJECTS UNDER STUDY:

A. Androgenetic alopecia.
B. Dermal (collagen associated) dendritic cells.
C. Primary cutaneious lymphoma and pseudolymphomas.
D. Articles submitted for publication:
   1. Comparative Mitoses Counts in Spitz Nevus and Melanomas.
   2. A Morphometric Analysis of Male Androgenetic Alopecia Using Transverse Secions.
   3. Cutaneous Myxomas. A Major Component of the Complex of Myxomas, Spotty Pigmentation and Endocrine Overactivity.
   4. Solitary Benign Congenital Langerhans Cell Tumors of Skin.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Pigmented Lesion Clinic.

MEDICAL SCHOOL/HOSPITAL:

A. Dermatopathology Unit.
B. Co-director, Clinical Microbiology Laboratory.

REGIONAL AND NATIONAL:

A. Director, Advanced Dermatopathology, The American Academy of Dermatology.
B. Director, Annual Dermatopathology Symposium, The International Academy of Pathology.
C. Executive Board Member, The American Society of Dermatopathology.
D. Editorial Board, Archives of Dermatology.

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES AND SEMINARS:

1. Langerhans Cell Syndromes. XV International Congress of Pathology. Miami, September, 1984.
2. Pathology and Treatment of Alopecia Areata. Illinois Dermatology Society. Peoria, September, 1984.
3. Dermatopathology Symposium, Victoria Hospital, London, Ontario. September, 1984.
4. Visiting Professor, University of Oklahoma, Oklahoma City. November, 1984.
5. Papular Infantile Xanthomatosis, The American Society of Dermatopathology. November, 1984.
6. Introduction and Role of the Dermal Dendrocyte. In Advanced Dermatopathology, "The Pathobiology of Cutaneous Inflammation". American Academy of Dermatology, Washington, D.C. December, 1984.
7. Alpha-1 antitrypsin deficiency panniculitis, CPC presentations. American Academy of Dermatology, Washington, D.C. December, 1984.
8. Advances in Adnexal Skin Tumors, British Society of Dermatopathology. London. February, 1985.
9. Cutaneous Myxomas and Carney's Complex. I.A.P. Dermatopathology Symposium, Toronto. March, 1985.
10. Soft Tissue Tumors of Skin, South Bay Pathology Society. Carmel, California. April, 1985.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Vanderveen, E.E., Ellis, C.N., Kang, S., Case, P., Headington, J.T., Voorhees, J.J. and Swanson, N.A.: Topical minoxidal for hair regrowth. J. Am. Acad. Dermatol. 11:416-421, 1984.
2. Headington, J.T. and Novak, E.: Clinical and histologic studies of male pattern baldness treated with topical minoxidil. Current Therapeutic Research 36:1098-1106, 1984.
3. Novak, E., Franz, T.J., Headington, J.T. and Wester, R.C.: Topically applied minoxidil in baldness. International J. of Derm. 24:82-87, 1985.
4. Padilla, R.S., Flynn, K. and Headington, J.T.: Epithelioid sarcoma. Enzymatic histochemical and electron microscopic evidence of histiocytic differentiation. Arch. Dermatol. 121:389-393, 1985.

5. Cooper, P.H., Mills, S.E., Leonard, D.D., Santa Cruz, D.J., Headington, J.T., Barr, R.J. and Katz, D.A.: Sclerosing sweat duct carcinoma. Microcystic and syringoid variants. Am. J. Surg. Pathol., in press.
6. Regezi, J.A., Stewart, J.C.B., Headington, J.T. and Lloyd, R.V.: Immunohistochemical staining of Langerhans cells and macrophages in oral lichen planus. Oral Surg., Oral Med., Oral Pathol., in press.

BOOKS AND CHAPTERS IN BOOKS:

1. Headington, J.T.: Primary plasma cell tumors of skin. In, Hematopathology and the Skin, Murphy, G. and Mihim, M.C., Jr., editors. Butterworth. In press.
2. Headington, J.T.: The dermal dendrocyte. In, Advances in Dermatology. Colitz, L.E. and Callen, J.C., editors Year Book, in press.

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

1. Male androgenetic alopecia: A morphometric analysis of transverse sections of scalp using image processing. Clin. Res. April, 1985.

KATHLEEN P. HEIDELBERGER, M.D.
PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Pediatric Surgical and Placental Pathology - daily, twelve months.
B. Pediatric Necropsies - daily, twelve months.
C. Pediatric Consultation Cases - daily, twelve months.
D. Adult Surgical Pathology - six weeks.
E. MDS Surgical Pathology - Eleven weeks.
F. Adult Necropsy Service - two weeks.
G. Continued to organize and maintain the Michigan Cardiac Registry - twelve months.
H. Continued to direct and interpret the Lung Morphometric Program - twelve months.
I. Teratology Unit - Histology, as necessary, approximately 30 cases per year.
J. Children's Cancer Study Group - coordinate all pathological material and data necessary for all children registered in national tumor protocols.
K. Bone Consultation Cases - intermittent backup for Lee Weatherbee.

II. TEACHING ACTIVITIES:

A. M2: Pathology 600, 16 weeks; laboratory instructor.
B. M2: Pathology 600, three whole class lectures on Pediatric Pathology.
C. M4: Pediatric Surgical Pathology, twelve months, while they were on their pathology electives.
D. Supervised M4s on Pathology elective, one rotation (four weeks).
E. House Officers in Pathology - daily reading of pediatric surgicals, twelve months.
F. House Officers in Pathology - Gross and microscopic supervison of most pediatric necropsies, twelve months and adult cases two weeks plus call weekends.
G. Surgical Pathology Conference - one hour/week, twelve months.
H. Gross Autopsy Conference - one hour/week, twelve months.
I. Supervised Pediatric Hematology Fellows (two) for AP elective period.
J. Conferences:
    1. Pediatric Cardiology Death Conference - monthly, all year.
    2. Pediatric Tumor Conference - twice monthly, all year.
    3. CPC/General Death Conference - approximately quarterly.

III. RESEARCH ACTIVITIES:

A. Multiphased, ongoing study with Pediatric cardiologists and Thoracic surgeons on effects of various congenital heart defects on the pulmonary vasculature.
B. Studies of regional variations in lung structure.
C. Compiling data base of morphometric characteristics of normal lungs at various ages.
D. Continued study of pulmonary vascularity in SIDS and respiratory distress of the newborn.

PROJECTS UNDER STUDY:

A. Long-term study with Dr. Appelman and the Pediatric surgeons on the effects of hyperalimentation on the neonatal liver.
B. Continued detailed study of the lethal neonatal chondrodysplasias and their morphologic characterization.
C. Histologic studies of myocardium in hypoplastic left heart syndrome.
D. Study with Drs. John Wesley and Michael DiPietro of various congenital lung masses in infancy and childhood. (See publications).
E. Study of embryological etiology of primitive CNS tumor causing congenital deformity, with Drs. Barr and Dorovini-Zis. Submitted.
F. Report of bizarre fatal liver neoplasm in infant, with Drs. Wesley, DiPietro, Hutchinson, Blane and Coran. Submitted.
G. Study of fetal/placental neuroblastoma, its causes and effects, with Drs. Barr and Sanders (see Abstracts).
H. Review of quantitative and qualitative patterns of lung metastases in osteosarcoma with an attempt to correlate them with survival (with Dr. Theo Polly).
I. Documentation of the validity of rectal suction biopsy in the diagnosis of Hirschprung's disease: A review of twelve years' experience (with Dr. Theo Polly).

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Departmental ACAPT.

MEDICAL SCHOOL/HOSPITAL:

B. Executive Committee for Mott/Women's/Holden Unit.

REGIONAL AND NATIONAL:

A. Continued in three-year term as Councilor of the Society for Pediatric Pathology.
B. Member, American Board of Pathology Test Committee for Pediatric Pathology.
C. Member of the Education Committee of the Society for Pediatric Pathology, Subcommittee I, charged with the definition of a core curriculum for fellowship training in pediatric pathology.

V. OTHER RELEVANT ACTIVITIES:

A. Attended a three day course in cardiac pathology at Stanford University pursuant to the University of Michigan's transplantation program.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Wesley, J.R., Heidelberger, K.P., DiPietro, M.A., Cho, K.J. and Coran, A.G.: Diagnosis and management of cystic disease of the lung in children. Accepted, Pediat. Surg.

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

1. Heidelberger, K.P.: Review: Perinatal pathology: Major problems in pathology by J.S. Wigglesworth. Arch. Pathol. Lab. Med. 109:298, 1985.
2. Wesley, J.R., Heidelberger, K.P., DiPietro, M.A., Cho, K.J. and Coran, A.G.: Diagnosis and management of cystic disease of the lung in children. Presented: 32nd Annual International Congress of British Association of Paediatric Surgeons, Vienna, July 17-19, 1985.
3. Barr, M., Heidelberger and Sander, C.H.: Lethal fetal neuroblastoma. Presented at D.W. Smith Conference on Morphogenesis and Malformations, Santa Fe, New Mexico, June, 1985.

SAMUEL P. HICKS, M.D.
PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Microscopic examination of brains from autopsies at University Hospital, and brains sent from other hospitals from patients thought to have adult dementia, such as Alzheimer's or Huntington's Disease, or developmental brain diseases.

II. TEACHING ACTIVITIES:

A. Preparation of handouts, notes, and visual aid material for lectures and laboratories for second year Medical Students.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. USPHS Grant NS 19825, "Recovery or Malformation After Fetal Injury." In collaboration with T.M. Annesley, C.J. D'Amato, R.A. Glover, K.J. Johnson, R.V. Lloyd, J.P. McCoy, P.E. McKeever, K.S. O'Shea, and J. Varani.
1) Studies of ultrastructural technics best for preparation of rats embryos such as those irradiated in utero or having a genetic nervous system developmental disorder (hydrocephalus). 2) Immunocytochemical studies of carbohydrate constituents such as laminin, fibronectin, and collagen IV of the basal lamina of the neuroepithelium. There is a lag in formation of collagen IV in the early mutant hydrocephalic fetus mentioned in 1) above. 3) Successful search for appropriate tissue culture media for growing neuroepithelial cells from normal, mutant hydrocephalic, and irradiated rat embryos to determine how they respond to discrete components of the basal lamina and mesenchymal extracellular matrix. 4) X-irradiation (such as 150-200R) kills numerous primitive cells in rat fetus, and from the 12th to 22nd (term) fetal day this is met within a few hours by myriads of macrophages in certain parts of nervous system but not in others. Coinciding with the appearance of the macrophages which are engulfing dead cells 4 to 6 hours after irradiation, cells from the fetal brains show a marked increase in production of superoxide anion compared with normals and this continues at least through 24 hours. These macrophages may add to damage that radiation and other agents produce, as they do in other tissues. The source of the macrophages has been a puzzle. There is no evidence that they come from blood vessels or blood; in latent form they are already widely distributed in the neuroepithelium and primitive mesenchyme which have very high mitotic rates. Recognizing these cells in early stages before they have engulfed dead cells will be an interesting problem to solve.

B. The pathologic examination of human autopsy brains from patients with a clinical diagnosis of Alzheimer's, Huntington's, Pick's and other dementing diseases is being done in collaboration with Drs. A. B. Young and J. B. Penney, who are examining the brains biochemically. The clinical diagnoses need to be confirmed by pathologic diagnosis.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Plan laboratory work.

MEDICAL SCHOOL/HOSPITAL:

A. Neural and Behavioral Sciences Curriculum Committee (Medical School).
B. Neural and Behavioral Sciences Examinations Committee.

REGIONAL AND NATIONAL:

A. Editorial Board, J. Neuropathology and Experimental Neurology.

V. OTHER RELEVANT ACTIVITIES: None.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Greenamyre, J.T., Penney, J.B., Young, A.B., D'Amato, C.J., Hicks, S.P. and Shoulson, I.: Alteration in L-glutamate binding in Alzheimer's and Huntington's diseases. Science 227:1496-1499, 1985.
2. D'Amato, C.J., O'Shea, K.S., Hicks, S.P., Glover, R.A. and Annesley, T.M.: Genetic prenatal aqueduct stenosis with hydrocephalus in rat. (Accepted for publication with revision, J. Neuropath. and Exper. Neur., 1985).
3. Miller, F.DeW., Hicks, S.P., D'Amato, C.J. and Landis, J.R.: A descriptive study of neuritic plaques and neurofibrillary tangles in an autopsy population. Amer. J. Epidem. 120:331-341, 1984.
5. Fligiel, S.E.G., Varani, J., D'Amato, C.J., O'Shea, K.S., Hicks, S.P. and Johnson, K.J.: Superoxide anion production in CNS cells after fetal radiation injury. (In preparation).

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

1. Glover, R.A., D'Amato, C.J. and Hicks, S.P.: Neuroepithelial-mesenchymal relations in the morphogenesis of eye abnormalities in a mutant and radiation induced aqueduct stenosis-hydrocephalus syndrome. Soc. for Neurosci. Abstr. 10:953, 1984. (Poster)
2. Young, A.B., Greenamyre, J.T., Penney, J.B., D'Amato, C.J., Hicks, S.P. and Shoulson, I.: Altered patterns of L- [^{3}H] glutamate binding in Alzheimer's disease and Huntington's disease. Soc. for Neurosci. Abstr. 10:890, 1984.
3. O'Shea, K.S., D'Amato, C.J. and Hicks, S.P.: Immunocytochemistry of neuroepithelial basal lamina alterations in rat embryos with genetic hydrocephalus. (Accepted for poster and abstract, Society for Neuroscience Meeting, October, 1985, Dallas).

JERRY L. HUDSON, PH.D.
ASSISTANT PROFESSOR
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Cell Identification Center.

II. TEACHING ACTIVITIES:

MEDICAL SCHOOL/HOSPITALS:

A. Lectures: Senior Medical Students: Automated Cytology - Clinical and Research Applications.
B. Faculty Advisor: Medical Student Research Projects.
C. Faculty Advisor: Undergraduate Senior Honors Projects
D. Lectures: Medical Technology Students: Automated Cytology.
E. Faculty Advisor: Residents' Research Projects (Departments of Allergy, Otolaryngology, Pathology and Surgery.
F. Faculty Advisor: Biomedical Engineering Program.
G. Faculty Advisor: College Work-Study Program.

INVITED LECTURES/SEMINARS:

1. Hudson, J.L.: Clinical and Research Applications in Flow Cytometry. Presented at the Bristol Myers Company, Syracuse, New York, 25 April, 1985.
2. Hudson, J.L.: Application of Flow Cytometry in Genetic Toxicology. Presented at the Gordon Conference on Genetic Toxicology, Colby-Sawyer College, New London, Connecticut, 12 June, 1985.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Cytometry Research and Development Project, EPICS Division, Coulter Corporation and Department of Pathology, University of Michigan (J.L. Hudson, Ph.D., Principal Investigator; P.W. Ward, M.D. Co-Investigator), 1 July, 1984 - Present.
B. Immune Responses in Head and Neck Cancer Patients, Veterans Administration Hospital, Ann Arbor, Michigan, (G.T. Wolf, M.D. Principal Investigator, J.L. Hudson, Ph.D., Consultant), 1 July, 1984 - Present.
C. Automated Cytology Methods Development for Mutagenicity Testing, The Procter and Gamble Company, Research Gift Grant, (J.L. Hudson, Ph.D. and R.W. Wolber, M.D. Co-Investigators).
D. Nutritional Support in Postoperative and Posttraumatic Recovery, Departments of Surgery and Pathology, (R.H. Bartlett, M.D., T. Kresowic, M.D., R.H. Dechert, M.S., J.H. Greenwood, M.S., P.A. Ward, M.D., and J.L. Hudson, Ph.D. Co-Investigators), 1 July, 1984 - Present.

E. Flow Cytometric Immunotoxicology Profile Development in Rodents, Research Gift Grant, Biomedical Science Division, G.M. Research Laboratories, General Motors Corporation, (J.L. Hudson, Ph.D. and P.A. Ward, M.D., Co-Investigators).

F. Cellular Effects of Tricyclic Nucleotides, National Cancer Institute and the American Cancer Society, (L.L. Wotring, Ph.D., Principal Investigator, J.L. Hudson, Ph.D., Consultant), 1 July, 1984 - Present.

G. Automated Image Analysis Development Project, Coulter Corporation and the Department of Pathology, University of Michigan, (J.L. Hudson, Ph.D. Principal Investigator), 1 July, 1984 - Present.

H. Clinical Studies on Anti-T12 Therapy in Renal Transplant Patients, Immunology Division, Coulter Corporation, (L. Rochet, M.D., Principal Investigator; L.M. Stoolman, M.D., R.E. Duque, M.D., J.P. McCoy, Ph.D., and J.L. Hudson, Ph.D., Consultants), 1 July, 1984 - Present.

I. Interferon Therapy in Burn Patients, Ortho Pharmaceutical Company, (I. Feller, M.D., Principal Investigator; G.O. Till, M.D., L.M. Stoolman, M.D., R.E. Duque, M.D., J.P. McCoy, Ph.D., and J.L. Hudson, Ph.D., Consultants), 1 July, 1984 - Present.

J. Flow Cytometric Analysis in Cancer Cell Detection, Biomedical Research Support Grant, University of Michigan Medical School, (A. Flint, M.D., Principal Investigator; J.L. Hudson, Ph.D., Consultant), 1 July, 1984 - Present.

PROJECTS UNDER STUDY:

A. A series of studies involving research and development for clinical applications and immunotoxicity assessment using automated cytology (flow cytometry and image analysis) including: Cell surface marker analysis, immune cell function, cell surface receptor analysis, cell cycle analysis, cell membrane electronic potential analysis, neoplastic cell screening and diagnosis (immune system, breast, cervical, bladder, colon, and head and neck tissues), prototype instrumentation development, instrumentation-computer networking, and software development for cytometry data analysis and cytometry data base systems.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Cell Identification Center.
B. M-Laboratories/Pathology Associates.

MEDICAL SCHOOL/HOSPITAL:

A. Cell Identification Center.
B. Medical Research Computer Advisory Committee.
C. Alternate, Faculty Senate.

REGIONAL AND NATIONAL:

A. Member, National Immunotoxicology Discussion Group.
B. Member, Flow Cytometry Standards Group, Society for Analytical Cytology.
C. Reviewer, Cytometry.
D. Consultant, Coulter Corporation.

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES/SEMINARS:

1. National Immunotoxicology Discussion Group, Uniformed Services Health Sciences Center, Bethesda, Maryland, 19-20 November, 1984.
2. National Immunotoxicology Discussion Group, Technicon Science Center, Tarrytown, New York, 4 April, 1985.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Duque, R.E., Phan, S.H., Hudson, J.L., Till, G.O. and Ward, P.A.: Functional defects in phagocytic cells following thermal injury. Am. J. Pathol. 118:116-127, 1985.
2. Vesely, D.J., Hudson, J.L., Pipkin, Jr., J.L., Pack, L.D. and Meiners, S.E.: Plant growth-promoting hormones activate mammalian guanylate cyclase activity. Endocrinology 116:1887-1892, 1985.
3. Flint, A., Kahn, L.E., Schnitzer, B., Lovett, III, E.J. and Hudson, J.L.: The preparation of electronically sorted hematopoietic cells for visual analysis. Amer. J. Clin. Pathol. 82:201-202, 1984.
4. McCoy, J.P., Schade, W., Merz, G.E., Esch, T., Varani, J. and Hudson, J.L.: DNA content of murine fibrosarcoma cell lines with varying metastatic potential. Cancer Research, in press.
5. Duque, R.E., Robinson, J.P., Hudson, J.L., Till, G.O. and Ward, P.A.: Differences in oxidative metabolism between blood and peritoneal rat neutrophils established by flow cytometry. Amer. J. Pathol., in press.
6. Wotring, L.L., Passiatore, J.E., Roti Roti, J.L., Hudson, J.L. and Townsend, L.B.: Effects of the tricyclic nucleoside TCN on the viability and cell cycle distribution of L1210 cells in vitro. Cancer Res., in press.
7. Ayers, P.H., Schol, H.M. and Hudson, J.L.: A rapid method for preparation of urinary bladder epithelium for flow cytometric analysis. J. Urology 131:1202-1205, 1984.
8. Yechezkel, S., Hudson, J.L. and Mitchell, B.S.: Metabolic and cell cycle changes resulting from guanine ribonucleotide accumulation in lymphoblasts. Cancer Res., in press.
9. Roa, R.A., Carey, T.E., Passamani, P.P., Greenwood, J.H., Hsu, S., Ridings, E.O., Schwartz, D.R., Wolf, G.T. and Hudson, J.L.: DNA content of human squamous cell carcinoma cell lines: Analysis by flow cytometry and chromosome enumeration. Arch. Otolaryngology, in press.
10. Flint, A., Lovett, III, E.J., Stoolman, L.M., McMillan, K., Schnitzer, B., McClatchey, K.D. and Hudson, J.L.: Flow cytometric evaluation of nuclear DNA content: Application to diagnostic cytology. Amer. J. Clin. Path., in press).

BOOKS AND CHAPTERS IN BOOKS:

1. Hudson, J.L., Duque, R.E. and Lovett, III, E.J.: Applications of flow cytometry in immunotoxicology. In, "Immunotoxicology and Pharmacology", J. Dean, A. Munson, and M. Luster, editors. Raven Press, New York, in press.
2. Swartzendruber, D.A., Lovett, III, E.J. and Hudson, J.L.: Flow cytometry and monoclonal antibodies. In, "Monoclonal Antibodies in Clinical Diagnostic Medicine. X. Gordon, editor. Igaku-Shion Medical Publishers, Inc., New York, in press.

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

1. Duque, R.E., Phan, S.H., Hudson, J.L., Till, G.O. and Ward, P.A.: Functional evaluation of circulating rat neutrophils by flow cytometry. Evidence for a defect following thermal injury. (Abstract) Presented at the FASEB Meetings, Anaheim, California, 21-26 April, 1985.
2. Roa, R.A., Carey, T.E., Passamani, P.P., Greenwood, J.H., Hsu, S., Ridings, E.O., Wolf, G.T. and Hudson, J.L.: DNA content of human squamous carcinoma cell lines using flow cytometry and karyotypic analysis. (Abstract) Presented at the Meetings of the American Society for Head and Neck Surgery. San Juan, Puerto Rico, May, 1985.
3. Armstrong, L.R., Kahn, L.E., Esch, T.R., Greenwood, J.H. and Hudson, J.L.: Reticulocyte assay using Thioflavin-T on the EPICS C. (Abstract) Poster Session Presentation, Coulter EPICS Conference, Boston, Massachusetts, 20-23 September, 1984.
4. Greenwood, J.H., Kahn, L.E., Cohn, R.J., Wolber, R.A., Lovett, III, E.J. and Hudson, J.L.: Flow cytometric analysis of human lymphocyte proliferative responses. (Abstract) Poster Session Presentation, Coulter EPICS Conference, Boston, Massachusetts, 20-23 September, 1984.
5. Greenwood, J.H., Esch, T.R., Kahn, L.E., Kelley, S.M., Lovett, III, E.J., Auer, R.E., Coulter, R. and Hudson, J.L.: Flow cytometric studies of leukocyte activation using DC and RF Coulter cell volume. (Abstract) Poster Session Presentation, Coulter EPICS Conference, Boston, Massachusetts, 20-23 September, 1984.
6. Duque, R.E., Hudson, J.L., Marasco, W.A., Smolen, J.E. and Ward, P.A.: Multiparameter evaluation of neutrophil function by flow cytometry. (Abstract) Poster Session Presentation, Coulter EPICS Conference, Boston, Massachusetts, 20-23 September, 1984.
7. Carey, T.E., Roa, R.A., Hsu, S., Greenwood, J.H., Ridings, E.O., Schwartz, D.R. and Hudson, J.L.: Abnormal DNA in human squamous carcinoma: Evidence for in vivo evolution of cell populations with streamlined DNA content. (Abstract) Presented at the Meeting of the American Society of Human Genetics. Salf Lake City, Utah, 9-12 October, 1985.
8. Armstrong, L.R., Greenwood, J.H. and Hudson, J.L.: Flow cytometric single and dual parameter analysis of the normal and perturbed cell cycle of cultured mouse spleen cells. (Abstract) Poster Session Presentation, Symposium on Immunotoxicology, The Michigan Regional Chapter for the Society of Toxicology, Michigan State University, East Lansing, Michigan, 16 May, 1985.
9. McCoy, J.P., Schade, W., Merz, G.E., Esch, T.R., Varani, J. and Hudson, J.L.: DNA content of murine fibrosarcoma cell lines with varying metastatic potential. Proc. Amer. Assoc. Cancer Res. 26:52, 1985.

DAN M. HYDER, M.D.
INSTRUCTOR IN PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1983 - 30 JUNE 1984

I. CLINICAL ACTIVITIES:

A. Staff pathologist and Director of Clinical Laboratories, Ann Arbor Veterans Administration Medical Center.
B. Interpretive reporting and consultation in the areas of hematopathology, hemostasis, immunopathology, cell phenotyping, and diagnostic enzymology, Ann Arbor Veterans Administration Medical Center.

II. TEACHING ACTIVITIES:

A. Supervise monthly clinical pathology resident rotation, Ann Arbor Veterans Administration Medical Center.
B. Clinical Associate, Eastern Michigan University Medical Technology Program.
C. One day per week, surgical case sign-out with pathology resident, Ann Arbor Veterans Administration Medical Center.
D. Participate in monthly Medicine-Pathology Conference, Ann Arbor Veterans Administration Medical Center.
E. Participate in weekly Tumor Board Conference, Ann Arbor Veterans Administration Medical Center.
F. Supervise pathology resident in performance of selected autopsies, Ann Arbor Veterans Administration Medical Center.
G. Series of four coagulation lectures presented at clinical pathology grand rounds.
H. Lecturer, Continuing Medical Education Program, Ann Arbor Veterans Administration Medical Center.
I. Lectures (three) to third year medical students.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Principal Investigator, Research Advisory Group grant, VA "Selective Removal of Circulating Immune Complexes in Chronic Nephritis".
B. Collaborator, "Role of Surface Laminin in NK/NC Recognition of Tumor Cells". (Varani and Hiserodt, principal investigators.)
C. Consultant, "Immunobiology of Head and Neck Tumors", (Wolf, principal investigator).

PROJECTS UNDER STUDY:

A. Immunodysfunction in Hodgkin's disease (funding request submitted).
B. Role of natural killer cells in control of tumor metastasis (funding request in preparation).
C. Papers submitted or in preparation.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. General administrative responsibility for clinical laboratories section of the Ann Arbor Veterans Administration Medical Center and the Veterans Administration Outpatient Clinic in Toledo, Ohio.

MEDICAL SCHOOL/HOSPITAL:

A. Member, Automated Data Processing Committee, Ann Arbor Veterans Administration Medical Center.
B. Member, Drug Utilization Review Committee, Ann Arbor Veterans Administration Medical Center.
C. Member, Animal Research Committee, Ann Arbor Veterans Administration Medical Center.
D. Member, Equipment Committee, Ann Arbor Veterans Administration Medical Center.

REGIONAL/NATIONAL:

A. Chairman, MEDIPP High Technology Subcommittee, Veterans Administration District 14.

V. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Johnson, C., Cohen, I., Bickley, S. and Hyder, D.M.: The stability of theophylline in human serum and whole blood under varying storge conditions. Amer. J. Hosp. Pharm. 41:2065, 1984.
2. Cohen, I., Hyder, D.M. and DeKeyser, J.: The effect of various sample storage conditions on the results of the TDX fluorescence polarization immunoassay for tobramycin. Amer. J. Hosp. Pharm. 42:605, 1985.
3. Hyder, D.M., Schnitzer, B. and Beals, T.F.: Leu M1 positive small cell carcinoma. Human Pathol., in press.
4. Palutke, M., Schnitzer, B., Hyder, D.M. et al: A time study of the feasibility of storing and transporting lymphoid tissue in saline at refrigerator temperatures for the purpose of immunophenotyping. Amer. J. Clin. Path., in press.

BOOKS AND CHAPTERS IN BOOKS:

1. Hiserodt, J.C., Laybourn, K.A., Hyder, D.M. and Varani, J.: Expression of laminin on natural killer and natural cytotoxic lymphocytes and its role in NK/NC recognition of tumor targets. In, Genetic Control of Host Defenses Against Infection and Malignancy. E. Skamene, editor, Alan Liss, New York.
2. Schnitzer, B. and Hyder, D.M.: The use of surface markers and DNA studies in leukemia and lymphoma evaluation. In, The Use of Surface Markers and DNA Studies in Diagnostic Pathology. D. Keven and E.J. Louch, editors. ASCP Pres, in press.

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

1. Hyder, D.M. and Schnitzer, B.: The utility of Leu M1 in the diagnosis and differential diagnosis of Hodgkin's disease. Lab. Invest. 52:204, 1985.
2. Schnitzer, B. and Hyder, D.M.: Leu M1 staining of Reed-Sternberg cells. Lancet, p. 757, March 30, 1985 (letter).

KENT J. JOHNSON, M.D.
ASSOCIATE PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Renal Pathology Service.
B. Immunopathological evaluation of skin biopsies.
C. Director - Electron Microscopy Service.
D. Autopsy coverage - six weeks.

II. TEACHING ACTIVITIES:

A. Lecturer Renal Pathology - Second year pathology course.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Lung Injury Produced by Oxygen Metabolites. National Institutes of Health, $507,078 for four years. Co-Investigator with Peter A. Ward.
B. Immune Complex Injury of Lung and Oxygen Metabolites. National Institutes of Health, $245,304 for three years. Co-Investigator with Peter A. Ward.
C. Clinical Investigator Award, National Institutes of Health, $199,500 for five years.
D. Oxygen-Derived Free Radicals, Immune Complexes and Tissue Injury. Council for Tobacco Research, $70,000. Co-Investigator with Peter A. Ward and Barry Wilson.
E. Effectors in Pulmonary Hypertension from Monocrotaline. National Institutes of Health, $264,183 for three years. Co-Investigator with Bob Roth.
F. Mediator Systems in Experimental IgA Glomerulonephritis. National Kidney Foundation of Michigan, $14,775 for one year.

PROJECTS UNDER STUDY:

A. Oxygen Free Radical Mediated Tissue Injury.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Director, Immunopathology Fellowship Program.
B. Renal Pathology Conference - Bi-weekly.
C. Residency Selection Committee.

V. OTHER RELEVANT ACTIVITIES: None.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Ward, P.A., Sulavik, M. and Johnson, K.J.: Rat neutrophil activation and effects of lipoxygenase and cyclooxygenase inhibitors. Amer. J. Pathol. 116:223-233, 1984.
2. Johnson, K.J., Wilson, B.S., Till, G.O. and Ward, P.A.: Acute lung injury in rat caused by IgA immune complexes. J. Clin. Invest. 74:358-369, 1984.
3. Hirszel, P., Yamase, H.T., Carney, W.R., Galen, M.A., Graeber, C.W., Johnson, K.J., Kennedy, T.L., Lapkin, R.A., McLean, R.H., Rosenworcel, E. and Rowett, D.A.: Mesangial proliferative glomerulonephritis with IgM deposits: Clinicopathologic analysis and evidence for morphologic transitions. Nephron 38:100-108, 1984.
4. Rehan, A., Johnson, K.J., Wiggins, R.C., Kunkel, R.C. and Ward, P.A.: Evidence for the role of oxygen free radicals in acute nephrotoxic nephritis. Lab. Invest. 51:396-403, 1984.
5. Rehan, A., Johnson, K.J., Kunkel, R.G. and Wiggins, R.C.: Role of oxygen radicals in phorbol myristate acetate induced glomerular injury. Kid. Int. 27:503-511, 1985.
6. Rehan, A., Johnson, K.J., Kunkel, R.G. and Wiggins, R.C.: Intravascular complement activation and acute glomerular injury. Submitted for Publication.
7. Ward, P.A. and Johnson, K.J.: Lung inflammatory mechanisms. Submitted to the Human Path., in press.
8. Ward, P.A., Johnson, K.J. and Till, G.O.: Oxygen radicals, arachidonate metabolites and lung injury. Ann. N.Y. Acad. Sci., in press.
9. Ward, P.A., Johnson, K.J. and Till, G.O.: Oxygen radicals and microvascular injury of lungs and kidneys. In press.
10. Ward, P.A., Sulavik, M.C. and Johnson, K.J.: Arachidonate metabolites and activation of rat neutrophils. Amer. J. Pathol., in press.
11. Rehan, A. and Johnson, K.J.: IgM nephropathy associated with penicillamine. Clin. Nephrol., in press.
12. Ward, P.A., Johnson, K.J. and Till, G.O.: Current concepts regarding acute respiratory distress syndrome. Annal. Emerg. Med., in press.

BOOKS AND CHAPTERS IN BOOKS:

1. Johnson, K.J. and Ward, P.A.: Mechanisms of acute and chronic immune inflammatory Response in the lung. In, Pulmonary Immunology and Immunologic Diseases of the Lung, R.P. Daniele, editor. Blackwell Scientific Publications, Publishers, in press.
2. Johnson, K.J. and Ward, P.A.: Inflammation and active oxygen species. In, Superoxide Dismutase, Volume III; Pathological Studies, L.W. Oberley, editor. CRC Press, in press.
3. Fligiel, S.E.G., Johnson, K.J. and Ward, P.A.: The role of complement in immune complex induced tissue injury. In, Complement, K. Rother and G. Till, editors. Springer Publishers, in press.

4. Wiggins, R.C. and Johnson, K.J.: Glomerulonephritis. In, Pathophysiology of Electrolyte and Renal Disorders, R.D. Humes, editor. Churchill, Livingston, in press.
5. Ward, P.A., Johnson, K.J. and Till, G.O.: Tissue injury caused by toxic oxygen products from phagocytic cells, Proceedings of the Satellite Symposium. In, Chemical Mediators of Inflammation. Academic Press Japan, Inc. Iwata, Japan, in press.
6. Ward, P.A., Johnson, K.J. and Till, G.O.: Leukocytic oxygen radicals and acute lung injury. In, Acute Lung Injury. H. Karemi, Publishers, in press.
7. Johnson, K.J. and Ward, P.A.: Immune complexes. In, Immunology of the Lung, J. Bienenstock, editor. McGraw-Hill, Publishers, 1984.

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

1. Rehan, A., Johnson, K.J., Wiggins, R.C. and Ward, P.A.: Oxygen free radical induced glomerular injury following intravascular activation of complement. FASEB 44:6640, 1985.
2. Bruner, L.H., Johnson, K.J. and Roth, R.A.: Effect of desferoxamine (DF) and dimethylsulfoxide (DMSO) on monocrataline pyrrole (MCTP) pneumotoxicity. FASEB 44:2966, 1985.
3. Kunkel, R.G., Rehan, A., Smith, D.L., Johnson, K.J. and Ward, P.A.: Morphometric analysis of glomerular injury. FASEB 44:2976, 1985.
4. Fligiel, S.E.G., Johnson, K.J. and Varani, J.: The effects of oxygen radicals on proteolysis by human neutrophils. FASEB 44:4176, 1985.
5. Sulavik, M., Johnson, K.J. and Ward, P.A.: The effect of albumin on the detection of superoxide released from neutrophils and macrophages. FASEB 44:4538, 1985.
6. Macconi, D., Ward, P.A. and Johnson, K.J.: Potentiation by platelets of O_2^- production in stimulated rat neutrophils. FASEB 44:988, 1985.
7. Johnson, K.J.: Overview of oxygen radicals and tissue injury. FASEB Symposium on Oxygen Radicals and Tissue Injury. 44, 1985.
8. Johnson, K.J.: Leukocytic oxygen radicals and tissue injury. Sixth Annual Symposium of the American Society for the Immunology of Reproduction, 1985.
9. Johnson, K.J., Sulavik, M, and Ward, P.A.: Mono-HETE production by neutrophils: Relationship to enzyme release and superoxide oroduction. FASEB 44:2874, 1985.
10. Rehan, A., Johnson, K.J. and Wiggins, R.C.: Oxygen radical induced proteinuria in rats following intravascular activation of complement. ASN, 1984.

W. JOHN JUDD, F.I.M.L.S., M.I. Biol.
ASSOCIATE PROFESSOR OF MEDICAL TECHNOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Director, Blood Bank Reference Laboratory.
B. Consultant, Veteran's Administration Medical Center, Ann Arbor.

II. TEACHING ACTIVITIES:

A. Medical Technology 409.
B. Presentations to Residents in Clinical Pathology.
C. Trained House-Officers in Immunohematology.
D. Developed Core Lecture Series for Residents in Clinical Pathology.
E. Developed Core Lecture Series for Residents in Anatomic Pathology.
F. Current Topics in Blood Banking, Department of Post-Graduate Medicine:
   1. Workshop Director: Cost-Containment in Blood Banking.
   2. Speaker: Immune Hemolysis - a Concern for the Blood Bank.
G. Invited Lecturer, Specialist in Blood Banking Program, Wayne State University.
H. Invited Lecturer, Specialist in Blood Banking Program, University of Cincinnati.
I. Workshop Director, Blood Banking in a Changing Environment American Association of Blood Banks Annual Meeting, San Antonio, 1985.

III. RESEARCH ACTIVITIES:

PROJECTS UNDER STUDY:

A. Judd, W.J., Wilkinson, S.L., Issitt, P.D., Johnson, T.L., Keren, D.F. and Steiner, E.A. Immune hemolysis associated with an anti-Pr biphasic hemolysin. Transfusion (submitted).
B. Localization of Erythrocyte ABH-active Glycolipids by Western Blotting (with T. Carey and B. Rosenblum).
C. Xg^a-linkage analysis (with S. Smalley, UCLA).

IV. ADMINISTRATIVE ACTIVITIES:

MEDICAL SCHOOL/HOSPITAL:

A. Director, AABB Regional Reference Laboratory, University of Michigan Medical School.

REGIONAL AND NATIONAL:

A. National Committee for Clinical Laboratory Standards:
   1. Chairman, Subcommittee on Lectins
B. American Association of Blood Banks:
   1. Committee on Technical Workshops.
   2. Subcommittee on Regional Workshops.
   3. Committee on Technical Manual.
   4. Scientific Section Coordinating Committee.
C. Michigan Association of Blood Banks:
   1. President-Elect.
   2. Chairman, Annual Meeting Program Committee.
D. Laboratory Medicine - member of editorial board.
E. Referee of articles submitted to Transfusion, Vox Sanguinus and Laboratory Medicine.

