DEPARTMENT OF PATHOLOGY

QUEEN'S UNIVERSITY

ANNUAL REPORT

JULY 1, 1985 - JUNE 30, 1986

Report Compiled By Anna Northcott, Departmental Assistant

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FACULTY, ADMINISTRATION AND HEAD

TECHNOLOGISTS

FACULTY

1985-1986

EMERITUS

Dr. Nathan Kaufman
Dr. G.F. Kipkie

PROFESSOR AND HEAD

Dr. David M. Robertson

PROFESSORS

Dr. A.F. Clark
Dr. W.E.N. Corbett
Dr. A.J. de Bold
Dr. R. Kisilevsky
Dr. S.K. Ludwin
Dr. T.F. McElligott
Dr. H. Steele
Dr. B. White

ASSOCIATE PROFESSORS

Dr. B.E. Elliott
Dr. A.R. Giles
Dr. W. Mackillop
Dr. S. Nag
Dr. R.S. Prentice
Dr. S. Wasan

ASSISTANT PROFESSORS

Dr. D.F. Dexter
Dr. W.A. Fletcher
Dr. D. Lillicrap
Dr. P.N. Manley
Dr. M. Raymond
Dr. F. Swaine

LECTURER

Dr. A. Collins

JOINT APPOINTMENT

Dr. R. Bell

CROSS APPOINTMENT

Dr. P.M. Ford

KGH APPOINTMENTS

Dr. P. Chadwick	
Dr. G.J. Delisle	(until December 1985)
Dr. J.J. Holden	
Dr. G. Ozanne	(May 1, 1986)
Dr. B.N. White	

SESSIONAL APPOINTMENTS

Dr. J.C. Kennedy
Dr. S.A. Bencosme

ADMINISTRATION

N.A. Meyers	Administrative Assistant
A.J. Northcott	Departmental Assistant

LABORATORY SUPERVISORS - HEAD TECHNOLOGISTS

L. Fidler	Bacteriology
M. Waugh	Chemistry
P. Fardella	Hematology
L. Franchi	Histology
P. Gribbon	Blood Bank
J. Hauser	Cytology
D. More	Neuropathology
L. Kennedy	Pathologist Assistant
A. Smith	Cytogenetics

LABORATORY MEDICINE AND PATHOLOGY

LABORATORY MEDICINE AND PATHOLOGY

The Department of Pathology and Laboratory Medicine is responsible for all areas of clinical pathology and anatomic pathology, including hematology, immunopathology, neuropathology, clinical chemistry, surgical pathology, autopsy pathology, cytogenetics, biochemical genetics and cytology. Consultations go on daily over the microscope with clinicians. A myriad of telephone consultations are carried out continuously by the clinical pathologists, clinical chemists and microbiologists.

The University Department of Pathology, which is responsible for the residency training program, utilizes the facilities of the two university affiliated hospitals, Kingston General Hospital and Hotel Dieu Hospital. In addition, diagnostic services are provided for several university affiliated hospitals in the Kingston area including St. Mary's of the Lake Hospital,Kingston Psychiatric Hospital, Rideau Regional Hospital School and Prince Edward County Memorial Hospital. The combined laboratory statistics for 1985 for the Department of Pathology at Kingston General Hospital and Hotel Dieu Hospital are as follows:- autopsies - 419; surgical specimens - 19,672; cytology - 37,363. The DBS units done in clinical pathology are 15,161,251.

PERSONNEL, AWARDS, AND SIGNIFICANT EVENTS

PERSONNEL:

Dr. David P. Lillicrap was appointed Assistant Professor in the Department of Pathology effective September 1, 1985, with a cross-appointment in the Department of Medicine, Division of Hematology. Dr. Lillicrap was also appointed to the Attending Staff at Kingston General Hospital. One of his main responsibilities are the Hemophilia Clinic and the Hemostatis Laboratory. Dr. Lillicrap trained in internal medicine, hematology and laboratory hematology at several centers including Queen's University, and for the past few years has been a Medical Research Council Fellow studying in Cardiff, Wales.

Dr. William J. Mackillop was appointed Associate Professor in the Department of Radiation Oncology at Queen's University, with a cross-appointment as Associate Professor in the Department of Pathology. Dr. Mackillop, a graduate of the University of Glasgow was formerly associated with the McGill Cancer Centre, Montreal Victoria Hospital and Montreal General Hospital. Dr. Mackillop is participating in the research and graduate programs of the cancer research area in the Department of Pathology. His appointment was effective November 1, 1985.

Dr. J.T. Feltis, Assistant Professor of Pathology, resigned in November to assume new duties at the Credit Valley Hospital in Mississauga.

Dr. Gloria J.Delisle resigned her position as Assistant Microbiologist in the department to assume the position of Director, Division of Microbiology, at Hotel Dieu Hospital.

Dr. Gerard Ozanne was appointed Assistant Microbiologist in the Division of Microbiology, Department of Pathology, beginning May 1, 1986. Dr. Ozanne comes to the Kingston General Hospital from the University of Montreal, where he was an Assistant Professor in the Department of Microbiology.

Dr. Bradley White was appointed Supervisor of the D.N.A. Laboratory and Professor on the adjunct staff of the Department of Pathology.

Mr. Norman Meyers resigned as Administrative Assistant in the department effective April 30, 1986. Mr. Meyers will be joining the Human Resources Department at Kingston General Hospital with responsibility for employee relations.

PROMOTIONS:

Dr. A.J. de Bold was promoted from Associate Professor to Professor in the Department of Pathology effective July 1,1985.

Dr. B.E. Elliott was promoted from Assistant Professor to Associate Professor in the department effective July 1, 1985.

AWARDS

GERMAIN CANCER RESEARCH FUND:

The Cancer Research Division of the Department of Pathology received a donation of $50,000 from Mr. Arthur W.M. Germain in August 1985. Mr. Germain, a former graduate of Queen's University (Arts '24) wanted to give money for cancer research and has promised a similar donation annually as long as he lives. The funds are to be used for the support of cancer research in the Faculty of Medicine. Initially these funds will be used to rebuild the Cancer Research Group of the Department of Pathology. These funds may also be used for the purchase of equipment, and for the provision of special facilities, and will be administered by the Dean of Medicine, in collaboration with the Associate Dean of Research and the Head of the Department of Pathology. In the Spring of 1985 Mr. Germaine was given a tour of the cancer research area and was the special guest at a reception in his honour.

