

**ANNUAL NEWSLETTER
QUEEN'S PATHOLOGY ALUMNI GROUP (QPAG)**

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**Department of Pathology, Queen's University
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1. FOREWORD

- The first Annual Newsletter of the Queen's Pathology Alumni Group (QPAG) was mailed from the Department to some 300 members in August 2001.
- The "Feedback", whether in writing or conveyed orally, was sufficiently enthusiastic (encouraging) for the embarking on the continuation of this annual endeavour (see Table).

The Editors invited the readers to convey to them any corrections or omissions of the No. 1 Newsletter, but none of the (35) replies contained rectification of data provided in it. Thus it is (happily!) assumed that all information was largely correct.

- The Editors of the August 2001 – NEWSLETTER agreed to continue with this task for the 2002-year, expecting however that at the forthcoming QPAG-Reunion in Kingston (September 21,22, 2002) at a formal meeting of the "Group" a new Editor will be assigned to take over as of 2003, in addition to the establishment of a Nominating Committee for an Executive (which will draft the necessary items for the governing and function of the QPAG; see: Annual Newsletter No. 1, p. 12, second paragraph).
- The period of Departmental activities covered in this, the 2nd Annual Newsletter, spans the time from July 1st 1967 to June 30, 1991, i.e., a total of 24 years of the Departmental history. It ends just prior to the major redesigning and reconstruction of the Richardson Laboratory.
- The format of this Newsletter will follow largely that of the 1st Annual, 2001-issue, with two modifications:
 - a) As many alumni expressed the wish to learn more of the present-day activities in the Department, a summary-report will be included in the current issue (kindly provided by Dr. Paul Manley).
 - b) A novel segment (section) reflecting a special area of the past and/or present departmental expertise and scientific contributions will be added. The Editors invited Dr. Juan Lechago to provide such (first) account on the scientific developments under the leadership of Dr. Sergio Bencosme. Dr. Lechago was in the Department from 1966 to 1973, and studied under Dr. Bencosme's supervision for his MSc and PhD degrees. Areas of similar importance will be addressed in future NEWSLETTERS.
- In view of the above two modifications the accounts of the 24 years of departmental activities will be presented in a more global rather than detailed manner. This will be particularly evident in the presentation of the Faculty. Since 1967 the size of the Department in terms of its staff grew considerably and thus, documenting the "comings" and "goings" of the many members would extend the length of this Newsletter considerably (some alumni pleaded for a shortened version). However, an effort is being made in a separate "project" to compile the names of all Faculty members, their time spent in the Department, and their ranks on joining and on leaving; this "register", when

completed, will be available in the Departmental Archives. A similar “register” will be compiled for residents, fellows and graduate students.

- To achieve the best balance and the most accurate accounts for the period of the 24 years, the Editors addressed themselves for assistance to all three chairmen of the Department of the above period. It is with much gratitude that the kind cooperation in providing these accounts by Drs. Nathan Kaufman, David Robertson and Robert Kisilevsky, is acknowledged.
- The Editors wish to express their appreciation also to the many other colleagues who provided valuable information.
- A special word of appreciation is due to the current Chairman of the Department, Dr. Paul Manley, for his continuing encouragement and support provided by himself, Mrs. Barbara Latimer, Mr. Lloyd Kennedy and other Staff members.

Kingston, June 14, 2002

Abbreviations and Key

KGH	-	Kingston General Hospital
HDH	-	Hotel Dieu Hospital
QU	-	Queen’s University
DP	-	Department of Pathology at Queen’s University
QPAG	-	Queen’s Pathology Alumni Group
RL	-	Richardson Laboratory
NCIC	-	National Cancer Institute of Canada
DW	-	Douglas Wing at KGH
OCI	-	Ontario Cancer Institute
CIHR	-	Canadian Institutes of Health Research
NSERC	-	Natural Sciences and Engineering Research Council
AP	-	Anatomic Pathology
*	-	by Editors’ invitation

2. ADDITIONAL HISTORY OF PRE-1967-PERIOD

A. RICHARDSON LABORATORY

Dr. James Cameron Connell was appointed Dean of Medicine at Queen's in 1903 and was determined to bring Queen's into the "microscopic age". In 1917, when the American Medical Association accredited Queen's Faculty of Medicine with a "C" rating, two of the main criticisms were that Kingston General Hospital (KGH) was too old and small, serving too small a community and that there were no laboratories.

Dean Connell drew up plans to suitably modernize the hospital but Principal Bruce Taylor felt that such changes would be too expensive and that all funding available for university expansion would be used up.

In 1920 Principal Taylor suggested at a public meeting at city hall and to a medical education committee of the university board of trustees, that as a new Civic Hospital was built in Ottawa, it would be better to locate there the clinical years of the study of medicine. There was an uproar from the medical community and from the general public, Dean Connell threatened to resign and pointed out that he had already raised significant sums of money (\$100,000 from Chancellor Douglas and \$100,000 from Senator Henry Richardson) for the expansion and renovations. The city of Kingston even put up \$150,000 to keep the school in Kingston so the trustees' committee recommended against the move to Ottawa.

A \$5,000,000 fund had been established to "improve and develop the leading medical schools of the Dominion" (Toronto and Montreal). Queen's was rejected as being too small, however the provincial government relented and recognized Queen's for providing education to "men of moderate means and keen intellectual ambition".

Construction of the new hospital Douglas Wing (DW) began, with the usual cost overruns. Funding was augmented by further provincial grants and by a donation from the estate of Sir Alexander Campbell. A gift of \$80,000 to establish a pathology laboratory was made by Mrs. Alice Richardson; it was built at the same time.

Thus on 16 October 1924, the DW and the Richardson Laboratory (RL) were officially opened. The hospital wing contained patient beds and some services. In a sunken area of the first floor, the RL had "an autopsy theatre with a refrigerated mortuary attached", and the basement had a large lecture amphitheatre "with a special lantern for the projection of microscopic slides" seating a hundred persons. The first floor housed the pathology museum and specimen preparation rooms. The second (top) floor housed a large pathology student laboratory, the Public Health Laboratory, the clinical chemistry laboratory and small laboratories for the professor and his assistants.

In 1926, Mrs. Alice F. Richardson established a Fellowship in Clinical Pathology to allow a senior intern to study the correlation of clinical medicine with the findings from the Pathology and clinical chemistry laboratories. A further gift from her estate in 1929 established a trust fund, one function of which was to provide assistance to the Fellows. Many young pathologists, either in training or at the graduate level, took advantage of this Fellowship to study abroad. Since 1967 there has been no record of the Fellowship or the related trust fund.

When Dr. John Hamilton was Head of DP in the late 1940's, the museum was moved to the basement and replaced by a library/meeting room and offices for the Head, secretaries and residents.

In 1960, major renovations began during the tenure of Dr. Robert More. Two additional floors were added, with a large library/meeting room, pathologists' and secretarial offices, small

special labs on the top (5th) floor, and electron microscopes and research labs on the 4th floor. A completely new autopsy suite was built in the basement, consisting of two rooms accommodating three tables, with space and seating for autopsy conferences. Seminar rooms for student teaching and more research labs were also added throughout the building. The renovations were completed and the building officially opened in 1962.

All floors were connected to the DW, and since renovations were also going on there, the result was a joint clinical laboratory/research operation. While the cost of changes to RL are not available, the cost for the joint project was the sum of \$1,435,000.

B. THE DOUGLAS WING OF KGH

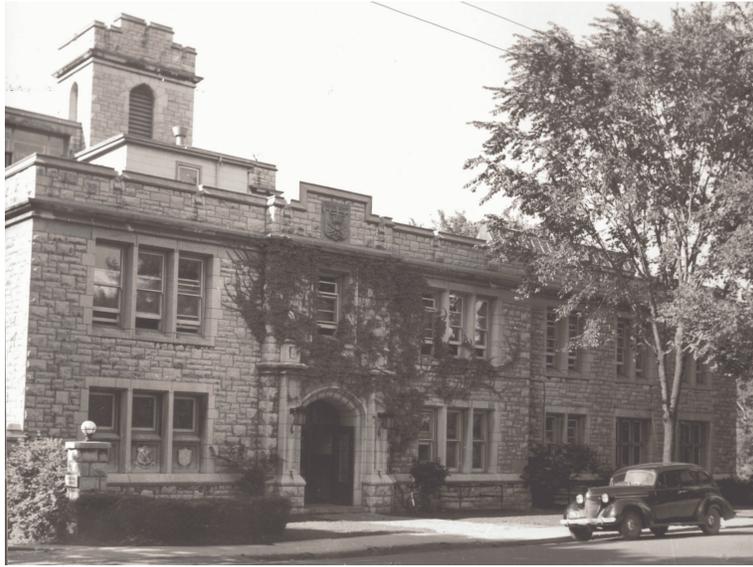
This Wing was built for patient care and services at the same time as the RL, and while both were connected, the latter was a University building. Despite that, it also provided pathology services for KGH. When space became insufficient however, expansion began into the adjacent DW. The first laboratory moving into DW was the Blood Bank which was located on Douglas 1. By 1958 it was too small and as there was no room for expansion, it was moved to the only nearby available space behind the Watkins Wing, off the passage between Nickle and the Douglas-Empire corridor of the KGH.

