

**THE UNIVERSITY OF MICHIGAN**

**Department of Pathology**

**ANNUAL REPORT**



**July 1, 1981 - June 30, 1982**



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## **List of Faculty**

LIST OF FACULTY

<u>Name</u>	<u>Rank</u>	<u>Institutional Affiliation</u>
Abell, Murray R.	Emeritus Professor	The University of Michigan
Abrams, Gerald D.	Professor	The University of Michigan
Annesley, Thomas D.	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
Bloch, Daniel M.	Assistant Professor	The University of Michigan
Burkholder, Peter	Professor and Chief of Staff	The University of Michigan 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
Dorovini-Zis, Katerina	Instructor	The University of Michigan
England, Barry G.	Assistant Professor	The University of Michigan
Fantone, Joseph C.	Instructor	The University of Michigan
Fine, Gerald**	Professor	Henry Ford Hospital
Flint, Andrew	Assistant Professor	The University of Michigan
Forbes, Betty	Research Associate	The University of Michigan
French, A. James	Professor	The University of Michigan
Friedman, Bruce A.	Professor	The University of Michigan
Gikas, Paul W.	Professor	The University of Michigan
Gluck, Sandra	Instructor	The University of Michigan

<u>Name</u>	<u>Rank</u>	<u>Institutional Affiliation</u>
Goldman, Robert T.**	Assistant Professor	Wayne County General Hospital
Gronvall, John***	Professor	The University of Michigan
Headington, John T.	Professor	The University of Michigan
Heidelberger, Kathleen P.	Professor	The University of Michigan
Hendrix, Robert C.	Professor	The University of Michigan
Hicks, Samuel P.	Professor	The University of Michigan
Hinerman, Dorin L.	Professor	The University of Michigan
Hudson, Jerry L.	Instructor	The University of Michigan
Hyder, Daniel M.	Instructor	Veterans Administration Medical Center
Johnson, Kent J.	Assistant Professor	The University of Michigan
Judd, W. John	Assistant Professor	The University of Michigan
Keren, David F.	Associate Professor	The University of Michigan
Kumar, Neelam B.	Instructor	The University of Michigan
Kunkel, Steven L.	Instructor	The University of Michigan
Landefeld, Thomas D.	Research Associate	The University of Michigan
Lloyd, Ricardo V.	Assistant Professor	The University of Michigan
Lovett, Edmund J., III	Assistant Professor	The University of Michigan
McClatchey, Kenneth D.	Assistant Professor	The University of Michigan
Midgley, A. Rees	Professor	The University of Michigan
Naylor, Bernard	Professor	The University of Michigan
Oberman, Harold A.	Professor and Director of Clinical Laboratories	The University of Michigan
Phan, Sem H.	Assistant Professor	The University of Michigan

<u>Name</u>	<u>Rank</u>	<u>Institutional Affiliation</u>
Pierson, Carl L.	Instructor	The University of Michigan
Rao, K. Murali Krishna	Research Investigator	The University of Michigan
Regezi, Joseph A.*	Assistant Professor	The University of Michigan
Rowe, Nathaniel 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
Silverman, Eugene M.	Associate Professor	Wayne County General Hospital
Solomon, Alvin R.	Instructor	The University of Michigan
Till, Gerd O.	Associate Professor	The University of Michigan
Varani, James	Assistant Professor	The University of Michigan
Vasiliades, John	Assistant Professor	The University of Michigan
Ward, Peter A.	Professor and Chairman	The University of Michigan
Weatherbee, Lee	Associate Professor	Veterans Administration Medical Center
Wilson, Barry S.	Assistant Professor	The University of Michigan
Wolter, J. Reimer ****	Professor	The University of Michigan

\*\* Clinical Appointment

\*\*\* Joint Appointment, Medical School

\*\*\*\* Joint Appointment, Department of Ophthalmology







## **Overview**

## OVERVIEW

The two years that have passed since I took the position as Chairman of the Department of Pathology have seen a multitude of changes. In the service area, the diagnostic activities continue to prosper, bolstered by the addition of two new surgical pathologists (Drs. Ricardo Lloyd and Andrew Flint) in the Summer of 1981, and the participation of Dr. Kent Johnson in the renal diagnostic activities. In the Clinical Laboratories, Dr. Thomas Annesley was recruited in the Summer of 1981, to be followed, in the Summer of 1982, by the addition of Dr. Donald Giacherio. In the Summer of 1982, Dr. Gikas returned from a sabbatical leave of six months in Chicago where he had an intensive exposure to the use of transmission electron microscopy in the diagnosis of tumors that are difficult to classify by light microscopy. This expertise can be expected to add an important dimension to the Diagnostic Electron Microscopy Service. In the teaching area, we succeeded in convincing the Medical School Administration to allow Pathology teaching for the Inteflex Program to be merged with the regular second year Pathology course, eliminating a substantial amount of duplication. With the completion of the total physical renovation of the single remaining teaching laboratory on the fourth level of the Pathology Building, we now have a suite of three modern and compact teaching laboratories, a considerable improvement over the physical facilities of years past.

The Residency Training Program, now under the direction of Dr. Kenneth D. McClatchey, continues to attract high quality applicants. The Program has been undergoing some changes that allow greater flexibility in the type of training programs available. Not only can residents desiring the 2 + 2 (AP/CP) programs be accommodated, we have now consciously made a decision to admit limited numbers of residents who desire only AP or only CP training. With respect to the former, in the Summer of 1982 we admitted into the Residency Training Program the first individual who plans to obtain AP training, to be followed by a two-three year fellowship in the research laboratories. We anticipate the Program will continue to develop flexibility, although we must also realize that the pressure to add a clinical year of training for Board-eligibility-requirements will probably, within 2-3 years, force us to reduce the total number of slots in the Training Program to accommodate this new requirement, which is expected to be imposed by the American Board of Pathology in the near future.

The research programs in the Department of Pathology continue to flourish in spite of very hard times with respect to NIH funding. The Department now has in excess of \$1,000,000 in direct research-generated support per annum, an impressive accomplishment for a two year period. Perhaps most encouraging is the awarding of career-type research grants to four young individuals in the Department (Drs. Fantone, Johnson, Wilson, and Zis), a tribute to the promise of these young investigators. The emerging impact of our research programs on numerous activities in this and other Departments is a gratifying outcome. It is reassuring that the Department of Pathology is coming to be recognized as a leading center for research and training in the field of Immunopathology. I fully expect this trend to increase with time.

In the Spring of 1982 we established a Flow Cytometry Facility in the Department, using Departmental development funds for the purchase of the equipment. In addition, two individuals with Ph.D. backgrounds have been dedicated to this effort, namely Drs. E.J. Lovett and Jerry Hudson, the latter having been recruited from the National Center for Toxicological Studies in Little Rock, Arkansas. Dr. Hudson is widely recognized as an expert in the area of flow cytometry. The Flow Cytometry Facility is under the direction of Dr. K.D. McClatchey and is becoming rapidly integrated as both a research and a clinical facility. It is our hope and expectation that this Facility will become a type of national demonstration center, being a unique Pathology-oriented resource that is being dedicated to the marriage of clinical and anatomic pathology. Part of the goal in the next few years will be to validate the use of flow cytometry in clinical diagnostic activities as flow analysis begins to replace many of the common, contemporary diagnostic techniques.

While the Department is in a healthy state of evolution, we need to be very carefully atuned to the rapidly changing events at the national and state levels where it is clear we are in a state of rapid transition as the forces of cost containment in the medical care area begin to take hold. These forces cannot be withstood. It will be our responsibility to adjust to the changes in ways that protect the academic and fiscal integrity of the Department. To this end we have been in close and continuous contact with consultants who are advising us ways in which we should consider changing the method of reimbursement for our professional services. It is clear that we are now entering into a period of turbulence and change that will be as important as any time of the post-World War II period. The adjustments that will be necessary because of pressures from both Washington and Lansing carry an air of forboding. Nevertheless, I believe that, with strong leadership, we can meet these challenges and, at the same time, forge a new destiny that will, although different, be as exciting as any we have seen over the past four decades.



Peter A. Ward, M.D.  
Professor and Chairman



## **Faculty Reports**

GERALD D. ABRAMS, M.D.

PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
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DIAGNOSTIC SERVICE ACTIVITIES

- A. August 1981, Necropsy Service
- B. January 1982, Surgical Pathology Service
- C. March 1982, Surgical Pathology Service
- D. 1981 - 1982, Consultant Pathologist, Unit for Laboratory Animal Medicine

TEACHING ACTIVITIES

- A. Freshman Medical Class
  - 1. 20 contact hours, lectures on General Pathology in ICS 500
- B. Sophomore Medical Class
  - 1. 14 contact hours, 2 lectures in ICS Immunopathology sequence, 3 lectures in Path 600, 4 hours of laboratory in Path 600
- C. Inteflex Curriculum
  - 1. 14 contact hours, lecture in Anatomy-Pathology 506 (I-3)  
2 contact hours, lectures in Human Illness (I-4)
- D. Senior Medical Class
  - 1. Coordinator/mentor for groups of M4 Clerks
- E. Graduate School
  - 1. Pathology 859 - 45 contact hours, lecture
  - 2. Pathology 860 - 30 contact hours, laboratory

3. Doctoral Dissertation Committees
  - a) Maija Mizens, Toxicology, Ph.D., 1981
  - b) Joseph L. Romson, Pharmacology, Ph.D., 1982
  - c) Duck Hyang Suh, Toxicology

F. Miscellaneous

1. Minority Student Orientation - 2 contact hours
2. Postgraduate Medical Education - 3 presentations
3. Pathology House Officer Training - 3 months
4. Surgery-GI Pathology Conference - monthly
5. Cardiology-Pathology Conference - monthly
6. Medicine-GI Pathology Conference - weekly (alternate for H.D. Appelman)
7. Comparative Pathology Conference - weekly

RESEARCH ACTIVITIES

A. Projects

1. Factors influencing the size of myocardial infarcts, survival of ischemic myocardium, and the quantitation thereof. In collaboration with B. R. Lucchesi, et. al.
2. Morphologic correlates of microecological perturbations in the gastrointestinal tract. In collaboration with Dr. R. Fekety, et. al.
3. Analysis and design for interactive instructional system in Pathology and Histology. In collaboration with Drs. J. Calhoun and R. Kahn.
4. Quantitation of coronary arterial occlusive disease by computer analysis of angiographic and echographic data. In collaboration with Cardiology staff.
5. Histologic aspects of healing around percutaneous access devices. In collaboration with Dr. A. Kantrowitz (Sinai Hospital, Detroit).

B. Grant Support

1. RROO 200-18 NIH, Division of Research Resources. A University Resource in Laboratory Animal Medicine Bennett J. Cohen, P.I. (GDA 5%)

2. R01-HL19782-04A1 NIH, Heart, Lung, Blood Inst. Pharmacologic Studies on the Ischemic Heart. Benedict R. Lucchesi, P.I. (GDA 5%)

### SERVICE ACTIVITIES

- A. Departmental Activities
  1. Education Coordinator
  2. Course Director, Pathology 600
  3. Chairman, Departmental Advisory Committee on Appointments, Promotions, and Titles
  4. Medical Service Plan Executive Committee
- B. Medical School - Hospital
  1. Basic Science Phase Committee
  2. Ad hoc committee to plan "Interphase"
  3. Basic Science Phase Promotion Board
  4. Clinical Phase Promotion Board
  5. Financial Aid Committee
  6. Senior year counselor
  7. Medical School Executive Committee
- C. Regional and National Activities
  1. Deputy Medical Examiner, Washtenaw County
  2. Consultant Physician, Ann Arbor VAMC
  3. Secretary-Treasurer, Gastrointestinal Pathology Club (International Academy of Pathology)

### PUBLICATIONS

- A. Published
  1. Doepel, F.M.1, Glorioso, J.C., Newcomer, C.E., Skinner, M., Abrams, G.D.: Enzyme-linked immunosorbent assay of serum protein SAA in rhesus monkeys with secondary amyloidosis. Lab Invest 45:7-13, 1981.



2. Abrams, G.D.: The right to privacy when lives are at stake. In, "Troubling Problems in Medical Ethics". Basson, M.D., Lipson R.E., Ganos, D.L., Eds., Alan R. Liss, Inc., 1981, pp. 257-268.
3. Romson, J.L., Haack, D.W., Abrams, G.D., Lucchesi, B.R.: Prevention of occlusive coronary artery thrombosis by prostacyclin infusion in the dog. Circulation 64:906-914, 1981.
4. Abrams, G.D.: Introduction to general pathology - Mechanisms of disease. Chapters 1-8. In, "Pathology. Clinical Concepts of Disease Processes". Price, S.A. and Wilson, L.M., Eds. 2nd ed. McGraw-Hill, 1982, pp. 3-104.
5. Pease, C.R., Abrams, G.D., Murphy, W.H.: FV-1 restriction of age-dependent paralytic lactic dehydrogenase virus infection. Virology 117:29-37, 1982.
6. Huang, D.D., Abrams, G.D., Maassab, H.F.: Neurological involvement in mice after infection with a cold-adapted herpes simplex Type 2 virus. Infect Immun 35:1070-1078, 1982.
7. Lerman, B.B., Thomas, L.C., Abrams, G.D., Pitt, B.: Aortic stenosis associated with systemic lupus Erythematosus. Am J Med 72:707-710, 1982.

B. In Press

1. Kirilin, P.C., Romson, J.L., Pitt, B., Abrams, G.D., Schork, M.A., Lucchesi, B.R.: Ibuprofen mediated infarct size reduction. effects on regional myocardial function in canine myocardial infarction. Am J Cardiol
2. Adler, D.D., Silver, T.M., Abrams, G.D.: Sonographic appearance of splenic plasmacytoma. J Ultrasound Med

THOMAS ANNESLEY, Ph.D.

ASSISTANT PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Associate Director, Clinical Biochemistry Laboratories: See Laboratory Annual Report
  - 1. Responsible for routine operation, research and development, house officer training, and clinical consultation for the Clinical Biochemistry Laboratories.
- B. New Tests Introduced or Modified
  - 1. Urine proteins by dye-binding
  - 2. Lipoprotein electrophoresis
  - 3. CPK isoenzyme electrophoresis
  - 4. Quantitative CPK isoenzymes
  - 5. LDH isoenzymes by electrophoresis
  - 6. Quantitative LDH isoenzymes
- C. Consultant to Veterans Administration Hospital, Ann Arbor, MI.

TEACHING ACTIVITIES

- A. Coordinator, Laboratory Continuing Education Program, Section of Clinical Chemistry
- B. Two lecture hours. "Clinical Enzymology." Clinical Pathology Lecture Series, The University of Michigan
- C. One lecture hour. "Centrifugal Analyzers." Clinical Pathology Lecture Series, The University of Michigan

- D. Co-program Chairman. Conference on Current Topics in Clinical Chemistry and Immunology. Towsley Center for Continuing Education, The University of Michigan, 1982
- E. Participating Lecturer. "Two-dimensional Electrophoresis." Conference on Current Topics in Clinical Chemistry and Immunology. Towsley Center for Continuing Education, The University of Michigan, 1982
- F. Eight lecture hours on Clinical Enzymology, Steroids, and Thyroid Physiology. Medical Technology Program, The University of Michigan.
- G. Two-hundred hours plus in resident training in Clinical Chemistry

#### RESEARCH ACTIVITIES

- A. The evaluation of automated instrumentation for routine urinalysis
- B. Bioluminescence Methodology for CPK-MB Analysis
- C. Biochemical changes in cadmium toxicity (collaborative study with the School of Public Health)
- D. High resolution electrophoresis to detect protein changes in cadmium toxicity (collaborative study with the School of Public Health)
- E. CPK-isoenzymes in non-cardiac disease states
- F. Ectopic enzyme production and atypical enzymes in cancer
- G. CPK sub-isoenzymes in neuromuscular disorders
- H. Immunochemical methods versus electrophoresis in the Clinical Laboratory for isoenzyme determination
- I. Electrophoretic determination of glycosylated hemoglobin (collaborative study with Gelman Corporation)
- J. Evaluation of dye-binding methods for quantitative urinary protein determination
- K. Melatonin levels and relation to endocrine imbalances

#### SERVICE ACTIVITIES

- A. Medical School - Hospital
  - 1. Member, Standardization of Procedures Committee, The University of Michigan Hospitals

B. Regional and National Activities

1. Presentations, American Association for Clinical Chemistry National Meeting, Kansas City, Missouri, July 19-24, 1981
  - a) "Evaluation of the Dupont CK-MB Method in the Prediction of Myocardial Infarction"
  - b) "Calcium binding by an IgG myeloma protein"

PUBLICATIONS

A. Publications in Scientific Journals

1. Hay, I.D., Annesley, T.M., Jiang, N.S., Gorman, C.A.: Simultaneous determination of D- and L-thyroxine in human serum by liquid chromatography with electrochemical detection. J Chromatg 226:383, 1981.
2. Annesley, T.M.: Glycosylated hemoglobin tests diabetes. Clin Chem New 8:8, 1982.
3. Welch, C.L., Annesley, T.M., Luthra, H.S., Moyer, T.P.: Liquid chromatographic determination of zomepirac in serum and plasma. Clin Chem 28:481, 1982.

B. Articles Accepted for Publication

1. Annesley, T.M., Burritt, M.F., Kyle, R.A.: Artifactual hypercalcemia in multiple myeloma. Mayo Clinic Proc, (In press).
2. Cohen, H.N., Hay, I.D., Annesley, T.M., Beastall, G.H., et. al.: Serum immunoreactive melatonin in boys with delayed puberty. Clin Endocrinology

C. Articles Submitted for Publication

1. Annesley, T.M. and McKenna, B.J.: Ectopic creatine kinase MB production in metastatic cancer. Am J Clin Path.

HENRY D. APPELMAN, M.D.

PROFESSOR OF PATHOLOGY AND DIRECTOR OF ANATOMIC PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. General Surgical Pathology - 6 months
- B. Gastrointestinal Hepatic Pathology Consultation Service - 11 months
- C. Director, Division of Anatomic Pathology - full time

TEACHING ACTIVITIES

- A. Medical Students
  - 1. Pathology 600 - 4 full class lectures, 2 days devoted to gross gastrointestinal pathology in the laboratory for all laboratory sections, and full time assignment as Director of one teaching laboratory (January through April, 1982)
  - 2. Introduction to Clinical Sciences - 2 sessions with the gastroenterologist on liver disease, 2 hours each
  - 3. Senior Medical Student Elective in Pathology - 6 months instruction in surgical pathology in the reading rooms
  - 4. Inteflex Students - 3 whole class lectures
- B. House Officers
  - 1. Surgical Pathology Conference - weekly for 1 hour
  - 2. Autopsy Service Tutoring - 5 weekends and gross autopsy conference, approximately 6 months, twice a week
  - 3. Surgical Pathology Diagnosing Room - 6 months
  - 4. Gastrointestinal Hepatic Pathology Tutoring - full time
  - 5. Mentor for 2 months - house officer rotation in gastrointestinal and liver pathology subspecialty

- C. Medical Gastrointestinal Pathology Conference - weekly 1 1/2 hours
- D. Pediatric Gastrointestinal Pathology Conference - monthly 1 hour

#### RESEARCH ACTIVITIES

- A. Clinical-Pathologic Studies Continuing in the Following Areas:
  - 1. Lymphomas of the Gastrointestinal Tract (with S. Hirsch, B. Schnitzer, and W. Coon)
  - 2. Carcinoma of the Gastric Cardia and Barrett's Esophagus (with R. Kalish, W. Clancey, and M. Orringer)
  - 3. Granulomas in Crohn's Disease (with N.B. Kumar and J.A.P Wilson)
  - 4. Indeterminate Colitis
  - 5. The Ileal Disease of Ulcerative Colitis (with R. Zarbo)
  - 6. The Biopsy Diagnosis of Primary Biliary Cirrhosis (joint project with the Mayo Clinic)
  - 7. Mucin Histochemistry of Barrett's Mucosa (joint project with R. Kalish and J. Lechago of UCLA)
  - 8. Carcinoma and Dysplasia in Ulcerative Colitis (continuing study with the National Colitis Dysplasia Morphology Study Group)
  - 9. Stromal Tumors of the Gastrointestinal Tract
  - 10. Effect of Hyperalimentation on the Infantile Liver (with K.P. Heidelberger and Division of Pediatric Surgery)
  - 11. Clinical Pathologic Study, including Ultra-structure of Gastrointestinal Manifestations of Multiple Neurofibromatosis (with J. Shaldenbrand)
- B. Grant Support - None

#### SERVICE ACTIVITIES

- A. Departmental Activities
  - 1. Member, Departmental Advisory Committee on Appointments, Promotions and Titles
  - 2. Member, Departmental Medical Service Plan Executive Committee

3. Member, Departmental Executive Committee for Residency Training Program
- B. Medical School - Hospital
1. Member and Vice-Chairman, Medical School Advisory Committee on Appointments, Promotions and Titles
  2. Member, Director's Advisory Council, University Hospital
- C. Regional and National Activities
1. Member of Steering Committee, Inflammatory Bowel Disease Dysplasia Morphology Study Group
  2. Gastrointestinal Pathology Club: Past President and Member of Executive Committee. Co-Editor of Newsletter
  3. Reviewer of papers for Perspectives in Pediatric Pathology, Archives of Pathology, and Laboratory Medicine
- D. Member of the Program Committee of the Michigan Society of Pathologists
- E. Invited Lectures and Seminars
1. Ulcerative Colitis, Dysplasia and Carcinoma. Medical Grand Rounds, Vancouver General Hospital, Vancouver, British Columbia, 29 October 1981.
  2. Slide Seminar in Gastrointestinal Pathology. Fall Meeting of the British Columbia Association of Laboratory Physicians, Kamloops, British Columbia, 31 October 1981.
  3. The Natural History of the Colonic Mucosa in Ulcerative Colitis. Lecture to the British Columbia Association of Laboratory Physicians, Kamloops, British Columbia, October 1981.
  4. Indeterminate Colitis - Presented at the Gastrointestinal and Liver Pathology Day Sponsored by The University of Western Ontario Faculty of Medicine, London, Ontario, 16 April 1982.

5. Seminar in Neoplastic Diseases of the Intestines. Course in Gastrointestinal Pathology Sponsored by The American Society of Clinical Pathology, Denver, Colorado, 10 June 1982.

## PUBLICATIONS

### A. Papers in Journals

1. Lobert, P.F., and Appelman, H.D.: Inflammatory cloacogenic polyp: A unique inflammatory lesion of the anal transitional zone. Am J Surg Path 5:761-766, 1981.
2. Eckhauser, F.E., Argenta, L.C., Strodel, W.E., Wheeler, R.H., Bull, F.E., Appelman, H.D., Thompson, N.W.: Mesenteric angiopathy, intestinal gangrene, and midgut carcinoids. Surgery 90:720-728, 1981.

### B. Papers Accepted and In Press

1. Kumar, N.D., Nostrandt, T., Appelman, H.D.: Acute limited colitis. Accepted for publication, Am J of Surg Path
2. Fantone, J., Geisinger, K., Appelman, H.D.: Ultrastructural study of an adenoma of lung containing both Clara-type cells and type II pneumocytes. Accepted for publication in Cancer.

### C. Abstracts

1. Hirsh, S.D., Coon, W.W., Schnitzer, B.S., Appelman, H.D.: Primary gastrointestinal lymphomas: A study of 143 cases. Lab Invest 46:36A-37A, 1982.
2. Kalish, R.J., Clancy, T., Orringer, Appelman, H.D.: Adenocarcinomas of the gastric cardia and Barrett's Esophagus. Lab Invest 46:44A, 1982.
3. Keren, D.F., Appelman, H.D., Geisinger, K.R., Foley, J.L.: Immunoglobulin-containing cells in inflammatory bowel disease: Correlation of immunofluorescence findings with histopathology. Lab Invest 48:486A, 1982.
4. Keren, D.F., Wells, J.J., Dobbins, W.O., Whisenant, J.L., Appelman, H.D.: Immunoglobulin-containing cells in colonic biopsies in inflammatory bowel disease (IBD): Correlation of immunofluorescence findings in a large series with clinical assessment of disease activity. Gastroenterology 82:109A, 1982.



BARBARA A. BARNES MT(ASCP) SBB

ASSISTANT PROFESSOR OF MEDICAL TECHNOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES: None

TEACHING ACTIVITIES

A. House Officer Program

1. Lectured in Brief Blood Bank Introductory Lecture Series
2. Planned and presented four times a nine session blood bank laboratory and seminar course for house officers

B. Medical Technology Program

1. Restructured and taught Pathology 408, a course consisting of 30 lectures given once and 19-three hour laboratory sessions taught twice
2. Restructured and directed Pathology 409. This course, which includes 14 hours of lecture and discussion, 30 hours of structured laboratory class, and seventy hours of clinical practicum, was repeated for seven groups of students. With the advice and consent of Blood Bank Medical Directors, supervisory and administrative technologists, identified staff technologists willing and able to serve as class preceptors, provided objectives and discussed their implementations with the clinical preceptors.
3. Arranged for a series of Blood Bank guest lectures which were incorporated into Pathology 410 and 412

RESEARCH ACTIVITIES

- A. Review of Rh typing problem at U of M Blood Bank. Abstract for submission to AABB

SERVICE ACTIVITIES

A. Departmental Activities

1. Assist in preparing for accreditation review of Medical Technology Program.

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

B. Medical School - Hospital

1. Participated in Student Outreach Program May 6, 1982
2. Designed and presented a preconference workshop, Teaching Blood Banking in the Hospital Setting. Current Topics in Blood Banking, Towsley Center, June 2, 1982
3. Conducted 48 hours of instruction for each of five new technical employees of the Hospital Blood Bank
4. Participated in various committees responsible for communication and technical advice to the Hospital Blood Bank
5. Drafted and implemented a weekly schedule of in-service education for Blood Bank staff. Developed computer assisted instruction to supplement these sessions

C. Regional and National Activities

1. As an inspector for the Inspection and Accreditation Program of the American Association of Blood Banks, conducted inspection at Sparrow Hospital, Lansing, June 27, 1982
2. Presented lecture, "Blood Group Antibodies in Transfusion and Pregnancy," Michigan State Society of American Medical Technologists, Fall Meeting, Southfield, October 24, 1981
3. Presented lecture, "Prenatal Testing." Advanced Blood Banking for Career Mobility Students, Eastern Michigan University, Ypsilanti, November 11, 1981
4. Presented lecture, "Blood Bank Inspections and New Considerations," South Central Michigan Association of Medical Laboratorians, Battle Creek, December 9, 1981
5. Presented lecture, "Immunohematology Review," Michigan State Society of American Medical Technologists, Ann Arbor, May 14, 1982
6. Presented lecture, "Use of Microaggregate Filters in Homologous and Autologous Blood Transfusion," Veteran's Administration Auto-transfusion Symposium, Ann Arbor, May 25, 1982
7. Planned and implemented organizational meeting of individuals who teach blood banking in an academic setting, Ann Arbor, June 2, 1982

8. As a member of the Education and Consultation Committee of the Michigan Association of Blood Banks, provided sources of in-service programs for staff of transfusion services in community hospitals

#### PUBLICATIONS

##### A. Published

1. Oberman, H.A., Barnes, B.A., Steiner, E.A.: Role of the major cross-match in testing for serologous incompatibility. Transfusion 22 January-February, 1982.

THEODORE F. BEALS, M.D.

ASSISTANT PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Principal activity is diagnostic electron microscopy.
  - 1. Director of Diagnostic Electron Microscopy Unit at VA Medical Center.
  - 2. Examined nearly 400 specimens as part of this activity.
- B. Principal Cytopathologist at VA Medical Center.
  - 1. Reported out 2800 cytology specimens, nearly all of which were non-gynecologic.
- C. Assists in surgical pathology and autopsy pathology.

TEACHING ACTIVITIES

- A. Conduct special elective training for Pathology House Officers in diagnostic electron microscopy.
- B. Responsible for didactic and laboratory sessions on respiratory and reproductive systems for Inteflex Human-Illness, Pathology Course.
- C. Conduct bi-weekly electron microscopy case conferences at The University of Michigan Department of Pathology.

RESEARCH ACTIVITY

- A. Principal research activity is in application of ultrastructural characteristics to diagnosis of human illness. The special emphasis is on pulmonary neoplasms and the correlation of ultrastructural features with biologic behavior and therapeutic response.
- B. Co-investigator in study on the immunogenetic and cytologic study of tissue grafts in mice.
- C. Supportive research activities include ultrastructural analysis of respiratory epithelium, experimental vascular prostheses, tissue culture growth characteristics, abnormalities of hair, morphology and effects of chemical agents on platelet morphology.

D. Grant Support

1. Co-investigator, Immunogenetic Control of Tissue Grafts, Medical Research Service, VA Medical Center.

SERVICE ACTIVITIES

A. Medical School - Hospital

1. Electron Microscopy Committee

B. VA Medical Center

1. Chair, Tissue Committee
2. Member, Quality Assurance Committee
3. Chair, Electron Microscope Committee
4. Member, Medical Records Review Committee
5. Director of Clinical Microscopy Unit
6. Assistant Chief, Laboratory Service

PUBLICATIONS

A. Published

1. Schultz, J.S., DeMott-Friberg, R., Beals, T.F.: Liver tissue graft rejection and murine major histocompatibility complex mutants. Immunogenetics 15:357-364, 1982.
2. Anhalt, G.J., Labib, R.S., Voorhees, J.J., Beals, T.F., Diaz, L.A.: Induction of pemphigus in neonatal mice by passive transfer of human pemphigus IgG from patients with the disease. New Eng J Med 306:1189-1196, 1982.

DANIEL M. BLOCH, M.D.

ASSISTANT PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Director, Laboratory Data Center, until March 1982

TEACHING ACTIVITIES

- A. Inteflex Medical Curriculum and Sophomore Medical Students
- B. Lectures on "Computers in Medicine" given to the School of Medical Technology, School of Medicine, Pathology Course

RESEARCH ACTIVITIES:

- A. The prediction of overdue stat laboratory tests with J. Goldberg
- B. Computer-generated management tools for the Clinical Pathology Laboratory: III. Quality control of the laboratory computer database
- C. Analysis of laboratory use by location
- D. Laboratory dysutilization
- E. The significance of nucleated red blood cells in peripheral blood with Dr. Bertram Schnitzer
- F. Correlation of phone calling patterns with physician rounds with Drs. S. Aiello, J. Arno and T. Rowell
- G. Crohn's disease with Drs. H.D. Appelman, N. Kuman and J. Wilson
- H. Improvement by computer of turnaround times for Microbiology culture results
- I. Why are computer systems like non-Hodgkin's Lymphomas with Dr. T. Lincoln

SERVICE ACTIVITIES

- A. Departmental Activities
  - 1. Clinical Pathology Faculty

B. Medical School-Hospital

1. University Committee on Computing and Policy Utilization
2. Medical School Computer Advisory Committee
3. Cancer Work Group
4. Patient Care Evaluation Work Group
5. Medical Records Work Group
6. Order Entry/Result Reporting Work Group

C. Regional and National Activities

1. Communication/Information System TAsk Force
2. Area VI PSRO Committee on Ancillary Services Review

D. Invited Lectures and Seminars

1. "The Etiology and Pathogenesis of Laboratory Computing Problems" presented at the College of American Pathologists Wordshop on Acquiring a Laboratory Computer, Traverse City, June 1981 (Invited)
2. "Laboratory Misutilization", presented at The University of Michigan School of Public Health, Ann Arbor, June, 1981 (with Dr. B.A. Friedman)
3. "An Online Archive of Laboratory Results for Ambulatory Care", presented at the SAMS/SCM Joint Annual Conference on Computers in Ambulatory Care, Washington, D.C., November 1981
4. Invited Expert at the Laboratory Computerization Table for "Brunch with the Experts" at the SAMS/SCM Joint Annual Conference on Computers in Ambulatory Care, Washington, D.C., November 1981
5. "Analysis of Changes in Laboratory Use by Computer", presented at the Baptist Medical Center Montclair, Birmingham, Alabama, February 1982
6. "Analysis by Computer of Changes in Laboratory Usage", presented at the University of Texas at Houston, Houston, Texas, May 1982
7. "Laboratory Computers in Blood Banking", presented at the Mid-America Red Cross Seminar Hemotherapy-Current Concepts, Chicago, June 1982

## PUBLICATIONS

### A. Published

1. O'Leary, T.J. and Bloch, D.M.: Independent value of laboratory tests in diagnosis of latent hemochromatosis. Univ Mich Med Ctr J 47:10, 1981.

### B. In Press

1. Bloch, D.M.: Computer-generated management tools for the Clinical Pathology Laboratory: II. Computer-generated graphic workflow. J Med Sys
2. Bloch, D.M.: Computers in laboratory management. Clin Lab Med
3. Bloch, D.M., Barnes, B. and Pade, S.: An outline archive of laboratory results for Ambulatory Care. J Med Sys
4. Pierson, C.L., Schaberg, D.R., Fekety, F.R. and Bloch, D.M.: In-vitro activity of Sch 29482 MK 0787, Ceftriaxone and seven other antimicrobics against 840 separate clinical isolates. J Antimicrob Chemother



RICHARD M. COURTNEY, D.D.S., M.S.

ASSISTANT PROFESSOR OF PATHOLOGY  
PROFESSOR OF DENTISTRY - DEPARTMENT OF ORAL PATHOLOGY  
CHAIRMAN - DEPARTMENT OF ORAL PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Oral Pathology Biopsy Service, Dental School
- B. Consultant, Head and Neck Pathology, Medical School

TEACHING ACTIVITIES

- A. Oral Pathology for Graduate Dental Students, Fall 1981 and Winter, 1982
- B. Oral Pathology for Senior Dental Students, Winter 1982
- C. Oral Pathology for Sophomore Dental Students, Winter, 1982
- D. E.N.T. Pathology, Medical School, Spring, 1982

RESEARCH ACTIVITIES

- A. Evaluation of recently developed polymer dental implant in dogs (Kerr-Sybron Co. \$10,000)

SERVICE ACTIVITIES

- A. Dental School
  - 1. Executive Committee
  - 2. Department Chairman Committee
  - 3. Graduate Studies Committee
- B. Medical School - Hospital
  - 1. Consultant in Dentistry for patients with Head and Neck Malignancies
  - 2. Consultant in Oral Pathology for Veterans Administration Hospital

C. Regional and National Activities

1. President, American Academy of Oral Pathology
2. Editorial Board, Journal of Dental Research
3. Consultant to the American Dental Association on graduate oral pathology programs
4. Consultant to the American Dental Association on Hospital Dentistry programs

PUBLICATIONS

A. Published

1. Regezi, J.A., Courtney, R.M., Batsakis, J.G.: The Pathology of Head and Neck Tumors: Cysts of the Jaws, Part 12. Head Neck Surg 4:48-57, 1981.

CONSTANCE J. D'AMATO, B.S.

ASSISTANT PROFESSOR OF NEUROBIOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE 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. Work in similar way with these people on autopsy brain material sent for consultative study from University associated hospitals, state hospitals, and other hospitals and institutions.
- C. Plan and participate in weekly Brain Cutting Conference with house officers, students and staff for diagnosis and demonstrations of diagnostic methods, using selected cases in A and B.
- D. Continuous review of quality control of diagnostic techniques autopsy and surgical neuropathology and search for improved and new methods.
- E. Responsibility for general management and supervision of the Neuropathology Laboratory.

TEACHING ACTIVITIES

- A. Neural and Behavioral Sciences 600 (NBS 600), Neuropathology for second-year medical students, 20 hours, lectures and laboratories. Ten additional hours of laboratory sessions for the Inteflex-4 students. 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 laboratories of the course with other instructors.
- B. Neuropathology for Pathology house officers. This exercise is integrated with Diagnostic Service Activities A, B, and C, as already noted above.
- 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, 18 hours. One credit offered.
- D. Teach laboratory techniques and basic neuroanatomy and neuropathology to our laboratory technologists.

## RESEARCH ACTIVITIES

- A. Development of the mammalian nervous system as studied by the effects of radiation, mutant genes, and other factors used as experimental tools in developmental neurology. Current experiments concern recovery and plasticity of nervous system structure and function, as well as abnormal development, after severe fetal radiation injury, and the morphogenesis of radiation-induced and gene-induced developmental hydrocephalus in rats. Other work beginning: a study of environmental factors that may be related to Alzheimer's presenile and senile dementia, in collaboration with colleagues in the School of Public Health; a review of the large number of human brains from autopsies at this institution and especially our state centers for persons with developmental disabilities.
- B. Grant Support
  - 1. USPHS grant NS 10531. Other support being sought.

## SERVICE ACTIVITIES

- A. Departmental: inferred from this report.
- B. Medical School - Hospital
  - 1. Neural and Behavioral Sciences Curriculum Committee (Medical School)
  - 2. Neural and Behavioral Sciences Examinations Committee (Medical School)
  - 3. Preprofessional Counselor, premedical and health-related students (University and Medical School)
- C. Regional and National Activities
  - 1. Reviewer of research grant applications for National Science Foundation Neurobiology Program
  - 2. Reviewer of journal manuscripts, such as Teratology, Experimental Neurology, Science.

## PUBLICATIONS

- A. Published
  - 1. D'Amato, C.J.: Regeneration and recovery in the fetal nervous system after radiation injury. Experimental Neurology 76:457-467, 1982

B. Abstracts

1. D'Amato, C.J. and Hicks, S.P.: Hydrocephalus produced by prenatal irradiation. Proceedings of the 11th Annual Meeting, Society for Neuroscience, Los Angeles, CA. (Abstract and poster exhibit). Neuroscience Abstract 7:467, 1981.