JOSEPH S. STAUFFER CHAIR IN CANCER RESEARCH:

In September 1985 Principal Smith announced that a gift of $1,000,000 from the estate of Joseph S. Stauffer has made it possible to establish the Joseph S. Stauffer Chair in Cancer Research in the Department of Pathology. Funding for the new Stauffer Chair will make it possible to attract an outstanding cancer research investigator and provide a sound financial base for this area within the department. The work of the cancer research group at Queen's University is of special significance since it brings together investigators and graduate students to build a bridge between clinical treatment and the pure science of the laboratory. This dynamic investigative environment has enhanced the research programs significantly. Currently a selection committee is in the process of recruiting a candidate to fill the Joseph S. Stauffer Chair. The Stauffer estate has donated generously to Queen's University causes in the past. The late Joseph S. Stauffer, a native of Galt, Ontario, died in 1978. During World War I Mr. Stauffer served as an officer in the Royal Naval Air Services. His studies at Queen's were interrupted by the war but he graduated in science in 1920. After graduation he made his home in Toronto where he became a successful businessman.

DUTKEVICH TRUST FUND:

The Dutkevich Trust Fund once again awarded a portion of its funds to the Department of Pathology. This trust fund was established by Dr. E. Dutkevich for the support of individuals in their first year of training in Pathology. The Departmental Postgraduate Committee recommended three of the current resident staff as being eligible for financial support under the guidelines of the trust fund.

AWARDS (continued)

Dr. Russell Price,Resident in the Department of Pathology, was awarded the prize for the Best Resident Presentation at the 48th Annual Meeting of the Ontario Association of Pathologists held in London, Ontario, October 3-5, 1985. Dr. Price presented "Pulmonary Involvement by Multiple Myeloma Detected in Sputum Cytology" (with Dr. W.A. Fletcher and L. Merrit). Dr. Price also presented, "Diffuse Proliferative Glomerulonephritis in a Case of Coagulase Positive Staphylococcal Endocarditis - A Light and Electron Microscopic Study" (with Dr. J.T. Feltis).

KGH Service Awards: Service Awards were presented to Dr. Robert Kisilevsky (fifteen years) and to Dr. W.E.N. Corbett (twenty years) at a luncheon for long service employees in September 1985. Three additional employees were recognized for fifteen and twenty years of service respectively, and one employee received an award for twenty-five years of service.

Basmajian Award: Dr. Bruce Elliott, Associate Professor of Pathology, was awarded the Basmajian Award for 1985-1986, for having been judged to have made the most meritorious contribution to medical research during the previous year or several years in the Faculty of Medicine at Queen's University. This award is given annually to a member of the faculty by the Faculty Research Committee.

Alumni Award for Excellence in Teaching: Dr. Brad White, a member of the Adjunct Staff of the Department of Pathology, was awarded the Alumni Award for Excellence in Teaching by the Teaching Awards Committee of the Alumni Association, Queen's University.

ROYAL COLLEGE OF PHYSICIANS & SURGEONS OF CANADA FELLOWSHIPS

Dr. Jonathan Willmer was successful in passing the Royal College of Physicians and Surgeons of Canada Fellowship examinations in Neurology. Dr. A. Collins was also successful in the RCPSC Fellowship examinations in General Pathology. Dr. A.C. Shah passed his American Boards in June 1985. Dr. M. Brett successfully completed the oral and practical portion of the Royal College of Pathologists, United Kingdom, examinations and also her RCPSC Fellowship examinations.

UNDERGRADUATE, GRADUATE AND POSTGRADUATE

EDUCATIONAL PROGRAMS

UNDERGRADUATE, GRADUATE AND POSTGRADUATE EDUCATIONAL PROGRAMS

UNDERGRADUATE:

Objectives of the course: The course in Pathology involves the study of the causes and mechanisms of disease and the observable changes (morphological, biochemical and physiological) resulting from the interaction of the causative factors with the living tissues. General Pathology (Pathology 520) deals with the general tissue and cellular reactions to the various types of injurious factors. Special Pathology (Pathology 521) is a study of the reactions of specific organs and systems in specific situations and disease entities.

The recommended textbooks were Pathologic Basis of Disease (Robbins, Cotran & Kuman) and Pathologic Basis of Disease - Self-Assessment and Review (C. Compton). Students were also provided with self-study aids, and the slide carousels in the student laboratory were accessible to the students on a 24 hour basis. Regular staff-student meetings were held during the academic year during which the content and quality of the course were reviewed. The students also evaluated the program of instruction and the professors on a routine basis as each segment of the course was completed.

Seventy-nine students were registered in second year medicine during the 1985-1986 academic year. Two medical undergraduates were in the department on a service rotation during the summer of 1985. They were Marino Labinaz and George Linn. Two medical undergraduates also took Selectives in the Department of Pathology during 1985-1986. They were Steve Melnick, a selective in Neuropathology and John Penswick, a selective in Surgical Pathology.

GRADUATE:

Six Master of Science students were registered in the Department of Pathology during 1985-1986. They were Odette Tadross; Peter Vandervelden; Anna Marie Rodricks; Cynthia Tape; Diane Renwick and Edi Alvarez. Two Ph.D. students were also registered in the department - Alan Snow and Douglas Carlow. In addition, one student was registered in the Department of Biochemistry but worked under the supervision of Dr. Kisilevsky. This student was Andrew Lyon.

One of the Ph.D. students, Douglas Carlow, successfully defended his thesis in February 1986. One of the Master of Science students, Diane Renwick, also successfully defended her thesis in October 1985.

Graduate Course in Cancer Biology: The department once again offered a graduate course in Cancer Biology (Pathology 823). The course has been designed to consider cancer in the broadest possible perspective without sacrificing detailed analysis of questions being examined in present day research. The six registrants were all successful in the course.