There were no other “invasions” into DW until the major expansion of the Department in the early 1960’s, when most of Douglas 4 and all of the new Douglas 5 were converted to laboratory use. The latter contained a specimen reception and communication center, haematology and cytology labs, blood bank, the tissue/processing areas, and space for residents, some pathologists and secretarial service. Douglas 4 also housed staff, Microbiology and Biochemistry labs, and the clean-up and sterilization area.

In the early 1980’s when space became available on Douglas 1, an excellent Autopsy suite and Biochemistry laboratory were built there; Cytogenetics moved to Douglas 4, Diagnostic Cytology to Douglas 2 and the Blood Bank to Douglas 3.

N.B. The history of the DP at the Hotel Dieu Hospital (HDH) prior to its “merging” with the Department at the KGH will be provided in one of the subsequent ANNUAL NEWSLETTERS of the QPAG.

Richardson Laboratory



3. DEPARTMENTAL STATUS: 1967-1991

A. AN OVERVIEW

During this 24-year-period the Department was lead by three chairmen and (briefly) by an acting chairman.

The initial period after Dr. More's departure for McGill's Department of Pathology was characterized by a time of national hope and promise for health care, education and research following the recommendations of the Royal Commissions. New resources were made available by all levels of governments intended to improve rapidly the status quo and committed to imaginative innovation.

Dr. Nathan Kaufman (1967-1979), who succeeded Dr. More as the Chairman, took full advantage of the opportunities for new resources to innovate, develop and expand the Department.

Thus, some of the space in RL was redesigned to meet new needs and allow for the expansion of research facilities. Whereas the teaching space was reduced, there was no negative impact on the content or hours of teaching. More space became available at KGH to accommodate the new technologies in service laboratories. These innovations opened up the possibility of establishing a Cancer Research Group in the Department. It quickly outgrew that space and expanded into the newly built research "Building C" on the campus (later renamed). Soon, even this expansion was not sufficient, but other available space on campus was not appropriate or adequate to meet the growing needs of this group. After extensive negotiations, and with the strong support of the Dean of Medicine, funds for the construction of the needed space in Botterell Hall were made available by the Ontario Division of the Canadian Cancer Society. Thus, the entire "Cancer Research Group" could be housed in one compact facility (with the exception of the cesium irradiator that remained in Building C). The official opening of the new Cancer Laboratories was on October 21, 1978.

Whereas two faculty members departed on Dr. More's leaving (Dr. Shao-nan Huang for McGill; Dr. M. Daria Haust for the University of Western Ontario) many more were added in that period to those who remained in the Department (see No. 1 ANNUAL NEWSLETTER; 2001).

At the KGH/Queen's Campus the first addition to the faculty was the late Dr. Michael Axelrad, who took on the responsibility for the Blood Bank, and whose research activities concentrated on the subject of amyloidosis. The appointments of Drs. Robert Kisilevsky, Samuel Ludwin, Paul Manley, Al Fletcher, Subash Ramchand, Sue Nag, Herbert Manz and Frank Crussi followed thereafter at different times. The Cancer Group, under the Directorship of Dr. Kaufman, was initiated with two recent graduates of the O.C.I. Program, who had just completed postdoctoral fellowships in Australia, i.e., Drs. Steven Haskell and James Kennedy. They were joined by Dr. John Marbrook, a postdoctoral fellow from New Zealand (who resigned later to return to his homeland). Drs. Ralph Mankovitz, Robert Kerbel and Bruce Elliott joined the Group later, as did Dr. Hugh Pross whose primary appointment was in the Ontario Cancer Treatment and Research Foundation (OCTRF) with a joint appointment in Pathology.

At HDH the "core" of Pathologists, i.e., Drs. Frank McElligott and Robert Prentice were soon joined by Drs. Santosh Wasan, David Dexter, Peter Neame and Adolfo de Bold.

During this period the clinical laboratories at KGH and HDH were supervised by colleagues, who may have held primary appointments in the Departments of Biochemistry or

Microbiology & Immunology, i.e., Drs. Gloria Delisle, Albert Clark, Michael Raymond, Paul Chadwick, Eileen Crowe and Ellen van der Hoeven.

The number of residents grew steadily in this period. In the last year of Dr. Kaufman's Chairmanship (1978-1979) there were 21 residents in Pathology with additional residents on rotation from the departments of Medicine, Surgery and Obstetrics and Gynaecology.

A Staff-Student Liaison Committee was established consisting of three staff members and three students chosen by their peers. This Committee met regularly during the academic year at a luncheon in order to review all course offerings, relevance of material covered in class and examinations, and to evaluate each section of teaching. It also attempted to identify areas of excellence as well as deficiencies, reviewed students' complaints and recommendations, and served as a means of addressing potential problems by taking corrective action without delay.

Mr. Gerald Hagan (appointed by Dr. More in 1960), the outstanding Administrator of the Department, and Mrs. Anna Northcott, the competent Executive Secretary were instrumental in ensuring the continuity, efficiency in management and effective operation of the Department. In 1973 Mr. Hagan was succeeded by Mr. Wallace Hill.

In the early seventies, the DP played a pivotal role in the establishment of a new research and education facility, named "Instituto de Estudios Biomédicos (IEB), under the aegis of the Universidad Nacional Pedro Enríquez Urena in Santo Domingo, Dominican Republic. This was achieved through the tireless efforts of the departmental member, Dr. Sergio A. Bencosme and his staff, with the support of the academic and administrative authorities of Queen's University, especially Vice-Principal (Health Sciences), Dr. Garfield Kelly. The modern facility, the only one of its kind in this Caribbean nation, was built, equipped and staffed with funds from the Canadian Institute for Development Abroad (CIDA) and, to a lesser degree, from the Dominican government. The IEB initiated its mission with twelve full-time staff members in July 1973, and its inauguration was attended by numerous representatives of the Dominican Republic and Canada, including Queen's Dean of Medicine, Dr. Douglas Waugh, Dr. Garfield Kelly and Pathology Chairman Dr. Nathan Kaufman. During 1973-1974, Dr. Bencosme took a year of sabbatical leave from Queen's to become the first director of this facility, a position he held until 1977.

Dr. David M. Robertson (1979-1986), who succeeded Dr. Kaufman as Chairman, was facing a period different from that of the preceding decade, as the prevailing feature affecting the Department was that of fiscal restraint. Queen's University was under considerable pressure to upgrade some of the externally criticized clinical departments and the Deans decided to divert the resources from the budgets of the strong DP to remedy the above shortcomings. The departmental budgets were first frozen and the funding was subsequently reduced.

Kingston General Hospital experienced in this period considerable financial cutbacks. It faced major bed-closures, and many new requirements for accountability, productivity and quality assurance imposed by government. All these developments added to the complexity and cost of laboratory operations.

There were a number of Faculty changes in this period, particularly in the Cancer Unit as some members left and others joined it. Drs. G.F. Kipkie and John Wyllie retired and Dr. Howard Steele became the Director of Laboratories. The appointments that had a lasting influence on the Department were those of Drs. Alan Giles and David Lillicrap in Haematopathology, Jeannette Holden in Cytogenetics and William MacKillop in the NCIC-unit.

All had cross-appointments in corresponding clinical departments and developed strong research programs.

The Departmental Administrator, Mr. Norman Meyers, who replaced Mr. Wallace Hill in 1982, left in April 1986 to assume an administrative post at KGH and was succeeded by Mr. David Piper in July of the same year.

Major revisions of all residency programs took place in this period with emphasis on objectives, structured teaching and in-service examinations. The General Pathology programs were upgraded, although those in Haematopathology and Microbiology were largely inactive, and there was no program in existence in Clinical Biochemistry. The DP had an excellent record of RCPSC-evaluations and examinations; many of the present senior hospital pathologists of Ontario were residents in the Department of this era.

The number of undergraduate curriculum hours in Pathology was reduced and the era of coordinated teaching with clinical departments began; it was well-received.