V. INVITED LECTURES/SEMINARS:

1. Special Techniques in Blood Banking. Charing Cross Hospital, London, England, August, 1985.
2. The MN Blood Group System. Henry Ford Hospital, Detroit, September, 1984.
3. Cost-Containment in Blood Banking. Vanderbilt University, Nashville, September, 1984.
4. Cost-Containment in Blood Banking. Michigan Association of Blood Banks, Detroit, September, 1985.
5. Cost-Containment in Blood Banking. Central Kentucky Blood Center, Lexington, October, 1984.
6. Cost-Containment in Blood Banking. American Association of Blood Banks Annual Meeting, San Antonio, October, 1985
7. Unnecessary Serological Testing. Kansas City Area Antibody Club, Kansas City, February, 1985.
8. Unnecessary Serological Testing. Ohio Association of Blood Banks Annual Meeting, Toledo, March, 1985.
9. The Direct Antiglobulin Test - How Much is Enough? Joint Reference Laboratory Conference of the American Red Cross and American Association of Blood Banks, Arlie, Virginia, March, 1985.
10. The Clinical Significance of the Positive Direct Antiglobulin Test Revisited. Greater Cincinnati Area Antibody Club, Cincinnati, April, 1985.
11. The Appropriateness of Serological Testing. California Blood Banks Systems Annual Meeting, Palm Springs, May, 1985.
12. A Case of Mistaken Identity. California Blood Banks System Annual Meeting, Palm Springs, May, 1985.
13. The Xg^a Blood Groups. South Florida Blood Service, Miami, May 1985.
14. Biochemistry of the Blood Groups. Florida Association of Blood Banks Annual Meeting, Jacksonville, May, 1985.
15. The Future of Pretransfusion Testing. Florida Association of Blood Banks Annual Meeting, May, 1985.
16. The Appropriateness of Pretransfusion Testing. Mid-Atlantic Association of Blood Banks, Norfolk, VA, June, 1985.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Dahr, W., Kordowicz, M., Judd, W.J., Moulds, J., Beyreuther, K. and Kruger, J.: Structural analysis of the Ss sialoglycoprotein specific for the Henshaw blood group from human erythrocyte membranes. Eur. J. Biochem. 141:51-55, 1984.
2. Judd, W.J. and Butch, S.H.: Cost-containment in the blood bank: Eliminating unnecessary serological testing. J. Med. Technol. 1:484-495, 1984.
3. Judd, W.J., Barnes, B.A., Steiner, E.A., Oberman, H.A., Averill, D.B. and Butch, S.H. The clinical significance of a positive direct antiglobulin test revisited. Transfusion (accepted, April, 1985).
4. Kimmel, K.A., Carey, T.E., Judd, W.J. and McClatchey, K.D. Monoclonal antibody (G10) to a common antigen of human squamous cell carcinoma binds to the H type 2 blood group determinant. J Natl. Cancer Inst. (accepted May, 1985).

BOOKS AND CHAPTERS IN BOOKS:

1. Judd, W.J. and Butch, S.H.: Streamlining serological testing - scientific considerations. In, Blood Banking in a Changing Environment, Smith, D.E. and Judd, W.J., eds. American Association of Blood Banks, Arlington, Virginia, 1984, p. 15-43.
2. Smith, D.E. and Judd, W.J., eds: Blood Banking in a Changing Environment. American Association of Blood Banks, Arlington, Virginia, 1984.
3. Rolih, S.D., Judd, W.J., eds. Serological Methods in Forensic Science. American Association of Blood Banks, Arlington, Virginia, in press.
4. Principles of the Antiglobulin Test. Technical Manual of the American Association of Blood Banks, 9th ed. Arlington, Virginia, in press.
5. Antibody Identification. Technical Manual of the American Association of Blood Banks, 9th ed. Arlington, Virginia, in press.
6. Evaluation of the Positive Direct Antiglobulin Test and Immune Hemolysis. Technical Manual of the American Association of Blood Banks, 9th ed. Arlington, Virginia, in press.
7. The Rh blood groups. In, DADE Monograph Series. Miami: Dade, Division of American Hospital Supply Corporation (accepted, March, 1985).

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

1. Judd W.J., Wilkinson, S.L., Issitt, P.D., Johnson, T.L. and Steiner, E.A.: Immune hemolyis due to an IgG biphasic hemolysin with anti-Pr-like specificity. 37th Annual Meeting of the American Association of Blood Banks, San Antonio, 1984. Transfusion 24:416, 1984 (abstract).
2. Kimmel, K.A., Carey, T., Judd, W.J. and McClatchey, K.D. Blood group H antigen in squamous cell carcinoma and normal tissues detected by monoclonal antibody G10. Proceedings of American Association of Cancer Research 25:257, 1984 (abstract).

3. Judd, W.J. Localization of type II H blood group antigen in salivary gland and skin using monoclonal antibody G10. Proceedings of the 9th International Convocation of Immunology, Buffalo, 1984 (abstract).
4. The Human Blood Groups, by Salmon et al. (reviewed for Diagnostic Medicine, in press.

DAVID F. KEREN, M.D.
ASSOCIATE PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Head, Biochemistry Section.
B. Director, Clinical Immunopathology Laboratory.
C. Surgical Pathology - Consultant on Immunopathology and Gastrointestinal Pathology, MDS signout, on-call duties.
D. Autopsy Pathology - staff coverage and on-call duties.

II. TEACHING ACTIVITIES:

A. Medical Students and Graduate Students:
   1. Biology 414 - Lecture on Mucosal Immunity.
   2. Pathology Course - Lectures on myeloma and autoimmunity.
B. House Officers:
   1. Coordinator - Weekly Clinical Pathology Rounds.
   2. Coordinator - Clinical Pathology Grand Rounds.
   3. Clinical Immunopathology - Daily sign-out.
   4. Immunology Journal Club - Weekly.
   5. Clinical Chemistry Conference - Weekly.

III. RESEARCH ACTIVITIES:

A. Studies on kinetics of the mucosal immune response to bacterial antigens.
B. Creation of carcinogen-protein conjugates to study systemic and mucosal immune response to carcinogens.
C. Clinical Immunopathology of gastrointestinal lymphomas.
D. Grant Support - Principle Investigator:
   1. United States Army Research and Development Command. "An Investigation of the Memory Response of the Local Immune System to Shigella Antigens". $290,628. December 1, 1984 - June 30, 1987.
   2. Smokeless Tobacco Research Council, Inc. "Significance of Immune Responses to Mucosal Carcinogens". $162,946. January 1, 1984 - December 31, 1985.
E. Grant Support - Co-Investigator:
   1. National Institutes of Health. "Cell Differentiation Within the Liver Acinus". Jorge Gumucio, Principle Investigator. David F. Keren, Co-Investigator. $316,820. April 1, 1984 - March 31, 1987.
F. Training Grant:
   1. National Institutes of Health. Lung Immunopathology, Project Director - P.A. Ward. Dr. Keren is a trainer with one fellow at present.

G. Student and Fellow Research Projects:
   1. Scott Kern - "In Vitro Culture of Paneth Cells from Isolated Ileal Loops".
   2. John Carey - "The cellular basis for enhanced mucosal IgA memory responses".

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Clinical Pathology Committee.
B. Resident Selection Committee.
C. Resident Counselor.

MEDICAL SCHOOL/HOSPITAL:

A. Immunopathology Council (ASCP), (Chairman, 1985-1987).
B. Editorial Board - Infection and Immunity (ASM).
C. National Institutes of Health, Special Review Committee.
D. Council on Continuing Education, (ASCP).

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES/SEMINARS:

1. Autoantibody Testing, Flint Osteopathic Hospital, July, 1984.
2. Paneth Cell Isolation Studies, Symposium on Mucosal Immunity, Sponsored by American Gastroenterological Association, National Foundation for Ileitis and Colitis, and the National Institutes of Health, Tampa, Florida, October, 1984. (Scott Kern and David Keren.)
3. Surface Marker Assays in Clinical Immunology, American Society of Clinical Pathology, New Orleans, Louisian, October, 1984.
4. Immunopathology Council and Council on Continuing Education, American Society of Clinical Pathology, Chicago, November, 1984.
5. Laboratory Diagnosis of Monoclonal Gammonpathies by High Resolution Electrophoresis and Immunofixation, Indiana University, Richmond, Indiana, November, 1984.
6. New Autoantibody Testing, Indiana University, Richmond, Indiana, November, 1984.
7. Electrophoresis in Research and Clinical Diagnosis, Michigan State University, East Lansing, Michigan, November, 1984.
8. Site Visit, U.C. San Diego, for National Institutes of Health, San Diego, California, December, 1984.
9. Multiple Myeloma--Laboratory Diagnosis, Videotape, Smith-Kline/Beckman, Philadelphia, Pennsylvania, January, 1985.
10. High Resolution Electrophoresis and Immunofixation, Towsley Symposium, The University of Michigan, Ann Arbor, Michigan, April, 1985.
11. Surface Markers in Immune Deficiency Diseases, Hurley Medical Center, Flint, Michigan, January, 1985.

12. Immunofixation: Methodologic Concerns, Scientific Advisory Committee, Smith-Kline/Beckman, San Diego, California, March, 1985.
13. T and B Cell Markers, American Society of Clinical Pathology, Chicago, Illinois, April, 1985.
14. Model for Mucosal Immunity, Visiting Professor, Case Western Reserve University, Department of Pathology, May, 1985.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Keren, D.F., Appelman, H.D., Dobbins, III, W.O., Wells, J.J., Whisenant, B., Foley, J., Dieterle, R. and Geisinger, K.: Correlation of histopathologic evidence of disease activity with the immunoglobulin-containing cells in the colon of patients with inflammatory bowel disease. Human Pathol. 15:757-763, 1984.
2. Keren, D.F.: Laboratory diagnosis of autoimmune disease: New antinuclear antibody testing. J. Clin. Immunoassay. 7:321-327, 1984.
3. Carey, C.J., Peter, G.K., Crisp, C.E. and Keren, D.F.: Serological analysis of five serotypes of Pasteurella multocida of rabbit origin by use of an enzyme-linked immunosorbent assay with lipopolysaccharide as antigen. J. Clin. Microbiol. 20:191-194, 1984.
4. Tajiabue, A., Boraschi, D., Villa, L., Keren, D.F., Lowell, G.H., Rappuoli, R. and Nencioni, L.: IgA-dependent cell-mediated activity against enteropathogenic bacteria: Distribution, specificity, and characterization of the effector cells. J. Immunol. 133:988-992, 1984.
5. Roth, R.I., Owen, R.L., Keren, D.F. and Volberding, P.A.: Intestinal infection with Mycobacterium avium in acquired immune deficiency syndrome (AIDS). Histologic and clinical comparison with Whipple's disease. Dig. Dis. Sci. 30:497-504, 1985.
6. Keren, D.F., McDonald, R.A., Scott, P.J., Rosner, A.M. and Strubel, E.: Effect of antigen form on local immunoglobulin A memory response of intestinal secretions to Shigella flexneri. Infect. Immun. 47:123-128, 1985.
7. Francis, I.R., Agha, F.P., Thompson, N.W. and Keren, D.F.: Fibrolamellar hepatocarcinoma: Clinical, radiologic and pathologic features. Gastroent. Radiol., in press.
8. Keren, D.F., DiSante, A.C., Mervak, T. and Bordine, S.L.: Problems with transporting serum to the laboratory for cryglobulin assay: A solution. Clin. Chem., in press.
9. Weller, F.E., Mutchnik, M.G., Keren, D.F., Goldstein, A.G. and Naylor, P.H.: MicroELISA method for measurement of human serum thymosin alpha-1. J. Immunol. Methods, in press.
10. Keren, D.F.: Gastrointestinal lymphomas correlation of histopathology with immunohistology: Introduction. Am. J. Surg. Pathol., in press.
11. Keren, D.F., DiSante, A.C. and Bordine, S.L.: Densitometric scanning of high resolution electrophoresis of serum: Methodology and clinical applications. Am. J. Clin. Pathol., in press.
12. Agha, F.P. and Keren, D.F.: Spindle cell squamous carcinoma of the esophagus: A tumor with biphasic morphology. Am. J. Radiol., in press.

BOOKS AND CHAPTERS IN BOOKS:

1. Keren, D.F.: Immunization via the intestinal route. In, Attachment of Microorganisms to the Gastrointestinal Mucosal Surfaces. Volume II, E.C. Boedecker, Editor. CRC Press, Publishers, P.217, 1985.
2. Keren, D.F.: Whipple's disease. In, Current Diagnosis, 7th Edition. Rex B. Conn, Editor. W.B. Saunders Co., Publishers, P.699, 1985.
3. Keren, D.F.: Assays for circulating immune complexes. In, Clinical Laboratory Annual. J.G. Batsakis and H.A. Homburger, Editors. Appleton Century Crofts, p.105, 1985.

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

1. Keren, D.F.: Immunoflurorescence staining: Myths and benefits. Lab. Management, April, 29-35, 1985.
2. Keren, D.F.: Pernicious anemia with atrophic gastritis. ASCP Check Sample Immunopathol. 85-1:1-5, 1985.
3. Giacherio, D., Wiggins, Annesley, T. and Keren, D.F.L Performance of a Coomassie blue protein assay on the Cobas-Bio. Clin. Chem. 30:980, 1984.
4. Kern, S.E., Keren, D.F. anbd Dieterle, R.C.: Paneth cell response. Hyperplasia association with bacterial overgrowth. Lab. Invest. 52:A34, 1985.
5. Keren, D.F., Anselmi, L.J., Lincoln, P.M., Annesley, T.M. and Giacherio, D.G.: Humoral immune response to parenteral immunization with protein conjugates of the carcinogin 2-acetylaminofluorene (2-AAF). Fed. Proc. 44:963, 1985.
6. Donofrio, P.D., Greenberg, H.S., Albers, J.W., Alessi, A.G., Leavitt, A., Davar, G., Keren, D.F., Latov, N. and Freddo, L.: IgM monoclonal protein binding to spinal cord and peripheral nerve glycolipids in a patient with motor neuron disease. Ann. Neurol., in press.
7. Johnson, T.L. and Keren, D.F.: Indirect immunofluorescence technique to detect a momoclonal (IgMK) antinuclear antibody. Am. J. Clin. Pathol., in press.
8. Braunstein, A.J. and Keren, D.F.: Cell surface and serum monoclonal immunoglobulins in Burkitt's lymphoma: In reply (letter). Arch. Pathol., Lab. Med., in press.
9. Keren, D.F.: Maternal connective tissue disease and congenital heart block (letter). N. Engl. J. Med. 312:1328, 1985.
10. Keren, D.F.: The laboratory diagnosis of monoclonal gammopathies. Smith/Kline-Beckman videotape, 1985.

NEELAM B. KUMAR, M.D.
ASSISTANT PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Cytopathology, ten weeks.
B. Surgical Pathology, eight weeks.
C. Gynecologic pathology consultations, 12 months.
D. Breast pathology consultations, sporadic (two-three months).
E. Cytopathology consultations, 12 months.
F. Gynecologic tumor conference, biweekly for 12 months.

II. TEACHING ACTIVITIES:

A. Sophomore pathology course for four months.
B. Gynecologic pathology lectures for the Pathology 600 (five hours).
C. Cytopathology Conference for the residents (every six weeks).
D. Gynecologic pathology teaching of the Gynecologic Oncology Fellows during their elective rotation in the Department of Pathology (two months).
E. Gynecology pathology teaching of the Pathology resident during the elective period (one month).
F. Department of Pathology House Officer Surgical Pathology Conference (weekly).
G. M-4 student's group leader, one month.

III. RESEARCH ACTIVITIES:

PROJECTS UNDER STUDY:

A. Vulvar melanoma.
B. Esophageal herpes.
C. Borderline ovarian tumor.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Associate Director of the Cytopathology Laboratory, six months.
B. Quality Control Program in the cytopathology laboratory, six months.
C. Surgical Pathology coding system, six months.

MEDICAL SCHOOL/HOSPITAL:

A. Member of the Hospital Tissue Committee, (six months).

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES/SEMINARS:

1. Codirector of workshop, "Transthoracic Fine Needle Aspiration Cytology", at the Annual Scientific Meeting of the American Society of Cytology.
2. Paper presentations at the annual Scientific Meeting of the International Academy of Pathologists, in November 1984. Kumar, N.B., Hughes, J., Lloyd, R.: Prevalence of human papilloma virus in cervicovaginal smears.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Novak, P.M., Kumar, N.B. and Naylor, B.A.: Curschmann's spirals in cervicovaginal smears: Prevalence, morphology, significance and origin. Acta Cytol., 28:5-8, 1984.
2. Kumar, N.B.: Small cell carcinoma of the endometrium in a 23-year-old woman: Light microscopic and ultrastructural study. A.J.C.P., 81:98-101, 1984.
3. Peters, W.A., Kumar, M.B., Fleming, W.P. and Morley, G.W.: Prognostic features of sarcomas and mixed tumors of the endometrium. Obstet. Gynecol., 63:550-556, 1984.
4. White, C., Morley, G.W. and Kumar, N.B.: Prognostic significance of tumor emboli in lymphatic or vascular spaces of the cervical stroma in stage IB squamous cell carcinoma of the cervix. Am. J. Obstet. Gynecol. 149:342-349, 1984.
5. Fleming, W.P., Kumar, M.B., Peters, W.A. and Morley, G.W.: Autopsy findings in patients with uterine sarcomas. Gynecol. Oncol.
6. Cookingham, C.L. and Kumar, N.B.: Diagnosis of a prostatic leiomyosarcoma by fine needle aspiration cytology. Acta Cytol. 29:170-172, 1985.
7. Peters, W.A., Kumar, N.B. and Morley, G.W.: Carcinoma of the vagina. Cancer 55:892-897, 1985.
8. Remick, D.G. and Kumar, N.B.: Benign polyps with prostatic-type epithelium of the urethra and the urinary bladder: A suggestion of histogensis based on histologic and immunohistochemical studies. Amer. J. Surg. Pathol. 8:833-839, 1984.
9. Hoffman, J.S., Kumar, N.B. and Morley, G.W.: Prognostic significance of groin lymph nodal metastases in saquamous carcinoma of vulva. In press.
10. Peters, W.A., III, Kumar, N.B., Anderson, W.A. and Morley, G.W.: Primary sarcoma of the adult vagina: A clinicopathologic study. Obstet. Gynecol. 65:699, 1985.
11. Peters, W.A., Kumar, N.B., Fleming, W.P. and Morley, G.W.: Prognostic features of endometrial sarcomas and sarcomas containing mixed tumors. Gynec. Oncol. 17:255, 1984.

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

1. Kumar, N.B., Hughes, J.D. and Lloyd, R.V.: Prevalence of human papilloma virus antigens in cervicovaginal smears. Acta Cytol. 1984. (Abstract).
2. Cary, J.L. and Kumar, N.B.: Cytologic diagnosis of herpes esophagitis and its correlation with histologic and clinical findings. Acta Cytol. (Abstract) 1984.

STEVEN L. KUNKEL, PH.D.
ASSISTANT PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

II. TEACHING ACTIVITIES:

A. Inflammation/Immunopathology Series ICS-600.
B. Biochemistry 522B.
C. Pathology 630.
D. Core lectures in Immunopathology.
E. Teaching/research seminars in various departments.
F. Supervised the following medical students, residents, and fellows: Lori Quinlan, Guim Kwon, Denise Ellul, Dr. John Rediske, Dr. Dan Remick, Dr. Peter Bachwich.
G. Doctoral Committee member for the following graduate students: Wendy Scales, Paul Simpson, Mohammad Hata, Bruce Riser.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. NIH - Macrophage Function in Pulmonary Inflammation HL31237 - Principal Investigator.
B. NIH - Inflammatory Cells and Lung Injury HL-31963 Principal Investigator for Section II and Core II.
C. American Heart Association Established Investigator - Regulation of pulmonary granuloma formation by macrophages - Principal Investigator.
D. NIH - Thermal Injury Complement and Leukocyte Dysfunction GM28499 - Co-Investigator.

PROJECTS UNDER STUDY:

A. Role of monocyte/macrophage signals in dictating immune responses:
   1. Ia antigen expression.
   2. Synthesis of arachidonic acid metabolites.
   3. Interleukin - 1 production.
B. Role of macrophages - lymphocyte interactions in the initiation, maintenance, and resolution of shronic immune response.
C. Techniques used to study the above projects:
   1. High pressure liquid chromatography.
   2. Spectrophometry.
   3. Immunofluoresence.
   4. Image analysis.
   5. Proliferation assays (IL-1 and IL-2 assays).

D. Collaborative research outside of pathology:
   1. Dr. Darrell Cambell.
   2. Dr. Gene Higashi.
   3. Dr. Ben Lucchesi.
   4. Dr. Joseph Lynch.
   5. Dr. Roger Wiggins.

E. Articles submitted for publication:

1. Wolter, J.R. and Kunkel, S.L.: Phagocytosis of whole blood erythrocytes by fibroblast-like cells on lens implants: Under experimental conditions. Arch. Opthalmol.
2. Kunkel, S.L., Campbell, D.A., Chensue, S.W., and Higashi, G.I.: Species dependent regulation of monocyte/macrophage Ia antigen expression and antigen presentation by prostaglandin E. Cell Immunol.
3. Kunkel, S.L. Chensue, S.W., and Phan, S.H.: Prostaglandins as endogenous mediators of interleukin-1 production. J. Immunol.
4. Chensue, S.W. and Kunkel, S.L.: Role of leukotrienes in phagocytosis-induced interleukin-1. J. Immunol.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Conduct Research Seminar Series.
B. Interview Candidates for Residency Program.

MEDICAL SCHOOL/HOSPITAL:

A. Committee on Medical Student Research.
B. Committee on use and care of animals.
C. Reviewer for Biomedical Research Council grants.
D. Reviewer for Dental Research Institute grants.
E. Reviewer for Diabetes Research and Training Center grants.
F. Interviewer for Medical Scientist Training Program (MSTP).

REGIONAL AND NATIONAL:

A. Reviewer for the following journals: American Journal of Pathology, American Review of Respiratory Disease, Circulation, Clinical Immunology and Immunopathology, Infection and Immunity, Journal of Rheumatology, Journal of Immunology, Laboratory Investigation, Science.
B. Research peer review committee of the American Heart Association (Michigan).
C. Chairperson for symposium of the Physiologic, Metabolic, and Immunologic actions of interleukin-1.
D. Consultant/grant reviewer for Veteran's Administration.
F. National Institutes of Health study section member for the review of Academic Research Enhancement Award.
G. National Institute of Health study section consultant for the review of RFA-85-HL "Endothelial and smooth muscle cell interactions in the lung."

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES/SEMINARS:

1. Kitasato Institute, Tokyo, Japan - Archidonate metabolites and the immune response.
2. American Academy of Dermatology, Washington, D.C., Advanced Dermatopathology.
3. Workshop on the immunology of diabetes, Ann Arbor, Michigan, Role of cyclo-oxygenase products in diabetes.
4. Symposium on the physiologic, metabolic, and immunologic actions of interleukin-1, Ann Arbor, Michigan, Arachidonic acid metabolites regulate interleukin-1, (IL-1) production.
5. Ciba - Geigy Research Seminar, Ardsley, New York, Role of Arachidonic Acid in macrophage mediated chronic inflammation.
6. Warner - Lambert Research Seminar, Ann Arbor, Michigan, Macrophage mediated immune reaction.
7. Lilly Research Laboratories Minisymposium, Indianapolis, Indiana, Arachidonic acid metabolites in macrophabe/lymphocyte reactions.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Chensue, S.W., Quinlan, L., Higashi, G.I. and Kunkel, S.L.: Role of oxygen reactive species in Schistosome-mansoni egg-induced granulomastous inflammation. Biochem. Biophys. Res. Comm. 122:184-190, 1984.
2. Kunkel, S.L., Chensue, S.W. and Higashi, G.I.: Role of lipoxygenase products in murine pulmonary granuloma formation. J. Clin. Invest. 74:514-525, 1984.
3. Campbell, D., Wiggins, R., Kunkel, S. and Neiderhuber, J.: Chronic intrarenal delivery of PGE_1 using an implantable drug delivery system. American Society for Artificial Organs Transactions 29:344-347, 1984.
4. Campbell, D., Wiggins, R., Kunkel, S., Juni, J., Tuscan, M., Shapiro, B. and Niederhuber, J.: Constant intrarenal infusion of PGE_1 into a canine renal transplant using a totally implantable pump. Transplantation 38:209-212, 1984.
5. Zimmerman, A.W., Dunham, B.S., Nochimson, D.J., Kaplan, B.M., Clive, J.M. and Kunkel, S.L.: Zinc transport in pregnancy. Am. J. Obst. Gyn. 149:523-529, 1984.
6. Wolter, J.R. and Kunkel, S.L.: Artificial anterior chamber made of rigid PMMA contact lense. CLAO Journal 11:107-112, 1985.
7. Kunkel, S.S. and Chensue, S.W.: Arachidonic acid metabolites regulate interleukin-1 production. Biochem. Biophys. Res. Comm. 128:892-897, 1985.
8. Jolly, S.R., Schumacher, W.A., Kunkel, S.L., Abrams, G.D., Liddicoat, J. and Lucchesi, B.R.: Platelet depletion in experimental myocardial infarction. Basic Research in Cardiology 293:131-140.
9. Bachwich, P., Lynch, J.P., Quinlan, L.A. and Kunkel, S.L.: Down regulation of arachidonic acid metabolism in sarcoid alveolar macrophage. Chest, in press.

10. Kunkel, S.L. and Chensue, S.W.: The role of arachidonic acid metabolites in mononuclear phagocytic cell interactions. International Dermatol., in press.
11. Chensue, S.W., Ellul, D.A., Spengler, M., Higashi, G.I. and Kunkel, S.L.: Dynamics of arachidonic acid metabolism in macrophages from hypersensitivity (Schistosom mansoni egg) and foreign body type granulomas. J. Leukocyte Biol., in press.

BOOKS AND CHAPTERS IN BOOKS:

1. Kunkel, S.L. and Ward, P.A.: The complement system. In, Immunology III, Bellanti, editor. W.B. Saunders Company Philadelphia. Page 106-116, 1984.
2. Fantone, J.C., Kunkel, S.L. and Zurier, R.B.: Effects of prostaglandins on in vivo immune and inflammatory reactions. In, Prostaglandins and Immunity, J.S. Goodwin, editor. Martinus Nijhoff Publishing, Boston, Massachusetts, pp. 123-146, 1985.
3. Kunkel, S.L., Chensue, S.W., Ellul, D.A. and Higashi, G.: Macrophage function in granulamatous inflammation: Regulatory role of arachidonic acid metabolites. In, Chemical mediators of inflammation the Satellite Symposium of the Fifth International Congress of Immunology, in press.
4. Kunkel, S.L., Chensue, S.W., Spengler, M. and Geer, J.: Effects of arachidonic acid and their metabolitic inhibitors on interleukin-1 production. In, The Physiologic, Metabolic, and Immunologic Actions of Interleukin-1, M.J. Kluger, J.J. Oppenheim, and M.C. Powanda, editors. Alan R. Liss, Inc., in press.
5. Kunkel, S.L., Spengler, S.A., Hirata, A.A. and Ward, P.A.: Complement C5a antigen. In, Methods of Enzymatic Analysis, H.A. Bergmeyer, editor. UCH, in press.

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

1. Phan, S.H. and Kunkel, S.L.: Role of arachidonic acid metabolites in bleomycin-induced pulmonary fibrosis. Third International Colloquium on Pulmonary Fibrosis: Paris, France, 1984.
2. Chensue, S.W., Ellul, D.A., Mouton, C., Higashi, G.I. and Kunkel, S.L.: Dynamics of arachidonic acid metabolism in macrophages from pulmonary granulomas induced by schistosome eggs and sephadex beads. Kyoto Conference on Prostaglandins, Kyoto, Japan, 1984.
3. Kunkel, S.L., Ellul, D.A. and Chensue, S.W.: Metabolic conversion of exogenous versus endogenous arachidonic acid by resident and elicited macrophages. Kyoto Conference on Prostaglandins, Kyoto, Japan, 1984.
4. Phan, S.J. Kunkel, S.L. and McGarry, B.: Effect of the lipoxygenase inhibitor, nordihydroguararetic acid, on bleomycin-induced pulmonary fibrosis. American Heart Association, Miami, 1984.
5. Lucchesi, B.R., Kunkel, S.L., Hook, B.G., Lee, E.C. and Schumacher, W.A.: In vivo assessment of the antithrombotic activity of thromboxane sythetase ingibitors and prostacyclin. Kyoto Conference on Prostaglandins, Kyoto, Japan, 1984.
6. Hiserodt, J.C., Remick, D.G., Higashi, G.I. and Kunkel, S.L.: Regulation of granulomatous inflammation by natural killer cells. FASEBM Anaheim, California, 1985.

7. Remick, D.G., Kunkel, S.L., Hiserodt, J.C., Chensue, S.W. and Higashi, G.I.: Flow cytometric analysis of lymphocyte populations during T cell and non-T cell mediated murine pulmonary granuloma formation. FASEB, Anaheim, California, 1985.
8. Kunkel, S.L., Ellul, D.A., Chensue, S.W., Spengler, M., Geern J. and Higashi, G.I.: Diverse metabolism of exogenous and endogenous arachidonic acid by resident and ranuloma macrophages. FASEB, Anaheim, California, 1985.
9. Fantone, J.C., Phan, S.H. and Kunkel, S.L.: Regulation of rat neutrophil phospholipase A_2 activity and arachidonic acid metabolism by PGE_1 and cyclic AMP. FASEB, Anaheim, California, 1985.
10. Chensue, S.W. and Kunkel, S.L.: Induction of interleukin-1 release by leukotrienes. FASEB, Anaheim, California.
11. Nagata, S., Glovsky, M.M. and Kunkel, S.L.: Neutrophil (PMN) chemotactic activity of human sera and plasma. FASEB, Anaheim, California, 1985.
12. Bachwich, P., Lynch, J.P., Quinlan, L.A. and Kunkel, S.L.: Down-regulation of arachidonic acid metabolism by sarcoid alveolar macrophages. Aspen Lung meeting, Aspen, Colorado, 1985.
13. Chensue, S.W., Davey, M. and Kunkel, S.L.: Interleukin-1 activity is spontaneously released by monocytes of patients with tuberculosis and acute bacterial infections. Symposium of the Physiologic Metabolic and Immunologic Actions of Interleukin-1. Ann Arbor, Michigan, 1985.
14. Kunkel, A.L. and Chensue, S.W.: Arachidonic acid metabolites regulate interleukin (IL-1) production. Symposium of the Physiologic, Metabolic, and Immunologic Actions of Interleukin-1. Ann Arbor, Michigan, 1985.

THOMAS LANDEFELD, PH.D.
ASSISTANT PROFESSOR OF PATHOLOGY AND PHARMACOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. DIAGNOSTIC SERVICE ACTIVITIES: None.

II. TEACHING ACTIVITIES:

MEDICAL SCHOOL/HOSPITALS:

A. Pharmacology 626: Anterior Pituitary Control.
B. Pharmacology 646: Graduate Student Seminar, Associate Course Director.
C. Anatomy/Physiology 581: Mammalian Reproductive Endocrinology (lectures).
D. Pharmacology 614: Endocrine Pharmacology and Biochemistry, Course Director.
E. Supervision of one postdoctoral fellow and one graduate student.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. NIH HD 12016, "Gonadotropin Biosynthesis", Principal Investigator, $79,092; current year, 1 August 1981 to 31 July 1985.
B. NIH HD 07048, "Training in Reproductive Endocrinology", Program Co-ordinator; $124,984, current year, 1 July 1980 to 30 June 1985.
C. Preceptor in four Training Grants:
   1. "Interdepartmental Training in Pharmacological Sciences".
   2. "Training in Cell and Molecular Biology".
   3. Reproductive Endocrinology Training Grant.
   4. Training in Endocrinology and Metabolism.
D. NIH HD 11489, "Role of GnRH in Gonadotropin and Steroid Secretion", Co-Investigator, $124,134; current year, 1 March 1984 to 30 June 1987.
E. Plot Feasibility Study - Diabetes Research adn Training Center "Analysis of the Insulin Gene in Patients Exhibiting Mutant Insulins," Principal Investigator. $23,158 current year, September 1984 - August 31 1986.

PROJECTS UNDER STUDY:

A. The research in my laboratory deals with the regulation and mechanisms involved in pituitary gonadotropin biosynthesis. Currently, recombinant DNA methods are being utilized to examine transcriptional events in this process. This research involves collaborative studies with Drs. Fred Karsch (Physiology) and John Marshall (Internal Medicine). In addition, collaborative efforts are ongoing with Dr. Ricardo Lloyd (Pathology) that involve in situ cDNA hybridization in rat pituitary tumors and a collaboration exists with Dr. A. Vinik (Internal Medicine) which involves the analysis of the insulin gene from patients exhibiting mutant insulins.

B. Manuscripts submitted:

1. Papavasiliou, S.S., Zmeili, S., Khoury, S., Landefeld, T.D., Chin, W.W., and Marshall, J.C.: "Gonadotropin Releasing Hormone Differentially Regulates Expression of the Alpha nd Luteinizing Hormone Beta Subunit Genes in Male Rats."
2. Papavasiliou, S.S., Zmeili, S., Marshall, J.C., and Landefeld, T.D.: "The use of an Improved RNA Dot Method: Application to the Gonadectomized Rat Model."

IV. ADMINISTRATIVE ACTIVITIES:

MEDICAL SCHOOL/HOSPITAL:

A. Member, Cancer Research Committee.

REGIONAL AND NATIONAL:

A. Reviewer, Endocrinology journal.
B. Reviewer, Biology of Reproduction.
C. Reviewer, NSF grant proposals.
D. Reviewer, MRC (Canada) grant proposals.

V. OTHER RELEVANT ACTIVITIES:

A. Program Coordinator, Reproductive Endocrinology Training Program.
B. Member, Molecular Genetics Faculty.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Landefeld, T.D. and Kepa, J.: Regulation of LH beta subunit mRNA in the sheep pituitary gland during different feedback states of estradiol. Biochem. Biophys. Res. Commun. 122:1307-1313.
2. Landefeld, T.D. and Kepa, J.: Pituitary alpha subunit mRNA amounts during the sheep estrous cycle. Assessment by cDNA Hybridization. J. Biol. Chem. 256:12817-12820.
3. Landefeld, T.D., Maurer, R.A. and Kepa, J.: Luteinizing hormone beta subunit in RNA amounts increase during the pre-ovulatory surge in the ewe: The highest levels are observed at the completion of the peak. DNA, in press.
4. Landefeld, T.D., Kaynard, A. and Kepa, J.: Pituitary alpha subunit mRNA remains elevated during the latter stages of the preovulatory LH surge. Endocrinology, in press.
5. Lloyd, R.V., Landefeld, T.D., Maslar, I. and Frokman, L.A.: Diethylstilboestrol inhibits tumor growth and prolactin production in rat pituitary tumor. Am. J. Pathol. 118:379-386.

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

1. Lloyd, R., Landefeld, T.D. and Maslar, I.: Diethylstilbestrol (DES) reduces tumor size and inhibits growth of MtTW15 rat pituitary tumor while modifying expression of prolactin and growth hormone by tumor cells, International Congress of Endocrinology, 1984, Quebec City, Quebec.
2. Landefeld, T.D., Levitan, I. and Kepa, J.: Assessment of pituitary alpha subunit mRNA amounts during the ovine estrous cycle using cDNA hybridization, International Congress of Endocrinology, 1984, Quebec City, Quebec.
3. Landefeld, T.D., Kepa, J. and Leung, K.Y.: "LH beta mRNA amounts eemain elevated at the completion of LH surge in the ewe, The Endocrine Society 1985, Baltimore, Maryland.
4. Papavasiliou, S.S., Zmeili, S., Khoury, S., Herbon, L., Landefeld, T., Chin, W. and Marshall, J.C.: GnRH modulation of alpha and beta LH gene expression in male rats, American Society for Clinical Investigation, 1985, Washington D.C.
5. Zmeili, S., Papavasiliou, S., Marshall, J.C. and Landefeld, T.: An improved method for mRNA quantitation using the dot blot assay: Application to the gonadectomized rat model, The Endocrine Society 1985, Baltimore, Maryland.

RICARDO V. LLOYD, M.D., PH.D.
ASSISTANT PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Surgical Pathology - six months.
B. Necropsy Pathology - two weeks.
C. Consultant for soft tissue lesions - 12 months.
D. Consultant for endocrine lesions - 12 months.
E. Consultant to Veterans Administration Medical Center, Ann Arbor.

II. TEACHING ACTIVITIES:

A. Lectures to Sophomore Medical Students in Pathology 600.
B. Fourth year medical student rotation in Pathology, one month.
C. Course in basic histology and pathology for histotechnologists, one month.
D. Lectures to Pathology House Officers.
E. Resident elective in endocrine and soft tissue pathology, one month.
F. Supervise medical student during summer research program - 5/84 - 8/84.
G. Thesis Committee for Graduate Students in Dental School
H. Immunoperoxidase Rounds - twice monthly - 9 months.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Regulation of Rat Pituitary Hyperplasia and Neoplasia: NIH Grand 1R23 CA 37238, March, 1984 - February, 1987.
B. Regulation of Rat Pituitary Hyperplasia and Neoplasia: Phoenix Memorial Research Grant - January, 1984 - December, 1984.
C. Regulation of Differentiation and of Hormone Production in Normal and Neoplastic Human Pituitary Tissues: Biomedical Research Support Grant May, 1985 - April, 1986.
D. Member of Immunochemistry Care in the Gastrointestinal Hormone Research Core Center Grant (PI T. Yamada) NIH - NIADDKD 10/84 - September, 1989.

PROJECTS UNDER STUDY:

A. Dopamine receptor analysis and in situ cDNA hybridization in rat pituitary tumors and human pituitary tissues.
B. Development of monoclonal antibodies as diagnostic aids in surgical pathology.
C. Immunocytochemical techniques For light and electron microscopy.
D. Development of a reverse hemolytic plaque assay to study hormone secretion.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Director of Immunoperoxidase Service.
B. Coordinator of Anatomic Pathology Journal Club.
C. Residency Training Program Planning Committee.
D. MSP Executive Committee.
E. Activation Committee for Surgical Pathology in RHP.

MEDICAL SCHOOL/HOSPITAL:

A. Thyroid Therapy Conference - weekly.
B. Pituitary Study Group - monthly.

REGIONAL AND NATIONAL:

A. Michigan Thyroid Association.
B. Workshop on Immunohistochemistry to the Michigan Society of Histotechnology, June 8, 1985.
C. Presentations at the International Academy of Pathology in March, 1985.
D. Presentation at the Endocrine Society 67th Annual Meeting, Baltimore, Maryland, June 19-21, 1985.
E. Editorial Board, American Journal of Surgical Pathology.
F. Reviewer of articles for Endocrinology and The American Journal of Pathology.
G. Reviewer of articles for the American Journal of Pathology and Journal of the American Medical Association.

V. OTHER RELEVANT ACTIVITIES:

A. University Student Relations Committee - August 1982 to June 1985
B. Medical School Admissions Committee - August 1983 to Present.
C. Preceptor for student in AIMED Program. Spring 1985.