UNDERGRADUATE, GRADUATE AND POSTGRADUATE PROGRAMS

POSTGRADUATE:

Nineteen housestaff were registered in the postgraduate training program in the department during 1985-1986. In addition, two residents (Dr. Casson and Dr. Maskens) from the Department of Obstetrics and Gynecology were each on rotation in the department for four month intervals. One resident (Mark Wells) from the Department of Surgery, was also on rotation in the department for three months.

ELECTIVES:

The Elective program in the department is arranged in such a way that clerks participate as members of a team, with pathologists and residents,in the analysis and correlation of clinical, laboratory and pathological data. Assignment is made to specific supervisors according to field of interest. Richard Camiciolli, a medical student in the Faculty of Medicine, McGill University, performed a three week Elective in the Department of Pathology during June 1985 under the supervision of Dr. P. Manley.

SUMMER STUDENTS: During the summer of 1985 two students filled summer service positions within the department. In addition, five summer research positions were filled.

During the summer of 1986 the department once again offered both service and research positions to summer students. Three were offered summer service positions and eight students were offered summer research positions.

POSTDOCTORAL FELLOW: Dr. Debra Bakker, a Medical Research Council Postdoctoral Fellow, continued her appointment in the department under the supervision of Dr. S. Ludwin.

MEDICAL RESEARCH PROGRAMS

RESEARCH PROGRAMS

The investigators in the department have sought to optimize the resources and opportunities by linking their efforts with individuals in other departments and institutes on campus. The department has developed major research programs in the biochemical and molecular mechanisms in pathology (Dr. A.F. Clark; Dr. A.J. de Bold; Dr. A.R. Giles; Dr. R. Kisilevsky); studies in cell biology of malignancy and tumor progression (Cancer Biology Research Group: Dr. B. Elliott; Dr. W.J. Mackillop); mechanisms of the blood brain-barrier, studies on the mechanism of remyelination and studies of cerebrovascular permeability (Neuropathology group: Dr. David M. Robertson; Dr. S. Ludwin; Dr. S. Nag); and research in morphological pathology (Dr. P. Manley; Dr. T.F. McElligott; Dr. H. Steele; Dr. S. Wasan)

DR. A.F. CLARK: Dr. Clark's research program is concerned with androgen metabolism. He has been studying androgen metabolism in the rat especially as it relates to the prostate gland. Prostatic enzymes involved in androgen metabolism are being studied so as to understand their role in controlling the expression of androgenic activity. The androgen dependence of the prostatic enzyme, acid phosphatase, is being studied. Prostate cell culture studies are being utilized to investigate androgen metablism, indicators of androgen actions, and the mechanism of androgen actions in normal cells.

DR. D.F. DEXTER: Dr. Dexter has continued collaborative research with Dr. J.C. Roder in a) analyzing spontaneous and primary oncogenesis in natural killer cell deficient mice; b) with Dr. Cole and Dr. Roder the establishment and metastasis of a human large cell lung tumor cell line and c) with Dr. Shtromas and Dr. Roder analysis of metastatic potential, associated markers, and cytogenic makeup of a metastasizing human melanoma cell line.

DR. A.J. DE BOLD: Dr. de Bold's research is mainly directed to further advance the field of cardionatrins. Cardionatrins are peptides produced by the heart with important pharmacological properties. Dr. de Bold has been a guest at several international symposia on cardionatrins.

DR. B.E. ELLIOTT: During the past few years, Dr. Elliott has applied his expertise in basic immunology to the study of the role of cell surface glycoproteins encoded by the major histocompatibility gene complex (MHC) in malignancy. Since MHC molecules are an essential element in the T cell recognition process, it has been proposed that tumor cells could evade the host T cell immune system by expressing insufficient or inappropriate MHC glycoproteins. Most studies on the role of MHC in malignancy have been based on experimentally induced highly immunogenic animal tumors, despite the lack of evidence that human tumors are immunogenic. Dr. Elliott and his collaborators have therefore developed a 'spontaneous' non-immunogenic murine carcinoma model for immunological studies. Current results show an

RESEARCH (continued)

DR. B.E. ELLIOTT: (continued) increase in surface expression of certain MHC molecules on most immunogenic variants examined compared to the parent tumor, supporting an inverse correlation between MHC expression and malignancy in this tumor system. Three main approaches are now in progress in Dr. Elliott's laboratory to further develop these findings: a) determination of a causal relationship between increased MHC antigen expression and tumor immunogenicity, using MHC gene transfection; b) identification of qualitative changes in surface MHC and associated molecules which correlate with the immunogenic phenotype of the tumor and c) analysis of the genetic mechanisms leading to altered MHC gene expression in malignancy. These studies will provide further understanding of the genetic control of the immunological properties of tumors, as well as the basic mechanisms of altered gene expression in malignant cell populations. Information from these studies will contribute to the evaluation and design of improved strategies for cancer treatment.

DR. A.W. FLETCHER: The cytopathology of tracheal aspirates of three groups of infants receiving Continuous Airway Pressure, Conventional Mechanical Ventilation, and High Frequency Oscillatory Ventilation is being assessed. A clinical trial is being conducted at Kingston General Hospital to determine whether the cytopathology of these three groups is different with respect to the time course.

DR. P. FORD: Dr. Peter Ford is conducting a study of the interaction of rheumatoid factor with immune complexes in the in vivo systems. Dr. Ford is also conducting a comparison of Flurbioprofen and Piroxican in the treatment of osteoarthritis.

DR. A.R. GILES: Basic and applied studies are being performed in the field of coagulation and fibrinolysis. In all cases there is a major emphasis on in vivo study using a number of defined models of hemostatic disorders. Of particular importance is the availability of a hemophilic (Factor VIII:C deficiency) dog colony. Studies include the development of innovative approaches to clotting factor replacement including genetic engineering. A second major interest is the regulation of coagulation and fibrinolysis in vivo. Close affiliations have been established with the Departments of Biochemistry, Biology and Medical Genetics.

