



Pathology and  
Molecular Medicine  
QUEEN'S UNIVERSITY

**DEPARTMENT OF PATHOLOGY AND MOLECULAR  
MEDICINE**

**FACULTY OF HEALTH SCIENCES  
QUEEN'S UNIVERSITY**

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Excellence In Education, Research and Clinical Care

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**ANNUAL REPORT  
2004**

(insert Queen's logo)

***Mission:***

*“Together, we proudly serve our regional community through the provision of expert laboratory and clinical services, education and research.”*

***Vision:***

*“We strive to be national leaders in advanced diagnostic services, employee success, student achievement and knowledge discovery.”*

***Values:***

*“In our pursuit of excellence, we value people by practicing mutual respect, professionalism, teamwork, integrity, trust and accountability.”*

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## MESSAGE FROM THE HEAD

In 2004, we began the implementation of a new departmental strategic plan. Entitled “Excellence in Service and Discovery: A Strategic Management System”, this comprehensive plan integrated strategic initiatives for the diverse and complex enterprises of the Departments of Pathology and Molecular Medicine of Queen’s University and Kingston General Hospital as well as the Clinical Laboratory Services program of KGH. The plan defined our mission in clinical service, education and research and articulated our collective vision of becoming national leaders in advanced diagnostic services, employee success, student achievement and knowledge discovery. We set the following overarching strategic priorities: People; Quality; Integration and Partnerships; and, Business Process Management. These priorities guided us as we established the specific strategic objectives which will determine the focus of our activities into the medium term.

We created a departmental logo which appears for the first time on the cover of this report. Its three figures symbolize the department’s tripartite mission, our recognition of people as our most valuable resource and our commitments to patient care, student achievement and employee success. The close relationship of the figures to one another represents the integration of our hospital and university missions in education, research and clinical care. The helical motif symbolizes molecular medicine and its two winding strands reflect the importance of this theme in both our clinical laboratories and our research programs.

Renewal was a major theme in 2004 as the department recruited four new faculty members. We attracted superb individuals to fill a leadership post in clinical chemistry, positions in diagnostic molecular genetics and diagnostic molecular microbiology, and a research scientist position.

The year was marked by significant achievements in each of the department’s missions. Our research programs received nearly \$4.4 M of support from diverse sources and we were extremely productive: approximately 100 publications were generated from a broad range of basic experimental, translational and clinical investigations. Our researchers continue to be recognized for their excellence. Two Tier I Canada Research Chairs and one Heart and Stroke Foundation Career Investigator award are currently held by departmental members and our faculty hold numerous significant leadership positions in the scientific community.

Our educational programs are expanding and excelling. From a nadir of two residents in 2002, the postgraduate training program grew to ten in 2004 and we have set a short-term objective of further 50% growth. The graduate program is flourishing with enrollment exceeding 30 students, 40% of whom are pursuing PhDs. The program underwent detailed evaluation in the seven-yearly review conducted by the Ontario Council on Graduate Studies and received full approval. The outreach education program the department offers to high school and elementary school students has grown to three courses. Planned and delivered largely by our graduate students, these courses have been lauded for the quality of instruction and the superb learning opportunities they provide for young students.

Our clinical faculty continue to deliver high quality patient care through laboratory diagnostic and clinical genetics services. The Clinical Laboratory Services program achieved full accreditation following an extraordinarily rigorous Ontario Laboratory Accreditation review and, despite clinical budget constraints, we are finding creative means to introduce necessary molecular diagnostic technology into the laboratories.

Our achievements of the last year are a tribute to the outstanding quality of the people in our department. As we build on these accomplishments in 2005 we will focus on a number of key strategic initiatives. In education, we intend to expand our doctoral and residency training programs. In research, we will continue to develop our translational program and seek opportunities to broaden the overall scope of our research enterprise. In clinical care we will focus on optimizing the quality of our tertiary care laboratory services and leading the regionalization of laboratory medicine in southeastern Ontario.

# PEOPLE

## **Faculty**

### **Primary Appointed**

#### **Emeritus Professors**

Sergio Bencosme

William Corbett

Alan Giles

Nathan Kaufman

George Kipkie

Robert Kisilevsky

Howard Steele

David Robertson

### **Professor And Head**

Iain D. Young

### **Professors**

Susan Cole

Roger Deeley

Bruce Elliott

David Lillicrap

Samuel Ludwin

Paul Manley

Lois Mulligan

Dick Zoutman

### **Associate Professors**

Sandy Boag

Christine Collier

David Dexter

Peter Greer

Mohamed Khalifa

David LeBrun

John Rossiter

Lorne Seargeant

Sandip SenGupta

Lois Shepherd

Sherryl Taylor

### **Assistant Professors**

Timothy Childs

Harriet Feilotter

Karen Harrison

Tadaaki Hiruki

David Hurlbut

Phillip Isotalo  
Robert Liao  
Dilys Rapson  
Michael Raymond  
Caroline Rowlands  
Xiaolong Yang

**Cross-Appointed  
Professors**

John Matthews – Medicine  
Martin Petkovich – Biochemistry  
Paul Young – Biology

**Associate Professors**

Gerald Evans – Medicine  
David Lee – Medicine  
Donald Maurice – Pharmacology and Toxicology  
Christopher Mueller – Biochemistry  
Leda Raptis – Microbiology and Immunology  
Lewis Tomalty – Microbiology and Immunology