INVITED LECTURES/SEMINARS:

1. Invited Lecturer to Michigan Society of Cytoloty on Immunochemistry, October 13, 1985
2. Invited seminar speaker, Henry Ford Hospital, Detroit, Michigan, on February 6, 1985.
3. Invited Lecturer to Department of Pathology University of South Florida College of Medicine, July 11 and 12, 1985.
4. Research Seminars in Anatomy Department and Reproductive Endocrinology Program - University of Michigan, 1984.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Lloyd, R.V., Landefeld, T.D., Maslar, I. and Frohman, L.A.: Diethylstilbestrol inhibits tumor growth and prolactin production in rat pituitary tumors. Am. J. Pathol. 118:379-386, 1985.
2. Lloyd, R.V., Wilson, B.S., Kovacs, K. and Ryan, N.: Immunohistochemical localization of chromogrnin in human hypophyses and piuitary adenoma. Arch. Pathol. Lab. Med. 109:515-517, 1985.
3. Lloyd, R.V., Johnson, T.L., Blaivas, M., Sisson, J.C. and Wilson, B.S.: Detection of HLA-DR antigens in paraffin-embedded thyroid epithelial cells with a monoclonal antibody. Am. J. Pathol. 120:106-111, 1985.
4. Lloyd, R.V., Wilson, B.S., Varani, J., Gaur, P.K., Moline, S. and Makari, J.G.: Immunocytochemical characterization of a monoclonal antibody that recognizes mitosing cells. Am. J. Pathol., in press.
5. Lloyd, R.V., Blaivas, M. and Wilson, B.S.: Distribution of chromogranin and S-100 protein in normal and abnormal adrenal medullary tissue. Arch. Pathol. Lab. Med. 109:633-635, 1985.
6. Johnson, T.L., Lloyd, R.V., Shapiro, B., Sisson, J.C., Beierwaltes, W.H., Thompson, N.W. and Orringer, M.B.: Cardiac paragangliomas: A clinicopathologic and immunohistochemical study of four cases. Am. J. Surg. Path., in press.
7. Lloyd, R.V., Schmidt, K., Blaivas, L., McCoy, J.P. and Wilson, B.S.: A rapid immunostaining method utilizing preformed antibody-avidin-biotin-peroxidase complexes. Am. J. Clin. Pathol. 83:636-639, 1985.
8. Kalff, V., Shapiro, B., Lloyd, R.V., Nakajo, M., Sisson, J.C. and Beierwaltes, W.H.: Bilateral pheochromocytomas. J. Endocrinol. Invest. 7:387-391, 1984.
9. Grossman, H.B., Sonda, L.P., Lloyd, R.V. and Gikas, P.W.: Carcinosarcoma of bladder. Evaluation by electron microscopy and immunohistochemistry. Urology 25:387-389, 1984.
10. Beierwaltes, W.H., Rabbani, R., Lloyd, R.V., Eyre, P. and Mallette, S.: An analysis of "abalation of thyroid remnants" with I-131 in 511 patients from 1947-1984: Experience at University of Michigan. J. Nucl. Med. 25:1287-1293, 1984.
11. Thompson, N.W., Eckhauser, F.E., Vinik, A.I., Lloyd, R.V., Fiddian-Green, R.C. and Strodel, W.E.: Cystic neuroendocrine neoplasms of the pancreas and liver. Ann. Surg. 199:158-164, 1984.
12. DaFoe, C.D., Campbell, D.A., Marks, W.H., Borgstrom, A., Lloyd, R.V. and Turcotte, J.G.: Inclusions of the donor spleen in pancreaticoduodenal transplantation is associated with rejection. Transplantation, in press.
13. Regezi, J.A., Stewart, J.C.B., Headington, J.T. and Lloyd, R.V.: Immunohistochemical staining of Langerhans cells and macrophages in oral lichen planus. Oral Surg. Med. Pathol., in press.
14. Stewart, J.C.B., Regezi, J.A., Lloyd, R.V. and McClatchey, K.D.: Immunohistochemical study of idiopathic histiocytes of the jaws. Oral. Surg. Med. Pathol., in press.
15. Facer, P., Bishop, A.E., Lloyd, R.V., Wilson, B.S., Hennessy, R.J. and Polak, J.M.: Chromogranin: A newly recognized marker for endocrine cells of the human gastrointestinal tract. Gastroenterology, in press.

16. Varndell, I.M., Lloyd, R.V., Wilson, B.S. and Polak, J.M.: Ultrastructural localization of chromogranin: A potential marker for the electron microscopical recognition of endocrine secretory granules. Histochem. J., in press.
17. Bussolati, G., Gugliotta, P., Sapino, A., Eusebi, V. and Lloyd, R.V.: Chromogranin-reactive endocrine cells in argyrophilic carcinomas ("carcinoids") and normal tissue of the breast. Am. J. Pathol. 120:186-192, 1985.
18. Walts, A.E., Said, J.W., Shintaku, I.P., and Lloyd, R.V.: Chromogranin as a marker of neuroendocrine cells in cytologic material - An immunocytochemical study. Am. J. Clin. Path., in press.
19. Sirki, K.L., Varndell, I.M., Hamid, Q.A., Wilson, B.S., Kameya, T., Ponder, B.A.J., Lloyd, R.V., Bloom, S.R. and Polak, J.M.: Medullary carcinoma of the thyroid: An immunocytochemical and histochemical study of 25 cases using 9 separate markers. Cancer, in press.
20. Carle, F., Bishop, A.E., Bonamico, M., Lloyd, R.V., Wilson, B.S., Ceccamea, A., Lezoche, E., Speronza, V. and Polak, J.M.: The gut endocrine cell population in coeliac disease estimated by immunocytochemistry using a monoclonal antibody to chromogranin. Gut, in press.
21. Cilley, R.E., Thompsen, N.W., Lloyd, R.V. and Shapiro, B.: Sarcoidosis of the thyroid presenting as a painful nodule. In press.
22. Glowniak, J.V., Shapiro, B., Sisson, J.C., Thompson, N.W., Coran, A.G., Lloyd, R.V., Kelsch, R.C. and Beierwaltes, W.H.: Familial extra-adrenal pheochromocytoma: A new syndrome. Arch. Int. Med. 145:257-261m 1985.
23. Regezi, J.A., Lloyd, R.V., Zarbo, R.J. and McClatchey, K.D.: Minor salivary gland tumors: A histologic and immunohistochemical study. Cancer 55:108-115, 1985.
24. Orringer, M.B., Sisson, J.C., Glazer, G., Shapiro, B., France, I., Behrendt, D.M., Thompson, N.W. and Lloyd, R.V.: Surgical treatment of cardia pheochromocytomas. J. Thoracic and Cardiovascular Surgery, in press.
25. Harness, J.K., Thompson, N.W., McLeod, M.K., Eckhauser, F.E. and Lloyd, R.V.: Follicular carcinoma of the thyroid gland: Trends and treatment. Surgery 96:972-980, 1984.
26. Jackson, C.E., Talpos, G.B., Block M.A., Norum, R.A., Lloyd, R.V. and Tashjian, A.H.: Clinical value of tumor doubling estimations in multiple endocrine neoplasia type II. Surgery 96:981-987., 1984.
27. Nishiyama, R.H., Thompson, N.W., Lloyd, R. and Augur, N.A.: Secretory diarrhea with islet cell hyperplasia and increased immunohistochemical reactivity to serotonin. Surgery 96:1038-1044, 1984.
28. Thompson, N.W., Lloyd, R.V., Nishiyama, R.H., Vinik, A.I., Strodel, W.E., Allo, M.D., Eckhauser, R.E., Talpos, G. and Mervak, T.: MEN I pancreas: A histological and immunohistochemical study. World J. Surg. 8:561-574, 1984.
29. Regezi, J.A., Lloyd, R.V., Zarbo, R.J. and McClatchey, K.D.: Minor salivary gland tumors: A histologic and immunohistochemical study. Cancer 55:108-115, 1985.
30. Kalff, V., Shapiro, B., Lloyd, R., Nakajo, M., Sisson, J.C. and Beierwaltes, W.H.: Bilateral pheochromocytomas. J. Endocrinol. Invest. 7:387, 1984.
31. Said, J.W., Vimadala, S., Nash, G., Shintaku, I.P., Heusser, R.C., Sassoon, A.P. and Lloyd, R.V.: Immunoreactive neuron-specific enolase, bombesin and chromogranin as markers for neuroendocrine lung tumors. Hum. Path. 16:236-240, 1985.
32. Lloyd, R.V., Schmidt, K. and Nath, V.: Effects of pergolide on diethylstilbestrol-induced rat pituitary hyperplasia. Am. J. Pathol., in press.

BOOKS AND CHAPTERS IN BOOKS:

1. Lloyd, R.V.: Tumors of the pituitary. In, Atlas of Tumor Pathology of the Fischer Rat, Stinson, S.F., Schuller, H.M., and Reznik, G., editors. CRC Press, Boca Raton, Florida, 1986.

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

1. Lloyd, R.V., Coleman, K., Schmidt, K. and Varani, J.: Paradoxical effects of estrogens on pituitary cell proliferation and prolactin expression. Lab. Invest. 52:39A, 1985.
2. Lloyd, R.V., Johnson, R.L., Blaivas, M., Sisson, J.C. and Wilson, B.S.: Detection of Ia-like immunoreactivity in paraffin-embedded thyroid epithelial cells with a monoclonal antibody. Lab. Invest. 52:31A, 1985.
3. Johnson, T.L., Lloyd, R.V., Shapiro, B., Sisson, J.C. and Beierwaltes, W.J.: Cardiac paragangliomas: A clinicopathologic study of four cases. Lab. Invest. 52:31A, 1985.
4. Blaivas, M., Lloyd, R.V. and Wilson, B.S.: Distribution of chromogranin and S-100 protein in normal and abnormal adrenal medullary tissue. Lab. Invest. 52:22A, 1985.
5. Flint, A., Lloyd, R.V. and Wilson, B.S.: Pulmonary histiocytosis X: Immunoperoxidase staining for Ia-like antigen in paraffin-embedded tissues. Lab. Invest. 52:22A, 1985.
6. Kay, D., DeLellis, R.A., Dayal, Y., Lloyd, R.V., Duggan, M.A., Tallbers, K., Sternberg, S.S. and Wolfe, H.: Ductal adenocarcinomas of the pancreas with neuroendocrine cells: An immunohistochemical study. Lab. Invest. 52:33A, 1985.
7. Lloyd, R.V., Landefeld, T. and Maslar, I.: Diethylstilbestrol reduces tumor size and inhibits growth of the MtT/W15 rat pituitary tumor while modifying expression of prolactin and growth hormone by tumor cells. 7th International Congress of Endocrinology, Quebec, Canada, July 2-7, 1984.
8. Lloyd, R.V., Schmidt, K., Nath, V. and Colemen, K.: Synthesis of prolactin and growth hormone and incorporation of thymidine in normal hyperplastic and neoplastic rat pituitary tissues. Abstract 168. The Endocrine Society 67th Annual Meeting, Baltimore, Maryland, June 19-21, 1985.
9. Barkan, A., Jolley, D., Beals, T. and Lloyd, R.V.: Acromegaly due to ectopic growth hormone-releasing hormone secretion. Abstract 487. The Endocrine Society 67th Annual Meeting, Baltimore, Maryland, June 19-21, 1985.
10. Lloyd, R.V., Phan, S. and Wilson, B.S.: Monoclonal antibodies in the analysis and purification of human chromogranin. Abs. F. Proc. FASEB 68th Annual Meeting, Anaheim, California, April 21-26, 1985.
11. Regezi, J.A., Stewart, J.C.B., Lloyd, R.V. and McClatchey, K.D.: Immunohistochemical study of idiopathic histiocytosis of the jaws. International Association of Dental Research, March 21-24, 1985, Las Vegas, Nevada.
12. Regezi, J.A., Stewart, J.C.B., Headington, J.T. and Lloyd, R.V.: Immunohistochemical staining of Langerhans cells and phagocytes in oral lichen planus. International Assoction of Dental Research, March 21-24, 1985, Las Vegas, Nevada.
13. Tobes, M.C., Jaques, S., Lloyd, R.V., Shapiro, B. and Sisson, J.C.: Comparison of the in vitro pharmacodynamics of meta benzylguanidine (MIBG) to the in vivo scintigraphy. Abstract.

14. Varndell, I.M., Bishop, A.E., Lloyd, R.V., Wilson, B.S., Grimelius, L., Pearse, A.G.E. and Polak, I.M.: Chromogranin immunocytochemistry possible correlation with Grimelius argyrophilia. J. Pathol. 143:A299, 1984.
15. Kumar, N.B., Hughes, J.D. and Lloyd, R.V.: Prevalence of human papillomavirus antigens in cervicovaginal smears. Acta. Cytol. 28:636, 1984.
16. Bishop, A.E., Facer, P., Lloyd, R.V., Wilson, B.S. and Polak, J.M.: Chromogranin A as a marker for the endocrine cells of human gut. Regulatory Peptides 9326A, 1984.
17. Bishop, A.E., Facer, P., Lloyd, R.V., Wilson, B.S. and Polak, J.M.: Monoclonal antibodies to chromogranin A in the demonstration of all currently identifiable endocrine cells of the human gut. Gut 25:1161, 1984.
18. Wilson, B.S. and Lloyd, R.V.: Monoclonal antibodies in diagnostic pathology. Pathology Update Series 2:Lesson 13, pp. 1-8, 1984.
19. Lloyd, R.V.: Immunohistochemical methods in diagnostic tissue pathology. Medical Laboratory International 4-5:26-30, 1985.

VII. HONORS:

1. Recepient of the first annual Arthur Purdy Stout Society of Surgical Pathology Award, March, 1985.
2. Recepient of Resident Teaching Award in Anatomic Pathology, June, 1985.

WAYNE A. MARASCO, PH.D.
RESEARCH INVESTIGATOR
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES: None

II. TEACHING ACTIVITIES: None

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. National Institutes of Health _ Leukocyte Chemotaxis. Co-investigator. NIH-AI-17690-01.
B. National Institutes of Health - Study of Chemotaxis Receptor Structure and Function. Co-Principal Investigator. HL/AI-33003-02.

PENDING SUPPORT:

A. National Institutes of Health - Leukocyte Chemotaxis Receptors. Principal Investigator.
B. National Institutes of Health - Localization of Formyl Peptide Chemotaxis Receptors on PMN. Co-Principal Investigator.

PROJECTS UNDER STUDY:

A. The experimental research in my laboratory is aimed at achieving detailed structural knowledge about the receptor on leukocytes for the chemotactic N-formylated peptides, which have now been identified as the major peptide leukotactic agents produced by bacteria. We are using a wide combination of membrane receptor purification techniques to achieve this goal including subcellular fractionation and plasma membrane purification, detergent solubilization, photoaffinity labeling, selective enzymatic digestions, autoradiography, affinity chromatography and high-pressure liquid chromatography. We are also currently involved in the production of monoclonal antibodies directed against the receptor which will be used for immunoprecipitation of purified receptor material. Protein sequencing will be accomplished by using conventional sequencing techniques. Detailed molecular information about this chemotaxis receptor is of direct health-relatedness. The approaches we have used provide the tools for unraveling, not only the molecular structure of this receptor, but also the physiologic and pathophysiologic regulation of their function.
B. My laboratory is also involved in studies on the mechanisms of neutrophil activation primarily by understanding the events that follow

receptor-ligand binding. To this end, we have developed and implemented several computer programs to analyze ligand binding. Through the combined analysis of both equilibrium binding data and kinetic dissociation data, we have demonstrated the existence of negative cooperativity among the formyl peptide receptors. To further delineate the molecular mechanisms of the concave curvilinearity, we are currently investigating the role of guanine nucleotides and their regulatory proteins in the modulation of the formyl peptide chemotaxis receptor.

C. In the coming year, we plan to investigate whether the molecular basis of curvilinear, concave upward Scatchard plots can be determined using purified receptor protein incorporated into phospholipid vesicles with and without the addition of the purified guanine nucleotide regulatory proteins. We will also determine whether ligand binding stimulates GPTase activity in these purified regulatory proteins. We also plan to insert the purified receptors into phospholipid vesicles and to subsequently fuse these vesicles with a receptor-deficient cell with the intention of conveying formyl peptide responsiveness to the acceptor cell. This will be assayed by biological responses (i.e., f-Met-Leu-the induced chemotaxis) and biochemical activation pathways (i.e. ^{3}H-arachidonate release, phosphoinositide metabolism). Furthermore, we will determine whether the formyl peptide receptor possesses intrinsic protein kinase activity for itself or other acceptor proteins. We will also determine whether GTP or ATP is required for kinase activity and whether tyrosine, theonine or serine residues are phosphorylated.

D. The following fellow, medical student and research assistant have been actively involved in these research efforts:
   1. Dr. Richard Smith - postdoctoral fellow, Departments of Pathology and Microbiology/Immunology. Structural characterization of the rabbit neutrophil formyl peptide receptor.
   2. Mr. Doug Feltner - medical student, Department of Pathology. Analysis of Neutrophil GTPase activity.
   3. Mr. Todd Grey - Research Assistant - Purification of the Formyl Peptide Chemotaxis Receptors.

E. My laboratory has established collaborative ties with the faculty from the following departments:
   1. Dr. Roderick Nairn - Department of Microbiology/Immunology. Study of Chemotaxis Receptor Structure and Function.
   2. Dr. John E. Niederhuber - Departments of Surgery and Microbiology/Immunology. Influence of the Major Histocompatability Complex on the Expression of Murine Neutrophil Formyl Peptide Receptors and on the Antibody Response to an N-formylated Chemotactic Peptide.

IV. <u>OTHER RELEVANT ACTIVITIES</u>:

<u>INVITED LECTURES/SEMINARS</u>:

1. UCLA Symposium on Monoclonal Antibodies and Cancer Therapy, Park City, Utah, 1985.
2. Federation of American Society for Experimental Biology. Anaheim, CA, 1985.
3. Co-Organizer of Satellite Symposium for the 6th International Congress of Immunology on "Anti-Idiotypic Antibodies as Probes for the Receptor", Toronto, Canada, 1986.

ARTICLES SUBMITTED FOR PUBLICATION:

1. Walter, R.J. and Marasco, W.A.: Visualization of formylpeptide receptor recovery on the surface of rabbit neutrophils after down-regulation.
2. Walter, R.J. and Marasco, W.A.: Direct visualization of formylpeptide binding on human neutrophils. I. Cellular and receptor heterogeneity.
3. Walter, R.J. and Marasco, W.A.: Direct visualization of formylpeptide binding on human neutrophils. II. Asymmetric distribution on spontaneously polarized cells.
4. Marasco, W.A., Assiz-Baumgartner, R., Huzy, R., Eldridge, C.J., Stross, J. and Gikas, P.W.: Acute, reversible renal failure with associated acute tubular necrosis and proteinuria induced by therapeutic short term ibuprofen administration.
5. Feltner, D.E., Smith, R.H., Ward, P.A. and Marasco, W.A.: Characterization of the plasma membrane bound GTPase activity from rabbit neutrophils. I. Inhibition by pertussis toxin of the stimulation induced by formyl peptide, C5a and leukotriene B_4.
6. Duque, R.E., Phan, S.H., Fantone, J.C. and Marasco, W.A.: Effects of p-bromophenacyl bromide on stimulus response coupling in rat neutrophils.
7. Marasco, W.A., Laybourn, K.A., Ward, P.A. and Niederhuber, J.E.: Genetic control of the immune response in mice to an NH_2-formylated chemotactic peptide. I. More than one gene in H-2 controls the antibody response.
8. Marasco, W.A., Niederhuber, J.E. and Ward, P.A.: Murine neutrophil formyl peptide receptors: Effects of the major histocompatability complex on receptor number, affinity and biological response.
9. Marasco, W.A., Feltner, D.E., Nairn, R. and Ward, P.A.: Evidence of negative cooperative interactions of formyl peptide chemotaxis receptors on the rat neutrophil.
10. Zoghbi, S.S., Marasco, W.A., Becker, E.L. and Thakur, M.L.: Selective radiolabeling of human neutrophil through internalization of the formyl peptide receptor complex.

V. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Marasco, W.A., Phan, S.H., Krutzsch, H., Showell, H.J., Feltner, D.E., Nairn, R., Becker, E.L. and Ward, P.A.: Purification and identification of formyl-methionyl-leucyl-phenylalanine as the major peptide neutrophil chemotactic factor produced by Escherichia coli. J. Biol. Chem. 259:5430-5439, 1984.
2. Fantone, J.C., Marasco, W.A., Elgas, L.J. and Ward P.A.: Stimulus specificity of prostaglandin inhibition of rabbit polymorphonuclear leukocyte lysosomal enzyme release and superoxide anion production. Am. J. Pathol. 115:9-16, 1984.
3. Walter, R.J. and Marasco, W.A.: Autoradiographic localization of formyl peptide chemotaxis receptors on rabbit peritoneal neutrophils. Exp. Cell Res. 154:613-618, 1984.
4. Marasco, W.A., Feltner, D.E. and Ward, P.A.: Formyl peptide chemotaxis receptors on the rat neutrophil. Experimental evidence for negative cooperativity. J. Cell. Biochem. 27:359-375, 1985.

5. Marasco, W.A., Ward, P.A., Feltner, D.E. and Varani, J.: Chemotactic factor binding by metastatic tumor cells: Evidence for a formyl-peptide receptor on an non-myelogenous cell. J. Cell Sci. 73:121-134, 1985.
6. Marasco, W.A., Becker, K.M., Feltner, D.E., Brown, C.S., Ward, P.A. and Nairn, R.: Covalent affinity labeling, detergent solubilization, and fluid phase characterization of the rabbit neutrophil formyl peptide chemotaxis receptor. Biochem. 24:2227-2236, 1985.
7. Nairn, R., Smith, R.J., Brown, C.S. and Marasco, W.A.: What are the molecular characteristics of the neutrophil receptor for chemotactic formylated peptides. Survey of Immunologic Research (In Press).

BOOKS AND CHAPTERS IN BOOKS:

1. Marasco, W.A., Charles, J. and Ward, P.A.: A Search for "Internal Image" Anti-Idiotypic Antibodies: A Subpopulation of Anti-f Met-Leu-Phe Anti-Idiotypic Antibodies Binds to the Formyl Peptide Chemotaxis Receptor of the Neutrophil and to Several Genetically Unrelated Anti-f Met-Leu-Phe Antibodies. In, UCLA Symposium on Molecular and Cellular Biology. New Series, Reisfeld, R.A. and Sell, S., editors. Alan R. Liss, Inc., New York, NY, Vol. 27, p. 1-18, 1985.
2. Becker, E.L. and Marasco, W.A.: Chemotaxis and Activation of Neutrophils. In, Symposium on Chemical Mediators of Inflammation. Cohen, S., Hayashi, H., Saito, K. and Takada, A., editors (Japan). Academic Press (In Press), 1985.

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

1. Marasco, W.A., Feltner, D.E. and Ward, P.A.: Evidence for cooperative interactions of formyl peptide chemotaxis receptors on the rat neutrophil. J. Cell Biochem. Suppl. 8A:272, 1984.
2. Duque, R.E., Hudson, J.L., Marasco, W.A., Smolen, J.E. and Ward, P.A.: Multiparameter evaluation of neutrophil function by flow cytometry. International Conference of Analytical Cytology X, 1984 (In Press).
3. Marasco, W.A., Feltner, D.E., Nairn, R. and Ward, P.A.: Negative cooperativity among formyl peptide chemotaxis receptors on the rat neutrophil. Fed. Proc. Abst. 43:653, 1984.
4. Nairn, R., Brown, C.S., Becker, K., Ward, P.A. and Marasco, W.A.: Evaluation of protocols for the purification of the rabbit formyl peptide receptor. Fed. Proc. 43:1504, 1984.
5. Brown, C.S., Becker, K., Marasco, W.A., Hirata, A., Ward, P.A. and Nairn, R.: A competitive solid phase radioimmunoassay to monitor purification of formyl peptide receptor activity. Fed. Proc. 43:1966, 1984.
6. Brown, C.S., Smith, R.H., Ward, P.A., Marasco, W.A. and Nairn, R.: Isoelectric focusing for the isolation of active rabbit formyl peptide chemotaxis receptor. Fed. Proc. 44:1267, 1985.
7. Smith, R.H., Brown, C.S., Ward, P.A., Marasco, W.A. and Nairn, R.: Guinea pig antisera reactive with the N-formyl peptide receptor on rabbit neutrophils. Fed. Proc. 44:1259, 1985.

8. Marasco, W.A., Charles, J., Feltner, D.E., Brown, C.S., Smith, R.H. and Nairn, R.: Fluid phase characterization of the rabbit neutrophil formyl peptide chemotaxis receptor. Fed. Proc. 44:576, 1985.
9. Walter, R.J. and Marasco, W.A.: Cellular and receptor heterogeneity of formylpeptide binding on human neutrophils. J. Cell. Biol. 1985, in press.
10. Walter, R.J. and Marasco, W.A.: Formylpeptide receptor heterogeneity on spontaneously polarized human neutrophils. J. Cell. Biol. 1985, in press.
11. Hudson, J.L., Greedwood, J.G., Armstrong, L.A., Marasco, W.A., Hiserodt, J.C., Robinson, J.P., Duque, R.E. and Ward, P.A.: Flow cytometry in immunotoxicology. 99th Annual Meeting of the Assoc. of Official Anal. Chemists, Washington D.C., 1985.

KENNETH D. McCLATCHEY, M.D., D.D.S.
ASSOCIATE PROFESSOR AND ASSOCIATE CHAIRMAN
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Surgical Pathology - consultant on all head and neck pathology cases.
B. Autopsy:
   1. Consultant on forensic odontology cases.
   2. Assistant Medical Examiner, Washtenaw County.
C. Associate Director of Clinical Laboratories.
D. Director of Clinical Microbiology Laboratory (which includes Adult Virology in the School of Public Health).
E. Medical Director of Clinical Toxicology Laboratory.
F. Medical Director of Medical Technology Program - Eastern Michigan University.
G. Ann Arbor Veterans Administration Medical Center - monthly consultant.
H. Coordinator of Cytometry Program - The University of Michigan, Department of Pathology.
I. MDS Laboratories, Inc., Ann Arbor, Michigan, Pathologist in Chief.
J. Medical Advisory Board, MDS Laboratories, Toronto, Canada.
K. Chief Consultant, MDS Laboratories, Michigan.

II. TEACHING ACTIVITIES:

MEDICAL SCHOOL/HOSPITALS:

A. Pathology 630, 631 - Course Director:
   1. Six hours credit (M, W, F 1-4 pm).
   2. 155 Dental students, 20 medical technology and graduate students.
B. Pathology 856 - Otorhinolaryngology Pathology.
C. Oral Diagnosis 664 - participant.
D. Clinical Studies 510 (Inteflex) - Lecturer, Head and Neck Pathology.
E. Microbiology 521 Introductory Diagnostic Microbiology - participant.
F. Coordinator of resident teaching with Dr. Carl Pierson in the clinical laboratory under my direction (Microbiology).

INVITED LECTURES/SEMINARS:

1. Tumors of the Mandible: Head and Neck Oncology Course, Department of Otolaryngology, Towsley Center.
2. Forensic Odontology in the Eyes of a General Pathologist: Hospital Dentistry 550 Seminar Series.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Co-investigator with Carl L. Pierson, Ph.D., Thomas C. Shope, M.D., William H. Murphy, Jr., M.D., Rapid Diagnostic Techniques in Microbiology, Abbott Laboratories, Inc., $100,000, 1984-present.
B. Consultant, principal investigator Thomas Carey, Ph.D., Department of Otorhinolaryngology, The University of Michigan. Human Squamous Cell Carcinoma: Culture and Serology, NIH, 1980-1985; 1985- (pending review).
C. Consultant, principal investigator Richard L. Wahl, M.D., Department of Internal Medicine, The University of Michigan. Radioimmunodiagnosis of Squamous Cell Carcinoma, Department of Health and Human Services, $608,579, 1984 (three years).

PROJECTS UNDER STUDY:

A. Veterans Administration Cooperative Studies Program. G.T. Wolf, T.F. Beals, A.A. Forastiere, T. Carey, K.D. McClatchey, A. Flint and J.L. Hudson: A New Strategy to Preserve the Voice Box in Advanced Laryngeal Cancer. Protocol 582-C, Clinical Research Center, The University of Michigan, 1985.
B. See laboratories under my direction.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Medical Service Plan Executive Committee, Department of Pathology, The University of Michigan, 1979-present.
B. Hospital Replacement Project (Pathology Group) Laboratory Planning Committee, 1980-present.
C. Director, Residency Program, Department of Pathology, The University of Michigan, 1982-present.

MEDICAL SCHOOL/HOSPITAL:

A. Infection Control Committee, The University of Michigan Hospitals, 1978-present.
B. Laboratories Committee, The University of Michigan Hospitals, 1978-present.
D. Ambulatory Care Committee, The University of Michigan Hospitals, 1980-present.
E. Medical, Surgical and Psychiatric Hospital Planning Committee, 1982-present.
F. Committee on Sophomore Student Promotions, School of Dentistry, The University of Michigan, 1982-present.
G. Clinical Chairmen's Council, The University of Michigan Hospitals, 1982-present.

H. Dean's Advisory Committee, The University of Michigan Medical School, 1982-present.
I. Advisory Committee on Appointments, Promotions, and Titles (ACAPT), The University of Michigan Medical School, 1983-present.
J. Alternative Revenue Sources Task Force, The University of Michigan Hospitals, 1984-1985.
K. Basic Oral Sciences A Interdisciplinary Coordinating Committee, The University of Michigan School of Dentistry, 1984-1985.
L. Multi-Organ Transplant Program: Planning Group, Alternate, 1985-present.

REGIONAL AND NATIONAL:

A. American Academy of Oral Pathology, 1968-present.
B. American Medical Association, 1983-present.
C. American Society of Clinical Pathologists, 1975-present.
D. American Society of Microbiology, 1978-present.
E. College of American Pathologists:
Commission on Scientific Resources, 1982-present.
Chairman, Standards Committee, 1982-present.
Council on Quality Assurance, 1982-84.
Surveys Committee, 1982-present.
Coordinator, Roger K. Gilbert Fellowship Program at the National Bureau of Standards, 1985-present.
Coordinator, Reference Materials Program, 1985-present.
National Committee for Clinical Laboratory Standards - Project on Cost Accounting, 1985-present.
F. American Association of Clinical Chemists, 1975-present.
G. Michigan Society of Pathologists:
Secretary-Treasurer, 1984-present.
H. American Association of Pathologists, 1984-present.
I. Council of the National Reference System in Clinical Chemistry of the National Committee for Clinical Laboratory Standards, 1983-present.
J. Southwestern Oncology Group (SWOG), 1982-present.

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES, SEMINARS AND PRESENTATIONS:

1. Major and minor salivary gland cysts, "ceoles" and tumors. J.G. Batsakis and K.D. McClatchey. Short Court for the International Academy of Pathology, 73rd Annual Meeting (San Francisco), 1984; 74th Annual Meeting (Toronto), 1985.
2. Poster presentation, "Comparison of two commercial systems for the rapid identification of streptococci." R.E. Kloosterman, K.C. Cullen and K.D. McClatchey. The Annual Meeting of the American Society of Microbiology, St. Louis, 1984.
3.. Minor salivary gland tumors: A histologic and immunohistochemical study. J.A. Regezi, R.V. Lloyd, R.J. Zarbo and K.D. McClatchey. The Annual Meeting of the Academy of Oral Pathology, Boston, 1984.
4. Oral and pharyngeal pathology. Guest Lecturer. The Annual Meeting of the Montana State Pathologists, Butte, Montana, 1984.

5. Poster Presentation, "Sphenoid sinus brown tumor, hypercalcemia and blindness: an unusual presentation of primary hyperparathyroidism." Vanessa G. Schweitzer, Norman W. Thompson, and Kenneth D. McClatchey. The Annual Meeting of the American Academy of Otolaryngology - Head and Neck Surgery, Las Vegas, 1984; 5th Joint Meeting of the American Society for Head and Neck Surgery and The Society for Head and Neck Surgeons, Dorado Beach, Puerto Rico, 1985.
6. Impaired lymphokine production in patients with head and neck cancer (HNSC) correlates with alterations in lymphocyte subpopulations. G.T. Wolf, E.J. Lovett, K.D. McClatchey, K. Peterson and M. Beauchamp. The American Association for Cancer Research Meeting, Baltimore, 1984.
7. Blood group H antigen in squamous cell carcinomas and normal tissues detected by monoclonal antibody G10. K.A. Kimmel, T.E.Carey, W.J. Judd and K.D. McClatchey. American Association for Cancer Research Meeting, Baltimore, 1984.
8. Localization of type II-H blood group antigen in salivary gland and skin using monoclonal antibody G10. A.J.M. Balm, T.E. Carey, K.D. McClatchey, K.A. Kimmel and W.J. Judd. The 9th International Convocation of Immunology, The University of Buffalo, New York, 1984.
9. Immunoperoxidase localization of type 2H blood group antigen with the monoclonal antibody G10 in malignant head and neck tumors. A.J.M. Balm, T.E. Carey, K.A. Kimmel, W.J. Judd, K.D. McClatchey and S. Hsu. Presented at the Conference of Dutch Otolaryngological Society, Rotterdam, The Netherlands, 1984.
10. Cell Culture and Cytometric Characterization. Moderator with Thomas E. Carey, Ph.D. International Conference on Head and Neck Cancer, Baltimore, 1984.
11. Flow cytometry: DNA analysis of squamous cell carcinoma in the upper aerodigestive tract. H.B. Lampe, A. Flint, G.T. Wolf, K.D. McClatchey and J.L. Hudson. International Conference on Head and Neck Cancer, Baltimore, 1984.
12. Flow cytometry: Basic methodology. K.D. McClatchey. International Conference on Head and Neck Cancer, Baltimore, 1984.
13. Topics in Head and Neck Pathology. K.D. McClatchey. Wayne State University Pathology Lecture Series, Guest Speaker, Detroit, Michigan, 1984.
14. Evaluation of the Monolight 2001, Bac-T-Screen chemstrip-9 and gram-stain for the rapid screening of clinical urine specimens. W.H. Hubbard, R.E. Kloosterman, C.L. Pierson and K.D. McClatchey. Annual Meeting of the American Society for Microbiology, Las Vegas, 1985.
15. The Impact of DRGs on Histotechnology. K.D. McClatchey, Michigan Society of Histotechnologists, Guest Speaker, Ann Arbor, Michigan, 1985.

ARTICLES SUBMITTED FOR PUBLICATION:

1. Pierson, C.L., Reynolds, S.R. and McClatchey, K.D.: Relative susceptibility of moxalactum-resistant pseudomonas aerugionosa to selected antipseudomonas antibiotic in various test media. Antibiotic Agents Chemotherapy, 1984.
2. Baugh, R., Wolf, G.T. and McClatchey, K.D.: Small cell carcinoma of the head and neck. Head and Neck Surg., 1985.
3. Brody, L., Amendola, B. and McClatchey, K.D.: Radiation induced sarcoma. Cancer, 1985.

4. Schweitzer, V.G., Thompson, N.W. and McClatchey, K.D.: Sphenoid sinus brown tumor, hypercalcemia and blindness: an unusual presentation of primary hyperparathyroidism. Amer. J. Otolaryngol, 1985.
5. Amendola, B.E., Amendola, M.A., Oliver, E. and McClatchey K.D.: Chordoma: role of radiation therapy. Radiology, 1985.
6. Amendola, B.E., McClatchey, K.D., Amendola, M.A. and Gebarski, S.S.: Primary large cell lymphoma of the central nervous system. J. Ped. and Med. Oncol., 1985.
7. Sullivan, M.J., McClatchey, K.D. and Passamani, P.P.: Airway growth following cricotracheal resection in puppies. Head and Neck Surg., 1985.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. McClatchey, K.D.: Ameloblastoma of the maxilla. American Society of Clinical Pathology - Check Sample, AP, 1184-4:1-3, 1984.
2. Falck, F.Y., Jr., Fine, L.J., Smith, R.G., McClatchey, K.D., Annesley, T.M. and England, B.G.: Protein excretion patterns in cadmium-exposed individuals: High resolution electrophoresis. Arch. Environ. Health 39:69-73, 1984.
3. McClatchey, K.D., Zarbo, R.J., Appelblatt, N.H. and Merrell, D.M.: Plunging ranula. Oral Surg., Oral Med., Oral Pathol. 57:408-412, 1984.
4. Lovett, E.J., III, Schnitzer, B., Keren, D.F., Flint, A., Hudson, J.L. and McClatchey, K.D.: Application of flow cytometry to diagnostic pathology. Lab. Invest. 50:115-140, 1984.
5. McClatchey, K.D. and Zarbo, R.J.: Benign "cystic" non-neoplastic lesions of major and minor salivary glands. Cancer Bulletin of the University of Texas M.D. Anderson Hospital and Tumor Institute 36:111-114, 1984.
6. Forbes, B.A., McClatchey, K.D. and Schaberg, D.R.: Subinhibitory resistant staphylococcus aureus. Antimicrob. Agents Chemother. 25:491-493, 1984.
7. Kimmel, K.A., Carey, T.E., Judd, W.J. and McClatchey, K.D.: Blood group antigen in squamous cell carcinoma and normal tissues detected by monoclonal antibody G10. Proc. Amer. Assoc. Ca. Res. 25:257, 1984.
8. McClatchey, K.D.: Flow cytometry: A new diagnostic tool. MediLab 1:29-33, 1984.
9. Amendola, B.E., McClatchey, K.D. and Amendola, M.A.: Pineal region tumors. Int. J. Rad. Onc. Biol. Phys. 10:991-997, 1984.
10. Vernick, D.M., Graham, M.D., and McClatchey, K.D.: Intralabyrinthine schwannoma. Laryngoscope 94:1241-1243, 1984.
11. Patel, J.A., Clayton, L.T., LeBel, C.P. and McClatchey, K.D.: Abnormal patients with renal disease. Therap. Drug. Mon. 6:458-460, 1984.
12. Regezi, J.A., Lloyd, R.V., Zarbo, R.J. and McClatchey, K.D.: Minor salivary gland tumor. Cancer 55:108-115, 1985.
13. Johnson, T.L., Machinski A., McClatchey, K.D., O'Connor-Scarlet, M. and Forbes, B.A.: Rapid method of MIC determinations utilizing tetrazolium reduction. Am. J. Clin. Pathol. 83:374-378, 1985.
14. Nakamura, R.M., Skendzel, L.P. and McClatchey, K.D.: Update on rubella serology. Pathologist 39:8-9, 1985.
15. McClatchey, K.D. and Polomski, J: Clinical anaerobic bacteriology. MediLab 1:31-35, 1985.