RESEARCH (continued)

DR. R. KISILEVSKY: Dr. Kisilevsky's research concerns the protein synthesizing apparatus of liver cells, and the manner in which this apparatus is upset in induced disease states. The current problems being explored are: modulation of ribosome structure; an examination of several enzymes involved in ribosomal protein phosphorylation; mRNA metabolism and initiation factor phosphorylation - all during induced cell injury. A second area of study is the pathogenesis of experimental murine amyloidosis.

DR. S.K. LUDWIN: Dr. Ludwin conducts a research program which deals with the mechanisms of remyelination and oligodendrocyte mitogenesis in the central nervous system. This study involves the use of Cuprizone to cause demyelination in the central nervous system of young mice, non-specific traumatic wounds to the cortex and the use of organotypic C.N.S. cultures by means of electron microscopy, radio-autography and immunohistochemistry, involved in remyelination.

DR. P.N. MANLEY: Dr. Manley's research activities involve the diagnostic specificity of prostatic acid phosphatase, an analysis by immunohistochemistry and radioimmunoassay.

DR. W.J. MACKILLOP: Dr. Mackillop's research interests are in cellular heterogeneity in human neoplasms and in the effects of hyperthermia on cell membrane function. Dr. Mackillop also has an interest in psychosocial problems in oncology.

DR. T.F. MCELLIGOTT: Dr. McElligott's collaborative studies with the Division of Gastaroenterology are progressing in developing an experimental model for chronic inflammatory bowel disease.

DR. S. NAG: Dr. Nag's research program is directed to morphologic studies designed to determine factors responsible for increased cerebrovascular permeability in hypertension. The acute hypertension model is being used in which sudden severe blood pressure elevations are produced in rats by pressor agents. Specific projects underway are: 1) the effect of locus coeruleus ablation on blood-brain barrier permeability in normotensive rats and rats with hypertension induced by angiotensin, norepinephrine and epinephrine; 2) the distribution of Ca2+ -ATPase in normal cerebral endothelium and in rats with angiotension-induced acute hypertension; and 3) quantitative studies of pinocytotic vesicles in capillaries fixed with different fixatives to determine whether the type of fixative affects the total number present.

DR. M.J. RAYMOND: Dr. Raymond has continued the development and improvement of the methodologies employed in the clinical chemistry laboratory. His research interest is in the investigation of the potential applications for computers within the clinical laboratories.

RESEARCH (continued)

DR. M.J. RAYMOND (continued): This ongoing study is concerned with the possible impact of computerization on the handling of patient data, laboratory management and resident teaching programs within the department.

DR. D.M. ROBERTSON: Dr. Robertson's research deals with the mechanisms of alteration of the blood-brain barrier to proteins in hypertension and lesions of the cerebral cortex, and the effects of various drugs on stabilizing the barrier function.

DR. H.D. STEELE: Dr. Steele, with Dr. Gorwill of the Department of Obstetrics and Gynecology, are using a mouse model to study the effects of certain hormones on cervico-vaginal development, and the relationship of these over the long term to neoplasia.

DR. S. WASAN: Dr. Wasan's research involves the following areas: study of corneal lesions by light and scanning electron microscopy in association with Dr. W.E. Willis of the Department of Ophthalmology, and study of contact lens and Timolol induced corneal lesions in rabbits, in collaboration with Dr. W.E. Willis. Dr. Wasan plans to pursue corneal research and ophthalmic pathology at Cullen's Eye Institute in Houston, Texas in September 1986, in collaboration with Dr. Ramon Font of Baylor School of Medicine in Houston, Texas.

Department of Pathology

Queen's University

List of Grants in Progress 1985-1986

Name	Agency	Amount	Title
Dr. A. Clark	MRC	$ 82,063	Steroid Metabolism and Actions
Dr. A. de Bold	MRC	50,567	Isolation and Characterization of Cardionatrins
Dr. A. de Bold	OHF	61,551	Studies on a Natriuretic Factor Isolated from heart atria
Dr. A. de Bold	NSERC	61,050	The application of biotechnology to the commercialization of cardionatrin I
Dr. B. Elliott	NCI	52,500	Self-nonself discrimination and the role of tumor-associated and major histocompatibility antigens in anti-tumor immunity
Dr. B. Elliott	MRC	51,500	Clonal analysis of cytolytic lymphoreticular cells in host defense: physiology, serology and biochemistry of effector and target interactions
Dr. T. Feltis	MRC	31,425	Ultrastructural studies in murine AA Renal amyloidosis
Dr. A. Giles	MRC	75,000	The role of phospholipid in bypassing Factor VIII (Anti-hemophilic factor) Activity and/or Inhibition <u>in vivo</u>

Dr. A. Giles	Alpha	59,870	Development of Animal Models of Hemophilic Bleeding and their response to Novel Forms of Factor VIII Replacement Therapy
Dr. A. Giles	NIH	42,720	Canine model of hemophilia with Antibodies to F VIII:C
Dr. A. Giles	OHF	45,630	The regulation of fibrinolysis
Dr. R. Kisilevsky	MRC	62,773	Molecular Pathology - liver cells
Dr. R. Kisilevsky	MRC	90,589	Amyloidogenesis
Dr. R. Kisilevsky	Bickell	15,000	High Pressure Liquid Chromatograph
Dr. S. Ludwin	MRC	37,137	Central nervous system remyelination and oligodendrocyte proliferation
Dr. S. Nag	OHF	40,987	Mechanisms of Cerebral damage in hypertension
Dr. D. Robertson	MRC	26,603	Maintenance FACS
Dr. D. Robertson	MRC	12,967	Maintenance EM
Dr. D. Robertson	MRC	41,256	Research in Cerebrovascular Disease

COMMITTEES AND EDITORIAL BOARDS

REGIONAL, PROVINCIAL AND NATIONAL COMMITTEE MEMBERSHIPS

DR. A.F. CLARK: Scientific Officer Medical Research Council Maintenance Grants Panel; Chairman, Ontario Cancer Treatment and Research Foundation Advisory Research Committee; Chairman, Queen's University Animal Care Committee; Member of Principal's Advisory Research Committee; Member of Faculty of Medicine Council; Member of Clare Nelson Bequest Fund Committee; Member of Apps Research Center Planning Committee and member of Hazardous Chemicals Committee at Queen's University.