KATERINA DOROVINI-ZIS, M.D., FRCP (C)

INSTRUCTOR IN PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Diagnostic Neuropathology
- B. Autopsies: Central and peripheral nervous system pathology
- C. Muscle Pathology
- D. Neuropathology and muscle pathology consultations from Veterans Administration Hospital, Wayne County General Hospital, and other state institutions and private hospitals

TEACHING ACTIVITIES

- A. Neural and Behavioral Science 600. Neuropathology for second-year medical students. 18 hours
- B. Neuropathology 858. Course for house officers, staff, graduates and other students. 18 hours
- C. Neuropathology for Pathology House officers: Brain cutting, review of autopsies, neuroanatomy, neurohistology, histologic neuropathology and muscle pathology
- D. Brain Cutting Conference for house officers and staff, weekly
- E. Neuropathology Conference for Neurosurgery house officers and staff, twice monthly
- F. Muscle Conference for Neurology house officers and staff, monthly
- G. Monthly rotations of Neurology house officers through muscle pathology

RESEARCH ACTIVITIES

- A. Blood-brain barrier properties of brain capillary endothelium in vitro.
- B. Effects of hyperosmotic solutions on blood-brain barrier. Significance of tight junction opening and the role of vesicular transport in vivo and in vitro

- C. Participation in the Program Project Study on Regeneration and Transplantation of Skeletal Muscle (1P01-NS17017). This includes a combined clinical, electrophysiological and morphological study of Polymyositis-Dermatomyositis patients.
- D. Grant Support
  - 1. NINCDS Teacher-Investigator Award (1K07-NS00708). 1982 -

SERVICE ACTIVITIES

- A. National Activities
  - 1. Reviewer for Science and Human Pathology

PUBLICATIONS

- A. In Press
  - 1. Dorovini-Zis, K., Sato, M., Goping, G., Rapoport, S.I., Brightman, M.W.: Ionic lanthanum passage across cerebral endothelium exposed to hyperosmotic arabinose. Lab Invest.
  - 2. Wolter, J.R., Schut, A.L., Dorovini-Zis, K.: Massive ocular astrocytoma in a congenitally deformed eye. Brit J Ophthalm.
- B. Submitted
  - 1. Mata, M., Dorovini Zis, K., Wilson, M., Young, A.: A new form of Parkinson-dementia syndrome: Clinical and pathological findings. Neurology.
  - 2. Hildebrand, P.G., Gabrielsen, T.O., Dorovini-Zis, K., Knake, J.E., Latack, J.T., Gebarski, S.S.: Radiology of primary intracranial yolk sac (endodermal sinus) tumors. Am J Neuroradiology
- C. Abstracts
  - 1. Hicks, S.P., D'Amato, C.J., Dorovini-Zis, K.: Fetal and infant brain phagocytes after radiation cell-killing. J Neuropath Exp Neuol 40:358, 1981.
  - 2. Mata, M., Dorovini-Zis, K., Wilson, M., Young, A.: A new form of Parkinson-dementia syndrome: Clinical and pathological findings. Neurology 31:50, 1981.
  - 3. Albers, J.W., Faulkner, J.A., Dorovini-Zis, K., Must, R.E., Goldstein, G.W., Donn, S.M.: Infantile myasthenic-like syndrome: Electrophysiologic, histologic and immunologic evaluation. Muscle and Nerve 4:440, 1981.

BARRY G. ENGLAND, Ph.D

ASSISTANT PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. My major service activity is to oversee the operation of the Central Ligand Assay Laboratory. The laboratory offers about forty different assays and the number of specimens analyzed will be about 38,000 this year with an estimated revenue of \$1,101,982. This is an increase of approximately 23% over the volume of samples run last year. A total of 12.5 medical and laboratory technologists and supervisory personnel are currently employed in the laboratory.
- B. One of the laboratories (M3237) available to me has been renovated and will allow the development of an active role in monoclonal antibody development. We intend to utilize this technology in the development of more specific diagnostic assays and to investigate hormone structure-receptor interactions. The renovation includes a walk-in cold room that will be shared with Immunology, a new work area and a tissue culture facility.

TEACHING ACTIVITIES

- A. Pathology House Officers currently participate in a two week rotation through the laboratory. During their rotation, I am heavily involved with them and they are encouraged to work with the technologists and to participate in assay setups and to become involved in the operation of the laboratory. The residents learn management aspects of a Ligand Assay Laboratory including quality control, data reduction and kit evaluation.
- B. Fourth year Medical Technologists have a one week rotation in the Ligand Assay Laboratory. I am peripherally involved in their education; however, the bulk of this responsibility falls to the laboratory supervisor and medical technologists.
- C. Presented the following Symposia talks:
  - 1. "Some Clinical Uses of Monoclonal Antibodies" in Current Topics in Clinical Chemistry and Immunology in the Towsley Center for Continuing Medical Education at the University of Michigan. March 10, 1982
  - 2. "Clinical and Research Aspects of Monoclonal Antibodies" at the national meeting of the Clinical Ligand Assay Society in Detroit. May 8, 1982



3. "Some Clinical Uses of Monoclonal Antibodies" at the Michigan Section of the American Association for Clinical Chemistry in Ann Arbor. May 27, 1982
- C. I participated in the presentation of a 2 week course in Immunoassay Procedures to the Medical Technologists. I also presented two sessions of a three session overview on the Basics of Radioimmunoassay at the Clinical Pathology Conferences. In addition, I have presented lectures in the following courses during the past year.
  1. In Vitro Methods in Nuclear Medicine
  2. Medical Student Biochem 500

#### RESEARCH ACTIVITIES

- A. My research interests are broken into two major areas of involvement, the first of these is the development of methodologies that will be of interest and use in the clinical laboratory and the second is the investigation of ovarian follicular development in monotocous mammals.
- B. Under the first of these two categories are included all of the developmental activities of the Ligand Assay Laboratory:
  1. Evaluation of commercially available kits for C-terminal and intact parathyroid hormone (PTH).
  2. Development of high pressure liquid chromatography for the purification of radioiodinated labels for "in house" assays. In the future this procedure will be used for an increasing number of our assay procedures.
  3. The organic synthesis of a digoxin derivative for radioiodination to replace one we currently purchased from Cambridge Nuclear Corp. has been initiated. In addition non-isotopic labels (chemiluminescent and fluorescent) are being developed for digoxin.
  4. Research into the development and uses of monoclonal antibodies has continued and will proceed at an increased rate due to the recently renovated laboratory. We expect to develop monoclonal antibodies against fragments of parathormone and a number of other analyses of interest during the next year.
- C. The second of two categories includes my efforts that are devoted to the study of ovarian follicular development in the sheep and the cow. This activity has resulted in the publication of several papers throughout the past year and several more are in various stages of preparation (see Publications).

D. Grant Support

1. 1976-, New England Nuclear Corporation: Research Grant, Study Reproductive Endocrinology and Ligand Assay Techniques; Principle Investigator, \$15,000/yr.
2. 1977-1982, NIAMDD: Michigan Diabetes Research and Training Center; Director, Ligand Assay Core Facility, \$93,000/yr.
3. 1979-1982, Andrew W. Mellon Foundation: Mellon Young Scientist Program in Reproductive Endocrinology, Co-Investigator, \$225,000/3 yr.
4. 1979-1984, NICHD: Reproductive Endocrinology Program; Co-Director, Standards and Reagents Core Facility, \$93,21/yr.
5. 1980-1985, NICHD: Training Program in Reproductive Endocrinology, Faculty Member, \$150,914/yr.
6. Ford Foundation: Training Program in Reproductive Endocrinology, Faculty Member, \$120,000/yr.

SERVICE ACTIVITIES

A. Departmental Activities

1. Director, Central Ligand Assay Laboratory, University Hospitals

B. Medical School - Hospital

1. Director, Ligand Assay Core Facility, Diabetes Research and Training Center
2. Co-Director, Standards and Reagents Core Facility, Reproductive Endocrinology Program

C. Regional and National Activities

1. Educational Committee Member; Society for the Study of Reproduction
2. National Scientific Program Director, Clinical Ligand Assay Society

PUBLICATIONS

A. Papers Published in Scientific Journals

1. Nordblom, G.D., Webb, R., Counsell, R.E., England, B.G.: A chemical approach to solving bridging phenomena in steroid radioimmunoassays. Steroids 38:161-173, 1981.

2. Khazaeli, M.B., England, B.G., Dieterle, R.C., Nordblom, G.D., Kabza, G.A., Beierwaltes, W.H.: Development and characterization of a monoclonal antibody which distinguished the B-subunit of human chorionic gonadotropin (hCG) in the presence of hCG. Endocrinology 109:1290-1292, 1981.
3. Sisson, J.C., Gross, M.D., Freitas, J.E., Jackson, C.E., England, B.G.: Combining provocative agents of calcitonin to detect medullary carcinoma of the thyroid. Henry Ford Hospital Journal 29:75-80, 1981.
4. England, B.G., Webb, R., Dahmer, M.K.: Follicular steroidogenesis and gonadotropin binding to ovine follicles during the estrous cycle. Endocrinology 109:881-887, 1981.
5. Webb, R. and England, B.G.: Identification of the ovulatory follicle in the ewe: Associated changes in follicular size, thecal and granulosa cell LH receptors, antral fluid steroids and circulating hormones during the preovulatory period. Endocrinology 110:873-881, 1982.
6. Stagmiller, R.B. and England B.G.: Folliculogenesis in the bovine. Theriogenology 17:43-52, 1982.

B. In Press

1. Staigmiller, R.B., England, B.G., Webb, R., Short, R.E., Bellows, R.A.L.: Estrogen secretion and gonadotropin binding by individual bovine follicles during estrus. J Ann Sci.
2. Webb, R. and England, B.G.: Relationship between LH receptor concentrations in thecal and granulosa cells and in vivo and in vitro steroid secretion by ovine follicles. J Reprod Fert.
3. England, B.G.: Follicular development in the cow and sheep. University of Arkansas, Experiment Station Special Report.

C. Abstracts of Papers Presented at Regional and National Meetings

1. Mukhopadhyay, S.K., England, B.G., Beierwaltes, W.H.: Effect of Salt Concentrations on Radioiodination by Chloramine T. American Society of Medical Technologists, 43rd Annual Meeting, Anaheim, CA, August 1981.
2. Griffin, B.F., Bajpai, P.K., McCully, M.J., England, B.G.: The Effect of Adriamycin on the Reproductive System of the Male Pre-puberal Rat. American Society of Andrology, Sixth Annual Meeting, 1981.

3. Nordblom, G.D., Schappa, L.W., Dieterle, R.C., England, B.G.: Towards a Better Understanding of Bridge-Binding in Steroid Radioimmunoassays Using Monoclonal Antibodies, 14th Annual Meeting of the Society for the Study of Reproduction, Corvallis, Oregon, August 1982.
4. Nordblom, G.D., Huler, R.J., England, B.G.: Radioimmunoassay of Androstenedione: Specificity and Reduced Bridge-Binding, 34th Annual Meeting of the American Association of Clinical Chemists, Anaheim, California, August 1981.
5. Khazaeli, M.B., England, B.G., Kabza, G.A., Sargent, E.W., Beierwaltes, W.H.: Radioimmunoassay of Free Beta-Subunit of Human Chorionic Gonadotropin (HhCG) in the Presence of Intact Chorionic Gonadotropin (BhCG), 8th Annual Meeting of the Clinical Ligand Assay Society, Detroit, May 7, 1982.
6. Khazaeli, M.B., England, B.G., Bracey, D., Faaleolea, K., Sisson, J.C.: Comparison of Amerlex and Corning Radioimmunoassay Kits for the Quantitative Determination of Free Thyroxine. 8th Annual Meeting of the Clinical Ligand Assay Society, Detroit, May 8, 1982.
7. England, B.G.: Some Clinical Uses of Monoclonal Antibodies. Current Topics in Clinical Chemistry and Immunology, University of Michigan, Ann Arbor, March 10, 1982.
8. England, B.G.: Some Clinical Uses of Monoclonal Antibodies, 8th Annual Meeting of the Clinical Ligand Assay Society, Detroit, May 9, 1982.
9. England, B.G.: Some Clinical Uses of Monoclonal Antibodies. Michigan Section of the American Association of Clinical Chemists, Ann Arbor, May 27, 1982.

JOSEPH C. FANTONE

INSTRUCTOR IN PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES: None

TEACHING ACTIVITIES

- A. Sophomore Medical Student Pathology Laboratory (approximately 100 contact hours)
- B. Lecturer - Sophomore Medical Students (ICS-600) Immunopathology
- C. Lecturer - Clinical Immunology Series for House Officers
- D. Pulmonary Pathology Conference (monthly to Pulmonary Division - Internal Medicine)
- E. Arthritis and Rheumatic Disease Division Pathology Conference (monthly for 6 months)
- F. Lecturer - Continuing Medical Education Family Practice Review
- G. Lecturer - Microbiology and Immunology 624
- H. Seminar - Pediatric Cardiology
- I. Supervise undergraduates in Laboratory Honors Program
- J. Supervise two medical students in summer research program resulting in the presentation of two abstracts at Student Medical Research Forum and Mid-western Medical Research (Chicago)

RESEARCH ACTIVITIES

- A. During the previous 12 months, I have focused my efforts in three areas.
  - 1. Examining the role of prostaglandins in modulating acute inflammatory reactions
  - 2. Examining the role of oxygen derived metabolites in inflammatory reactions
  - 3. Examining the role of prostaglandins in modulating tumor cell adherence

B. Grant Support

1. NIH - Clinical Investigator Award (5 yrs) - Lung Inflammation (NIH-HL-00905)
2. Co-investigator: NIH grant beginning 9/1/82 Modulation of Acute Inflammatory Reactions in Experimental Diabetes (Steven L. Kunkel, Ph.D., P.I.)

SERVICE ACTIVITIES

A. Departmental

1. Interview resident applicants (20)
2. Cell Sorter and Cytofluorograph Development Committee
3. Chairman's Computer Advisory Committee

B. Medical School - Hospital

1. Medical student advisor (3rd and 4th years)

C. Regional and National Activities

1. Program Selection Committee for American Association of Pathologists (FASEB)
2. Member NIH - Grant site visit team for Minority Biomedical Science Programs
3. Lecturer - Eastern Michigan University Medical Technologists Program

PUBLICATIONS

A. Published

1. Fantone, J.C., Kunkel, S.L., Ward, P.A.: Chemotactic mediators in neutrophil dependent lung injury. Annual Rev Physiology 44:283-293, 1982.
2. Varani, J., and Fantone, J.C.: Phorbol myristate acetate induced adherence of tumor cells. Cancer Res 42:190-197, 1982.
3. Ogawa, H., Kunkel, S.L., Fantone, J.C., Ward, P.A.: Comparative study of eosinophil and neutrophil chemotaxis and enzyme release. Am J Path 104:149-155, 1981.

4. Ogawa, H., Kunkel, S.L., Fantone, J.C., Ward, P.A.: Digestion of the fifth component of complement by eosinophil lysosomal enzymes: Production of eosinophil specific chemotactic activity. Virchow Arch (Cell Path) 38:149-157, 1981.
5. Varani, J., Lovett, E.J., Fantone, J.C.: "Stimulated adherence of tumor cells: Relationship to metastasis. In Proc VI the Annual Meeting of EACR." Jeney and Lapis, Eds., Kugler, Amsterdam, 1982.
6. Fantone, J.C., Kunkel, S.L., Varani, J.: Inhibition of tumor cell adherence by prostaglandins. In, "Prostaglandins and Related Lipids." Vol 2. Poweles, J.T., Bochman, R.S., Honn, K.V., Ramwell, P., Eds. A. Liss Inc., NY, 1982, p. 673-677.
7. Kunkel, S.L., Fantone, J.C., Ward, P.A.: Role of prostaglandins in macrophage cell function. In, "The Reticuloendothelial System: A Comprehensive Treatise." Vol VI.
8. Kunkel, S.L., Fantone, J.C., Ward, P.A.: Complement mediated inflammatory reactions. Pathol. Annual, 11:127-154, 1981.

B. In press

1. Fantone, J.C., Schrier, D., Weingarten, B.: Inhibition of vascular permeability changes by Captopril. J Clin Invest.
2. Fantone, J.C., Geisinger, K.R., Appelman, H.D.: Papillary adenoma of the lung with lamellar and electron dense granules: An ultra-structural study. Cancer.
3. Fantone, J.C., and Ward, P.A.: Role of oxygen derived free radicals and metabolites in leukocyte dependent inflammatory reactions. Am J Path
4. Fantone, J.C., Weingarten, B., Kunkel, S.L.: Systematic prostaglandin treatment inhibits carrageenan induced vascular permeability. Biochem Pharm.

C. Submitted

1. Fantone, J.C., Kunkel, S.L., Varani, J.: PGI<sub>2</sub> inhibition of chemotactic factor induced tumor cell adherence.
2. Varani, J., and Fantone, J.C.: The role of CA<sup>++</sup> and Mg<sup>++</sup> in stimulated adherence in tumor cells.
3. Marasco, W.A., Fantone, J.C., Ward, P.A.: N-formylated oligopeptides are potent spasmogenic agents for guinea pig ileum.
4. Marasco, W.A., Fantone, J.C., Ward, P.A.: Characterization of the rat neutrophil formyl peptide receptor.

5. Fantone, J.C., Marasco, W.A., Elgas, L.G., Ward, P.A.: Modulation of rat neutrophil function in vivo by prostaglandins.
6. Fantone, J.C., Elgas, L.G., Ward, P.A.: Differential effects of prostaglandins on neutrophil activation by particulates and soluble stimuli.
7. Kunkel, S.L., Kaercher, K., Plewa, M., Fantone, J.C., Ward, P.A.: Production of cyclooxygenase products and superoxide anion by macrophages in response to chemotactic factors.

C. Abstracts

1. Kunkel, S.L., Plewa, M.C., Fantone, J.C., Ward, P.A.: Differential effect of C5a and f-Met-Leu-Phe on the production of  $O_2^-$  and prostaglandins by macrophages. IX Int. Complement Workshop. Key Biscayne, FLA, 1981.
2. Fantone, J.C., and Varani, J.: Prostaglandin inhibition of PMA induced tumor cell adherence. Fed Proc. 1982.
3. Phan, S.H., Fantone, J.C., McGarry, B.: The effect lipopolysaccharide on bleomycin-induced pulmonary fibrosis. Amer Thorac Soc. 1982.



ANDREW FLINT, M.D.

ASSISTANT PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Surgical Pathology (Room II) - March, May, August (2 weeks)
- B. Cytology - October, December, February, April, June, January (2 weeks)

TEACHING ACTIVITIES

- A. Pathology of Interstitial Lung Diseases (2 hour lecture), Sophomore Pathology Course, January 1982
- B. Pathology of Infective Pneumonias (1 hour lecture), Sophomore Pathology Course, January 1982
- C. Allergic Bronchopulmonary Aspergillosis - Interphase Clinical Symposium, May 1982
- D. Group leader, M-4 students elective in Pathology, April, 1982

RESEARCH ACTIVITIES

- A. Morphologic correlations with collagen alterations in experimentally-induced interstitial lung disease in guinea pigs, in collaboration with Jack D. Fulmer, M.D., University of Alabama in Birmingham
- B. Non-Hodgkins lymphoma study: Analyses of mixed lymphocytic-histiocytic lymphomas and poorly-differentiated lymphocytic lymphomas, carried out in collaboration with other members of the Lymphoma Review Panel, Southeastern Cancer Study Group
- C. Retrospective analysis of Hodgkin's disease: Prognostic significance of subclassifications, in collaboration with other Lymphoma Panel members, Southeastern Cancer Study Group
- D. Review and analysis of pulmonary vasculitides: A study based upon pathologic material and clinical records at The University of Michigan Medical Center
- E. Grant Support: None

## SERVICE ACTIVITIES

### A. Departmental

1. Residents Cytology Conference
2. Pulmonary Pathology Seminar, November, 1981
3. Faculty-Resident liaison person
4. Pizza seminar

### B. Medical School - Hospital

1. "Diagnostic usefulness and limitations of transbronchial biopsies", Pulmonary Medicine Conference, 1981
2. Gynecology-Pathology Conference, February, June, July
3. Case presentation and discussion (Churg-Strauss Syndrome), Rheumatology Grand Rounds, August 1981

### C. Regional and National Activities

1. Guest discussant, Tri-State Thoracic Society Conference, Biloxi, Mississippi, January 1982
2. Southeastern Cancer Study Group Lymphoma Review Panel, Birmingham, Alabama, November 1981, Longboat Key, Florida, June 1982

## PUBLICATIONS

### A. Published

1. Hood, J., Wilson, E.R., Alexander, C.F., Flint, A.: Lymphomatoid granulomatosis manifested as a mass in the cerebellopontine angle. Arch Neurol 39:319, 1982.
2. Murad, T.M., Terhard, K., Flint, A.: Atypical cytologic findings in post partum vaginal smears. Acta Cytol 25:623-630, 1981.
3. Crist, W.A., Kelly, D.R., Ragab, A.H., Roper, M.A., Dearth, J.C., Castleberry, R.P., Flint, A.: Predictive ability of Lukes-Collins classification of immunologic phototypes of childhood non-Hodgkin's lymphomas: An institutional series and literature review. Cancer 48:2070-2075, 1981.
4. Whitcomb, C.C., Cousar, J.A., Flint, A., Crissman, J.D., Collins, R.D., Byrne, G.E.: Clinical relevance of a cytologic subclassification of histiocytic lymphoma. The Southeastern Cancer Study Group Experience. Cancer 48:2464-2474, 1981.

5. Fulmer, J.D., Flint, A.: Interstitial lung disease - An overview. IM-Internal Medicine for the Specialist, 2:23-32, 1981.

B. In Press

1. Flint, A.: The interstitial lung diseases: A pathologist's view. In, "Clinics in Chest Medicine." Fulmer, J.D., Ed., W.B. Saunders, Philadelphia, 1982.
2. Vath, R., Flint, A., Fulmer, J.D.: The lymphocytic infiltrative lung diseases. In, "Clinics in Chest Medicine." Fulmer, J.D., Ed., W.B. Saunders, Philadelphia, 1982.
3. Flint, A., Terhart, K., Murad, T.M., Taylor, P.: Confirmation of metastases by fine needle aspiration biopsy in patients with gynecologic malignancies. Gynecol Oncol
4. Grissom, J.R., Whitley, R., Durant, J.R., Flint, A.: Thymic hyperplasia in a case of Hodgkin's disease. Southern Med J

BETTY ANN FORBES, Ph.D.

RESEARCH ASSOCIATE II  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Clinical Microbiologist in the Main Laboratory directly responsible for:
  - 1. Student and resident diagnostic teaching
  - 2. Physician consultation
  - 3. Intralaboratory consultant

TEACHING ACTIVITIES

- A. Pathology Residents - laboratory instruction, daily
- B. Participation in Clinical Pathology Weekly Conference
- C. Clinical Pathology Conferences
  - 1. "Nosocomial Infections and Resistance Plasmids", December 18, 1981.
  - 2. "Setting up a Clinical Microbiology Laboratory" with Dr. Pierson, December 4, 1981.

RESEARCH ACTIVITIES

- A. Current Research Activities
  - 1. "Direct Susceptibility Testing of Positive Blood Cultures," Principle Investigator. Partially supported by Micro-Media Systems and the Vitek Corporation.
  - 2. "Clinical Evaluation of the Antimicrobial Removal Device," Co-Investigator with Dr. Kenneth McClatchey. Research contract funded by Marion Laboratories (33,000).
  - 3. "In vitro Studies Using Subinhibitory Concentrations of MKO787 (N-Forminidoyl Thienamycin) Involving Methicillin-resistant S. aureus." Principle Investigator.

## SERVICE ACTIVITIES

- A. Departmental and Interdepartmental Service Activities
  - 1. Member, Infectious Diseases Journal Club
  - 2. Daily Clinical Microbiology laboratory rounds
- B. National Activities
  - 1. Paper presented at the 82nd annual meeting of the American Society of Microbiology. Atlanta, Georgia, May 7-12, 1982. B.A. Forbes and D.R. Schaberg. "Transfer of Resistance Plasmids from S. epidermidis to S. aureus: Evidence for Conjugative Exchange of Resistance."

## PUBLICATIONS

- A. Articles submitted for publication
  - 1. Forbes, B.A. and Schaberg, D.R.: Transfer of resistance plasmids from Staphylococcus epidermidis to Staphylococcus aureus: Evidence for conjugative exchange resistance. J Bacteriology, 1982.
- B. Published Abstracts
  - 1. "Transfer of R Plasmids from S. epidermidis to S. aureus: Evidence for Conjugal Exchange of Resistance." Abstracts, American Society for Microbiology, 1982.
- C. Submitted Abstracts
  - 1. Subinhibitory Concentrations of MK0787 Induce Increased Resistance to Methicillin and MK0787 in vitro in MRSA." American Society of Microbiology - 22nd Interscience Conference on Antimicrobial Agents and Chemotherapy, 1982.
  - 2. Schalberg, D.R. and Forbes, B.A.: "Conjugative Gentamicin R-Plasmids in Clinical Isolates of S. aureus." American Society of Microbiology - 22nd Interscience Conference on Antimicrobial Agents and Chemotherapy, 1982.

BRUCE A. FRIEDMAN, M.D.

PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Director, Laboratory Data Center (effective March 22, 1982)
- B. Director, Venipuncture Team
- C. Associate Director, Blood Bank

TEACHING ACTIVITIES

- A. Co-Director of Microscopic Anatomy-General Pathology 506 (Inteflex) with responsibility for course administration and approximately one-half of the pathology teaching load.
- B. Principal planner and participant in a two and one-half day postgraduate seminar in blood banking entitled "Current Topics in Blood Banking" held at Towsley Center on June 2-4, 1982.
- C. Course planning committee for a one and one-half day seminar entitled "The Phlebotomy Team: Technical and Management Perspectives" held at the Towsley Center on May 13-14, 1982.
- D. Delivered lectures on blood banking to Inteflex students in the fourth year course in Human Illness.
- E. Delivered assorted lectures in blood banking and computer topics to Pathology House Officers during the course of the year.

RESEARCH ACTIVITIES

- A. Systems for monitoring blood utilization in hospitals
- B. The evolving role of the Hospital Transfusion Committee
- C. Blood Bank inventory control
- D. Differences in blood transfusion by age among hospital patients

## SERVICE ACTIVITIES

### A. Departmental

1. Participant in a work group planning the upgrade of the laboratory computer
2. Computer Oversight Committee

### B. Medical School - Hospital

1. Chairman, Transfusion Committee
2. Quality Assurance Committee
3. Patient Care Evaluation Work Group
4. Medical Record Work Group
5. Order Entry-Results Reporting Task Force
6. Physicians' Advisory Committee to the Laboratory Data Center

### C. University

1. Senate Advisory Committee on University Affairs (term ended April 1982)
2. Ad hoc Committee on a Central Grievance Mechanism
3. Joint appointment as Associate Professor of Epidemiology in the School of Public Health (resigned from this position effective September, 1982)

### D. Regional and National Activities

1. Chairman of an ad hoc committee convened by the Blood Resources Branch of the National Heart, Lung, and Blood Institute to review an unsolicited contract proposal on blood donor recruitment.
2. Chairman, Transfusion Practices Committee of the American Association of Blood Banks
3. Reviewer for Transfusion.
4. Invited Lectures and Workshops
  - a) Lectures presented to the Illinois Association of Blood Banks at their annual meeting in Galesburg, Illinois, on September 18, 1981.

- b) Lecture presented to the Fourth Ohio PSR Council and guests in Sylvania, Ohio, on January 13, 1982.
  - c) Two lectures presented at a workshop on blood transfusion sponsored by the American Association of Anesthesiology in San Diego, California, on January 23-24, 1982.
  - d) Lecture presented at the annual meeting of Pennsylvania Association of Blood Banks in Pittsburgh, Pennsylvania, on April 3, 1982.
  - e) Lecture presented to the medical staff of Pawating Hospital in Niles, Michigan, on May 28, 1982
5. Principal planner and lecturer in a two-day postgraduate seminar on monitoring blood transfusion in hospitals sponsored by InterQual, Inc. and presented in Chicago, New York, Dallas, and Cleveland during the year.

#### PUBLICATIONS

##### A. Published

- 1. Friedman, B.A., Burns, T.L., Schork, M.A., Kalton, G.: A Description and Analysis of Current Blood Transfusion Practices in the United States with Applications for the Hospital Transfusion Committee. In: "Clinical Laboratory Annual, 1982." Hamburger, H.A., Batsakis, J.G., Eds., Appelton-Century-Crofts, New York, 1982.
- 2. Friedman, B.A.: The Maximum Surgical Blood Order Schedule. In: "Safety in Blood Transfusion Practice." Walker, R.H., and Polesky, H.F., Eds., College of American Pathologists, Chicago, 1982.
- 3. Watkins, G.M., Glover, J.L., Greenburg, A.G., Friedman, B.A.: Present use of blood and blood products (A panel presentation). J Trauma 21:1005, 1981.

##### B. In Press

- 1. Friedman, B.A., Abbott, R.D., Williams, G.W.: A blood ordering strategy for hospital blood banks derived from a computer simulation. Am J Clin Path, 1982.



PAUL W. GIKAS, M.D.

PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. My diagnostic service activities were performed during the period July through December, 1981. This included two weeks on the Cytology Service and two months and three weeks in Room I on the Surgical Pathology Service. I shared in the interpretation of renal biopsy specimens during that period and one-half day per week was spent in Surgical Pathology, including diagnostic renal electron microscopy, at the Ann Arbor VA Hospital. I also diagnosed the genitourinary specimens submitted to the Department from non-University sources. I was on sabbatical leave from January 1, 1982 through June 30, 1982. The first five months of this leave were spent in the Department of Pathology at Rush-Presbyterian-St. Luke Medical Center in Chicago studying the ultrastructure of neoplasms under Dr. Victor E. Gould. During this period of time, I served as a visiting professor in that Department participating in their weekly diagnostic conferences and teaching. The last month of the sabbatical was spent reading and preparing for my participation as a faculty member for the University of Michigan Northern Michigan Summer Conference (June 20-25, 1982 in Bellaire, Michigan).

TEACHING ACTIVITIES

- A. In the fall of 1981 I delivered a series of lectures on genitourinary and renal pathology to the residents in our Department.
- B. During my sabbatical I returned to Ann Arbor and delivered a lecture on "Pathogenesis of Highway Injury" to the sophomore medical class.

RESEARCH ACTIVITIES: None

GRANT SUPPORT: None

SERVICE ACTIVITIES

- A. Departmental Activities
1. Prior to the period of my sabbatical, I was responsible for the following conferences based in the Department of Pathology:
    - a) Weekly Renal Biopsy Conference

- b) Monthly Arthritis-Pathology Conference. (Bi-monthly devoted to lupus nephropathy)
    - c) Monthly Urologic Pathology Conference
  - 2. My departmental duties also included serving as Director of the Electron Microscopy Service and Coordinator of the Residency Training Program.
- B. Medical School - Hospital
  - 1. My University Hospital committee responsibilities included membership on the Disaster Committee.
  - 2. On the University level I am a member of the Board In Control of Intercollegiate Athletics and was chairperson of the nominating committee for the Alternate Faculty Representative to the Big Ten Conference.
- C. Regional and National Activities
  - 1. Clinical Pathologist in Lupus Nephritis Corroborative Group (Dr. E. J. Lewis, Principal Investigator, Rush-Presbyterian-St. Luke Medical Center, Chicago)
  - 2. Course Director for a course titled "Causes and Prevention of Highway Injury" at the Michigan State Medical Society Annual Scientific Meeting, Dearborn, Michigan, November 17, 1981
  - 3. Board of Directors, Physicians for Automotive Safety
  - 4. Board of Directors, Public Citizen, Inc. (Ralph Nader, Initial Chairman and Founder)
  - 5. Faculty at Northern Michigan Summer Conference sponsored by The University of Michigan, June 20-25, 1982, Bellaire, Michigan
  - 6. Invited to present a lecture, "Pathogenesis of Injuries in Car Crashes", and serve as panelist at the 58th Annual Session of American Congress of Rehabilitation Medicine, November 2, 1981, San Diego, California.

#### PUBLICATIONS

- A. Published
  - 1. Perlow, D.L., Gikas, P.W., Horowitz, E.M.: Effect of vesicle overdistention on bladder mucin. Urology 18:380-383, 1981.
- B. Submitted
  - 1. Gikas, P.W. and Smith, C.S.: Congenital mesoblastic nephroma, twenty-two year follow-up after apparent incomplete removal.

SANDRA GLUCK

INSTRUCTOR IN PATHOLOGY  
PROGRAM DIRECTOR, MEDICAL TECHNOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC ACTIVITIES: Not Applicable

TEACHING ACTIVITIES

- A. Responsible for organization and coordination of Pathology 410-412 lecture series, presented by guest lecturers or student-led sessions.

RESEARCH ACTIVITIES: Not Applicable

SERVICE ACTIVITIES

- A. LSA - Counseling for all MT undergraduates
- B. Medical Technology Admissions Committee
- C. Recruitment and career-education programs within University and local communities

DEPARTMENTAL ACTIVITIES

- A. Administration of MT program
- B. Writing and organization of reaccreditation Self-Study Report
- C. Organization of reaccreditation in hospital and community media
- D. Implementation of new curriculum format
- E. Publicity for program and profession in hospital and community media
- F. Cooperative planning with Departments of Biology, Microbiology and Immunology for necessary future curriculum changes

MEDICAL SCHOOL - HOSPITAL: Not Applicable

REGIONAL AND NATIONAL ACTIVITIES

- A. Annual meeting of state MT program directors
- B. State and national professional society meetings (MSMT and ASMT)

PUBLICATIONS: None

ROBERT T. GOLDMAN

CLINICAL ASSISTANT PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Surgical tissue rotation, WCGH
- B. Examine and report necropsies, WCGH
- C. Chief, Clinical Chemistry Laboratory, WCGH

TEACHING ACTIVITIES

- A. Residents, WCGH
  - 1. Surgicals
  - 2. Chemistry Rotation
- B. Clinical Conferences, WCGH
- C. Medical Technology School, WCGH

SERVICE ACTIVITIES

- A. Departmental
  - 1. Chairman, Radiosotope Committee, WCGH
  - 2. Chairman, Credentials Committee, WCGH
  - 3. Assistant Director of Pathology, WCGH
  - 4. Board of Directors, UMA, P.C.
- B. Medical School - Hospital
  - 1. JCAH Accreditation Committee

JOHN T. HEADINGTON, M.D.

PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Dermatopathology - daily, 12 months
- B. Muscle and peripheral nerve pathology - daily, 12 months

TEACHING ACTIVITIES

- A. Medical Students
  - 1. Dermatopathology lectures
  - 2. Muscle pathology lectures
- B. Pathology and Dermatology House Officers
  - 1. Dermatopathology

RESEARCH ACTIVITIES

- A. Effects of squaric acid dibutyl ester on alopecia areata
- B. Effects of Minoxidil on androgenetic alopecia
- C. Histology of thin melanomas
- D. Histochemistry and immunohistochemistry of the dermal glial system

SERVICE ACTIVITIES

- A. Departmental
  - 1. Surgical Pathology Search Committee
  - 2. MSP Committees, Dermatology and Pathology
  - 3. Internal Review Committee, Dermatology
  - 4. Acting Chairman, Department of Dermatology (in Dr. Voorhee's absence)

B. Regional and National Activities

1. National Committees

- a) Intersociety Pathology Council
- b) International League of Dermatopathology

2. National Courses

- a) Director, Advanced Dermatopathology, The American Academy of Dermatology
- b) Director and Presenter, Advanced Dermatopathologic Oncology (Short Course), The International Academy of Pathology

3. National Administrative

- a) Secretary-Treasurer, The American Society of Dermatopathology
- b) President-Elect, The American Society of Dermatopathology

4. Editorial Boards

- a) The American Journal of Dermatopathology
- b) The Journal of Cutaneous Pathology
- c) The Archives of Dermatology

C. Presentations at Meetings

- 1. International Dermatopathology Symposium, London, England, July 1981
- 2. Washington State Society of Pathologists, Seattle, Washington, October 1981
- 3. American Academy of Dermatology, San Francisco, California, December 1981
- 4. International Academy of Pathology, Boston, Massachusetts, February 1982
- 5. Oregon Dermatological Society and Dermatology Symposium, March 1982
- 6. American Society of Oral Pathology, Reno, Nevada, May 1982

## PUBLICATIONS

### A. Published

1. Swanson, N.A., Mitchell, A.J., Leahy, M.S., Headington, J.T, Diaz, L.A.: Topical treatment of alopecia areata: Contact allergen versus primary irritant therapy. Arch Dermatol 117:384, 1981.

### B. Submitted

1. Allen, R.J., Wong, P., Rothenberg, S., DiMauro, S., Headington, J.T.: Systemic carnitine deficiency associated with homocysteinuria due to 5, 10 - methylenetetrahydrofolate reductase deficiency.
2. Padilla, R.S., Flynn, K., Headington, J.T.: Epithelioid sarcoma. Enzyme histochemical and electron microscopic evidence of histiocytic differentiation. A case report with review of the literature. J Am Acad Dermatol
3. Solomon, A.R. and Headington, J.T.: An evaluation of vertical growth of thin superficial spreading melanomas by serial sections. Cancer.

### C. In Preparation

1. Headington, J.T. and Novak, I.: Histologic study of androgenetic alopecia treated with topical minoxidil: Preliminary findings.



KATHLEEN P. HEIDELBERGER, M.D.

PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Pediatric Surgical Pathology - daily, all year
- B. Pediatric Necropsies - daily, all year
- C. Pediatric Consultation Cases - daily, all year
- D. Bone Consultation Cases - intermittent backup for Lee Weatherbee
- E. Teratology Unit - Histology, as necessary, approximately 30 cases per year
- F. Children's Cancer Study Group - coordinate all pathological material and data necessary for all children registered in national tumor protocols

TEACHING ACTIVITIES

- A. University of Michigan Sophomore medical students - Laboratory Section, 6 hrs/week x 16 weeks
- B. One full class M2 lecture
- C. Preparation for class and attending M2 lectures in pathology 6 hrs/week x 16 weeks
- D. Inteflex students - organized, coordinated and participated in "Congenital Heart Day"
- E. M4: Peds Surgical Pathology while they were on their elective
- F. M4: Senior year counselor for one student
- G. House Officers in Pathology - daily reading of pediatric surgicals. Gross and microscopic supervision of most pediatric necropsies
- H. Surgical Pathology Conference - 1 hour/week
- I. Gross Autopsy Conferences - 1 hour/week
- J. Pediatric House Officer - mentor for 0.5 month elective

- K. Towsley Update for Family Practitioners - 1 hour CPC
- L. Conferences
  - 1. Pediatric Cardiology Death Conference - monthly
  - 2. Pediatric Tumor Conference - twice monthly
  - 3. Pediatric Liver/G.I. Conference - monthly
  - 4. CPC/General Death Conference - approximately monthly

#### RESEARCH ACTIVITIES

- 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. Several projects with the surgeons looking at the morphologic manifestations of their operative techniques or other manipulations in experimental animals
- D. Several case reports with pediatricians and/or surgeons concerning malformations, mucopolidosis, and amniotic band syndrome
- E. Histologic studies of myocardium in hypoplastic left heart syndrome; working with cardiac surgeons to establish criteria for surgical correction
- F. Pulmonary Morphometrics
  - 1. Multiphased, ongoing study with Pediatric cardiologists and Thoracic surgeons on effects of various congenital heart defects on the pulmonary vasculature
  - 2. Studies of regional variations in lung structure
  - 3. Compiling data base of morphometric characteristics of normal lungs at various ages
  - 4. Study of pulmonary vascularity in SIDS
  - 5. Study of lung development in RDS of newborn
  - 6. Consultant for grant request of Paul L. Carson, Ph.D. correlating intrauterine ultrasound findings with natal lung development
- G. Grant Support: None

## SERVICE ACTIVITIES

- A. Departmental
  - 1. Departmental Resident Selection Committee
  - 2. Departmental ACAPT
- B. Medical School - Hospital
  - 1. CAA (Committee on Academic Affairs) Curriculum Committee
  - 2. Inteflex Admissions Committee
- C. Regional and National Activities
  - 1. Chairman of the Pediatric Pathology Club's Study Committee on Feasibility/Applicability of Anatomic Pathology Boards
  - 2. Elected to a three-year term as Councilor of the Pediatric Pathology Club

## PUBLICATIONS

- A. Published
  - 1. Jaffee, M.H., White, S.J., Silver, T.M., Heidelberger, K.P.: Wilms' tumor: Ultrasonic features, pathologic correlation and diagnostic pitfalls. Radiology 140:147-152, 1981.
  - 2. Rocchini, A.P., Wessner, K.M., Heidelberger, K.P., Keren, D.F., Behrendt, D., Rosenthal, A.: Procine xenograft valve failure in children: An immunologic response. Circulation (Suppl II):162-171, 1981.
  - 3. Dick, M., II, Heidelberger, K.P., Crowley, D., Rosenthal, A., Hees, P.: Quantitative morphometric analysis of pulmonary arteries in two patients with D-transposition of the great arteries and persistence of the fetal circulation Pediatr Res 15:1397-1401, 1981.
  - 4. Shapira, N., Rosenthal, A., Heidelberger, K.P., Badanowski, R., Behrendt, D.M.: Pulmonary vascular morphology in shunted and non-shunted patients with tetralogy of Fallot. J of Thorac Cardiovas Surg 83:650-658, 1982.
- B. In Press
  - 1. Rocchini, A.P., Cho, K.J., Heidelberger, K.P., Byrum, C.R.: Transluminal angioplasty of superior vena cava obstruction in a 15 month old child. (in press, Chest).

ROBERT C. HENDRIX, M.D.

PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC ACTIVITIES

- A. Surgicals
  - 1. 8 weeks scheduled
  - 2. Unscheduled and unrecorded substitution (4 weeks)
  
- B. Autopsy
  - 1. General supervision
  - 2. Five months direct responsibility
  - 3. Forensic pathology
  
- C. General
  - 1. Staff call list
  - 2. Transmittal letters for outgoing surgical slides
  - 3. Autopsy reports to family, referring physicians, lawyers
  - 4. SNOP code supervision
  
- D. Backup for Ophthalmologic Pathology
  
- E. Backup for Pediatric Pathology

TEACHING ACTIVITIES

- A. Lecture sequence coordinator LCS-Sophomore
  - 1. Medicine and the Law - 1st semester 1981-82
  
- B. Teaching and working interdepartmental conferences
  - 1. Internal Medicine CPC
  - 2. Occasional substitute in others

## RESEARCH ACTIVITIES

- A. Value of the Autopsy. Clinical Pathologic Correlations

## SERVICE ACTIVITIES

- A. Departmental
  - 1. Anatomic Pathology Committee
  - 2. Alternate Member MSP Executive Committee
- B. Hospital - Medical School
  - 1. Hospital Quality Assurance Committee
  - 2. Hospital Medico-Legal Committee
  - 3. Cancer Work Group
  - 4. Substitute "listener" for chairmen as needed in various committees
  - 5. Hospital Tissue Committee
- C. Regional and National
  - 1. National Association of Medical Examiners: Member Educational Committee
  - 2. Deputy Medical Examiner, Washtenaw County
  - 3. Departmental evening seminar: Gun shot wounds
  - 4. Member Board of Directors, Michigan Medicolegal Foundation, Inc.

SAMUEL P. HICKS, M.D.

PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Work with house officers and staff in gross and microscopic examination and diagnosis of brains at the autopsy and from autopsies, and neurosurgical and other nervous system biopsy material from University Hospital.
- B. Work with the above in a similar way with autopsy brain material and neurosurgical material sent for consultative study from University associated hospitals, state hospitals, and other hospitals and institutions.
- C. Brain Cutting Conference, weekly, for diagnosis and demonstration of diagnostic methods, using selected cases in A and B.
- D. Continuous review of quality control of neuropathologic diagnostic techniques and search for improved and new methods.
- E. Responsibility for Neuropathology Laboratory.

TEACHING ACTIVITIES

- A. Neural and Behavioral Sciences 600, Neuropathology for second-year medical students, and others, including Inteflex-4 students, annually, 20 hours, lectures and laboratories.
- B. Neuropathology for Pathology house officers. This exercise is integrated with Diagnostic Service Activities A, B, and C.
- C. Neuropathology 858. Intensive laboratory-lecture course for house officers in Pathology, and the several clinical services concerned with the nervous system, graduate students, and faculty. Annually, 18 hours. One credit hour elective.
- D. Teach neuropathologic techniques, basic neuroanatomy and neuropathology to our laboratory technologists.

## RESEARCH ACTIVITIES

- A. Development of the mammalian nervous system using effects of radiation, mutant genes, and other factors as experimental tools. Current experiments concern recovery and plasticity of nervous system structure and function after severe fetal radiation injury, and comparison of the morphogenesis of radiation-induced and gene-induced developmental hydrocephalus in rats. Other work beginning: a study of environmental factors that may be related to Alzheimer's presenile and senile dementia, in collaboration with colleagues in the School of Public Health; a review of the large number of human brains from autopsies at this institution and especially our state institutions for the developmentally disabled. More on these in the Neuropathology Laboratory Overview elsewhere in this report.
- B. Grant Support
  - 1. USPHS grant NS 10531. Other support being sought.

## SERVICE ACTIVITIES

- A. Departmental: Inferred from this report
- B. Medical School - Hospital
  - 1. Neural and Behavioral Sciences Curriculum Committee (Medical School)
  - 2. Neural and Behavioral Sciences Examinations Committee
  - 3. Subcommittees on Human Use of Radioisotopes and on Radioactive Drug Research (University)
- C. National Activities
  - 1. Society of Medical Consultants to Armed Forces
  - 2. Reviewer for National Science Foundation research grant applications
  - 3. Referee submitted journal articles

## PUBLICATIONS

- A. Published
  - 1. Mitchell, M.L., Erickson, R.P., Schmid, D., Hieber, V., Poznanski, A., Hicks, S.P.: Mannosidosis: Two brothers with different degrees of disease severity. Clinical Genetics 20:191-202, 1981.

B. Abstracts

1. D'Amato, C.J. and Hicks, S.P. Hydrocephalus Produced by Prenatal Irradiation. Proceedings of the 11th annual meeting, Society for Neuroscience, Los Angeles, California. (Abstract and poster exhibit). Neuroscience Abstracts 7:467, 1981.
2. Bertoni, J.M., Label, L.S., Sackellares, J.C., Hicks, S.P.: Supranuclear Gaze Palsy in Familial Creutzfeldt-Jakob Disease. (Abstract and poster exhibit pp 55). American Acad. Neurology 34th Annual Meeting, Washington, DC, April 1982, Neur 32, A77, 1982.



JERRY L. HUDSON, Ph.D.

ASSISTANT PROFESSOR OF PATHOLOGY  
DIRECTOR, FLOW CYTOMETRY PROGRAM

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Provide technical/professional interpretation of flow cytometry data including cell surface marker and all cycle analysis studies.

TEACHING ACTIVITIES: None

RESEARCH ACTIVITIES

- A. Research and development of automated cytometry (flow cytometry and image analysis) procedures for use in clinical diagnostic applications. Principal projects involve development and application of cell cycle analysis techniques to clinical programs.
- B. Grant Support - None

SERVICE ACTIVITIES

- A. Departmental Activities
  - 1. Director, Cytometry Program:  
This responsibility involves coordination of a comprehensive research/development and application program based on Analytical Cytology and Flow Cytometry. Four activities are currently within this program: Flow Cytometry Laboratory, Image Analysis Laboratory, Hybridoma Laboratory and Departmental Computer Facilities. An overview of this program is attached.
  - 2. Chairman, Departmental Computer Committee:  
This committee is charged with providing a comprehensive overview of departmental computer activities in an advisory capacity to the Department Chairman, Dr. Peter A. Ward
- B. Medical School - Hospital - None
- C. Regional and National Activities
  - 1. Presented paper at National Coulter Flow Cytometry Users Meeting entitled, "Applications of Cell Cycle Analysis Software." New Orleans, Louisiana, 14 April 1982.

2. Presented paper at Engineering Foundation Conference on Cytometry in the Clinical Laboratory entitled, "Effects of Leukemic Sera on Free Fatty Acids Upon Human Lymphocyte Proliferation." Santa Barbara, California, 26 April 1982.
3. Presented paper at Henry Ford Hospital Symposium on Cell Sorter Applications in Biology and Medicine: Immunological and Cell Cycle Analyses entitled, "Multiparameter Flow Cytometric Analysis of Macrophage Phagocytosis and Killing." Detroit, Michigan, 7 May 1982.

#### PUBLICATIONS

##### A. Published

1. Pipkin, J.L, Hinson, W.G., Anson, J.F., Hudson, J.L.: Isoproterenol modulation of nuclear protein synthesis during rat liver regeneration: An electrophoretic and capillary isotachnophoretic study. Cell Biology International Reports 6:205-214, 1982.
2. Hinson, W.G., Pipkin, J.L., Hudson, J.L., Anson, J.F., Tyrer, H.: A Micro-sample collection device for electrostatically sorted cells or particles and its preparative use for biochemical analysis. Cytometry 6:390-394, 1982.

KENT J. JOHNSON, M.D.

ASSISTANT PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
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DIAGNOSTIC SERVICE ACTIVITIES

- A. Renal Pathology Service

TEACHING ACTIVITIES

- A. Lecturer - Renal Pathology, Second year pathology course.
- B. Lecturer - Renal Pathology, Inteflex
- C. Lecturer - Renal Pathology, Medical Technology Students
- D. Lecturer - Immunologic Renal Disease, Clinical Immunology Series
- E. Lecturer - Glomerulonephritis, Interphase
- F. Lecturer - Respiratory Subject Committee, University of Connecticut

RESEARCH ACTIVITIES

- A. Oxygen Free Radical Mediated Tissue Injury
- B. Grant Support
  - 1. NIH #019026 (CIA)

SERVICE ACTIVITIES

- A. Departmental Activities
  - 1. Renal Pathology Conference - Biweekly
- B. Medical School - Hospital: Not Applicable
- C. Regional and National Activities: Not Applicable

PUBLICATIONS

- A. Published
  - 1. Johnson, K.J. and Ward, P.A.: Role of oxygen metabolites in immune complex injury of lung. J Immunol 126:2365, 1981.

2. Johnson, K.J. and Varani, J: Substrate hydrolysis by immune complex activated neutrophils: Effect of physical presentations of complexes and protease inhibitors. J Immunol 127:1875, 1981.
3. Johnson, K.J. and Ward, P.A.: Acute and progressive lung injury after contact with phorbol myristate acetate. Am J Pathol 107:29, 1982.
4. Varani, J., Ward, D., Johnson, K.J.: Nonspecific protease and elastase activity in rat leukocytes. Inflammation 6(2):177, 1982.
5. Till, G.O., Johnson, K.J., Kunkel, R., Ward, P.A.: Intravascular activation of complement and acute lung injury: Dependency on neutrophils and toxic oxygen metabolites. J Clin Invest 69:1126, 1982.

B. In Press

1. Ward, P.A., Fantone, J.C., Johnson, K.J.: Lung injury produced by oxygen metabolites. VIIIth International Symposium on Immunopathology.
2. Johnson, K.J. and Ward, P.A.: Newer concepts of the pathogenesis of immune complex induced tissue injury. Lab. Invest.

C. Articles Submitted

1. Johnson, K.J., Tennant, R., Gilles, C.: Ultrastructural evidence of a neural origin for Wilm's tumor.
2. Ward, P.A. and Johnson, K.J.: Lung inflammatory mechanisms.
3. Hirszel, P., Yamase, H.T., Carney, W.R., Galem, M.A., Graeber, C.W., Johnson, K.J., Kennedy, T.L., Lapkin, R.A., McLean, R.H., Rosenworcel, E., Rowett, D.A.: Mesangial proliferative glomerulonephritis with IgM deposits: Clinicopathologic analysis and evidence for morphologic transition.
4. Till, G.O., Tourtellotte, W., Menapace, D., Kunkel, R., Beauchamp, C., Johnson, K.J., Ward, P.A.: Oxygen radical dependent lung damage following thermal injury of rat skin.

D. Chapters in Books

1. Ward, P.A. and Johnson, K.J.: Inflammatory mechanisms in lung injury. In, "Advances in Immunopathology." W.O. Weigle, Editor, Elsevier, North Holland. pp. 257-269, 1981.
2. Johnson, K.J., Striker, G., Killen, P.: Immunopathology of glomerular disease. In, "Handbook of Inflammation." Vol. II. P.A. Ward, Editor, Elsevier, North Holland. Submitted.

E. Abstracts

1. Johnson, K.J. and Ward, P.A.: Oxygen Free Radicals in Lung Injury. Michigan Thoracic Society, 1981.
2. Till, G.O., Johnson, K.J., Ward, P.A.: Leukocyte-Dependent Lung Injury Resulting From Intravascular Complement Activation. Tagung der Gesellschaft fur Immunologic. Bern, Switzerland, 1981.
3. Sandblom, R., Johnson, K.J., Killen, P., Hudson, L., Striker, G.: Lung Injury Due to Oxygen Metabolites Alters the Composition of Extracellular Matrix. Fed Proc 41:3922, 1982.
4. Johnson, K.J. and Ward, P.A.: Acute and Progressive Lung Injury After Contact With Phorbol Myristate Acetate. Fed Proc 41:1253, 1982.
5. Till, G.O., Johnson, K.J., Ward, P.A.: Oxygen-Dependent Lung Injury Following Thermal Injury of Skin. Fed Proc 41:2897, 1982.
6. Kunkel, R. and Johnson, K.J.: Morphological Study of Lung Injury Produced by Oxygen Metabolites. Fed Proc 41:2898, 1982.
7. Duque, R.E., Phan, S., Sulavik, M., Till, G.O., Johnson, K.J., Ward, P.A.: Pulmonary Alveolar Macrophage Dysfunction Following Remote Thermal Injury. Fed Proc 41:3923, 1982.
8. Phan, S., Armstrong, G., Sulavik, M., Schrier, D., Johnson, K., Ward, P.A.: A Comparative Study of Pulmonary Fibrosis Induced by Bleomycin and an O<sub>2</sub> Metabolite Producing Enzyme System. 25th Aspen Lung Conference, 1982.
9. Hirszel, P., Kennedy, T., McLean, R.H., Johnson, K.J., Rosenworcel, E., Rowett, D., Yamase, H.: Long Term Evaluation of Patients with Mesangeil IgM Glomerulonephritis. Amer Fed Clin Res, 1982.
10. Sandblom, R., Johnson, K.J., Killen, P., Sage, H., Hudson, L., Striker, G.: Lung Injury by Oxygen Metabolites Alters the Composition of Extracellular Matrix. 25th Aspen Lung Conference, 1982.
11. Ward, P.A., Johnson, K.J., Till, G.O.: Acute and Progressive Lung Injury Secondary to Toxic Oxygen Products from Leukocytes. 25th Aspen Lung Conference, 1982.

W. JOHN JUDD, F.I.M.L.S., M.I. Biol.

ASSISTANT PROFESSOR OF MEDICAL TECHNOLOGY  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
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DIAGNOSTIC SERVICE ACTIVITIES

- A. Director, Blood Bank Reference Laboratory.
  - 1. Provided consultation on all refer samples (approximately 80) from outside institutions.
  - 2. Introduced three new techniques for routine use in the University Hospital Blood Bank Reference Laboratory:
    - a) Chloroquine dissociation of IgG from red cells.
    - b) Z-ZAP treatment of red cells for removal of IgG.
    - c) Phthalate ester separation of transfused and autologous red cells.
  - 3. Attended Blood Bank Communications Meetings.
  - 4. Attended weekly meetings with Obstetrics and Gynecology Department to review alloimmunized prenatal patients.
- B. Consultant, Veterans Administration Medical Center.

TEACHING ACTIVITIES

- A. Pathology 409 and 412.
- B. Attended weekly Clinical Pathology House Officer Conferences.
- C. Trained pathology residents in Blood Bank Reference Laboratory procedures.
- D. Presented lectures for Blood Bank Continuing Education program.
- E. Presented lecture on Special Techniques in Blood Banking at Current Topics in Blood Banking Program, Department of Postgraduate Medicine.
- F. Presented lectures to Specialist in Blood Banking Programs at Wayne State University, Detroit, University of Cincinnati, and Emory University, Atlanta.

- G. Presented seminar on MN-system at Pathology Research Conference.
- H. Invited Lectures:
1. Blood Typing Anomalies - Michigan Association of Blood Banks Annual Meeting, Troy.
  2. Pretransfusion Testing: How Much is Enough? - Atlanta Red Cross; Bay Area Antibody Club, Oakland; Lexington Red Cross; Louisville Antibody Club; Fort Lauderdale Antibody Club.
  3. Polyagglutination - Atlanta Antibody Club; South Florida Blood Service.
  4. MN-System Serology and Biochemistry of Red Cell Membrane Sialoglycoproteins - Research in Progress Session, Annual Meeting of the American Association of Blood Banks, Chicago.
  5. Lectins - Irwin Memorial Blood Bank, San Francisco.
  6. MN-System Update - Pennsylvania Association of Blood Banks Annual Meeting, Pittsburgh; Atlanta Red Cross.
  7. Alloantibody Identification - Atlanta Red Cross; Garden City Osteopathic Hospital.
  8. Special Techniques in Blood Banking - Michigan Association of Blood Banks Annual Spring Workshop, Lansing.
  9. Microbial Induced Polyagglutination: T, Tk and acquired-B - American Association of Blood Banks Technical Workshop Program, Chicago.

#### RESEARCH ACTIVITIES

- A. Preliminary Communications at National Meetings:
1. Advani, H., Zamor, J., Judd, W.J., Johnson, C.L., Marsh, W.L.: Inactivation of Kell Blood Group Antigens by 2-aminoethylisothiouonium Bromide. Annual Meeting of the American Association of Blood Banks, Chicago. Abstract: Transfusion 21:625, 1981.
  2. Trudeau, L.R., Judd, W.J., Butch, S.H., Oberman, H.A.: Is a Room Temperature Crossmatch Necessary for the Detection of ABO Errors? Annual Meeting of the American Association of Blood Banks, Chicago. Abstract: Transfusion 21:625, 1981.
  3. Edwards, J.M., Moulds, J.J., Judd, W.J.: Chloroquine Dissociation: A New Technique for Phenotyping Red Cells Having a positive direct antiglobulin test. Annual Meeting of the American Association of Blood Banks, Chicago. Abstract: Transfusion 21:628, 1981.

4. Geisland, J.R., Judd, W.J., Issitt, P.D., et al. Studies on an  $M_i^V/M^k$  Proposita and Her Family. Annual Meeting of the American Association of Blood Banks, Chicago. Abstract: Transfusion 21:615, 1981.
5. Baumeister G., Dahr, W., Beyreuther, K., Moulds, J., Judd, W.J., Issitt, PD, Kruger J.: Studies on the Structure of the  $M_1$ ,  $T_m$  and Can antigens. Annual Congress of the German Society for Blood Transfusion and Immunohematology, Wurzburg, West Germany.

B. Additional Projects

1. Studies on the blood of an Mu/MsHe proposita - with colleagues at the University of Cincinnati, University of Cologne, Biological Corporation of America, and the Toledo Red Cross.
2. Studies on an autoanti-Kell - with colleagues at the Atlanta Red Cross.
3. Studies on an anti-U with unusual serologic characteristics - with colleagues at the Atlanta Red Cross.
4. Studies on Bacteroides fragilis enzymes: Their induction of red cell polyagglutination - with colleagues at the Community Blood Center of Kansas City.
5. Studies on the structure of the Henshaw antigen - with colleagues at the University of Cologne and Gamma Biologicals.
6. Crossreactivity of murine metastatic tumors with immune anti-B reagents - with colleagues from the Department of Pathology.

SERVICE ACTIVITIES

A. Departmental

1. Attended monthly Clinical Pathology Faculty meetings.
2. Attended Pathology Departmental meetings.

B. Regional and National Activities

1. American Association of Blood Banks - Technical Workshop Committee; Regional Workshop Committee; Committee on Reference Laboratories; Scientific Section Coordinating Committee (elected November 1981).
2. Michigan Association of Blood Banks - Annual Meeting Program Committee; Interim Scientific Committee; Executive Committee (term ended December 1981).



## PUBLICATIONS

### A. Published

1. Judd, W.J.: A handbook of serologic techniques for use in investigative immunohematology. West Chester: Biological Corporation of America, 1981.
2. Judd, W.J., Steiner, E.A. and Cochran, R.K.: Paraben-associated autoantiJk<sup>a</sup> antibodies: Three examples detected using commercially-prepared low-ionic-strength saline containing parabens. Transfusion 22:31-35, 1982.
3. Edwards, J.M., Moulds, J.J., Judd, W.J.: Chloroquine dissociation of antigen-antibody complexes: A new technique for typing red blood cells with a positive direct antiglobulin test. Transfusion 22:59-61, 1982.
4. Judd, W.J.: Antibody elution from red cells. American Association of Blood Banks (Review article for Technical Seminar at forthcoming annual meeting).

### B. In Press

1. Daniels, G.L., Judd, W.J., Moore, B.P.L., et al: A 'new' high-frequency antigen, Er<sup>a</sup>. Transfusion.
2. Judd, W.J., Steiner, E.A., Capps, R.D.: Autoagglutination with apparent anti-P specificity reactive only by low-ionic-strength salt (LISS) techniques. Transfusion.
3. Judd, W.J., Geisland, J., Issitt, P.D., et al: Studies on the blood of an Mi M<sup>k</sup> proposita and her family. Transfusion.
4. Advani, H., Zamor, J., Judd, W.J., et. al: Inactivation of Kell blood group antigens by 2-aminoethylisothiuronium bromide. Brit J Haemat. 51: 107-115, 1982.

### C. In preparation

1. Trudeau, L.R., Judd, W.J., Butch, S.H., Oberman, H.A.: Is a room temperature crossmatch necessary for the detection of ABO errors?
2. Judd, W.J., Rolih, S.D., Dahr, W., et al. Studies on the blood of an Mu/MsHe proposita and her family: Serological evidence that Henshaw-producing genes do not code for the 'N' antigen.

DAVID F. KEREN, M.D.

ASSOCIATE PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Director, Clinical Immunopathology Laboratory
- B. Director, Clinical Chemistry Laboratory
- C. Surgical Pathology

TEACHING ACTIVITIES

- A. Medical Students and Graduate Students
  - 1. Section Director, Human Illness -
    - a) Inteflex 630, 640, 650
    - b) Lecture series on gastrointestinal pathology and endocrine pathology
  - 2. Biology 414 - Lecture on mucosal immunity
  - 3. Clinical Studies, Inteflex 410 - lecture on Clinical Immunology
- B. House Officers
  - 1. Coordinator - Weekly Clinical Pathology Rounds
  - 2. Coordinator - Weekly Clinical Pathology Didactic Lecture Series
  - 3. Clinical Immunopathology - daily sign-out
  - 4. Immunology Journal Club - weekly
  - 5. Clinical Chemistry Conference - weekly
- C. Postgraduate Teaching
  - 1. Director - Towsley Seminar in Clinical Chemistry and Immunology
  - 2. Lectures on Immune Complexes and Immunofluorescence

## RESEARCH ACTIVITIES

- A. Studies on kinetics of the mucosal immune response to bacterial antigens
- B. Immunohistochemical studies on the immunoglobulin-containing cells in inflammatory bowel disease
- C. Clinical immunopathology studies of monoclonal gammopathies
- D. Grant Support
  - 1. United States Army Research and Development Command. "An Investigation of the Memory Response of the Local Immune System to Shigella Antigens. \$99,956. September 1, 1981 - August 31, 1982.
  - 2. National Foundation for Ileitis and Colitis. "Immunopathogenesis of Inflammatory Bowel Disease." \$59,201. September 1, 1980 - August 31, 1982.
  - 3. National Institutes of Health. Gastrointestinal Training Grant. T32 Am 07367-01. Dr. Keren is a Trainer in gastrointestinal immunopathology. Funded September 1, 1980 for 5 years.
- E. Student Research Projects
  - 1. Scott Keren. Muramidase Activity of ileal secretions: Response to Local Antibiotic Therapy.
  - 2. Arthur Rosner. Use of a Mucosal Adjuvant (DEAE-dextran) to Augment the Mucosal Immune Response.

## SERVICE ACTIVITIES

- A. Departmental
  - 1. Resident Selection Committee
  - 2. Resident Counselor
  - 3. Clinical Pathology Committee
- B. Medical School - Hospital
  - 1. Scientific Advisory Committee - Dental School
  - 2. University Laboratory Animal Committee
  - 3. University Senate Assembly

C. Regional and National Activities (Invited Lectures)

1. American Gastroenterological Association Conference on Plasmids and Bacterial Adhesion. Reston, Virginia. September, 1981.
2. National Institutes of Health. Joint U.S. - Japan Conference on Cholera. Baltimore, Maryland. October, 1981.
3. American Society for Microbiology. Conference on Bacterial Adhesion in Pathogenesis. Atlanta, Georgia. December, 1981.
4. Johns Hopkins University, Department of Pathology. Immune Response of the Gastrointestinal Tract. Baltimore, Maryland. October, 1981.
5. International Academy of Pathology. Gastrointestinal Specialty Surgical Pathology Panel. Boston, Massachusetts. March, 1982.
6. Wayne State University, Department of Immunology. Model for Mucosal Immunity. Detroit, Michigan. January, 1982.
7. New York Academy of Sciences. Symposium on Mucosal Immunity. New York, New York. May, 1982.
8. University of Iowa. Midwest Conference on Secretory IgA. Iowa City, Iowa. May, 1982.

PUBLICATIONS

A. Published

1. Bostwick, D.G., Gensch, K.G., Burke, J.S., Billingham, M.E., Miller, D.C., Smith, J.C., Keren, D.F.: Whipple's disease presenting as aortic insufficiency. N Engl J Med 305:995-998, 1981.
2. Keren, D.F.: Whipple's disease: A review emphasizing immunology and microbiology. CRC Critical Review in Laboratory Medicine. 14:75-108, 1981.
3. Weesner, K., Rocchini, A., Heidelberger, K., Rosenthal, A., Keren, D.F.: Immune mechanisms in porcine xenograft failure in children. Circulation 64 (suppl 11):162-171, 1981.
4. Atkinson, J.P., Gorman, J.C., Curd, J., Hyla, J.F., Deegan, M.J., Keren, D.F., Abdou, N.I., Walker, S.E.: Cold dependent activation of complement in SLE: A unique cause for discrepancy between clinical and laboratory parameters. Arthritis and Rheumatism 24:592-601, 1981.

5. Mutchnik, M.G. and Keren, D.F.: In vitro synthesis of antibody to specific bacterial lipopolysaccharide by peripheral blood mononuclear cells from patients with alcoholic cirrhosis. Immunology 43:177-182, 1981.
6. Flynn, S.D., Keren, D.F., Torretti, B., Dieterle, R.C., Grauds, S.: An enzyme-linked immunosorbent assay (ELISA) to detect insulin antibodies. Clin Chem. 27:1753-1757, 1981.
7. Rao, K.M.K., Bordine, S.L., Keren, D.F.: Decision making by pathologists: A strategy for curtailing inappropriate tests. Arch Pathol Lab Med 106:55-56, 1982.
8. Keren, D.F., Kern, S.E.1, Bauer, D.H., Scott, P.J., Porter, P.: Director demonstration in intestinal secretions of an IgA memory response to orally administered Shigella flexneri antigens. J Immunol 128:475-479, 1982.
9. Kujada, F.P., Belitsos, N.J., Keren, D.F., Hutchins, G.M.: A submucosal variant of Whipple's disease. Gastroenterol. 82:46-50, 1982.

B. In Press

1. Clark, K.A. and Keren, D.F.: Demonstration of monoclonal lymphoplasmacytic proliferations by immunofluorescence on routine formalin-fixed, paraffin-embedded tissue. (Cancer).
2. Mozdzen, J.J. and Keren, D.F.: Detection of immunoglobulin antigens in methacrylate-embedded human colon. (J Histochem Cytochem)
3. Hamilton, S.R., Keren, D.F., Yardley, J.H., Brown, G.D.: Effects of parenteral keyhole limpet hemocyanin (KLH) or cholera toxin on intestinal immune response to KLH. (Int Arch Allergy Appl Immunol).
4. Keren, D.F., Collins, H.H., Baron, L.S., Kopecko, D.J., Formal, S.B.: Mucosal (IgA) immune responses of the intestine to a potential vaccine strain: Salmonella typhi gal E Ty 21a expressing Shigella sonnei from I antigen. (Infect Immunol)
5. Keren, D.F.: Local IgA anamnestic response following peroral immunization with Shigella flexneri antigens. (NIH publications).
6. Keren, D.F.: Mucosal (immunoglobulin A) immune response to non-invasive bacteria in the gut. (Microbiology).
7. Keren, D.F., Scott, P.J., McDonald, R.A., Kern, S.E.: Local IgA memory response to bacterial antigens. (Ann NY Acad Sci)
8. Keren, D.F.: Immunization via the intestinal route. CRC Press. Attachment of Micro-Organisms to the Gastrointestinal Mucosal Surface.

9. Keren, D.F.: Oral vaccines and the development of mucosal IgA responses. (Clin Immunol News.).

C. Abstracts and Brief Communications

1. Keren, D.F., Wells, J.J., Dobbins, W.O., Whisenant, B.J., Foley, J.L., Appelman, H.D.: Immunoglobulin-Containing Cells in Colonic Biopsies in Inflammatory Bowel Disease: Correlation of Immunofluorescence Findings in a Large Series With Clinical Assessment of Disease Activity. Gastroenterol. 82:1098, 1982.
2. Keren, D.F., Scott, P.J., Bauer, D.: Effect of Parenteral Immunization of the Mucosal Immune Response to Shigella flexneri. Fed Proc. 41:823, 1982.
3. Collins, H.H., Keren, D.F., Gemski, P., Formal, S.B., Zollinger, W.D., Lowell, G.H.: Stimulation of Secretion of Anti-Shigella Lipopolysaccharide (LPS) Secretory IgA by Mucosal Immunization With Meningococcal Outer Membrane Protein-LPS Complexes. Fed Proc. 41:830, 1982.
4. Keren, D.F.: Circulating Immune Complexes in Whipple's Disease. Reply. Gastroenterol. 80:1087c, 1981.
5. Keren, D.F.: More on Whipple's disease. Gastroenterol. 80:878c, 1981.
6. Rosner, A.J., Keren, D.F., Scott, P.J.: The Effect of DEAE-Dextran on the Primary Intestinal Immunologic Response in Rabbits to Shigella X16. 23rd Natl Stud Res For 50. 1982.
7. Keren, D.F., Appelman, H.D., Geisinger, K.R., Foley, J.L.: Immunoglobulin-Containing Cells in Inflammatory Bowel Disease in Correlation of Immunofluorescence Findings With Histopathology. Lab Invest. 46:45A, 1982.

NEELAM B. KUMAR, M.D.

INSTRUCTOR IN PATHOLOGY  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
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DIAGNOSTIC SERVICE ACTIVITIES

- A. Routine Cytopathology Laboratory assignment for 6 months
- B. Routine Surgical Pathology assignment for 2 months
- C. All gynecologic consultation cases
- D. All cytology consultation cases from July 1981 to December 1981
- E. All breast consultations cases during Dr. H. Oberman's absence

TEACHING ACTIVITIES

- A. Cytopathology conference for the residents - monthly
- B. Gynecologic pathology lectures for the residents
- C. Department of Pathology House Officer Surgical Pathology Conference - weekly
- D. Gynecologic pathology teaching of the gynecologic oncology fellows during their elective rotation in the Department of Pathology - 2 months
- E. Informal teaching of the cytotechnologists
- F. Occasional teaching of medical students (M-4) rotating through the Cytopathology Laboratory and Surgical Pathology rooms

RESEARCH ACTIVITIES

- A. Clinicopathologic investigations of the female genital tract and gastrointestinal tract
- B. Cytopathologic investigations of serous fluids and gynecologic smears
- C. Major Ongoing Research Projects:
  - 1. Clinicopathologic correlation in sarcomas of the uterus (A study of 100 cases)

2. Prognostic implications of histology of inguinal and pelvic lymph nodes in cases with lymph nodal metastases in squamous carcinoma of the vulva (A study of 60 cases)
3. Curschmann's spirals in cervicovaginal smears: their origin and significance (A study of 72 cases)
4. Cells of extrauterine metastases seen in cervicovaginal smears (A study of 50 cases)

D. Grant Support: None

#### SERVICE ACTIVITIES

##### A. Departmental

1. Associate Director of the Cytopathology Laboratory
2. Quality control program in the Cytopathology Laboratory
3. Partial administrative responsibilities in the Cytopathology Laboratory - Complete administrative responsibilities in Dr. B. Naylor's absence
4. Gynecologic tumor conference twice a week

#### PUBLICATIONS

##### A. Published

1. Kumar, N.B., Pandit, S.K., Detmer, M.D.: Pulmonary lesions after antacid and cimetidine aspiration. Anesthesiology Review IX No. 3 March, 1982.

##### B. In Press

1. Kumar, N.B., Nostrant, T.T., Appelman, H.D.: The histopathologic spectrum of acute self-limited colitis (acute infectious type colitis) Am J Surg Path
2. Kumar, N.B. and Hart, W.R.: Metastases to the uterine corpus from extragenital cancers. A clinicopathologic study of 63 cases. Cancer.

##### C. Submitted

1. Hoffman, J.S., Kumar, N.B., Morley, G.W.: Microinvasive carcinoma of the vulva: The search for a definition (review of 90 cases of stage I squamous carcinoma of the vulva). Obstet Gynecol



STEVEN L. KUNKEL, Ph.D.

INSTRUCTOR OF MICROBIOLOGY AND IMMUNOLOGY  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
July 1, 1981 - June 30, 1982

DIAGNOSTIC SERVICE ACTIVITIES: Not Applicable

TEACHING ACTIVITIES

- A. Participated in the Inflammation/Immunopathology Series ICS-600 for second year medical students
- B. Participated in Clinical Immunology Series for house staff and clinical faculty
- C. Presented research/teaching seminars in various departments

RESEARCH ACTIVITIES

- A. Experimental research directed at understanding mediators of acute and chronic inflammatory reactions is of paramount importance in our laboratory. This is reflected by the active research currently being conducted involving the products of two diverse, yet equally important, inflammatory mediator systems, complement and polyoxygenated fatty acids. With regard to the first mediator system, we have recently purified C5a to homogeneity using an affinity column. This procedure allows for the rapid purification of significant quantities of C5a, which were impossible to acquire in the past. An extension of this research has led to the perfection of an immunochemical technique (ELISA), as a means to quantitate this C5a anaphylatoxin. This assay may prove to be important as a means to access human disease states where complement activation products play a key role.
- B. Our laboratory is interested in examining the role of prostaglandins in acute and chronic inflammatory reactions. We have been able to demonstrate an important role for both prostaglandin E and prostaglandin F in chronic granulomatous inflammation. While PGE can suppress the granulomatous reactions, PGF appear to potentiate this response. This observation has been extended to a clinical disease state of pulmonary sarcoidosis, where we have found alveolar macrophages, as well as lavage fluid, from the human granulomatous disease to have increased PGF levels.