16. Patel, J.A. and McClatchey, K.D.: Chromatography for toxicology applications. MediLab 2:10-16, 1985.
17. McClatchey, K.D., Lloyd, R.V. and Schaldenbrand, J.D.: Metastatic carcinoma to the sphenoid sinus: Case report and review of the literature. Arch. Otorhinolaryngol. 241:219-224, 1985.
18. Lawrence, T.M., McClatchey, K.D. and Fonseca, R.J.: Congenital duplication of mandibular rami in Klippel-Feil syndrome. J. Oral Med. 40:120-122, 1985.

ARTICLES ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Amendola, B.E., McClatchey, K.D. and Amendola, M.A.: Radiation induced cancer of the larynx. J. Surg. Gyn. Obstet., 1984.
2. Flint, A., Lovett, E.J., Stoolman, L.M., McMillan, K., Schnitzer, B., McClatchey, K.D. and Hudson, J.L.: Flow cytometric evaluation of nuclear DNA content: Application to diagnostic cytology. Am. J. Clin. Pathol., 1984.
3. Myers, S.F., Ross, M.D., Jokelainen, P., Graham, M.D. and McClatchey, K.D.: Morphological evidence of vestibular pathology in long-term experimental diabetes mellitus. Acta Otolaryngoligica, 1985.
4. Kimmel, K.A., Carey, T.E., Judd, W.J. and McClatchey, K.D.: Monoclonal antibody to a common antigen of human squamous cell carcinoma binds to the H type 2 blood group determinant. J. Natl. Cancer Inst., 1985
5. Amendola, B.E., Amendola, M.A. and McClatchey, K.D.: Post-irradiation malignant fibrous histiocytoma: Report of five cases and review of the literature. Cancer Invest., 1985.
6. Maceri, D.R., Sullivan, M.J. and McClatchey, K.D.: Autoimmune thyroiditis: pathophysiology and relationship to thyroid cancer. Laryngoscope, 1985.
7. Stewart, J.C.B., Regezi, J.A., Lloyd, R.V. and McClatchey, K.D.: Immunohistochemical study of idiopathic histiocytosis of the jaws. Oral Surg., Oral Med., Oral Pathol., 1985

BOOKS AND CHAPTERS IN BOOKS:

1. McClatchey, K.D. and Haupt, C.J.: Standards, Reference Materials and Methods - A Practical Guide for the Medical Laboratory. College of American Pathologists, 1983 (Revised 1984).
2. McClatchey, K.D.: Histopathological diagnosis of nonneoplastic salivary gland tumors. In, Year Book - Medical Publishers, 1984.
3. McClatchey, K.D.: Histopathology and diagnosis of nonneoplastic salivary gland tumors. In, Otolaryngology, Vol. 5, Chapter 32, Revised Edition, 1985.

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

1. Wolf, G.T., Lovett, E.J., McClatchey, K.D., Peterson, K. and Beauchamp, M.: Impaired lymphokine production in patients with head and neck cancer (HNSC) correlates with alterations in lymphocyte subpopulations. American Association for Cancer Research Meeting (Abstract), 1984.

2. Kimmel, K.A., Carey, T.E., Judd, W.J. and McClatchey, K.D.: Blood group H antigen in squamous cell carcinomas and normal tissues detected by monoclonal antibody G10. American Association for Cancer Research Meeting (Abstract), 1984.
3. Balm, F.J.M., Carey, T.E., McClatchey, K.D., Kimmel, K.A. and Judd, W.J.: Localization of type II-H blood group antigen in salivary gland and skin using monoclonal antibody G10. The 9th International Convocation of Immunology (Abstract), 1984.
4. Regezi, J.A., Stewart, J.C.B., Lloyd, R.V. and McClatchey, K.D.: Immunohistochemical study of idiopathic histiocytosis of the jaws. The International Association for Dental Research, American Association for Dental Research (Abstract), 1985.
5. Brody, L., Amendola, B. and McClatchey, K.D.: Radiation induced sarcoma. The International Congress of Radiology (Abstract), Honolulu, Hawaii, July, 1985.

J. PHILIP MCCOY JR, PH.D.
INSTRUCTOR
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Laboratory Director - Clinical Flow Cytometry Laboratory.
B. Administrative Director - Immunohistochemistry Laboratory.

II. TEACHING ACTIVITIES:

A. Serving on a dissertation committee in the Neuroscience Program.

III. RESEARCH ACTIVITIES:

A. During the previous year research projects have been conducted in conjunction with other members of the Department of Pathology and with members in the Departments of Anatomy and Cell Biology, Biochemistry, Dermatology, and Internal Medicine, and the Mental Health Research Institute.

SPONSORED SUPPORT:

A. DNA Ploidy in Basal Cell Carcinoma, UM Cancer Research Institute, Principal Investigator, $5,000, May 1, 1985 - April 30, 1986.
B. Endogenous Laminin Expression and Metastasis, NIH - National Cancer Institute, Co-investigator, $215,500, July 1, 1984 - June 30, 1897.
C. Characterization of Immune Responses to Intradermal Implantation of Bovine Collagen, Dept. of Dermatology, $5,000, May 1, 1984 - June 30, 1985.

PROJECTS UNDER STUDY:

A. Investigation of the mechanisms of metastasis.
B. Study of immune responses induced in patients by intradermal injections of bovine collagen.
C. Study of the role of laminin in the regeneration of crushed optic nerves.
D. Determination of the specificity and diagnostic utility of a monoclonal antibody to cervical carcinoma antigen.
E. Development of functionally monovalent lectins for use in flow cytometry.
F. Examination of relationship of DNA ploidy to tumor aggressiveness and/or metastatic potential.
G. Investiagtion of the reactivity of lectins with alveolar macrophages.

ARTICLES SUBMITTED FOR PUBLICATION:

1. Simon, R.H., McCoy, J.P., Chu, A.E., DeHart, P.D. and Goldstein, I.J.: Pulmonary type II alveolar epithelial cell isolation procedure using Griffonia simplicifolia I lectin.
2. McCoy, J.P., Schade, W., Merz, G.E., Esch, T., Varani, J. and Hudson, J.L.: DNA content of murine fibrosarcoma cells with varying metastatic potential.
3. McCoy, J.P., Shibuya, N., Riedy, M.C. and Goldstein, I.J.: Griffonia-simplicifolia I isolectin as a functionally monovalent probe for use in flow cytometry.
4. Michaelson, J.H., McCoy, J.P. Hirszel, P. and Bigazzi, P.E.: Immune effects of metals: Mercury-induced renal autoimmunity in BN and MAXX rats.

IV. ADMINISTRATIVE ACTIVITIES: None.

V. OTHER RELEVANT ACTIVITIES: None.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Situ, R., Lee, E.C., McCoy, J.P. and Varani, J.: Stimulation of murine tumor cell motility by laminin. J. Cell Sci. 70:167-176, 1984.
2. Grimstad, I.A., Varani, J. and McCoy, J.P.: Contribution of alpha-D-galactopyranosyl end groups to attachment of highly and low metastic murine fibrosarcoma cells to various substrates. Exp. Cell Res. 155:345-358, 1984.
3. Lloyd, R.V., Schmidt, K., Blaivas, L., McCoy, J.P. and Wilson, B.S.: A rapid immunostaining method utilizing preformed antibody-avidin-biotin-peroxidase complexes. Am. J. Clin. Path. 83:636-639, 1985.
4. McCoy, J.P., Schade, W., Siegle, R.J., Waldinger, T.P., Vanderveen, E.E. and Swanson, N.A.: Characterization of the humoral immune response to bovine collagen implants. Arch. Dermatol., in press.
5. Varani, J., Knibbs, R.N., Grimstad, I.A. and McCoy, J.P.: Differential attachment, spreading and growth of high and low malignant cells on collagen. Clin. Exp. Metast., in press.
6. McCoy, J.P., Goldstein, I.J. and Varani, J.: A review of studies in our laboratory regarding ELLA methodology for the study of cell surface carbohydrates from tumors of varying metastatic potential. Tumor Bio., in press.
7. Fligiel, S.E.G., Rodriguez, A.F., Knibbs, R.N., McCoy, J.P. and Varani, J.: Characterization of laminin-stimulated adherence and motility in tumor cells. Oncology, in press.
8. Hopkins, J.M., Ford-Holevinski, T.S., McCoy, J.P. and Agranoff, B.W.: Laminin and optic nerve regeneration in the goldfish. J. Neurosci., in press.

BOOKS AND CHAPTERS IN BOOKS:

1. Varani, J., McCoy, J.P. and Ward, P.A.: The attraction of wandering metastic cells. In, Progressive Stages of Neoplastic Growth, H. Kaiser, editor, in press.

2. McCoy, J.P. and Varani, J.: Immunobiology of corneal graft rejection: Historical perspectives. In, Stocker's Endothelium of the Cornea: Clinical Implications, C. Bahn, editor, in press.
3. Varani, J. and McCoy, J.P.: Chemotaxis in tumor cells: Possible mechanisms and implications for therapy. In, Mechanisms of Metastasis: Potential Therapeutic Implications, K. Honn and B. Sloane, editors, in press.

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

1. Agranoff, B.W., Hopkins, J.M., Davis, R.E., Ford-Holevinski, T.S. and McCoy, J.P.: Laminin: Role in goldfish optic nerve regeneration. Soc. Neurosci. Abstr. 10(1):282, 1984.
2. Waldinger, T.P., McCoy, J.P., Schade, W., Siegle, R.J., Vanderveen, E.E. and Swanson, N.A.: Serologic cross reactivity between connective tissue diseases and zyderm collagen implant. Natl. Clin. Dermatol. Conf., Chicago, Illinois, 1984.
3. McCoy, J.P., Schade, W., Merz, G.E., Esch, T.R., Varani, J. and Hudson, J.L.: DNA content of murine fibrosarcoma cell lines with varying metastatic potential. Proc. Am. Assoc. Cancer. Res. 26:52, 1985.
4. Simon, R.H., McCoy, J.P., Chu, A.E., DeHart, P.D. and Goldstein, I.J.: Isolation procedure for type II alveolar epithelial cells from rat lung using Griffonia simplicifolia I lectin. Am. Rev. Resp. Dis. 131(4 pt 2):A361, 1985.

PAUL E. McKEEVER, M.D., PH.D.
ASSOCIATE PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Gross and microscopic examination of human and animal autopsy neuropathologic material with house officers and faculty. The cases shared with another faculty member were from University Hospital, University Associated Hospitals, and State Institutions. Medical examiner cases.
B. Daily supervision of House Officer and Staff participation in diagnostic neuropathology, electron microscopic neuropathology, ceroid service, nerve and muscle biopsy. Responsible for final report and diagnosis in each category.
C. Necropsy Service gross and microscopic (one month).
D. Consultations on diagnostic neuropathology muscle and nerve biopsies from other hospitals and medical centers.

II. TEACHING ACTIVITIES:

A. Neural and Behavioral Sciences 600, Neuropathology for second year medical students. Lectures and laboratories. Twenty hours shared with other faculty.
B. Neuropathology 858. Intensive laboratory-lecture course for all beginning House Officers in Pathology, and in several clinical services concerned with the nervous system, graduate students and faculty. Annual, 16 hours shared with other faculty. One credit hour elective.
C. House Officers:
    1. Review of microscopic neuropathological postmortem material with Pathology House Officers, shared with another faculty member.
    2. Weekly brain cutting with pathology house officers.
    3. Reviews all neurosurgically removed material in this hospital in CME-approved conference for Pathology and Neurosurgery House Officers and Staff.
    4. Shared consultations with Pathology house officers.
    5. Invited presentations of neuropathologic observations at joint Pathology-Neurology-Neurosurgery and clinical conferences.
    6. Teach laboratory techniques to our Laboratory Technologists.
    7. Monthly conference for Neurology and Pathology House Officers and Staff (review of muscle and nerve biopsies).
    8. Runs monthly Brain Conference for Pathology, Neurology and Neurosurgery House Officers and Staff.
    9. Directs teaching of Neurology House Officers who take elective in Neuropathology. One month or longer rotation with teaching shared with other Pathology Faculty and with Neurohistologists. Two House Officers.

10. Weekly Brain Tumor Conference. Review of Neurosurgery, Nuclear Medicine, Neuroradiology, and Neuropathology in clinical research setting of brain tumor cases by Staff. Responsible for neuropathology segment of tumor review.

C. Supervise research project of one student (Mr. Evan Cohn).

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Consultant on USPHS grant application, Recovery of Malformation After Fetal Injury, Dr. Samuel Hicks, Principal Investigator.

B. Grant #1R01 CA33768-01A3, Co-investigator: Intra-arterial BUdR Radiosensitization of Malignant Gliomas.

C. Rackham School of Graduate Studies Faculty Research Grant: Explantation Model of Glioma Antigen Instability, Principal Investigator. Changes in malignancy and resistance to treatment of human gliomas, the most common and devastating group of brain tumors, are thought to be related in part to antigenic instabilities of these cells. Antigenic instabilities will be followed upon explantation of human glioma cells in-vitro and correlated with studies designed to determine the mechanism of these instabilities. The extent of changes in antigens will be studied. Antigenic changes will be correlated with changes in cellular DNA over time intervals and correlated with changes in clones of cells from the gliomas of individual patients. 4/1/85 - 6/30/86.

D. Michigan Memorial-Phoenix Project #656: Explantation Model of Glioma Antigen Instability, Principal Investigator. 4/1/85 - 6/30/86.

E. American Cancer Society: Glioma Imaging Agents-Glutamine Synthetase Inhibitors, Neuropathologist, co-investigator. Action pending.

F. National Institutes of Health: Glioma Imaging Agents, Neuropathologist co-investigator. Action pending.

G. Infuse-Aid Corporation: Treatment of an MPTP Primate Model of parkinson's Disease with Intraventricular Infused Dopamine, Co-investigator.

PROJECTS UNDER STUDY:

A. Growth, spread and antigenicity of ENU-induced gliomas in rats, with Ms. Constance D'Amato.

B. Quantitative analysis of DNA in fresh and cultured cells of brain tumors, with Dr. Jerry Hudson.

C. Production of monoclonal antibodies to human brain tumors for diagnosis and therapy, with Drs. James A. Taren, Julian T. Hoff, William H. Beierwaltes and Richard L. Wahl.

D. Davenport, R.D. and McKeever, P.E.: Ploidy of endothelium in high grade astrocytomas. Submitted to AFIP International Conference on Advances in Morphometry and Ploidy Determination.

E. Extracellular matrix products of gliomas with Drs. James Varani and Suzanne Fligiel.

F. Biologic substrates for promotion of growth of type-specific cells from human gliomas, with Dr. Max Wicha.

G. Schroeder, K., McKeever, P.E., Schaberg, D., Hoff, J.T.: Dexamethasone in experimental brain abscess (submitted).
H. Black, K.L., McKeever, P.E., Corbett, J., and Radin, N.: Leukotrienes and cerebral edema surrounding intracranial tumors in humans.
I. Histologic features of high grade gliomas from patients with unusually long survival and correlation with treatment modality with Drs. William Beierwaltes and James Taren.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Chief, Section of Neuropathology.

MEDICAL SCHOOL/HOSPITAL:

A. Organization and scheduling of Pathology, Neurology and Neurosurgery House Officer Neuropathology teaching conferences, individual instruction and consultation review.
B. Organization of call logistics of specimen handling, and schedules for complete coverage of diagnostic and postmortem neuropathology by staff.
C. Supervision of neurohistologists and neuropathology laboratories, and quality control of histologic preparations.
D. Interaction with Chiefs and appointed Staff of other clinical services, particularly Neurosurgery, Neurology, Nuclear Medicine and Neuroradiology.
E. Quality control of muscle histochemistry, ultrastructural neuropathology and peripheral nerve teasing.

REGIONAL AND NATIONAL:

A. Reviewer for pathology, neuropathology oncology and neuro-oncology journals or texts.
B. Research Merit Advisory Committee, Annual Meeting of American Association of Neuropathologists, in June, 1985.
C. Invited Contributor to ASCP Anatomic Pathology II Series: Rapid Lectin-DNA Staining of Pituitary Biopsies, in June, 1985.
D. M-Lab Neuropathology, Muscle and Nerve Biopsy services.

V. OTHER RELEVANT ACTIVITIES:

A. Faculty Advisory Committee for graduate student James Hopkins, Dr. Bernard Agranoff, Chairman.

INVITED LECTURES/SEMINARS:

1. Guest lecturer, "Cytologic Markers in Brain Tumors", at Wayne State University, Detroit, Michigan, in April, 1985.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Shitara, N., Resine, T., Nakamura, H., Smith, B.H., Kornblith, P.L. and McKeever, P.E.; The B-adrenergic receptor system in human glioma-derived cell lines: The mode of PDE induction and macromolecules phosphorylated by cAMP dependent protein kinase. Brain Res. 296:67-74, 1984.
2. McKeever, P.E., Wichman, A., Chronwall, B.M., Thomas, C. and Howard, R.: Sarcoma grows from a human gliosarcoma. So. Med. J. 77:1027-1032, 1984.
3. Bates, S., McKeever, P.E., Masur, H., Levens, D., Macher, A., Armstrong, G. and Magrath, I.T.: Myelopathy following intrathecal chemotherapy in a patient with extensive Burkitt's lymphoma and altered immune status. Am. J. Med. 78:697-702, 1985.
4. Clark, G.B., Henry, J.M. and McKeever, P.E.: Cerebral pilocytic astrocytoma. Cancer, in press.
5. Oldfield, E.J., Chrousos, G.P., Schulte, H.L., Schaff, M., McKeever, P.E., Krudy, A.G., Cutler, G.B., Loriaux, D.L. and Doppman, J.L.: Preoperative lateralization of ACTH-secreting pituitary microadenomas by bilateral and simultaneous inferior petrosal venous sinus sampling: Correlation with operative findings and clinical outcome. New Engl. J. Med. 312:100-103, 1985.
6. Oberc-Greenwood, M.A., McKeever, P.E., Kornblith, P.A. and Smith, B.H.: A human ganglioglioma containing paired helical filaments. Hum. Pathol. 15:834-838, 1984.
7. Bates, S.E., Raphaelson, M.I., Price, R.A., McKeever, P.E., Cohen, S. and Poplack, D.G.: Ascending myelopathy after chemotherapy for central nervous system. Acute lymphoblastic leukemia: Correlation with cerebrospinal fluid myelin basic protein. Med. Ped. Oncology 13:4-8, 1985.
8. Baldwin, J.R., McKeever, P.E. and Booker, T.R.: Products of cultured neuroglial cells: II. The production of fibronectin by C6 glioma cells. Neurochem. Res. 10:525-534, 1985.

BOOKS AND CHAPTERS IN BOOKS:

1. McKeever, P.E. and Spicer, S.S.: Pituitary histochemistry. In, Application of Histochemistry to Pathologic Diagnosis. Spicer, S.S., Garvin, A.J., and Hennigar, G.R., editors. Marcel-Dekker, New York, NY, in press.
2. McKeever, P.E. and Balentine, J.D.: Histochemistry of the nervous system. In, Application of Histochemistry to Pathologic Diagnosis. Spicer, S.S., Garvin, A.J., and Hennigar, G.R., editors. Marcel-Dekker, New York, NY, in press.

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

1. Junck, L., McKeever, P.E. and Greenberg, H.S.: Leukoencephalopathy following intracarotid chemotherapy: Neuropathology and positron emission tomography (PET). Annual Meeting of The American Neurological Association, 1985.

2. Taasan, V., Shapiro, B., Taren, J.A., Wahl, R.L., McKeever, P.E. and Beierwaltes, W.H.: Treatment of cystic grade IV astrocytoma and craniopharyngioma with radioactive phosphorus - A preliminary report. 32nd Annual Meeting of Society of Nuclear Medicine, Houston, Texas, 1985.
3. McKeever, P.E. and Chronwall, B.M.: Early switch in glial protein and fibronectin markers on cells during the culture of human gliomas. Annals of the New York Academy of Sciences. First Colloquium in Biological Sciences vol. 435.

A. REES MIDGLEY, M.D.
PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES: None.

II. TEACHING ACTIVITIES:

A. Occasional Lectures.
B. Supervision of one visiting professor: Fumihisa Miyauchi.
C. Supervision of one postdoctoral fellow: Eleanor Sims.
D. Primary supervision of 8 graduate students:
   1. Robert Milius, CMB
   2. Emilie Bell, CMB.
   3. Jane Wiesen, CMB.
   4. Hal Cantor, Bioengineering
   5. Craig Halberstadt, Bioengineering
   6. Rhonda Brand, Bioengineering
   7. Mahmoud Ghazzi, Bioengineering
   8. P. Bagavandoss, Anatomy
   9. (also serving on several other dissertation committees)
E. Supervision of 3 undergraduate students.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. NIH-P30-HD 18258-01. "Center for the Study of Reproduction," $1,822,419 (direct), Principal Investigator.
B. Mellon Foundation Grant, 1982-1985, $250,000 (total).
   Renewed as:
   Mellon Foundation Grant, 1985-1988, $300,000 (total).
C. NIH-HD-16093-03. "Granulosa Cell hCG Receptor Interaction," 1982-1985, $223,764, (direct), Principal Investigator.
   Replaced by:
   NIH-HD-18018-01 "Gonadotropin control of the ovary", 1985-1988, $331,663 (direct), Principal Investigator.
D. NIH-T32-HD-07048-10, "Training program in reproductive endocrinology" (6 pred; 4 postdoc), 1980-1985, $687,480 (direct), Principal Investigator.
   Renewed as:
   NIH-T32-HD-07048-11 1985-1990, $972,975 (direct), Principal Investigator.
E. Burroughs Corporation. Contract to develop a "Scientific Data System", $515,000, 1984-1986, (total), Principal Investigator.

F. NIH-R43-6M34169-01, Phase I SBIR to KMS Fustion, Inc., John Widman, P.E., Subcontract to UM. "Pulse signals to cells using a unique perifusion system", 1984-1985, $11,667 (total). Phase II submitted on April 15, 1985. Subcontract requests $200,000 (total) for Dec. 1, 1985 - Nov. 30, 1987.

G. NSF-BNS-8419007, "Hormones and psychosocial development in early adolescence". A pilot one year, multidepartmental, interdisciplinary project, J. Eccles (Psychology), P.I., 1985-1986, $60,054 (total), Co-Principal Investigator.

PROJECTS UNDER STUDY:

A. Development of a computer-controlled perifusion system for on-line analysis of cellular responses to pulsatile and other controlled signalling.
B. Analysis of dynamic control of ovarian function by gonadotropins.
C. Non-invasive assessment of the normality and development of single, pre-gastrula mouse embryos.
D. Development of a computer-based system for collection, analysis and management of scientific information.

IV. ADMINISTRATIVE ACTIVITIES:

MEDICAL SCHOOL/HOSPITAL:

A. Director, Consortium for Research in Developmental and Reproductive Biology.
B. Director, Reproductive Endocrinology Program.

REGIONAL AND NATIONAL:

A. President and Past President, Society for the Study of Reproduction.
B. Member of Glycoprotein Hormone Subcommittee, National Hormone and Pituitary Program.
C. Chair, NIH Miniworkshop to explore potential utilization of recombinant DNA and monoclonal antibody to obtain supplies of monkey gonadotropins.
D. Organizer, Fourteenth Annual Meeting of Directors of NICHD CPR-Supported Research Centers and Program Projects in the Reproductive Sciences, May 22, 1985, University of Michigan. Hosted accompanying Symposium on Regulatory Factors in Development and Reproduction, University of Michigan, May 23-24, 1985.
E. Member, NICHD Special Review Committee, August 14-17, 1985.

V. PUBLICATIONS:

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

1. Midgley, A. Rees: Ligand Assays in a Changing World. Syllabus, 11th Annual Meeting of the Clinical Ligand Assay Society, New Orleans, April 9-13, 1985, pp. 191-204.

(Note: During the past year and a half my laboratory has been engaged in the development of a new technology, the ability to deliver chemical signals in presice, controlled patterns to small numbers of living cells and then to detect the responses of the cells to the signals on-line, in real time, by monitoring changes in concentrations of selected ions, concentrations of electrochemically-detectable compounds, electrical activity and temperature. The efforts have involved the interests and technologies of chemists, chemical engineers, bioengineers, electrical engineers, computer scientists, biostatisticians and biologists. These activities have included the design and introduction of novel biosensors and new control systems. The work has been reviewed and funded, both by the NIH and elsewhere (see items III C, D, and F). We have recently obtained on-line data strongly supporting the feasibility of our approach. As a consequence we expect shortly to be able to begin using teh integrated system to acquire publishable data concerning hitherto unexplored relationships.

VI. AWARDS:

Smith-Kline Bio-Science Laboratories Award, April 12, 1985.

BERNARD NAYLOR, M.D.
PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Cytopathology - 25 weeks.
B. Director, Cytopathology Laboratory - full time.
C. Cytopathology, pulmonary pathology, and gynecologic pathology consultation service - 12 months.
D. Surgical Pathology - 6 weeks.

II. TEACHING ACTIVITIES:

A. Pathology 600 - Sophomore medical students, class lectures - 4 contact hours.
B. Pathology residents - supervision and teaching during cytopathology and surgical pathology rotations and when covering necropsies.
C. Pathology residents - biweekly cytopathology conferences.
D. Gynecology - Pathology - Radiation Therapy Conference-backup coverage.

III. RESEARCH ACTIVITIES:

Cytopathology, with particular reference to serous fluids.

SPONSORED SUPPORT:

None

PROJECTS UNDER STUDY:

A. Aspiration cytology of pulmonary Hodgkin's disease.
B. Cross contamination in the cytologic staining circuit.
C. Curschmann's spirals in serous fluids.
D. Efficiency of collaboration between Cytopathology and Radiology in fine needle aspiration cytology.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Pathologist in charge of Cytopathology Laboratory.
B. Department of Pathology Medical Serivce Plan Executive Committee.

MEDICAL SCHOOL/HOSPITAL: None

REGIONAL AND NATIONAL:

A. President, American Society of Cytology.
B. Secretary-Treasurer, American Society of Cytology.

V. OTHER RELEVANT ACTIVITIES:

A. Editorial Advisory and American Review Board, Acta Cytologica.
B. Editorial Board, The Cytotechnologist's Bulletin.
C. Editorial and Publications Committee, International Academy of Cytology.
D. Membership Committee, International Academy of Cytology.
E. U.S. Mesothelioma Reference Panel.
F. Naylor, B., Kumar, N.B. and Beals, T.F.: Transthoracic Fine Needle Aspiration Cytology: Light Microscopic and Ultrastructural Appearances. Workshop, Annual Scientific Meeting of the American Society of Cytology, Atlanta, Georgia, November, 1984.
G. Invited Presentation. Naylor, B.: A Case for Intolerance. Presidential Address, Annual Scientific Meeting of the American Society of Cytology, Atlanta, Georgia, November, 1984.
H. Invited Presentation. Naylor, B.: Aspiration Cytology: The Role of the Pathologist. Lecture, Ohio Society of Pathologists, Columbus, Ohio, January, 1985.
I. Naylor, B.: Cytopathology of Serous Fluids. Workshop, Interim Scientific Meeting of the American Society of Cytology, San Antonio, Texas, April, 1985.
J. Naylor, B.: a) Cytopathology of Transthoracic Fine Needle Aspirates, b) Cytopathology of Non-Neoplastic Entities. Workshops, Rhode Island Cytopathology Association, Providence, Rhode Island, June, 1985.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Naylor, B.: Creola bodies: Their "discovery" and significance. Cytotechnol. Bull. 22,33-34, 1985.
2. Naylor, B.: On the presentation of papers at medical meetings: A critique. Acta Cytol. 29,197-201, 1985.
3. Naylor, B. and Novak, P.M.: Charcot-Leyden crystals in pleural fluids. Acta Cytol., in press.
4. Bartziota, E.V. and Naylor, B.: Megakaryocytes in a hemorrhagic pleural effusion caused by anticoagulant overdose. Acta Cytol., in press.

HAROLD A. OBERMAN, M.D.
PROFESSOR OF PATHOLOGY AND DIRECTOR OF CLINICAL PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Director, Clinical Laboratories, University Hospitals.
B. Director, Blood Bank, University Hospitals.
C. Diagnosis of surgical specimens from University Hospitals patients.
D. Diagnosis of surgical specimens from MDS Laboratories.
E. Diagnosis of consultation cases from throughout the United States on surgical pathology of breast.
F. Medical coverage of Transfusion Service.

II. TEACHING ACTIVITIES:

MEDICAL SCHOOL/HOSPITALS:

A. Lectures on breast pathology (2), transfusion medicine (4), and clinical laboratory diagnosis (2) to sophomore class.
B. Responsible for laboratory section of sophomore pathology course.
C. Lectures on breast cancer to Interphase Program.
D. Presentation of monthly Conference on Surgical Pathology to Section of General Surgery.
E. Postgraduate course - "Current Topics in Blood Banking" - Planning Committee.
F. Course on Transfusion Medicine presented to Pathology and Hematology/Oncology House Officers.

INVITED LECTURES/SEMINARS:

A. Seminars on Pathology of Breast to Pathology House Officers.
B. Lecture on breast concer to Department of Surgery.
C. Lecture on massive transfusion to Section of Emergency Medicine.
D. Lecture on emergency transfusion to Department of Anesthesiology.
E. Lecture on use of plasma components to Department of Surgery.

III. RESEARCH ACTIVITIES:

PROJECTS UNDER STUDY:

A. Treatment of acute Guillain-Barre Syndrome with plasma exchange (in cooperation with Department of Neurology - Dr. J. Albers).
B. The pathology of metaplastic carcinoma of breast.
C. The pathology of mamary hamartomas.
D. Cooperative study of breast ultrasonic imaging.
E. Juvenile (cellular) adenfibromas (submitted) Am. J. Surg. Path.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Head, Section of Clinical Pathology.
B. Executive Committee, Departmental Medical Service Plan.
C. Resident Selection Committee.
D. Medical Director, Medical Technology Program.
E. Departmental Committee on Appointments, Promotions and Titles.
F. Limited Special Function Laboratories Consolidation Task Force.

MEDICAL SCHOOL/HOSPITAL:

A. Executive committee, Medical School.
B. Executive Committee on Clinical Affairs, University Hospitals.
C. University Hospitals Executive Committee.
D. New Hospital Planning Committee.
E. Medical Center Clinical Priorities Committee.
F. Laboratories Committee, Chairman.
G. Transfusion Committee, Chairman.
H. Joint Conference Committee.
I. Interdepartmental Communication Committee.
J. Breast Care Program Committee.
K. Admission Day Surgery Committee.
L. Multi-Organ Transplantation Committee (liver homotransplantation).
M. Ad Hoc Operating Rooms Committee on Transfusion (DRC strike).
N. Ad Hoc Committee on HTLV-III Testing in University Hospitals.

REGIONAL AND NATIONAL:

A. American Association of Blood Banks:
    1. Transfusion Transmitted Diseases (AIDS) Task Force.
    2. Nominations Committee.
    3. Liaison Committee on Circular of Information for Use With Human Blood and Components.
    4. Award Committee.
B. American National Red Cross:
    1. National Blood Operations Committee.
C. American Society of Clinical Pathologists:
    1. Council on Anatomical Pathology.
    2. Director, Check Sample Program, Anatomical Pathology.
    3. Prelector, 1987 Annual Slide Seminar.
D. Michigan Society of Pathologists:
    1. Medical Care Insurance Committee.
E. American Medical Association:
    1. Advisory Panel on AIDS.
F. Arthur Purdy Stout Society of Surgical Pathologists:
    1. Program Chairman.
G. American Cancer Society:
    1. Task Force on Fibrocystic Disease of Breast.

H. Detroit Red Cross:
   1. Medical Advisory Committee.
   2. Blood Operations Committee.
H. Breast Cancer Detection Demonstration Project, National Cancer Institute - Consultant.
I. Wayne County General Hospital - Consultant.
J. Veterans Administration Hospital, Ann Arbor - Consultant.

V. OTHER RELEVANT ACTIVITIES:

EDITORIAL ACTIVITIES:

A. Associate Editor, Transfusion.
B. Editorial Board, American Journal of Surgical Pathology.
C. Associate Editor, Critical Reviews in Clinical Laboratory Sciences.
D. Editor, General Principles of Blood Transfusion (AMA).
E. Editorial Board, Archives of Pathology (AMA).
F. Editor, Arthur Purdy Stout Society of Surgical Pathologists Centennial Symposium.
G. Editor, Anatomical Pathology Check Sample Program, American Society of Clinical Pathologists.

INVITED LECTURES/SEMINARS:

1. Visting Professor, Cedars-Sinai Hospital, Los Angeles, California. Lectures on breast neoplasia, April, 1984.
2. Post-transfusion AIDS. Annual Meeting, Michigan Association of Blood Banks. Detroit, Michigan, September, 1984.
3. Sherwood Smith lectureship: History of blood transfusion. University of Rochester, Rocherster, New York, October 9, 1984.
4. Short Course on Surgical Pathology of Breast. Annual Meeting, American Society of clinical Pathologists. St. Louis, Missouri, October, 1984.
5. Lecture: The grey zone of breast carcinoma - an approach to borderline and early lesions. St. Joseph Hospital Clinic Day, Pontiac, Michigan, November 1984.
6. Invited seminar: Hepatitis and AIDS in blood banking. Michigan State University College of Human Medicine, November, 1984.
7. Course: Diagnosis and management of breast cancer. American Society of Clinical Pathologists. Key Biscayne, Florida, December 3-5, 1984.
8. Lecture: Uses of blood components. St. Mary's Hospital, Livonia, Michigan, December, 1984.
9. Chairman, Arthur Purdy Stout Society Centennial Symposium. Annual Meeting, International Academy of Pathologists. Toronto, Canada, March, 1985.
10. Poster presentation: Cellular (juvenile) adenofibromas (with A. Pike). Annual Meeting, International Academy of Pathologists. Toronto, Canada, March, 1985.
11. Eisenstein Memorial Lecture: Borderline lesions of breast. Mercy Hospital, Pontiac, Michigan, May, 1985.
12. Lecture: Conservation of blood resources in surgical procedures. Ontario Medical Association. Toronto, Canada, May, 1985.

13. Lecture: Appropriate use of fresh frozen plasma. Postgraduate course on current concepts in blood banking. University of Michigan, June, 1985.
14. Panel Discussion: Legal and ethical aspects of blood transfustion. Postgraduate course on current concepts in blood banking. University of Michigan, June, 1985.
15. Panel Discussion: Centralized pretransfusion testing. National Congress, Canadian Society of Laboratory Medicine. Winnipeg, Canada, June, 1985.
16. Lecture: Pretransfusion processing of blood. National Congress, Canadian Society of Laboratory Medicine. Winnipeg, Canada, June, 1985.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Oberman, H.A. Editorial: A new era for blood banks. Transfusion 24:279-80, 1984.
2. Braunstein, A.H. and Oberman, H.A.: Transfusion of plasma components. Transfusion 24:281-86, 1984.
3. Flint, A. and Oberman, H.A.: Infarction and squamous metaplasia of intraductal papillomas. A benign lesion that may simulate carcinoma. Hum. Path. 15:764-67, 1984.
4. Panel of acquired immunodeficiency syndrome (H.A. Oberman, member): The acquired immunodeficiency syndrome - commentary. J.A.M.A. 252:2037-43, 1984.
5. Oberman, H.A.: Indications for fresh frozen plasma. International Forum. Vox. Sang. 47:435-48, 1984.
6. Oberman, H.A.: "High risk" and "premalignant" lesions. Am. J. Surg. Path. 9:5-6, 1985.
7. Oberman, H.A.: Editorial: Inappropriate use of fresh frozen plasma. J.A.M.A. 253:556-57, 1985.

BOOKS AND CHAPTERS IN BOOKS:

1. Oberman, H.A., editor: General Principles of Blood Transfusion. American Medical Association. Chicago, Illinois, 1985.

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

1. Judd, W.J., Oberman, H.A., et al: Clinical significance of anti-Lan (letter). Transfusion 24:181, 1985.
2. Book review: Human blood groups (Salmon, Carton, and Rouger). Arch. Path. 109:584, 1985.
3. Book review: Advances in immunobiology, blood cell antigens and bone marrow transplantation (McCullough and Sandler, eds.). Arch. Path. 108:999, 1984.
4. Transfusion classics. Historical vignettes in blood banking. Transfusion. Vol. 24 (18 citations), Vol. 25 (3 citations).

SEM H. PHAN, PH.D., M.D.
ASSISTANT PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Autopsy Service.
B. Serum Angiotensin converting enzyme assay.

II. TEACHING ACTIVITIES:

A. Pathology Residents - Autopsy
B. John Feighan. Undergraduate Honor Student

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Mechanisms and Genetic Regulation of Pulmonary Fibrosis. R01-HL28737. Principal Investigator, S.H. Phan, Ph.D., M.D. 20% effort, $77,050 current annual direct cost. (NIH).
B. Macrophage Function in Lung Injury and Fibrosis. POI-HL31963, Section IV. Principal Investigator, S.H. Phan, Ph.D., M.D., 35% effort, $63,382 current annual direct cost (NIH).
C. Fibroblast Regulatory Factors in Pulmonary Fibrosis. 84-136. Established Investigator Award (American Heart Association), $32,000 current annual direct cost.
D. Fibroblast Regulatory Factors. 84-1165. Grant-in-Aid (American Heart Association), Principal Investigator, S.H. Phan, Ph.D., M.D., $30,000 current annual direct cost.

PROJECTS UNDER STUDY:

A. The influence of H-2 haplotype on a model of murine pulmonary fibrosis.
B. Lung macrophage/monocyte kinetics and recruitment during lung injury and fibrosis.
C. Fibroblast function - in terms of chemotaxis, collagen metabolism and proliferation during lung injury, and their regulation by inflammatory and immune cell-derived mediators.
D. The roles of phospholipase A_2 and serine proteases/esterases in neutrophil activation.
E. The state of macrophage activation as determined by Ia antigen expression and its relationship to production of arachidonate metabolites active in fibroblast activation.
F. Fibroblast arachidonate metabolism in response to inflammatory cell and macrophage derived mediators, and their effects on fibroblast collagen synthesis and proliferation.

G. The effects of selective inhibitors of arachidonate metabolism on murine pulmonary fibrosis.
H. Regulation of macrophage and T-cell fibroblast growth factor production by arachidonate metabolites in normal and diseased states.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL: None.

MEDICAL SCHOOL/HOSPITAL:

A. Reviewer for BMRC research grant application.

REGIONAL AND NATIONAL:

A. Member, Pathology A Study Section (Reviews research grant applications for National Institutes of Health) Public Health Service, NIH.
B. Reviewer for J. Immunology, Laboratory Investigation, J. Clinical Investigation, American Review of Respiratory Diseases, Experimental Lung Research, Infection and Immunity, American Journal of Pathology and Chest.