DR. W.E.N. CORBETT: Consultant Pathologist, Ontario Cancer Treatment and Research Foundation, Kingston Clinic; Member of LPTP Committee on Hematological Morphology, Ontario Medical Association; Curriculum Committee, Faculty of Medicine, Queen's University; Kingston General Hospital Quality Assurance Co-ordinating Committee.

DR. D. DEXTER: Member, Canadian Tumour Reference Center Soft Tissue Panel; member, Curriculum Committee, Rehabilitation Therapy, Queen's University; President, Medical Staff, Hotel Dieu Hospital; member, Medical Advisory Committee Finance Committee, Quality Assurance Committee and Board, Hotel Dieu Hospital.

DR. A.J. DEBOLD: Member of Hypertension SCOR, Cornell University-National Institutes of Health; member of Canadian Heart Foundation National Study Panel Grant Reviews; member, Study Panel, Atrial Natriuretic Factor, National Institutes of Health, Washington; member, Medical Advisory Committee, Stroke and Heart Foundation of Ontario, Kingston.

DR. B.E. ELLIOTT: Representative of the National Cancer Institute of Canada on the Canadian Council on Animal Care; Genetics Supervisor of the Mouse Barrier Breeding Unit, Botterell Hall.

DR. W.A. FLETCHER: Chairman, Cytotechnology Advisory Council, Toronto Institute of Medical Technology; Vice-Chairman, Canadian Society of Cytology; member, Canadian Association of Pathologists Commission on Continuing Education; member, Board of Governors, Toronto Institute of Medical Technology; chairman, Tissue Committee, Kingston General Hospital; Chairman of Tissue Committee and Infection Control Committee, Lennox & Addington County Hospital; chairman of Tissue Committee and Infection Control Committee at Moose Factory General Hospital.

DR. P. FORD: Chairman, Rheumatoid Arthritis Protocol Committee, Canadian Apheresis Study Group (Health & Welfare); member, Canadian Apheresis Group; member, Advisory Committee Arthritis Society.

REGIONAL, PROVINCIAL AND NATIONAL COMMITTEE MEMBERSHIPS

(continued)

DR. A. GILES: Member, Advisory Committee, Canadian Hemophilia Society Ontario Chapter; member, Subcommittees for Factor IX (co-chairman) and Animal Model (chairman), International Committee on Thrombosis and Hemostasis; Chairman, Ontario Factor VIII Study Group; member, Ontario Factor Concentrates User/Fractionator Group; member, Canadian Standards Association Committee on Extracorporal Circulation; member,Medical Research Council Grants Committee for Experimental Medicine.

DR. R. KISILEVSKY: Member, Medical Research Council Pathology & Morphology Panel; member, Education Committee, International Academy of Pathology (U.S.-Canadian Division).

DR. S.K. LUDWIN: Chairman, Pathology and Morphology Grants Committee, Medical Research Council; Chairman, Specialty Committee in Neuropathology, Royal College of Physicians and Surgeons of Canada.

DR. P. MANLEY: Member, Canadian Association of Pathologists Membership Committee; member, Royal College of Physicians and Surgeons of Canada Subcommittee on Educational Objectives in General Pathology; member, Ontario Medical Association Council on Laboratory Medicine; member, Council of Ontario Association of Pathologists; Vice-President of the Canadian Association of Pathologists.

DR. T.F. MCELLIGOTT: President-Elect Canadian Association of Pathologists; Chairman, Laboratry Workload Measurement Committee - a committee of the CAP; Chairman, Medical Advisory Committee, Hotel Dieu Hospital; Chairman, Ad Hoc Endoscopy Review Committee, Hotel Dieu Hospital.

DR. W. MACKILLOP: Member, National Cancer Institute of Canadian Physics and Biology Review Panel.

DR. W. PRENTICE: Reference Pathologist, Canadian Tumour Reference Centre Skin Tumour Panel; Reference Pathologist, National Cancer Institute of Canada Clinical Trial on Immunotherapy for Malignant Melanoma.

DR. M. RAYMOND: Member, Isotope Committee and Patient Information System Task Force, Kingston General Hospital; member, Advisory Committee Medical Laboratory Technology, St. Lawrence College.

REGIONAL, PROVINCIAL, AND NATIONAL COMMITTEE MEMBERSHIPS

(continued)

DR. DAVID M. ROBERTSON: Member of Council, International Academy of Pathology; Consultant Neuropathologist, Canadian Tumour Reference Center; Consultant in Pathology, Ontario Cancer Foundation, Kingston Clinic; Past-President, International Academy of Pathology (U.S.-Canadian Division); Vice-Chairman, Postgraduate Manpower - Council of Ontario Faculties of Medicine; Chairman, Ontario Cancer Treatment and Research Personnel Committee; Secretary, Chairmen of Departments of Pathology of Canadian Medical Schools; Royal College of Physicians and Surgeons of Canada Subcommittee on Manpower; Scientific Advisor, Management Board,Canadian Brain Tissue Bank; member, Professional Affairs Committee, American Association of Neuropathology; Chairman, Medial Advisory Committee, Kingston General Hospital; member, Planning Committee, Kingston General Hospital; member, Information Services Steering Committee, Kingston General Hospital; member, Apps Research Centre Planning Committee, Kingston General Hospital.

DR. H.D. STEELE: Member, Consultant Pathology Committee, Ontario Cancer Treatment and Research Foundation; member, Laboratory Medical Test committee, Royal College of Physicians anbd Surgeons; Chairman, Ambulatory Clinics Committee, Kingston General Hospital; Member, Medical Advisory Committee, Kingston General Hospital; Member, Quality Assurance Committee, Kingston General Hospital; Chairman, Infection Control Committee, St. Mary's of the Lake Hospital; Chairman, Medical Advisory Committee, St. Lawrence College.

DR. S. WASAN: Member, Tissue and Audit Committee, Hotel Dieu Hospital.