At the graduate level, the departmental emphasis shifted from education of academic pathologists to graduates in the life sciences, particularly those in cancer research. This was a regrettable but necessary change of the Department's tradition dictated by the funding problems and lack of opportunities in universities across Canada. Also, because of the growing discrepancy in income between academic and hospital pathologists many residents in Pathology recognized that their future was in a hospital laboratory rather than a university. The recruitment of suitable life sciences students for the graduate programs was very successful with courses and research programs designed for their specific career goals.

In addition to the existing research activities (amyloidosis, neuropathology), other major new programs were developed in haematology (establishment of a colony of hemophilic dogs) and cytogenetics. The NCIC-cancer group continued its expansion and assumed an increasing autonomy in determining its own direction. All research programs were adequately supported by grants-in-aid from various sources.

There were no significant structural changes to the RL, and only some renovations/improvements to the NCIC's unit to allow installation of new equipment. After considerable deliberations, the KGH-Board committed itself to upgrading the DW. Thus, an excellent new autopsy facility was established and a new Biochemistry Laboratory was built on Douglas I. Minor renovations, largely required for safety reasons, were carried out in other laboratories. The remaining planned renovations to the DW were delayed by funding problems.

The hospital laboratories, both of KGH and HDH, had an excellent reputation regarding their efficiency, high quality and educational contributions to the residents' and technologists' programs. A strong technology-training program was established with St. Lawrence College. Considerable automation, acquisition of modern equipment, beginning of computerization, upgrade in technology and procedures in all laboratories, and staff safety training, all were features of that period.

The faculty and residents were encouraged and provided opportunities to enhance the already established reputation of the Queen's University Department of Pathology by presentation of papers, and by participation in and contribution to national and international scientific events. Faculty members served on committees of RCPSC, MRC, International Academy of Pathology, CAP, OAP, and others.

In 1982, an alumna of the Department who, following her residency years, was also a faculty member, Dr. M. Daria Haust, approached the Chairman with an offer to establish a Trust Fund for the departmental benefit of his choice. Seeing the need for support of continuous

education of faculty members, he selected that area for financial assistance by the proposed Fund. Following his discussions with Dr. Haust and clarifications with the then Dean of Medicine (Dr. Laurence Wilson), the Trust Fund was established in 1983 with Terms of Reference and Guidelines. Amongst the latter was the explicit specification of the donor's wish that her and the Trust Fund's name remain undisclosed and be known exclusively to the Chairman and Dean of Medicine. Since its establishment, many educational endeavours of faculty members were supported by this Fund. (N.B. this anonymity ceased in 1999).

Dr. Howard Steele (1986) served for four months as the Acting Chairman of the Department at Queen's University after Dr. David Robertson stepped down. In this short period he was able to introduce several innovations to the Department either to "keep-up" with times or improve some of its activities. Amongst these two changes were of particular note: microscopes no longer were used in the students' laboratory session (the tissue changes were, instead, illustrated by photographic images) and the "routine" Clinical-Pathological Conferences were replaced by a special format, which required an invited speaker to participate.

Dr. Robert Kisilevsky (1986–1991). Throughout Dr. Kisilevsky's chairmanship, the DP was housed in RL, the Douglas Wing and the Syl & Molly Apps Research Centre at KGH, the Centennial Wing of HDH and the Third Floor of Botterell Hall. However, the outstanding successes in research of this period "precipitated" problems because of a lack of space and infrastructure (as well as the necessary support from the university). Adequate research space was not available to meet the growth of investigative activities. Funds obtained from two research-supporting agencies for five additional faculty members could not be utilized because the lack of space prevented the recruitment of the researchers. The RL was in a "sad" condition with a failing elevator, and leaks of roof and gas. Despite the 1989-repairs, a portion of the roof blew off in 1990. Similarly, the secretarial and administrative support was inadequate to meet the considerably increased activities in research and teaching (vide infra). It was necessary to use funds earmarked for research as a stop-gap measure, totally unacceptable, but the only available move.

Notwithstanding the above shortcomings the departmental activities and its stature at the University, nationally and internationally, continued to grow considerably in this period. At the undergraduate level the teaching included that of medical, Rehabilitation Medicine and Life Sciences students. The Department represented a testing site for a computer assisted curriculum delivery system for teaching General Pathology, a program developed by the National Library of Medicine, Bethesda, Maryland, USA. Acquisition of videodiscs and computer programs for self-instruction that began in 1985 was completed in 1990. This material was available to students at the Bracken Library (Botterell Hall). The medical students rated Pathology teaching in 1987 amongst the top courses offered. The Staff-Student Liaison meetings continued to be useful in improving the teaching and communications on its various aspects.

At the graduate level the Department continued offering programs for MSc and PhD degrees. These included the previously established course in Cancer Biology and the newly introduced course in 1987 and another in 1990 (Human Molecular Diagnosis, co-sponsored by Paediatrics). The enrolment in the graduate program escalated during this five-year period. In 1985-86 five Master's and two PhD students were enrolled in the programs, whereas in 1990-1991 ten Master's and five PhD students enrolled. In 1989 the Appraisals Committee of the Council of Ontario Universities evaluated the Master's and Doctoral programs in the Department

and accredited both with an “A” rating. In addition to the weekly Departmental Seminars serving as the forum for the students’ research presentations, an annual joint Queen’s University/University of Toronto Pathology Graduate Student Seminar was introduced for that purpose in 1988. Over two hundred inquiries regarding the graduate program were processed in 1989-1990, but only a few of these were submitted by students in pathology or MDs, a trend that began in the previous period (1979-1986).

Four postgraduate programs of the Department (General, Anatomical, Hematological and Neuro- Pathology) were accredited by the Royal College of Physicians and Surgeons of Canada (RCPSC) in this period, and the training was rated as one of the top two amongst all Pathology programs in Canada. Since 1986 a total of 22 out of 23 residents in the DP at QU have passed their RC-fellowship examinations. Between the 2nd and 4th year each resident in Pathology was expected to be involved in a research project in Anatomical/Clinical Pathology or in basic research. Residents from other departments continued rotating through the DP. Since 1986 four were from Medicine, eight from Obstetrics/Gynaecology, and one from Oncology.

Research within the DP was divided since 1986 into five areas of strength:

- (1) Cancer Research – strengthened since 1986
- (2) Haemostasis and Thrombosis – reinstated as a Heart and Stroke Program in 1989
- (3) Neuropathology – ongoing long prior to 1986
- (4) Molecular Genetics – established in 1987
- (5) Amyloid and Alzheimer’s Disease – considerably increased in activities in 1988.

The DP was uniquely successful in obtaining research funding that increased twice during the period since 1985 and amounted to a total of \$11,259,403.

The existing “Outreach Program” of laboratory services of the DP to hospitals of Eastern Ontario was considerably expanded since 1987. In addition to those of Napanee, Moose Factory and St. Mary’s of the Lake it was introduced to Smiths Falls Community, Prince Edward County Memorial, and Kingston Psychiatric Hospitals. Consultations were also provided in certain areas to Belleville General, Brockville General and Trenton Memorial Hospitals. These services allowed for extending the Queen’s presence and influence in a wide geographic sphere, generated some discretionary funds for the DP and offered the residents in Pathology the opportunity to experience the practice in laboratories in a non-tertiary care setting.

However, continuing budget cuts by both the University and Hospital(s) have forced the DP to use the so generated income (as well as the research funds) for activities that should have been supported by both institutions. The resulting adverse effect on Faculty morale no doubt endangered the status of excellence of the DP.

A number of the Faculty received in that period distinctions and awards. Dr. Bruce Elliott was named the Terry Fox Research Scientist in 1987; Dr. Iain Young was the recipient of the Aesculapian Society Award for Excellence in Teaching 1987-88, and Dr. David Dexter for 1989-90; the Joseph S. Stauffer Professorship in Cancer Research was established in the Department in August, 1987 and Dr. Roger Deeley was named as its first recipient; Dr. Robert Kisilevsky obtained the University-Industry Award between 1988 and 1991; Dr. Alan Giles was awarded the Distinguished Research Professorship by the Heart and Stroke Foundation of Ontario and a Prize for Excellence in Research by QU in 1989; and Dr. David Lillcrap received the Basmajian Award from QU in 1990.

The DP obtained substantial annual donations from The Dutkevich Trust Fund in support of residents' travel and books and the Haust Trust Fund (established during Dr. Robertson's Chairmanship) provided funds for continuous education of the Faculty members of the DP.

In the summary of his five-year term (1986-1991) as the Chairman of the Department, Dr. Robert Kisilevsky wrote: "The Department has achieved some remarkable successes within the last five years in terms of expanding the Outreach Program, expanding our research funding and research programs, the significant growth in the graduate program, and in teaching at both the graduate and undergraduate levels. The initiatives, although successful, have not been adequately supported (by QU and KGH) in concrete terms with resources to reflect the increasing activity. There is a significant risk that all that was built will erode in five to ten years".