V. OTHER RELEVANT ACTIVITIES: None.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Fantone, J.C., Duque, R.E. and Phan, S.H.: Prostaglandin modulation of N-formylmethionylleucylphenylalanine induced transmembrane potential changes in rat neutrophils. Biochem. Bophys. Acta. 804:265-74, 1984.
2. Schrier, D. and Phan, S.H.: Modulation of bleomycin-induced pulmonary fibrosis in the Balb/c mouse by cyclophosphamide-sensitive T cells. Am. J. Pathol. 116:270-8, 1984.
3. Duque, R.E., Phan, S.H., Hudson, J.L., Till, G.O. and Ward, P.A.: Functional defects in phagocytic cells following thermal injury. Am. J. Pathol. 118:116-27, 1985.
4. Phan, S.H., Varani, J. and Smith, D.: Rat lung fibroblast collagen metabolism in bleomycin-induced pulmonary fibrosis. J. Clin. Invest., in press.

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

1. Phan, S.H. and Kunkel, S.L.: The role of arachidonate metabolites in bleomycin-induced pulmonary fobrosis. Paper presented at the 3rd International Colloquium on Pulmonary Fibrosis. October 17-19, 1984 in Paris, France.
2. Fantone, J.C., Phan, S.H. and Kunkel, S.L.: Regulation of rat neutrophil phospholipase A_2 activity and arachidonate metabolism by PGE_1 and cyclic AMP. Fed. Proc. 44:579, 1985.
3. Lloyd, R.V., Phan, S.H. and Wilson, B.S.: Monoclonal antibodies in the analysis and purification of chromogranin. Fed. Proc. 44:634, 1985.

4. Phan, S.H., Hurtado, S., Fantone, J.C. and Kramer, C.: The mechanism of diisopropylphosphofluoridate inhibition of neutrophil stimulation. Fed. Proc. 44:577, 1985.
5. Albertson, R.D. III, Simon, R.H. and Phan, S.H.: Production of a fibroblast proliferation factor by isolated rat type II pneumocytes. Am. Rev. Resp. Dis. 131:A361, 1985.

CARL L. PIERSON, PH.D.
ASSISTANT PROFESSOR OF PATHOLOGY
ASSOCIATE DIRECTOR, CLINICAL MICROBIOLOGY LABORATORY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. DIAGNOSTIC SERVICE ACTIVITIES:

A. Associate Director of Clinical Microbiology Laboratory.

II. TEACHING ACTIVITIES:

A. Pathology 600 - three lectures.
B. Pathology 630 - two lectures.
C. Pathology 410 - three lectures.
D. Microbiology 505 - two lectures
E. Pathology House Officers - four lectures.
F. Medical student project advisor for J. Purifoy.
G.. Coordinator - House Officer rotation in Clinical Microbiology.
H. Epidemiology 560 - four lectures, School of Public Health
I. Project advisor for J. Alday in College of Pharmacy.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Amdinocillin-B-Lactam Combination Study, Hoffmann-La Roche; $16,212/three months.
B. Laboratory Diagnosis of Chlamydia Infections, Abbott Laboratories; $108,402/one year.
C. Antimicrobial Susceptibility of Bacteroides fragilis in the United States, Lederle Laboratories; $3,000/one year.
D. Evaluation of the Staph Coagulase Latex Kit, Difco Laboratories; $900/two months.

PROJECTS UNDER STUDY:

A. Detection of Clostridium difficile toxin by ELISA.
B. Epidemiology and clinical significance of blood cultures positive for coagulase-negative staph.
C. Inducible B-lactamase activity in gram-negative bacteria.
D. Lysostaphin susceptibility of methicillin-resistant Staphylococcus aureus.
E. Evaluation of the Ramco Candida Antigen Latex Kit.
F. Phagocyte function using flow cytometry.
G. Evaluation of the Dupont "Isolator" for the detection of clinical fungemia.

ARTICLES SUBMITTED FOR PUBLICATION:

1. Comparative pharmacokinetics of selected cephalosporins (submitted for publication).
2. Rapid identification of corynebacterium JK by gas-liquid chromatography (submitted for publication).
3. Protothecal olecranon bursitis: Treatment with intrabursal amphotericin B (submitted for publication).

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Serve on Clinical Laboratories Directors' Committee.
B. Coordinate Clinical Microbiology Senior Staff meeting (weekly).
C. Coordinate Clinical Microbiology in-service education program.

MEDICAL SCHOOL/HOSPITAL:

A. Alternate, Infection Control Committee.

REGIONAL AND NATIONAL:

A. Educational Program Planning Committee, Michigan State Department of Public Health.
B. Program Committee, Tricounty Clinical Microbiology Meeting (two per year).

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES/SEMINARS:

1. The clinical role of new antibiotics: Drugs in search of a disease. South Bend Medical Foundation, South Bend, Indiana.
2. Rapid diagnosis of Chlamydial infections. Spring meeting, Laboratory Professionals of Michigan, Lansing, Michigan.
3. Rapid diagnosis of urinary tract infections. Tricounty Clinical Microbiology Meeting, Detroit, Michigan.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Cuchural, G.J., Tally, F.P., Jacobus, N.V., Gorbach, S.L., Aldridge, K., Cleary, T., Finegold, S.M., Hill, G., Iannini, P., O'Keefe, J.P. and Pierson, C.: Antimicrobial susceptibilities of 1,292 isolates of the Bacteroides fragilis group in the United States: Comparison of 1981 with 1982. Antimicrob. Agents Chemother. 26:145-148, 1984.
2. Behl, C.R., Flynn, G.L., Kurihara, T., Smith, W.M., Bellantone, N.H., Gatmaitan, O., Higuchi, W.I., Ho, N.F.F. and Pierson, C.L.: Age and anatomical site influences on alkanol permeation of skin of the male hairless mouse. J. Soc. Cosmet. Chem. 35:237-252, 1984.

3. Pierson, C.L., Kahn, L.E. and Lovett, E.J., III: The risk of environmental contamination during flow cytometric analysis of contaminated specimens. Cytometry, in press.
4. Bacon, A. and Pierson, C.L.: Onchocerca volvulus in a returning Peace Corp volunteer. Clinical Microbiology, in press.

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

1. Pierson, C.L. and Cullen, K.C.: Rapid diagnostic techniques in clinical microgiology. Med. Lab. International, Sept./Oct., 59-64, 1984.
2. Pierson, C.L.: In vitro activity of enoxacin and five other antimicrobials against clinical isolates of mycoplasma. Abstract of the 1984 IC/AAC, no. 987, page 264.
3. Hubbard, W.H., Kloosterman, R.E. and Pierson, C.L.: Evaluation of the monolight 2001, Bac-T-Screen Chemstrip 9 and gram stain for the rapid screening of clinical urine specimens. Abstract of the 1985 Amer. Soc. Microbiol., no. C355, page 359.

JOSEPH A. REGEZI, D.D.S.
ASSOCIATE PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Oral Pathology biopsy service: four months/year (5,000 biopsies/year).
B. Patient consultations: on call at the School throughout the year and scheduled consultations four months/year for one afternoon per week.

II. TEACHING ACTIVITIES:

A. Course Director and Lecturer in Senior Oral Pathology 816 and 818.
B. Course Director, Lecturer and Laboratory Instructor in Sophomore Oral Pathology 626 and 627.
C. Lecturer, Graduate Oral Pathology and Diagnosis 695.
D. Contributor, Graduate Seminars in Oral Pathology 698 and 699.

III. RESEARCH ACTIVITIES:

PROJECTS UNDER STUDY:

A. Osteosarcoma and chrondrosarcoma of the head and neck - immunohistochemical markers.
B. Immunohistochemical study of reactive and neoplastic giant cell lesions.
C. Pemphigus and pemphigoid - immunologic diagnosis from paraffin embedded tissue.
D. Langerhans cells and macrophages in cystic epithelium of the jaws.
E. Antigenic markers in salivary gland tumors.

ARTICLES SUBMITTED FOR PUBLICATION:

1. Stewart, J.C.B., Regezi, J.A., Lloyd, R.V. and McClatchey, K.D.: Immunohistochemical study of idiopathic histiocytosis of the jaws. Oral Surg., Oral Med., Oral Path.
2. Zarbo, R.J., Regezi, J. and Batsakis, J.G.: Immunohistochemical staining of S-100 protein in salivary gland tumors. Head Neck Surg.
3. Regezi, J.A., Ellis, C., Stewart, J., Giustina: Histologic changes associatd with the topical use of isotretinoin on oral lichen planus with isotretinoin. J. Am. Acad. Derm.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Chairman, Thesis Committee for Dr. J. Stewart, Department of Oral Pathology.
B. Thesis Committees for Drs. Gardner and Contos, Department of Endodontics.

DENTAL SCHOOL:

A. Member of Executive Committee, 1982-1985.
B. Dental School Budget Priority Committee.
C. Faculty Advisor, Student Council.

NATIONAL:

A. Member of Executive Committee of American Academy of Oral Pathology, 1982-1985.
B. Member, Committee to Encourage Scholarly Activity, American Academy of Oral Pathology, 1985-1986.
C. Member of Editorial Board for Oral Surgery, Oral Medicine and Oral Pathology, C.V. Mosby, Publisher.

V. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Zarbo, R.J., Regezi, J.A. and Baker, S.R.: Periosteal ostegenic sarcoma of the mandible. Oral Surg., Oral Med., Oral Path. 57:643-647, 1984.
2. Regezi, J.A., Lloyd, R.V., Zarbo, R.J. and McClatchey, K.D.: Minor salivary gland tumors: A histologic and immunohistochemical study. Cancer 55:108-115, 1985.
3. Regezi, J.A., Stewart, J.C.B., Headington, J.T. and Lloyd, R.V.: Immunohistochemical staining of Langerhans cells and macrophages in oral lichen planus. Oral Surg., Oral Med., Oral Path., in press.

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

1. Regezi, J.A., Stewart, J.C.B., Lloyd, R.V. and McClatchey, K.D.: Immunohistocheical study of idiopathic histiocytosis of the jaws. Abstract, #334, AADR, Las Vegas, Nevada, March, 1985.
2. Regezi, J.A., Krause, M.E. and Bye, F.L.: Histologic evaluation of periodontal implants in a biologically "closed" model. Abstract #389, AADR, Las Vegas, Nevada, March, 1985.
3. Regezi, J.A., Stewart, J.C.B., Lloyd, R.V. and McClatchey, K.D.: Immunohistochemical study of idiopathic histiocytosis of the jaws. Abstract, #334, AADR, Las Vegas, Nevada, March, 1985.
4. Stewart, J.C.B., Goistoma. T.A., Regezi, J.A., Ellis. C.N. and Woo, T.Y.: Treatment of oral lichen planus with isotretinoin (13-cis-retinoic acid): A double blind study. Abstract #31, St. Louis, Missouri, May, 1985.

NATHANIEL H. ROWE, JR., D.D.S.
PROFESSOR OF PATHOLOGY, DENTISTRY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Responsible for biopsy service four months/year.
B. Responsible for clinical patient diagnostic problems and management thereof four months/year on a regular basis, seven months/year on an as needed basis.

II. TEACHING ACTIVITIES:

A. Oral Pathology to Freshman Dental Students, Course 516 (course director).
B. Oral Pathology to Sophomore Dental Students, Course 624 and 625.
C. Pathology Lecture and Laboratory to Sophomore Dental Students, Course 631.
D. Oral Pathology to Senior Dental Students, Course 818.
E. Oral Pathology Seminar to Graduate Students in Operative Dentistry, Course #690.
F. Oral Pathology Lecture and Laboratory to Graduate Students, Course 695.
G. Oral Pathology Seminar to Graduate Students in Periodontics, Course #781 (course director).

III. RESEARCH ACTIVITIES:

SPONSORED RESEARCH:

A. Protocol to define the efficacy and tolerance of systemically administered acyclovir versus placebo in patients with herpes labialis. Principal Investigator. Sponsor: Burroughs Wellcome Co.
B. Tolerance and efficacy study comparing 15% 5-IODO-2'-deoxyuridine (IDU) in 80% dimethyl sulfoxide (DMSO) and 5% H_2O to control groups of 80% DMSO and 2% DMSO for the treatment of herpes simplex labialis. Principal Investigator. Sponsor: Research Medical, Inc.

PROJECTS UNDER STUDY:

A. Dental health manpower utilization in New Zealand, a pilot study with possible pertinence to the State of Michigan. Coprincipal Investigator.

IV. ADMINISTRATIVE ACTIVITIES:

MEDICAL/DENTAL SCHOOL:

A. Acting Chairman, Department of Oral Pathology, School of Dentistry, January 1, 1985 - June 30, 1985.

B. Associate Director of the Dental Research Institute. Activities include:
   1. Chairman, Symposium on hypersensitive dentin: Origin and management, November 20, 1985.
   2. Participant in deliberation of various other committees such as the Scientific Advisory Committee and the Policy Committee of the Institute.

REGIONAL AND NATIONAL:

A. Member, Executive Committee, Michigan Division, American Cancer Society.
B. Member-at-Large, Board of Directors, Michigan Division, American Cancer Society.
C. Chairman, Committee on Cancer Control, Hospital and Institutional Dental Service, Michigan Dental Association.
D. Chairman, Annual Regional Oral Cancer Symposium to be held at Mt. Carmel Hospital, Detroit, Michigan, February 26, 1986.
E. Member, Board of Appeals, Commission on Accreditation, Graduate Specialty Education Programs, American Dental Association.
F. Consultant, Committee on Hospital and Institutional Dentistry, American Dental Association.
G. Consultant, Council on Dental Education, American Dental Association.
H. Consultant, Council on Dental Therapeutics, American Dental Association.
I. Manuscript Consultant and Reviewer:
   1. Journal of the American Medical Association.
   2. Journal of Oral Pathology.
   3. Journal of the American Dental Association.
   4. Cancer.
   5. Journal of the Academy of General Dentistry.

V. OTHER RELEVANT ACTIVITIES:

A. Lecturer to various groups including:
   1. American Association of Nurse Anesthetists Annual Meeting.
   2. Periodontal Study Club for Dental Hygiene, Fall Meeting.
   3. Northwest Seminars, Annual Meeting, West Yellowstone, Montana.
   4. Hawaii Dental Hygienists' Association's Pan Pacific Dental Convention.
   5. Houston District Dental Hygienists' Society Annual Meeting.
   6. Saginaw Valley District Dental Hygiene Society and Delta College Community Services Program.
   7. Oral Cancer Symposia (one at Lansing Community College and one at Delta College, Bay City, Michigan).
   8. 1985 Annual Session, Michigan Dental Association, Open Workshop, "Hospital Dentistry -- Survival?", Chairman.
   9. Massachusetts Department of Public Health, Public Hearing, Smokeless Tobacco.
   10. Ypsilanti Regional Psychiatric Hospital, Ypsilanti, Michigan.
   11. Miscellaneous component dental societies, civic clubs and study clubs.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Rowe, N.H., Aseltine, L.F. and Turner, J.L.: Control of pain by meclofenamate sodium following removal of an impacted molar. Oral Surg., Oral Med., Oral Path. 59:446-448, 1985.
2. Rowe, N.H., Doelle, P.J., Loos, P.J. and Herschfus, L.: Hospital dentistry -- Survival? J. Mich. Dent. Assoc., October, 1985.

BERTRAM SCHNITZER, M.D.
PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985
(Sabbatical Leave 1 January 1985 through 30 June 1985)

I. CLINICAL ACTIVITIES:

A. Director, Clinical Hematology Laboratory.
B. Director, University of Michigan Health Services Laboratories.
C. Diagnostic Surgical Pathology, Hematopathology.
D. Diagnostic Surgical Pathology, Veterans Administration Hospital (weekly).
E. Diagnostic Hematopathology, Veterans Administration Hospital.
F. Diagnostic Clinical Flow Cytometry.
G. Consultant of Hematopathology cases.
H. Review of Southwest Oncology Group (SWOG) cases (circa 200/year).
I. Diagnostic electron microscopy of lymphoreticular and hematopathology cases.

II. TEACHING ACTIVITIES:

MEDICAL SCHOOL/HOSPITALS:

A. Daily review of blood smears and body fluids in Hematology Laboratory.
B. Daily review of in-house and consultation hematopathology cases and correlation with flow cytometry data and immunoperoxidase studies.
C. House Officer Conference in Hematopathology

AFFILIATED HOSPITALS:

A. Veterans Administration Hospital.

INVITED LECTURES/SEMINARS:

1. Immunologic Aspects in Hematology, Department of Internal Medicine, St. Joseph Mercy Hospital, Pontiac, Michigan, 1984.
2. Immunologic Methods in the Diagnosis and Classification of Leukemias and Lymphomas, Bay Medical Center, Bay City, Michigan, March, 1985.
3. Flow Cytometry in the Diagnosis of Hematologic and Lymphoid Disorders, Henry Ford Hospital, Detroit, Michigan, March, 1985.
4. Application of Flow Cytometry in the Diagnosis and Classification of Leukemias and Lymphomas, Georgetown University Medical Center, Washington, D.C., May, 1985.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Southwest Oncology Group (SWOG). Combination chemotherapy of unfavorable histology non-Hodgkin's lymphomas with CHOPP and CBV (with Dr. V. Dabich).
B. Southwest Oncology Group (SWOG). Combination chemotherapy of unfavorable histology non-Hodgkin's lymphomas with alternating regimens of CHOPP and CVB (with Dr. V. Dabich).

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Clinical Hematology Laboratory, Hospitals.

MEDICAL SCHOOL/HOSPITALS:

A. University of Michigan Health Services Laboratories.

REGIONAL AND NATIONAL:

A. Member, American Board of Pathology, Hematology Test Committee.
B. Society of Hematopathology, Executive Committee.
C. Southwest Oncology Group:
    1. Lymphoma Subcommittee.
    2. Leukemia Subcommittee.
D. Regional Center Review Pathologist, Southwest Oncology Group.
E. Member, Executive Committee, National Panel for Lymphoma Clinical Studies.
F. Children's Cancer Study Group: Review pathologist of lymphoma cases.

V. OTHER RELEVANT ACTIVITIES:

EDITORIAL BOARD:

A. American Journal of Clinical Pathology.

INVITED LECTURES/SEMINARS:

1. Flow Cytometry, Clinical Applications. Leukemias and Lymphoma. International Congress of the International Association of Pathologists, Miami Beach, Florida, September, 1984.
2. Immunologic Aspects in Hematology. American Society of Medical Technology, Dearborn, Michigan, September, 1984
3. Flow Cytometry, Clinical Applications. Leukemias and Lymphomas. American Society of Cytology, Atlanta, Georgia, November, 1984.
4. Flow Cytometry and Electron Microscopy in Diseases of the Reticuloendothelial System. A Practical Approach to Diagnostic Hematologic Problems. ASCP Educational Course. Lake Buena Vista, Florida, November, 1984.

5. Hyder, D.M. and Schnitzer, B.: Utility of Leu M1 Monoclonal Antibody in the Diagnosis and Differential Diagnosis of Hodgkin's Disease. Lab. Invest. 52:30A, 1985.
6. Narang, S., Palutke, M., Schnitzer, B., Tabaczka, P. and Assarian, G.: Immunohistologic Analysis of Cell Populations in Hodgkin's Disease. Lab. Invest. 52:47A, 1985.
7. Current Concepts in the Diagnosis and Classification of Leukemias and Lymphomas. Sponsored by the Chinese Medical Association in: (1) Beijing; (2) Nanjing; (3) Suchou; and (4) Shanghai, China, April, 1985.
8. Ninth Annual Hematopathology Course. Electron Microscopy and Flow Cytometry as an Aid in the Diagnosis of Hematologic Disorders. Armed Forces Institute of Pathology, Washington, D.C., May, 1985.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Amendola, B.E., Hutchinson, R., Amendola, M.A. and Schnitzer, B.: Childhood non-Hodgkin's lymphoma: A review of treatment results in 53 children. Eur. Paed. Hematol. Oncol. 1:213-223, 1984.
2. Schnitzer, B. and Hyder, D.M.: Leu M1 monoclonal antibody staining of Reed-Sternberg cells. Lancet 1:757, 1985.
3. Appelman, H.D., Hirsch, S.D., Schnitzer, B. and Coon, W.W.: Clinicopathologic overview of gastrointestinal lymphomas. Am. J. Surg. Pathol. 9:1-83, 1985.
4. Agha, F.P. and Schnitzer, B.: Esophageal involvement in lymphoma. Am. J. Gastroenterol. 80:412-416, 1985.
5. Schnitzer, B., Lovett, E.J., Kahn, L. and Hudson, J.L.: Adult T-cell leukemia-lymphoma. Flow cytometric analysis. Ann. N.Y. Acad. Sci., in press.

B. BOOKS AND CHAPTERS IN BOOKS:

1. Schnitzer, B.: Reactive lymphoid hyperplasia. In, Surgical Pathology of Lymph Nodes and Related Organs, E.S. Jaffe, editor. W.B. Saunders, Co., Philadelphia, pp. 22-55, 1985.

C. ABSTRACTS:

1. Narang, S., Schnitzer, B., Tabaczka, P. and Assarian, G.: Immunohistologic analysis of cell populations in Hodgkin's disease. Lab. Invest. 52:47A, 1985.
2. Hyder, D.M. and Schnitzer, B.: Utility of Leu M1 monoclonal antibody in the diagnosis and differential diagnosis of Hodgkin's disease. Lab. Invest. 52:30A, 1985.

LLOYD M. STOOLMAN, M.D.
ASSISTANT PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Hematopathology Diagnostic Service (seven months, 1200 cases) - interpretation of peripheral smears, body fluid cytologies, bone marrow aspirates and biospies, cytochemical stains.
B. Flow Cytometry Diagnostic Service (three months, 250 cases) - interpretation of cell surface marker studies and cellular DNA analyses in the evaluation of hematologic disorders, primary and secondary immune deficiencites and autoimmune processes.

II. TEACHING ACTIVITIES:

MEDICAL SCHOOL/HOSPITAL:

A. Coordinator, core and elective rotations in flow cytometry.
B. Coordinator, core lecture series on hematopathology.
C. Daily sign-out of cases in flow cytometry and hematopathology with pathology residents.
D. Monthly seminars on the clinical applications of flow cytometry for the residents and fellows on the Hematology/Oncology Services.
E. Lecturer, Hematopathology, medical school.
F. Lecturer, Clinical Applications of Flow Cytometry, Medical Technologist Training Program.
G. Supervisor, undergraduate honors research project in cellular immunology.
H. Pediatric/Adult Leukemia Conferences.
I. Adult Lymphoma Conferences.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

These projects examine the molecular basis of migration across vessel walls for both normal and malignant lymphoid cells:

1. NIH, NCI Physician Investigator Award ($170,000; 3 years; 1 July 1984 through 30 June 1987): Lymphocyte migration and the metastatic process.
2. American Cancer Society Research Award ($109,000; 2 years; 1 July 1984 through 30 June 1986): Lymphocyte migration and the metastatic process.
3. Michigan Leukemia Society Research Award ($50,000; 2 years; 1 July 1984 through 30 June 1986): The role of extracellular matrix in the migration of lymphoid cells across vessel walls.

PROJECTS UNDER STUDY:

A. Monoclonal antibodies in the treatment of lymphoproliferative disease - hematopathology consultant; Kenneth Foon, M.D., Principle Investigator.
B. The role of the endothelium, basement membrane and extracellular matrix in the modulation of lymphoid cell migration into tissues - Principle Investigator.

ARTICLES SUBMITTED FOR PUBLICATION:

1. Yednoch, T.A., Stoolman, L.M. and Rosen, S.D.: Demonstration of a lymphocyte cell surface mannose-6-phosphate binding activitiy and correlation with recirculation potential. J. Cell Biol.
2. Stoolman, L.M., Yednoch, T.A., Burton, M. and Rosen, S.D.: Human lymphoid cells express a membrane lectin which is functionally equivalent to an adhesive molecule implicated in the recirculation of rodent lymphoid cells. J. Cell Bio.
3. Dafoe, D.C., Stoolman, L.M., Campbell, D.A., Lorber, M.I and Lovett, E.J.: T-lymphocyte subset patterns in renal transplant recipients with CMV disease and acute rejection. Transplantation.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Medical Director of the Flow Cytometry Laboratory.
B. Co-director of the Hematopathology Laboratory.
C. Member, Microcomputer Steering Committee

MEDICAL SCHOOL/HOSPITAL:

A. Planned and managed the consolidation of the Pediatric Hematology Laboratory with the Main Pathology Hematology Laboratory.
    1. Accomplished without reducing the spectrum of tests offered or increasing the turn-around time for results.
    2. Required novel solutions to problems in the ares of specimen procurement, specimen distribution, specimen processing and the reporting of results.
    3. Projected savings to Hospital of >$170,000/year (compared to the cost of maintaining two, independent laboratories).
B. Member, Medical Staff Implementation Work Group on Referring Physician Communications.

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES/SEMINARS:

1. The Pathobiology of Cutaneous Inflammation, Blood Vessels and Lymphocytes. American Academy of Dermatology, 43rd Annual Meeting, Washington, D.C.
2. Flow Cytometry in Diagnostic Hematopathology. Saint John Hospital, Detroit, Michigan.
3. The Clinical Applications of Flow Cytometry, American Red Cross, Fort Wayne, Indiana.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Stoolman, L.M. and Rosen, S.D.: Phosphomannosyl receptors may participate in the adhesive interaction between lymphocytes and high endothelial venules. J.C.B. 99:1535, 1984.
2. Rosen, S.D., Singer, M.S., Yednock, T.A. and Stoolman, L.M.: The involvement of sialic acid on endothelial cells in organ-specific lymphocyte recirculation. Science 228:1005, 1985.
3. Flint, A.F., Lovett, E.J., Stoolman, L.M., McMillan, K., Schnitzer, B., McClatchey, K.D. and Hudson, J.L.: Flow cytometric evaluation of nuclear DNA content: Application to diagnostic cytology. A.J.C.P., 1984.

BOOKS AND CHAPTERS IN BOOKS:

1. Rosen, S.D. and Stoolman, L.M.: Potential role of cell surface lectins in lymphocyte reciruclation. In, Vertebrate Lectins, K. Olden, editor.

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

1. Rosen, S.D., Singer, M.S., Yednock, T.A. and Stoolman, L.M.: Sialic acid as an organ-specific endothelial recognition determinant in lymphocyte recirculation. Fed. Proc. 44:1495, 1985.
2. Stoolman, L.M., Frazein, A. and Burton, M.: Laminin selectively enhances the migratory activity of rodent lymphoid cells. J. Cell Biol., in press.
3. Stoolman, L.M., Yednoch, T.A., Burton, M. and Rosen, S.D.: Human lymphoid cells express a membrane lectin which is functionally equivalent to an adhesive site implicated in the recirculation of rodent lymphoid cells. J. Cell Bio., in press.
4. True, D.D., Singer, M.S., Stoolman, L.M. and Rosen, S.D.: Interactions of acidic glycolipids with a lymphocyte homing receptor. J. Cell Bio., in press.
5. Yednoch, T.A., Butcher, E.C., Stoolman, L.M. and Rosen, S.D.: Lymphocyte homing receptor: Relationship between the Mel-14 antigen and a cell surface lectin. J. Cell Bio., in press.

GERD O. TILL, M.D.
ASSOCIATE PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Clinical Immunopathology Laboratory.

II. TEACHING ACTIVITIES:

A. Resident training in immunology and immunopathology.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Thermal Injury, Complement and Leukocyte Dysfunction (GM-28499). Co-investigator with Dr. Peter A. Ward.
B. Lung Injury Produced by Oxygen Metabolites (GM-29507). Co-investigator with Dr. Peter A. Ward.
C. Immune Responses to Burns. Co-investigator with Dr. F. Whitehouse.

PROJECTS UNDER STUDY:

A. Experimental thermal injury, complement and leukocyte dysfunctions.
B. Pathomechanism of acute tissue injury following activation of complement and neutrophils in vivo.
C. Protection from oxygen radical-induced tissue damage.

ARTICLES SUBMITTED FOR PUBLICATION:

1. Varani, J., Fligiel, S.E.G., Till, G.O., Kunkel, R., Ryan, U.S. and Ward, P.A.: Pulmonary endothelial cell killing by human neutrophils: Possible involvement of hydroxyl radical. Lab. Invest.
2. Duque, R.E., Robinson, J.P., Hudson, J.L., Till, G.O. and Ward, P.A.: Differences in oxidative metabolism between blood and peritoneal rat neutrophils established by flow cytometry. Amer. J. Pathol.
3. Hatherill, J.R., Till, G.O. and Ward, P.A.: Thermal injury, intravascular hemolysis, and toxic oxygen products. J. Clin. Invest.
4. Annesley, T.M., Till, G.O. and Ward, P.A.: Experimental cutaneous burn and acute pulmonary injury. Appearance in serum of lung-related lactate dehydroenase isoenzyme. J. Free Rad. Biol. Med.
5. Rehan, A., Wiggins, R.C., Kunkel, R.G., Till, G.O. and Johnson, K.J.: Glomerular injury and proteinuria in rats after intrarenal complement activation. Evidence for the role of neutrophil-derived oxygen free radicals. Lab Invest.
6. Rao, N.A., Calandra, A.J., Sevarrian, A., Till, G.O., Ward, P.A. and Marak, G.E.: Modulation of lens-induced uveitis by dimethylsulfoxide. Amer. J. Ophthalmol.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Associate Director, Immunopathology Laboratory.

MEDICAL SCHOOL/HOSPITAL:

A. Member, External Review and Search Committee, Department of Anatomy.
B. Interviewed candidates for faculty positions.
C. Interviewed candidates for Medical Scientist Training Program.
D. Consultant, clinical research programs.

REGIONAL AND NATIONAL: None.

V. OTHER RELEVANT ACTIVITIES:

A. Member Editorial Advisory Board, Immunobiology.
B. Editor, The Complement System, Springer Verlag, Berlin, 1985.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Johnson, K.J., Wilson, B.S., Till, G.O. and Ward, P.A.: Acute lung injury in rat caused by IgA immune complexes. J. Clin. Invest. 74:358-369, 1984.
2. Till, G.O.: Inflammatory responses in thermal injury. Clin. Immunol. Newslett. 5:175-178, 1984.
3. Duque, R.E., Phan, S.H., Hudson, J.L., Till, G.O. and Ward, P.A.: Functional defects in phagocytic cells following thermal injury: Application of flow cytometric analysis. Amer. J. Pathol. 118:116-127, 1985.
4. Tvedten, H.W., Till, G.O. and Ward, P.A.: Mediators of lung injury in mice following systemic activation of complement. Amer. J. Pathol. 119:92-100, 1985.
5. Till, G.O., Hatherill, J.R., Tourtellotte, W.W., Lutz, M.J. and Ward, P.A.: Lipid peroxidation and acute lung injury after thermal trauma to skin. Evidence of a role for hydroxyl radical. Amer. J. Pathol. 119:376-384, 1985.
6. Till, G.O.: Complement activation and acute lung injury. Fed. Proc., in press.
7. Till, G.O.: Acute lung injury secondary to skin burns. Klin. Wochenschr., in press.
8. Till, G.O. and Ward, P.A.: Oxygen radicals in complement and neutrophil-mediated acute lung injury. J. Free Rad. Biol. Med., in press.
9. Baldwin, S.R., Boxer, L.A., Till, G.O. and Simon, R.H.: Attenuation of complement and neutrophil-mediated acute lung injury in the rat using 2,3-dihydroxybenzoic acid. Amer. Rev. Resp. Dis., in press.
10. Tvedten, H.W. and Till, G.O.: Effect of povidone, povidon-iodine, and iodide on locomotion (in vitro) of neutrophils from people, rats, dogs, and rabbits. Amer. J. Vet. Res., in press.
11. Ward, P.A., Till, G.O., Hatherill, J.R., Annesley, T.M., and Kunkel, R.: Systemic complement activation, lung injury, and products of lipid peroxidation. J. Clin. Invest., in press.

12. Ward, P.A., Johnson, K.J. and Till, G.O.: Current concepts regarding acute respiratory distress syndrome. Ann. Emerg. Med., in press.
13. Ward, P.A., Johnson, K.J. and Till, G.O.: Complement and experimental respiratory failure. Intens. Care Med., in press.
14. Ward, P.A., Johnson, K.J. and Till, G.O.: Oxygen radicals, arachidonate metabolites and lung injury. Ann. N.Y. Acad. Sci., in press.
15. Ward, P.A., Johnson, K.J. and Till, G.O.: Oxygen radicals and microvascular injury of lungs and kidney. Acta Physiol. Scand., in press.

BOOKS AND CHAPTERS IN BOOKS:

1. Till, G.O. and Ward, P.A.: Complement-induced lung injury. In, The Pulmonary Circulation and Acute Lung Injury, S.I. Said, editor. Futura publishing Company, New York pp. 387-402, 1985.
2. Till, G.O.: Chemotaxis and cell activation. In, The Complement System, K.O. Rother and G.O. Till, editors. Springer-Verlag, Heidelberg, in press.
3. Ward, P.A. and Till, G.O.: The autodestructive consequence of thermal injury. In, The Immune Consequences of Thermal and Traumatic Injury, J. Ninnemann, Editor, in press.
4. Till, G.O. and Ward, P.A.: The lung and rheumatic disease: Role of complement and neutrophils. Butterworth's International Medical Reviews. Rheumatology 3, in press.
5. Ward, P.A., Johnson, K.J. and Till, G.O.: Tissue injury caused by toxic oxygen products from phagocytic cells. In, Chemical Mediators of Inflammation and Immunity. Academic Press, Tokyo, in press.
6. Ward, P.A., Johnson, K.J. and Till, G.O.: Leukocyte oxygen radicals and acute lung injury. Proceedings of Symposium on "Acute Lung Injury". PSG Publishing Company, Littleton, Massachusetts, in press.

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

1. Duque, R.E., Robinson, J.P., Hudson, J.L., Till, G.O. and Ward, P.A.: Metabolic differences between circulating and elicited rat neutrophils established by flow cytometry. Fed. Proc. 44:907, 1985.
2. Lutz, M.J., Till, G.O. and Ward, P.A.: Evidence of inhibitory effects of hydroxyl radical ($^{\cdot}OH$) on neutrophil chemotaxis. Fed. Proc. 44:922, 1985.
3. Till, G.O., Tourtellotte, W.W., Hatherill, J.R., Lutz, M.J. and Ward, P.A.: Evidence of lipid peroxidation in experimental thermal injury. Fed. Proc. 44:1544, 1985.
4. Morganroth, M.L., Kuipers, P.J., Till, G.O. and Ward, P.A.: Cobra venom factor causes pulmonary hypertension and acute lung injury in isolated perfused rat lung. Fed. Proc. 44:1919, 1985.
5. Hatherill, J.R., Till, G.O. and Ward, P.A.: Systemic complement activation, lung injury, and lipid peroxidation. Fed. Proc. 44:1919, 1985.
6. Winn, W., Davis, G., Elliott, J. and Till, G.O.: Neutropenia enhances growth of Legionella pneumophilia in rat lung. 85th Annual Meeting of the American Society for Microbiology, 1985.
7. Till, G.O., Hatherill, J.R. and Ward, P.A.: Lipid peroxidation and acute lung injury following systemic complement activation. Circ. Shock 16:65, 1985.

8. Till, G.O., Hatherill, J.R. and Ward, P.A.: Evidence for role of hydroxyl radical in tissue damage and lipid peroxidation following thermal injury. Workshop on Oxygen Free-Radicals in Shock. Florence, May 31-June 1, 1985.

JAMES VARANI, PH.D.
ASSOCIATE PROFESSOR
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Clinical Virology Laboratory.

II. TEACHING ACTIVITIES:

A. Two postdoctoral scholars, one graduate studnet, one visiting scientist and several undergraduate students work in my laboratory.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Endogenous laminin expression and metastasis. CA36132, Principal Investigator, 30% effor, $70,347 current annual direct costs, NIH.
B. Growth and biological properties of fibroblasts and epithelial cells on various substrates. CA36656, Principal Investigator, 30% effort, $75,000 current annual direct costs, NIH.
C. Inhibition of tumor cell chemotactic responses by prostaglandins. BC-512, Principal Investigator, 40% effort, $53,930 current annual direct costs, American Cancer Society.

PROJECTS UNDER STUDY:

A. The involvement of laminin and laminin receptors in mediating tumor cell behavior as it relates to metastatic activity.
B. Regulation of chemotactic responses in tumor cells by prostaglandins produced by the tumor cells and by other cells.
C. The development of substrates for optimum growth of cells in large-scale culture.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Isolation of herpes simplex virus from specimens obtained from MDS Laboratories.

REGIONAL AND NATIONAL:

A. Grant reviewer for the Medical Research Council of Canada.
B. Reviewer for Cancer Research, Journal of the National Cancer Institute, International Journal of Cancer, American Journal of Pathology, and Laboratory Investigation.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Situ, R., Lee, E.C., McCoy, J.P. and Varani, J.: Stimulation of murine tumor cell motility by laminin. J. Cell Sci. 70:167-176, 1984.
2. Grimstad, I.A., Varani, J. and McCoy, J.P.: Contribution of α-D-galacto-pyranosyl end groups to attachment of highly and low metastatic murine fibrosarcoma cells to various substrates. Exp. Cell Res. 155:345-358, 1984.
3. Varani, J., Dame, M., Rediske, J., Beals, T.F. and Hillegas, W.: Substrate-dependent differences in growth and biological properties of fibroblasts and epithelial cells grown in microcarrier culture. J. Biol. Standard 13:67-76, 1985.
4. McCoy, J.P., Jr., Goldstein, I.J. and Varani, J.: Tumor cell carbohydrates: Investigation of cells with varying metastatic potential using an enzyme-linked lectin assay (ELLA). Tumor Biology, in press.
5. Fligiel, S.E.G., Rodriguez, A.F., Knibbs, R.N., McCoy, J.P. and Varani, J.: Characterization of laminin-stimulated adherence and motility in tumor cells. Oncology 42:265-271, 1985.
6. Marasco, W.A., Ward, P.A., Feltner, D.E. and Varani, J.: Formyl peptide binding by metastatic tumor cells: Evidence for a formyl peptide receptor on a non-myelogenous cell. J. Cell Sci. 73:121-135, 1985.
7. Varani, J. and Perone, P.: Response of Walter 256 carcinosarcoma cells to phorbol esters: Possible regulation by prostaglandins. J. Nat. Cancer Inst. 74:165-172, 1985.
8. Solomon, A.R., Rasmussen, J.E., Varani, J. and Pierson, C.L.: Het Tzanck-uitstrijkje bij de diagnostiek van cutane herpes simplex. JAMA - Belgische Uitgave 32:15-17, 1984.
9. Solomon, A.R., Rasmussen, J.E., Varani, J. and Pierson, C.L.: Diagnostic de l'herpes cutane par cytodiagnostic de Tzanckd. JAMA - French edition 9:19-24, 1984.
10. Clarke, P.R.H. and VArani, J.: Phorbol ester binding to chemtoactically responsive and non-responsive Walker 356 carcinosarcoma cells. Cancer Res. 44:4967-4971, 1984.
11. Varani, J., Grimstad, I.A., Knibbs, R.N., Hovig, T. and McCoy, J.P.: Attachment spreading and growth in vitro of highly-malignant and low-malignant murine fibrosarcoma cells. Clin. Exp. Metastasis 3:45-59, 1985.
12. Varani, J., Fligiel, S.E.G. and Perone, P.: Directional motility in strongly-malignant murine tumor cells. Int. J. Cancer 35:559-564, 1985.
13. Fligiel, S.E.G., Perone, P and Varani, J.: Arachidonic acid metabolism in murine fibrosarcoma cells with differing in vivo and in vitro characteristics. Int. J. Cancer, in press.
14. Hiserodt, J.C., Laybourn, K.A. and Varani, J.: Expression of a laminin-like substance on the surface of murine natural killer (NK) lymphocytes and its role in NK recognition of tumor target cells. J. Immunol., in press.
15. Hiserodt, J.C., Laybourn, K.A. and Varani, J.: Laminin inhibits the recognition of tumor target cells by murine natural killer (NK) and natural cytotoxic (NC) lymphocytes. Amer. J. Pathol., in press.
16. Phan, S.H., Varani, J. and Smith, D.: Rat lung fibroblast collagen metabolism in bleomycin-induced pulmonary fibrosis. J. Clin. Invest., in press.