EDITORIAL BOARDS

DR. A.J. DE BOLD:	Hypertension Journal Editorial Board
DR. R. KISILEVSKY:	Laboratory Investigation Editorial Board
DR. S.K. LUDWIN:	Journal of Neuropathology and Applied Neurobiology Editorial Advisory Board
Dr. D.M. Robertson:	Clinical Neuropathology - An International Journal Editorial Advisory Board
	Laboratory Investigation Editorial Board

SENIOR STAFF

INVITED LECTURES OUTSIDE OF KINGSTON

INVITED LECTURES OUTSIDE OF KINGSTON

DR. A. CLARK: Androgen Metabolism and Action in the Rat Prostate. Seminar presented to the Reproductive Biology Group, Department of Obstetrics and Gynecology, McMaster University, November, 1985

Talk on Androgen Production in the Hyperandrogenic Woman. Given to the Combined Endocrine Training Program Group, Department of Medicine, University of Ottawa, May, 1986.

DR. W.E.N. CORBETT: Operation of the Immune System and its Relevance to Lymphomas. Invited lecture at an International Symposium on Immunology in Clinical Medicine sponsored by the Cornwall Academy of Medicine, September, 1985.

DR. A.J. DEBOLD: Cardionatrins: Blood Pressure and Volume Regulating Heart Hormones. Symposium on Research in Action sponsored by the Heart and Stroke Foundation of Ontario, Toronto, November, 1985.

Atrial Natriuretic Peptides. Participated in an International Symposium on Atrial Natriuretic Peptides, Swiss Hypertension Workshop, Berne, Switzerland, November, 1985.

DR. B. ELLIOTT: The Role of Major Histocompatibility Antigens in Malignancy. Lecture presented at the McGill Cancer Center, McGill University, June, 1985.

Studies on the Role of Major Histocompatibility Antigens in the Immunogenicity of a Spontaneous Murine Carcinoma. Lecture presented at the Michigan Cancer Foundation, Meyer L. Prentis Cancer Center, Detroit, Michigan, December, 1985.

The Role of the Major Histocompatibility Gene Complex in Malignancy. Lecture presented to the Departmentof Immunology, University of Toronto, May, 1986.

DR. W.A. FLETCHER: Precertification Review Lectures. Cytotechnology Program on Sputum and Urine Cytology, Toronto Institute of Medical Technology, May, 1986.

DR. P. FORD: Antinuclear Factor. Lecture presented to the Canadian Society of Internal Medicine, Vancouver, September, 1985.

In Situ Immune Complex Nephritis in the Mouse; Role of Human IgM Rheumatoid Factors. Lecture presented at the Second International Milano Meeting of Nephrology, Milano, Italy, September, 1985.

INVITED LECTURES OUTSIDE KINGSTON
(continued)

DR. A. GILES: An Experimental Approach to the Evaluation of Clotting Factor replacement Therapy. Lecture presented at the Genetics Institute, Boston, Mass., October, 1985.

The Regulation of Fibrinolysis. Heart and Stroke Foundation of Ontario Research Symposium on Atherosclerosis - Pathophysiology and Prevention, Toronto, November, 1985.

Evaluation of Experimental Therapies for the Treatment of Hemostatic Disorders. Lecture presented to the Research and Development Group of Cutter Laboratories, Berkeley, California, February, 1986.

DR. R. KISILEVSKY: The Amyloids or What Progress Does to the Definition of Disease. Lecture presented in the Department of Pathology, University of Alberta, Edmonton, Alberta, January, 1986.

Visiting Research Scientist in the Department of Rheumatology Institute of Clinical Medicine, University of Tromso, Tromso, Norway, August, 1985.

Rapid Changes in Glucose Metabolism Following the Administration of Ethionine: Its Role in Regulating Hepatic Protein Synthesis. Presented at the Third Sardinian International Meeting on Agents and Processes in Chemical Carcinogenesis, Cagliari, Sardinia, Italy, October, 1985. Dr. Kisilevsky was also Chairman of the session on Xenobiotics and Cell Interaction.

DR. D.M. ROBERTSON: Control of the Blood Brain Barrier. Participated in the seminar series at Vancouver General Hospital and was Visiting Professor in the Department of Pathology, University of British Columbia, November, 1985.

GUEST LECTURERS

DEPARTMENT OF PATHOLOGY 1985-1986

VISITING LECTURERS

DEPARTMENT OF PATHOLOGY

1985-1986

The department has continued to provide seminars and lectures for continuing education of the staff and residents. During 1985-1986, we have hosted the following lecturers:

"Platelet Immunofluorescence in Thrombocytopenia: Is It Clinically Relevant?"
Dr. Albert von dem Borne, University Hospital in Amsterdam and The Dutch Red Cross Blood Transfusion Service

"Morphologic Differentiation in Organotypic Cultures of Central Nervous System"
Dr. Walter Hendelman, Professor of Anatomy, University of Ottawa

"Differences in the Representation of the Trajectory of Limb Movements Between Neurons in Motor and Parietal Cortex"
Dr. John Kalaska, Assistant Professor, University of Montreal

"Modification of Tumor Cells for Induction of their Immunological Regression"
Dr. Hiroshi Kobayashi, Hokkaido University School of Medicine, Sapporo, Japan

"The Effect of Hyperthermia on Cell Membrane Structure and Function"
Dr. W.J. Mackillop, Assistant Professor, McGill Cancer Center and Department of Radiation Oncology, Royal Victoria Hospital, Montreal

"Cellular Mechanisms of Myelin Formation and Breakdown"
Dr. Henry Webster, Chief of the Laboratory of Experimental Neuropathology, National Institutes of Health, Bethesda, Maryland

"Biochemical Basis of Ischemic Cell Damage"
Dr. Sydney Finkelstein, Department of Pathology, Hahnemann University, Philadelphia

"Cardiomyopathies"
"Heart and Lung Transplantations: The Stanford Experience"
Dr. Margaret Billingham, Associate Professor of Pathology, Stanford University Medical Center, Stanford, California
Dr. Billingham was a Visiting Woman Scholar sponsored by Queen´ Quest.