It is evident from the above OVERVIEW of the departmental activities, that research was a prominent feature of the entire period (1967-1991). The original and manifold investigations either continued from the previous years or were introduced in this era. As mentioned in the FOREWORD it would be impossible at this juncture to elaborate on all those ongoing investigations. Thus, it was decided to select one territory of outstanding research for a detailed account in this and in subsequent NEWSLETTERS. For this purpose, the Editors invited Dr. Juan Lechago who was a resident and a graduate student in the Department from 1966 to 1973 to summarize research activities directed by his mentor Dr. Sergio Bencosme, with whom he remained in touch until the present day. The following is his report.

B. SPECIAL AREAS OF INVESTIGATIONS (by Dr. Juan Lechago*)

The period since the late fifties witnessed a remarkable outburst of research in the Department, a good deal of which was carried out in a variety of fields by Dr. Sergio A. Bencosme and his graduate students and associates. On the strength of his electron microscopy training and expertise acquired under Daniel Pease and Harrison Latta at UCLA, Bencosme collaborated with many researchers in ultrastructural studies on a wide variety of subjects. However, three main lines of investigation stand out because of their particular impact.

i) The pathobiology of the pancreatic islets, subject of Bencosme's PhD thesis at McGill University in 1950, continued to be one of his main investigations. These studies began with the morphologic characterization by light and electron microscopy of the pancreatic islet cells in several animal species and man. Bencosme's pioneering observations on the X-cells of the canine pancreas were the forerunners of the eventual identification of the pancreatic polypeptide (PP)-producing cells in all species, many years later. Further work included several experimental models in rats, guinea pigs and rabbits in which functional aspects were incorporated, and culminated with studies on the differential release of insulin by the pancreatic beta cells utilizing in vitro and in vivo models. Between 1965 and 1978, 15 abstracts, and 15 papers and book chapters were published on this subject, in collaboration with a number of coworkers, including A. Martinez-Palomo, J. Lechago, H. Aleyassine, O. Pulido, A. de Bold, M. de Bold, and others. The studies on the mechanisms of insulin release by the beta cells were the subjects of the PhD thesis of Dr. Mercedes de Bold (defended in 1974).

ii) As an offshoot of the pancreatic islet cell project, Bencosme and his graduate student Lechago embarked in 1967, on a study of the endocrine cells of the digestive system, at a time when this area, that became later quite fashionable, was barely nascent. Bencosme committed to this subject much of his MRC grant, exhibiting both vision and courage. Light and electron microscopic studies of these cells were carried out in several animal species and man. These

were complemented by experiments in dogs, and timid attempts at what would be called today translational studies on human normal and diseased tissues. These results generated 4 abstracts and 4 publications between 1970 and 1973 and constituted together with some data on the non-beta islet cells of the pancreas, the basis of the PhD thesis of Dr. Juan Lechago (defended in 1971).

iii) The third area of research (related to both above by virtue of an endocrine-like morphology) was that of the specific granules of the cardiac atrium. Bencosme was one of the first investigators to call attention to the presence of these granules in the atrial muscle of frogs and rodents. He was intrigued by the thought that, like in endocrine cells elsewhere, these granules were likely to contain some humoral factor. Given the location of these structures, it stood to reason that their contents would have a role in cardiovascular function and, perhaps, regulation of blood volume and pressure. As in his other studies, the initial efforts were focused on the light and electron microscopic characterization of these granules. This was soon followed by experimental manipulation of several animal models in an effort to test their functional systemic qualities. It was noticed that elevation in systemic blood pressure caused an increase in the number of the atrial granules. This spurred a long and checkered series of studies attempting to link these granules to catecholamines. Many workers partook in this long and sometimes sinuous line of investigation, including (among others) A. Martinez-Palomo, A. Trillo, W.L. Chang, J. Berger and, prominently, A. de Bold. This body of research, generated between 1966 and 1978, 10 abstracts, and 14 publications and chapters in books. It constituted the foundation for the eventual discovery and characterization of atrial natriuretic factor, known later as cardionatrin, by Adolfo de Bold, and was the main theme of his PhD thesis, completed in 1973.

It is quite apparent from the above that Sergio Bencosme had a particular gift to focus on subjects of his interest that would become highly topical themes. But, more interestingly, he also had a special talent to select suitable collaborators who would contribute to the completion of the experiments and to the interpretation of their results. The three lines of research in this era, i.e., the pathobiology of the pancreatic endocrine cells, the pathomorphology of the digestive endocrine cells, and the endocrine function of the atrial muscle served as the basis of three PhD theses. Their authors (*vide supra*) have all continued their careers long after leaving the Department and became successful researchers and academicians in their own terms. This is an eloquent testimony to the constructive and fertile environment prevailing in the Department of Pathology at Queen's University at that time nurturing the development of scholastic pathologists.

4. QPAG ACTIVITIES

Queen's Pathology Alumni Group Reunion II – September 21, 22, 2002

Please join us and your contemporary Queen's colleagues from all around the continent to celebrate our common experiences at Queen's and our professional and personal relationships. We have developed an entertaining and informative social and scientific program with a mix of participants from past and present members of our community.

The reunion will be preceded by the 65th Annual Ontario Association of Pathologists meeting from September 20-22. You should make an effort to attend that meeting too.

Our Queen's reunion will begin with a cocktail hour and banquet on Saturday evening, September 21st. The program will be focused on Sunday, September 22nd and will be held in Etherington Auditorium. We will begin at 9:30 am with two hours of vignettes of the major

scientific findings of prominent Queen's researchers over the last 25 years. The major social event will be a long sumptuous lunch at the University Club. We will end by 3:30 pm with brief talks and demonstrations of our application of new technology and group management including the integration of imaging into anatomic pathology practice and education, computers, photography and specimen preparation, and also anatomic pathology group reorganization to improve quality and to manage errors. All participants will be invited to tour the Department and receive a CD incorporating archival information about the Department.

Details regarding hotel reservations, registration and other information are provided in a mailing from the Department.

5. SUMMARY OF ALUMNI NEWS

A. VISITING ALUMNI

In May 2002, Dr. Daria Haust returned to the DP for six weeks to continue her work on departmental history, archives and QPAG matters. With the exception of one year, her visits to the Department became an annual event since 1995.

Patrick van derHoeven visited the Department to renew acquaintances while in Kingston for a family wedding. He is now the Deputy Director of the Gippsland Pathology Service and is based at the Latrobe Regional Hospital, Traralgon West 3844, Australia. He can be reached at pvand@gippspath.com.au, and his number at work is 03-5174-0800.

B. LETTERS RECEIVED

The following alumni have contacted the Department and provided information and current addresses:

1. Hedy Boutros, to use her words: "I have decided to resurface once more, a characteristic I share with other Egyptian mummies" and in her expressive fashion, made several comments, including suggestions for the Newsletter. She is at the Scarborough Hospital Grace Division, 3030 Birchmount Road, Scarborough, ON, M1W 3W3.
2. Nav Gill is the father of a baby boy. His address is NGill@RPSLAB.com.
3. Andrew Horn, after further training and work in the USA, eventually returned to Canada. He now lives in retirement at 215 Pinegrove Crescent, Waterloo, ON, N2L 4V2.
4. Juan Lechago left California for Texas Medical School in Houston, but returned there recently to chair Pathology at Cedars-Sinai Medical Center, 8700 Beverly Blvd., Los Angeles, CA, 90048, email: lechagoj@CSHS.org.
5. Hilda Tremblett retired in 1991 in Nova Scotia. She enjoys voyages by boats and ships and is in possession of a "captain's ticket" for a small boat. She may be reached at 1478 Old Route 5, Big Bras D'or, Nova Scotia, B1X 1C1.
6. Mike Wendleboe is at Nanaimo General Hospital, and his e-mail address in Ladysmith, BC is mwendleboe@look.ca

C. OTHER INFORMATION, AWARDS AND DISTINCTIONS

1. Dr. Monique Arquint left the Department in October 2001 for St. Mary's in Kitchener. Monique was a resident in the Department, did a PhD in the Department of Microbiology and Immunology at Queen's and a one year Fellowship in cytopathology at the Baylor College of Medicine in Houston, Texas. Her expectations are to have a broader range of experience in pathology and to initiate directly an active interventional cytopathology program.

2. Dr. William Corbett, now retired from the Department, was presented with the Royal College 2001 Regional Award for Excellence in Medical Education, a fitting honour to acknowledge Dr. Corbett's many years of dedication to teaching.



Dr. Bill Corbett (left) receives his Royal College Award from departmental member Dr. Sandip SenGupta, President of the Canadian Association of Pathologists. In the background from left to right are: Drs. Lois Shepherd, Al Fletcher, Caroline Rowlands, Mohammed Khodabandehloo and Jason Sack.