17. Lloyd, R.V., Wilson, B.S., Varani, J., Gaur, P.K., Moline, S. and Makari, J.G.: Immunochemical characterization of a monoclonal antibody that recognizes mitosing cells. Amer. J. Pathol., in press.
18. He, X., Fligiel, S.E.G. and Varani, J.: Modulation of tumor cell motility by prostaglandins and inhibitors of prostaglandin synthesis. J. Cell Sci., in press.
19. Varani, J., Fligiel, S.E.G., Till, G.O., Kunkel, R.G., Ryan, U.S. and Ward, P.A.: Pulmonary endothelial cell killing by human neutrophils: Possible invovlement of hydroxyl radical. Lab. Invest., in press.
20. Desai, U., Dickie, B., Varani, J. and Kreutzer, D.L.: Complement-cleaving activity in hamster lung lavage fluid. J. Exp. Pathol., in press.

BOOKS AND CHAPTERS IN BOOKS:

1. Varani, J., McCoy, J.P. and Ward, P.A.: The attraction of wandering metastatic tumor cells. In, Progressive Stages of Neoplastic Growth, H.E. Kaiser, editor. Pergamon Press, Oxford, in press.
2. Varani, J.: Chemotaxis. In, Prostaglandins, Leukotrienes and Cancer, K. Honn and L. Marnett, editors, Volume 1., Basic Biochemical Processes. Martinus Nijhoff, Boston, pp. 227-242, 1985.
3. Varani, J. and McCoy, J.P.: Chemotaxis in tumor cells: Possible mechanisms and implications for therapy. Martinus Nijhoff, Boston, in press.
4. McCoy, J.P. and Varani, J.: Corneal graft rejection: An historical perspective. In, Stocker's Endothelium of the Corneal, C. Bahn, editor.
5. Grimstad, I.A. and Varani, J.: Cell surface laminin-like molecular mediate metastasis-promoting functions of murine tumor cells: Involvement of α-D-galactopryanosyl end groups. In, 2nd International Workshop of Membranes and Tumor Growth, in press.
6. Hiserodt, J.C., Laybourn, K.A. and Varani, J.: Correlation of malignant potential, laminin receptor expression and sensitivity to natural cell-mediated cytolysis of several murine tumors. In, International Symposium on Genetic Control of Resistance to Infection and Malignancy, in press.

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

1. Grimstad, I.A., Varani, J. and McCoy, J.P.: Terminal α-D-galactophranosyl groups mediate attachment of highly and low metastatic murine fibrosarcoma cells to various substrates. Biology of the Cell 51:50a, 1984.
2. Varani, J. and Fligiel, S.E.G.: Biological responses and arachidonic acid metabolism in murine tumor cells. J. Cell Biochem. Supp. 9A. 51:143, 1985.
3. Fligiel, S.E.G. and Varani, J.: Laminin effect on arachidonic acid metabolism in high and low metastatic tumor. Lab. Invest. 52:22a, 1985.
4. McCoy, J.P., Schade, W., Merz, G.E., Esch, T.R., Varani, J. and Hudson, J.L.: DNA content of murine fibrosarcoma cell lines with varying metastic potential. Proc. Amer. Assoc. Cancer Res. 26:52, 1985.
5. Sanchez, J., Varani, J., Wicha, M. and Miller, D.: Relationship of altered gene expression to metastatic potential. Proc. Amer. Assoc. Cancer Res. 26:59, 1985.
6. Varani, J., Fligiel, S.E.G. and Perone, P.: Stimulation of biological responses in highly-malignatn and low-malignant murine tumor cells by laminin, fibronectin and TPA. Fed. Proc. 44:417, 1985.

7. Hiserodt, J.C., Laybourne, K.A. and Varani, J.: Expression of a laminin-like substance on the surface of miurine natural killer (NK) and natural cytotoxic (NC) lymphocytes and its role in NK/NC recognition of tumor target cells. Fed. Proc. 44:587, 1985.
8. Fligiel, S.E.G., Johnson, K.J. and Varani, J.: The effects of oxygen radicals on proteolysis of human neutrophils. Fed. Proc. 44:1125, 1985.
9. Laybourne, K.A., Varani, J. and Hiserodt, J.C.: Correlation of laminin receptor expression on various tumor targets sensitive to natural cell-mediated immunity. International Symposium on Natural Cell-Mediated Immunity, in press.
10. Hiserodt, J.C., Hyder, D.M., Laybourn, K.A. and Varani, J.: Laminin expression on lymphoid cells from various lymphoid organs: Correlation with NK/NC function. International Symposium on Natural Cell-Mediated Immunity, in press.
11. Lloyd, R.V., Coleman, K., Schmidt, K. and Varani, J.: Paradoxical effects of estrogens on pituitary cell proliferation and prolactin expression. Lab. Invest. 52:39A, 1985.
12. Varani, J., He, X. and Fligiel, S.E.G.: Modulation of tumor cell motility by prostaglandins and inhibitors of prostaglanding synthes. J. Cell Biol., in prss.

PETER A. WARD, M.D.
PROFESSOR AND CHAIRMAN
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

1. These have been limited to occasional involvement in immunopathology specimens.

II. TEACHING ACTIVITIES:

A. Medical students:
   1. Clinical Immunology - Two one hour sessions directed to medical students, house staff, and clinical faculty interested in Clinical Immunology.
   2. ICS 600 - One one hour session to Sophomore Medical Students.
   3. Lecture in the Sophomore Pathology Course.
   4. Lecture annually to medical students at the Medical College of Pennsylvania and Hospital.

B. Graduate students:
   1. Indirect supervision of six postdoctoral students.
   2. Indirect supervision of two Research Scientists.
   3. Lecture to faculty and students at the Hospital of the University of Pennsylvania.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. Thermal Injury, Complement, and Leukocyte Dysfunction, NIH GM-28499; $76,188/year ($353,456/five years), Principal Investigator.
B. Lung Immunopathology (Training Grant), NHLBI HL-07517; $211,554/year ($612,684/five years), Principal Investigator.
C. Leukocyte Chemotaxis, NIH HL-28442; $73,773/year ($340,327/five years), Principal Investigator.
D. Pathogenesis of Targeted (Immunologic) Lung Injury, NHLBI HL-26498; $83,055/year ($204,145/three years).
E. Lung Injury Produced by Oxygen Metabolites NIH GM-29507; $107,796/year ($507,078/five years), Principal Investigator.
F. Oxygen-Derived Free Radicals, Immune Complexes and Tissue Injury, Tobacco Research Council Grant #155; $70,000/year ($140,000/two years), Principal Investigator.
G. Inflammatory Cells and Lung Injury (Program Project), NHLBI HL-31963; $385,687/year ($1,730,153/five years), Principal Investigator.

TOTAL DIRECT COSTS (July 1, 1984 - June 30, 1985)	$ 1,233,827.00
TOTAL DIRECT COSTS (July 1, 1981 - June 30, 1985)	$ 4,433,152.00

PROJECTS UNDER STUDY:

ARTICLES SUBMITTED FOR PUBLICATION:

1. Annesley, T.M., Till, G.O. and Ward, P.A.: Cutaneous thermal burn and oxidant-mediated acute lung injury: Appearance in serum of lung-related LDH isoenzyme. Submitted to J. Free Radicals Biol. Med.
2. Becker, K.M., Marasco, W.A., Ward, P.A. and Nairn, R.: Demonstration of a formyl peptide receptor on murine macrophages.
3. Duque, R.E., Robinson, J.P., Hudson, J.L., Till, G.O. and Ward, P.A.: Differences in oxidative metabolism between blood and peritoneal rat neutrophils established by flow cytometery. Submitted to Am. J. Path.
4. Hatherill, J.R., Till, G.O. and Ward, P.A.: Thermal injury, intravascular hemolysis and toxic oxygen products. Submitted to the J. Clin. Invest.
5. Marasco, W.A., Feltner, D.E., Nairn, R. and Ward, P.A.: Evidence of negative cooperative interactions of formyl peptide chemotaxis receptors on the rat neutrophil.
6. Marasco, W.A., Laybourn, K.A., Ward, P.A. and Niederhuber, J.E.: Genetic control of the immune response in mice to an NH_2-formylated chemotactic peptide: I. More than one gene in H-2 controls the antibody response.
7. Marasco, W.A., Niederhuber, J.E. and Ward, P.A.: Murine neutrophil formyl peptide receptors: Effects of the major histocompatibility complex on receptor number, affinity and biological response.
8. Marasco, W.A., Ward, P.A. and Nairn, R.: Purification of endogeneously radiolabeled rabbit neutrophil formyl peptide chemotaxis receptors.
9. Park, S., Fantone, J.C., Kunkel, S.L. and Ward, P.A.: Inhibition of phorbol myristate acetate induced lung injury in mice by platelet depletion, Submitted to Lab. Invest.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Chief, Section of General Pathology.
B. MSP Executive Committee.
C. Pathology Associates.

MEDICAL SCHOOL/HOSPITAL:

A. Interim Dean, Medical School, August 1, 1982 to May 31, 1985.
B. Clinical Chairmen's Council, 1980-1985.
C Executive Committee on Clinical Affairs, 1981-82.
D. Dean's Advisory Council, 1980-85.
E. Director's Advisory Council, 1980-85.
F. Director, Feasibility Study for Multifloor Medical Research Facility Attached to Medical Science II Committee.
G. Chairman, Medical Sciences Research Building (MSRB) Task Force.
H. Michigan Eye Bank Research Review Committee, 1980--.
I. Michigan Diabetes Research and Training Center Policy Committee, 1981--.
J. Chairman, Psychiatry Search Committee, 1982-1984.
K. Wayne County General Hospital/University of Michigan Liaison Committee, 1982-85.

L. Chairman, Medical School Executive Committee, 1982-85.
M. Chairman, Joint Staff Committee, 1982-85.
N. Dental Research Institute Policy Committee, 1982-85.
O. Chairman, Henry Ford Hospital Liaison Committee, 1982-85.
P. St. Joseph Mercy Hospital Liaison Committee, 1982-85.
Q. Chairman, Inteflex Policy Committee, 1982-85.
R. Chairman, VA/Dean's Committee, 1982-85.
S. Clinical Laboratory Directors, 1982-85
T. Joint Conference Committee, 1982-85.
U. Hospital Executive Board, 1982-85.
V. Financial Development Committee, 1982-85.
W. Academic Affairs Advisory Council, 1982-85.
X. Michigan Medical School Council of Deans, 1982-85.
Y. Medical Service Plan Executive Board, 1982-85.
Z. Chairman, Expanded Medical School Task Force, 1982-85.
AA. Clinical Research Council Policy Committee, 1982-85.
AB. Chairman's Advisory Panel on Ambulance Services, 1982-85.
AC. Vice-Provost Advisory Board, 1984-85.
AD. Main Hospitals Operations Committee, 1985--.
AE. University Hospitals Executive Committee, 1985--.
AF. National Task Force on Organ Transplantation, 1985--.
AG. Professional Fee Policy Committee, 1984--.
AH. Interdepartmental Coordinating Committee, 1984--.
AI. Search Committee for the Chairmanship in Environmental and Industrial Health, April, 1985--.
AJ. Department of Surgery Review and Search Committee, May, 1985--.
AK. Dean's Advisory Council, 1985--.
AL. Dean's Advisory Committee on Clinical Affairs, May, 1985--.
AM. Chairman, Advisory Committee for the Howard Hughes Medical Institute, 1984--.

REGIONAL AND NATIONAL:

A. Member, Universities Associated for Research and Education in Pathology, Inc.
B. Member, Advisory Council, Johns Hopkins Center for Alternatives to Animal Experiments.
C. Immunopathology Test Committee, The American Board of Pathology.
D. Member, American Association of Pathologists.
E. Member, Association of American Physicians.
F. Member, American Society for Clinical Investigation.
G. Member, American Association for Advancement of Science
H. Member, American Association of Immunologists
I. Member, American Pathology Foundation
J. Member, Association of Pathology Chairmen
K. Member, Michigan Society of Pathology
L. Member, International Academy of Pathology
M. Member, Society of Medical Consultants to the Armed Forces
N. Consultant, Upjohn Company.
O. Consultant, Schering Corporation.
P. Consultant, Cytogen Corporation.

V. OTHER RELEVANT ACTIVITIES:

EDITORIAL ACTIVITIES:

A. American Journal of Pathology, Editorial Board, 1975-1980; 1982--.
B. American Review of Respiratory Diseases, Consulting Editor, 1977--.
C. Annals of Internal Medicine, Consulting Editor, 1976-81.
D. Archives of Pathology and Laboratory Medicine, Reviewer, 1973--.
E. Arthritis and Rheumatism, Consulting Editor, 1975--.
F. Clinical Immunology and Immunopathology, Consulting Editor, 1977--.
G. Experimental Cell Research, Consulting Editor, 1980--.
H. Experimental Lung Research, Consulting Editor, 1980--.
I. Human Pathology, Consulting Editor, 1980--.
J. Immunological Communications, 1971-1981.
K. Immunopharmacology, Associate Editor, 1977-82.
L. Infection and Immunity, Editorial Board, 1978--.
M. Journal of Clinical Investigation, 1982--.
N. Journal of Experimental Cell Research, Consulting Editor.
O. Journal of Experimental Lung Research, Consulting Editor.
P. Journal of the Reticuloendothelial Society, Consulting Editor.
Q. Journal of Clinical Investigation, Consulting Editor.
R. Journal of Immunology, Editorial Board, 1975-83.
S. Laboratory Investigation, Editorial Board, 1981--.
T. Nature, Consulting Editor, 1980.
U. New England Journal of Medicine, Consulting Editor, 1980--.

INVITED LECTURES/SEMINARS:

1. Participant, Conference, Cell-Cell Interactions in Lung, sponsored by the National Heart, Lung and Blood Institute, Nationa Institutes of Health, in St. Louis, Missouri, June 3-5, 1984.
2. Participant, Research Panel Meeting on Atherosclerosis, sponsored by the National Academy of Sciences Institute of Medicine, in Philadelphia, Pennsylvania, July 17-18, 1984.
3. Participant, Coller-Penberthy-Thirlby Medical Conference, in Traverse City, Michigan, July 26-27, 1984.
4. Visiting Professor, Department of Pathology, The Medical College of Pennsylvania, in Philadelphia, Pennsylvania, August 22-24, 1984.
5. Visiting Professor, Department of Pathology, Medical University of South Carolina School of Medicine, Charleston, South Carolina, August 26-28, 1984.
6. Participant, Symposium on Oxygen Derived Free Radicals in Microcirculation, in Oxford, England, September 10-13, 1984.
7. Participant, Tenth International Conference on Sarcoidosis and Other Granulomatous Disorders, sponsored by the Johns Hopkins University, in Baltimore, Maryland, September 17-22, 1984.
8. Participant, Symposium on Acute Lung Injury, sponsored by the American Heart Association, in Grapevine, Texas, September 24, 1984.
9. Participant, Workshop on Airway Smooth Muscle, sponsored by the Division of Lung Diseases, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, Maryland, September 25-27, 1984.

10. Participant, the Graduate Hospital Symposium, Mechanisms of Lung Injury, The Graduate Hospital in affiliation with the University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania, October 1-2, 1984.
11. Participant, Conference on Basic and Clinical Research on Pulmonary Fibrosis, sponsored by the National Heart, Lung, and Blood Institute and the Federal Republic of Germany, in Heidelberg, Germany, November 12-13, 1984.
12. James C. Paterson Lecturer, University of Western Ontario, School of Medicine, London, Ontario, Canada, November 19-21, 1984.
13. Participant, Workshop on Bronchoalveolar Lavage in Asthmatics, sponsored by the National Heart, Lung, and Blood Institute, in Denver, Colorado, December 3-4, 1984.
14. Participant, Conference on Free Radicals, Metal Ions and Disease, sponsored by the Society for Free Radical Research, Guy's Hospital Medical School, London, England, December 17-18, 1984.
15. Participant, Monitoring Board for the Collaborative Bronchoalveolar Lavage Study, sponsored by the National Heart, Lung, and Blood Institute, in Chicago, Illinois, February 4, 1985.
16. Participant, UA/EM Symposium on Resuscitation: The Investigators Meet the Practitioners, sponsored by the University Association of Emergency Medicine, Lake Buena Vista, Florida, February 6-7, 1985.
17. Participant, Symposium on Infection and Burns - 1985, sponsored by Marion Laboratories, Dallas, Texas, February 14-16, 1985.
18. Participant, Conference on Basic Sciences that Relate to Pulmonary Disorders of Cystic Fibrosis, sponsored by the National Heart, Lung, and Blood Institute, at the Heart House, American College of Cardiology, Bethesda, Maryland, March 6-8, 1985.
19. Participant, Course on "Diagnostic Cellular and Molecular Pathology", Special Course presented at the International Academy of Pathology Meeting, Toronto, Canada, March 15, 1985.
20. Visiting Professor, Cardiovascular Research Institute, University of California, San Francisco, April 1-2, 1985.
21. Lecturer, 1985 Mechanisms of Disease, Department of Veterinary Pathobiology, Ohio State University, April 18, 1985.
22. Lecturer, Santa Barbara Symposium, Reactive Airways Disease and Lung Inflammation - Etiologic, Mechanistic, and Therapeutic Considerations, in Santa Barbara, California, April 21-26, 1985.
23. Lecturer, Ninth Annual Hematopathology Course, American Registry of Pathology, Armed Forces Institute of Pathology, April 29-30, 1985.
24. Keynote Speaker, 1985 Comparative Respiratory Society Meeting in Anaheim, California, May 10-11, 1985.
25. Krakower Visiting Professor, The University of Illinois School of Medicine, Chicago, Illinois, May 20-21, 1985.
26. Summarizer, 26th Annual Aspen Lung Conference, Aspen, Colorado, June 12-15, 1985
27. Keynote Speaker, Upjohn Conference on , "The Role of Prostaglandin E_1 in Therapy of Adult Respiratory Distress Syndrome", in Dallas, Texas, June 26-28, 1985.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Till, G.O., Beauchamp, C., Menapace, D., Tourtellote, W., Jr., Kunkel, R., Johnson, K.J. and Ward, P.A.: Oxygen radical dependent lung damage following thermal injury of rat skin. J. Trauma 23:269-277, 1983.
2. Ward, P.A.: Role of toxic oxygen products from phagocytic cells in tissue injury. Adv. Shock Res. 10:27-34, 1983.
3. Ward, P.A., Duque, R.E., Sulavik, M.C. and Johnson, K.J.: In vitro and in vivo stimulation of rat neutrophils and alveolar macrophages by immune complexes. Production of O_2^- and H_2O_2. Am. J. Pathol. 110: 297-309, 1983.
4. Wolter, N.J., Kunkel, S.L., Lynch, J.P. and Ward, P.A.: Production of cyclooxygenase products by alveolar macrophages in pulmonary sarcoidosis. Chest 83:79S-81S, 1983.
5. Johnson, K.J., Wilson, B.S., Till, G.O. and Ward, P.A.: Acute lung injury in rat caused by immunoglobulin A immune complexes. J. Clin. Invest. 74:358-369, 1984.
6. Rehan, A., Johnson, K.J., Wiggins, R.C., Kunkel, R.G. and Ward, P.A.: Evidence for the role of oxygen radicals in acute nephrotoxic nephritis. Lab. Invest. 51:396-403, 1984.
7. Ward, P.A., Sulavik, M.C. and Johnson, K.J.: Rat neutrophil activation and effects of lipoxygenase and cyclooxygenase inhibitors. Am. J. Pathol. 116:223-233, 1984.
8. Duque, R.E., Phan, S.H., Hudson, J.L., Till, G.O. and Ward, P.A.: Functional defects in phagocytic cells following thermal injury: Application of flow cytometric analysis. Am. J. Pathol. 118:116-127, 1985.
9. Marasco, W.A., Becker, K.M., Feltner, D.E., Brown, C.S., Ward, P.A. and Nairn, R.: Covalent affinity labeling, detergent solubilization, and fluid-phase characterization of the rabbit neutrophil formyl peptide chemotaxis receptor. Biochem. 24:2227-2236, 1985.
10. Marasco, W.A., Feltner, D.E. and Ward, P.A.: Formyl peptide chemotaxis receptors on the rat neutrophil: Experimental evidence for negative co-operativity. J. Cell Biochem. 27:359-375, 1985.
11. Till, G.O., Hatherill, J.R., Tourtellotte, W.W., Lutz, M.J. and Ward, P.A.: Lipid peroxidation and acute lung injury following thermal trauma to skin: Evidence for role of hydroxyl radical. Amer. J. Pathol. 119:376-384, 1985.
12. Till,G.O. and Ward, P.A.: Oxygen radicals in complement and neutrophil-mediated acute lung injury. J. Free Radicals Biol. Med. 1:163-168, 1985.
13. Tvedten, H.W., Till, G.O. and Ward, P.A.: Mediators of lung injury in mice following systemic activation of complement. Am. J. Pathol. 119:92-100, 1985.
14. Ward, P.A., Johnson, K.J. and Till, G.O.: Current concepts regarding acute respiratory distress syndrome. Ann. Emerg. Med. 14:724-728, 1985.
15. Ward, P.A., Sulavik, M.C. and Johnson, K.J.: Activated rat neutrophils: Correlation of arachidonate products with enzyme secretion but not with O_2^- generation. Amer. J. Pathol. 120:112-120, 1985.
16. Bernstein, I.L., Boushey, H.O., Cherniak, R.M., Fink, J.N., Fulmer, J.D., Goetzl, E.J., Goldstein, R.A., Hurd, S.S., Ram, J.S., Lichtenstein, L.M., Reynolds, H.Y., Senior, R.M., Simon, R.A., Ward, P.A., and Zavala, D.C.: Summary and recommendations of a workship on the investigative use of fiberoptic bronchoscopy and bronchalveolar lavage in asthmatics. Chest, Amer. Rev. Resp. Dis., J. Allerg. Clin. Immunol., July, 1985, in press.

17. Fantone, J.C. and Ward, P.A.: Polymorphonuclear leukocyte mediated cell and tissue injury: Oxygen metabolites and their relationship to human disease. Human Pathol. (Review article), in press.
18. Johnson, K.J., Till, G.O. and Ward, P.A.: Oxygen Radicals and microvascular injury of lungs and kidney. Acta Physiol. Scand., in press.
19. Johnson, K.J., Wilson, B.S., Till, G.O. and Ward, P.A.: Acute lung injury in rat caused by IgA immune complexes. J. Clin. Invest., in press.
20. Marasco, W.A., Ward, P.A., Feltner, D.E. and Varani, J.: Chemotactic factor binding by metastatic tumor cells: Evidence for a formyl-peptide receptor on a non-myelogenous cell. J. Cell. Sci., in press.
21. Till, G.O., Annesley, T. and Ward, P.A.: Lung Injury following thermal trauma to skin: Role of hydroxyl radical and lipid peroxidation. Amer. J. Pathol., in press.
22. Varani, J., Fligiel, S.E.G., Till, G.O., Kunkel, R.G., Ryan, U.S. and Ward, P.A.: Pulmonary endothelial cell killing by human neutrophils: Possible involvement of hydroxyl radical. Lab. Invest., in press.
23. Ward, P.A.: The Wound Environment - Local and systemic perturbations: Inflammation and the burn wound. J. Burn Care & Rehab., in press.
24. Ward, P.A., Johnson, K.J. and Till, G.O.: Oxygen radicals, arachidonate metabolites and lung injury. Ann. N.Y. Acad. Sci., in press.
25. Ward, P.A., Johnson, K.J. and Till, G.O.: Complement and experimental respiratory failure. Intensive Care Med., in press.
26. Ward, P.A., Till, G.O., Hatherhill, J.R., Annesley, T.M. and Kunkel, R.G.: Systemic complement activation, lung injury and products of lipid peroxidation. J. Clin. Invest., in press.
27. Wolter, N.J., Kunkel, S.L., Lynch, J.P. and Ward, P.A.: Production of cyclooxygenase products by alveolar macrophages in pulmonary sarcoidosis. Chest, in press.

BOOKS/CHAPTERS IN BOOKS:

1. Fantone, J.C. and Ward, P.A.: Oxygen-derived radicals and their metabolites: Relationship to tissue injury. In, Current Concepts, a Scope publication, The Upjohn Company, Kalamazoo, Michigan, 1985.
2. Johnson, K.J. and Ward, P.A.: Immune complexes, Chapt. 10. In, Immunology of the Lung and Upper Respiratory Tract, J. Bienenstock, editor. McGraw Hill Book Company, New York, New York, pp. 232-241, 1984.
3. Till, G.O. and Ward, P.A.: Complement-induced lung injury. In, The Pulmonary Circulation and Acute Lung Injury, S.I. Said, editor. Futura Publishing Co., Mount Kisco, New York, pp. 387-402, 1985.
4. Fligiel, S.E.G., Johnson, K.J. and Ward, P.A.: The role of complement in immune complex induced tissue injury. In, The Complement System, Rother, K., and Till, G.O. editors. Springer-Verlag, Berlin, publishers, in press.
5. Johnson, K.J. and Ward, P.A.: Mechanisms of acute and chronic immune inflammatory response in the lung, Chapt. 10. In, Pulmonary Immunology and Immunologic Diseases of the Lung, Daniele, R.P. editor. Blackwell Scientific Publications, Inc., Boston, Massachusetts, in press.
6. Johnson, K.J. and Ward, P.A.: Inflammation and active oxygen species. In, Superoxide Dismutase, Volume III: Pathological States, Oberley, L.W. editor. CRC Press, Inc., Boca Raton, FL, in press.
7. Kunkel, S.L. and Ward, P.A.: The complement system. In, Immunology, J. Bellanti, editor, in press.

8. Maderazo, E.G. and Ward, P.A.: Leukocyte chemotaxis. In, Manual of Clinical Laboratory Immunology, 3rd Ed., American Society for Microbiology, Washington, DC, in press.
9. Till, G.O., Hatherill, G.O., and Ward, P.A.: Lipid peroxidation products in experimentaL thermal injury. In, Proceedings of "Workshop on Oxygen Free Radicals in Shock", S. Karger, Basel, in press.
10. Till, G.O. and Ward, P.A.: Role of complement and neutrophils in experimental acute lung injury. In, The Lungs and Rheumatic Disease, Butterworths International Medical Reviews, Rheumatology 3. Nuki, G., and Zvaifler, N., editors. Butterworth and Co., England, in press.
11. Varani, J., McCoy, J.P. and Ward, P.A.: The attraction of wandering metastatic cells. In, Progressive Stages of Neoplastic Growth, Kaiser, H., editor, in press.
12. Varani, J. and Ward, P.A.: The immunobiology of tumor cell chemotaxis, In, Handbook of Cancer Immunology, Waters, H. editor. Garland STPM Press, in press.
13. Ward, P.A.: Inflammation, Chapt. 12. In, Immunology in Medicine, Bellanti, J.A. editor. W.B. Saunders Company, Philadelphia, Pennsylvania, in press.
14. Ward, P.A., Johnson, K.J. and Till, G.O.: Leukocytic oxygen radicals and acute lung injury. In, Kazemi, PSG Publishing Co., Littleton, MA, in press.

ABSTRACTS AND MISCELLANEOUS PUBLICATIONS IN UNREFEREED JOURNALS:

1. Hunninghake, G.W., Garrett, K.C., Richerson, H.B., Fantone, J.C., Ward, P.A., Rennard, S.I., Bitterman, P.B. and Crystal, R.G.: Pathogenesis of the granulomatous lung diseases. Am. Rev. Respir. Dis. 130: 476-496, 1984
2. Workshop on Airway Smooth Muscle, Summary of Conference held on September 25-27, 1983. Am. Rev. Resp. Dis. 131:159-162, 1985.
3. Ward, P.A.: How does the local inflammatory response affect the wound healing process?, in, Conference on Burn Injury, Frontiers in Understanding Burn Injury, National Institutes of Health, Publisher, in press.
4. Ward, P.A., Johnson, K.J. and Till, G.O.: Tissue injury caused by toxic oxygen products from phagocytic cells, Proceedings of the Satellite Symposium, Chemical Mediators of Inflammation, held in Iwata, Japan, in press.
5. Ward, P.A., Johnson, K.J. and Till, G.O.: Tissue injury as a consequence of oxygen radicals produced by phagocytic cells, Proceedings of Symposium by Comparative Respiratory Society, given in Anaheim, California, in press.
6. Ward, P.A., Johnson, J.K. and Sulvavik, M.D.: Lung injury produced by oxygen-derived free radicals from leukocytes", Mechanisms of Lung Injury Symposium, given at the Graduate Hospital, Philadelphia, Pennsylvania, in press.

LEE WEATHERBEE, M.D.
ASSOCIATE PROFESSOR OF PATHOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Chief, Laboratory Service, Ann Arbor Veterans Administration Medical Center and Veterans Administration Outpatient Clinic, Toledo, Ohio.
B. Consultant for referred orthopedic cases at University of Michigan.
C. Primary activities in anatomic pathology - surgical and autopsy.
D. General overview of clinical pathology.

II. TEACHING ACTIVITIES:

A. Two to three days per week read out surgical cases with resident on one to one basis.
B. Review and oversee review of all autopsies with residents.
C. Supervise autopsy conferences with residents.
D. Oversee surgical diagnosis teaching activities by staff and consultant pathologists.
E. Participate in monthly Medicine-Pathology Conference at the Veterans Administration Medical Center.
F. Lecture, Bone and Joint, Second year medical students, five lectures.
G. Seminar, Bone and Joint Pathology, Pathology Residents.
H. Taught Laboratory Section in Pathology, second year medical students.
I. Participate in bi-weekly Oncology Review Board.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT: None.

PROJECTS UNDER STUDY:

A. Well-differentiated osteosarcoma.

ARTICLES SUBMITTED FOR PUBLICATION:

1. Kang, H.K. et al.: Soft tissue sarcoma and military service in Vietnam: A case comparison group analysis of hospital patients. Amer. J. Indust. Med.
2. Lee, H.H. et al.: Pseudomyxoma peritonei: Clinical and radiologic features. Digestive Diseases and Sciences.
3. Shenker, Y. et al.: Ectopic prolactinoma in a patient with hyperparathyroidism and abnormal sellar radiography. Clin. Endocrin.
4. Wilson, K. et al.: Gnotobiotic systems for the study of micropecology of C. difficile. J. Infect. Dis.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. Resident Selection Committee.

MEDICAL SCHOOL/VA MEDICAL CENTER:

A. General administrative responsibility for Laboratory service at the Ann Arbor Veterans Administration Medical Center and the Veterans Administration Outpatient Clinic, Toledo, Ohio (FTE 56.025 and 3.0 residents in training).
B. Executive Faculty, The University of Michigan Medical School.
C. Professional Standards Board (VAMC). Major decision-making board advising Chief of Staff.
D. Clinical Executive Board. Review activities consisting of all service chiefs (VAMC).
E. Transfusion Committee. Chair (VAMC).
F. Medical Audit Committee (VAMC).
G. Radiation Safety Committee (VAMC).
H. Pharmacy and Therapeutics Committee (VAMC).
I. Library Committee (VAMC).
J. General responsibility for participation of VA Pathology staff in other medical center committees.
K. Acting Chief of Staff (VAMC), December, 1984, and January, 1985.
L. Quality Assurance Board, Chair, Veterans Administration Medical Center.
M. Resident Selection Committee.

REGIONAL AND NATIONAL:

A. Red Cross Medical Advisory Board, Southeastern Michigan Region.
B. Special Project VACO, Review Pathology Service, Roseburg, Oregon, June 16-19, 1985.

V. OTHER RELEVANT ACTIVITIES:

A. Inspector for College of American Pathologists, Inspection and Accreditation Program.
B. Deputy Medical Examiner, Washtenaw County.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Agha, F.P., Weatherbee, L. and Sams, J.: Verrucous caricnoma of the esophagus. Amer. J. Gastroenterol. 79:1984.

BARRY S. WILSON, PH.D.
ASSISTANT PROFESSOR OF MICROBIOLOGY AND IMMUNOLOGY
DEPARTMENT OF PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Provide monoclonal antibodies to the Flow Cytometry Laboratory and the Immunoperoxidase Laboratory.

II. TEACHING ACTIVITIES:

MEDICAL SCHOOL/HOSPITAL:

A. Supervised a summer research project for David Huebner (M1 medical student).
B. Assisted in the research projects of two pathology residents, Scott E. Kern and Daniel G. Remick in regards to the production and analysis of monoclonal antibodies.

INVITED LECTURES/SEMINARS:

A. Lecturer, Immunobiology 414, "Immunotherapeutic Approaches to Cancer Diagnosis and Therapy".
B. Lecturer, Flow Cytometry Research Conference, "Monoclonal Antibodies".

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. USPHS - NCI Research Career Development Award, "Monoclonal Antibodies to Melanoma-Associated Antigens", $39,204/year, Principal Investigator.
B. Children's Leukemia Foundation of Michigan, "Studies of a Human B Lymphocyte and B Leukemic Cell Marker (C3d Receptor) Defined by Monoclonal Antibodies, $25,000/year, Principal Investigator.
C. American Tobacco Council, "Oxygen-Derived Free Radicals, Immune Complexes and Tissue Injury", $78,532, Co-Investigator.
D. NIH-NIADDKD, Gastrointestinal Hormone Research Core Center Grant, $485,00/year, Co-Investigator.
E. NIH, Monoclonal Antibody Lymphoscintography in Melanoma, $142,000/year, Co-Investigator.

PROJECTS UNDER STUDY:

A. Purification and characterization of the neuroendocrine marker, chromogranin, defined in humans by monoclonal antibodies.
B. Determination and analysis of B cell activation mediated by monoclonal antibodies to the complement fragment receptor C3d.

C. Analysis of HLA-DR antigens in thyroid disease using a monoclonal antibody applicable to immunohistochemical staining of formalin fixed and paraffin embedded tissues.
D. Production of monoclonal antibodies to neuroendocrine peptide hormones and enzymes.
E. Analysis of human endocrine oncogenes by DNA transfection.

ARTICLES SUBMITTED FOR PUBLICATION:

1. Perri, R.T., Wilson, B.S. and Kay, N.E.: Inhibition of B cell growth factor (BCGF) by monoclonal antibodies directed against the C3d receptor (CR2).
2. Wilson, B.S., Phan, S.H. and Lloyd, R.V.: Chromogranin from normal human adrenal glands: Purification by monoclonal antibody affinity chromatography and N-terminal amino acid sequence.
3. Lloyd, R.V., Schmidt, K., Coleman, K. and Wilson, B.S.: Hormone synthesis and cell proliferation in dissociated pituitary cells from normal, hyperplastic and neoplastic pituitaries.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL: None.

MEDICAL SCHOOL/HOSPITAL: None.

REGIONAL AND NATIONAL:

A. Member, American Association of Immunologists.
B. Member, American Association of Pathologists.
C. Invited Lecturer, Department of Pathology, University of Washington, Seattle, Washington.
D. Outside reviewer for Laboratory Investigation.

V. OTHER RELEVANT ACTIVITIES:

A. Attended a course on recombinant DNA technology held at the Center for Advanced Training in Cellular and Molecular Biology, Catholic University of America, Bethesda, Maryland.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. DeStephano, D.B., Lloyd, R.V., Pike, A.M. and Wilson, B.S.: Pituitary adenomas: An immunohistochemical study of hormone production and chromogranin localization. Amer. J. Pathol. 116:464-472, 1984.
2. Lloyd, R.V., Mervak, T., Schmidt, K., Warner, T. and Wilson, B.S.: Immunohistochemical detection of chromogranin and neuron specific enolase in pancreatic endocrine neoplasms. Amer. J. Surg. Path. 8:607-614, 1984.
3. Kshirsagar, B., Wilson, B.S. and Wiggins, R.C.: Polymers and fragments of albumin in normal human plasma. Clin. Chim. Acta 143:265-273, 1984.
4. Johnson, K.J., Wilson, B.S., Till, G.O. and Ward, P.A.: Acute lung injury in rat caused by IgA immune complexes. J. Clin. Invest. 74:358-369, 1984.