"The Genetics of Hemophilia"
Dr. Ian Peake, Principal Scientist, Department of Hematology, University of Wales, Cardiff, U.K.

"A Novel Mechanism of Immune Complex Injury"
Dr. Peter Ward, Professor and Chairman, Department of Pathology, University of Michigan Medical School

"Cell Surface Glycopeptides from Human Normal and Malignant Colonic Epithelial Cells"
Dr. Annette Herscovics, Associate Professor, McGill Cancer Centre, Montreal

"Molecular Basis of Viral Neurovirulence"
Dr. Alan Jackson, Department of Neurology, Johns Hopkins University, Baltimore

"Alcohol, Nutrition and the Liver"
Dr. E. Rubin, Chairman, Department of Pathology, Hahnemann University School of Medicine

"Opiate Peptides in Adrenal Paraneurons"
Dr. Simon Lemaire, Department of Pharmacology, University of Sherbrooke

"Molluscan Model for Studies of Olfaction"
Dr. Ronald Chase, Department of Biology, McGill University

"Substance P in Primary Sensory Afferents: Possible Physiological Function"
Dr. Rejean Couture, Department of Neurosciences, University of Montreal

"Electron Microscopy - Fact or Artifact"
Dr. Mary Richardson, Assistant Professor, Department of Pathology, McMaster University

"Studies of Mammalian Sound Localization"
Dr. J.B. Kelly, Department of Psychology, Carleton University

"Axonal Guidance in Neurogenesis: Molecular Mechanisms Subserving Neuronal Interaction with the Extracellular Milieu"
Dr. Richard Riopelle, Department of Medicine, Queen's University

"Circulating Anti-coagulants and Systemic Lupus"
Dr. B. Colaco, Northward Park Hospital, Middlesex, England

"Regional Heterogeneity of Motor Function in Rat Striatum"
Dr. Michele A. Pisa, Department of Neurosciences, McMaster University

"Lipid-Associated Glomerular Disease"
Dr. Alexander B. Magil, Associate Professor, Department of Pathology, University of British Columbia, Vancouver

"Brain Microvessel Neurotransmitter Receptors and Blood-Brain Barrier Transport Mechanisms, in vitro Studies"
Dr. S. Harik, Professor of Pharmacology and Neurology, Case Western Reserve University School of Medicine, Cleveland

"How do Seizures Start?"
Dr. Charles P. Taylor, Parke-Davis Research Division, Werner-Lambert, Ann Arbor, Michigan

"Tumor Markers and Differentiation Markers"
Dr. S. Jothy, Department of Pathology, McGill University

"Pathology of Adult Respiratory Distress Syndrome"
"Pathogenesis of Asthma"
"Pathophysiology of Chronic Obstructive Lung Disease"
Dr. James Hogg, Professor of Pathology, University of British Columbia and Director of the Pulmonary Research Laboratory, St. Paul's Hospital, Vancouver
Dr. Hogg was a Medical Research Council Visiting Professor in the Department of Pathology and was co-sponsored by the Respiratory Division of the Department of Medicine in a seminar involving case presentations.

"Controlling Factors in Epithelial Renewal"
Dr. Gabriel Altmann, Department of Anatomy, University of Western Ontario

"Mechanisms of Cartilage Destruction in Rheumatoid Arthritis"
Dr. D. Cooke, Department of Surgery, Queen's University

"Mechanisms of Ventilatory Impairment at Elevated Lung Volumes"
Dr. Steve Iscoe, Department of Physiology, Queen's University

PRESENTATIONS BY SENIOR STAFF

PRESENTATIONS

DR. A. CLARK: Clark, A.F., Orlowski, J. Androgens and Immature Rat Ventral Prostate (RVP) Cell Culture Proliferation and Acid Phosphatase Production. Presented at the III International Congress of Andrology, Boston, MA, 1985.

DR. A. CLARK: Clark, A.F., Orlowski, J. Androgen Metabolism and Actions in Rat Ventral Prostate. Presented at the Canadian Federation of Biological Sciences, Prostate Symposia #19, Toronto, 1985.

DR. A. CLARK: Orlowski, J., Clark,A.F. Selective inhibition of 5α - reductase activity in rat ventral prostate epithelial and stromal cells by 17α-N,N-diethylcarbamoyl-4-methyl-4-aza-5α-androstan-3-one (DMAA). Poster presentation at the Canadian Federation of Biological Sciences, Toronto, 1985.

DR. A. CLARK: MacDonald, G., Clark, A.F. and Flynn, T.G. Functional and immunological relationships among rat aldehyde reductases. Presented at the Canadian Federation of Biological Societies 28th annual meeting,Toronto, 1985.

DR. A. CLARK: Clark. A.F., Orlowski, J. Estrogen metabolism and effects of cell proliferation by rat ventral prostate epithelial and stromal cells in culture. Presented at the Laurentian Hormone Conference, Alberta, 1985.

DR. A. CLARK: Clark,A.F. and Orlowski, J. Effects of steroid inhibitors on androgen metabolism in rat ventral prostate epithelial cell cultures. Presented at the Canadian Fertility and Andrology Society meeting, Val David, Quebec, 1985.

DR. A. CLARK: Clark, A.F. An overview of current techniques in use in the clinical chemistry laboratory. Presented at the 68th Canadian Chemical Conference, Kingston, Ontario, 1985.

DR. A. DEBOLD: de Bold, A.J. Atrial Natriuretic Factor. First International Symposium on Atrial Natriuretic Factor. Clinical Research Institute of Montreal, Montreal, Canada, March, 1986.

DR. A. DEBOLD: de Bold, A.J. Atrial Natriuretic Factor, 70th Annual FASEB Meeting, St. Louis, Missouri, April, 1986.

DR. A. DEBOLD: de Bold, A.J. Atrial Natriuretic Peptides. First Annual Meeting, The American Society of Hypertension and the First World Congress on Biologically Active Atrial Peptides, New York, May, 1986.