3. Dr. M. Daria Haust's biography, as one of the Founders of Pediatric Pathology, was published in the PERSPECTIVES IN PEDIATRIC PATHOLOGY in 2001. Later that year she received an Outstanding Service Award from the Canadian Society of Atherosclerosis, Thrombosis and Vascular Biology. In 2002, two issues of "Pediatric Pathology and Molecular Medicine", dedicated to her as a Festschrift, consist of 14 contributions by scientists around the globe. Also, an Annual Award in her name was established by the Department of Pathology at the University of Western Ontario for a graduate student.
4. Dr. David Lillicrap was awarded a 2001 Queen's Prize for Excellence in Research. Two prizes are awarded each year, usually one in humanities and social sciences and the other in natural sciences, medical sciences and engineering. The prizes are the most prestigious awards in research and reflect the international standing of the awardees. Since its inception in 1980, members of the Department have won six times, exceeding all other departments of the University. Other members of the Department who received this award were:
- 1985 – Dr. Adolfo Jose de Bold
 - 1989 – Dr. Alan Randolph Giles

1991 – Dr. Roger Graham Deeley
 1994 – Dr. Susan Patricia Cooper Cole
 1996 – Dr. Robert Kisilevsky

Dr. Lillicrap's research focuses on the molecular genetics of haemostasis related to the interactions amongst Factors VIII and IX and von Willebrand Factor, the sources of most bleeding disorders. Dr. Lillicrap has been in the Department since 1985 and is one of Canada's best exemplars of a basic science physician and teacher.

5. Dr. Samuel Ludwin has been appointed in 2002 as Associate Dean, Research in the Faculty of Health Sciences and Vice-President, Research Development, at KGH and the Kingston teaching hospitals. These appointments were announced by Principal William Leggett and Mr. Joseph de Mora, President and Chief Executive Office, KGH. Dr. Ludwin is an internationally recognized neuropathologist who has published extensively on both basic science and clinical subjects, has held a variety of positions in professional organizations associated with his specialty, and has been with the Department since 1975.
6. Dr. Sandip SenGupta was elected in 2001 to the office of President of the Canadian Association of Pathologists for a two-year term.

6. VISITORS TO THE DEPARTMENT

Dr. Kurt Benirschke, a world authority in perinatal diseases and placental pathology, visited the Department on 1st and 2nd of October 2001, to present the First M. Daria Haust Lecture entitled "Challenges of the Pathology of Twinning". Dr. Benirschke is an Emeritus Professor of Pathology and Reproductive Medicine, University Medical Center, San Diego, California. The lecture was sponsored by the M. Daria Haust Lectureship Fund and the Department of Pathology, Queen's University. While at Queen's he also conducted small group teaching sessions with residents in Pathology and Paediatrics.

Dr. Janet Rossant was a visiting lecturer in the Department on January 10th, 2002. While here, she presented the Second Nathan Kaufman Lecture entitled "Signalling Pathways in Early Mouse Development". Dr. Rossant is Joint Head, Program in Development and Fetal Health at the Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto; and Professor in the Department of Molecular and Medical Genetics and the Department of Obstetrics/Gynaecology, University of Toronto. The lecture was sponsored by the Nathan Kaufman Lectureship Fund, the Visiting Speaker Trust Fund and the Department of Pathology, Queen's University.

7. IN MEMORIAM

At this time of preparation of the SECOND ANNUAL NEWSLETTER of the QPAG, the Editors are aware of a few departures from our ranks and wish to pay tribute to these colleagues. Please notify us should you know of other colleagues who have passed away.

1. **Dr. Michael Axelrad** – joined the Department of Pathology as an Assistant Professor in 1968 and was promoted to Associate Professor in 1973. He died after a serious illness while still on the faculty, in November 1977.
2. **Dr. Hugh Cameron** - (Meds '54) was a resident in the Department for one year (1956-1957). He specialized in Paediatrics and practiced in Toronto, Ont, where he died in June 2000.

3. **Dr. Benjamin Dunn** – (Meds '52) spent two years of his residency in the Department (1953-1955). He moved to Windsor, ON, where he practiced Pathology. He died in August 2000.
4. **Dr. Allen Gardner** spent two years as a resident in the Department (1966-1968) moving on to Toronto thereafter. He became Director of Genetic Services of Lakeridge Health Centre, Oshawa where he died in 2002.
5. **Dr. Norman Hinton** – (Meds '50) of Queen's Department of Bacteriology, held a cross appointment in the Department since 1957. He became the Chairman of his "home" department in 1963 and effected the change of its name to the Department of Microbiology and Immunology in the late sixties. He left in 1970 for the University of Toronto to assume the chairmanship of his specialty in the Faculties of Medicine, and Arts and Science. Upon his retirement from the academia in 1990 he was Chief of Microbiology at St. Michael's Hospital of Toronto until 1995. Thereafter, he moved to Cobourg, Ont. and traveled extensively. He died in 1997.
6. **Dr. Ralph Mankovitz** – was appointed as Assistant Professor of Pathology in 1971, remaining in the Department until April 1, 1978 when he went on Queen's Long Term Disability. He died in August 1998.

Tribute is also due to departed Staff members who contributed considerably throughout their long years of service to the Department:

- **Mr. Gerald (Gerry) Hagan** was appointed by Dr. More as the Administrator (the first such post in the Department) in 1960. He organized and administered all the departmental activities and planning concerned with space, salaries, schedules of duties of technical staff, research grants, and ordering and maintaining of equipment. He was very dependable and provided great stability for the departmental operations. Mr. Hagan continued serving under Dr. Kaufman until he became mortally ill and passed away in 1973. His concern for and loyalty to the Department continued even during his illness, as it was he who suggested his successor introducing him also to the administrative duties.
- **Mr. Wallace (Wally) Hill** succeeded Mr. Hagan as Administrator in 1973, and was equally respected for his competence. He retired in 1982 spending more time in golfing. He died in December 1996.

8. CURRENT DEPARTMENTAL ACTIVITIES

A. SPECIAL EVENTS AND CELEBRATIONS

i) The M. Daria Haust Lectureship

The first lecture was delivered on October 1, 2001 in the Etherington Auditorium at Queen's University by Dr. Kurt Benirschke, Emeritus Professor of Pathology and Reproductive Medicine, University Medical Center, San Diego, California on the subject: "Challenges of the Pathology of Twinning". It was followed by a reception in Richardson 102 & 107.

On the occasion of Dr. Daria Haust's 80th birthday, Dr. Paul Manley, the current Chair of the DP paid the following tribute to her in the September 2001-issue of "PATHOLOGY NEWS". (N.B. some parts of his writing were paraphrased or deleted for brevity):

"Many of our residents and faculty were initially bewildered by the distinguished woman in a white lab coat who regularly came to weekly scheduled conferences in 1995 and asked

several probing questions. This was their initial introduction to Daria who had returned to our Department as a Visiting Scholar for six months and continues to be as enthusiastically engaged in the study of pathology as she was when she began her career in pathology at Queen's almost 50 years ago.

Maria Daria Haust was born in Poland on August 18th, 1921. She found herself in Germany after World War II and was accepted into Medical School at the University of Heidelberg in 1945. In 1951 she graduated summa cum laude and completed an MD thesis on "Primary Pulmonary Sclerosis in an Infant". At the Medical School she met Heinz Haust, a more senior medical student and a superb classical guitarist. They married shortly after her graduation in 1951 and arrived in January 1952 in Montreal as landed and unemployed immigrants. They began applying to teaching hospitals for rotating internship, and Dr. Larry Wilson was the first to reply with a firm offer for both to begin at the KGH in July, 1952. After the completion of her internship Daria stayed home taking care of their two little boys, Bill and Jan, both born at KGH.

Her career in pathology began in 1955 as a Research Fellow investigating atherosclerosis under Dr. Robert H. More, Chairman of the Department. She was later accepted into the General Pathology Program and in 1959 obtained both an MSc (Med) degree from Queen's University and her Fellowship in Anatomic and Clinical Pathology from the Royal College of Physicians and Surgeons of Canada. During her residency she was extraordinarily productive in research with multiple presentations and publications on atherogenesis, including the observation that smooth muscle cells proliferated in atherosclerotic plaques and contributed to the production of collagen and extracellular matrix. This work was temporarily interrupted when Dr. Haust accepted a postdoctoral fellowship with a famous paediatric pathologist and mentor, Dr. Ben Landing, at the Children's Hospital in Cincinnati. She quickly developed expertise in paediatric and perinatal pathology and investigated the pathology of inborn errors of metabolism, which became a second branch of her research career.