- C. The following students and fellows have been actively involved in our research efforts.
1. Dr. Steven W. Chensue - third year medical student. The immunomodulating role of prostaglandins in lung granulomas
  2. Mr. Mike Plewa - second year medical student. The role of prostaglandins in macrophage Ia expression
  3. Mr. Greg Armstrong - senior undergraduate. Comparative levels of glutathione peroxidase, catalase, and superoxide dismutase in various macrophage populations
  4. Ms. Lori Quinlan - junior undergraduate. The role of cyclooxygenase inhibitors on inflammatory cell function
  5. Dr. Nick Wolter - pulmonary fellow. Superoxide anion and cyclooxygenase products in pulmonary sarcoidosis
- D. Our laboratory has established collaborative ties with the faculty from the following departments.
1. Dr. Joseph Lynch - Pulmonary Medicine. Superoxide anion and cyclooxygenase products from alveolar macrophages in pulmonary sarcoidosis.
  2. Dr. Gene Higashi - Department of Epidemiology. Immunomodulation of schistosome egg-induced pulmonary granulomas
  3. Dr. Ben Lucchesi - Department of Pharmacology. Role of neutrophils in myocardial infarcts
  4. Dr. Roger Wiggins - Nephrology. Cyclooxygenase products in renal disease
- E. Grant Support
1. Rackham School of Graduate Studies Faculty Research Grant  
Nutritional Modulation of Inflammatory Diseases FRR 387668 -  
Principal Investigator
  2. National Institute of Health Modulation of Acute Inflammatory  
Reactions in Experimental Diabetes - 2 P60-AM20572-06 Pilot project  
#39 - Principal Investigator
  3. National Institute of Health - Targeted Cell Injury 1R01 HL-26598-01  
- Co-investigator
  4. National Institute of Health - Leukocyte Chemotaxis 1R01-HL-28442-01  
- Co-investigator

5. National Institute of Health - Thermal Injury Complement and Leukocyte Dysfunction - 1R01-GM-28499-02 - Co-investigator

### SERVICE ACTIVITIES

#### A. Departmental

1. Directed weekly departmental research seminar series
2. Interviewed residents for resident training program

#### B. Medical School - Hospital

1. Committee on Medical Student Research
2. Committee on Immunology Forum Lecture Series

#### C. Regional and National Activities

1. Review manuscripts for different scientific journals
2. Participant in Harvard Medical School Continuing education program  
Modulation of Host Defense Immune Reactions by Essential Fatty Acids and Prostaglandins
3. Presentations at the following regional and national meetings
  - a) Kunkel, S.L., Plewa, M.C., Fantone, J.C., Ward, P.A.: Differentiated Effects of C5a and F-Met-Leu-Phe on the Production of  $O_2^-$  Prostaglandin by Macrophages. IX International Complement Workshop, Key Biscayne, Florida, 1981.
  - b) Kunkel, S.L. and Chensue, S.W.: Modulation of Experimental Lung Granulomas by Prostaglandin. Michigan Thoracic Society, Ann Arbor, Michigan, 1981.
  - c) Kunkel, S.L., Plewa, M., Kaercher, K., Armstrong, G.: Synthesis and Potential Immuno-Immunomodulating Activity of Various Cyclooxygenase Compounds Produced by Macrophages. Federation of American Society for Experimental Biology. New Orleans, La., 1982.
  - d) Wolter, N.J., Kunkel, S.L., Higashi, G., Lynch, J.P., Ward, P.A.: Generation of Superoxide Anion ( $O_2^-$ ) by Pulmonary Macrophages in Granulomatous Lung Disease. American Thoracic Society, Los Angeles, California., 1982.

- e) Suarez, A.F., Manderino, G.L., Kunkel, S.L., Ward, P.A., Hirata, A.A.: Purification of C5a Des Arg From Human Serum by Immuno- adsorbent and Molecular Sieve Chromatography. Federation of American Society for Experimental Biology. New Orleans, Louisiana, 1982.
- f) Wolter, N.J., Kunkel, S.L., Lynch, J.P., Ward, P.A.: Production of Cyclooxygenase Products and Superoxide Anion ( $O_2^-$ ) by Human Alveolar Macrophages (AM) in Pulmonary Sarcoidosis. 25th Annual Aspen Lung Conference, Aspen, Colorado, 1982.

## PUBLICATIONS

### A. Published

1. Ogawa, H., Kunkel, S.L., Fantone, J.C., Ward, P.A.: Comparative study of eosinophil and neutrophil chemotaxis and enzyme release. Am J Path 105:149-155, 1981.
2. Fantone, J.C., Kunkel, S.L., Ward, P.A., Zurier, R.B.: Suppression of human polymorphonuclear leukocyte function after intravenous infusion of prostaglandin  $E_1$ . Prostaglandin Medicine 7:195-1982, 1981.
3. Kunkel, S.L., Ogawa, H., Conran, P., Ward, P.A., Zurier, R.B.: Anti-inflammatory effects of orally administered prostaglandins. Arthritis Rheum 24:1151-1158, 1981.
4. Ogawa, H., Kunkel, S.L., Fantone, J.C., Ward, P.A.: Digestion of the fifth component of complement by eosinophil lysosomal enzymes; Production of eosinophil specific chemotactic activity. Virchow Arch B 38:149-158, 1981.
5. Kunkel, S.L., Fantone, J.C., Ward, P.A.: Complement mediated inflammatory reactions. Pathobiol Ann 11:127-154, 1981.
6. Kunkel, S.L., Fantone, J.C., Ward, P.A., Zurier, R.B.: Modulation of inflammatory reactions by prostaglandins. Prog Lipid Res Vol 20:633-640, 1981.
7. Kunkel, S.L., Ogawa, H., Ward, P.A., Zurier, R.B.: Suppression of chronic inflammation by evening primrose oil. Prog Lipid Res Vol 20, 1981.
8. Fantone, J.C., Kunkel, S.L., Ward, P.A.: Chemotactic mediators in neutrophil dependent lung injury. Annual Rev Physiol 44:283-293, 1982.
9. Elgebaly, S.A, Kunkel, S.L., Lovett, E.J., Lundy, J., Varani, J.: CAMP differences between clones of high and low malignant fibro-sarcoma cells. Oncology 74:287-293, 1982

10. Fantone, J.C., Kunkel, S.L., Varani, J.V.: Inhibition of tumor cell adherence by prostaglandins. Prostaglandins and related lipids. In Prostaglandin and Cancer: First International Conference. Vol II. Powles, T.J., Bockman, R.S., Honn, K.V. and Ramwell, A., Editors. Alan Liss, Inc., pp. 673-677, 1982.

B. In Press

1. Ward, P.A., and Kunkel, S.L.: Bacterial virulence and the inflammatory system. In, Conference on Bacterial Virulence and Pathogenesis.
2. Kunkel, S.L. and Sugar, A.: Inflammatory mechanisms in the eye. Handbook of Inflammation. P.A. Ward, Editor.
3. Kunkel, S.L., Zanetti, M., Sapin, C.: Suppression of nephrotoxic serum nephritis in rats by prostaglandin E<sub>1</sub> Am J Path
4. Manderino, G.L., Suarez, A.F., Kunkel, S.L., Ward, P.A., Hirata, A.A.: Purification of human C5a des arg by immunoadsorbent and molecular sieve chromatography. J Immunol Methods.
5. Kunkel, S.L., Fantone, J.C., Ward, P.A.: Role of prostaglandins in macrophage cell function. In, The Reticuloendothelial System: A Comprehensive Treatise. Vol VI. Bellanti, J.A. and Hersowitz, H.B., Editors. Plenum Publishing Corp., New York.
6. Fantone, J.C., Weingarten, B., Kunkel, S.L.: Systemic prostaglandin treatment inhibits carrageenan induced vascular permeability. Biochem Pharm.
7. Wolter, N.J., Kunkel, S.L., Lynch, J.P., Ward, P.A.: Production of cyclooxygenase products by alveolar macrophages in pulmonary sarcoidosis. Chest.

C. Submitted

1. Chensue, S.W., Kunkel, S.L., Ward, P.A., Higashi, G.I.: Modulation of pulmonary Schistosoma mansoni egg granuloma in mice by prostaglandin.
2. Fantone, J.C., Kunkel, S.L., Weingarten, B., Varani, J: PGI<sub>2</sub> inhibition of chemotactic factor-induced tumor cell adherence.
3. Kunkel, S.L., Kaercher, M., Plewa, M., Fantone, J.C., Ward, P.A.: Production of cyclooxygenase products and superoxide anion by macrophages in response to chemotactic factors. J Immunol.
4. Romson, J.L., Hook, B.G., Kunkel, S.L., Abrams, G.D., Lucchesi, B.R.: Reduction in the ultimate extent of ischemic myocardial injury by neutrophil depletion in the dog. Circulation.

THOMAS D. LANDEFELD, PhD

ASSISTANT RESEARCH SCIENTIST  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
July 1, 1981 - June 30, 1982

DIAGNOSTIC SERVICES: None

TEACHING ACTIVITIES: None

RESEARCH ACTIVITIES

- A. Nature of Research - The research in my laboratory deals with the regulation and mechanisms of pituitary gonadotropin biosynthesis. The emphasis this past year has been:
  - 1. Development of recombinant DNA techniques for application to assay gonadotropin subunit mRNAs
  - 2. Studies to examine the effects of gonadal steroid feedback and GnRH on gonadotropin biosynthesis. These are being done in collaboration with Drs. Fred Karsch (Physiology) and John Marshall (Internal Medicine)
- B. Grant Support
  - 1. "Gonadotropin Biosynthesis" Principal Investigator  
8/01/81 - 7/31/84
  - 2. "Training in Reproductive Endocrinology" Program Coordinator  
7/01/80 - 6/30/85

SERVICE ACTIVITIES

- A. Departmental
  - 1. Chairman, Reproductive Endocrinology Selection Committee
  - 2. Assistant Director, Reproductive Endocrinology Training Program
- B. Medical School
  - 1. Member, Advisory Committee on Primary Research Appointments, Promotions and Titles in Medical School

C. Regional and National

1. Invited Lecture, Department of Biochemistry, Texas Tech University Medical School
2. Abstract Presentation, The Endocrine Society, San Francisco, California

PUBLICATIONS

A. Published

1. Landefeld, T.D., Byrne, M.D., Campbell, K.L., Midgley, A.R., Jr.: Differential processing of the two subunits of human choriogonadotropin (hCG) by granulosa cells. I. Preparation and characterization of selectively labeled human choriogonadotropin. Endocrinology 109:1851, 1981.
2. Campbell, K.L., Bagavandoss, P., Byrne, M.D., Jonassen, J.A., Landefeld, T.D., Quasney, M.W., Sanders, M.M., Midgley, A.R., Jr.: Differential processing of the two subunits of human choriogonadotropin (hCG) by granulosa cells. II. In vivo studies. Endocrinology 109:1858, 1981.

B. Submitted

1. Landefeld, T.D., Kepa, J., Karsch, F.J.: Regulation of alpha subunit RNA by gonadal steroid feedback in the sheep anterior pituitary. (submitted to Endocrinology)

C. Abstracts

1. Landefeld, T.D. and Kepa, J.: The Effect of Negative and Positive Feedback of Sex Steroids on Ovine Pituitary LH Alpha RNA. 64th Annual Meeting of The Endocrine Society. Abstract #194. June 1982

RICARDO V. LLOYD, M.D.

ASSISTANT PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
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DIAGNOSTIC SERVICE ACTIVITIES

- A. Surgical Pathology - six months
- B. Necropsy Pathology - one month
- C. Consultant for soft tissue lesions - 12 months
- D. Consultant for endocrine lesions - 12 months
- E. Diagnosis of submitted male genitourinary pathology slides -6 months
- F. Consultant to Veterans Administration Medical Center, Ann Arbor
- G. Immunoperoxidase diagnostic service - 12 months

TEACHING ACTIVITIES

- A. Lectures to Sophomore Pathology Class
- B. Fourth year medical student rotation in Pathology - 1 month
- C. Lectures to Pathology House Officers
- D. Postgraduate teaching - Towsley Seminar on Clinical Chemistry and Immunology - Lecture on Immunoperoxidase

RESEARCH ACTIVITIES

- A. Development of diagnostic immunocytochemical methods for light and electron microscopy
- B. Study of DES induced rat pituitary gland hyperplasia and of M T/W15 rat pituitary tumors in vivo and in cell culture
- C. Collaborations:
  - 1. Localization of laminin in murine fibrosarcoma cells by ultrastructural immuno-cytochemistry with Dr. J. Varani.



2. Immunocytochemical localization of monoclonal antibodies in normal and neoplastic cells with Dr. B. Wilson.
- D. Grant Support: Application pending

#### SERVICE ACTIVITIES

- A. Departmental
1. Coordinator of Anatomic Pathology Journal Club
- B. Medical School - Hospital
1. Thyroid Scan Conference - weekly
  2. Scintiscan Conference - weekly (1/82 - 4/82)
  3. Urology Conference - monthly (1/82 - 6/82)
  4. Pituitary Study Group - monthly
  5. Committee Appointment - Committee on Student Affairs (1982-1985)
- C. Regional and National
1. Michigan Thyroid Association
  2. International Academy of Pathology - paper presentation in March 1982: Lloyd, R.V., Rosen, P.P., Sarker, N.H., Jimenez, D., Kinne, D.W.: Murine mammary tumor virus related antigen in human male mammary carcinomas. Lab Invest 46:50A, 1982

#### PUBLICATIONS

- A. In Press
1. Lloyd, R.V., Rosen, P.P., Sarker, N.H., Jimenez, D., Kinne, D.W.: Murine mammary tumor virus related antigen in human male mammary carcinoma. An immunohistochemical study. Cancer, 1982.
  2. Lloyd, R.V., Sisson, J.C., Marangos, P.J.: Calcitonin carcino-embryonic antigen and neuron-specific enolase in medullary thyroid carcinoma. An immunohistochemical study. Cancer, 1982.
  3. Kalff, V., Shipiro, B., Lloyd, R., Sisson, J., Holland, K., Beierwaltes, W.: The spectrum of pheochromocytoma in hypertensive patients with neurofibromatosis. Arch Int Med, 1982.

4. Warner, T.F.C.S., Block, M., Hafez, R., Mack, E., Lloyd, R.V., Bloom, S.R.: Glucagonomas: Ultrastructure and immunocytochemistry. Cancer, 1982.
  5. Lloyd, R.V., and Fruhman, J.: Comparison of peroxidase-antiperoxidase and avidin biotin complex methods with radioimmunoassay antibodies. Am J Clin Path, 1982.
  6. Lloyd, R.V., Gikas, P.W., Chandler, W.F.: Prolactin and growth hormone producing adenomas. An immunohistochemical and ultrastructural study. Am J Surg Path.
- B. Submitted
1. Lloyd, R.V. and Beierwaltes, W.H.: Occult sclerosing carcinoma of the thyroid: Potential for aggressive biological behavior.
- B. Chapters in Books
1. Warner, T.F.C.S and Lloyd, R.V.: Pathology of the apudomas. In, Endocrinology of Cancer. Rose, D., Ed. Vol. III. CRC Press, 1982.

EDMUND J. LOVETT III, Ph.D.

ASSISTANT PROFESSOR OF MICROBIOLOGY & IMMUNOLOGY  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
July 1, 1981 - June 30, 1982

#### DIAGNOSTIC SERVICE ACTIVITIES

- A. As Director of the Flow Cytometry Laboratory, my diagnostic service activities included establishing the Flow Cytometer as a service facility and working with other members of the clinical pathology faculty to begin an Immunohematology clinical conference in the department and integrate automated cytology into the Department's diagnostic activities.
- B. The clinical diagnostic assays currently being performed in the Flow Cytometry Laboratory include T and B lymphocyte subset analysis on peripheral blood, bone marrow, and lymphnode samples and cell cycle analysis of bone marrow, solid tumors, and peripheral blood leukocytes. Development of these and additional assays are proceeding in conjunction with the Clinical Immunopathology Laboratory.

#### TEACHING ACTIVITIES

- A. In addition to lecturing in the Clinical Immunology Course in the Medical School and participating in a seminar series in the School of Public Health, my teaching activities were centered in my research laboratory and the Flow Cytometry Laboratory. During the past year, I have had one graduate student, two dental students, and three undergraduate students doing research projects in my laboratory.
- B. The major didactic teaching load I have embarked upon this year is the establishment of two courses in flow cytometry. The first is a lecture course for investigators in which instrument mechanics, capabilities and clinical and basic science research applications are discussed. The second course is a graduate level lecture and laboratory course dealing with technical and applied aspects of flow cytometry in particular and automated cytometry in general. Both courses will commence with the 1982-1983 academic year.

#### RESEARCH ACTIVITIES

- A. My research laboratory has two independent areas under investigation: Immune response modification and transplantation immunity. In the former, my associates and I are investigating the interaction between host defense mechanisms and tumor cells with varying malignant potential. In addition to assessing the effect of tumor cell products on the immune system, we are attempting to determine what role the immune system plays

in tumor cell metastases. Collaborative studies were carried out with scientists in the Departments of Internal Medicine, Biological Chemistry, Microbiology and Immunology as well as members of the Department of Pathology. With the establishment of the Flow Cytometry Laboratory, several of the projects in tumor cell biology and immunity performed in conjunction with Dr. James Varani were modified to take full advantage of the analytical and preparative capabilities of the EPICS V Flow Cytometer.

- B. During the past year, we have expanded our cooperative relationship with Stauffer Chemical Company and are pursuing investigations into the immunopathology of tumor derived substances produced at their research facilities. This work is being performed in collaboration with Drs. Ward, Varani and Till in the Department of Pathology.
- C. A major change in the direction of our research efforts was initiated in the last year. In collaboration with Dr. Charles Bahn in the Department of Ophthalmology and Dr. Donald MacCallum in the Department of Anatomy, we have begun research into the immunopathology of corneal transplant rejection in the cat. Our collaboration has been successful to date (10 manuscripts in press, submitted, or in preparation) and shows promise for large scale funding at the national level.
- D. Grant Support (not including pending applications)
  - 1. Clinical and Immunological Evaluation of Thymosin in Alcoholic Hepatitis, Veteran's Administration, Co-investigator, 1982-85, \$246,900
  - 2. Investigations into the Makari Phenomenon, Stauffer Chemical Company, Principal Investigator, 1982-84, \$330,000
  - 3. Clinical Trials of the Makari Intradermal Test for Cancer, NCI - Stauffer Chemical Company, Co-investigator, 1981-1986, \$250,000
  - 4. Rejection of BCE Linked Feline Corneal Transplants, Michigan Eye Bank, Principal Investigator, 1981-1982, \$9,900

#### SERVICE ACTIVITIES

- A. Departmental
  - 1. Director, Flow Cytometry Laboratory
  - 2. Member, Computer Oversight Committee
  - 3. Member, Clinical Immunohematology Group
- B. Medical School - Hospital
  - 1. Member, Immunology Forum Committee

2. Member, CYPERNET Image Analysis Committee
3. Grant Proposal Reviewer for BMRC and Rackham Graduate School

C. Regional and National Activities

1. Presented papers at 3 national and 1 international scientific meeting
2. Organizing Committee, Midwest Regional Flow Cytometry Group
3. Reviewed manuscripts for several scientific journals
4. Reviewed grant applications for the Veteran's Administration Research Committee
5. Scientific Coordinator on National Clinical Study on Validity of the Makari Intradermal Test for Cancer
6. Consultant to Stauffer Chemical Company, Inc.

PUBLICATIONS

A. Published

1. Varani, J., Lovett, E.J., III, Lundy, J.: A model of tumor cell dormancy in mice: Effects of anesthesia and surgery. J Surg Oncology 17:9-14, 1981.
2. Phan, S.H., Varani, J., Lovett, E.J., III, Schrier, D.: Isolation and characterization of fibroblasts from bleomycin induced fibrotic lungs. Fed Proc 40:793, 1981.
3. Shaskan, E. G. and Lovett, E.J., III: Effect of psychotropic drugs on delayed type hypersensitivity reactions in mice. In, Proceedings of the Third World Congress of Biological Psychiatry. Jansson, B., Perris, C., and Stuwe, G., Editors, 1981.
4. Bahn, C.F., Meyer, R.F., MacCallum, D.K., Lillie, J.H., Lovett, E.J., III, Sugar, A., Martonyi, C.L.: Penetrating keratoplasty in the cat: A clinically applicable animal model. Proc of ARVO, 1982.
5. Varani, J., Lovett, E.J., III, Elgebaly, S., Lundy, J.: Characteristics of tumor cell clones with varying malignant potential. In, Metastases: Clinical and Experimental Aspects. Hellman, K., Editor. Martinus Nijhoff, Publishers, The Hague, 1981.
6. Lovett, E.J., III, Maddox, D.E., Shibata, S., Varani, J., Goldstein, I.J.: Differentiation of high and low malignant tumor clones with GSl-B4 isolectin from Griffonia (Bandeiraea) simplicifolia. Fed Proc, 41:336, 1982.

7. Bahn, C.F., Meyer, R.F., MacCallum, D.R., Lillie, J.H., Lovett, E.J., III, Martonyi, C.L.: Feline keratoplasty - A clinically applicable animal model. Ophthalmology, 57:1121, 1982.
8. Elgebaly, S., Kunkel, S., Lovett, E.J., III, Lundy, J., Varani, J.: cAMP differences between clones of high and low malignant fibrosarcoma cells. Oncology 39:163, 1982.
9. Varani, J., Lovett, E.J., III, Wicha, M., Shibata, S., Goldstein, I.J.: Differential attachment of high and low metastatic fibrosarcoma cells to type IV collagen. Fed Proc, 41:336, 1982.
10. Lovett, E.J., III and Varani, J.: Immunosuppression induced by culture supernatants from tumor cell variants is proportional to the metastatic potential of the tumor clone. Proceedings of the Sixth Meeting at the European Association for Cancer Research 6:47, 1981.

B. In Press

1. Lovett, E.J., III, Bahn, C.F., Dickinson, R.W., Meyer, R.F., MacCallum, D.K.: Feline keratoplasty as a model for the study of ocular transplantation immunity. In, Immunology and Immunopathology of the Eye. Karger Press, 1982.
2. Lovett, E.J., Connell, T., Lundy, J.: The Immunomodulating properties of N-acetylacetylthioacetamide, A non-cyclic, sulfur containing compound. Immunopharmacology.
3. Lovett, E.J., III, Bahn, C.F., Dickinson, R.W., Meyer, R.F., MacCallum, D.K., Lillie, J.H.: Cellular immune response to cultured bovine corneal endothelial cell lined corneal transplants. Proc of the International Symposium on Immunology and Immunopathology of the Eye, 1982.
4. Lovett, E.J., III, Varani, J., Lundy, J.: Suppressor cells and increased primary tumor growth rate induced by thiopental. J Surg Oncology
5. Lovett, E.J., III, Dickinson, R.W., Varani, J.: Metastatic variants from a methylcholanthrene induced syngeneic murine fibrosarcoma produce immunosuppression proportional to the metastatic potential of the variant. Proceedings of VI Congress of European Association for Cancer Research. Lapis, R. and Jeney, S., Editors. Markel Press, 1982.
6. Varani, J., Lovett, E.J., III, Fantone, J.C.: Stimulated adherence of tumor cells: Relationship to metastases. Proceedings of VI Congress of European Association for Cancer Research. Lapis, R. and Jeney, S., Editors. Markel Press, 1982.

7. Varani, J. and Lovett, E.J., III: Phenotypic stability of murine tumor cells in vitro and in vivo. JNCI.

KENNETH D. McCLATCHEY, D.D.S., M.D.

ASSISTANT PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
July 1, 1981 - June 30, 1982

DIAGNOSTIC SERVICE 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 (in Pharmacy area)
- 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

TEACHING ACTIVITIES

- A. Pathology 630, 631 - Course Director
  - 1. 6 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 in the clinical laboratories under my direction (Microbiology, Flow Cytometry)

#### RESEARCH ACTIVITIES

- A. Investigator with Thomas Carey, Ph.D. of Department of Otorhinolaryngology, Human Squamous Cell Carinoma: Culture and Serology, NIH, 1979 -
- B. Co-Investigator with George Cherry, Ph.D. and William Grabb, M.D., Effect of the Microcirculation on the Etiology and Treatment of Hemangiomas, funded by Louise Vaughn Memorial Fund UM#361382, 1980 -
- C. Principal Investigator, Jojoba Oil: its percutaneous absorption and anti-inflammatory effects, funded by Jojoba Plantation Products, 1981 -
- D. Principal Investigator, Cost Acrylic Gross Pathology Specimen Project, funded by University of Michigan Medical Center for Research on Learning and Teaching, 1981 -
- E. Co-Investigator with Ronald B. Natale, M.D., Application of the Clonogenic Assay to New Drug Development, NIH grant, pending 1982 -
- F. Co-Investigator with B.A. Forbes, Ph.D., Antimicrobial Removal Device Study, Marion Laboratories, Inc., 1981, \$33,000
- G. Investigator, Adjuvant Chemotherapy Trial in Head and Neck Squamous Carcinoma NIH, RFP N01 CM 87154, 1978 -
- H. Co-Investigator with Carl J. Pierson, Ph.D., Comparative in vitro Evaluation of Ceftriaxon, Hoffman LaRoche, Inc., 1981, \$40,000

#### SERVICE ACTIVITIES

- A. Departmental
  - 1. Medical Service Plan Executive Committee, Department of Pathology, The University of Michigan, 1979 -
  - 2. Hospital Replacement Project (Pathology Group) Laboratory Planning Committee, 1980 -
  - 3. Interim Director, Residency Program, Department of Pathology, University of Michigan, 1982 -
- B. Hospital - Medical School
  - 1. Infection Control Committee, University of Michigan Hospital, 1978 -
  - 2. Scientific Advisory Committee, Dental Research Institute, University of Michigan, School of Dentistry, 1980 -

3. Laboratory Committee, University of Michigan Hospital, 1978 -
4. Ambulatory Care Committee, University of Michigan Hospital, 1980 -
5. Medical, Surgical and Psychiatric Hospital Planning Committee, 1982 -
6. Doctoral Committee, Rackham Graduate School, University of Michigan, Lois Ann Beerbaum, 1981 -
7. Doctoral Committee, Rackham Graduate School, University of Michigan, Steven Smith, 1981 -
8. Committee on Educational Affairs, School of Dentistry, University of Michigan, 1981 -
9. Committee on Sophomore Student Promotions, School of Dentistry, University of Michigan, 1982 -

C. Regional and National

1. College of American Pathologists, Standards Committee, 1982 -
2. College of American Pathologists, Scientific Resources Committee, 1981 -
3. College of American Pathologists, President's Invitational Conference, 1982 -
4. American National Metric Council, member 1982 -
5. Invited Lectures and Programs Presented:
  - a) Major and Minor Salivary Gland Cysts "Coeles" and Tumors: Classification and Histogenesis, Batsakis, J.G. and McClatchey, K.D. Short course for International Academy of Pathology 70th Annual Meeting, Boston, March 1982
  - b) Pathology of the Head and Neck with Emphasis on Unusual Oral Lesions. McClatchey, K.D., Henry Ford Hospital Pathology Seminar, December 18, 1981
  - c) Cast Acrylic Gross Pathology Specimen Innovations in Medical Education. Washington, DC, November 2, 3, 1981.
  - d) Bacteremia - Laboratory Diagnosis, Flint Society of Medical Technologists, October 1981
  - e) Thymopharyngeal Duct Cyst, Zarbo, R.J., McClatchey, K.D.: American Academy of Oral Pathology Annual Meeting, May, 1982

## PUBLICATIONS

### A. Published Articles

1. Areen, R.G., McClatchey, K.D., Baker, H.L.: Squamous cell carcinoma arising in an odontogenic keratocyst. Arch Otorhinolaryngology 107:568-569, 1981.
2. Schalenbrand, J.D., McClatchey, K.D., Patel, J.A., Muilenberg, M.J.: Doxylamine: A cause for false positive chromatographic assay for phencyclidine. Therapeutic Drug Monitoring 3:181-193, 1981.
3. Baker, S.R. and McClatchey, K.D.: Carcinoma of the nasopharynx in childhood. Otolaryngology - Head and Neck Surgery 89:555-559, 1981.
4. McClatchey, K.D., Langin, J.L., Appelblatt, N.H.: Carcinoma in papillary cystadenoma lymphomatosum. Laryngoscope 92:98-99, 1982.
5. Krause, C.J., Carey, T.E., Ott, R., Hurbis, C., McClatchey, K.D.: Human squamous cell carcinoma: Establishment and characterization of new permanent cell lines. Arch Otolaryngology 1981.
6. McClatchey, K.D., Pierson, C.L., Ferrell, W.J.: In vitro antimicrobial effects of Jojoba oil. Proceedings of the 4th International Conference on Jojoba Oil, 1981.
7. McClatchey, K.D., Ferrell, W.J., Pierson, C.L.: Percutaneous absorption of Jojoba oil. Proceedings of the 4th International Conference on Jojoba Oil, 1981.
8. Pierson, C.L., Schaberg, D.R., Fekety, F.R., McClatchey, K.D.: In vitro activity of Sch 29482, MI 0787, RO 139904 and seven other antimicrobics against 840 separate clinical isolates. J Clin Micro, 1981.

### C. Articles Accepted for Publication

1. Batsakis, J.G. and McClatchey, K.D.: Ameloblastoma of the maxilla and peripheral ameloblastoma. Annals Otorhinolaryng, 1981.
2. Baker, S.R., Baker, H.L., McClatchey, K.D.: Laryngocele: A clinicopathologic study. Arch Otolaryng, 1981.
3. Rosset, J., McClatchey, K.D., Higashi, H., Knisely, A.S.: Anisikiasis. A clinicopathologic study. Arch Otolaryng, 1981.
4. Pasyck, C., McClatchey, K.D., Cherry, G., Austad, E.: An electron microscopic study of expanded skin. J Plast Recon Surg, 1981.
5. Appelblatt, N.H. and McClatchey, K.D.: Olfactory neuroblastomas: A retrospective clinicopathologic study. Head Neck Surgery, 1981.

6. Zarbo, R.J., McClatchey, K.D., Areen, R., Baker, S.: Thymopharyngeal duct cysts: A clinicopathologic study. Annals Otorhinolarynx, 1982.
7. Lulenski, G., McClatchey, K.D., Kemink, J.L.: Carcinoid tumor metastatic to submandibular gland, 1982.

D. Articles Submitted for Publication

1. McClatchey K.D., Zarbo, R., Appelblatt, N.H., Merrell, D.: Plunging ranula: A clinicopathologic study. Annals Otorhinolarynx, 1981.
2. Zarbo, R.J., McClatchey, K.D., Cohen, A.R.: Nasopharyngeal hamartoma: Review of literature and report of case. Arch Otolarynx, 1982.
3. Cherry, G., Grabb, W., Pascyk, C., McClatchey, K.D.: Increased surviving length of skin flaps elevated in controlled skin - Survival similar to delayed flaps. Plastic Reconstruction Surgery, 1981.
4. Polomski, J., and McClatchey, K.D.: Evaluation of Minitex system for direct identification of anaerobic rods from positive blood cultures. J Clin Micro, 1982.
5. Kemink, J.L., Graham, M.D., McClatchey, K.D.: Hemangioma of the external auditory canal. Arch Otolarynx Head Neck Surgery, 1982.

E. Thesis, Chapters in Books

1. Regezi, J.A., McClatchey, K.D., Batsakis, J.G.: Electron Microscopy of the Head and Neck. In, "Diagnostic Electron Microscopy." Trump, B.F and Jones, R.T., Eds. John Wiley and Sons, Inc., 1982 (in press).
2. McClatchey, K.D.: Salivary Gland Tumors. In, "Otolaryngology." English, G.M., Ed. Harper and Row Co., 1982 (in preparation).

F. Books Published

1. Gross and Microscopic General Pathology for Dental Students. McClatchey, K.D., and Green, T.G. The University of Michigan Dental Publications, 1981.

A. REES MIDGLEY, JR., M.D.

PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

Annual Department Report  
July 1, 1982 - June 30, 1982

DIAGNOSTIC SERVICE ACTIVITIES

A. None

TEACHING ACTIVITIES

A. Miscellaneous Lectures

B. Thesis Advisor

1. Michel Sanders, Ph.D. 1981

2. Robert Milius

3. P. Bagavandoss

C. Serving on several other Thesis Committees

RESEARCH ACTIVITIES

A. Protein hormone action in differentiating ovarian cells

B. Grant Support

1. Specialized Population Research Center, NIH-P50-HD11311, \$2,550,081  
(5 years), 1979-1984

2. Mellon Foundation Grant (With Population Studies Center), \$450,000,  
1979-1982

3. Ford Foundation Training Grant, \$92,000, 1981-1985

4. Predoctoral and Postdoctoral Training Grant, NIH-HD-07048, \$703,120,  
1980-1985,

5. Granulosa Cell hCG-Receptor Interaction, NIH-HD-16093, \$242,090,  
1982-1983,

B. Medical School - Hospital

1. Director, Center for Human Growth and Development

C. Regional and National Activities

1. Endocrine Society
  - a. Member, Education Committee
  - b. Member, Council

#### PUBLICATIONS

##### A. Published

1. P. Bagavandoss and Midgley, A.R.: Blem formation in granulosa cells of rat pre-ovulatory follicles in vivo and in vitro. Tissue and Cell 13:669-680, 1981.
2. Landefeld, T.D., Byrne, M.D., Campbell, K.L., Midgley, A.R., Jr.: Differential processing of the two subunits of human chorionic gonadotropin (hCG) by granulosa cells. I. Preparation and characterization of selectively labeled hCG. Endocrinology 109:1851-1856, 1981.
3. Campbell, K.L., Bagavandoss, P., Byrne, M.D., Jonassen, J.A., Landefeld, T.D., Quasney, M.W., Sanders, M.D., Midgley, A.R., Jr.: Differential processing of the two subunits of human chorionic gonadotropin by granulosa cells. II. In vivo studies. Endocrinology 109:1858-1871, 1981.
4. M.M. Sanders and Midgley, A.R.: Rat granulosa cell differentiation: An in vitro model. Endocrinology 111:614-624, 1982.

BERNARD NAYLOR, M.D.

PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
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DIAGNOSTIC SERVICE ACTIVITIES

- A. Cytopathology - 5 weeks
- B. Director, Cytopathology Laboratory - full time
- C. Cytopathology and pulmonary pathology consultation services - 6 months
- D. Sabbatical leave 1 June - 31 December, 1981

TEACHING ACTIVITIES

- A. Pathology 600 - Sophomore Medical students, laboratory course, 90 contact hours
- b. Pathology 600 - Sophomore Medical students, class lectures, 2 contact hours
- C. Introduction to Clinical Sciences 600, class lectures, 5 contact hours
- D. Supervisor and instructor of Pathology residents in the Cytopathology Laboratory

RESEARCH ACTIVITIES

- A. Cytopathology with particular reference to serous fluids

SERVICE ACTIVITIES

- A. Pathologist in charge of the Cytopathology Laboratory
- B. Department of Pathology Medical Service Plan Executive Committee
- C. Member of Executive Committee and Vice President, American Society of Cytology
- D. Chairman, Editorial and Publications Committee of the American Society of Cytology
- E. Editorial Advisory Board, Acta Cytologica

- F. Editorial Board, Journal of Clinical Pathology
- G. Editorial Board, The Cytotechnologist's Bulletin
- H. Cytopathology Subcommittee, American Board of Pathology
- I. Invited Presentation: Naylor, B. and Novak, P.M.: Non-Neoplastic Entities Manifested in Cytologic Specimens. Workshop, Annual Scientific Meeting of the American Society of Cytology, St. Louis, Missouri, November, 1981.

#### PUBLICATIONS

- A. Published
  - 1. Thorbury, J.R., Burke, D.P, Naylor, B.: Transthoracic needle aspiration biopsy: Accuracy of cytologic typing of malignant neoplasms. Amer J Roentgenol 126:719-724, 1981.
  - 2. Naylor, B.: Reflections of a former chairman of the cytotechnology programs review committee. Cytotech Bull 18:67-68, 1981.

#### HONORS

- A. Elected to the Alpha Omega Alpha Honors Medical Society, February, 1982



HAROLD A. OBERMAN, M.D.

PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Director of Clinical Laboratories, University Hospitals
- B. Head, Section of Clinical Pathology, Department of Pathology
- C. Director of Blood Bank, University Hospitals (daily participation in management of patient care problems and supervision of assigned House Officers)
- D. Diagnosis of surgical specimens
- E. Diagnosis of biopsies submitted for personal consultation from pathologists throughout the United States, primarily related to breast disease
- F. Consultant to Veterans Administration Hospital, Ann Arbor
- G. Consultant to Wayne County General Hospital (presentation of monthly lectures to House Officers and Staff)

TEACHING ACTIVITIES

- A. Lectures to sophomore medical class in pathology and ICS courses. Lectures included clinical pathology, blood banking and diseases of the breast
- B. Lectures to Interphase Program on blood banking and diseases of the breast
- C. Lectures to House Officers in Department of Surgery on clinical laboratory diagnosis and diseases of breast
- D. Presentation of lectures and seminars to Pathology House Officers covering topics in both Clinical and Anatomic Pathology
- E. Presentation of two-week seminar on blood banking to Pathology House Officers.
- F. Responsible for monthly conference on Management of Neoplastic Disease to Department of Surgery

## SERVICE ACTIVITIES

### A. Departmental

1. In charge of Clinical Pathology Faculty, chairing monthly meetings and many interim meetings
2. Committee on Appointments, Promotions and Titles
3. Resident Selection Committee
4. Medical Service Plan Executive Committee
5. Laboratory Computer Planning Committee

### B. Medical School - Hospital

1. New Hospital Committee (responsible for planning Replacement Hospital)
2. Vice Chairman, Interdepartmental Coordinating Council for Medical Service Plans
3. Vice Chairman, Professional Fee Policy Committee for Medical Service Plans
4. Medical Service Plan Executive Board
5. Chairman, Laboratories Committee of Medical Staff (chair monthly meetings of Committee, as well as multiple Budget Review meetings)
6. Chairman, Director's Advisory Council
7. Transfusion Committee
8. Hospital Information Systems Planning Committee
9. Planning Committee for Ambulatory Care Building
10. Committee on Hepatitis Prevention in University Hospitals
11. Alternate member, Clinical Chairmen Council
12. Alternate member, Dean's Advisory Council
13. Review Committee for Chairmanship of Department of Radiology
14. Planning Committee for Interphase Program

### C. Regional and National Activities

### Committees

1. Detroit Red Cross - member of Blood Operations Committee and of Medical Advisory Committee (meets monthly, and the latter meets quarterly)
2. Detroit Red Cross - member of Scientific Advisory Council
3. American Association of Blood Banks
  - a. Chairman, Committee on Standards. This involves chairing the Committee which prepares the bi-annual Standards for Blood Banks and Transfusion Services. This booklet is the basis for the practice of Blood Banking in most of the world.
  - b. Hepatitis Testing Advisory Committee (Bureau of Biologics of FDA)
  - c. Component Therapy Committee
4. International Academy of Pathology
  - a. Co-Chairman of 1983 Long Course, "Diseases of Breast"
5. Michigan Society of Pathologists
  - a. Practice of Pathology Committee
  - b. Nominating Committee
6. Central Review Committee for Pathology, National Breast Cancer Detection Demonstration Project (National Cancer Institute - American Cancer Society)

### Editorial Activities

1. Associate Editor, Transfusion
2. Editor, Standards for Blood Banks and Transfusion Services, 10th edition
3. Associate Editor, Critical Reviews in Clinical Laboratory Science

### Invited Workshops and Lectures

1. Lecture on Pretransfusion Testing, Annual Meeting of Pittsburgh Association of Blood Banks, September 1981
2. Presentation of workshops on "Diseases of Breast" and "Decision-Making in Blood Banking", Annual Meeting of American Society of Clinical Pathologists. Las Vegas, NV, October 1981

3. Invited lecture, "The Crossmatch: Past, Present and Future". Annual Meeting of American Association of Blood Banks. Chicago, IL, November 1981
4. Presentation of lecture, "Relationship of Pathologic Findings to Treatment and Prognosis of Breast Cancer". Omaha Mid-West Clinical Society. Omaha, Nebraska, October 1981
5. Presentation of seminar on Diseases of Breast to Department of Pathology, University of Nebraska College of Medicine. Omaha, Nebraska, October 1981
6. Invited lecture, "The Usefulness of the Antiglobulin Phase of the Crossmatch". Seminar on The Crossmatch. Food and Drug Administration (Bureau of Biologics). Washington, DC, December 1981
7. Presentation of course, "Surgical Pathology of the Breast". International Academy of Pathology. Boston, MA, March 1982
8. Presentation of three lectures on Blood Banking in Israel (Haifa, Jaffa and Jerusalem). March 1982
9. Presentation of invited lecture on Pretransfusion Testing to Milwaukee Blood Center and Department of Pathology, University of Wisconsin-Milwaukee, May 1982
10. Organization and presentation of lectures in postgraduate course, "Current Topics in Blood Banking" and "Autotransfusion". University of Michigan. May-June 1982

#### RESEARCH ACTIVITIES

- A. Current interests include evaluation of pretransfusion testing, cost control in clinical laboratories and surgical pathology of breast diseases. Heavy institutional and departmental service obligations prevented desired extent of investigative effort.