5. Lloyd, R.V., Schmidt, K., Baivas, L., McCoy, J.P and Wilson, B.S.: A rapid immunostaining method utilizing preformed antibody-avidin-biotin complexes. Amer. J. Clin. Pathol. 83:636-639, 1985.
6. Wiggins, R.C., Kshirsager, C.B., Kelsch, R.C. and Wilson, B.S.: Fragmentation of polymeric complexes of albumin in human urine. Clin. Chim. Acta, in press.
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8. Wilson, B.S., Platt, J.L. and Kay, N.E.: Monoclonal antibodies to the 140,000 Ur glycoprotein of B lymphocyte membranes (CR2 receptor) initiates proliferation of B cells in vitro. Blood, in press.
9. Lloyd, R.V., Johnson, T.L., Blaivas, M., Sisson, J.C. and Wilson, B.S.: Detection of Ia-like immunoreactivity in paraffin-embedded thyroid epithelial cells with a monoclonal antibody. Amer. J. Pathol., in press.
10. Lloyd, R.V., Blaivas, M. and Wilson, B.S.: Distribution of chromogranin and S-100 protein in normal and abnormal adrenal medullary tissues. Arch. Pathol. Lab. Med., in press.
11. Lloyd, R.V., Wilson, B.S., Kovacs, K. and Ryan, N.: Immunohistochemical localization of chromogranin in human hypophyses and pituitary adenomas. Arch. Pathol. Lab. Med. 109:515-517, 1985.
12. Varndell, I.M., Lloyd, R.V., Wilson, B.S. and Polak, J.M.: Ultrastructural localization of chromogranin: A potential marker for the electron microscopical recognition of endocrine cell secretory granules. Histochem. J., in press.
13. Facer, P., Bishop, A.E., Lloyd, R.V., Wilson, B.S., Hennessy, R.J. and Polak, J.M.: Chromogranin A: A newly diagnosed marker for endocrine cells of the human gastrointestinal tract. Gastroenterol., in press.
14. Sirki, K.L., Varndell, I.M., Hamid, Q.A., Wilson, B.S., Kamega, T., Ponder, B.A.J., Lloyd, R.V., Bloom. S.R. and Polak, J.M.: Medullary carcinoma of the thyroid: An immunocytochemical and histochemical study of 25 cases using 9 separate markers. Cancer, in press.
15. Lloyd, R.V., Wilson, B.S., Varani, J., Gaur, P., Moline, S. and Makari, J.G.: Immunocytochemical characterization of a monoclonal antibody that recognizes mitosing cells. Amer. J. Pathol., in press.

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

1. Wilson, B.S. and Lloyd, R.V.: Monoclonal antibodies in diagnostic pathology. In, "Pathology Update Series", Continuing Professional Eduation Center, Inc., Vol. 2, Lesson 13, Princeton, New Jersey.
2. Perri, R.T., Wilson, B.S. and Kay, N.E.: Inhibition of B cell growth factor (BCGF) enhancmeent of B cell proliferation by a monoclonal antibody AB5 directed against the C3d (CR2) receptor. Amer. Soc. Hematology, 1985.
3. Blaivas, M., Lloyd, R.V. and Wilson, B.S.: Distribution of chromogranin and S-100 protein in normal and abnormal adrenal medullary tissues. International Association of Pathologists, 1985.

4. Lloyd, R.V., Johnson, T.L., Baivas, M., Sisson, J.C. and Wilson, B.S.: Detection of Ia-like immunoreactivity in paraffin embedded thyroid epithelial cells with a monoclonal antibody. International Association of Pathologists, 1985.
5. Wilson, B.S., Platt, J.L. and Kay, N.E.: Stimulation of B cell DNA synthesis by monoclonal antibodies (MoAbs) to the CR2 (C3d) complement fragment receptor. FASEB 44:1876, 1985.
6. Lloyd, R.V., Phan, S. and Wilson, B.S.: Monoclonal antibodies in the analysis and purification of chromogranin. FASEB 44:634, 1985.
7. Wahl, R.L., Geatti, O., Liebert, M., Beers, B., Jackson, G., Laino, L., Kronberg, S., Wilson, B.S. and Beierwaltes, W.H.: Kinetics of intralymphatically delivered monoclonal antibodies. Soc. of Nuclear Med. 26:55, 1985.
8. Wahl, R.L., Wilson, B.S. and Beierwaltes, W.H.: High dose cold non-specific antibody pre-treatment: Influence on specific antibody localization in nude mice with human melanoma xenografts. Radiological Society of North America, 1985.

J. REIMER WOLTER, M.D.
PROFESSOR OF OPHTHALMOLOGY
IN THE DEPARTMENTS OF OPHTHALMOLOGY AND PATHOLOGY

ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

I. CLINICAL ACTIVITIES:

A. Director, General Ophthalmology Service, Kellogg Eye Center, including direct patient care and surgery.
B. Director, Veterans Administration Ophthalmology Service, Veterans Administration Medical Center, Ann Arbor, Michigan.
C. In charge of Eye Pathology Laboratory, Departments of Ophthalmology and Pathology. Number of cases examined in the period of this report, 870 cases.

II. TEACHING ACTIVITIES:

A. Taking part in the general teaching effort for students, residents, and fellows in Ophthalmology and Ophthalmic Surgery of the Department of Ophthalmology. Also in charge of teching and representing Ophthalmic Pathology to students, residents and staff of this University. Ophthalmic Pathology is one of the basic subspecialties in our field and it is an important part of the written and oral examination of the American Board of Ophthalmology.

III. RESEARCH ACTIVITIES:

SPONSORED SUPPORT:

A. The Ophthalmic Pathology Laboratory has had continuous support from The Research to Prevent Blindness, Inc., New York, New York for more than ten years.
B. Experts of several fields in the Pathology Department, as well as clinicians in the Ophthalmology Department have been of continuous and very valuable help and support of the research effort in this Laboratory.

PROJECTS UNDER STUDY:

A. The Functions of Cells of Macrophage Origin in the Eye.
B. Cytopathology of Intraocular Lens Implantation.
C. The involvement of corneal endothelium and central retina in intraocular lens implantation.
D. Stages in the development of uveal malignant melanomas.
E. Nature and cause of expulsive hemorrhage.
F. The actions of bee venom in the inner eye.

IV. ADMINISTRATIVE ACTIVITIES:

DEPARTMENTAL:

A. In charge of organization and daily routine in Ophthalmic Pathology Laboratory as well as for the continuous research and teaching process in Ophthalmic Pathology.
B. Usual administrative function of a professor in the Departments of Ophthalmology and Pathology.
C. Responsible for some administrative aspects of the Ophthalmology Service of the Ann Arbor Veterans Administration Medical Center.

MEDICAL SCHOOL/HOSPITAL:

A. Member, Medical Student Research Committee.
B. Member, Tissue Committee.
C. Member, VA Hospital Surgery Committee.
D. Member, Medical Staff of the University Hospital.
E. Member, Medical Staff, Ann Arbor Veterans Administration Medical Center.
F. Dirctor, General Ophthalmology Clinic.
G. Chief, Ann Arbor Veterans Administration Medical Center Eye Service.

REGIONAL AND NATIONAL:

A. Member, AMA.
B. Member, American Ophthalmological Society.
C. Member, American Academy of Ophthalmology.
D. Member, German Ophthalmological Society.
E. Member, Michigan Ophthalmological Society
F. Member, Association for Research in Ophthalmology.
G. Member, Detroit Ophthalmology Club.
H. Member, University of Michigan Ophthalmology Alumni Association.
I. Member, Contact Lens Association of America.
J. Honorary Member, Association of Pediatric Ophthalmologists.

V. OTHER RELEVANT ACTIVITIES:

INVITED LECTURES/SEMINARS:

1. Cystoid Macular Edema in Pseudophakia. Annual Summer Conference, Michigan Ophthalmology Society, Mackinac Island, Michigan, June 20, 1984.
2. Pathology of Lens Implantation. Germal Ophthalmological Society Meeting, Frankfurt, German, September 25, 1984.
3. White Thrombi in Expulsive Hemorrhage. American Association of Ophthalmic Pathologists, Atlanta, Georgia, November 10, 1984.
4. The Giant Cells on Lens Implants. Poster, American Academy of Ophthalmology, Atlanta, Georgia, November 11, 1984.
5. Symposium on, "The Interface Between Biologic Surface and Alloplastic Polymers", with P. Binder, S. Stenson, D. Lim, E. Zavala and B. McCarey. CLAO Mid-Winter National Meeting, San Diego, California, January 11, 1985.

6. Necrosis of Choriodal Melanoma in Giant Cell Arteritis. Georgiana Theobald Society, San Antonio, Texas, March 29, 1985.
7. Materials in Intraocular Lenses. Annual Meeting of Society for Biomaterials, San Diego, California, April 28, 1985.
8. Necrosis of Choroidal Melanoma in Giant Cell Arteritis. Alumni/Resident Day, The University of Michigan, Ann Arbor, Michigan, May 16, 1985.
9. Lens Implant Cytopathology. Kellogg Eye Center Dedication Symposium, The University of Michigan, Ann Arbor, Michigan, May 18, 1985.
10. Immunology and Biocompatability of Intraocular Implants. AAAS Annual Meeting, Los Angeles, May 28, 1985.

VI. PUBLICATIONS:

ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATION IN REFEREED JOURNALS:

1. Wolter, J.R., Bergstrom, T.J and Tibble, T.M.: Lens implant cytopathology in postoperative proteus panophthalmitis. Ophthalm. Surg. 15:661-665, 1984.
2. Wolter, J.R. and Sugar, A.: Reactive cellular membrane on a glass fragment after two years in the anterior chamber. Amer. Intraocular Implant Soc. J. 11:68-71, 1985.
2. Wolter, J.R. and Meyer, R.F.: Sessile macrophages forming clear endothelium-like membrane on the inside of successful keratoprosthesis. Graefe's Arch. Ophth. 222:109-117, 1985.
3. Wolter, J.R.: Cytopathology of intraocular lens implantation. Ophthalmol. 92:135-142, 1985.
5. Wolter, J.R. and Kunkel, S.L.: Artifical anterior chamber made of rigid PMMA contact lenses. CLAO J. 11:107-112, 1985.
6. Wolter, J.R.: Adaptor for low power projection of eye sections. Amer. J. Ophth. 99:88-89, 1985.
7. Wolter, J.R.: Acellular proteinaceous film on lens implants. Ophthal. Surg. 16:242-246, 1985.
8. Wolter, J.R. and Meyer, R.F.: Sessile macrophages forming clear endothelium-like membrane on inside of successful kertoprosthesis. Transact. Amer. Ophth. Soc. 82:187-202, 1984.
9. Wolter, J.R.: Massive subfoveal giant cell reaction. Pakistan J. Ophth. 1:60-63, 1985.
10. Wolter, J.R.: Proteinaceous film without macrophages on lens implants in acute panophthalmitis. Ophth. Surg., in press.
11. Wolter, J.R.: Giant cells attached to vitreous structures in association with hemorrhaging. Pakistan J. Ophth. 1:123-126, 1985.
12. Wolter, J.R.: White thrombi in massive subchoroidal hemorrhage. Brit. J. Ophth. 69:303-306, 1985.
13. Wolter, J.R.: Pathologie der linsenimplantation. Fortschr. Ophthalmol., in press.
14. Wolter, J.R., Sugar, A. and Meyer, R.F.: Reactive membranes on posterior chamber lens implants. Ophth. Surg., in press.

BOOKS AND CHAPTERS IN BOOKS:

1. Wolter, J.R.: Pathology of intraocular lens implantation. In, Cataract and intraocular Lens Surgery, S.P. Ginsberg, editor. Aesculapius Publishing Company, Birmingham, Alabama, Vol. 2, pp. 652-720, 1984.

Program and Section Reports

EDUCATIONAL ACTIVITIES*

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

The educational mission of the Department of Pathology is unique in its breadth, involving not only the Medical School and University Hospitals, but several other schools within the University as well. Formal lecture and laboratory courses offered by the Department are required features of diverse programs within the College of Literature, Science and the Arts, the Dental School, the School of Public Health, and the Rackham School of Graduate Studies. Within the Medical Center context, departmental teaching activities reach not only medical students, but also house officers and staff of many clinical departments in the form of regularly scheduled, formal conferences. Departmental teaching also extends to practitioners in the region and the nation through courses given in the Towsley Center.

During the past year, a major departmental project was the revision of the Sophomore Pathology Course (Path 600). The outlines of this revision were drawn at a departmental teaching retreat in response to changing conditions within the Medical School, affecting students and staff alike. The revised course was predicated on the students' acceptance of a significant responsibility for their own education, under faculty guidance. To this end, students were provided with microscopes, slide sets, and descriptive syllabi for home study. Accordingly, laboratory sessions, previously much more intensive, were shortened and streamlined; while the lecture series, intended to direct and supplement study of the text, was redesigned and expanded. As judged by the results of a formal course evaluation, the revision appears to have been successful and well accepted.

Formal courses given within the Department include:

I. Courses in the "Standard" Medical Curriculum

1. ICS 500:
   a. Introductory Lectures on General Pathology (20 contact hours)
2. ICS 600:
   a. Immunopathology Sequence (12 contact hours).
   b. Clinicopathologic Conferences (10 contact hours).
   c. Selected Topics in Surgical Pathology.
3. NBS 600:
   a. Neuropathology (18 contact hours).
4. Pathology 600:
   a. 75 hours of whole-class lecture, 45 hours of laboratory (in each of five sections) (120 contact hours).
5. Pathology Clerkships:
   a. Elected by 32 students at University Hospitals and four additional students elsewhere.

*House Officer training, postdoctoral research training, and the Medical Technology program are discussed elsewhere.

II. Courses in the Dental Curriculum

1. Pathology 630:
   a. General Pathology lectures (45 contact hours.
2. Pathology 631:
   a. Pathology Laboratory (90 contact hours) each of three sections (assisted by Oral Pathology staff).

III. Courses for Graduate School/Allied Health/School of Public Health/LS&A

1. Pathology 859:
   a. General Pathology for Biological Scientists, lecture (42 contact hours).
2. Pathology 860:
   a. General Pathology Laboratory (28 contact hours).
3. Pathology 858:
   a. Neuropathology (23 contact hours).

IV. Postgraduate Medicine/Continuing Medical Education

1. Clinical Chemistry and immunology, April 10.
2. Current Topics in Bloodbanking, June 5-7.
3. Clinical Laboratory Computers, June 12-14.

V. Clinical Conferences

The Department of Pathology provides an important educational service to many other clinical departments through regular participation in interdepartmental working/teaching conferences. The Department is involved in many such conferences on a weekly, bi-weekly, and monthly basis. The units served include:

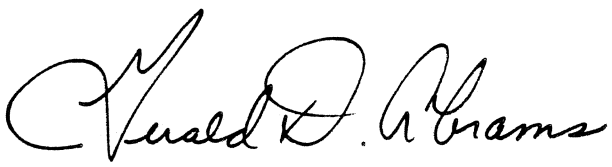
Internal Medicine
- Gastroenterology
- Nephrology
- Hematology/Oncology
- Nuclear Medicine
- Pulmonary Medicine
- Arthritis
- Cardiology
- General (Necropsy Review, CPC)

Dermatology
Neurosurgery
Thoracic Surgery
Urology

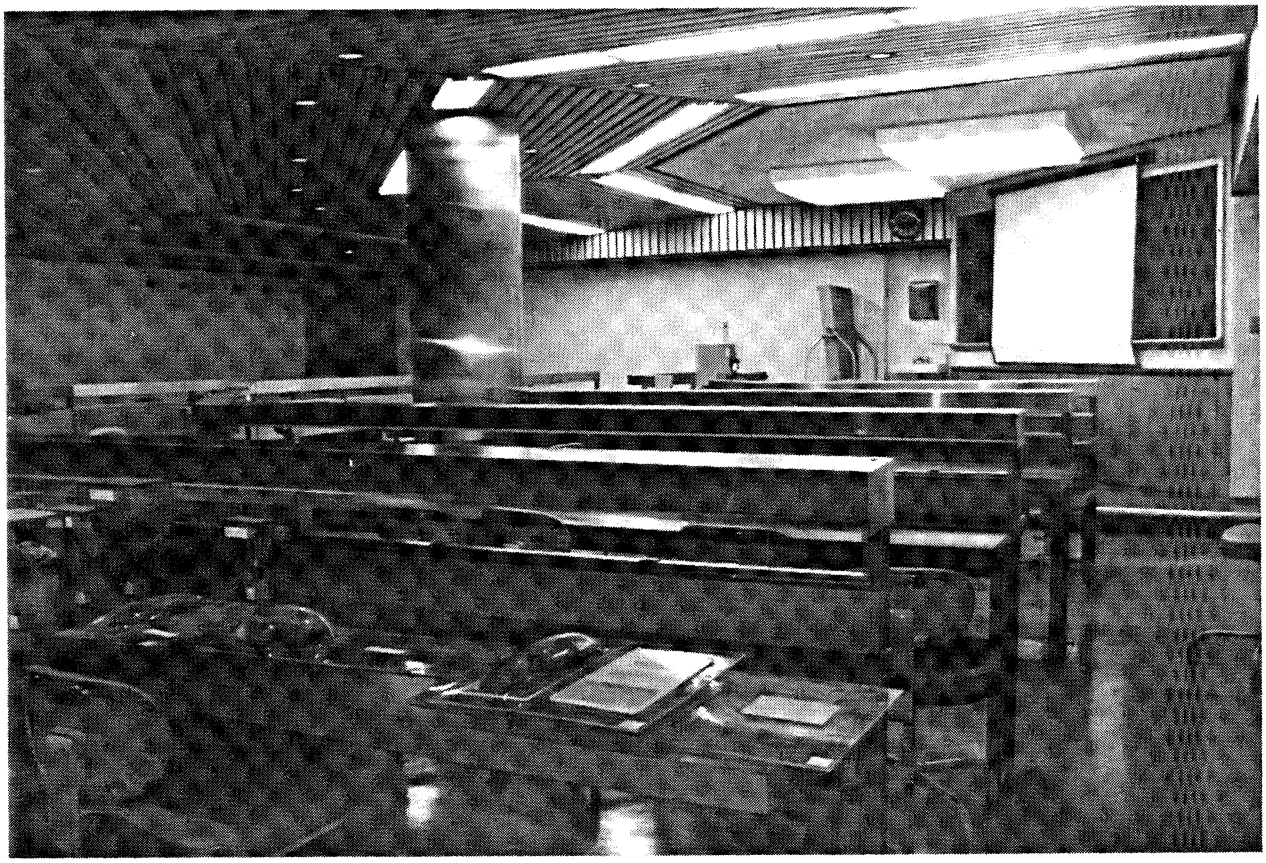
Pediatrics
- Cardiology
- Oncology
- Gastroenterology
- General (Death Conference, CPC)

Obestetrics and Gynecology
- Oncology

Oral Surgery
General Surgery (Breast, GI)
Otorhinolaryngology



Gerald D. Abrams, M.D.
Director
Educational Activities



DIVISION OF ANATOMIC PATHOLOGY

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

1984/1985 marks the end of the first five years under the Chairmanship of Dr. Peter A. Ward. During this time, some notable accomplishments have occurred in the Division of Anatomic Pathology, all of which have resulted in impressive expansions of functional and administrative capabilities. These accomplishments include the following:

At the beginning of this period, the Histopathology Laboratory was split into two diverse administrative units with two supervisors, two groups of technical personnel and two sets of performance standards. The first major change was the unification of the laboratory administratively with a single supervisor, Mrs. Frances Pullen, a single budget and a single set of technical requirements and standards. At the same time, the laboratory equipment was upgraded to the level expected for a mid-1980's operation. Thus, there was gradual conversion to new state-of-the-art microtome, an entirely new paraffin embedding system was instituted, the first of two computerized tissue processors was put into operation, and there was remodeling and refurbishing of the old processors and stainers. At the same time, an entirely new, enlarged laboratory dedicated to histochemistry was equipped and made operative and there was constant monitoring and updating of techniques so that this laboratory is now as capable as any comparable laboratory in the country. Furthermore, an entire plastic processing system was put into operation for routine use with bone marrows and bone biopsies so as to avoid the distortion inherent with decalcification procedures. This processing system for routine analysis was one of the first such operations to be established in the country. These technical activities resulted both in better preparations for diagnosis and in in considerable streamlining of laboratory functions, so that an increased workload could be handled by the same number of laboratory personnel, culminating in a 30% increase in the case load without any increase in technical support during the past fiscal year.

The accessioning and gross dissection area was remodeled so that there would be much more efficient use of space and a better flow of specimens. This area was also designed to accommodate an accessioning computer terminal which was installed and functioning in January, 1984. The first detailed gross dissection manual for this Department was developed utilizing the expertise of the surgical pathologists in their specific subspecialty areas. This manual is currently being edited and updated.

The entire surgical pathology space was redesigned so as to cluster the diagnostic rooms about the tissue typists and to give the surgical pathologist easy access to the accessioning and dissection areas, the area was designed to accommodate the offices of many of the surgical pathologists so that departmental experts would be readily available for diagnostic consultations. These designs have produced a surgical pathology suite that is one of the most efficiently functioning operations of its kind in the country.

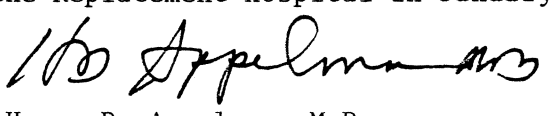
To improve efficiency even more, a computer package became operational in January, 1984. This program was specially designed for surgical pathology and allows for word processing typing into the system, rapid corrections, extremely quick generation of final reports, and almost instantaneous retrieval of previous diagnoses for individual patients and of cases of comparable type based upon the SNOMED pathology coding system.

There are a number of changes involving faculty which also occurred during this five year period. First, there was formal designation of subspecialty areas to individual faculty members, based upon their interest, level of known expertise, and national reputations. Each individual was thus designated as the specific consultant in the specific area, and all consultation cases sent to the Department were distributed according to such subspecialties, to ensure that the most accurate interpretations would be rendered only by the most knowledgeable consultants. Furthermore, this subspecialization was incorporated into a program of diagnostic quality control, in which the subspecialists are now responsible for evaluating pathology report in their area of expertise, ensuring accuracy of diagnosis for in-house cases, detecting errors that may have evolved, and improving the education of colleagues and house officers in general surgical pathology diagnosis. This is a unique system of quality control, but, fortunately, the Pathology Department of The University of Michigan possesses such an outstanding group of surgical pathology subspecialists, that such a program is not only possible but has functioned admirably over the past several years. To continue this program, recruitment of two young surgical pathologists, based upon specific subspecialty needs resulted in even greater departmental capabilities. It is the plan of this Division to continue the pattern of recruitment based upon subspecialization requirements.

A number of financial changes were made. A per-case charge schedule, incorporating the combination of professional, clerical, and technical aspects of each type of case, was instituted for in-house cases. In addition, for the first time, charges were established for consultation services. This was necessary because the Department could not afford to maintain a consultation service unless it became self-supporting, and it has become self-supporting in the past three years.

Finally, a questionnaire regarding frozen section services was sent to almost all academic institutions of comparable size and activities to ours. This has generated unusual interest at the national level by leaders in surgical pathology. Data is still being generated and a summary will be available within the next year. It appears that the frozen section service in this Department is comparable to virtually any other in the country.

All in all, it can be said that Surgical Pathology at The University of Michigan is one of the most effectively functioning and diagnostically sophisticated activities of its kind in the United States and Canada and is ready to continue in this role as it moves into the Replacement Hospital in January, 1986.



Henry D. Appelman, M.D.
Acting Director
Anatomic Pathology

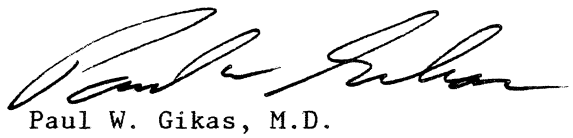
NECROPSY SERVICE

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

During the past year 328 necropsies were performed compared to 326 necropsies during the previous year. Sixty eight (20%) were performed as Medical Examiner cases. This is the same percentage of Medical Examiner cases as last year. Eighteen Departmental staff members served as attending staff for the Necropsy Service during the past year, either as a regular duty assignment and/or an on-call assignment. Following the death of Mr. Jonas Crudup, the senior member of the autopsy technician staff, the service is now staffed by two full-time technicians.

In addition to the above mentioned necropsies performed in our Department, there are a significant number of necropsies performed on Teratology Unit cases and stillborn infants by Dr. Mason Barr of the Department of Pediatrics.

I am particularly pleased to report that during this past year the backlog of incomplete necropsies was eliminated.



Paul W. Gikas, M.D.
Director
Necropsy Service

ELECTRON MICROSCOPY SERVICE

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

During the twelve month period of July 1, 1984 - June 30, 1985 a total of 496 specimens were processed by the electron microscopy service. Of this total 273 cases were clinical biopsies with the majority of these being renal biopsies. The remaining clinical specimens were almost entirely tumors.

The remaining 223 specimens processed were for research studies. The nature of the research projects varied widely. Some examples included evaluation of neutrophil function including the degree of phagocytosis of bacteria, the ultrastructural study of endothelial cell injury, repair to the patellor tendon, as well as the ultrastructural characterization of many types of experimentally induced neoplasms. However, most of the research projects have centered on the morphology of experimental lung and renal injury. For many of these projects, besides using traditional transmission electron microscopy, morphometric evaluation was also performed. This is accomplished by the use of two computerized analytical systems. When analysis of experimental granulomas was done, the size (diameter) of the granulomas was assessed by the use of an electronic wand attached to an Omicron Alpha Analyzer. Another type of analysis routinely carried out was that of particle counting as well as measuring the length and area of a particular tissue component in question such as the percentage of damaged endothelial cells in the section. These precise studies use ultrastructural prints quantitatively assessed by the use of a Zeiss Videoplan attached to a computer. By the use of these techniques it has been possible, in a systematic fashion, to assess the exact cell type involved in the injury and the efficiency of various therapeutic interventions in preventing this injury.

The electron microscopy service will continue to work closely with all the investigators to ensure prompt morphologic interpretation of their studies. During the coming year efforts will also be made to apply the techniques of morphometry to the analysis of clinical biopsies, particularly renal biopsies.

Kent J. Johnson, M.D.
Director
Electron Microscopy Service

NEUROPATHOLOGY SERVICE

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

The laboratory of Neuropathology continues to have three interrelated functions: Laboratory diagnostic service, teaching, and research in experimental animal work and human disease.

Full time faculty continuing this year were Constance J. D'Amato, B.S., Assistant Professor, and Paul E. McKeever, M.D., Ph.D., Associate Professor. Dr. Samuel P. Hicks was unable to continue his active status due to illness. Dr. Katerina Dorovini-Zis was on the faculty through 1984. Dr. Mila Blaivas will join the Department of Pathology in July, 1985, and spend 40% of her time in Neuropathology teaching and service programs.

I. Clinical Activities:

Clinical services are the examination and diagnosis of disease conditions, and their correlation with the clinical findings, in nervous system tissues, muscle, and other tissues and body components.

1. Over 350 Neurosurgical cases were examined this year from Main, Mott and outside hospitals in consultation. The increase in cases is due in part to new and returning Neurosurgery staff and in part to consultations from clinical colleagues and the Brain Tumor Study Group.
2. Two hundred and sixty-six brains were examined from this Medical Center, and three from other institutions and hospitals.
3. Nerve and muscle pathology service has increased over the year. There were 12 muscle biopsies, ten with histochemistry, one with electron microscopy, two peripheral nerve biopsies and three outside consultations in the last month. This represented more than a two-fold monthly increase over 1984 and will mean over 100 cases per year if the service continues at this level. Nerve teasing and morphometry will be offered.
4. Ultrastructural neuropathology examined, interpreted and reported 53 cases in semi-thin section and electron micrographs of 44 cases.

II. Teaching Activities:

1. Medical students. This year the faculty taught the regular Neuropathology sequence to our medical students (20 hr) in the Neural and Behavioral Sciences 600 curriculum. NBS Neuropathology consists of microscopic sections, handouts, posters, lectures and laboratories for all 215 second year medical students.
2. House officers, graduate students, postgraduate and other students, and faculty. All of the Service Activities are integrated appropriately into teaching. Specific exercises include twice monthly conferences where all biopsies are presented and interpreted; a weekly brain cutting conference; monthly muscle biopsy conference; individual instruction on autopsies and biopsy material; Neuropathology 858, a 16-18 hour laboratory-lecture course; and informal elective periods for

house officers and others. Continuing Medical Education accreditation has been received for the biopsy conference.

3. Strong clinical interest for a combined clinical-pathology brain conference has encouraged a new Brain CPC with Pathology, Neurology, Neuroradiology and Neurosurgery House Officer and Staff participation during the past year.

III. Research Activities:

1. The research of Dr. Hicks and Ms. D'Amato (see their respective personal reports for details) concerns 1.) the study of the basal lamina and the study of oxygen free radicals produced in phagocytes in the rat fetus cephalic neural tube and their relation to malformation and recovery of the fetus in genetic and radiation induced injury. 2.) A collaborative biochemical study of the autopsy brains of patients with Alzheimer's disease and other dementias with Drs. Anne Young and John Penney, in which Dr. Hicks and Ms. D'Amato examine the brains morphologically.
2. Dr. McKeever is interested in determining the extent and cause of differences in antigens in brain tumor tissue versus cells in culture. These differences may result from a separate population of cells within brain tumors or from instability of antigen expression by neoplastic cells.
3. The Brain Tumor Study Group, faculty and staff with clinical research interests in brain tumors, was formed this year through the collaboration of Neurosurgery, Nuclear Medicine, Neuropathology, Neurology and Neuroradiology.

Paul E. McKeever, M.D., Ph.D.
Director
Neuropathology Service

CLINICAL PATHOLOGY LABORATORIES

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

The reports of the Clinical Pathology Laboratories are attached, and reflect continued enhancement of service provision for patients in University Hospitals. Moreover, the exemplary performance of the Laboratories is reflected by the national recognition achieved by members of their medical and technical staffs. Several activities of the Laboratories during the past year warrant emphasis.

The successful consolidation of all of the activities of the Pediatrics departmental laboratories into the Clinical Pathology Laboratories was achieved through outstanding interdepartmental cooperation. This merger of activities will result in maintenance and, in some instances improvement, of patient care, with conservation of personnel, space and equipment. This will result in considerable cost reduction for the institution. The Urine Catecholamine Laboratory of the Department of Surgery also was consolidated into the Chemical Pathology Laboratory.

The Clinical Laboratories were inspected by the College of American Pathologists and received the maximum two-year accreditation. Similarly, the Laboratories were accredited by the Inspection Program of the State of New York.

Testing for anti-HTLV-III was initiated through the Ligand Assay Laboratory. Because of the uniquely sensitive nature of the results of this test, implementation required cooperation between several laboratories of the Department of Pathology and the Infectious Disease Section of the Department of Internal Medicine.

Considerable efforts have been expended to prepare for activation of the RHP. These efforts, naturally, will accelerate during the second half of 1985, culminating in relocation.

Finally, the educational activities of the Laboratories were augmented by the Visiting Professorship of Dr. Diane Arthur, a national leader in cytogenetic diagnosis, from the Department of Pathology of the University of Minnesota. In addition, Clinical Pathology faculty initiated a series of presentations for the M-2 class.

Harold A. Oberman, M.D.
Director
Clinical Pathology Laboratories

UNIVERSITY HOSPITALS BLOOD BANK

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

PATIENT CARE

The Blood Bank focused its attention on cost containment. It was found that elimination of the pretransfusion Direct Antiglobulin Test could be safely accomplished without compromising patient safety. This study, published during the year, has received nationwide attention and undoubtedly will lead to similar action in other hospital Blood Banks. Similarly, the Blood Bank is evaluating elimination of the antiglobulin phase of the major crossmatch. This would result in cost savings, primarily in terms of reagents. The provision of partial units of blood in syringes for patients in Mott/Holden was expanded after its inception during the previous year. Finally, the popularity of the Outpatient Transfusion Program continued to increase. This provides patients with the opportunity to receive transfusions of blood and components without the need for hospitalization.

A major effort of the Blood Bank staff related to preparation for the liver homotransplantation program. Members of the staff visited the program at the University of Pittsburgh, and protocols were designed for support of the planned program at this Hospital. The staff also actively participated in development of Admission Day Surgery program.

Finally, considerable effort was devoted to planning for the move of the Blood Bank to the RHP. Because of the intimate relationship between provision of blood and components to care of the acutely ill patient, it is likely that the Blood Bank will be one of the last laboratories to move into the RHP, in relation to the move of in-patients and Operating Rooms.

TEACHING ACTIVITIES: (University of Michigan)

A variety of lectures were provided to departments and services in University Hospitals. The annual course for House Officers in Pathology and Hematology/Oncology was provided in July, and the in-house educational program for nurses throughout the Hospitals, consisting of monthly and bi-monthly lectures, was continued. The 12th Annual Postgraduate Course, "Current Topics in Blood Banking", was held on June 5-7, 1985. Approximately 250 medical technologists and physicians throughout the United States attended this program. Suzanne Butch, Chief Technologist of the laboratory, was Program Director, and seven technologists and faculty members of the Department of Pathology participated as course faculty.

PROFESSIONAL ACTIVITIES:

Blood Bank technologists are represented on several University Hospitals committees, as well as on a variety of regional and national organizational committees. These are summarized in the attached Appendix. Four technologists inspected other hospital blood banks for the Inspection and Accreditation Program of the American Association of Blood Banks. Mr. Salisbury, supervisory

technologist, served as Chairman of the Medlab Blood User's group, and Ms. Butch, Chief Technologist, and Mr. Judd, Associate Professor, were widely sought as speakers by blood bank groups across the country.

RESEARCH ACTIVITIES AND PUBLICATIONS:

Members of the faculty and staff presented papers at state, regional and national meetings as indicated in their individual reports and in the attached Appendix. In addition, members of the staff participated in applied research related to computer applications in the Blood Bank, especially involving usefulness of the routine Direct Antiglobulin Test in pretransfusion testing and the usefulness of the antiglobulin phase of the (major) crossmatch.

PUBLICATIONS:

(See individual reports of Barbara A. Barnes, MT(ASCP)SBB, W. John Judd, F.I.M.L.S. MIBiol., Bruce A. Friedman, M.D. and Harold A. Oberman, M.D.)

1. Butch, S.H.: Blood inventory management. Lab. Med., January, 1985

Harold A. Oberman, M.D.
Director
Blood Bank

APPENDIX

INDIVIDUAL REPORTS

DALLAS FORSHEW, R.N.:

1. Board of Trustees, Society of Hemapheresis Specialists.
2. In-house Educational Programs for the Department of Nursing, including bi-monthly lectures to all newly-hired nurses in University Hospitals, participation in mandatory nursing educational update program and provision of annual lecture to senior nursing students.
3. Other invited lectures:
   a. "Transfusion procedures". Am. Soc. Med. Tech. Regional Meeting, Dearborn, MI. September 28, 1984.
   b. "Vascular access in therapeutic apheresis". Soc. Hemapher. Spec. Toronto, Canada. March 22, 1985.
   c. "Update on blood products". Medical Nursing Update. U-M Post-graduate Course. Ann Arbor, MI. April 19, 1985.

DEBORAH WILLIAMS:

1. Co-Chairman, Michigan Association of Blood Banks Annual Workshop Committee.

RON SALISBURY:

1. Chairman, Medlab Blood Bank User's Group.
2. Liver homotransplantation committee.
3. Invited lectures:
   a. "Computers in the blood bank". Am. Soc. Med. Tech. Regional Meeting. Dearborn, MI. September 27, 1984.
   b. "Computers in the blood bank". Int. Soc. Clin. Lab. Tech. Ann Arbor, MI.. May 10, 1985.

E. ANN STEINER:

1. Inspector for AABB I&A Program.
2. Invited lectures:
   a. "Resolution of antibody problems in the blood bank". Am. Soc. Med. Tech. Dearborn, MI. September 28, 1984.
   b. "Resolution of antibody problems". Mid-Michigan Med. Tech. Soc. Kalamazoo, MI. November 27, 1984.

JUDY DOUVILLE:

1. Inspector for AABB I&A Program.

LOUANN TRUDEAU:

1. Editor, Michigan Association of Blood Banks Newsletter.

SUZANNE BUTCH:

1. University Hospital Committees:
   a. Transfusion committee.
   b. Quality assurance committee.
   c. Disaster committee.
2. American Association of Blood Banks Committees:
   a. Committee on pediatric hemotherapy.
   b. Scientific/technical workshops committee.
   c. Ad hoc committee on teleconferencing.
   d. Inspector for I&A program.
   e. Co-Chairman, chief technologists forum.
3. American Society for Medical Technology:
   a. Trustee, ASMT education and research fund.
   b. Delegate and elections committee member.
4. Michigan society for medical technology:
   a. Annual meeting planning committee.
   b. Newsletter editor.
   c. Regional meeting planning committee.
   d. Student bowl judge.
   e. Handbook chairman.
5. Clinical laboratory educational consortium, board member.
6. Board of directors, Planned Parenthood of Michigan and member, Medical advisory committee.
7. Invited lectures:
   a. "Computers as a management tool". Clin. Lab. Educ. Cons. Hillsdale, MI. September 11, 1984.
   b. "Hemotherapy of the infant and premature". Annual Meeting, American Association of Blood Banks. San Antonio, TX. October 20-21, 1984.
   c. "Preparation and effective use of visual aids". Southeastern Michigan Red Cross. Detroit, MI. December 12, 1984.
   d. "Neonatal and pediatric transfusions". Gulf Coast Blood Center. Houston, TX. December 15, 1984.
   e. "Transfusion techniques" and "Containing costs within the blood bank". Milwaukee Association of Blood Banks. Milwaukee, WI. March 22, 1985.
   f. "Nobody likes change". Laboratory Professionals of Michigan. Lansing, MI. April 25, 1985.
   g. "Containing costs in the blood bank". Minnesota Association of Blood Banks. Rochester, MN. May 3, 1985.
   h. "Re-designing the work flow". Am. Soc. Med. Tech. Orlando, FL. June 11, 1985.
   i. "Transfusion techniques". 12th Annual Course, "Current Concepts in Blood Banking". Ann Arbor, MI. June 7, 1985.

CELL IDENTIFICATION CENTER

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

A wide variety of research projects are in effect in the Flow Cytometry Laboratory ranging from neuron cell sorting to development of special flow cytometric assays for immune cell function. The experiments are conducted by staff members of the Laboratory in collaboration with faculty, residents, students, and fellows in Pathology, Anatomy and Cell Biology, Dermatology, Human Genetics, Internal Medicine (Divisions of Allergy, Cardiology, Hematology and Oncology, Rheumatology, and Nephrology), Microbiology and Immunology, Otolaryngology, Surgery, and Pediatrics; the Dental School; the College of Pharmacy; and the Ann Arbor Veterans Administration Medical Center. In addition, the laboratory is pursuing collaborative ventures with several industrial partners including: The Coulter Corporation, General Motors Corporation, the Pfizer Company, the Procter and Gamble Company, and the Warner Lambert/Parke Davis Company.

The staff of the Cell Identification Center is engaged in a series of studies concerning research and development for clinical applications and immunotoxicity assessment using automated cytology (flow cytometry and image analysis) including: Cell surface marker analysis, cytoplasmic immunoglobulin analysis, immune cell function, cell surface receptor analysis, cell cycle analysis, cell membrance electronic potential analysis, neoplastic screening and diagnosis (immune system, breast, cervical, bladder, neural, colon, and head and neck tissues), calibration aids and flow cytometric standards, prototype instrumentation development, instrumentation computer networking, and software development for cytometry data analysis and cytometry database systems.