She returned to Kingston in 1960 as an Assistant Professor of Pathology, a Paediatric Pathologist at KGH, and an active researcher in experimental atherosclerosis. She became an expert with an extraordinary eye in discerning and interpreting abnormalities using the new technology of the time, electron microscopy. Her studies considered the role of thrombosis, blood components and inflammation in atherogenesis and elastogenesis. Daria was promoted to Associate Professor in 1965 and left for the University of Western Ontario (UWO), London, Ontario in 1967 when Heinz accepted a position there. She became the Director of Pathology at the Children's Psychiatric Research Institute and was promoted to Professor of Pathology in 1968, of Paediatrics in 1972, and of Obstetrics and Gynaecology in 1977. These appointments reflected Daria's close clinical collaborations and her broad range of interests which continued in atherogenesis and extended more deeply into paediatric pathology focussed on inborn errors of metabolism, and perinatal and placental pathology.

Daria has also been recognized as an excellent teacher and a mentor by undergraduate, postgraduate and graduate students and postdoctoral fellows. She received multiple teaching awards including the best teacher award of Basic Sciences at UWO in 1978 and 1984, and the Class of '62 award in 1982 given to "the faculty member who in the opinion of the graduating class contributed the most to the medical school in the previous four years". She still maintains close ties to several of her former graduate students including Dr. Roberta Bondar and the current Dean of the Medical School in Santiago, Chile, Dr. Jorge Las Heras.

Daria is also committed to the initiation and the sustenance of multiple professional organizations. She was the first president of the Canadian Atherosclerosis Society and played a major role in its evolution. In honour of her contributions to societies and her research she has received the Gold Medal from the International Atherosclerosis Society, Distinguished Service Award of the American Heart Association, Special Distinguished Colleague Award of the Pediatric Pathology Society and the Andreas Vesalius Medal from the University of Padua, amongst others. In Canada she was awarded the William Boyd Lectureship, the highest honour conferred annually by the Canadian Association of Pathologists, and the Canada Council Izaak Walton Killam Prize in Medicine, one of only two women in Canada recognized by this distinguished honour as of 1998. Her achievements and the appreciation of her peers have led to honorary doctorate of medicine degrees at the Jagiellonian University of Krakow in 1996, and Charles University, Prague and Havana University in 1998. Her research has become known to the world through over 200 publications, numerous invited addresses, and service on the editorial boards of 10 scientific journals. She remained continually funded as a principal investigator by the Heart & Stroke Foundation of Ontario from 1961-88 for both the operating and personnel support, and by the Medical Research Council from 1961-74, 79-81 and 91-98.

Throughout her career Daria has sustained a passionate devotion to our Department of Pathology at Queen's University as her first home in a new land, in which she defined the course of her future life as a dedicated physician/scientist and enthusiastic teacher. While Daria credits the Queen's environment and her colleagues of the time for much of her early success there is no doubt her intelligence, keen observation, perseverance, and focussed energy were the predominant factors as her continued success until the present time attests.

Daria returned to Kingston for 6 months as a Visiting Scholar in 1995. During that time she reviewed unreported material from the 1960s and published five papers. She has returned since for a month each year (but one), often overcoming a variety of medical difficulties and returning with renewed vigour. After extensive renovations of Richardson Laboratory and our Reunion, Daria was determinedly persuasive in convincing me to support the development of the Queen's Pathology Alumni Group. She enlisted the support and recollections of others in beginning an archive and writing the history of the Department and biographies of our senior colleagues. She is also contributing to our scholarly success through generously endowing the M. Daria Haust Travel Fund in 1985. It currently provides special travel funds to faculty members, thus enhancing their scholarly activities.

By establishing this lectureship the Department has chosen to honour Daria's scholarly achievements, her multiple contributions to her profession both in Canada and internationally, and above all her generous support and passionate devotion both to our department and to Queen's University."

The lecture was sponsored by the M. Daria Haust Lectureship Fund and the Department of Pathology, Queen's University.

ii) The Nathan Kaufman Lecture

The second presentation of this Lectureship was given by Dr. Janet Rossant, Joint Head, Program in Development and Fetal Health at the Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, and Professor in the Departments of Molecular and Medical Genetics and of Obstetrics/Gynaecology, University of Toronto. The title of the lecture was "Signalling Pathways in Early Mouse Development". A reception followed at the University Club.

Dr. Kaufman's contributions in the field of pathology and his role as Head of the Department at Queen's were recorded in the first QPAG Newsletter, August 2001.

This event was sponsored by the Nathan Kaufman Lectureship Fund, the Visiting Speaker Trust Fund and the Department of Pathology, Queen's University.

iii) Dr. Allen Fletcher - Retirement

Early retirement appeals to some and one of them is Dr. Allen Fletcher. To mark the occasion, there was a gathering of staff members and visitors in Richardson Amphitheatre chaired by Dr. Paul Manley. At this special time, the 80th birthday of Dr. Howard Steele was also celebrated (see item iv) below). Dr. Manley noted how appropriate it was to have these two events together, since Al was a student of Howie's, worked with him and continued on as the expert in the fields of Gynaecological Pathology and Diagnostic Cytology.

Al graduated in 1969 at Queen's and spent the rotating internship at Montreal General Hospital. He began his residency program here in 1970 and worked with Dr. Steele, upon whose retirement Al followed him as the expert in cytology and gynaecological pathology, and the Head of the busy Cytology Laboratory. He has been in the Department longer than any other current faculty member. Al also had expertise in paediatric and perinatal pathology, and since 1974 was the highly respected Laboratory Director of the Lennox & Addington County General Hospital in Napanee, Ontario. He was a Consultant Pathologist in hospitals in Moose Factory, Picton and Smiths Falls, all in Ontario, and since 1993 was Associate Professor at Queen's.

Dr. David Dexter, a colleague since their days in training, lauded Al as an exemplar, quiet, considerate and concerned. His love of family and music was mentioned, as well as friendships and contributions within both the Department here and at the hospital in Napanee. He wished both Al and his wife Barb well in his early retirement, and mentioned how envious the remaining staff were.

Dr. Manley thanked Dr. Fletcher for his contributions to the Department, wished him well in retirement and presented him with the classic Queen's University arm chair.

Dr. Fletcher thanked Dr. Manley and Dr. Dexter, and made some comments on his time in the Department and his associates.

Dr. Fletcher's retirement at 57 will give him ample time to apply his various talents to public service, such as the programs for seniors, "school breakfast" and others. He also intends to become engaged again in his church and in physical activities, and devote more time to his family, i.e., wife Barbara, two daughters and a grandchild.

iv) Dr. Howard Steele – 80th Birthday Celebration

The May 2002 Newsletter of the Department contained an article that offered congratulations to "Howie" for his upcoming birthday on June 14th. It was written by Dr. Daria Haust and contained both a summary of his events in pathology and personal comments of their association over many years.

It was emphasized in it that Dr. Steele has been highly respected by his colleagues, other staff and students alike, not only for his competent diagnostic skills and teaching ability, but also for his admirable integrity.

Dr. Steele entered Medicine at Queen's in 1939 and graduated in 1944, having saved a year since the course had been accelerated because of the war. After a short time in the Army he spent three years in Surgery, Internal Medicine and Pathology, then opted for the field which he thought produced the answers for Medicine. Training in it occurred at Kingston, Montreal and

Cleveland, with subsequent short stints at Columbus, New York, Ann Arbor, Toronto, Chicago, Boston and Bar Harbour.

The first job he accepted in 1953 was at St. Catharines where the new Hotel Dieu Hospital was to open, because he wanted to have the challenge of starting a new laboratory entirely from scratch. After the lab was functioning smoothly, he went to the University Hospital in Saskatoon in 1955 as Assistant Professor. Here the University Medical School was changing from an incomplete two year course to a full four year course with its own graduates. An offer from Dr. R.H. More brought him back to Queen's in 1957 where he remained on faculty for the next 30 years, retiring as an Emeritus Professor. Finding life too quiet, he accepted the Directorship of the Kingston MDS Laboratory and then began to fill in for vacancies at both the KGH and HDH for the next five years. By 70, he was working part time for 9 months of the year, and spending the remaining time (Jan-Mar) in Florida.

During his life at Queen's he served on many university and hospital committees, held several important appointments and elected offices in provincial and national societies, and at one point was Acting Head of the Department (1986). Although he was a General Pathologist, his areas of expertise were Gynaecological Pathology and Diagnostic Cytology. He had a close association with the members of the Obs & Gyn clinical department, took part in their teaching program, and provided an excellent correlative teaching experience for their residents and those in Pathology as they worked together.