#### PUBLICATIONS

- A. Published
  1. Oberman, H.A., ed.: Standards for Blood Banks and Transfusion Services. Ed. 10. American Association of Blood Banks. Washington DC, 1981.
  2. Walter, W.J. and Oberman, H.A.: Optimal use of blood components and derivatives. Otolaryng Clin No Am 14:739-753, 1981.
  3. Oberman, H.A.: The crossmatch: A brief historical perspective. Transfusion 21:645-651, 1981

4. Bove, J.R., Oberman, H.A., Holland, P.V., Ishak, K.G., Peck, C., Shorey, J.: Report of the ad hoc Committee on ALT Testing. Transfusion 22:12-16, 1982.
  5. Oberman, H.A.: Abbreviation or elimination of the crossmatch. Clin Lab Med 2:181-192, 1982.
  6. Oberman, H.A.: The crossmath: Past, present and future. In Seminar on Immune-Mediated Cell Destruction. Bell, C., ed. American Association of Blood Banks. Washington, DC, 1981.
- B. Chapters in Books
1. Oberman, H.A.: The history of blood transfusion. In Clinical Practice of Blood Transfusion. Swisher, S.N. and P $\bar{e}$ ts, L.D., eds. New York. Churchill Livingston, 1981. pp 9-30.
  2. Oberman, H.A.: Surgical blood ordering, blood shortage situations and emergency transfusion. In Clinical Practice of Blood Transfusion. Swisher, S.N. and P $\bar{e}$ tz, L.D., eds. New York. Churchill Livingstone, 1981. pp. 393-404.
  3. Oberman, H.A.: Standard versus abbreviated compatibility tests. In Safety in Transfusion Practices. Polesky, H. and Walker, R., eds. College of American Pathologists. Chicago, IL, 1982.

SEM H. PHAN, Ph.D.

ASSISTANT PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Consultant, VA Hospital

TEACHING ACTIVITIES

- A. Lecturer in ICS 600

RESEARCH ACTIVITIES

- A. Current research focused on regulation of pulmonary fibrosis by immune and inflammatory systems. The effect of H-2 composition on the ability of mice to mount a fibrogenic response to bleomycin is also being investigated. Briefly, results from the various completed studies revealed:
1. Intact neutrophil function is not essential for full expression of bleomycin-induced pulmonary fibrosis.
  2. On the other hand, an intact complement and also cellular immune systems are required for a complete fibrogenic response to bleomycin.
  3. Fibrogenic response to bleomycin but not  $O_2$  metabolite generating enzyme systems appear to be regulated by suppressor T-lymphocytes.
  4. Transient cellular sensitivity to homologous type I collagen is present during bleomycin-induced pulmonary fibrosis.
  5. For details see PUBLICATIONS
- B. Grant Support
1. Research Associate of the Veterans' Administration and Merit Review Grant Awardee. Project entitled "Regulation of pulmonary fibrosis and lung collagen metabolism by immune system" 7/1/80 - 6/30/83 (Research Associate) 1/1/81 - 12/31/83 (Merit Review). Total \$70,000 annually
  2. NIH grant # 1R01 HL2837-01, entitled "Mechanisms and Genetic Regulation of Pulmonary Fibrosis" 7/1/82 - 6/30/85 Total 3 years \$214,550

## SERVICE ACTIVITIES

### A. Regional and National Activities

1. Attend Geriatric Institute of American Association of Medical Colleges (4/82) as a representative of Dr. Peter A. Ward, and participated in discussions on how to modify or add to the medical school curriculum in such a manner as to have a greater beneficial impact on gerontology and the practice of geriatrics.

### National Meetings Attended

1. International Symposium on HPLC of Proteins
2. Federation of American Societies for Experimental Biology
3. American Thoracic Society/American Lung Association
4. Aspen Lung Conference on Lung Injury and Repair

## PUBLICATIONS

### A. Published

1. Phan, S.H., Thrall, R.S., Williams, C.: Bleomycin-induced pulmonary fibrosis: Effects of steroid on lung collagen metabolism. Am Rev Resp Dis 12:428, 1981.
2. Thrall, R.S., Phan, S.H., McCormick, J.R., Ward, P.A.: The development of bleomycin-induced pulmonary fibrosis in neutrophil-depleted and complement-depleted rats. Am J Pathol 105:76, 1981.
3. Phan, S.H., and Thrall, R.S.: The role of soluble factors in bleomycin-induced pulmonary fibrosis. Am J Pathol 106:156, 1981.
4. Phan, S.H., and Thrall, R.S.: Inhibition of bleomycin-induced pulmonary fibrosis by cobra venom factor. Am J Pathol 107:25, 1982.
5. Phan, S.H., Schrier, D., McGarry, B.: Bleomycin-induced pulmonary fibrosis in the beige mouse. Fed Proc 41:617, 1982.
6. Schrier, D.J., McGarry, B., Phan, S.H.: Strain variation in bleomycin-induced pulmonary fibrosis: Control by a cyclophosphamide sensitive suppressor cell population. Fed Proc 41:619, 1982.
7. Duque, R.E., Phan, S.H., Sulavik, M., Till, G.O., Johnson, K.J., Ward, P.A.: Pulmonary alveolar macrophage dysfunction following remote thermal injury Fed Proc 41:941, 1982.

8. Phan, S.H., Fantone, J.C., McGarry, B.: The effect of lipopolysaccharide on bleomycin-induced pulmonary fibrosis Am Rev Resp Dis 125:54, 1982.

B. In Press

1. Phan, S.H., Armstrong, G., Sulavik, M.C., Schrier, D.J., Johnson, K.J., Ward, P.A.: A comparative study of pulmonary fibrosis-induced by bleomycin and an O<sub>2</sub> metabolite producing enzyme system, 1982.

C. Submitted

1. Schrier, D., Phan, S.H., Ward, P.A.: Cellular sensitivity to collagen in bleomycin-induced pulmonary fibrosis in rats. J Immunology
2. Schrier, D., Kunkel, R.G., Phan, S.H.: The role of strain variation in murine bleomycin-induced pulmonary fibrosis. Am Rev Resp Dis



CARL. L. PIERSON, Ph.D.

INSTRUCTOR IN PATHOLOGY  
CO-DIRECTOR, CLINICAL MICROBIOLOGY LABORATORY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Microbial Quantitation in Tissues
- B. Special Antimicrobial Susceptibility Testing
  - 1. MIC/MBC
  - 2. Antimicrobial Synergism
  - 3. Special Panels
- C. Mycoplasma Culture
  - 1. Clinical Specimens
  - 2. Tissue Culture Reagents
- D. Physician Consultation

TEACHING ACTIVITIES

- A. Pathology residents' teaching program - Microbiology rotation
- B. Clinical Pathology Conferences lectures
  - 1. "The Clinical Microbiology Laboratory"
  - 2. "Antimicrobial Susceptibility Testing"
- C. Medical Technology Program (Pathology 410)
  - 1. Lecture: "In Vitro Susceptibility Testing"
  - 2. Lecture: "Gas-Liquid Chromatography of Microorganisms"
- D. Clinical Microbiology In-Service Program
  - 1. Journal Club presentations

2. Special presentations on conferences attended
  3. Coordinate Pathology resident's reports
- E. Burn Nurse Specialist Education Program
1. "Infection Control Techniques for ICUs"
- F. Postgraduate Medicine Course (Towsley) - Basic Burn Care
1. "Immunodeficiency in Burned Patients"

#### RESEARCH ACTIVITIES

- A. Principal Investigator. Ceftriaxone Study: An in vitro comparative evaluation
- B. Co-Investigator. In vitro evaluation of Sch-294 and Ro-13-9904 against clinical bacterial isolates, with F. R. Fekety, Jr., Infectious Disease Service, Department of Internal Medicine
- C. Co-Investigator. Clinical evaluation of Cefsulodin in burn patient infections due to Pseudomonas aeruginosa, with I. Feller, Burn Program, Department of Surgery
- D. Study Participant. A survey of Cefoxitin resistance of Bacteroides fragilis with F. Tally, Tufts University School of Medicine, Boston, MA
- E. Project Participant Jojoba Oil: Effects on microbial growth with K.D. McClatchey, Department of Pathology. Funded by Jojoba Plantation Products
- F. Project Participant. Vascular implant infections with W. Whitehouse, Jr., Department of Surgery
- G. Project Participant. Characterization of chemotoxins produced by clinical isolates with W. Marasco, Department of Pathology
- H. Project Participant. The efficiency of the MS-2 to determine bacterial killing by PMN's with S. Weiss and S. Pass, Departments of Internal Medicine and Dental Pathology
- I. Laboratory Pilot Projects:
1. Detection of circulating pseudomonas Exotoxin A by ELISA
  2. Effects of test media on the Methicillin-resistance of Staphylococcus aureus
  3. Use of gas-liquid and high performance liquid chromatography for rapid detection and identification of microorganisms

J. Grant Support

1. "Comparative In Vitro Evaluation of Ceftriaxone." Hoffman-LaRoche, Inc., Nutley, NJ. \$39,946
2. "In Vitro Evaluation of Sch-294 and Ro-13-9904 Against Clinical Bacterial Isolates." Shering Corporation, Kenilworth, NJ, and Hoffman-LaRoche, Inc., Nutley, NJ. \$4,000
3. "A Survey of Cefoxitin Resistance in Bacteroides fragilis." Merck Institute for Therapeutic Research. \$3,000/year
4. "Clinical Evaluation of Cefsulodin in Burn Patient Infections Due to Pseudomonas aeruginosa. \$1,000

SERVICE ACTIVITIES

A. Departmental

1. Co-Director, Clinical Microbiology Laboratory
2. Member, Clinical Laboratories Directors' Committee

B. Medical School - Hospital

1. Consultant, Burn Unit Infection Control
2. Alternate for Dr. McClatchey on Infection Control Committee

C. Regional and National Activities

1. Consultant, National Institute for Burn Medicine, Ann Arbor, MI
2. Presentations given to Lederle Pharmaceutical representatives and Glaxo Pharmaceutical representatives
3. Conferences attended:
  - a) Herpes & Chlamydia Training Course, Troy, MI
  - b) Current Topics in Clinical Microbiology, Cleveland Clinic, Cleveland, OH

D. Scientific Papers Presented

1. "In vitro activity of Sch-29482, MK 0787, Ro-13-9904 and seven other antibiotics against 600 separate clinical isolates." 21st Inter-science Conference on Antimicrobial Agents Chemotherapy, Chicago, IL

2. "Relative susceptibility of Moxalactin-resistant Pseudomonas aeruginosa of selected anti-pseudomonas antibiotics in various test media." 21st Interscience Conference on Antimicrobial Agents Chemotherapy, Chicago, IL

## PUBLICATIONS

### A. Publications in Scientific Journals

1. Pierson, C.L., Schaberg, D.R., Fekety, F.R., Jr. McClatchey, K.D.: In vitro activity of Sch-29482, MI 0787, ceftriaxone and seven other antimicrobics against 840 separate clinical isolates. J of Antimicrob Chemor 9:(Supl C)78-89, 1982.
2. McClatchey, K.D., Pierson, C.L., Ferrell, W.J.: In vitro antimicrobial effects of Jojoba Oil. Proceedings of the 4th International Conference on Jojoba Oil, 1981.
3. McClatchey, K.D., Ferrell, W.J., Pierson, C.L.: Percutaneous absorption of Jojoba Oil. Proceedings of the 4th International Conference on Jojoba Oil, 1981.
4. Behl, C.R., Wittkowsky, A., Barrett, M., Pierson, C.L. Flynn, G.L.: Technique for preparing appendage-free skin (scar) on hairless mouse. J Pharmaceutical Sci 70:835-837, 1981.
5. Behl, C.R., Flynn, G.L., Barrett, M., Walters, K.A., Linn, E.E., Mohamed, Z., Kurihara, T., Ho, N.F.H., Higuchi, W.I. Pierson, C.L.: Permeability of thermally damaged skin II: Immediate influence of branding at 60°C on hairless mouse skin permeability. Burns 7:389-399, 1981.
6. Behl, C.R., Flynn, G.L., Barrett, M., Walters, K.A., Linn, E.E., Mohamed, Z., Kurihara, T., Ho, N.F.H., Higuchi, W.I., Pierson, C.L.: Permeability of thermally damaged skin. IV: Influence of branding iron temperature on the mass transfer of water and N-alkanols across hairless mouse skin. Burns 8:59-68, 1981.
7. Flynn, G.L., Behl, C.R., Linn, E.E., Higuchi, W.I., Ho, N.F.H., Pierson, C.L.: Permeability of thermally damaged skin. V. Permeability over the course of maturation of a deep partial thickness wound. Burns 8:196-202, 1981

### B. Published Abstracts

1. Pierson, C.L., Schaberg, D.R., Fekety, F.R., Jr., McClatchey, K.D.: In vitro activity of Sch-29482, MK 0787, R0-13-9904 and seven other antibiotics against 600 separate clinical isolates. Abstracts, 21st Interscience Conference on Antimicrobial Agents and Chemotherapy, 1981, Abstract No. 840.

2. Gobetti, S.R., Pierson, C.L., McClatchey, K.D.: Relative susceptibility of moxalactam-resistant pseudomonas aeruginosa to selected anti-pseudomonas antibiotics in various test media. Abstracts, 21st Interscience Conference on Antimicrobial Agents and Chemotherapy, 1981, Abstract No. 728.

C. Articles Submitted for Publication

1. Pierson, C.L., Gobetti, S.R., McClatchey, K.D.: Relative susceptibility of moxalactam-resistant pseudomonas aeruginosa to selected anti-pseudomonas antibiotics in various test media. Submitted to Antibiotic Agents and Chemotherapy.

K. MURALI KRISHNA RAO, M.D.

RESEARCH INVESTIGATOR  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Services in clinical immunopathology laboratories along with Dr. Keren and Dr. Till

TEACHING ACTIVITIES

- A. Pathology residents rotating through immunology
- B. A lecture in clinical immunology series
- C. Postgraduate teaching
  - 1. Towsley Seminars on Clinical Chemistry Workshop on T & B Cell Quantitation

RESEARCH ACTIVITIES

- A. Grant Support
  - 1. Grant proposal submitted to American Cancer Society, "Actin State and Protein Phosphorylation in Neoplastic Lymphocytes" (Requested 7-1-82 to 6-30-84 at \$50,000 annually)

PUBLICATIONS

- A. Articles published
  - 1. Rao, K.M.K., Bordine, S.L., Keren, D.F.: Decision making by pathologists: A strategy for curtailing the number of inappropriate tests. Arch Pathol Lab Med 106:55, 1982.
- B. Articles in press
  - 1. Rao, K.M.K.: Age-related differential effects of zinc on concanavalin A-induced capping of human lymphocytes. Exp Gerontol.
  - 2. Rao, K.M.K.: Capping and mitogenesis: A model implicating microfilaments in lymphocyte activation. J Theoretical Biol.

C. Articles submitted

1. Rao, K.M.K. and Varani, J.: Actin polymerization induced by chemotactic peptide and concanavalin A in rat neutrophils.
2. Varani, J., Wass, J.A., Rao, K.M.K.: Actin changes in normal lymphocytes and transformed lymphoid cells.

D. Abstracts

1. Rao, K.M.K. and Varani, J.: Actin state before and after lectin stimulation in normal lymphocytes and neoplastic cell lines. Fed Proc 41:739, 1982.
2. Bedows, E., Rao, K.M.K., Welsh, M.J., Knight, P.R.: Effect of halothane on the cellular cytoskeletal system (in press).

JOSEPH A. REGEZI, D.D.S., M.S.

ASSOCIATE PROFESSOR OF PATHOLOGY  
PROFESSOR OF DENTISTRY - DEPARTMENT OF ORAL PATHOLOGY

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DIAGNOSTIC SERVICE ACTIVITIES

- A. Oral Pathology Biopsy Service, 4 months, Dental School

TEACHING ACTIVITIES

- A. General Pathology for Dental Students - Fall 1981 Laboratory Instructor (Medical School)
- B. Oral Pathology for Dental Hygienists - Fall 1981
- C. Oral Pathology for Senior Dental Students - Fall 1981 and Winter 1982
- D. E.N.T. Pathology (Medical School) - Spring 1982

RESEARCH ACTIVITIES

- A. Evaluation of recently developed polymer dental implant in dogs (10,000 Kerr-Sybron Co.)
- B. Salivary gland tumor ultrastructure study (no outside funding)

SERVICE ACTIVITIES - DENTAL SCHOOL

- A. Faculty Development Committee
- B. Representative from Dental School to University Senate

NATIONAL ACTIVITIES

- A. Editorial Board - Oral Surgery, Oral Medicine, Oral Pathology
- B. Consultant to the ADA on graduate oral pathology education
- C. Finance Committee for American Academy of Oral Pathology
- D. Elected to Executive Council for American Academy of Oral Pathology



## PUBLICATIONS

### A. Published

1. Regezi, J.A., Courtney, R.M., and Batsakis, J.G.: The pathology of head and neck tumors: Cysts of the jaws, Part 12 Head and Neck Sur 4:48-57, 1981.

### B. In Press

1. Regezi, J.A. Clinical Oral Pathology. In, Dimensions of Dental Hygiene, Steele, Ed.
2. Regezi, J.A., McClatchey, K.D., and Batsakis, J.G.: Diagnostic Electron Microscopy of Head and Neck Tumors. In, Diagnostic Electron Microscopy, Trump and Jones, Eds.

ROBERT W. SCHMIDT, M.D.

PROFESSOR OF PATHOLOGY  
DIRECTOR OF WAYNE COUNTY GENERAL HOSPITAL LABORATORIES  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
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DIAGNOSTIC SERVICE ACTIVITIES

- A. Share equally all rotations for surgicals, autopsy, cytology, after hours call, etc.. WCGH

TEACHING ACTIVITIES

- A. Student Medical Technologists, 15-20 lectures (Parasitology)
- B. Residents (Fri. a.m.), 4 lectures (Parasitology)
- C. Occasional non-scheduled - Cytology and Parsitology

RESEARCH ACTIVITIES

- A. Thymic and parathyroid cysts
- B. Exfoliative cytology of squamous cell carcinoma in effusions
- C. A medical school affiliated, general hospital staff, non-profit corporation - one experience

SERVICE ACTIVITIES

- A. Departmental
  - 1. Chief, Wayne County General Hospital Laboratories
  - 2. Director, Blood Bank and School of Medical Technology. WCGH
- B. Medical School - Hospital
  - 1. President, University Medical Affiliates, P.C. (Wayne County General Hospital Medical Faculty Non-Profit Corporation)

2. Chairman, Executive Committee (UMA, P.C.)
3. Member, Executive Committee (WCGH)

PUBLICATIONS: None

BERTRAM SCHNITZER, M.D.

PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

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DIAGNOSTIC ACTIVITIES

- A. Clinical Hematology Laboratory, Director (full-time)
- B. Diagnostic Surgical Pathology, Hematopathology (full-time)
- C. Diagnostic Surgical Pathology, V.A. Hospital (weekly)
- D. Consultation of Hematopathology Cases (full-time)
- E. Diagnostic Electron Microscopy of Lymphoreticular and Hematologic Disorders
- F. University of Michigan Health Service Laboratories, Director

TEACHING ACTIVITIES

- A. Pathology - Medical School, Human Illness Inteflex Program, Sophomore year.
  - 1. Lecturer
  - 2. Laboratory Section
- B. Pathology 600 - Sophomore Medical Students. Whole class on Hematologic Pathology.
- C. House Officer Conferences - Hematopathology - monthly.
- D. Affiliated Hospital
  - 1. Slide conferences, Wayne County
  - 2. V.A. Hospital; Wayne State University
- E. Lecture of lymphomas to clinical hematologists, Department of Medicine, Simpson Memorial Institute. CPC Department of Medicine.

## RESEARCH ACTIVITIES

- A. Ongoing studies of benign and neoplastic lesions of lymphoreticular and hematopoietic systems; morphologic, immunologic, cytochemical and ultra-structural.
- B. Plastic-embedded bone marrow biopsies in diagnostic hematopathology.
- C. Flow cytometry of lymphomas and leukemias with Drs. McClatchey, Keren, Lovett and Hudson.
- D. Grant Support
  - 1. With Dr. Albert LoBuglio. Southwest Oncology Group combination chemotherapy of unfavorable histology non-Hodgkin's lymphoma with CHOP and CVB.

## SERVICE ACTIVITIES

- A. Departmental Activities
  - 1. Electron Microscopy Committee
  - 2. Flow Cytometry Team Member
- B. Medical School - Hospital
  - 1. Director of Sophomore Teaching of Pathology, Human Illness, Inteflex Promotion Board
  - 2. Voting Member, Inteflex Promotion Board
- C. Regional and National Activities
  - 1. Member, American Board of Pathology, Hematology Test Committee
  - 2. Member, Southwest Oncology Group
    - a) Lymphoma subcommittee
    - b) Leukemia subcommittee
  - 3. Regional Center Review Pathologist, Southwest Oncology Group
  - 4. National Lymphoma Panel for Lymphoma Clinical Studies
  - 5. Examiner, Special Competence Examination in Hematology, American Board of Pathology
  - 6. Children's Cancer Study Group. Review of lymphoma cases and occult leukemia relapses in testicular biopsies for Group's study.

7. Founding Member, National Hematopathology Society
8. Invited Speaker, Sixth Annual Hematopathology Review, Armed Forces Institute of Pathology.

#### PUBLICATIONS

##### A. Published

1. Schnitzer, B., Cochran, R.L.K., Gorrin, G.M., and Pullen, F.A.: Auer rods in plastic-embedded bone marrow biopsy specimens. Arch. Path. Lab. Med. 105:630, 1981.

##### B. Abstracts

1. Hirsch, S.D., Coon, W.W., Schnitzer, B. and Appelman, H.D.: Primary gastrointestinal lymphomas. A study of 143 cases. Lab. Invest. 46:36-37A, 1982.
2. Palultke, M., Schnitzer, B., et al.: T-cell subclasses in various lymphoproliferative disorders and leukemias. Blood 58 (Suppl. 1):86A, 1981.

EUGENE M. SILVERMAN

ASSOCIATE PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
July 1, 1981 - June 30, 1982

DIAGNOSTIC SERVICE ACTIVITIES

- A. Rotation with two other pathologists at Wayne County General Hospital in Surgical Diagnostic Reading Room, Cytology Service and Autopsy Service.

TEACHING ACTIVITIES

- A. Supervise residents on Surgical and Autopsy services.
- B. Prepare pathology sessions of Neurosciences Conferences at Wayne County General Hospital.
- C. Give 16 lectures annually in Medical Technology Training Program at Wayne County General Hospital.

SERVICE ACTIVITIES

- A. Medical School - Hospital
  - 1. Vice-President Wayne County General Hospital Medical Staff
  - 2. Member, Board of Directors, UMA, P.C.
  - 3. Chairman, Tissue Committee, Wayne County General Hospital
  - 4. Liaison Committee, UMA, P.C., - Medical School

GERD O. TILL, M.D.

ASSOCIATE PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
July 1, 1981 - June 30, 1982

DIAGNOSTIC SERVICE ACTIVITIES

- A. Associate Director, Clinical Immunopathology Laboratory

TEACHING ACTIVITIES

- A. Resident training in immunology and immunopathology.

RESEARCH ACTIVITIES

- A. Co-investigator on the following research grants:
1. NIH, GM 28499, Thermal Injury
  2. Stauffer Chemical Company, Makari Phenomenon
- B. Grant Support: As co-investigator, see above.

SERVICE ACTIVITIES

- A. Departmental Activities: See above
- B. Medical School - Hospital: None
- C. Regional and National Activities:
1. Member Editorial Advisory Board, Immunobiology, Zeitschrift fuer Immunitaetsforschung

PUBLICATIONS

- A. Published
1. Till, G., and Gemsa, D.: Leukozytenchemotaxis: Ausloesung und Regulation granulozytaerer Gewebsinfiltrationen. In, Wundheilung, pp. 33-48, Eds.: P. Eckert, R. Haering. Bibliomed-Verlag, Melsungen, 1981.



2. .Gemsa, D., Kramer, W., Napierski, I., Barlin, E., Till, G., Resch, K.: Potentiation of macrophage tumor cytostasis by tumor-induced ascites. J Immunol 126:2153-60, 1981.
  3. Till, G., Gemsa, D.: Komplementaktivierung durch Roentgen-kontrastmittel. In Besondere Toxizitaetspruefungen bei Arzneimitteln und Biomaterialien. pp. 82-84. Eds: P. Grosdanoff, F.H. Kemper, D. Lorke, G.Stille. AMI Berichte. Dietrich Reimer Verlag, Berlin, 1981.
  4. Till, G.: Pathogenese pseudoallergischer Reaktionen. Hautarzt 32 Suppl. V, 116-119, 1981.
  5. Gemsa, D., Baerlin, E., Leser, H.G., Deimann, W., Till, G., Resch, K.: In vivo activation of macrophages by C. parvum, glucan and pyranicopolymer: Different effects on PGE release, tumor cytostasis and lymphocyte mitogenicity. In Heterogeneity of macrophages. pp. 243-250. Eds: O. Foerster, M. Landy. Academic Press, New York, 1981.
  6. Till, G.O., Johnson, K.J., Kunkel, R., Ward, P.A.: Intravascular activation of complement and acute lung injury. Dependency on neutrophils and toxic oxygen metabolites. J Clin Invest 69:1126-1135, 1982.
- B. In Press
1. Till, G.O. and Ward, P.A.: Altered inflammatory mechanisms in thermal injury. In Handbook of Inflammation, Vol. IV.
  2. Till, G.O.: Lung injury secondary to chemotactic factor-induced leukocyte activation. Agents and Actions.
- C. Submitted
1. Till, G.O., Tourtellotte, W., Jr., Menapace, D., Kunkel, R., Beauchamp, C., Johnson, K.J., Ward, P.A.: Oxygen radical dependent lung damage following thermal injury of rat skin.

JAMES VARANI, Ph.D.

ASSISTANT PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
July 1, 1981 - June 30, 1982

DIAGNOSTIC SERVICE ACTIVITIES: None

TEACHING ACTIVITIES

- A. I was directly responsible for the training of two postdoctoral fellows who worked in my laboratory during the period 7/1/81 - 6/30/82. In addition, three undergraduate students worked in my laboratory during this period as part of the The University of Michigan Honors Program.

RESEARCH ACTIVITIES

- A. Nearly 100% of my professional time is devoted to research activities. I have an ongoing research program in tumor biology. The research is directed toward identifying properties of tumor cells which contribute to their metastatic ability.
- B. Grant Support
  - 1. My research activities for the period 7/1/81 - 6/30/82 were supported by two grants from the National Cancer Institute.
    - a. Tumor cell subpopulations with varying degrees of malignancy. CA29550, \$170,000 through 12/31/82.
    - b. Immunopathology of complement-mediated tumor cell chemotaxis. CA29551, \$270,000 through 12/31/82.

SERVICE ACTIVITIES

- A. Department Activities - None
- B. Medical School - None
- C. Regional and National Activities
  - 1. Presented reports at the national meeting of the Federation of American Societies for Experimental Biology and at the national meeting of the Biophysical Society.

2. Presented two reports at the 6th meeting of the European Association for Cancer Research (held October 7-12, 1981 in Budapest, Hungary).
3. I review submitted manuscripts for several journals in my field and have served as a grant reviewer for the Veteran's Administration.

## PUBLICATIONS

### A. Published

1. Johnson, K.J. and Varani, J.: Substrate hydrolysis by immune complex-activated neutrophils. Effect of physical presentation of complexes and protease inhibitors. J Immunol 127:1875-1879, 1982.
2. Wass, J.A., Varani, J., Piontek, G.E., Ward, P.A.: Responses of normal and malignant cells to collagen, collagen-derived peptides and the C5-related tumor cell chemotactic peptide. Cell Differentiation 10:329-332, 1981.
3. Varani, J., Lovett, E.J., III, Lundy, J.: A model of tumor cell dormancy in mice: Effects of anesthesia and surgery. J Surg Oncology 17:9-14, 1980.
4. Varani, J. and Fantone, J.C.: Phorbol myristate acetate-induced adherence of tumor cells. Cancer Res 42:190-197, 1982.
5. Varani, J., Ward, P.A., Johnson, K.J.: Non-specific protease and elastase activities in rat leukocytes. Inflammation 6:177-187, 1982.
6. Elgebaly, S., Kunkel, S.L., Lovett, E.J., Lundy, J., Varani, J.: CAMP differences between clones of high and low malignant fibrosarcoma cells. Oncology 39:163-166, 1982.
7. Orr, F.W., Lam, W.C., Delikatny, E.J., Mckashi, S., Varani, J.: Localization of intravenously-injected tumor cells in the rat mesentery after intraperitoneal administration of chemotactic stimuli. Invasion and Metastasis 1:239-247, 1981.
8. Fantone, J.C., Kunkel, S., Varani, J.: Inhibition of tumor cell adherence by prostaglandins. In, "Prostaglandins and Cancer: First International Conference. Alan R. Liss, Inc. New York, pp. 673-677, 1982.
9. Varani, J., Lovett, E.J., Wicha, M., Shibata, S., Goldstein, I.J.: Differential attachment of high and low metastatic fibrosarcoma cells to type IV collagen. Fed Proc 41:336, 1982.

10. Lovett, E.J., Maddox, D.E., Shibata, S., Varani, J. Goldstein, I.J.: Differentiation of high and low malignant culture supernatants from tumor cell variants is proportional to the metastatic potential of the tumor clone. In, "Proceedings of the Sixth Meeting of the European Association for Cancer Research". Alan R. Liss, Inc. New York, pp. 673-677, 1982.
11. Fantone, J.C., Kunkel, S.L., Weingarten, B., Varani, J.: Prostaglandin inhibition of tumor cell adherence. Fed Proc 41:326, 1982.
12. Desai, J. and Varani, J.: Generation of tumor cell chemotactic factors by lung constituents. Fed Proc 41:326, 1982.
13. Wass, J., Varani, J., Ward, P.A.: Chemotactic factor-induced osmotic fragility changes in tumor cells. Fed Proc 41:334, 1982.
14. Rao, K.M.K. and Varani, J.: Actin state before and after lectin stimulation in normal lymphocytes and neoplastic cell lines. Fed Proc 41:739, 1982.
15. Wass, J.A., Varani, J., Ward, P.A.: Specificity for chemotactic responsiveness in carcinosarcoma cells. Biophysical J 37:284a, 1982.

B. In Press

1. Varani, J. and Lovett, E.J.: Phenotypic stability of tumor cells in vitro and in vivo. J Nat Cancer Inst.
2. Varani, J.: Chemotaxis of metastatic tumor cells. Cancer Metastasis Review
3. Varani, J., Lovett, E.J., Fantone, J.C.: Induced adherence of tumor cells: A possible role for phospholipid/arachidonic acid metabolism. Proceedings of the Sixth Meeting of the European Association for Cancer Research.
4. Lovett, E.J. and Varani, J.: Immunosuppression induced by culture supernatants from tumor cell variants is proportional to the metastatic potential of the tumor clone. Proceedings of the Sixth Meeting of the European Association for Cancer Research
5. Orr, F.W. and Varani, J.: Chemotactic mechanisms and cancer metastasis. Pathology Annual.
6. Varani, J. and Orr, F.W.: Chemotaxis in non-leukocytic cells. In, "Handbook of Inflammation". P.A. Ward, (ed.)
7. Varani, J. and Ward, P.A.: The attraction of wandering metastatic cells. In, "Progressive Stages of Neoplastic Growth". H.E. Kaiser (ed.).

8. Varani, J. and Ward, P.A.: Intravascular movement of tumor cells: Similarities with leukocytes. In, "Proceedings of the International Conference on Leukocyte Chemotaxis". G. Till (ed.).
9. Varani, J., Lovett, E.J., Wicha, M., Maddox, D.E., Shibata, S., Goldstein, I.J.: Role of laminin in adherence differences between high and low metastatic cells. 13th International Cancer Congress proceedings

JOHN VASILIADES, Ph.D.

ASSISTANT PROFESSOR OF PATHOLOGY  
ASSISTANT DIRECTOR OF CLINICAL CHEMISTRY  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
July 1, 1981 - June 30, 1982

DIAGNOSTIC SERVICE ACTIVITIES

- A. Consultations with Hospital staff on Drug Monitoring, Clinical Chemistry and Clinical Laboratory Toxicology
- B. New procedures developed and offered to clinical staff
  - 1. ALA-D delta aminolevulinic acid dehydrates
  - 2. Chlordiazepoxide
  - 3. Oxazepam
  - 4. Flurazepam
  - 5. Verapamil
  - 6. Norverapamil

TEACHING ACTIVITIES

- A. Residency Program
  - 1. Lectures in clinical laboratory toxicology and chromatography
- B. Medical Technology Program
  - 1. Lectures in clinical laboratory toxicology
- C. Towsley Center
  - 1. Participated in the program by presenting a workshop and lecture in clinical laboratory toxicology
  - 2. Program planning committee
- D. Resident and Medical Technologist Rotation through my laboratory

RESEARCH ACTIVITIES

- A. Collaborative research with Dr. Rocchini and Dr. Wagner on Verapamil pharmacokinetics

- B. Collaborative work with Dr. Lucchesi on Amiodarone and other anti-arrhythmic drugs
- C. CRK-MB protocol for Baker Diagnostics. Evaluated CPK-MB method for Baker Diagnostics
- D. Evaluation of Ames creatinine analyzer
- E. New procedures and method development for clinical laboratories
- F. Student Research Projects
  - 1. Marian Anticolli, Master's Degree Student in Public Health
  - 2. Denise Ellul, Master's Degree Student in Public Health
- G. Presentations before Professional Groups
  - 1. The Association of Drug Detection Laboratories. December 1981 "A Comprehensive Screen for the Determination of Misused Drugs".
  - 2. Pittsburgh Conference in Analytical Chemistry. May 1982 "The Determination of Creatinine by High Performance Liquid Chromatography".
- H. Grant Support
  - 1. NIH Grant on antiarrhythmic Drugs (10%). Dr. Lucchesi, Pharmacology. (Pending)
  - 2. Astra Pharmaceutical, \$10,000. Prenalterol analysis. (Pending)

#### SERVICE ACTIVITIES

- A. Departmental
  - 1. Assistant Director of Clinical Chemistry and Coordinator of Research
- B. Medical School - Hospital: None
- C. Regional and National Activities
  - 1. Local AACC Accent Officer
  - 2. AACC Reference Committee on Creatinine Methodology

#### PUBLICATIONS

- A. Published

1. Vasiliades, J. et al.: Determination of midazolam by HPLC. J Chromatogr 225:266-271, 1981.
  2. Vasiliades, J. et al.: The determination of midazolam by GC, LC and GC-MS. J Chromatogr 228:195-203, 1982.
  3. Vasiliades, J., et al.: Gas chromatographic determination of verapamil and norverapamil with nitrogen-selective detector. Clin Chem 28:638-641, 1982.
- B. In Press
1. Vasiliades, J.: A comprehensive screen for the determination of drugs of misuse in the clinical laboratory. II Benzodiazepines. Clin Biochem, 1982.
  2. Wagner, J., Rocchini, A., Vasiliades, J.: Prediction of steady state verapamil plasma concentrations in children and adults. Clin Pharmacol Ther 1982.
- C. Submitted
1. Spicer, R., Rocchini, A., Vasiliades, J., et al.: Hemodynamic effects of verapamil in children with hypertrophic cardiomyopathy. Circulation, 1982.
- D. To Be Submitted
1. Vasiliades, J., et al.: Quinidine determination by spectrofluorometry, LC and fluorescence scanning-TLC. Clin Chem, 1982.
  2. Vasiliades, J.: A comprehensive screen for the determination of misused drugs in the clinical laboratory. Clin Tox, 1982.
- E. Abstracts
1. Vasiliades, J. and Wilkerson, K.: The Determination of Creatinine by HPLC. Abs. 1982 Pitts. Conf. in Anal. Chem. and Spectroscopy. Atlantic City, NJ. March, 1982.



PETER A. WARD, M.D.

PROFESSOR AND CHAIRMAN  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
July 1, 1981 - June 30, 1982

DIAGNOSTIC SERVICE ACTIVITIES

These have been limited to occasional involvement in surgical pathology biopsy specimens.