Several improvements in the physical capacity of the Flow Cytometry Laboratory were instituted during the past year, these include: An EPICS 541 multiparameter cell sorter/flow cytometer; a Coulter E.A.SY 88 data analysis system; new operating systems and data analysis software revisions; and an EPINET/ETHERNET communications system linking the flow cytometers and the E.A.SY computer system. We will shortly receive a new EPICS 753 dye laser cell sorter/flow cytpometer system (which will allow three color multiparameter cytometric studies) and another E.A.SY computer. Eventually, all flow cytometers and analytic microcomputers will be linked to a VAX minicomputer (via ETHERNET). This will enable the development of new analysis and database software.

The cell Identification Center has hosted and provided consultation services to a number of medical centers either operating or attempting to establish flow cytometry laboratories. These include:

1. Barnes Hospital, St. Louis, Missouri.
2. University of Arkansas for Medical Sciences, Little Rock, Arkansas.
3. Brooks Army Hospital, San Antonio, Texas.
4. University of South Carolina, Charleston, S. Carolina

5. West Virginia University, Morgantown, West Virginia.
6. St. Jude's Hospital, Memphis, Tennessee.
7. Baylor University, Houston, Texas.
8. Tulane University, New Orleans, Louisana.
9. Medical College of Georgia, Augusta, Georgia.
10. Dana Farber Cancer Center, Boston, Massachusetts.
11. University of Washington, Seattle, Washington.
12. Victoria Hospital, London, Ontario.
13. George Washington University, Washington, D.C.
14. University of California at San Francisco, California.
15. Toronto Hospital, Toronto, Ontario.
16. Medical College of Wisconsin, Milwaukee, Wisconsin.
17. Northwestern University, Chicago, Illinois.
18. University of Indiana Medical School, Indianapolis, Indiana.
19. St. Vincent's Hospital, Sydney, Australia.
20. Creighton University/St. Joseph's Hospital, Omaha, Nebraska.
21. St. Paul's Hospital, Vancouver, British Columbia.

SPONSORED SUPPORT:

1. Cytometry Research and Development Project, EPICS Division, Coulter Corporation and Department of Pathology, University of Michigan, (J.L. Hudson, Ph.D., Principal Investigator, P.A. Ward, M.D. Co-Investigator), 1 July 1984 - Present.
2. Immune Responses in Head and Neck Cancer Patients, Veterans Administration Hospital, Ann Arbor, Michigan, (G.T. Wolf, M.D. Principal Investigator, J.L. Hudson, Ph.D., Consultant), 1 July 1984 - Present.
3. Automated Cytology Methods Development for Mutagenicity Testing, The Procter and Gamble Company, Research Gift Grant, (J.L. Hudson, Ph.D. and R.W. Wolber, M.D. Co-Investigators), 1 July 1984 - Present.
4. Nutritional Support in Postoperative and Posttraumatic Recovery, Departments of Surgery and Pathology, (R.H. Bartlett, M.D., T. Kresowik, M.D., and J.L. Hudson, Ph.D. Co-Investigators), 1 July 1984 - Present.
5. Flow Cytometric Immunotoxicology Profile Development in Rodents, Research Gift Grant, Biomedical Science Division, G.M. Research Laboratories, General Motors Corporation, J.L. Hudson, Ph.D. and P.A. Ward, Co-Investigators).
6. Lymphocyte Migration and the Metastatic Process, American Cancer Society and the National Cancer Institute, (L.M. Stoolman, M.D., Principal Investigator), 1 July 1984 - Present.
7. Cellular Effects of Tricyclic Nucleosides, National Cancer Institute and the American Cancer Society, (L.L. Wotring, Ph.D., Principal Investigator, J.L. Hudson, Ph.D., Consultant), 1 July 1984 - Present.
8. Automated Image Analysis Development Project, Coulter Corporation and the Department of Pathology, University of Michigan, (J.L. Hudson, Ph.D. Principal Investigator), 1 July 1984 - Present.
9. Clinical Studies on Anti-T12 Therapy in Renal Transplant Patients, Immunology Division, Coulter Corporation, (L. Rochet, M.D., Principal Investigator; L.M. Stoolman, M.D., R.E. Duque, M.D., J.P. McCoy, Ph.D., and J.L. Hudson, Ph.D., Consultants), 1 July 1984 - Present.

10. Interferon Therapy in Burn Patients, Ortho Pharmaceutical Company, (I. Feller, M.D., Principal Investigator; G.O. Till, M.D., L.M. Stoolman, M.D., R.E. Duque, M.D., and J.L. Hudson, Ph.D., Consultants), 1 July 1984 - Present.
11. Flow Cytometric Analysis in Cancer Cell Detection, Biomedical Research Support Grant, University of Michigan Medical School, (A. Flint, M.D., Principal Investigator; J.L. Hudson, Ph.D., Consultant), 1 July 1984 - Present.
12. DNA Ploidy in Basal Cell Carcinoma, University of Michigan Cancer Research Institute, (J.P. McCoy, Ph.D., Principal Investigator; N.A. Swanson, M.D., A. Flint, M.D., R. Grekin, M.D., and J.T. Headington, M.D., Co-Investigators), 1 May 1985 - Present.
13. Interactions Between Periodontiopathic Bacteria and Neutrophils, Dental Research Institute, University of Michigan School of Dentistry, (Investigators: Walter Loesch, D.D.S. and Ricardo E. Duque, M.D.).
14. Functional Kinetics of Circulating Neutrophils from Arterial Coronary Sinus Blood in Myocardial Ischemia, University of Michigan Medical School, Departments of Internal Medicine (Division of Cardiology) and Pathology, (Investigators: Michael Shea, M.D. and Ricardo E. Duque, M.D.).

ARTICLES SUBMITTED FOR PUBLICATION:

1. Richardson, B.C., Kahn, L.E., Lovett, III, E.J., and Hudson, J.L.: DNA Methlyation and T Cell Maturation. II. Effect of 5-Azacytidine of T Cell Phenotype. (Submitted to J. Immunology).
2. Bartlett, R.J., Dechert, R.E., Kresowik, T., Ward, P.A., and Hudson, J.L.: Nutritional Support in Postoperative and Posttraumatic Recovery. (Submitted to Surgery).
3. Pierson, C.L., Kahn, L.E., and Lovett, III, E.J.: The Risk of Environmental Contamination During Flow Cytometric Analysis of Contaminated Specimens. (Submitter to Cytometry).
4. McCoy, J.P., Shibuya, N., riedy, M.C., and Goldstein, I.J.: Griffonia simplicifolia I Isolectin as a Functionally Monovalent Probe for Use in Flow Cytometry. (Submitted to Cytometry).
5. Stoolman, L.M., Ydnoch, T.A., Burotn, M., and Rosen, S.D.: Human Lymphoid Cells Express a Membrane Lectin which is Functionally Equivalent to an Adhesive Molecule Implicated in the Recirculation of Rodent Lymphoid Cells. (Submitted to J. Cell Biology).
6. Stoolman, L.M. and Frazein, A.: The Molecular Basis of Lymphocyte Recirculation: Laminin Selctively Enhances the Migratory Activity of Recirculation Rodent Lymphoid Cells. (Submitted to J. Cell Biology).
7. Dafoe, D.C., Stoolman, L.M., Campbell, D.A., Lorber, M.I., and Lovett, III, E.J.: T-Lymphocyte Subset Patterns in Renal Transplant recipients with CMV Disease and Acute Rejection. (Submitted to Transplantation).
8. Greenwood, J.H. and Schultz, J.S.: Genetic Control of Differential Effects of Nitrous Oxide on Lectin Stimulated Lymphocyte Proliferative Responses in InBred Rat Strains. (Submitted to Cellular Immunology).

9. Duque, R.E., Robinson, J.P., Hudson, J.L., Till, G.O., and Ward, P.A.: Differences in Oxidative Metabolism between Blood and Peritoneal Rat Neutrophils Established by Flow Cytometry. Amer. J. Pathology, (Submitted to Journal of Leukocyte Biology).

J.L. Hudson, Ph.D.
R.E. Duque, M.D.
J.P. McCoy, Ph.D.
L.M. Stoolman, Ph.D.
Directors
Cell Identification Center

CLINICAL BIOCHEMISTRY SECTION

DEPARTMENT OF PATHOLOGY
ANNUAL DEPARTMENTAL REPORT
1 JULY 1984 - 30 JUNE 1985

General Chemistry Laboratory--Donald Giacherio, Ph.D., Laboratory Director.

During the past year, there has been a considerable savings of commodities (over $100,000), and a personnel reduction of 1.5 FTE plus 40 hours/week of temporary personnel. These were achieved largely by closing the redundant STAT laboratory and incorporating all functions into the main General Chemistry laboratory. These changes were implemented with no increase of turn-around time for specimens and in cooperation with the clinical staff.

New equipment was acquired during the past year with the goal of achieving more efficient laboratory operation and providing for a further reduction in the commodities budget for the upcoming year. Two RA 1000's were purchased to upgrade the SMACs to an SRA 2000 configuration. This provides for faster, more economical processing of repeats on the SMAC and reduces the down time for problems with a single channel. Further, the nephelometric capabilities of this instrument will allow it to entirely replace the Beckman Nephelometer used in the Clinical Immunology laboratory (see below). Two Beckman Astra IDEAL systems were purchased to allow us to perform assays on small sample volumes (such as those received from Pediatrics) and to decrease by as much as five-fold reagent costs from those formerly used on the DuPont ACA.

The General Chemistry laboratory has also implemented off-hour STAT coverage for Theophylline, dilantin, and digoxin which will reduce both the turn-around time and helps to eliminate wasteful on-call time by both the Ligand Assay laboratory and the Special Chemistry/Toxicology laboratories (see below).

While significantly decreasing our costs, the efficiencies built into the laboratory allowed us to expand our workload from outside sources and we became a reference laboratory for the College of American Pathologists Clinical Chemistry Standards program. This makes us one of only four such reference laboratories in the country.

Special Chemistry/Toxicology Laboratory--Thomas Annesley, Ph.D., Laboratory Director.

In October, 1984, the services of the Drug Analysis and Toxicology Laboratory were transferred from the Pharmacy Department to the Department of Pathology. Since that time, several significant changes have occurred.

Following the acquisition of an IBM computer, all laboratory procedures have been rewritten, reformatted, and stored on computer disks. Softward programs have been written that are being used to record workload and specimen volumes. Quality control has been modified to a graphing format that allows for rapid inspection and troubleshooting when necessary.

Following these changes, this laboratory has passed three major inspections: Internal University of Michigan Medical Center inspection, College of American Pathologists, and the New York State Laboratory inspections.

The workload of this laboratory is increasing at the fastest rate for any clinical laboratory. Compared to the previous year, the test volume has increased over 50%. The labor-intensive Cyclosporine assay alone has increased from the 115/month (when initiated) to over 330/month currently. To handle this volume, with needs for new assay development, this laboratory is cooperating with the Ligand Assay Laboratory in the development of an RIA for Cyclosporine (see below).

Lastly, the laboratory has had a significant increment in the reference work performed. During the past year, approximately 2400 tests have been performed on a reference bases. This number will likely double in the coming year.

Ligand Assay Laboratory--Barry England, Ph.D., Laboratory Director.

Cost savings have been achieved in this laboratory largely through continued efficient use of reagents and by eliminating the on-call personnel expenses (see above).

A number of new assays have been instituted during the past year including: Parathormone, N-terminal, Parathormone, mid-molecule, and HTLV-III. Further, there has been a significant increase in the volume of assays for: Thyroid stimulating hormone, amikacin, cortisol, folic acid, and vitamin B12. In addition, as with other laboratories, the Ligand Assay Laboratory has functioned as a major resource for the Ann Arbor Veterans Administration Hospital and for MDS clinical laboratories.

Plans for the coming year include the evaluation of a semiautomated RIA instrument which will increase the availability of ligand assay procedures while decreasing the technical skill required for their performance and developing a RIA for cyclosporine to increase the efficiency by which this test is performed and to increase its availability for our transplant patients.

Clinical Immunology Laboratory--David F. Keren, M.D., Laboratory Director.

By changing from a cellulose acetate electrophoresis method to high resolution agarose, this laboratory has increased its diagnostic capabilities while decreasing its overall operating costs. The greater information available from the high resolution electrophoresis techniques allows us to cancel unnecessary immunofixation analysis.

In addition, the laboratory ahs developed the ability to assay for Kappa and Lambda chains in the serum which will allow us to diagnose monoclonal gammopathies in most patients within one day rather that the 2-3 days previously needed. This will help to decrease hospital stay and has been accomplished while we have decreased the cost of performing this assay (compared to the previous immunoelectrophoresis).

Further efficiency has been achieved by using commercial sources for the substrates for our autoantibody testing. New commercial sources provide excellent reagents which save both technologist time and animal expense.

Lastly, we are in the process of developing all our nephelometric assays for the RA-1000. This will allow us to eliminate our Beckman Nephelometer contract while incurring no additional instrument cost (the RA-1000 is available in our General Chemistry Laboratory). Due to its convenient location in the replacement hospital, we will be able to use it for these assays.

Overall Summary:

The incorporation of the General Chemistry, Special Chemistry/Toxicology, Ligand Assay and Clinical Immunology Laboratories into a common Section of Biochemistry has resulted in a productive interaction between these laboratories. They have complementary techniques and by reviewing common interests and projects on a weekly basis, we have been able to improve efficiencies in all laboratories while enhancing our developmental programs to meet the expanding diagnostic needs of the institution.

David F. Keren, M.D.
Director
Clinical Biochemistry Section

CLINICAL HEMATOLOGY LABORATORY

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

LABORATORY ACTIVITIES:

1. For the 10 month period ending 30 March 1985, the Laboratory handled a total of 278,338 specimens (a 6.9% increase over the previous year) without incrementing either the number of employees or commodity expenditures. As a result, productivity for the period increased approximately 16% relative to FY 84/85.

2. The most spectacular accomplishment of the Laboratory is its consolidation with the Pediatric Hematology Laboratory under the management of the Department of Pathology. The Pediatric Laboratory analyzed 32,301 specimens in FY 83/84, operated a STAT outpatient laboratory 5 days per week, procured all hematology specimens for both Inpatient and Outpatient Pediatric Services and performed a variety of specialized hematology procedures, including bone marrow examinations, cytochemical staining procedures, bleeding times and osmotic fragilities. Thus, consolidation of hematology services involved both absorbing an increased load of familiar procedures and the implementation of new methodologies. Furthermore, neither turn-around time nor the spectrum of tests offered would be allowed to deteriorate. Through the joint efforts of Main Hematology, the Phlebotomy Service and the Laboratory Data Center, this goal has been realized. We project a net reduction of approximately 13% ($170,000/year) over the combined expenses of the Main and Pediatric laboratories if operated independently.

3. The second major organizational effort has been the final stages of planning for the move to the replacement hospital. The assimilation of pediatric hematology services involved increases in both personnel and equipment which needed to be factored in to the plans. Finally, sign-out and teaching facilities have been added to the Laboratory as part of a plan to create a section of Hematopathology within the Pathology Department.

4. Additional tests and technical changes made in the Laboratory include:

    a. Cytochemistry. Leukocyte alkaline phosphatase stain was implemented for MDS peripheral blood smears along with Sudan black B, chloroacetate esterase, nonspecific esterase and acid phosphatase.
    b. Urinalysis. The routine use of Chemstrip 9 has been instituted, resulting in a decrease in microscopic examination of urine sediment by 35 per cent.

TEACHING ACTIVITIES:

1. Pathology House Officers participated in the following activities:
    a. Daily review of abnormal blood smears, body fluids, bone marrow aspirates, bone marrow biopsies, and lymph node biopsies.
    b. Review of consultation cases in hematopathology (lymph node biopsies, bone marrow biopsies, fine-needle-aspirates and splenectomy specimens).

c. Correlation of morphology with special studies (cytochemistry, flow cytometry, immunoperoxidase and electron microscopy).
d. Daily review of cases submitted to the Flow Cytometry Laboratory (hematopathology, transplant immunology, and the evaluation of primary and secondary immune deficiencies).

2. Medical technology students participated in all laboratory activities during 6-week rotations in their internship year.

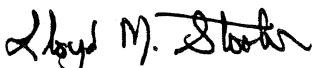
RESEARCH:

1. Ongoing studies examining the diagnostic utlity of flow cytometry in the evaluation of suspected leukemias and lymphomas.
2. Evaluation of the automated, 3-part differential as a substitute for manual differentials in a tertiary-care hospital.

FY 85/86 GOALS:

1. Creation of a Hematopathology Section within the Department of Pathology in an effort to improve the teaching experience for house-staff and to improve the coordination of diagnostic activities between Pathology and the Clinical Hematology//Oncology Services.
2. Accomplish the move to the Replacement Hospital.
3. Enhance services provided to the Ambulatory Care Facility in an effort to minimize delays due to specimen handling, turn-around time in the laboratory and the delivery of results to the clinics.

Bertram Schnitzer, M.D.



Lloyd M. Stoolman, M.D.
Directors
Clinical Hematology Laboratory

CLINICAL MICROBIOLOGY LABORATORY

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

LABORATORY ACTIVITIES:

Work volume continued to increase over the previous year (approximately 4.0%) to a total volume of approximately 92,897 tests. Marked volume increases were noted for anaerobes, chlamydia, routine "pyogen" cultures, mycoplasma respiratory cultures and urine cultures. Also noted were decreased specimens for cryptococcal screening, rubella screening and fungal immunodiffusion.

The laboratory also instituted the MDS reference laboratory program with a panel of 26 tests offered. In concert with the MDS reference laboratory program the laboratory successfully completed the College of American Pathologists and New York State inspections.

After two months of effort involving the entire laboratory staff the pediatric laboratory consolidation was completed having solved the following problems: new test acquisition, work flow, computer modifications, new positions, media inventory merger, outpatient report, billing, and requisition merger as well as sensitivity testing merger. During all of the aforementioned endeavors the laboratory procedure manuals were upgraded to a new computerized system.

Other computer activities and accomplishments in the laboratory included: 1) computerized billing; 2) blood culture data management interfaced with the Medlab system. (Statistics from the interface were used to eliminate the anaerobe "resin bottle" thus saving the hospital budget $54,000/yr); 3) statistics program developed on DEC equipment for CAP workload recording; 4) pathology laboratory inventory program developed; 5) chief technologist chaired Medlab Users Microbiology Committee.

REPLACEMENT HOSPITAL ACTIVITIES:

Involved were: 1) capital equipment bid pack specifications established and ultimately reviewed; 2) computer requirements established; 3) telephone proposal established; 4) casework and office furniture requirements established.

RESEARCH AND DEVELOPMENTAL ACTIVITIES:

Numerous new test kits and methodologies including rapid urine screening, organism identification and direct detection of microbial antigens have been evaluated by comparative trials resulting in the implementation of several new procedures in the clinical laboratory. Many of these new methods are rapid (same day) tests resulting in decreased specimen turn-around time and cost. Rapid methodologies established included:

1) Chlamydia FA - 2 hours vs. 48 hours for positives
2) "Rapid E." - 5 hours vs. 24 hours for enteric G-Rods
3) Urine Screen - 30 min. vs. 24 hours for negatives
4) Beta Strep Ag - 1 hour vs. 24 hours for strep screens
5) "RubaScan" Screen - 15 min. vs. 2 hours for rubella screen
6) "AnaIdent" - 4 hours vs. 48 hours for some anaerobic bacteria

Basic and applied research activities involving the participation of investigators from several medical services and institutions continue to have their focus in clinical microbiology. The efficacy of new antimicrobics, development of flap models, and the application of flow cytometry can be cited as examples. These investigations have resulted in the publication of six journal articles and four abstracts during the fiscal year. The investigative focus for the coming year will be on the development and testing of non-culture or limited culture methods to rapidly detect the presence and quantity of pathogenic microorganisms directly from patient specimens using latex agglutination, gas-liquid chromatography, ELISA and DNA probes.

CONTINUING MEDICAL EDUCATION:

MEETINGS AND WORKSHOPS ATTENDED:

1. Advances in Anaerobe Lab workshop - J. Polomski, July, 1984
2. Regional Medlab Users Group - P. Shalis, R. Kloosterman, July, 1984.
3. Fall SCACM - S. Salo, September, 1984.
4. Chlamydia Direct FA - E. Lee, September, 1984.
5. Clinical Lab Managers Association, September, 1984
6. National Medlab Users Group - P. Shalis, January, 1985.
7. National ASM - P. Shalis, S. Boone, R. Kloosterman, W. Hubbard, J. Polomski, March, 1985.
8. Flow Cytometry Workshop -R. Kloosterman, March, 1985 ASM.

WORKSHOPS PRESENTED:

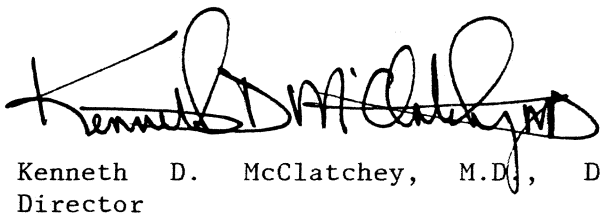
LOCAL AND NATIONAL:

1. "Computers in Clinical Microbiology" at the Towsley Center, P. Shalis and R. Kloosterman, June, 1985.
2. "Computers in Clinical Microbiology" at the national ASM meeting, P. Shalis, March, 1985.

PRESENTATIONS:

1. Hubbard, W.H., R.E. Kloosterman and C.L. Pierson. "Evaluation of the Monolight 2001, Bact-T-Screen, Chemstrip-9 and Gram-Stain for the Rapid Screening of Clinical Urine Specimens.." March, 1985, ASM.
2. Hubbard, W.H., "Rapid Urine Screening Techniques." May, 1985, Tri-County Clinical Microbiology Association.

3. Polomski, J.C., R. E. Kloosterman, K.D., McClatchey. "Comparison of the four hour AN-IDENT to the API 20A for the identification of anaerobic bacteria." March, 1985, ASM.
4. Shalis, P.J. "Creation of the Microbiology Position Statement and Description of Critical Issues." January, 1985, Medlab Users Group.
5. Shalis, P.J. "Critical Issues in Computerization." March, 1985, ASM.



Kenneth D. McClatchey, M.D., D.D.S.
Director
Clinical Microbiology Laboratory

FLOW CYTOMETRY FACILITY
CLINICAL SERVICE

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

The Diagnostic Service of the Clinical Flow Cytometry Laboratory consults and provides diagnostic services in the areas of hematopathology, organ-transplant immunology, the evaluation of immunologic deficiency and autoimmune disease. In an effort to assure the most effective application of this new technology, the medical staff supervise the selection and interpretation of all procedures. After correlation with pertinent clinical, laboratory and morphologic data, a formal report, containing specific measurements, interpretation and diagnosis, is prepared. Over the past year, the Medical Attendings on this service were Dr. Ricardo Duque (9 months) and Dr. Lloyd Stoolman (3 months). Assisting in this operation were Drs. J. Carey, A. Flint, and B. Schnitzer.

June 30, 1985 marked the end of the first full year that the Clinical Flow Cytometry Laboratory has operated as a hospital-based facility. This year has been a period of growth and change for the Laboratory. Several key personnel turnovers occurred, with Dr. Philip McCoy becoming laboratory director in October, 1984 and Mr. Jay Greenwood becoming laboratory supervisor in May, 1985. Both personnel transitions were accomplished in a smooth and orderly fashion, without loss of productivity or turnaround time.

Key to the successful first year was the ability of the laboratory to pass accreditation inspections by both the CAP and the New York State Health Department. In doing so, significant strides were made in quality assurance programs and continuing education records.

A potentially disastrous water leak totally destroyed one of the three flow cytometers. Clinical service, however, was not significantly affected and the damaged cytometer was replaced in relatively short order.

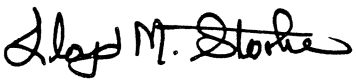
The number of clinical specimens increased significantly in the past year. The clinical load rose from 689 specimens for the year ending June 30, 1984 to 988 specimens for the year ending June 30, 1985, an increase of 43%. Of the 988 clinical specimens, 467 were transplant-related specimens, 401 were hematopathology specimens, and 120 were immunodeficiency or immune status specimens. Fee-for-service research, conducted by the staff of the flow cytometry laboratory, showed a similar increase, with the number of samples run increasing from 1096 in 1983-84 to 1497 in 1984-85; an increase of 36%.

In addition to the personal research of the faculty associated with the flow cytometry laboratory, flow cytometry lab staff were involved in numerous research projects designed to improve existing assays or to develop new assays for the clinical service. Dr. Ricardo Duque was instrumental in developing cytometer-based assays for antineutrophil antibodies and neutrophil function. Additionally, sufficient work has been done to now offer simultaneous two-color analyses for certain clinical applications, and a method for concomitantly measuring DNA and cell surface markers is being explored. Furthermore, a major clinical research project examining the effects of a monoclonal antibody in ameliorating

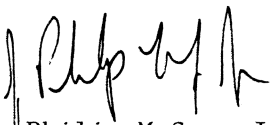
kidney transplant rejection is being conducted in conjunction with faculty members from Internal Medicine.

Finally, for the benefit of both faculty and staff, a series of noon seminars concerning various aspects of flow cytometry have been initiated and will continue throughout the academic year.

In summary, this past year has shown continued growth and development of the Flow Cytometry Laboratory. Clinical services and fee-for-service research demonstrated strong increases and allowed a balanced revenue flow. Continued growth is anticipated, particularly in the area of grant-sponsored research by Departmental Faculty.



Lloyd M. Stoolman, M.D.



J. Philip McCoy, Jr., Ph.D.
Directors,
Flow Cytometry Laboratory -
Clinical Service

LABORATORY DATA CENTER

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

During the past year, the staff of Pathology Data Systems has participated in the following projects:

A. Installation of "remote send" software and hardware for transmitting laboratory results generated within the Department to the Ann Arbor VAMC and to the MDS central laboratory.

B. Planning for the installation of a broadband cable and Local Area Network (LAN) in the RHP/ACF; this LAN will facilitate the move of the clinical laboratories to the new facility and also allow communication between clinicians and the laboratory database after the move.

C. Planning for the move of Medlab hardware and software to the RHP without major disruptions of data processing services to the clinical laboratories.

D. Planning and implementation of the separation of Central Distribution from LDC and its consolidation with Phlebotomy Services.

E. Incorporation of the Virology Laboratory and the MHRI Laboratory into the computerized laboratory information system.

F. Planning for the consolidation of the Pediatric Hematology, Microbiology, and Neurology clinical laboratories with the Central Laboratories including the enhancement of results reporting to remote pediatric stations.

G. Integration of the DEC and Medlab systems under the aegis of Pathology Data Systems with initial cross-training of computer operators.

H. Initiation of a detailed review of the quality and utility of all hardcopy reports generated by the Medlab system with frequent feedback to the various Chief Technologists about how to refine the Patient Cumulative Report.

I. Refinement of the system for assigning priority ratings to new applications and hardware requests submitted to Pathology Data Systems.

J. Initiation of a monthly PDS Forum consisting of personnel from the various clinical laboratories in which matters of common interest are discussed.

K. Planning and hosting the third annual symposium on clinical laboratory computers at the Towsley Center.

L. Initiation of a Microcomputer Steering Committee for the Department of Pathology to oversee all microcomputer applications for the Department.

M. Installation of the Plato-Pathlab system on the second level of the Main Hospital in LDC to allow clinicians to obtain plots of laboratory data across time. Adjacent to this terminal is a standard Medlab terminal so that physicians can also have access to the entire laboratory database in tabular form.

N. Planning for a hardward upgrade of the Medlab system with the installation of Powerpacks on Maize and Blue which will increase the efficiency of the CPU's by approximately 20% and also for an upgrade of the DEC system to a VAX785 which will allow PDS personnel to bring up the entire laboratory database on the DEC system.

O. Generation of a billing tape for the DEC system in order to implement MDS billing.
P. Implementation of workload recording for Clinical Microbiology.
Q. Design and implementation of PC terminal emulation software which will allow the use of microcomputers as Medlab workstations.

Bruce A. Friedman, M.D.
Director
Laboratory Data Center

PHLEBOTOMY SERVICE

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

Activities of the Phlebotomy Service for the academic year July 1984 - June 1985 consisted primarily of adding to the range of service offered to UMH inpatients and outpatients without any incremental personnel. Listed below is a list of new services offered during the year:

1. Added service for all pediatric patients ages 0-5 years except Hematology-Oncology patients in the Test Panel Blood Drawing Clinic; added service for newly admitted 6th level Mott Sports Medicine patients on Sunday afternoon (August 1984).
2. Added service for 4th level Women's Hospital adult patients for morning sweeps on weekends (October 1984).
3. Added service for all patients on the 4th and 5th levels of CPH on Tuesday and Thursday morning sweeps (February 1985).
4. Added service for newborn outpatients in the Test Panel Blood Drawing Clinic (June 1985).

Bruce A. Friedman, M.D.
Director
Phlebotomy Service

ADMINISTRATIVE/FINANCIAL AFFAIRS SECTION

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

The Administrative and Financial Affairs Section, which is under the auspices of the Office of the Chairman and his designee, includes four subsections which are organized as follows:

A. Administrative Support Center:
   1. Thomas D. Morrow
   2. Anita Liberman-Lampear
   3. Laura Blythe
   4. Nancy Coray

B. Grants and Contract Administration Office:
   1. Maria Ceo

C. Medical Service Plan, Billing Office and Fiscal Affairs:
   1. Douglas M. Kennedy
   2. Douglas Harris

D. Surgical Pathology, Clerical Support Staff:
   1. Edith M. Gilchrist-Brayton
   2. June Possley

MAJOR ACCOMPLISHMENTS

A. Implemented the Hospital/Pathology MSP agreement which required major administrative effort due to complex funding arrangements - September, 1984.

B. Provided assistance in the consolidation of several SLFL:
   1. Toxicology Laboratories, Department of Pharmacy, October, 1984;
   2. Pediatric Laboratory, Department of Pediatrics June, 1985;
   3. Urinary Catecholamine Laboratory, Department of Surgery, June, 1985.

C. Managed and coordinated the completion of the remodeling and renovation projects (Phase I) in the Pathology Building to accommodate the ever-growing Immunopathology Research Program. Laboratory space on the 3rd level (M-3240) and 4th level (M-4235 and M-4237) were completed. Completion of the A. James French Conference Room (M4242) occurred in September, 1984, with dedication ceremonies held in October, 1984.

D. Completed an agreement with MDS Laboratories, Inc. (Michigan) to provide them with service in the areas of Surgical Pathology, esoteric Clinical Pathology and physician/pathologist professional services - September, 1984. Gross revenue amounted to approximately $300,000 in FY 1985.

E. Completed an analysis to accommodate a budget/expense reduction program in the Pathology Laboratories amounting to $500,000 annually - March, 1985.

F. Developed the MLABS logo for the purpose of marketing our laboratory services to non-University of Michigan patients - March, 1985.

G. Developed a system using the IBM, PC and software provided by the LS&A School titled "SponRES" to monitor grant and contract expenditures - January, 1985. Coupled with this, we began to use the computerized ordering system offered by University Stores.

H. Coordinated the submission of 51 grant and contract applications to 12 different funding agencies.

I. Initiated the publication of the 3rd edition of the Pathology Laboratories Handbook (1984/1985) including those laboratories that are designed as Special Limited Function Laboratories - May, 1985.

J. Completed a major revision of all Laboratory Requisitions used in our Medical Center. The Unified Requisition System, initiated in July, 1983, was completed in November, 1984 and supplemented our efforts in automated billing which was completed in February, 1984.

K. AGH/RHP

1. Construction: Space for the Laboratory is near completion with a target move date of December, 1985.
2. Activation: Administrative staff have developed, with the assistance of the faculty and laboratory staff, a comprehensive plan to ensure a smooth transition from the "old" Hospital to the "new" Hospital.
3. Capital Equipment: all medical equipment has been ordered, non-medical equipment specifications are being developed.

L. Consolidated and unified the billing services of all Anatomic Pathology physician charges including consultation and other non-patient activities using the Medical School's IDS system - August, 1984.

M. Developed, through a major commitment of effort, the operational policies and procedures of the MSP Billing Office to maximize 3rd party and patient payments for all Anatomic Pathology services. This major effort increased cash collections by approximately 40% over targeted budget for fiscal year 1985.

N. Reorganized the Surgical Transcription Unit with reassignment of two clerical staff positions, and eliminating another position to meet the cost reduction program. This was accomplished due to the implementation of an automated Surgical Pathology reporting system (computer-generated) - January, 1985.

O. Continued to consolidate valuable medical files and records (autopsy protocols, CG, CH, CI, CJ years) and the numeric diagnostic card file for the fiscal years 1983-1984 (CI and CJ) through the use of microfilm - April/May, 1985.

SUMMARY OF FINANCIAL DATA

A. Medical Service Plan

Average Number of Accounts Fiscal Year 1985	5,576
Total Number of Charges	36,488

Gross Billings	$2,691,183[1]
Net Collections	$1,302,827[1]

B. Grants and Contracts

48 Active research, grant, contract and gift accounts

Direct Cost Expenditures	$1,658,362
Indirect Cost Expenditures	$ 665,135
TOTAL	$2,323,497

C. Pathology Laboratories

Number of Fee Code Procedures	2,118,001
Number of Laboratory Test Results (Estimated)	6,482,353
Gross Revenue	$36,280,075
Direct Expenses	$17,601,443

Details regarding the financial data are available in the Office of the Chairman.

Eugene J. Napolitan
Departmental Administrator

[1] Includes company (non-patient) accounts

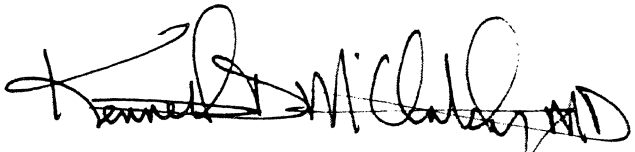
RESIDENCY TRAINING PROGRAM

THE DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
30 JUNE 1984 - 1 JULY 1985

The Residency Training Program, in the last year, recruited three excellent candidates. One resident was from the "match program"; one from an internal medicine training program; and one from a surgery training program. The total complement of residents stands at thirteen.

New teaching objectives added to the program include core lectures in anatomic and clinical pathology for junior residents as well as a revised schedule of grand round topics in anatomic and clinical pathology.

Further, the Department is instituting, in the coming year, fifth year programs in cytology, surgical pathology, immunology, hematology/immunology/flow cytometry, dermatology, and blood banking. Such programs will be established as fellowships for those individuals who have already satisfied the American Board of Pathology's fifth year requirement.



Kenneth D. McClatchey, M.D., D.D.S.
Director
Residency Training Program

MEDICAL TECHNOLOGY PROGRAM

DEPARTMENT OF PATHOLOGY
ANNUAL REPORT
1 JULY 1984 - 30 JUNE 1985

In April the Board of Regents voted to discontinue the program effective with the Class of 1987, primarily because of budgetary constraints. Vice-President Frye, the Executive Officers, and the Regents attested to the high quality of the program, its staff, and students but reiterated that cost constraints at both the Hospital and the University prevent continued financial support of the program.

Of major concern in the next two years is the possible loss of instructors and/or director leaving for other positions. The department and program need to develop a specific plan to ensure continued educational excellence for the last two classes.

A class of seventeen, most of whom completed the program on June 28, plans to take the national certification exam in August. Two students will complete their last clinical rotation in October and take the certification exam in February. All students are aware of the numerous forces operating on the health care system and the impact of those forces on the laboratory job market.

The Class of 1984 scored well above the national mean on the Board of Registry examination last August, with all students passing and seven students scoring more than one SD above the national mean. All students in this class successfully found jobs and are working in many different geographical locations, in addition to University Hospital.

The Class of 1986 has thirteen students just beginning their clinical education. Because this group will be in clinical rotations at the time of the move to the new hospital, the program deliberately chose not to recruit a larger class.

The class roster for the last class of 1986-87 has not been finalized, but will probably have 14-15 students. Although program applications for this class increased significantly, a review of applicants' winter term grades led to rejection of some students by the Medical Technology Admissions Committee. A few students with borderline GPA's will be reviewed again for possible admission after fall term grades are received.

No further curriculum or schedule changes are planned for the program during its last two years. Program graduates are expected to continue to be highly competitive in the laboratory job market, but are also being encouraged to consider furthering their education in the many areas for which a Medical Technology degree provides a solid base.

Sandra C. Gluck

Sandra C. Gluck, M.S., MT(ASCP)CLS
Director
Medical Technology Program

VETERANS ADMINISTRATION MEDICAL CENTER
ANNUAL REPORT TO THE UNIVERSITY OF MICHIGAN

DEPARTMENT OF PATHOLOGY
1 JULY 1984 - 30 JUNE 1985

INTRODUCTION:

The VA Medical Center has a strong and close relationship with the University of Michigan Medical Center. Pathology Residents rotate through the VA in surgical and autopsy pathology,

ANATOMIC PATHOLOGY:

A. Surgical Pathology: 4,069 cases have been completed and nearly all were processed by a resident closely supervised by a staff pathologist. The teaching activities are close and intense. The resident performs the frozen sections supervised by the staff pathologist.
B. Autopsies: 102 autopsies were done. A rate of approximately 45% has been maintained. The autopsies are generally done by a resident with staff supervision and review at a conference of all staff and assigned residents the following work day.
C. Cytology: 2,902 cases have been reported. Since most of these are sputums, urines and body fluids the positive rate is high and correlation with surgical pathology is clear. Fine needle aspiration is ued with increasing frequency. All of these activities are available for resident teaching on an ad hoc basis.
D. Electron Microscopy: Dr. Beals directs this section and makes an effort to discuss with the residents the use of electron microscopy in the every day practice of surgical and autopsy pathology. Both transmission and scanning microscopes are used and there is a high degree of correlation with other modalities including cytology.

CLINICAL PATHOLOGY:

Dr. Hyder directs clinical pathology and is very active in teaching as residents express interest. He specializes in hematopathology and reads out bone marrows with the hematology-oncology fellows as well as pathology residents.

TEACHING:

Each staff member participates in teaching residents and medical students as needed. During the past year Dr. Hyder gave a number of lectures on coagulation, Dr. Beals gave bi-weekly conferences at U of M on clinical electron microscopy and Dr. Weatherbee taught a second year medical student pathology laboratory. Two conferences were given by Dr. Weatherbee and Dr. Beals on gross identification of disease by the use of kodachromes. Dr. Burkholder participated in the sophomore laboratory.

RESEARCH:

Dr. Beals and Dr. Hyder are involved in sponsored research as noted on their individual activity reports and all staff members have participated with other investigators in a number of studies. Dr. Beals has been appointed to the VAMC Research Committee.

SUMMARY:

The close ties with the University of Michigan are considered to be of considerable value to the practice of high quality medicine at VAMC. Every attempt is made to assure that there are mutual benefits in all the areas discussed above. Our goal is to continually improve and strengthen the professional interchange that has been so well-grounded over the years.

Lee Weatherbee, M.D.
Chief, Laboratory Service
Ann Arbor VA Medical Center