In 1998 he celebrated 50 years of marriage with his wife Mary, their daughter and three sons, and their seven grandchildren. Howie and Mary still travel, maintain family ties and pursue their own individual hobbies. He says that he knows how to spend free time now, but he also thinks that it may just take longer today to do what he wants to do the way he wants to do it.

At the special event marking Dr. Fletcher's retirement and Dr. Steele's birthday, Dr. Bud Kipkie spoke and mentioned his close association with Dr. Steele over many years in the Department, as a neighbour and as a friend. Dr. Daria Haust also spoke, relating personal events that bound them together from the time when she first started in Pathology, and how much both she and her husband, Dr. Heinz Haust, were influenced by Mary and Howie to remain in Canada and start on their subsequent very successful careers.

Dr. Manley presented a portrait to Dr. Steele, which will be hung with those of other departmental Laboratory Directors (Drs. Kipkie and McElligott) in the hall of Douglas 2.

Following these events, a reception was held for Drs. Fletcher and Steele, invited guests and staff members.

Dr. Steele thanked Drs. Manley, Kipkie and Haust and mentioned how fortunate he was to have seen the Department grow from a small three pathologist operation to its present size and academic prominence.

B. HIGH-SCHOOL STUDENTS' EDUCATION (Dr. Jason Sack*)

The Enrichment Mini-Course Program at Queen's University was founded in 1988. Selected high school students (Grades 9 through 13) from across Ontario participated in a one-week enrichment experience during the month of May. In 1995, the Program initiated its in-residence component allowing high school students a taste of university life. The following year, as a result of increased student interest, the Enrichment Mini-Course Program expanded to two separate one-week options during May.

In 1997, "Pathology: A Growing Field in Medicine" was added to an expanding list of course options. Instructor Robert Leggett accepted 20 students (Grades 10 through OAC) in

each of the two one-week options. One year of Biology was the course prerequisite. In addition to emphasizing the pathology of organ systems, this course highlighted research in pathology and addressed the following questions: “How does research help cure diseases or provide for treatment?” and “How is research done?”

In the subsequent year, a total of 1680 high school students registered for the Queen’s Enrichment Mini-Course Program. Of these students, 25 registered in “Pathology: A Growing Field in Medicine” in each of the two weeks.

In 1999, Dr. Bruce Elliott assumed the role of instructor for the Pathology course. The course title and description remained unchanged.

The Pathology Mini-Course underwent major revision in 2000 under the direction of instructors Ms. Carla Cuthbert (graduate student in Pathology) and Drs. Jason Sack and Tim Childs (residents in Anatomical Pathology). The redesigned course “Pathology: an Inside Look”, available to high school students Grades 11 through OAC, featured small-group, interactive, hands-on sessions. The clinicopathological focus of the course was reflected in the amended description of the course:

“This course promises a dynamic, hands-on, interactive look at the exciting and multifaceted world of pathology. Students will gown, glove, and actively participate in the processing of a surgical specimen from the operating room. An overview of the fundamentals of inflammation and repair will be supplemented with clinical exposure to relevant pathological specimens. A discussion of cancer will be augmented by a visit to the Autopsy Suite for illustrative examples. Students will be introduced to genetic disorders, gene therapy and several intriguing issues surrounding recent advances in biotechnology.”

In 2001, the Pathology Mini-Course was overwhelmingly the most popular choice among student applicants. As a result, in addition to the course offered by Drs. Sack and Cuthbert, Dr. Ron Saulnier conducted a one-week considerably modified version of the course with emphasis on lectures.

Student feedback confirms that the Pathology Mini-Course continues to promote effectively the fascinating and dynamic realms of pathology to high school students. In May 2002, one student summarized the Hands-On Pathology week as follows: *“Thanks to Drs. Sack and Cuthbert, this has definitely been the best experience of my life! I’m now preparing a pathology presentation for my biology class. I can’t wait to tell them what I’ve learned.”*

C. SUMMARY – REPORT ON PRESENT STATUS (Dr. Paul Manley*)

Our Department has passed into the new millennium on a plateau of considerable academic and clinical achievements within highly functional recently renovated offices and laboratories. We rank at or near the highest levels in research funding, laboratory efficiency and effectiveness, and in the breadth and quality of our Outreach Program amongst pathology departments in Canada. Underlying the satisfaction that these accomplishments bring is a sense of foreboding at the rapid contraction of our postgraduate training program in common with many others across Canada.

1. CLINICAL SERVICE AND HOSPITAL LABORATORIES

i) In late June carpeting was finally installed throughout Douglas 4, thus completing the last stage of the first entirely renovated and fully integrated Academic Health Centre Hospital Laboratory in Ontario, here in Kingston. This process began in 1996 when the laboratories at both the HDH and the KG H began consolidating at the KGH site, beginning on Douglas 1 with

the Core Laboratory and progressing upward to Genetics on Douglas 4. Our redesigned laboratory now serves all the Kingston hospitals and is responsible for our extensive Regional and Community Outreach Program. We are the most efficient academic health science centre laboratory in Ontario and within the top 10 percentile in all Canada, according to a recent operational review. The cycle of renewal continues. Through funding from our Regional Forensic Sciences Program we are adding in 2002 an x-ray facility, and a larger more secure refrigerator and improved lighting to our autopsy suite.

In all of this planning there has been an active and spirited discussion amongst the managerial, medical, scientific and technical staff in the design of the laboratory. As a result our labs have a much more pleasant working environment since we have provided more open space with natural light, increasingly improved ventilation, and thoughtfully placed equipment through the redesign. We have also been able to accommodate important functional interrelationships between individual laboratories, their medical and scientific faculty, and related hospital services. Anatomic Pathology (AP) is situated on Douglas 2 and the combined pathology/cytology laboratory is immediately adjacent to the cytology screening room, the residents' room, most of the AP-faculty and the operating rooms. Microbiology shares Douglas 3 with the clinical microbiologists, and the Infection Control Service and the Genetics Laboratories share Douglas 4 with the Genetics faculty who are immediately adjacent to their research space on Richardson 3, 4 or 5. There is ready access to Douglas 1 through 4 from the adjacent hospital and the continuity of identical carpeting on each of Douglas 2-4 blurs any boundaries between us and our colleagues on the clinical wards of the hospital.

Our Core Clinical Chemistry/Hematology facility has recently gone through an extensive process of redesign, directed by the departmental Administrative Director, Mr. David Piper and Dr. Michael Raymond, and enabled by state-of-the-art robotic equipment from Roche. We were the first Canadian facility to install their track clinical chemistry and hematology analyzers which are about to be supplemented by immunoassay instrumentation. Specimens now are computer directed to the appropriate instruments and quickly tested. The results are confirmed by technologists and sent on-line within the Hospital and are available electronically to referring hospitals within the Outreach Program. Hematology specimens are on an adjacent track and are directed as required for automated reticulocyte counts and slide staining. This facility has attracted the interest of multiple users across Canada and we have hosted at least fifteen visiting laboratory groups. The efficiency of the instrumentation and the process design have allowed us to accommodate increasing volumes and complexity of workload without staff addition. We now report 5 million test results/year. However, we have been still unable to free up sufficient staff to meet the need for further test development and quality assurance requirements.

This physical reorganization of the DW allowed a focused concentration of our specialist faculty offices in extraordinarily close proximity to each other. All hematopathologists have adjacent or across the hall offices as do the cytologists. A large common microscope reading room is available in their midst. In AP Dr. Iain Young helped develop an innovative focused expertise model amongst 14 faculty members. Rather than being responsible for most disciplines in AP we have encouraged faculty to focus their expertise on much more circumscribed fields suiting their interests and area(s) of experience. As a consequence, faculty have increasingly developed a greater depth of expertise and closer links with subspecialty groups while maintaining an appropriate breadth of coverage in each sub-discipline that gives us flexibility in coverage. Some faculty maintain considerably broad areas of expertise; for example, Dr. Dave

Dexter who is the head of the Regional Forensics Unit, is also a member of the hematopathology division and signs out a broad range of surgical pathology.

Our 25,000 surgicals, 300 autopsies and approximately 20,000 cytology specimens make us one of the busiest hospitals in Ontario and our faculty amongst the most experienced in individual disciplines in the province. This volume of work in AP required a technical process redesign with greater use of digital dictation and computer editing and authorization. The improved turn-around-time in surgical pathology allows that the majority of biopsies' diagnoses are authorized within 48 hours of receipt in the laboratory and reports are available on-line to most physicians. We are fortunate to have an excellent team of pathologists' assistants, including Mr. Lloyd Kennedy, and sophisticated imaging infrastructure and network support. Photographic images of specimens and breast biopsy x-rays are now available on the computer screens of the pathologists as they are reviewing the microscopy the next day.