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 400 - Three one hour sessions to Inteflex Students.
3. Lecture in Sophomore Pathology Course

B. Graduate Students

Supervision of five postdoctoral fellows, Drs. Ricardo Duque, Wayne Marasco, Philip McCoy, Denis Schrier and John Wass; Director, Lung Immunopathology Training Program

RESEARCH ACTIVITIES

A. Principal Investigator for the following grants:

1. Pathogenesis of Inflammatory Lung Disease, NIH HL23192; \$89,899/year (\$161,684/2 years)
2. Thermal Injury, Complement, and Leukocyte Dysfunction; NIH GM28499, \$68,910/year (\$353,456/5 years)
3. Complement Mediated Tumor Cell Chemotaxis; NIH CA29551; \$73,933/year (\$195,157/3 years)
4. Immune Complex Injury of Lung and Oxygen Metabolites, NIH HL26809; \$77,100/year (\$245,309/3 years)
5. Lung Immunopathology (Training), NIH HL07517; \$61884/year (\$577,932/5 years)

6. Leukocyte Chemotaxis, NIH HL28442; \$62,715/year (\$340,327/5 years)
7. Pathogenesis of Targeted (Immunologic) Lung Injury, NIH HL26498; \$74,583/year (\$204,145/3 years)
8. In Vitro and In Vivo Investigations of Makari Phenomenon, Stauffer Chemical Company; \$102,960/year (\$300,000/2 years)

TOTAL DIRECT COSTS  
(July 1, 1981 - June 30, 1982) = \$ 611,984

TOTAL DIRECT COST  
(January 1, 1981 - June 30, 1986) = \$ 2,306,225

### SERVICE ACTIVITIES

#### A. Medical School - Hospital

1. Chairmen's Advisory Panel on Ambulance Services
2. Clinical Chairmen's Council
3. Clinical Department Chairmen
4. Dean's Advisory Council
5. Director's Advisory Council
6. Executive Committee on Clinical Affairs
7. Feasibility Study for Multifloor Medical Research Facility Attached to Medical Science II Committee, Chairman
8. Medical Sciences Research Building (MSRB) Task Force Committee, Chairman
9. Michigan Eye Bank Research Review Committee
10. Michigan Diabetes Research and Training Center Policy Committee
11. Psychiatry Search Committee, Chairman
12. Wayne County General Hospital/University of Michigan Liaison Committee
13. Review and Search Committee for a Permanent Section Head of General Surgery

B. Regional and National Activities

1. Member, Universities Associated for Research and Education in Pathology, Inc.
2. Member, Advisory Council, Johns Hopkins Center for Alternatives to Animal Experimentation
3. Member, Research Committee A (Program Project Study Section), National Institutes of Health
4. Immunopathology Test Committee, The American Board of Pathology
5. Chairman, Immunology Research Review Committee, Veterans Administration
6. Member of 11 site visit teams (National Institutes of Health), Chairman of four of these teams
7. Chairman and Board Member, Scientific Advisory Board, Armed Forces Institute of Pathology
8. Consultant, Upjohn Company
9. Consultant, Schering Corporation
10. Member, Pathology Test Committee, National Board of Medical Examiners
11. On editorial board of 17 national journals

C. Invited Lectures and Seminars

1. Approximately 35 during the 1981/82 academic year, including:
  - a. International Congress of Immunopharmacology (July, 1981), Brighton, England
  - b. Chairman of Minisymposium on "Tissue Damage of Toxic Oxygen Products", Annual FASEB Meetings (April, 1982), New Orleans
  - c. Chairman of session and participant in First International Conference on Leukocytes, Locomotion and Chemotaxis (May, 1982), Geneva, Switzerland

## PUBLICATIONS

### A. Papers in Journals

1. Dickey, B.F., Thrall, R.S., McCormick, J.R., Ward, P.A.: Oleic-acid-induced lung injury in the rat. Failure of indomethacin treatment or complement depletion to ablate lung injury. Am J Pathol 103:376-383, 1981.
2. Fantone, J.C., Kunkel, S.L., Ward, P.A.: Suppression of human polymorphonuclear function after intravenous infusion of prostaglandin E<sub>1</sub>. Prostaglandins and Medicine 7:195-198, 1981.
3. Fantone, J.C. and Ward, P.A.: II. Experimental studies of immune complex injury to the lung. Amer Rev Resp Dis 124:743-755 (1981); In: "Symposium on Immune Complex Injury of the Lung", R.P. Daniele, Editor. Am Rev Res Dis 124:738-755, 1981.
4. Jack, R.M. and Ward, P.A. Mechanisms of entry of Plasmodia and Babesia into red cells. In, "Babesiosis". Edited by M. Ristic and J.P. Kreier. Academic Press, Inc. (New York) publishers, pp. 445-457 1981.
5. Johnson, K.J., Fantone, J.C., III, Kaplan, J., Ward, P.A. In vivo damage of rat lungs by oxygen metabolites J Clin Invest 67:983-993, 1981.
6. Johnson, K.J. and Ward, P.A. Role of oxygen metabolites in immune complex injury of lung. J Immunol 126:2365-2369, 1981.
7. Kunkel, S.L., Fantone, J.C., III, Ward, P.A. Complement mediated inflammatory reactions. Pathobiology Annual 11:127-154, 1981.
8. Kunkel, S.L., Fantone, J.C., Ward, P.A., Zurier, R.B. Modulation of inflammatory reactions by prostaglandins. Prog Lipid Res 20:638-640, 1981.
9. Kunkel, S.L., Ogawa, H., Conran, P.B., Ward, P.A., Zurier, R.B. Suppression of acute and chronic inflammation by orally administered prostaglandins. Arth Rheum 24:1151-1158, 1981.
10. Kunkel, S.L., Ogawa, H., Ward, P.A., Zurier, R.B. Suppression of chronic inflammation by evening primrose oil. Prog Lipid Res 20:885-888 (1981).
11. Lam, W.C., Delikatny, J., Orr, W., Wass, J., Varani, J., Ward, P.A. Chemotactic response of tumor cells: A model for cancer metastases. Am J Pathol 104:69-76, 1981.

12. Maderazo, E.G. and Ward, P.A.: Infections and the host. In, "Management of Infections of the Oral and Maxillofacial Regions". R.G. Topazian and M.H. Goldberg, Editors, W.B. Saunders Company, (Philadelphia) publishers, pp. 1-38, 1981.
13. Manderino, G.L., Suarez, A.F., Hirata, A.A., Ward, P.A.: Chemotaxis under agarose utilizing human serum depleted of C-5 derived peptides. J Immunol Methods 45:283-299, 1981.
14. McCormick, J.R., Harkin, M.M., Johnson, K.J., Ward, P.A.: Suppression of superoxide dismutase of immune-complex-induced pulmonary alveolitis and dermal inflammation. Am J Pathol 102:55-61, 1981.
15. McCormick, J.R., Thrall, R.S., Ward, P.A., Moore, V.L., Fink, J.N.: Serum angiotensin-converting enzyme levels in patients with pigeon-breeder's disease. Chest 80:431-433, 1981.
16. O'Flaherty, J.T. and Ward, P.A.: Leukocyte responses to chemotactic factors. In, "Contemporary Hematology/ Oncology", Volume 2. R. Silber, A.S. Gordon, J. LoBue and F.M. Muggia, Editors. Plenum Publishing Corp. (New York), Publishers, pp. 131-152, 1981.
17. Ogawa, H., Kunkel, S.L., Fantone, J.C., Ward, P.A.: Comparative study of eosinophil and neutrophil chemotaxis and enzyme release. Am J Pathol 105:149-155, 1981.
18. Ogawa, H., Kunkel, S.L., Fantone, J.C., Ward, P.A.: Digestion of the fifth component of complement by eosinophil lysosomal enzymes: Production of eosinophil specific chemotactic activity. Virchows Archiv B 38:149-157, 1981.
19. Orr, F.W., Varani, J., Delikatny, J., Narendra, J., Ward, P.A.: Comparison of the chemotactic responsiveness of two fibrosarcoma subpopulations of differing malignancy. Am J Pathol 102:160-167, 1981.
20. Rothfield, L.I., Ward, P.A., Tilton, R.C., Bigazzi, P.E.: Microbiology & Immunology Review, 2nd edition. Arco Publishing Co., New York, New York. pp. 159, 1981.
21. Thrall, R.S., Phan, S.H., McCormick, J.R., Ward, P.A.: The development of bleomycin-induced pulmonary fibrosis in neutrophil-depleted and complement-depleted rats. Am J Pathol 105:76-81, 1981.
22. Varani, J., Wass, J., Piontek, G., Ward, P.A.: Chemotactic factor-induced adherence of tumor cells. Cell Biology 5:525-535, 1981.
23. Ward, P.A.: President's Symposium: Frontiers of parasitic diseases. Am J Pathol 102:108, 1981.

24. Ward, P.A.: The role of the complement system in smoke inhalation. J Trauma 21:722-723, 1981.
25. Ward, P.A.: Chemotactic mechanisms in thermal injury. In, "The Immune Consequences of Thermal Injury". J.L. Ninnemann, Editor, Williams & Wilkins (Baltimore), publishers, pp. 119-126 1981.
26. Ward, P.A.: Immunologic and nonimmunologic functions of complement in the inflammatory process. In, "Nutritional Assessment - Present Status, Future Directions and Prospects", Report of the Second Ross Conference on Medical Research. S.M Levenson, Editor. Ross Laboratories (Columbus, Ohio), pp. 117-118, 1981.
27. Ward, P.A.: Regulation of the chemotactic system. In, Proceeding "Immunology of the Eye; Workshop: III", A. Suran, I. Gery and R.B. Nussenblatt, Editors. Sp. Supp. Immunology Abstracts, pp. 303-307, 1981.
28. Ward, P.A.: The acute inflammatory response and the role of complement. In, "The Surgical Wound". Edited by P. Dineen and G. Hildick-Smith. Lea & Febiger (Philadelphia), pp. 19-25, 1981.
29. Ward, P.A. and Jack, R.M.: The entry process of Babesia merozoites into red cells. Am J Pathol 102:109-113, 1981.
30. Ward, P.A. and Johnson, K.J.: Inflammatory mechanisms in lung injury. In, "Advances in Immunopathology", W.O. Weigle, Editor. Elsevier North Holland, Inc., (New York, New York), pp. 257-269, 1981.
31. Ward, P.A. and Johnson, K.J.: Immunologically mediated pulmonary damage. In, "The Mucosal Immune System in Health and Disease", Proceedings of the Eighty-First Ross Conference on Pediatric Research. Ross Laboratories (Columbus, Ohio), pp. 296-306, 1981.
32. Ward, P.A., Sterzel, R.B., Lucia, H.L., Campbell, G.H., Jack, R.M.: Complement does not facilitate plasmodial infections. J Immunol 126:1826-1928, 1981.
33. Wass, J.A., Varani, J., Piontek, G.E., Goff, A., Ward, P.A.: Characteristics of the chemotactic factor-induced cell swelling response of tumor cells. J National Cancer Inst 66:927-933, 1981.
34. Wass, J.A., Varani, J., Piontek, G.E., Ward, P.A.: Responses of normal and malignant cells to collagen, collagen-derived peptides and the C5-related tumor cell chemotactic factor. Cell Diff 10:329-332, 1981.
35. Yoshida, T. and Ward, P.A.: Macrophage participation in the pathophysiology of the immune response and inflammation. In, "Pathophysiology of the Reticuloendothelial System", B.M. Altura and T.M. Saba, Editors. Raven Press (New York), pp. 31-46, 1981.

36. Fantone, J.C., Kunkel, S.L., Ward, P.A.: Chemotactic mediators in neutrophil-dependent lung injury. Ann Rev Physiol 44:283-293, 1982.
37. Fantone, J.C. and Ward, P.A.: A Review: Role of oxygen-derived free radicals and metabolites in leukocyte-dependent inflammatory reactions. Am J Pathol 107:395-418, 1982.
38. Johnson, K.J. and Ward, P.A.: Acute and progressive lung injury after contact with phorbol myristate acetate. Am J Pathol 107:029-035, 1982.
39. Ray, T.L., Levine, J.B., Weiss, W., Ward, P.A.: Epidermolysis bullosa acquisita and inflammatory bowel changes. Am Acad Dermatol 6:242-252, 1982.
40. Showell, H.J., Glovsky, M.M., Ward, P.A.: C3a-induced lysosomal enzyme secretion from human neutrophils. Lack of inhibition by f-met-leu-phe antagonists and inhibition by arachidonic acid antagonists. Int Arch Allergy Appl Immunol 67:227-232, 1982.
41. Till, G.O., Johnson, K.J., Kunkel, R., Ward, P.A.: Intravascular activation of complement and acute lung injury. J Clin Invest 69:1126-1135, 1982.
42. Ward, P.A.: The chemotaxis system. In, "Current Topics in Inflammation and Infection". Edited by G. Majno, R.S. Cotran, and N. Kaufman. IAP Monograph, No. 23, published by the Williams and Wilkins Company, New York, pp. 54-61, 1982.

B. In Press

1. Desai, U., Kruetzer, S.L., Dickey, B., Varani, J., Kunkel, S.L., Ward, P.A.: Demonstration of a specific C5 cleaving activity present in bronchoalveolar lavage fluids. Am J Pathol
2. Elgebaly, S., Varani, J., Kunkel, S.L., Ward, P.A.: Cyclic AMP levels in subpopulations of tumor cells: Correlation with in vitro and in vivo behavior. Oncology.
3. Fantone, J.C., Johnson, K.J., Till, G.O., Ward, P.A.: Acute and progressive lung injury secondary to toxic oxygen products from leukocytes. Chest.
4. Fantone, J.C. and Ward, P.A.: Experimental studies of immune complex injury of lung. Am Rev Resp Dis.
5. Fantone, J.C. and Ward, P.A.: Chemotactic mechanisms in the lung. In, "Immunopharmacology of the Lung". H.H. Newball, Editor. Marcel Dekker, Inc. (New York).

6. Kunkel, S.L., Fantone, J.C., Ward, P.A.: Role of prostaglandins in macrophage cell function. In, "The Reticuloendothelial System: A Comprehensive Treatise. Vol. VI." Edited by J.A. Bellanti and H. B. Herscovitz. Plenum Publishing Co., New York.
7. Manderino, G.L., Suarez, A.F., Kunkel, S.L., Ward, P.A., Hirata, A.A.: Purification of human C5a des arg by immunoadsorbent and molecular sieve chromatography. J Immunol Methods
8. Showell, H.J., Glovsky, M.M., Ward, P.A.: Morphological changes in human polymorphonuclear leukocytes (PMNs) induced by C3a in the presence and absence of cytochalasin B. Int Arch Allergy Appl Immunol.
9. Varani, J. and Ward, P.A.: The immunobiology of tumor cell chemotaxis and metastasis. In, "Handbook of Cancer Immunology", H. Waters, ed., Garland STPM Press.
10. Ward, P.A., Fantone, J.C., Johnson, K.J.: Lung injury produced by oxygen metabolites. VIIIth International Symposium on Immunopathology.
11. Ward, P.A. and Kunkel, S.L.: Bacterial virulence and the inflammatory system. In, "Conference on Bacterial Virulence and Pathogenesis".
12. Weiss, S.J. and Ward, P.A.: Immune complex induced generation of oxygen metabolites by human neutrophils. J Immunol
13. Wolter, N.J., Kunkel, S.L., Lynch, J.P., Ward, P.A. Production of cyclooxygenase products by alveolar macrophages in pulmonary sarcoidosis. Chest.

C. Submitted

1. Marasco, W.A., Fantone, J.C., Ward, P.A.: N-formylated oligopeptides are potent spasmogenic agents for guinea pig ileum Submitted to Science.
2. Ogawa, H., Kunkel, S.L., Fantone, J.C., Ward, P.A.: Comparative study of eosinophil and neutrophil chemotaxis and enzyme release. Submitted to the Am J Pathol.
3. Sheetz, M., Kunkel, S.L., Thimmappaya, R., Ward, P.A.: Hepatic clearance of oxidized erythrocytes requires complement. Submitted to the J Clin Invest.
4. Till, G.O., Tourtellotte, W., Jr., Beauchamp, C., Kunkel, R., Johnson, K.J., Ward, P.A.: Oxygen-radical dependent acute lung injury following thermal injury of rat skin. Submitted to the J Clin Invest.



5. Varani, J., Wass, J., Piontek, G., Ward, P.A.: Increased adherence and increased cell volume of tumor cells induced by chemotactic factor.
6. Ward, P.A. and Johnson, K.J.: Lung inflammatory mechanisms. Submitted to Human Pathol.

LEE WEATHERBEE, M.D.

ASSOCIATE PROFESSOR OF PATHOLOGY  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
July 1, 1981 - June 30, 1982

DIAGNOSTIC SERVICE ACTIVITIES

- A. Read out surgical cases with the residents 2-4 days per week (approximately 1800 cases)
- B. Reviewed 90 autopsy reports. Read microscopic and dictated final report on 25 autopsies.
- C. Read out cytology reports approximately 3 weeks
- D. Acted as consultant pathologist in the weekly Medical Service review and in other professional conferences at the VA Medical Center
- E. General administrative and professional direction of the Laboratory Service at the VA Medical Center
- F. Consulted at the University of Michigan and at other hospitals on approximately 14 cases of bone and joint disease.

TEACHING ACTIVITIES

- A. General supervision of and daily participation in resident training at VA Medical Center. This includes surgical, autopsy and clinical pathology.
- B. Taught the Inteflex Laboratory Course covering the genitourinary and musculoskeletal systems.
- C. One lecture for M-2 students on Bone Pathology.

RESEARCH ACTIVITIES: See Publications

SERVICE ACTIVITIES

- A. Departmental
  - 1. Clinical Pathology Faculty Committee
  - 2. Resident Selection Committee
  - 3. Resident Evaluation Committee

B. VA Medical Center

1. Served as Acting Chief of Staff from February 22, 1982 to June 6, 1982
2. Clinical Executive Board
3. Human and Financial Resources Committee
4. Medical Audit Committee
5. Radiation Control Committee
6. Transfusion Review Committee - Chair
7. Pharmacy and Therapeutics Committee
8. Library Committee
9. Nutrition Committee
10. Professional Review Board

C. Regional and National

1. College of American Pathologists, Inspected two outside hospital laboratories for the CAP

PUBLICATIONS

A. Published

1. Weatherbee, L., Good, A. et al.: Spinal cord block with a destructive lesion of the dorsal spine in ankylosing spondolitis. Arth and Rheum 25:February, 1982.

BARRY S. WILSON, PH.D.

ASSISTANT PROFESSOR  
DEPARTMENT OF PATHOLOGY

Annual Departmental Report  
July 1, 1981 - June 30, 1982

DIAGNOSTIC SERVICE ACTIVITIES: None

TEACHING ACTIVITIES

- A. Participated in the Medical Student Summer Research Program

RESEARCH ACTIVITIES

- A. Since my arrival in November 1981, I have established a Hybridoma/Cell Culture Facility within the Department and am actively engaged in a number of collaborative projects requiring monoclonal antibodies.

The following areas are under investigation.

1. Production of mouse monoclonal antibodies to human kidney glomerular antigens.
2. Detection of human tumor markers with mouse as well as human monoclonal antibodies.
3. Development of monoclonal antibodies to human lymphoid cell surface antigens, including the major human histocompatibility antigens HLA-A,B,C and Ia.
4. Development of a panel of monoclonal antibodies to define soluble antigens for analyzing the role of Ig classes in models of lung and kidney immune complex injury.

- B. Grant Support

1. Leukemia Society of America Special Fellowship, \$18,333, 11/1/81 - 12/30/82
2. Rackham Graduate School, \$7,500, 5/1/82 - 4/30/83
3. Phoenix Project, \$2,500, 5/1/82 - 4/30/83

SERVICE ACTIVITIES

- A. Departmental Activities - None
- B. Medical School - Hospital - None

C. Regional and National Activities - None

PUBLICATIONS

A. Published

1. Wilson, B.S., Ruberto, G., Ferrone, S.: Sulfation and molecular weight of fibronectin shed by human melanoma cells. Biochem Biophys Res Communications. 101:1047-1051, 1981.
2. Wilson, B.S., Glassy, M.C., Quaranta, V., Ng, A.-K., Ferrone, S.: Effect of tunicamycin on the assembly and antigenicity of HLA antigens: Analysis with monoclonal antibodies. Scand J Immunol 14:201-205, 1981.
3. Wilson, B.S., Imai, K., Natali, P.G., Ferrone, S.: Distribution of molecular characterization of a cell-surface and a cytoplasmic antigen detectable in human melanoma cells with monoclonal antibodies. Int J Cancer 28:293-300, 1981.
4. Natali, P.G., Imai, K., Wilson, B.S., Bigotti, A., Cavaliere, R., Pellegrino, M.A., Ferrone, S.: Structural properties and tissue distribution of the antigen recognized by the monoclonal antibody 653.40S to human melanoma cells. J Nat Cancer Inst 67:591-601, 1981.

B. In Press

1. Natali, P.G., Wilson, B.S., Imai, K., Bigotti, A., Ferrone, S.: Tissue distribution, molecular profile and shedding of cytoplasmic antigen identified by a monoclonal antibody 465.12S to human melanoma cells. Cancer Res, 1982.
2. Imai, K., Natali, P.G., Kay, N.E., Wilson, B.S., Ferrone, S.: Tissue distribution and molecular profile and a differentiation antigen detected by a monoclonal antibody (345.1345) produced against human melanoma cells. Cancer, Immunol Immunother, 1982.
3. Imai, K., Wilson, B.S., Bigotti, A., Natali, P.G., Ferrone, S.: A 94,000 dalton glycoprotein expressed by human melanoma and carcinoma cells. J Natl Cancer Inst, 1982.
4. Wilson, B.S., Kay, N.E., Imai, K., Ferrone, S.: Heterogeneity of human melanoma-associated antigens defined by monoclonal antibodies and conventional xenoantisera. Cancer Immunol Immunother, 1982.

### C. Chapters and Articles in Books

1. Quaranta, V., Glassy, M.C., Indiveri, F., Natali, P.G., Ng, A.-K., Pellegrino, M.A., Russo, C., Wilson, B.S., Ferrone, S.: Analysis of human Ia-like antigens with monoclonal antibodies. In, "Immunobiology of the Major Histocompatibility Complex", Ed., M. Zaleski, S. Karger, Basel, pp. 155-164, 1981.
2. Imai, K., Wilson, B.S., Kay, N.E., Ferrone, S.: Monoclonal antibodies to human melanoma cells: Comparison of serological results of several laboratories and molecular profile of melanoma associated antigens. In, "Monoclonal Antibodies and T cell Hybridomas", Eds., G.I. Hammerling, U. Hammerling and J.F. Kearney, Elsevier Publishing Co., 1982 (in press).
3. Imai, K., Wilson, B.S., Ruberto, G., Nakanishi, T. Yachi, A., Ferrone, S.: Molecular heterogeneity of a high molecular weight human melanoma associated antigen (MAA) detected by monoclonal antibodies. In, "Protides of the Biological Fluids", Colloquium 29, Ed. H. Peeters, Pergamon Press, Oxford, (in press).
4. Ng, A.-K., Imai, K., Pellegrino, M.A., Vitiello, M.A., Wilson, B.S., Ferrone, S.: Modulation of immune lysis of human tumor cells by interferon: Analysis with monoclonal antibodies to plasma membrane bound tumor associated antigens and histocompatibility antigens. In, "Pathological Membranes", Ed., A.H. Nowotny, Plenum Press, New York, in press.
5. Pellegrino, M.A., Natali, P.G., Wilson, B.S., Ng, A.-K., Imai, K., Indiveri, F., Ferrone, S.: Ia-like antigens on human melanoma cells. In, "Hybridomas in Cancer Diagnosis and Treatment", Eds., M. Mitchel and H. Oettgen, Progress in Cancer Diagnosis and Research Therapy, Vol. 21, Raven Press, New York, 1982 (in press).
6. Ruberto, G., Imai, K., Natali, P.G., Wilson, B.S., Ferrone, S.: Analysis of monoclonal antibodies to human melanoma cells. In, "Hybridomas in Cancer Diagnosis and Treatment", Eds., M. Mitchell and H. Oettgen, Progress in Cancer Research Therapy, Vol. 21, p. 191, Raven Press, New York, 1982.
7. Russo, C., Pellegrino, M.A., Ng, A.-K., Wilson, B.S., Ferrone, S.: Antigenic constitution of HLA-A,B,C molecules: Immunochemical analysis with monoclonal xenoantibodies. In, "HLA-Typing: Methodological Aspects and Relevance in Clinical Medicine", Eds., S. Ferrone and B. Solheim, CRC Press, Boca Ratan, (in press).
8. Wilson, B.S., Giacomini, P., Imai, K., Natali, P.G., Nakanishi, T., Ruberto, G., Ferrone, S.: Human melanoma associated antigens identified with monoclonal antibodies: Structural profile and potential usefulness in immunodiagnosis and immunotherapy. In, "Biomarkers of Neoplastic Cells", Ed., H. Guirgis, Alan R. Liss, NY (in press).

9. Wilson, B.S., Imai, K., Natali, P.G., Kay, N.E., Cavaliere, R., Pellegrino, M. and Ferrone, S.: Immunochemical analysis of the antigenic profile of human melanoma cells in monoclonal antibodies. In, Melanoma Antigens and Antibodies, Eds., R.A. Reisfeld, and S. Ferrone, Plenum Press, New York, (in press).
10. Wilson, B.S., Ng., A.-K., Quaranta, V., Ferrone, S.: HLA polyclonal and monoclonal xenoantibodies: Production, characterization, and application to the study of HLA antigens. In, "Current Trends in Histocompatibility", Eds., R.A. Reisfeld and S. Ferrone, Plenum Press, New York, pp. 307-345, 1981.

J. REIMER WOLTER, M.D.

PROFESSOR OF PATHOLOGY  
PROFESSOR - DEPARTMENT OF OPHTHALMOLOGY

Annual Departmental Report  
July 1, 1981 - June 30, 1982

DIAGNOSTIC SERVICE ACTIVITIES

- A. Under the direct supervision of Robert C. Hendrix, M.D., the histopathologic examination, description, diagnosis, and preparation of reports was completed in 632 cases. Some of the material comes from ophthalmologists and hospitals outside of this University and this "outside material" has an unusually high percentage of cases with value for teaching and research.

TEACHING ACTIVITIES

- A. Teaching of Ophthalmic Pathology to the residents of the Eye Department. Ophthalmic Pathology is essential for an understanding of disease causes, mechanisms, processes, and results. Ophthalmic Pathology is an important part of the oral and written examination of the American Board of Ophthalmology.

RESEARCH ACTIVITIES

- A. This Ophthalmic Pathology Laboratory will have its 30th birthday in the coming year. More than 300 publications have originated in this Laboratory during that time and almost all of them are based on observations in Ophthalmic Pathology. This Laboratory has had the support of the Research to Prevent Blindness, Inc., New York, N.Y. for many years.

SERVICE ACTIVITIES

- A. Medical School - Hospital
  - 1. Member, Tissue Committee, University of Michigan Hospital
  - 2. Member, Committee of Medical Student Research, University of Michigan Medical School
  - 3. Director General Ophthalmology Clinic, University of Michigan Hospital
  - 4. Chief, Eye Service, VA Hospital, Ann Arbor, Michigan
  - 5. Member, President's Club, University of Michigan



B. Regional and National

1. Member, Editorial Board, Graef's Arch. Opth.
2. Member, Review Board, American Journal of Opth.
3. Listed in Who's Who
4. Member, Association of Ophthalmic Pathologists
5. Member, American Academy of Ophthalmology.
6. Member, German Ophthalmological Society

C. Lectures

1. Wolter, J.R.: Trauma of the Glove - Indirect Involvement of the Central Retina in Anterior Segment Injuries, 1981 Michigan State Medical Society Annual Scientific Meeting, Detroit.
2. Wolter, J.R.: Guest Lecturer, Loyola University, Department of Ophthalmology, Chicago, November 11, 1981.
3. Wolter, J.R.: Lessons Learned by Managing Unusual Tumors and Cysts of the Orbit, Part of Modern Approaches in Eye Plastic and Orbital Surgery, Continuing Medical Education at Towsley Center, Ann Arbor, Michigan.
4. Wolter, J.R.: Lens Implant Cytology Technique, The American Ophthalmological Society, Hot Springs, Virginia.

PUBLICATIONS

A. Published

1. Wolter, J.R.: Unveal melanocytes may offer possibility of replacing damaged corneal endothelium. Opth Times 66:2, 1981.
2. Wolter, J.R.: Foveal pathology following anterior segment injury. Opth Surg 12:661-665, 1981.
3. Wolter, J.R. and Hansen, K.D.: Intimo-intimal intussusception of the central retinal artery. Amer J Opth 92:486-491, 1981.
4. Meyer, R.F. and Wolter, J.R.: Granulomatous inflammation reaction to degenerating Descemet's membrane. Annals of Opth 13:1113-1115, 1981.
5. Wolter, J.R., Replacement of the corneal endothelium by melanocytes. Graefes Archiv Opth 217:247-253, 1981.

6. Wolter, J.R.: Cystoid macular edema in vitreo-retinal traction. Ophthalm Surg 12:900-904, 1981.
7. Bahn, C.F., Vine, A.K., Martonyi, C.L.: Argon laser photocoagulation of a vitreo-corneal adhesion after trauma. Ophthalm Surg 13:53-55, 1982.
8. Wolter, J.R.: Foveal pathology in ciliary body melanoma. Ophthalm Surg 13:309-311, 1982.
9. Wolter, J.R.: CT scan called major technologic advancement in orbital surgery. Ophthalm Times 7:42,43 and 49, 1982.
10. Wolter, J.R.: Three basic types of foveal involvement in choroidal melanomas. Graefe's Arch Ophthalm 218:237-243, 1982.
11. Wolter, J.R.: Cell life on the surface of lens implants. Graefe's Arch Ophthalm 218:237-243, 1982.

B. In Print

1. Wolter, J.R., Schut, A.L., Dorovini-Zis, K.: Massive astrocytoma in a congenitally deformed eye, Brit J Ophthalm.
2. Wolter, J.R.: Pigment in cellular membranes on intra-ocular lens implants. Ophthalm Surg.
3. Wolter, J.R.: A technique for staining cellular membranes on intra-ocular lens implants. Transactions Ophthalm Soc.
4. Wolter, J.R.: Lens implant cytology. Ophthalm Surg.

C. Submitted

1. Wolter, J.R.: Expulsive hemorrhage: a study of histopathological details Graefe's Arch Ophthalm.
2. Wolter, J.R. and Felt, D.P.: Fibroblastic activity on failing intra-ocular lens implants, Ophthalm Surg.
3. Wolter, J.R.: Foreign body giant cells on intraocular lens implants. Graefe's Arch Ophthalm.
4. Wolter, J.R.: Vitreous traction and posterior cystoid retinopathy associated with occlusion of retinal and ciliary blood vessels. Amer J Retinal and Vitreal Diseases

D. Chapters in Books

1. Wolter, J.R. and Haymaker, W.: Chapter on "The Eye". In, "Histology and Histopathology the Nervous System", by Haymaker, W. and Adams, R.D. Charles Thomas Publishing, Springfield, Illinois, 1982, Vol. II, pp. 2236-2395.



Educational Activities\*  
Department of Pathology  
Annual Report for Academic Year  
July 1, 1981 - June 30, 1982

The Department continues to occupy a unique educational niche in the institution, serving as it does, several schools within the University; and simultaneously providing instruction in a Basic Science as well as teaching specialized Pathology and Laboratory Medicine over a broad range of clinical disciplines. Within the confines of the Medical Center itself, departmental teaching activities not only encompass the undergraduate medical curriculum, but also reach the Staff and House Officers of many departments in the context of formal clinical conferences. Our teaching efforts also extend to practitioners in the region through courses given in the Towsley Center.

During the past year, the formal graduate programs of the Department leading to the M.S. and Ph.D. degrees in Pathology were discontinued. The decision to discontinue these programs was based on the conviction that research training in Pathology is more appropriately gained in the setting of postdoctoral fellowship for persons holding a primary doctorate in Medicine or another scientific discipline, rather than granting a primary (or even a second) doctorate in Pathology. The Department will continue to offer formal courses in the Rackham School of Graduate Studies to meet the needs of many other programs; and, in fact, new offerings are being planned, such as a course in Flow Cytometry.

The traditional enthusiasm and dedication of our departmental faculty to classroom teaching continues, and there is a high level of interest in pedagogic refinement and innovation in our courses. These efforts are well recognized by the student body. During the past year, significant attention was directed at the construction of examinations within the Sophomore course, and prepared sets of teaching aids for laboratory instructors were also expanded. The Department was extensively involved in the planning for the first presentation of M-2/M-3 "Interphase" in May. A significant fraction of the presentations involved several departmental faculty members. In the Pathology 860 course, introductory histopathology was taught with great success using the videomicroscopic facilities of Learning Resource Center in the Taubman Library. Long range efforts continue in the development of computer-interactive teaching programs in Histology and Pathology. During the coming year, we look forward to utilizing our departmental teaching resources more effectively and imaginatively with the amalgamation of the Inteflex Pathology courses with the M-1 and M-2 offerings.

Formal courses given within the Department include:

1. Courses in the "Standard" Medical Curriculum

- a. ICS 500: 20 contact hours - introductory lectures on General Pathology.

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

- b. ICS 600: 17 contact hours - Immunopathology sequence (11 hours) and selected topics in special pathology of various systems.
  - c. NBS 600: 18 contact hours - Neuropathology.
  - d. Pathology 600: 120 contact hours - 30 hours of whole-class lecture, 90 hours of laboratory (in each of 4 sections).
  - e. Interphase: Collaborative participation in eight presentations.
  - f. Pathology
  - g. Pathology Clerkships: Elected by 49 students at University Hospital and six additional students elsewhere.
2. Course in the Inteflex Curriculum
- a. Anatomy-Pathology 506: Microscopic anatomy and General Pathology for I-3's. Total of 108 contact hours; 36 pathology, 18 combined, 54 anatomy.
  - b. Pathology /Human Illness: For I-4's. 132 contact hours, lecture and laboratory. Equivalent of Pathology 600.
3. Courses in the Dental Curriculum
- a. Pathology 630: General Pathology lectures, 45 contact hours.
  - b. Pathology 631: Pathology laboratory, 90 contact hours, each of three sections (assisted by Oral Pathology staff).
4. Courses for Graduate School/Allied Health
- a. Pathology 859: General Pathology for Biological Scientists, lecture, 42 contact hours.
  - b. Pathology 860: General Pathology Laboratory, 28 contact hours.
  - c. Pathology 858: Neuropathology, 23 contact hours.
  - d. Pathology-Physiology 581: Mammalian Reproductive Endocrinology 45 contact hours.
5. Postgraduate Medicine/Continuing Medical Education
- a. "Phlebotomy Team - Management and Technologic Perspectives" May, 1982. 1½ days.
  - b. "Current Topics in Blood Banking" June, 1982. 2½ days.

6. 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 10 regular weekly conferences and 13 additional conferences at bi-weekly and monthly intervals. The units served include:

Internal Medicine

Gastroenterology  
Hematology/Oncology  
Nuclear Medicine  
Pulmonary Medicine  
Arthritis  
Cardiology  
General (Death Conference, CPC)

Pediatrics

Cardiology  
Oncology  
Gastroenterology  
General (Death Conference, CPC)

Obstetrics and Gynecology

Oncology

Dermatology

Oral Surgery

Neurosurgery

General Surgery

Otorhinolaryngology

Urology

Gerald D. Abrams, M.D.  
Professor of Pathology  
Co-Ordinator, Educational Activities

Anatomic Pathology Service  
Department of Pathology  
Annual Report for Academic Year  
July 1, 1981 through June 30, 1982

I. Professional Staff and Workload

A. Past Year's Activities

There was no significant change in the volume of work performed, compared with the previous year, in terms of absolute number of specimens. However, certain changes in service capabilities occurred, mainly as a result of the addition of two new full time academically oriented diagnostic pathologists to the service, Drs. Andrew Flint, and Ricardo Lloyd. Their arrival coincided with the leaving of Dr. William Hart. Also, during the year, two faculty members were on six-month sabbaticals, Drs. Naylor and Gikas. These changes required considerable reshuffling of duties by the staff, but the result was not only the maintenance of services, but an increase in the capabilities and in the level of diagnostic sophistication. For the first time in several years, consultative services in all sub-specialities in Pathology were being offered by highly trained, sophisticated experts within this Department. The revised line-up of faculty in the division now is as follows:

1. The departure of Dr. Hart, a nationally renowned gynecologic pathologist, potentially might have created a huge void in this field, especially in tumor and infertility diagnostic problems. Also, the consultation load in gynecologic pathology is very extensive. Nevertheless, the emergence of Dr. Kumar as a highly capable gynecologic pathologist resulted in a smooth transition with no decrease in service performance. She handled all the consultation cases in this field as well and has begun to develop a following of her own among pathologists throughout the state.
2. The six months that Dr. Gikas was on sabbatical meant that a replacement diagnostic renal pathologist was needed. Dr. Kent Johnson more than adequately filled the job, interacted superbly with the nephrologists, and even delivered the necessary lectures on renal pathology to the medical students.
3. The six months that Dr. Naylor was on sabbatical left a large void in cytopathology, but the necessary expertise was available in the persons of Drs. Kumar and Flint, who shared almost all the cytologic diagnostic rotations for the year. Dr. Flint also handled all the pulmonary pathology problems and consultations as well.
4. The recruitment of Dr. Lloyd meant that the Department had a pathologist for the first time since the departure of Dr. Nishiyama three years ago. Dr. Lloyd also took over the area of soft tissue pathology that Dr. Hart previously handled. Finally,



he introduced immunologic tumor marker technology as a diagnostic service, an area that is a necessary activity in all modern anatomic pathology diagnostic departments, and an area that was not previously available in this department.

5. Dr. Flint has brought to the service a rapid stain technology for infectious agents which can be performed on frozen sections for imprints. This has dramatically improved the department's participation in the diagnosis and management of infections in immunologically suppressed patients. This is being used with increasing frequency by a number of clinical services, especially oncology and pulmonary.