PRESENTATIONS
(continued)

DR. B. ELLIOTT: B. Elliott. Increased Expression of Class I MHC Antigens on Immunogenic Variants of a Spontaneous Murine Carcinoma. Gordon Conference on Cancer, August, 1985.

DR. A.R. GILES: Giles, A.R. Type IIb von Willebrand's Disease (vWD) Presenting as a Lifelong Bleeding Diathesis Associated with Chronic Thrombocytopenia and Spontaneous Platelet Aggregation (SPA). Presented at the Xth International Congress of the International Society of Thrombosis & Hemostasis, San Diego, California, July, 1985.

DR. A.R. GILES: Lillicrap, D.P., Ford, P. and Giles, A.R. Association of von Willebrand Factor (vWD) with Immune Complexes (IC) in a Patient with Post-Transfusional Purpura (PTP). Presented at the Xth International Society of Thrombosis & Hemostasis, San Diego, July, 1985.

DR. A.R. GILES: Giles, A.R., Nesheim, M.E., Hoogendoorn, H. and Tinlin, S. A Fibrinolytic Deficiency State Induced by Hypoxia and Associated with Increased Levels of an Inhibitor to Tissue Plasminogen Activator (TPA). Presented at the Xth International Congress of the International Society of Thrombosis & Hemostasis, San Diego, California, July, 1985.

DR. A.R. GILES: Mertens, K., Giles, A.R. and Briet, E. Assessment of Factor VIII-Bypassing Activity of Factor VIIa in a Canine Model of Hemophilia. Presented at the Xth International Congress of the International Society of Thrombosis & Hemostasis, San Diego, July, 1985.

DR. A.R. GILES: Giles, A.R. and Kisilevsky, R. Serum and Tissue GAG Changes During Experimental Amyloidosis - Do They Play a Role in Factor X Metabolism? Prsented at the Xth International Congress of the International Society of Thrombosis & Hemostasis, San Diego, July, 1985.

DR. A.R. GILES: Giles, A.R., Nesheim, M.E., and Mann, K.G. Factor VIIIC Bypassing Activity (FEBA) In Vivo, Mediated by a Combination of F.Xa and Coagulant Active Phosphilipid (PLC) Associated with an Increase in Prothrombin A Supporting Activity of Circulating Platelets. Accepted for presentation at the XXI Congress of the International Society of Hematology and the XIX Congress of the International Society of Blood Transfusion, Sydney, Australia, 1986.

DR. A.R. GILES: Vandervelden, P. and Giles, A.R. A Detailed Electron Microscopic Analysis of the Morphology of the Hemostatic Plug in Normal, Factor VIII Deficient and Factor VII Deficient Dogs. Accepted for presentation at the XXI Congress of the International Society of Hematology and the XIX Congress of the International Society of Blood Transfusion, Sydney, Australia, 1986.

PRESENTATIONS
(continued)

DR. R. KISILEVSKY: R. Kisilevsky and A. Lyon. Rapid Changes in Glucose Metabolism Following the Administration of Ethionine. Third Sardinian Meeting on Agents and Processes in Chemical Carcinogenesis, Cagliari,Italy, October, 1985.

DR. R. KISILEVSKY: A. Snow, G. Rae, A.R. Giles and R. Kisilevsky. Serum and Tissue Glycosaminoglycans in Experimental Amyloidosis. Do they Play a Role in Factor X Metabolism? Presented at the International Society of Thrombosis and Hemostasis, Xth Congress, San Diego, California, July, 1985.

DR. R. KISILEVSKY: A. Snow, R. Kisilevsky, J. Willmer. Sulphated Glycosaminoglycans, a common constituent of all Amyloids. Its Potential Significance. Presented at the 27th annual National Student Research Forum, Galveston, Texas, April, 1986.

DR. R. KISILEVSKY: A. Snow and R. Kisilevsky. Plasma and Splenic Glycosaminoglycans During Experimental Amyloidosis and Acute Inflammation. FASEB, St. Louis, Missouri, April, 1986.

DR. R. KISILEVSKY: J.P. Willmer, A.D.Snow, R. Kisilevsky (sponsored by Dr. S. Ludwin). The Demonstration of Sulfated Glycosaminoglycans in Association with the Amyloidotic Lesions of Alzheimer's Disease. Presented at the 62nd annual meeting, American Association of Neuropathologists, Minneapolis, June, 1986.

PUBLICATIONS

DEPARTMENT OF PATHOLOGY 1985-1986

PUBLICATIONS

In Vivo Studies of the Role of Factor VII in Hemostasis
Alan Giles, Shawn Tinlin, Lorraine Brosseau, Hugh Hoogendoorn
Blood Vol 65 (5): 1197, 1985

Acetaminophen-Induced Hepatotoxic Congestion in Mice
Robin M. Walker, William J. Racz and T. Francis McElligott
Hepatology Vol 5 (2): 233, 1985

Ultrastructural Localization of Monosaccharide Residues on Cerebral Endothelium
Sukriti Nag
Lab Invest 52 (5): 553, 1985

Intermediate Glial Cells and Reactive Astrocytes Revisited: A Study in Organotypic Tissue Culture
D. Munoz-Garcia, S.K. Ludwin
J. Neuroimmunology 8: 237, 1985

Temporal Relationship between Glycosaminoglycan Accumulation and Amyloid Deposition during Experimental Amyloidosis: A Histochemical Study
Alan D. Snow, Robert Kisilevsky
Lab Invest 53 (1): 37, 1985

Effect of Digitoxin on Vaginal Epithelial Differentiation in the Balb/c Mouse
R. Hugh Gorwill, Howard D. Steele
Biol Neonate 48: 110-113, 1985

Acutane-induced teratogenesis: Case Report
R. Robertson, P.M. MacLeod
Can Med Assoc J 133: 1147, 1985

Distribution of Lectin Receptors on Cerebral Endothelium
S. Nag
IN: Brain Edema, Edited by Y. Inaba et al.,
Springer-Verlag, 1985, p. 120

Acute Stages of Batrachotoxin Induced Neuropathy
G.R.W. Moore, R.J. Boegman, D.M. Robertson
J. Neurocytology Vol. 15, 1986