We are recognized as international clinical experts in hemostasis, neuropathology, and in educational technology, and are Canadian and provincial experts in a variety of subspecialty disciplines. We thus have a Department that can attract and nurture outstanding medical and scientific faculty and allow them to become leaders in their respective disciplines.

ii) Genetics and Molecular Medicine

In the spring of 2001 a medical centre-wide review of Genetics was begun. The Review Committee recommended that a new Division of Genetic and Molecular Medicine be established within the DP replacing the previous Division of Medical Genetics in the Department of Pediatrics. This reorganization began in late 2001 and has culminated in the consolidation of all clinical, laboratory and academic aspects of Genetics within this new Division of the DP, with Dr. David Lillicrap as its first Chairperson. Through this consolidation, Dr. Mohamed Khalifa, a Clinical Geneticist with a research interest in the molecular genetic aspects of Aicardi Syndrome and Dr. Lois Mulligan, a basic PhD-researcher with expertise in multiple endocrine neoplasia, have formally joined the Department. A 3 million endowed chair, the Bracken Chair in Genetics and Molecular Medicine should receive Senate approval shortly and will provide funding for a new research focused position. We intend to integrate the entire clinical and laboratory research aspects of the Division within KGH and the adjacent parts of RL. Currently, Drs. Khalifa and Mulligan have offices at 20 Barrie Street but have their research laboratories in RL. We have also formed a multidisciplinary clinical genetics unit with significant participation by Dr. Jennifer MacKenzie, a clinical Geneticist and Developmental Disabilities expert in the Department of Pediatrics and with Dr. Cynthia Forster-Gibson, a family physician with a PhD in molecular genetics and expertise in hereditary cancer syndromes. There has always been a very close association between the laboratory and clinical aspects of genetics but this formal integration will facilitate closer and more productive research and educational collaborations. Dr. Lillicrap has recently initiated a very successful seminar series in genetics, and the genetics group is now offering clinical and directorial services to the Lakeridge Hospital Corporation in Oshawa.

iii) Outreach

Our Outreach Program has continued its expansion through a contract for reference laboratory services for the region to the west of us, including Oshawa, Lindsay and Peterborough which includes approximately 800,000 patients. We have competed successfully with Toronto Hospitals and private industry for these contracts, which have recently been renewed. We are

driven to do this work because our catchment area is small and we require a larger workload to develop efficiencies of scale and depth of professional expertise. A similar expansion took place in Infection Control (under the leadership of Dr. Dick Zoutman) to the Kingston Regional Cancer Centre, the Providence Continuing Care Centre including St. Mary's of the Lake Hospital, and Peterborough.

2. FACULTY

We appear to be a remarkably collegial, cooperative and happy faculty consisting at present of 29 primary members (8 professors; 13 associate professors; 8 assistant professors), 11 cross-appointees and 12 adjunct appointees. The intention is to maintain our culture and the quality of the faculty in our current hiring process. We were fortunate to have appointed Dr. Tim Childs, one of our recent AP residents with a PhD in Biochemistry to replace Dr. Allen Fletcher. Dr. Childs has a major interest in gynecologic pathology and has worked with Dr. Sandy Boag to develop a database system to access the vast amount of information available in our computer system on AP. In August (2002) Dr. Phillip Isotalo will be joining us after completing a Fellowship at the Mayo Clinic. Dr. Isotalo trained in General Pathology in Ottawa where he was reputed to be the best resident they have ever had, because of his catholic interests and his ability to "translate" these into 15 publications during a very busy residency program. Much of the strength of our Department lies in its faculty and we are especially pleased that such extraordinary young pathologists will be joining us.

Another change involves Dr. Dilys Rapson who recently succeeded Dr. Lois Shepherd as the Division Chief of Hematopathology. Over the last year Dr. Rapson has worked with others in the Division to introduce new testing including D-Dimer that facilitates the process of diagnosing patients with thromboembolic disorders. This improves our utilization of PTTs which are frequently over-ordered, and further expands our Point of Care Testing in coagulation.

We have continued the tradition of occasionally being big fish in big ponds although we reside in a small center. For example, Dr. Sam Ludwin is now the President of the International Society of Neuropathology and Chair of the Canadian Multiple Sclerosis Scientific Advisory Committee; Dr. Sandip SenGupta is the President of the Canadian Association of Pathologists; Dr. Paul Manley is Chair of the Canadian Chairs of Pathology Departments; Dr. Susan Cole has been made a Fellow of the Royal Society of Canada and Dr. Roger Deeley is the Research Director of Cancer Care Ontario.

3. EDUCATION (General Comments)

i) The Department continues an extraordinarily broad range of educational activities, focused on the medical undergraduate curriculum with numerous graduate courses centered on pathobiology, cancer and genetics. We participate in more interdisciplinary teaching rounds than any other department in the Faculty. This is best exemplified by the Hematopathology group which provides extraordinary teaching and research opportunities in conjunction with hematologists and oncologists. The Department holds weekly Pathology Grand Rounds and Autopsy Conference, and subspecialties' conferences and rounds. It conducts Mortality and Medical Legal Conferences on suitable occasions.

We have had two outstanding successes in the last year. The first is the Pathology Enrichment Mini Course entitled "Pathology: An Inside Look" given to selected high-school students by our resident Dr. Jason Sack and a graduate student Carla Cuthbert. (For details see Section 8-B.) The second was a training grant to the CIHR entitled "Transdisciplinary Training

Program in Cancer Research” written by Dr. Lois Mulligan and a group in the new Cancer Research Centre. It was ranked as the best Cancer training grant application in Canada and provides \$300,000 annually over the next six years for graduate and postdoctoral students and clinical fellows in the multidisciplinary research of cancer.

Major education accomplishments include those of Dr. Lewis Tomalty who was internationally recognized for the work with Dr. Gloria Delisle in interactive CD-Rom education. He has received recently the John Ruedy Award for Innovation in Canadian Medical Education.

Our plastination lab has over a thousand excellent specimens which are available for teaching of residents and students, and at interdisciplinary rounds. We were the first centre in Canada to begin this process and believe we still have the largest collection of cases.

ii) Graduate Program

Our students are winning increasing external salary support including two scholarships from NSERC, one from NCI, one from CIHR, five from the Ontario Graduate School and one from the McLaughlin Fellowship. We now have 32 students with an equal number of MSc and PhD candidates, all working with basic research appointees of the Department. In addition, 10 research fellows are engaged in investigations of various faculty members. Our lectureship program continues to expand focused on our weekly seminar series and supplemented by the recent institution of the Nathan Kaufman and Daria Haust Visiting Lectureships. In the last year, Dr. Kurt Benirschke initiated the Daria Haust Lectureship, and the Second Nathan Kaufman Lecture was delivered by Dr. Janet Rossant. [For details see Sections 6 and 8-A, items (i) and (ii).]

iii) Residency Program

The number of residents in our Residency Program has shrunk from 22 in the 1980s to 5 in early 2002. This reflects the decrease in the number of residents who are applying for positions in the disciplines of Laboratory Medicine across the country. Of approximately 25 positions that were available in Canada, only 13 were filled in the first round of the Canadian Matching program. The chronic inability of Pathology programs to fill their residency slots has resulted in the transfer of pathology positions to other training programs. Thus, there are only (approximately) six first year training slots available in Pathology each year in Ontario. Queen’s now has only one. We expect that we are at the nadir of interest in Pathology. Increasing the incomes of pathologists, unfilled staff positions, the enlarged medical school classes, and the active promotion of our programs to our medical students should increase interest in Pathology with a corresponding filling of currently available program slots and a subsequent expansion of their number.

4. RESEARCH

This has been a year of considerable accomplishments for several faculty members of the Department. Overall, our research funding has gone from 3.5 million dollars to 5.5 million dollars this year. Most of this funding reflects peer reviewed operational grant support, supplemented by personnel awards and translational research awards from major drug companies. Drs. David Lillicrap and Susan Cole were both awarded the highest level Canadian Tier I Research Chairs. We are the only Department in the University with two such awardees. These grants are for seven years (renewable) and offer the researcher \$200,000/year predominantly in support of their research program. Both investigators were already

acknowledged by the University for their research accomplishments through the awarding of the Queen's Prize for Excellence in Research which Dr. Cole received in 1994 and Dr. Lillicrap in 2001. Dr. Cole's award related to her work on drug resistance and the discovery (with Dr. Roger Deeley) of an important transmembrane family of transport proteins with significance not only to drug research but also to the movement of other substances, such as bilirubin, across the cell membrane. Dr. Lillicrap is an international expert on the regulation of transcription of Factor VIII, the most common factor deficiency responsible for hemophilia, and in gene therapy for hemophilia. These two researchers have joined other departmental awardees of this distinguished Queen's Prize (see: Section 5; C-4).