B. Projections and Plans for 1982 - 1983

During the next academic year, no members of the division will be away from the department for any significant amount of time. This will allow us to entrench and develop more fully our services. Several additions are anticipated:

1. Dr. Gikas will be returning after spending his sabbatical learning diagnostic electron microscopy. This will vastly improve our capabilities in this area, which has been relatively weak.
2. Dr. Lloyd will expand the tumor marker service, adding new antibodies as they become available.
3. Plans have been almost completed for the renovation of the surgical pathology service and office area. This remodeling, which should be complete by the end of the academic year, will achieve several goals. It will place the active full time anatomic pathology staff in close proximity to the surgical pathology laboratory, clerical staff, and diagnostic unit. It will move the clerical, diagnostic and technical support functions close together. It will simplify the flow of paperwork in slides and tissues, so as to cut out many unnecessary steps and enable the data processing operations to flow smoothly (see below for discussion of anatomic pathology computer package).
4. A new software computer package for anatomic pathology will likely be incorporated into the data processing aspects of the division. This package will enable all specimens to be computer accessed immediately upon their arrival in the department. It will include direct typing of reports and diagnoses into the system by some form of modified word processing. Through the use of such a system, the status of any specimen will be known at any moment, including whether a final report is being delayed for a variety of reasons, such as for recuts, special stains, consultations, or special handling. The system will also allow for rapid

diagnostic and Tissue Committee codings of each specimen. It will help to define technologists workloads, it will include data storage for archive purposes necessary for retrieval of previous specimens and for research, and it will assist in billing for each specimen.

5. Future plans include the purchase of two multiple head microscopes for two of the renovated diagnostic rooms which will vastly improve teaching of anatomic pathology for medical students, as well as house officers rotating through pathology from other departments.
6. Also in the plans is the eventual purchase of a Faxitron compact system for taking x-rays of specimens such as those injected for vascular studies and amputations for bone tumors and arthritis.
7. Two full day postgraduate courses in anatomic pathology, covering current concepts and new technologies in the various subspecialties, have been scheduled for October, 1982 and April, 1983.
8. The impending retirement of Dr. Hendrix in July, 1983, means that recruitment of a new faculty person must begin soon. Dr. Hendrix's leaving will remove not only the sole trained and highly knowledgeable forensic pathologist from the department, but it also means the loss of the Director of the Autopsy Service and will result in a major negative impact on the resident teaching program. The anatomic pathology faculty recognizes that recruitment of a trained forensic pathologist for our department, considering the small case load and the lack of a centralized medical examiner's office in this county, will be impossible. Discussion is currently underway among the faculty to determine the expertise which the new recruit must have to meet our projected needs, service, teaching and administration of the Autopsy Service.

The anatomic pathology staff has had little time to spend in any activity other than service, teaching and administration, because of the limited number of faculty and the workload requirements, which have not decreased but which have actually become much more varied and complex. It is expected that this increase in complexity will continue during the coming years, considering the tertiary care goal of the medical center. It is hoped that soon, new positions will be made available to allow all faculty additional time so that research activities can increase and improve and so that new subspecialty capabilities can be developed. For instance, the department has never had a faculty member with training and expertise in histochemistry who can enhance the special stain area and oversee the development of new techniques. We have one pediatric pathologist handling the needs of a children's hospital of a size which usually requires three or four pathologists. In addition, the number of requests from various clinical and basic science faculty for collaborations by anatomic pathologists has now dramatically exceeded the available faculty time in our department.

We have had to turn down many such requests as a result. Then, the use of tumor markers is so rapidly expanding that it has almost saturated the current faculty and laboratory capabilities. It is likely that in the near future, a second pathologist will be needed in this area to help Dr. Lloyd, and new technologists and laboratory space will be required as well if this aspect of the service is to be maintained, developed, and expanded further.

## II. Histology Laboratory

### A. Equipment

Replacement of outmoded microtomes with new Leitz machines continues with the purchase of one new microtome during the past year and the ordering of a second. At this rate, a complete replacement will be accomplished in three years. Also, a request for a replacement pH meter has been sent to the hospital for consideration under the capital equipment budget for the coming year. The current pH meter is inaccurate, and accurate pH measurements are essential for a large number of the routine histochemical procedures. The old Auto-Technicon tissue processors and stainers have been rebuilt, and the laboratory will begin to evaluate some new, totally enclosed tissue processing and staining systems. The plastic embedding and sectioning system is being used at close to capacity, and it is likely that a second system will be needed before long in order for the laboratory to accept any additional workload.

### B. Space

Total remodeling of the tissue laboratory to allow efficient use of space and positioning of personnel and to create a more pleasant working environment for the technologists is still being considered, but any specific plans must be delayed pending completion of the remodeling of the clerical, office, and research areas. Currently, the available laboratory space appears to be adequate in terms of square footage; however, it is too cluttered and inefficient for optimal use by the large number of people currently contained within it.

### C. Staff

The laboratory is currently short on technologists and plans are underway for more recruitment. At the moment, the entire service, teaching, and research load is being handled by 9-1/2 full time equivalent technologists and one supervisor. The staffing is marginal at best, and the laboratory will be unable to handle any unusually heavy load or new activities until new people are hired.

## III. Summary

During the past year, the Division of Anatomic Pathology was able to maintain and even improve diagnostic services, utilizing the limited staff almost on a fulltime service and teaching basis. With the

coming year, it is hoped that further expansion of service capabilities will be possible, but the number of staff members available is still marginal, especially if any extensive research activities are to be undertaken. The renovation of the surgical pathology office, diagnostic, and clerical areas, coupled with the addition of a modern laboratory data processing system will simplify and speed up the diagnostic service activities. Recruitment of one pathologist to replace Dr. Hendrix will be underway soon. Plans for remodeling the Histopathology Laboratory should be begun in order to streamline the operation there and allow for more efficient functioning of personnel, and new laboratory technologists must be recruited quickly if services are to be maintained and expanded.

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

Autopsy Service Report  
Department of Pathology  
Annual Department Report  
July 1, 1981 - June 30, 1982

The total number of autopsies continues to decline as does the autopsy rate. It is estimated that 330 will be done in this fiscal year. Of these, 55 will be Medical Examiner cases, and about 12 will be on other outside cases (Ypsilanti Regional Psychiatric Hospital, Hillcrest, and miscellaneous). We have contracts with Ypsilanti Regional Psychiatric Hospital, Hillcrest, and Northville. The Hillcrest contract will terminate July 31, 1982. Dr. Mason Barr has done dissection about 50 stillbirths, newborns and children with massive congenital anomalies. These bodies have been released to the Department for research and teaching. Dr. Heidelberger is often consulted on these cases.

Data from the first 50 autopsies in 1982 have been submitted to the National Autopsy Data Bank sponsored by the College of American Pathologists.

I continue to supply microscopic slides and data from autopsies on patients with hypertension to the Upjohn Company in support of their research on an anti-hypertensive agent. Upjohn pays the Department \$140.00 for each case. At one time there was reason to believe some scientific credit would be derived from this project, but that now seems to be unlikely. About 1-2 cases a month are submitted.

The Autopsy Service obtains lungs for Dr. Heidelberger's research on morphometric changes related to congenital heart disease.

We supply thymus glands to the Upjohn Company for the preparation of anti-thymocyte globulin. The Department is paid a handling fee for each gland.

We supply pituitary glands to the National Pituitary Agency for the manufacture of growth hormone. The Department receives a handling fee and acquires much goodwill thru their agency.

Washtenaw County now (as of January 1, 1982) pays \$250.00 for autopsies done on order of the Medical Examiner. The Department is paid \$75.00 and the prosector(s) \$175.00.

A detailed report of hospital autopsies will be prepared in July.

There are 3 technicians assigned full time to the Autopsy Service. They do perform other departmental duties. Two able-bodied technicians could do this work, but we need the third to cover weekends, vacations and the high absentee rate.

Robert C. Hendrix, M.D.  
Director,  
Autopsy Service

Electron Microscopy Unit  
Department of Pathology  
Annual Departmental Report  
July 1, 1981 - June 30, 1982

During the twelve month period June 1, 1981 through May 31, 1982 a total of 391 specimens were embedded in the Electron Microscopy Unit. These were processed as follows:

Blocked only	110
Thick sectioned only	68
Thin sectioned	213

The total number of thin sectioned specimens includes 92 renal biopsies. A total of 153 specimens, including the 92 renal biopsies, were charged. The current rate is \$300.00 for complete processing per specimen. A charge of \$75.00 is made for thick-sectioning only.

In addition, 50 research specimens were embedded and thick sectioned and 33 of these were thin sectioned.

The Electron Microscopy Unit provides diagnostic service on renal biopsy specimens for the following hospitals:

St. Joseph Mercy Hospital, Ann Arbor  
Wayne County General Hospital, Westland  
Borgess Hospital, Kalamazoo  
Bronson Hospital, Kalamazoo  
Munson Hospital, Traverse City  
St. Marys Hospital, Livonia  
Port Huron Hospital, Port Huron  
Gratiot Community Hospital, Alma  
Midland Hospital, Midland  
Mercy Hospital, Port Huron

This represents an increase of three over the number of hospitals served last year.

There are currently four full-time electron microscopy technologists in the Unit. The technical staff consistently produces high quality ultrathin sections and electron micrographs. The Zeiss EM continues to function well and the Zeiss EM 109 (payment for which was authorized June 10, 1981) was replaced by a new electron microscope of the same model October 1, 1981 without cost to the department by the Zeiss Company. This instrument is now functioning satisfactorily.

Paul W. Gikas, M.D.  
Director,  
Electron Microscopy Unit

Neuropathology Laboratory  
Department of Pathology  
Annual Departmental Report  
July 1, 1981 - June 30, 1982

The Laboratory of Neuropathology, which became a part of the Department of Pathology in 1962, has had three interrelated functions, laboratory diagnostic services related to the nervous system, teaching our medical students, graduate and undergraduate students, and faculty, and research, both experimental animal work and the first-hand study of human disease. Diagnostic service and teaching are especially integrated continuously, and research results are brought to bear on these when pertinent, appropriate for a medical school and teaching hospital.

Laboratory Diagnostic Services

The services are the examination and diagnosis of the disease conditions, and their correlation with the clinical findings, in:

1. The nervous system tissues from autopsies at this Medical Center, Ypsilanti State Hospital, state centers for the developmentally disabled (neurologically and mentally), other state institutions and other hospitals, as part of the Autopsy Service.
2. Neurosurgically removed tissue from this Medical Center and others in and out of the state from whom consultation is sought, as part of the Surgical Pathology Service.
3. Muscle and peripheral nerve biopsies from this hospital and others, in collaboration with Dr. J. T. Headington.

Teaching

1. Medical Students. We teach the Neuropathology sequence (20 hours plus) in the Neural and Behavioral Sciences (NBS) curriculum for the present 187 members of the standard curriculum, and this year incorporated the present 42 fourth-year members of the Inteflex curriculum into this sequence for the first time with eminent success. NBS Neuropathology consists of lectures and laboratories, and the students are provided with an elaborate set of microscopic sections representing nervous disease and comprehensive handouts. Posters and Kodachrome slides derived from the rich diversity of material available from this Medical Center and the others it serves are abundantly used. The course is one of the more elaborate ones in this country.
2. House officers, graduate students, other students, Pathology and other faculty. All of the service activities are integrated appropriately into teaching on a daily basis as stated in the introduction. Specific exercises include:

1. Weekly Brain Cutting Conference where pathology house officers present especially interesting cases and, with the help of the Neuropathology staff and visitors, demonstrate disease, pertinent normal anatomy, and diagnostic pathologic principles, for themselves and the audience.
2. Individual instruction chiefly in the form of detailed reviews and writing final reports on autopsies and biopsy material.
3. Neuropathology 858, an intensive laboratory-lecture course (18 hours) serving: a) to prepare house officers for various specialty board examinations; and b) introduce other students and faculty in the cognate neurosciences to the viewpoint of Pathology.
4. Informal elective periods for house officers and others in the Neuropathology Laboratory for study of general neuropathology, surgical neuropathology, disease of muscle, etc.

### Research

Experimental investigation concerns the use of radiation and other factors in the study of the morphogenesis of malformations of the nervous system of rats (certain forms of hydrocephalus and cortical malformations for example) and the extraordinary recovery from severe injury that the mammalian fetus can sometimes exhibit. The remodeling of motor circuits developmentally malformed by fetal irradiation with recovery of normal function is also being studied (Dr. Hicks, Ms. D'Amato).

Experimental examination of blood-brain barrier properties of brain capillary endothelium in vitro, effects of hyperosmotic solutions on the blood-brain barrier, and the significance of tight-junction opening and the role of pinocytosis in vivo and in vitro form a group of related studies (Dr. Dorovini-Zis).

Two clinically oriented collaborative studies are beginning. One includes a clinical, electrophysiological, and morphological study of patients with polymyositis and dermatomyositis (Dr. Dorovini-Zis). Another examines a large number of environmental factors including industrial and common environmental chemicals, as well as other agents, that may be associated with the development of Alzheimer's presenile and senile dementia, in subjects in whom the morphologic substrates of the disease have been established by autopsy (Drs. F. deW. Miller and Kelley A. Brix, School of Public Health, and Ms. D'Amato and Dr. Hicks).



Faculty

Samuel P. Hicks, M.D., Professor of Pathology, Constance J. D'Amato., B.S., Assistant Professor of Neurobiology in the Department of Pathology, and Katerina Dorovini-Zis, M.D., Instructor in Pathology. Dr. Zis holds a NINCDS Teacher Investigator Award.

Samuel P. Hicks, M.D.  
Director,  
Neuropathology Laboratory

Division of Clinical Pathology  
Department of Pathology  
Annual Report for Academic Year  
July 1, 1981 - June 30, 1982

Attached are a series of reports from the various Clinical Laboratories, prepared by the respective laboratory directors. In addition, a number of items of interlaboratory nature, which occurred during the past year, are noteworthy. These are summarized below:

Replacement Hospital Project: Members of the Clinical Pathology faculty, as well as several of the Chief Technologists, have been actively involved in planning for the Replacement Hospital. During the past year final plans for the clinical laboratories on level 860 were approved. Considerable effort was devoted to planning for the Ambulatory Care Building, including "gaming" and preparation of schematic drawings. It was decided not to have formal laboratories in this building, with the designated laboratory space serving a blood drawing function. The two blood drawing areas in the Ambulatory Care Building will be connected to the central laboratory through the vacuum tube system.

Renovation of Current Laboratories: Renovation of the central Hematology Laboratory should be completed by late Summer of 1982, and renovation of the remaining laboratories on the second level should begin before the end of the current year. Additional space will be available in the APH Building for renovation of the Chemical Pathology Laboratory on July 1, 1982. Moreover, the area to the South of the Laboratory Data Center should become available by mid-July, 1982, thereby permitting renovation for the new distribution area. Mr. Rod Capps has assumed primary responsibility for this renovation project.

In addition, the Ligand Assay Laboratory has been partly renovated. This has resulted in a new cold room as well as a newly remodeled adjacent laboratory.

Computer Up-Grade: During the past year, Dr. Bruce Friedman has assumed direction of the Laboratory Data Center, and is primarily responsible for acquisition of the new computer. Plans for the computer have been submitted to the Medlab Co. as an RFQ, and the initial response indicates that the projected budget is valid. Installation of the new system is anticipated for Autumn of 1982, with indoctrination of staff undoubtedly requiring an additional 3-4 months.

Capital Equipment: The Laboratories Committee of the Medical Staff has served as the prioritization body for laboratory capital equipment not only from the Pathology Laboratories, but also from the limited special function laboratories. Ultimately this should result in a more realistic approach to provision of such equipment in the institution. At the present time the volume of equipment required for all of these laboratories precludes obtaining anything but replacement items or equipment of the highest priority.

Clinical Pathology Teaching Program: The twice-weekly Clinical Pathology Conferences have been highly successful. One of these conferences is a problem-solving session, related to occurrences in the various laboratories over the preceding week. The other conference is a "Grand Rounds", with didactic presentations by faculty, guest speakers and senior house officers. The Clinical Pathology Faculty participated in lectures for sophomore medical students and was involved in planning and presentations to the Interphase program. It is noteworthy that 94 per cent of the current sophomore class requested additional instruction in use of the Clinical Laboratories. This should lead to increased CP instruction in future interphase programs. Dr. Robert Nakamura, of Scripps Clinic, served as Visiting Professor in Clinical Pathology this year.

Student Health Service Laboratories: Senior residents in Clinical Pathology provided medical direction for this laboratory under the supervision of Dr. Bertram Schnitzer. Discussions are underway to consolidate laboratory services at the SHS with possible relocation of chemistry testing to the laboratories of University Hospitals.

Recruitment: Dr. Thomas Annesley joined the faculty during the past year, with primary assignment to the Chemical Pathology Laboratory. He has been a most welcome addition to the faculty, and has been heavily involved both with service and instructional commitments. Dr. Donald Giacherio, of the Mayo Clinic, will join the faculty in September, 1982, and also will be assigned to the Chemical Pathology Laboratory. This should provide time for both Drs. Giacherio and Annesley to pursue research interests. Dr. Daniel Bloch's anticipated departure will result in the need for faculty recruitment either in the Laboratory Data Center or in the Blood Bank, depending upon Dr. Friedman's future assignment. In addition, clinical pathologists will be recruited to supplement staffing in Chemical Pathology, Hematologic Pathology, Laboratory Data Center and Microbiology.

Administrative Support: Ms. Anita Liberman-Lampear was appointed Administrative Coordinator of the Clinical Laboratories in April, 1982. She will provide administrative support for all aspects of the Clinical Laboratories except for maintenance of the commodity and personnel budgets. Most important, her appointment will facilitate interlaboratory communication, and enhance the concept of a single departmental laboratory. Her principal assigned duties during the coming year will include preparation for inspection by the CAP, implementation of an effective workload reporting system and publication of a new Laboratory User Manual.

Harold A. Oberman, M.D.  
Director of Clinical Laboratories  
Head, Section of Clinical Pathology

University Hospitals Blood Bank  
Department of Pathology  
Annual Report for Academic Year  
July 1, 1981 - June 30, 1982

Laboratory testing increased approximately eight per cent over the past year, principally related to pre-transfusion testing. This increase is primarily reflected in units of Red Blood Cells and Single Donor Plasma transfused. The therapeutic plasma exchange program continued to increase, and the outpatient transfusion activity more than doubled during the past year. The latter program precludes the need for admitting patients to the hospital solely to receive transfusions. Due to the increased emphasis on direct patient care through the above programs, one of our technologist's positions has been converted to a staff nurse position.

A further service enhancement was the introduction of "spin-filtered" blood. This easily-prepared product mitigates post-transfusion febrile reactions. Moreover, it avoids reduction in the outdated time of the unit of blood, a problem with previous techniques for this situation.

The laboratory implemented a change in detection of massive fetomaternal hemorrhage, using a rosette procedure. This is more specific and more sensitive than the prior microscopic Du technique.

The Reference Laboratory implemented use of chloroquine and Z-ZAP for treatment of red blood cells to remove IgG antibodies in elution procedures. This has greatly assisted resolution of complex antibody identification problems. The laboratory also instituted use of phthalate ester treatment of blood specimens to separate transfused from non-transfused red blood cells.

#### Teaching Activities

The laboratory was involved both in institutional and postgraduate education. House Officer instruction included a two-week introductory course in techniques of blood banking, presented for first-year residents by Ms. Barnes, and presentation of blood banking topics in the weekly Clinical Pathology problem-solving and Grand Rounds Conferences. A two-week didactic course in clinical aspects of blood transfusion was presented to the Pathology House Officers.

Both lecture and laboratory courses in blood banking were presented to the medical technology students. Weekly in-service education of Blood Bank staff included speakers from Departments throughout the institution, as well as members of the laboratory staff.

Finally, the Ninth Annual Postgraduate Course, "Current Topics in Blood Banking" was held in Towsley Center in June, 1982. This year's course was among the most successful, drawing almost 400 medical technologists and physicians from throughout the country. The program has become nationally recognized as one of the most important blood bank meetings of the year. Aside from Clinical Pathology faculty, seven members of the technical staff were involved in workshops or lectures of the course.

## Professional Activities

Members of the Blood Bank technical staff and faculty have been active in a variety of hospital, regional, and national committees:

### Hospital Committees:

Deborah Williams serves on the Infection Control Committee and Disaster Committee. Suzanne Butch is a member of the Disaster Committee and Transfusion Committee, and also serves on the Clinical Laboratories Work Group for the Replacement Hospital Project.

Deborah Williams was certified as a Specialist in Blood Bank Technology. There currently are six such certified technologists on the staff.

Members of the laboratory have been heavily involved in AABB activities. Four staff members (Douville, Steiner, Butch, and Barnes) have served as inspectors for the Inspection and Accreditation program. Mr. Judd and Ms. Butch have served on the regional workshop committee and on the committee on Reference Laboratories and Rare Donor File of the AABB.

Ms. Trudeau served as co-editor of the Michigan Association of Blood Banks Newsletter, and Ms. Butch served as President of the MABB and continues to serve on the Executive Board. Mr. Judd served on the Annual Meeting Program Committee and on the Interim Scientific Committee of the MABB and Ms. Steiner served on the Education and Consultation Committee and on the Spring Workshop Committee.

Ms. Butch is President-Elect of the Michigan Society for Medical Technology.

Ms. Butch is Associate Editor of the American Journal of Medical Technology.

Ms. Steiner and Ms. Trudeau presented workshops in blood banking for the Michigan Department of Public Health and Mr. Salisbury presented a workshop for the Michigan State Society of American Medical Technologists.

Ms. Steiner was a consultant to the Medical Technology Program at Eastern Michigan University.

Ms. Butch was a member of the Medical Advisory Committee for the Washtenaw County League for Planned Parenthood.

## Research Activities and Publications

Members of the faculty and staff of the Blood Bank presented research papers at regional and national meetings, as indicated in the individual annual reports attached. In addition, the laboratory participated in the national studies for usefulness of therapeutic plasma exchange in management

of neurologic disorders (Guillan-Barre syndrome and amyotrophic lateral sclerosis in cooperation with the Department of Neurology - Dr. James Albers). The laboratory also is cooperating with Dr. Richard Tannen, of the Section of Nephrology, in evaluating the usefulness of therapeutic plasma exchange in patients with lupus nephritis and also is cooperating with Dr. Alan Beer, of the Department of Obstetrics and Gynecology, in assessing the usefulness of oral administration of Rh-positive red cell stroma for pregnant patients sensitized to D antigen.

Publications by faculty are indicated in the individual reports from Drs. Oberman and Friedman, and Mr. Judd. In addition, Ms. Butch co-authored a paper (Utilization of specific mixed field agglutination in a case of apparent fetomaternal hemorrhage. La Ferla, J., Butch, S., Cooley, J.: Am J Obst Gynec. Nov., 1981.)

#### Goals for 1982-1983

Implementation of the computer will be a major project during the coming year. This will necessitate some degree of procedural change modification of forms and requisitions and changes in documentation of transfusions in the institution. Moreover, it will modify current inventory control practices and record-maintenance.

The Donor Room anticipates continued increase in outpatient transfusion activity. The Therapeutic Plasma Exchange Program should increase, and will involve "sham" procedures for neurologic patients to more effectively assess efficacy.

The orientation and examination program administered on transfusion practices for newly-hired nurses will be revised during the coming year.

Staffing continues to be adequate related to workload, although augmentation of Donor Room personnel may be necessary if the Plasma Exchange Program continues to increase.

Harold A. Oberman, M.D.  
Director of Clinical Laboratories  
and Blood Bank

Clinical Chemistry Laboratory  
Department of Pathology  
Annual Report for Academic Year  
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During the past year, Dr. Keren has assumed the position as Director of Clinical Chemistry. Dr. Annesley has continued on the staff and has been appointed as Associate Director of Clinical Chemistry. Dr. Giacherio has recently accepted a position as Clinical Chemist and he will replace Dr. Vasiliades.

Several new pieces of equipment have been acquired in the past year, including: two Technicon SMAC II units, a Beckman Paragon Electrophoresis system, a Gelman ACD 18 Densitometer, and a Beckman CDS-200 Densitometer.

Several new tests and/or updates have occurred on older tests during the past year in the Clinical Chemistry Laboratory. Procedures for isoenzyme electrophoresis, lipoprotein electrophoresis have been modified. Urine proteins are now quantitated by a dye-binding technique. By densitometry, it is now possible to perform quantitative isoenzymes.

The volume for the Clinical Chemistry Laboratory has increased at a rate of approximately 12 per year for the last two years. Presently, our laboratory processes approximately 150,000 specimens per month.

To meet a considerable need, the Director set up several new teaching conferences during the past year. These include a Clinical Chemistry Correlation Conference wherein House Officers present cases to the technologists and faculty, a Clinical Chemistry Journal Club which meets approximately once a month, and Clinical Chemistry Guest Lectures which are held approximately once per month. Conferences are set up on Wednesdays with the times alternating between 7:30 a.m. and 2:30 p.m. to allow various shifts to attend the meeting. The Clinical Chemistry Faculty ran a successful Towsley Symposium on "Current Topics in Clinical Chemistry and Immunology".

The Director has set up a new resident training schedule which incorporates the Veteran's Administration Medical Center, The University Hospital Clinical Chemistry Laboratory, and specialty Laboratories such as Dr. Patel's in Pharmacy. This allows broad, diverse training of residents and contact with several excellent teachers such as Dr. Patel, Dr. Annesley, Dr. Hyder, and the excellent medical technologists.

In-house orientation is co-ordinated by Ms. Thiessen. Daily sign-outs of isoenzyme patterns are performed directly with either Dr. Keren or Dr. Annesley.

Several personal contributions have added to the development of the laboratory during the past year. These include Ms. Thiessen's reprogramming a crucial interface between the Medlab System and the new SMAC II instrument. Mr. Capps has continued to perform his excellent lecture and demonstration to the Medical Technology Program. In addition, he participated in

the resident training program and has consulted for the Technicon Corporation "User Serviceability of the RA-1000 in New York City. Dr. Annesley has proven an asset to the laboratory. He is a superb teacher, and willing to participate in many of the offered programs. In addition, he has been enthusiastic in his developmental work on centrifugal analyzer methodology. Lastly, he has begun research activities on a project with the Laboratory Director regarding mucosal responses to chemical carcinogens. Dr. Vasiliades has continued his work evaluating new methodologies in quantitating various drugs.

Goals for the coming year include an expanded house officer rotation as mentioned above, full implementation of the SMAAC-II units, evaluation of two centrifugal analyzers (which may replace some cumbersome assays. In addition, the Technicon RA-1000 (which should replace some assays now performed by more expensive methods) will be investigated. The Laboratory is in the process of renovation in order to allow more working space and appropriate space for the laboratory staff.

David F. Keren, M.D.  
Director,  
Clinical Chemistry Laboratory



Clinical Immunopathology Laboratory  
Department of Pathology  
Annual Report for Academic Year  
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During the past year, Dr. Gerd Till has been added to staff of the Clinical Immunopathology Laboratory. His addition has improved teaching and developmental aspects of the Laboratory. Several new tests have been developed during the past year, including: islet cell antibody, immune complex assay by polyethylene glycol-micro-ELISA, and rheumatoid factor quantitation by nephelometry.

In progress are the development of high resolution electrophoresis for oligoclonal bands in cerebrospinal fluid, microELISA to detect antiglomerular basement membrane antibodies, immunofixation assays for monoclonal gammopathies, flow cytometry to detect subpopulations of lymphocytes and monocytes, and immunoperoxidase methodology for consultation with surgical pathology (Dr. Ricardo Lloyd from Anatomic Pathology is directing the development of this system).

During the past year, the Clinical Immunopathology Laboratory has acquired a Beckman microfuge 12, and a Captair fume hood.

The volume of laboratory tests has doubled for surface marker assays, indirect immunofluorescence, direct immunofluorescence, and VDRL's. The number of immunoperoxidase samples has increased 5 fold. Further, we now retrieve tissues from surgical areas and quantitate monoclonal proteins in 24 hour urine samples.

During the next year, we anticipate the need for a Pharmacia FRAC-100 fraction collector, a Captair "AP" filter, Sola computer regulator, binocular multi-viewing microscope, and replacement of an old spectrophotometer.

There has been extensive in-service education conducted at Clinical Immunology Journal Club under the direction of Dr. Keren and Ms. Bordine. In addition, technologists have attended other workshops within the University and workshops at other institutions.

The Clinical Immunology Laboratory collaborated with the Clinical Chemistry Laboratory in the organization and presentation of the Towsley Seminar on Current Topics in Clinical Chemistry and Immunology.

David F. Keren, M.D.  
Director,  
Clinical Immunopathology Laboratory

Clinical Microbiology Laboratory  
Department of Pathology  
Annual Report for Academic Year  
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Laboratory Activities

1. Personnel and laboratory organization have been revised and enhanced. The Performance Plan system was implemented for all permanent staff members. Weekly senior staff meetings were initiated to expedite handling of various laboratory issues. Two Senior Clinical Technologist positions were developed and established for the Special Bacteriology and Antibiotic Susceptibility sections. A planning retreat to develop annual and long range laboratory goals was held and attended by Senior Clinical Technologists and laboratory administrative staff.
2. Procedures throughout the laboratory were evaluated, revised and improved. Five major rapid identification systems were evaluated which give results 24 hours earlier than current methods. One of these new systems was implemented into the laboratory. "Normal flora" categories and rejection criteria were established to decrease unnecessary technologist time spent on culture without clinical relevance. The anaerobe "open bench top" protocol was instituted to expand effective working space and to decrease technologist handling time. Methanol fixation was evaluated and started to improve the accuracy of preliminary gram stains on positive blood cultures.
3. Fourteen new procedures and tests were adopted to improve results and expand services. In the Antibiotic Susceptibility area, a new panel composed of new and investigational antibiotics was developed, evaluated and made available for routine use. A revised procedure for susceptibility testing of fastidious organisms was instituted. Several newly released antibiotics were provided for routine testing. Special culture procedures for isolation of Mycoplasma, Ureaplasma and Trichomonas were tested and made available for routine use. Rapid identification of anaerobe organisms from blood cultures was initiated.
4. A new laboratory section is being developed in cooperation with the Department of Epidemiology, School of Public Health, and the Department of Pediatrics. This facility, located in the SPH I Building, is devoted to expanding our current capabilities of viral, bacterial and parasitic culture serology.

Computer Activities

1. A thorough evaluation of the proposed improved Medlab computer programs was done. A telephone survey was made of 12 large hospitals using the system and three site visits were made to investigate in detail. The conclusion was made that the improved system would meet

many of the Microbiology Laboratory needs. Overall laboratory computer needs were also assessed.

2. Patricia Shalis became a member of the National Microbiology Subcommittee of Medlab Computer User's Group. This will allow the University of Michigan to have direct input into the future plans of laboratory computer programs by the Medlab Company.

#### Teaching Activities

1. Pathology House Officers currently participate in a 4-8 week rotation through the Laboratory. The residents observe all laboratory work areas, participate in laboratory management via weekly administrative meetings, and daily laboratory operations via weekly general laboratory meetings. They prepare special educational presentations for the laboratory staff and also take responsibility for research projects during their rotation. Pathology House Officers also participate in daily laboratory rounds with Infectious Disease Service and laboratory staff.
2. Fourth year Medical Technology students each have a 6-week rotation through the Laboratory, and actively participate in the nine major laboratory areas during their stay.
3. Permanent laboratory staff actively participate in a variety of Continuing Education programs as time and funds permit. These activities include hospital presentations such as monthly Microbiology Journal Club, monthly Pathology Resident reports, monthly Infectious Disease Laboratory reports, general medical staff lectures (12 attended) and Infectious Disease hospital lectures (30 attended). Laboratory personnel have also attended ten Human Resource and Development programs, three regional workshops and three national meetings.

#### Research and Development Activities

1. Two projects were completed in Dr. Pierson's laboratory that investigated the relative susceptibility of clinical isolates to investigational antimicrobials. A special program for data storage and retrieval was developed by Steve Pade, Laboratory Data Center. This information was presented at a national meeting.
2. Dr. Betz Forbes investigated the feasibility of direct susceptibility testing of positive blood cultures using both automated and manual systems. She also performed in vitro studies on the activity of new antimicrobial, Thienamycin, against methicillin-resistant isolates of Staphylococcus aureus. This work is to be presented at a national meeting. A research contract was obtained to evaluate an antimicrobial removal device for blood cultures.

3. Other investigative projects were conducted by laboratory medical technologists. J. Polomski did a comparative evaluation of anaerobic identification and susceptibility testing methods. R. Kloosterman tested several rapid identification methods resulting in the selection of one for routine laboratory use. S. Reynolds evaluated the activity of new antimicrobials in various test media against Pseudomonas aeruginosa.

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

Flow Cytometry Laboratory  
Department of Pathology  
Annual Report for Academic Year  
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After a year of planning, construction, organization and hiring, the cytometry program is a reality. The acceptance of clinical specimens for flow cytometric analysis of T and B cell-lymphocyte surface markers began June 1 in conjunction with parallel procedures in the Clinical Immunology Laboratory. The 400 square foot primary facility is now rapidly expanding in the clinical and research arenas with the addition of test procedures such as DNA analysis, mitogens, antigen probes, and even membrane potential.

The basic organization of the cytometry program consists of a coordinator supported by directors in the areas of flow cytometry and image analysis. Support staff includes individuals skilled in the purely technical aspects of flow cytometric analysis, computer analysis, specimen preparation and various aspects of research and development. In addition, a strong advisory group has been established with the Immunology, Hematology, and Anatomic Pathology (Immunocytochemistry) staff.

Research collaboration has been initially overwhelming with, for example, establishment of a contract with the Ann Arbor Veteran's Administration Hospital (Gastrointestinal Medicine Research Group). The Veteran's Administration contract includes funds for flow cytometric analysis and support staff for computer analysis. Many other pilot projects are now initiated for investigators both inside and outside the Department, as well as for industry. Such projects, within months, will expand the research base of the laboratory and add to the clinically useful cytometry tests and computer analysis procedures initiated in the laboratory.

Jerry L. Hudson, Ph.D.  
Director,  
Cytometry Program

Clinical Hematology Laboratory  
Department of Pathology  
Annual Report for Academic Year  
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Service Activities

New Tests:

Urine pH for the Stone Clinic

New Equipment:

Automated differential white blood cell counter

Volume Change:

1. 10 per cent overall increase from 1980-1981
2. Increase in time-consuming tests:
  - a. Platelet counts
  - b. Differential white blood cell counts
  - c. Complete urinalyses
  - d. Body fluid differential counts
  - e. Body fluid cytologic examinations
3. Decrease in less time-consuming tests:
  - a. Platelet estimates
  - b. Urine, macroscopic examinations

Teaching

House Officers

1. Daily examination of abnormal blood smears and cytofuage preparations of body fluids with the House Officer. If bone marrow aspirate or biopsy or lymph node biopsy has been carried out on a patient whose material we have seen in the Hematology Laboratory, these sections are reviewed.
2. Examination of cytochemical stains on acute leukemias.
3. Examination of electron micrographs of hematologic cases.

4. Discussion of problems that arise in the laboratory.
5. Periodic hematopathology conferences.

#### National

1. Invited Lecturer. Armed Forces Institute of Pathology. Sixth Annual Hematopathology Review. Washington, D.C.
2. Abstracts:
  - a. Hirsch, S.D., Coon, W.W., Schnitzer, B., Appelman, H.D.: Primary gastrointestinal lymphomas. A study of 143 cases. Lab. Invest. 46:36-37A, 1982.
  - b. Palutke, M., Schnitzer, B., et al: T cell subclasses in various lymphoproliferative disorders and leukemias. Blood 58 (Suppl. 1): 86A, 1981.

#### Local:

1. Department of Internal Medicine, Simpson Memorial Institute, The University of Michigan. Lectures on lymphomas.
2. Wayne County General Hospital. Lectures on lymphomas.
3. Veterans' Administration Medical Center. Bone marrows and lymph node biopsies, spleens, etc. reviewed with residents. CAP unknowns in hematology reviewed with staff and residents.

#### Research

1. Plastic-embedded bone marrow biopsies in diagnostic hematopathology.
2. Application of cytochemistry in leukemias and proliferative disorders.
3. Electron microscopy in selected hematologic disorders, leukemias and lymphomas. Correlation with light microscopy, cytochemistry and immunology.
4. With Dr. Albert LoBuglio. Southwest Oncology Group. Combination chemotherapy of unfavorable histology non-Hodkin's lymphomas with CHOP and CVB.
5. Flow cytometry (with Drs. Hudson, Lovett, Keren, and McClatchey) T and B lymphocytes. Phenotyping cells in leukemias and lymphomas.

Goals for 1982 -1983

1. Install and implement usage of automated differential white blood counter.
2. Enhance quality control by better use of LDC computer.
3. Laboratory coverage 24 hours/day, 7 days/week with MT (ASCPs) with a minimum of one MT (ASCP) on each shift.
4. Strive towards providing full laboratory service for 24 hours/day, 7 days/week, thereby providing more support to the medical staff and better patient care.
5. Flow Cytometry. Multiparameter correlative studies of cases of lymphoma and leukemia. Correlate phenotype of cells with morphologic and cytologic features, cytochemistry and electron microscopy.

Bertram Schnitzer, M.D.  
Director,  
Hematology Laboratory



Laboratory Data Center (LDC)  
Department of Pathology  
Annual Report for Academic Year  
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Teaching Activities

1. Presentation of an overview of computer science in general and details about laboratory computers and the Pathlab system specifically to medical technology students during a one-week course for one session per day.
2. Educational activities for House Officers in Pathology on continuing basis.
3. Participation by Gloria Hauck Thiele in a symposium entitled, "The Phlebotomy Team: Technical and Management Perspectives", presented at the Towsley Center on May 13.
4. Offer a comprehensive in-service educational program about laboratory computers and the Pathlab System for technologists working in the various clinical and anatomic pathology laboratories.

Research:

1. Publications by Daniel M. Bloch, M.D.:
  - a. O'Leary TJ, Bloch DM: Independent value of laboratory tests in the diagnosis of latent hemochromatosis. 1981; U of M Med Ctr J. 47:10.
  - b. Bloch DM: Computer generated management tools for the clinical pathology laboratory: II. Computer generated graphic workflow. J Med Sys (in press).
  - c. Bloch DM: Computers in laboratory management. Clin Lab Med (in press).
2. Presentations by Dan Bloch and Bruce Barnes at the Medlab Users Group meeting in Salt Lake City, Utah, January 16-20, 1982.

Modification or Enhancements of Patient Care Support:

1. Development of an online long-term archive which holds laboratory data generated in University Hospitals for eight months and makes it rapidly accessible to users.
2. Development of a documentation manual for LDC which includes a description of all the commonly used computer programs, a description of the main working computer files, all procedures performed within the laboratory, and troubleshooting guidelines to follow when the system is not working properly.

3. Development of a schedule for daily documentation of all of the activities of the computer operators working in the LDC accompanied by a manual describing the details of this documentation including quality control activities and feedback loops.
4. A schedule similar to that described in #3 above is currently being developed for laboratory assistants in LDC including detailed guidelines about how to handle unidentified, misidentified, and mishandled specimens.
5. With the exception of one laboratory, documentation of the medical technologist identification system has been completed.
6. Two biweekly publications are now being written in the laboratory to enhance intralaboratory communication. The first of these is called the "Computer Operator Communications" and is intended only for this group. The second is called "Items of Interest" and is distributed to all employees in the LDC.
7. A major staffing change has been instituted this year. Staff have been converted from a 10-40 to an 8-40 weekly schedule. All LDC employees have also been put on a regular schedule, with the elimination of irregular or staggered shifts.
8. Biweekly or weekly staff meeting for all shifts have been instituted with distribution of the minutes to the LDC Manager, Director, and the Director of Clinical Pathology.
9. A major effort has been directed toward planning for the upcoming computer upgrade. The following steps have been taken during the year in anticipation of this event:
  - a. Generation of a detailed description of hardware and software requirements for the new system which was included in the request for quotation which was sent to Medlab in May, 1981.
  - b. The new system will include the Blood Bank and many of the special function laboratories within the Hospitals; detailed discussions were held with representatives of these laboratories, in addition to personnel from laboratories already active in the current system when the RFQ was being written.
  - c. Great effort has been expended on the second floor hospital renovation which will result in remodeled and expanded quarters for the LDC and the new computer system.
  - d. LDC personnel are working with the Interface Work Group to plan for the implementation of patient inquiry-results reporting capability in 15 high volume and critical patient care areas six months after the computer upgrade. This latter system will be developed through a collaborative effort between LDC and HDSC.

- e. The LDC staff participated in a day-long planning session during which more than 50 discrete tasks necessary for the implementation of the new computer system were identified and placed on a time line through 1983. A comprehensive planning document will be written on the basis of this information including specific assignment of each of these tasks.
10. Planning is now underway by the Order Entry-Results Reporting Task Force with representation by LDC personnel to plan a system whereby laboratory results will be both ordered from patient care units and reported directly back to such units.
11. An audit has been completed with the assistance of the Medical Information Department studying the various patient summary reports which are attached to patient records. On the basis of this report, guidelines have been developed and will be implemented soon governing how medical records personnel can purge patient charts of extraneous and redundant laboratory summary reports.
12. Two 600 line-per-minute printers have been installed in the LDC which will allow faster printing of the ward summary reports and the patient summary reports. This faster printing time will allow more patient laboratory data to be included in the reports which are delivered to patient care units or, alternatively, earlier delivery of the reports. The installation of these printers necessitated the implementation of a new operating system.
13. A Physicians' Advisory Committee to the Laboratory Data Center is being created to advise the Director about physician-user concerns such as the format of laboratory report summaries or the timing of their delivery.
14. The interfaces between the SMAC II's in Clinical Chemistry Laboratory and the LDC computer are up and operating.

Goals for 1982-1983:

1. Install and go online with the new computer system, including Blood Bank and many of the various special function laboratories within the Hospitals.
2. Review the current system for reporting "panic values" to the patient care units and introduce new guidelines for reporting these values, if necessary.
3. Develop a system for enhancing communication between LDC personnel and medical technologists and directors in the clinical laboratories, hospital physicians, nursing personnel, ward clerks, and personnel in the ambulatory care setting.
4. Analyze the timing and frequency of the ward summary reports and revise this reporting method, if necessary.

5. Work with ambulatory care and medical record personnel in the introductory phase of the Brighton Clinic to insure rapid and accurate transmission of laboratory data to personnel working in the facility.

Bruce A. Friedman, M.D.  
Director,  
Laboratory Data Center

Ligand Assay Laboratory  
Department of Pathology  
Annual Report for Academic Year  
July 1, 1981 - June 30, 1982

Service Activities:

The laboratory is currently performing a total of forty assays. The projected number of specimens analyzed will increase from 31,000 last year to approximately 38,000 in fiscal 1981-82 with an anticipated total revenue of \$1,101,982. The increased volume has not necessitated an increase in the number of clinical staff due to increases in operating efficiency and computer utilization. A total of 12.5 medical and laboratory technologists and supervisory personnel are currently in the laboratory.

Several new pieces of equipment have been acquired or ordered during the past year. An IEC-CRU 5000 refrigerated centrifuge has been received and the following items have been ordered: Perkin-Elmer Model LS-Fluorescence Spectrophotometer, Spectra-Physics SP-8700 high pressure liquid chromatograph and a second IEC-CRU 5000 centrifuge.

Storage capacity of the PDP-11/34 computer system was increased from 12.5 to 35 Megabytes with the purchase of 3 new disk drives. Transfer of data from the Laboratory Data Center will be enhanced by the acquisition of a magnetic tape drive. The addition of air conditioning in the computer room will increase equipment reliability and assure maximum system availability. The upgrade of the current computer system to a PDP-11/44 has been approved by the Pathology Computer Committee. The new data base management system (DATATRIEVE) will enable rapid implementation of a data base for clinical data with greatly reduced programming overhead and increased flexibility.

M-3237 has been renovated to allow the development of an active role in monoclonal antibody development. The renovation includes a walk-in cold room that will be shared with Immunology, a new work area and a tissue culture facility. Equipment received in conjunction with the renovation include a Baker Sterilgard Laminar Flow Hood, a Lab-Line Model 425 Incubator, and a Labconco Biological Safety Cabinet Model 50275.

Teaching Activities:

Pathology House Officers currently participate in a two week rotation through the laboratory. The residents observe assay setups and are encouraged to become involved in the operation of two or three assays. They also learn management aspects of a RIA laboratory including quality control, data reduction and kit evaluation.

Fourth year Medical Technologists have a one week rotation in the Ligand Assay Laboratory. The students run several assays including digoxin, various hepatitis tests, cortisol, and observe the progesterone and estradiol receptor assays.

Robert Dieterle presented a workshop intitled, "Design and implementation of a multi-user immunoassay data reduction and quality control system", at the Eighth Annual Meeting of the Clinical Ligand Assay Society in Detroit, May 6, 1982.

Drs. Barry G. England and Gerald D. Nordblom presented three symposia talks during the past year. The titles of these talks are listed in Dr. England's personal annual report.

Drs. Barry G. England and Gerald D. Nordblom presented a two week course in Immunoassay Procedures to the Medical Technologists and a three session overview on the Basics of Radioimmunoassay for the Clinical Pathology Conference. In addition, individual lectures were presented in the following courses:

Pharmacology 670:GDN  
Medicinal Chemistry 607:GDN  
In Vitro Methods in Nuclear Medicine:BGE & GDN  
Medical Student Biochem 500A:BGE

#### Research Activities:

Evaluation of commercially available kits for C-terminal and intact parathyroid hormone (PTH). This will allow us to run the assays instead of sending them to Laboratory Procedures, Smith-Kline.

Development of a high pressure liquid chromatography purification of radioiodinated labels for "in house" assays for 17B-estradiol, calcitonin and digoxin. In the future this procedure will be used for androstenedione, gentamicin, and tobramycin.

Dr. Nordblom has begun the organic synthesis of a digoxin derivative for radioiodination to replace one we currently purchase from Cambridge Nuclear Corp. In addition, non-isotopic labels (chemiluminescent and fluorescent) are being developed for digoxin.

Development of monoclonal antibodies has continued, although at a reduced rate due to the recently completed laboratory renovation, we expect to develop monoclonal antibodies against parathormone (PTH), and a number of other analyses of interest during the next year.

Several collaborative studies have been initiated with other laboratories. We are currently working with Dr. David Keren on a method of producing radioiodinated IgA to use in conjunction with a ELISA procedure for measuring rabbit IgA against Shigelli flexneri. We also are collaborating with the Reproductive Endocrinology Program to revalidate their progesterone radioimmunoassay.

Seven papers have been presented or accepted for presentation at regional or national meetings.

Seven papers have been published in Scientific Journals during the last year while three others are "in press".

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

Specimen Procurement  
Department of Pathology  
Annual Report for Academic Year  
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Teaching Activities

1. Teach venipuncture techniques to medical students during a yearly one-day session.
2. Teach venipuncture techniques to medical technology students yearly; each student participates in the 6:30 a.m. sweep for inpatients for a three week period and also three full days drawing blood in an outpatient setting.
3. Teach venipuncture techniques to research and nursing personnel working in the Hospital-Medical School complex on request. Approximately 12-15 personnel are trained in this fashion yearly.
4. Teach venipuncture techniques and hospital procedures to all newly-hired phlebotomists.
5. Sponsor, plan, and provide faculty for a 1-1/2 day symposium at the Towsley Center entitled, "The Phlebotomy Team: Technical and Management Perspectives".
6. Provide consultation to interested outside personnel about phlebotomy services; site visit by personnel from University Hospital, Columbus, Ohio, on May 17, 1982, to observe the organization of the unit.

Modifications or Enhancements of Patient Care Support

1. A full-time phlebotomist has been added to the Turner Clinical Laboratory.
2. Phlebotomy services have been enhanced at Parkview Hospital. Only one sweep was available previously at 6:30 a.m. New sweeps have been added at 12:30 p.m. and 3:30 p.m., Monday through Friday.
3. Services have been enhanced at Holden, Mott, and Women's Hospitals; sweeps have been added at noon, 3:30 p.m., and 4:30 p.m., Monday through Friday.
4. Service has been expanded in the Clinical Research Center. Previously sweeps occurred at 6:30 a.m. and 9:30 a.m.. The unit now has the full range of Main Hospital phlebotomy services.
5. Phlebotomists are now present for an additional one-half hour in the Test Panel Blood Drawing Clinic in response to a request by clinicians for expanded service hours.



6. The use of scalp vein (butterfly) needles by phlebotomists was introduced in August, 1981, for use with patients with small inaccessible veins. This change has resulted in fewer requests for physicians to draw blood from patients themselves.
7. Services have been expanded by the drawing of Blood Bank specimens. Such specimens are now collected during all sweeps to all Hospitals so that approximately 100 specimens for the Blood Bank Reference Laboratory and the Main Blood Bank Laboratory are now collected weekly.
8. Guidelines for documenting misdrawn and misidentified specimens by phlebotomists have been revised in order to minimize such incidents.

Goals for the Next Year

1. Expansion of Phlebotomy Services to the second level of Parkview.
2. Initiate CAP workload reporting.
3. Evaluate outside clinical laboratories to which specimens are sent in terms of turnaround time and the quality of their assays.
4. Develop a new test requisition designed specifically for sendout specimens.
5. Evaluate the volume of cancelled laboratory tests and the reasons for their cancellation.
6. Revise the written training materials for newly-hired phlebotomists and revise the format of their training classes.
7. Improve the quality of the yearly phlebotomy symposium held at the Towsley Center.
8. Consider drawing blood specimens from veins running intravenous infusion to reduce the deferred blood specimen collection rate.

Bruce A. Friedman, M.D.  
Director,  
Specimen Procurement

Immunopathology Research  
Department of Pathology  
Annual Report for Academic Year  
July 1, 1981 - June 30, 1982

The Immunopathology Research Program has grown dramatically during the 1981-1982 fiscal year. There were 12 new NIH and University-funded projects begun during this year. Of equal importance has been the development of research contracts with private institutions such as KMS Fusion of Ann Arbor, Stauffer Chemical Company of Westport, Connecticut, and Hoffman-LaRoache Inc. of Nutley, New Jersey. These sponsors have been very helpful in these times of federal budget reductions.

As the research responsibilities expand, the need for qualified research personnel has increased. In the past year, the Immunopathology Program has successfully recruited Dr. Barry S. Wilson and Dr. Jerry L. Hudson. Their recruitment has allowed the Department to expand into monoclonal antibody research and to establish a Flow Cytometry Laboratory.

The Postdoctoral Training Program is another area that has shown rapid development. Ricardo Duque, M.D. and J. Philip McCoy, Ph.D. joined the research staff to bring the total of postdoctoral scholars to five. The National Institutes of Health's Lung Immunopathology Training grant will allow three more postdoctoral fellows to join our Program during the course of the next year. The Training Program's success has encouraged supplemental funding from sources such as the Parker Francis Foundation and the University of Michigan Cancer Research Institute.

The Department has also recruited eight new research assistants and two secretaries to provide support to the principal investigators. Currently, the Research Program employs four Postdoctoral Scholars, 16 Research Assistants, three secretaries and one grants administrator.

In summary, the Department of Pathology has developed a strong exciting research program over the past few years. The ongoing research is quite varied and receives funding from both public and private sources. The principal investigators deserve much credit for actively seeking funding to support their salaries and research.

Ms. Maria Ceo  
Grants Administrator

PATHOLOGY RESEARCH PROGRAMS

July 1, 1981 - June 30, 1982

TITLE OF PROJECT	PROJECT DIRECTOR	ACCOUNT NUMBER	SPONSOR	DIRECT COST (PER YEAR)	TOTAL DIRECT COST (ALL YEARS)
1. Complement Mediated Tumor Cell Chemotaxis	Ward, P.A.	018282	NIH 7R01CA29551	\$73,933	\$ 195,157 (2 yrs)
2. Pathogenesis of Inflammatory Lung Disease	Ward, P.A.	018846	NIH HL23192	89,899	161,684 (2 yrs)
3. Thermal Injury Complement and Leukocyte Dysfunction	Ward, P.A.	018832	NIH 1R01GM28499	68,910	353,456 (5 yrs)
4. Lung Immunopathology (Training)	Ward, P.A.	019027	NIH 1732HL07517	61,884	577,932 (5 yrs)
5. Leukocyte Chemotaxis	Ward, P.A.	019041	NIH 1R01HL28442	62,715	340,327 (5 yrs)
6. Immune Complex Injury of Lung and Oxygen Metabolites	Ward, P.A.	019031	NIH 1R01HL26809	77,100	245,309 (3 yrs)
7. Pathogenesis of Targeted (Immunologic) Lung Injury	Ward, P.A.	019417	NIH 1R01HL26498	74,583	204,145 (3 yrs)
8. Investigation of Makari Phenomenon	Ward, P.A.	388335	Stauffer Chemical Co.	102,960	300,000 (2 yrs)
9. Tumor Cell with Varying Degrees of Malignancy	Varani, J.	018281	NIH 5R01CA29550	51,560	126,147 (3 yrs)
10. Tissue Culture Studies with Microcarriers	Varani, J.	388304 Fusion Inc.	KMS	11,536	11,536 (6 mos)

TITLE OF PROJECT	PROJECT DIRECTOR	ACCOUNT NUMBER	SPONSOR	DIRECT COST (PER YEAR)	TOTAL DIRECT COST (ALL YEARS)
11. Clinical Investigator Award	Fantone, J.C.	019022	NIH 1K08HL00905	39,500	199,500 (5 yrs)
12. Clinical Investigator Award	Johnson, K.J.	019026	NIH 1K08HL00889	39,500	199,500 (5 yrs)
13. Immunopathogenesis of Inflammatory Bowel Disease	Keren, D.F.	341667	National Foundation for Ileitis & Colitis	51,479	51,479 (2 yrs)
14. An Investigation of the Memory Response of the Local Immune System to Shigella Antigens	Keren, D.F.	018688	U.S. Army DAMD17-80-C-0113	53,379	146,360 (3 yrs)
15. Development of the Corticospinal System	Hicks, S.P.	017557	NIH NS10531	10,100	26,169 (5 yrs)
16. Blood-Brain Barrier Opening by Hyperosmotic Solutions	Dorovini-Zis, K.	019739	NIH 1K07NS00708	39,400	197,000 (5 yrs)
17. Comparative <u>in vitro</u> Evaluation of Caftriaxon	Pierson, C.	388302	Hoffman LaRoche, Inc.	34,736	34,736 (6 mos)
18. Nutritional Modulation of Inflammatory Diseases	Kunkel, S.L.	387668	H.H. Rackham Faculty Research	10,000	10,000 (1 yr)
19. Rejection of Heterologous Endothelial Lined Corneal Transplants in The Cat: Immunological Mechanisms	Lovett, E.J.	341845	Michigan Eye Bank	9,900	9,900 (1 yr)

TITLE OF PROJECT	PROJECT DIRECTOR	ACCOUNT NUMBER	SPONSOR	DIRECT COST (PER YEAR)	TOTAL DIRECT COST (ALL YEARS)
20. Monoclonal Antibodies to 11 to HLA-DR antigens as probes for the analysis of HLA-DR molecular heterogeneity	Wilson, B.S.	341868	Leukemia Society of America	16,975	16,975 (1 yr)
21. Monoclonal anti-idiotypic antibodies and "self" MH receptors on human T-Cells.	Wilson, B.S.	387753	H.H. Rackham Faculty Research	7,500	7,500 (1 yr)
22. Monoclonal anti-idiotypic antibodies and "self" MHC receptors	Wilson, B.S.	362304	Michigan Memorial Pheonix Project	2,500	2,500 (1 yr)
23. Immunocharacterization of IB <sub>4</sub> Receptor Related to Metastasis	McCoy, J.P.	341919	U/M Cancer Research Inst.	4,390	4,390 (1 yr)
24. Jojoba Oil Contract	McClatchey, K.D.	362071	Jojoba Oil	35,000	35,000
25. Ligand Training & Research	England, B.A.	306973	N.E. Nuclear	6,800	6,800
26. New England Nuclear Contract	England, B.A.	411550	N.E. Nuclear	15,740	15,740
27. VA Merit Review Fund	Phan, S.P.		Veterans Admin.	50,000	150,000 (3 yrs)
28. VA Merit Review	Phan, S.P.		Veterans Admin.	12,500	40,000 (3 yrs)
TOTALS				\$ 1,114,479	\$ 3,669,242

PROPOSALS SUBMITTED DURING THE 1981-1982 FISCAL YEAR\*

National Institutes of Health

National Cancer Institute	9	
National Eye Institute	1	
National Insitute of General Medical Sciences	1	
National Heart, Lung and Blood Institute	8	
National Institute of Neurological and Communicative Disorders and Stroke	<u>1</u>	20
American Cancer Society		3
The Council for Tobacco Research		1
University of Michigan Cancer Research Institute		3
Hoffman - LaRoche, Inc.		1
Michigan Eye Bank		1
Parker B. Francis Foundation		1
Marion Laboratories		1
H.H. Rackham Graduate School		1
Michigan Memorial Phoenix Project		1
United States Army		1
Stauffer Chemical Company		1
KMS Fusion, Inc.		1
Biomedical Research Support Center		1
Committee on Medical Student Research		1
Comprehensive Cancer Center of Metropolitan Detroit		2
Jane Coffin Childs Memorial Fund		1
Anna Fuller Fund		<u>1</u>
Total Number of Proposals Submitted		42

\*Includes competing and non-competing proposals.

NEW PROPOSALS FUNDED DURING 1981 - 1982 FISCAL YEAR\*

TITLE	PROJECT DIRECTOR	SPONSOR	DIRECT COST (PER YEAR)
1. Lung Immunopathology Training	Ward, P.A.	NIH 1732HL07517	\$ 61,884
2. Leukocyte Chemotaxis	Ward, P.A.	NIH 1R01HL28442	62,715
3. Immune Complex Injury of Lung and Oxygen Metabolites	Ward, P.A.	NIH 1R01HL26809	77,100
4. Pathogenesis of Targeted (Immunologic) Lung Injury	Ward, P.A.	NIH 1R01HL26498	74,583
5. Clinical Investigator Award	Fantone, J.C.	NIH 1K08HL00905	39,500
6. Clinical Investigator Award	Johnson, K.J.	NIH 1K08HL00889	39,500
7. Blood-Brain Barrier Opening by Hyperosmotic Solutions	Dorovini-Zis, K.	NIH 1K07NS00708	39,400
8. An Investigation of Memory Response of the Local Immune System to Shigella Antigens	Keren, D.F.	U.S. Army DAMD17-80-C-0113	53,379
9. Rejection of Heterologous Endothelial Lined Corneal Transplants in the Cat: Immunological Mechanisms	Lovett, E.J.	Michigan Eye Bank	9,900
10. Monoclonal anti-idiotypic antibodies and "Self" MHC Receptors on Human T-Cells.	Wilson, B.S.	H.H. Rackham Faculty Research	7,500

TITLE	PROJECT DIRECTOR	SPONSOR	DIRECT COST (PER YEAR)
11. Monoclonal Anti- idiotype Antibodies and "Self" MCH Receptors	Wilson, B.S.	Michigan Memorial Phoenix Project	2,500
12. Immunocharacterization of IB <sub>4</sub> Receptor Re- lated to Metastasis	McCoy, J.P.	U/M Cancer Research Inst.	4,390
13. Monoclonal Antibodies to 11 to HLA-DR Antigens as Probes for the Analysis Heterogeneity	Wilson, B.S.	Leukemia Society of America	16,975
14. Tissue Culture Studies with Microcarriers	Varani, J.	KMS Fusion Inc.	11,536
15. Investigation of Makari Phenomenon	Ward, P.A.	Stauffer Chemical Co.	102,960
16. Comparative <u>in vitro</u> Evaluation of Caftriaxon	Pierson, C.	Hoffman LaRoche, Inc.	34,736
TOTAL DIRECT COSTS			\$638,558

\* Includes competing renewals.



Administrative Support Section  
Department of Pathology  
Annual Report for Academic Year  
July 1, 1981 - June 30, 1982

I. Administrative Summary

A. Anatomic and Clinical Pathology Laboratories

1. Gross revenue generated by these laboratories in 1981/1982 amounted to \$21,611,680.

After reviewing the demands placed upon the Administrative Support Center by Hospital Administration, it was determined that an additional high level administrative support staff person was required for this section. This section is staffed by one P&A employee (Ms. Nancy Coray) and three clerical staff persons. The recruitment process has been initiated.

2. Ms. Anita Liberman-Lampear was hired as Clinical Coordinator of the Clinical Pathology Laboratories. Ms. Liberman-Lampear reports directly to Dr. Harold Oberman. This position is primarily responsible for the CAP Workload Recording System, compilation of data for all external inspections by accrediting agencies and compilation of the capital equipment budget.

B. Medical Service Plan/Departmental Administrative Computer

1. Medical Service Plan gross revenue amounted to \$3,940,421 for 1981/1982.

Mr. Douglas Kennedy's role was expanded to include the supervision of the Word Processing Center and the implementation of the IBM 5520 Administrative Computer System. We added 1.5 FTE staff to the Word Processing Center and expanded its service by four hours. The Center now operates from 8:00 a.m. to 9:00 p.m., Monday through Friday.

C. Sponsored Research Programs

1. A total of 42 grant/contract proposals were submitted to 18 different sponsoring agencies during the 1981/1982 Fiscal Year, and sponsored awards amounted to direct costs of \$1,114,479 for the same period.

Ms. Maria Ceo replaced Ms. Robin Graves and became responsible for the business affairs of all departmental sponsored research projects. With her expanded role and the growth of the Department in this area, it was necessary to add one full-time clerical position which is primarily responsible for purchasing of supplies and timekeeping.

D. Surgical/Necropsy Report Section

1. This section processed 13,313 Hospital surgical pathology cases, 4236 surgical pathology consultative and research cases, and 339 necropsy cases during the 1981/1982 fiscal year.

Ms. Gilchrist has selected an excellent staff and this coupled with her direction and supervision has allowed the section to function smoothly.

II. Completion of Major Tasks

The staff of the Administrative Support Center participated with the Administrative Manager in the completion of the following major tasks:

A. Medical Service Plan Contract.

1. Participated in the negotiations with Hospital Administration regarding our MSP agreement for FY 1982/1983. Prior to and during the negotiation, meetings were held with Mr. Larry Peterson, our consultant, who assisted us in developing data for analysis and presentation.

B. Faculty Recruitment/Appointments

1. Assisted in the recruitment and appointment of the following faculty; Drs. Wilson, Hyder, Hudson, Burkholder and Giacherio and the appointment of primary research staff, Drs. Schrier and Marasco.

C. Budgets

1. Developed and prepared, all budgets that amounted to over \$18,000,000. Performed fiscal analysis of those budgets and took corrective action where necessary. Systems, policies and procedures in the three major funding areas; Hospital, Sponsored Research and Medical Service Plan were reviewed and changes implemented where necessary.

D. Renovation and Remodeling Program

1. The 1981/82 year saw the completion of Dr. Johnson's laboratory, Dr. England's laboratory, the initiation of renovation and remodeling for the fourth floor classroom (M4234), and Dr. Wilson's laboratory (M4232).
2. The Administrative Support Center, as the first phase of a major renovation project to take place on the fifth level of the Pathology Building was completed in June 1982. The first phase included an additional administrative support

staff office, a Word Processing Center, a computer room, relocation of the distaff lounge, and revamping of the Surgical Pathology slide storage area. Construction of Phase Two will begin in September, 1982 and will include renovation and remodeling of the Surgical Diagnostic Rooms and the Surgical Typing and Reporting areas. Phase III of the project will be the addition of seven faculty offices and is scheduled for project initiation in January 1983. Phase IV of the project will be the addition of five faculty offices at the west end of the Building and will be initiated in April 1983.

3. Participated in the planning for the remodeling and renovation of space on the second, fourth and fifth levels of the Pathology Building. The second level space will become available when the Reproductive Endocrinology Program moves to the North Ingalls Building scheduled for 1 January 1983.
4. Completion of the renovation and remodeling of the Animal Care Quarters in December 1981.
5. Participated with the Chairman and selected faculty in the design and planned installation of a centralized deionized water supply system. The centralized system will be located in the penthouse of the Medical Science I Building and construction should begin on approximately 1 September 1982.
6. Participated with the faculty in the design of space and ordering of equipment for the Flow Cytometry Laboratory.
7. Developed the Certificate of Need for acquisition of a Philips Electron Microscope and placement of the order for the equipment. Participated in the design of space which will house the Electron Microscope Suite on the 3rd level of the Pathology Building.
8. Supervised the consolidation of space for Medical Technology Teaching Program to the second level of the Pathology Building and began planning for the renovation and remodeling of this area.

E. Administrative Affairs

1. Participated with the Chairman and the executive faculty of the Department of Pathology regarding Departmental policies and procedures.
2. Initiated in January 1982 the compilation of data for the Medical School's Planning Budgeting Program (PBP) which may not be implemented during the next fiscal year.

3. Participated with Hospital Administration and Dr. Friedman in the development of a request for quotation for a laboratory computer design of the Laboratory Data Center and the negotiation for the laboratory computer system.
4. Completed the movement of the Reproductive Endocrinology Program to the Center of Human Growth and Development as of 1 September 1981.
5. Selected, directed and supervised the installation of the Word Processing/Administrative Computer System and will begin to develop administrative tasks for that system beginning in the early Fall, 1982.
6. Consolidated the Necropsy/Surgical Reports so that they could be reproduced and stored on microfilm, thereby providing valuable storage space that has been reduced to meet the expanded programs initiated with your appointment.

### III. Major Committee Assignments and Training Programs

The administrative manager participated in many Medical Center and Departmental Committees, as well as attending professional society meetings. Staff of the Administrative Support Center also participated in national, state, local and University training programs.

### IV. Financial and Other Related Data

- A. Refer to Appendix A

### V. Goals and Objectives

- A. Develop system and files to be used on the IBM 5520 Administrative/Word Processing System. Develop training programs for selected P & A staff for implementation of files processing, document distribution and communications of the IBM 5520 System.
- B. Develop data for the establishment of a professional component of Pathology laboratory tests and initiate a separate billing and collection section as we move from a combined Hospital/Pathology Billing to separate billing for Pathology Associates.
- C. Continue to assist with the implementation of the new laboratory computer.
- D. Continued participation in the renovation and remodeling of the Pathology Building including the 5th floor renovation/faculty offices.
- E. Develop incentive programs for the faculty of the Department which will reward them for obtaining external sources of funding for salaries, benefits, supplies and equipment.

- F. Complete the reorganization of the Administrative Support Center, and implement policies and procedures that will enhance the business operations of the Department.
- G. Develop administrative support staff so that they are more responsive and responsible for the overall daily business operation of the Department.
- H. Develop budget reporting systems that will provide all administrators - Hospital, University, Departmental with accurate data in a timely manner.

Eugene J. Napolitan  
Administrative Manager,

Residency Training Program  
Department of Pathology  
Annual Departmental Report  
July 1, 1981 - June 30, 1982

During the 1981-82 academic year we have twenty-three physicians in training in our residency program. These were in the following categories for pay purposes based on previous post-medical school residency training

H.O. 1 - 6  
H.O. 2 - 4  
H.O. 3 - 5  
H.O. 4 - 6  
H.O. 5 - 2

Four of the five house officers completing their training June 30, 1982, will be entering the practice of pathology in the private sector. One resident will do a fellowship in Gynecologic Pathology at St. John's Mercy Medical Center, St. Louis, Missouri.

Sixty applications were submitted for positions as house officers for the academic year 1982-83. Twenty-nine of these applicants were interviewed and a total of six were ultimately appointed. Four of these were matched in the NRMP and the remaining two were appointed outside of the match program. There will be a total of twenty-four house officers in training for the academic year 1982-83 with the distribution as follows:

H.O. 1 - 5  
H.O. 2 - 7  
H.O. 3 - 4  
H.O. 4 - 5  
H.O. 5 - 2  
H.O. 6 - 1

In addition to the position of Coordinator of the Residency Program a liaison staff person was assigned to each House Officer group I - IV for the purpose of enhancing communication between the faculty and the house officers.

A monthly Journal Club was begun for the residents by Drs. A. Flint and R. Lloyd.

The Accreditation Council for Graduate Medical Education continued the accreditation of our program to offer graduate medical education of four years duration in anatomic and clinical pathology for the training of a maximum of twenty-four residents. Specific areas of concern addressed by the Accreditation Council include the following:

1. The need for increased space assigned to clinical pathology laboratories.

2. The need for specific required training in cytogenetics and virology.
3. The need for more emphasis in clinical pathology.
4. An inadequate number of clinical pathologists.

The departmental staff is fully aware of these problems and is taking steps to help in their solution. An additional 1500 net square feet of space is being allotted to the clinical laboratories; however, the major solution to this space problem will not occur until the completion of the Replacement Hospital Project. Recruitment at the Ph.D. and M.D. levels has occurred in clinical pathology and the emphasis in the formal training in clinical pathology has increased. Plans are also in development for a formal training program in cytogenetics and virology.

Paul W. Gikas, M.D.  
Co-Ordinator,  
Residency Training Program

Medical Technology Program Overview  
Department of Pathology  
July 1981 - June 1982

The major project for the MT program in 1981-1982 was the completion of the Self-Study Report for reaccreditation by NAACLS, and planning for the reaccreditation site survey which took place on May 6, 7. The report critique was very complimentary, and verbal feedback from the survey team was strongly positive. The consensus of the team was that this program is superior and should be continued. The NAACLS Medical Technology Review Committee will meet in July to make a final recommendation on reaccreditation.

The MT faculty implemented the planned format change for the Class of 1982. This led to a more tightly organized schedule with less wasted education time. Although the program is now more difficult, the new format allows for increased "hands-on" experience during the clinical laboratory rotations, and a reinforcement of theoretical material. Hopefully students will demonstrate a more clear superiority on the August national certification examination.

For the Class of 1981, twelve of fourteen students taking the national certification exam last August passed. The remaining two retook the exam in February, 1982, and one passed. The faculty agrees that these two students were among the academically weakest students accepted into the program that year.

The discontinuance of certain prerequisite courses offered by the Department of Microbiology and Immunology has necessitated a restructuring of the junior year curriculum. These changes have been coordinated with and approved by the Departments of Biology and Microbiology and Immunology and will take place in two phases, beginning Fall 1982.

Program applications have risen but are still below a competitive level, and some applicants are not as well-qualified as desirable. This has been reported as a national trend affecting a majority of MT programs. A continuing public relations effort has been made within the University and local community to emphasize the existence of the curriculum. Also lecture portions of all courses have been opened and advertised for audit by anyone interested in CE or retraining. Such students will pay the University audit fee.

Sandra Gluck  
Director,  
Medical Technology Program



VETERANS ADMINISTRATION MEDICAL CENTER  
LABORATORY SERVICE  
Annual Report for Academic Year  
July 1, 1981 - June 30, 1982

I. Introduction

The VA Medical Center, as a Dean's Committee hospital, is closely affiliated with the University of Michigan and the Laboratory Service of the VA and the University of Michigan Department of Pathology cooperate in a number of ways. A staff pathology vacancy in the Laboratory Service has existed since June of 1981 and will be filled by Dr. Dan Hyder on June 20, 1982. He will be appointed as an Instructor in the Pathology Department at the University. The VA staff participates in considerable residency training and teaches the medical students formally in the Inteflex program. Considerable mutual professional consultation occurs between the two institutions. Pathology residents rotate through the VA in microbiology, surgical pathology, necropsy pathology and electron microscopy.

This short introduction outlines the association of VA Medical Center and the University of Michigan. The ties in the Pathology Service have always been close and it is anticipated that they will be even closer in the future, particularly in the areas of research and training in electron microscopy. The following report is a summary of the VA Medical Center workload with particular attention paid to its relationship with the University of Michigan.

II. Anatomic Pathology

A. Surgical Pathology:

3,360 cases have been accessioned and reported. This is an increase of 10% over the same period one year ago. All of these cases are examined grossly and microscopically by a resident along with a staff pathologists. Frozen sections continue to be done by the resident under the supervision of a staff pathologists.

B. Necropsies:

73 necropsies were done in the above period of time. This is a significant decrease of 33% over the previous year. Although there has been a continuing trend toward fewer autopsies, I feel that this marked decrease is more of a one time situation and I would expect some increase next year.

C. Cytology:

2786 specimens were submitted and reported. This is an increase of 18%. Cytology slides are reviewed and reported by a pathologists, most often Dr. Beals. Although the resident does not

review all cytology specimens, in appropriate cases they are correlated with surgical and autopsy material.

### III. Clinical Pathology

The sections included in this heading are Chemistry, Urinalysis, Hematology, Blood Bank, Immunology, and Microbiology. A few tests are sent out to other laboratories on a fee basis and a few, especially toxicology specimens, are sent to Allen Park VA Medical Center at no cost. The total work load for this period is 1,663,636 tests or an increase over last year of 16%. These figures are unweighted laboratory tests. An updated "Normal Laboratory Values" sheet is appended to this report and gives the range of tests performed within this laboratory. There is a continued effort to computerize the laboratory and we would expect there would be some results of such efforts within the next year.

### IV. Teaching

Each of the staff members is responsible for teaching residents in pathology, primarily in surgical and autopsy pathology. The resident researches the cases, discusses problems and interpretations with the staff pathologists and with the clinician and generally acts as a coordinator in the areas of surgical and necropsy pathology. These activities are supervised on a one-to-one basis by the staff pathologists.

Dr. Weatherbee and Dr. Beals participate in the teaching of the interflex students at The University of Michigan.

### V. Research

Dr. Sem Phan is carrying out an extensive research activity in the Career Development Program of the VA. Much of his work is within the laboratory at the University. The technical portion of the laboratory also participates very frequently in the analysis of specimens of laboratory animals and in the examination of tissues from experimental animals. In clinical research involving patients considerable laboratory work is done. Some of this, however, is not identified when it is requested and the figures are somewhat inaccurate.

### VI. Budget

The budget for expendables and general operations in FY 82 is approximately \$896,000. This is an increase of nearly 25% over the same period last year. This increase is due to, in general, inflation but it is related significantly also to increased workload and special programs such as the cardiovascular surgery and the therapeutic drug analysis program within the laboratory. A total of approximately \$82,000 was spent on various items of new equipment. The most significant item is the MS-2 automated laboratory system for Microbiology, the cost of which was \$43,000. Neither personnel costs nor overhead are included in the budget preparations in this hospital.

## VII. Personnel

A copy of the authorized manpower listing and organizational chart is appended to this report. VA Central Office has developed staffing guidelines for Laboratory Services based on workload and a copy of this calculation is appended to this report indicating that we are approximately nine positions low. In order to perform the Laboratory mission at the level of excellence desired, there is no doubt that we are deficient to this degree at least. It is reemphasized that a fourth pathologist is absolutely necessary in order to bring Laboratory Service to the professional competency and efficiency necessary.

Dr. Dan Hyder will be filling the vacancy for a third staff pathologists on July 1, 1982. He is an excellent clinical pathologists with research interests.

An active mutual consultation service is carried on between the VA Medical Center and the University of Michigan Pathology Department. This activity is very important, particularly to the VA, and will be continued.

## VIII. Electron Microscopy

This is a separate section of this Laboratory Service and the following report has been prepared by Dr. Beals.

### Clinical Electron Microscopy Unit:

This unit, funded independently of VA Medical Center budget at an annual total cost of approximately \$150,000, is staffed by one full time pathologist and two full time electron microscopy technicians.

During this year the unit has examined 399 specimens of which 337 (85%) were from patients. 218 specimens were examined by transmission electron microscopy, 29 by scanning electron microscopy, and 32 by both transmission and scanning electron microscopy. 120 specimens were examined by semi-thin sections only.

The unit continues as the Regional Reference Electron Microscopy Service, providing ultrastructural analysis to neighboring hospitals (including the University Hospital, St. Joseph Mercy Hospital and Borgess Hospital). The unit continues to get high praise from the annual Quality Assurance Peer Review conducted by the Veterans Administration.

During the year eight house officers spent one month each assigned on an elective basis to the unit for training.

Bi-weekly electron microscopy case review conferences are held, principally for training of house officers in pathology. The 35 mm

teaching file for electron microscopy continues to expand and is used by many faculty members. Although the unit is principally funded for clinical diagnostic electron microscopists, nine research projects were formally assisted by the unit during the year, resulting in contributions to six publications.

XI. Individual Faculty Member Annual Reports

See attachments.

Lee Weatherbee, M.D.  
Chief, Laboratory Services  
Veteran's Administration Medical Center