**Assistant Professors**

Cynthia Forster-Gibson – Family Medicine  
Paula James – Medicine  
Jennifer MacKenzie - Pediatrics

**Adjunct Faculty**

John Ancsin  
Daniel Connor  
Scott Davey  
Daria Haust  
Christine Hough  
Lloyd Kennedy  
David Piper  
Michael Raymond  
Waheed Sangrar  
John Samis  
Ines Sumargo  
Shui Pang Tam  
John Stoneman  
Greg Twemlow  
Virginia Walley

**Promotions (Effective July 1, 2004)**

**Professor**

Dick Zoutman



## **New Appointments**

Robert Liao

Lorne Seargeant

Xiaolong Yang

## **Administration and Support Services**

Marg Croft, Postgraduate Program Assistant

John DaCosta, Electron Microscopy Service

Maria Dickson, Financial Administrative Assistant

Kevin Kell, Network Coordinator

Barb Latimer, Administrative Assistant

Sally Morin, Administrative Secretary

Barb Saunders, Graduate Program Assistant

John Stoneman, Administrative Director

Shakeel Virk, Pathology Coordinator, NCIC-Clinical Trials Group National Tissue Bank

## **Clinical Laboratory Services Management**

John Stoneman, Administrative Director

Dave More, Manager, Pathology Services

Mary Waugh, Manager, Core Laboratory Services

Anne Hanley, Manager, Genetics Services

Joyce deVette-McPhail, Manager, Microbiology Services

Susan Pugh, Manager, Quality Assurance

## **Departmental Historian and Archivist**

M. Daria Haust

## **Retirements**

Mary Waugh, Manager, Core Laboratory Services

Anne Hanley, Manager, Genetics Services

Michael Raymond, Service Chief, Clinical Chemistry

John Stoneman, Administrative Director

# COMMITTEES AND APPOINTMENTS

## Departmental Committees

### Promotion, Reappointment, Tenure and Continuing Appointments

Sandy Boag (Chair)  
Bruce Elliott  
Peter Greer  
Mohamed Khalifa  
David LeBrun  
Lois Mulligan  
Sandip SenGupta  
Sherry Taylor  
Brian Gannon (resident)  
Doug Richardson (graduate student)

### Graduate Program Committee

Peter Greer (Chair)  
Harriet Feilotter  
Leda Raptis  
John Rossiter  
Iain Young  
Lee O'Brien (graduate student)  
Ted Wright (graduate student)  
Barbara Saunders

### Anatomic and General Pathology Residency Training Committee

Caroline Rowlands (Chair)  
Sandy Boag  
Tim Childs  
Christine Collier  
David Dexter  
Brian Gannon (resident)  
David Hurlbut  
John Rossiter  
Andrew Schell (resident)  
Lois Shepherd  
Lewis Tomalty  
Iain Young

### Hematopathology Residency Training Committee

Lois Shepherd (Chair)  
Hessah Al-Sulami (resident)  
David Dexter  
David LeBrun  
David Lee

David Lillicrap  
Dilys Rapson  
Kristine Roland (resident)

### **Finance Committee**

Iain Young (Chair)  
Sandy Boag  
David Dexter  
Harriet Feilotter  
Dilys Rapson  
Sandip SenGupta  
Dick Zoutman

### **Canadian College of Medical Geneticists Standing Fellowship Committee**

Karen Harrison (Chair)  
Harriet Feilotter  
Mohamed Khalifa  
Jennifer MacKenzie  
Sherry Taylor

### **Internal Appointments and Representation on University Committees**

#### **Susan Cole**

Member, Board of Directors, PARTEQ Innovations, Inc.  
Elected Member, Senate  
Elected Member, Board of Trustees/Senate Committee to Select the Next Principal  
Member, Senate Promotion Advisory Committee  
Elected Senate Representative to the International Centre Council

#### **Christine Collier**

Faculty Coordinator, Teaching Improvement Project System (TIPS)  
Member, Council on Employment Equity

#### **Roger Deeley**

Director, Queen's University Cancer Research Institute  
Director, Division of Cancer Biology and Genetics, Queen's University Cancer Research Institute

#### **Samuel Ludwin**

Associate Dean, Research, Faculty of Health Sciences  
Vice-President, Research Development, Kingston General Hospital

#### **Lois Mulligan**

Director, CIHR Transdisciplinary Training Program in Cancer Research

#### **Sherry Taylor**

Director, Phase I Undergraduate Medical Curriculum

Chair, Biohazard Safety Committee

# EDUCATION PROGRAMS

## UNDERGRADUATE PROGRAM

The Department of Pathology and Molecular Medicine holds a unique position in the Faculty of Health Sciences as it serves to bridge the interface between basic medical science and clinical medicine. The Department fulfills this role in a range of undergraduate curricula.

### Courses

#### Medicine

**Phase I Pathology** – General Pathology (Coordinator: Sherry Taylor)  
- Medical Science Rounds (Coordinator: Sherry Taylor)

**Phase II Pathology** – Integrated, systems-based curriculum

#### Life Sciences

**Pathology 410** - General Pathology for Non-Medical Students (Coordinator: John Rossiter)

**Pathology 425** - Current Topics in Human Genetics (Coordinator: Lois Mulligan)

**Pathology 430\*** – Molecular Basis of Disease (Coordinator: Iain Young)

**Pathology 499** – Research Project in Pathology (Coordinator: David Lillicrap)

**Life Sciences 422** – Cellular and Molecular Neuroscience. Sections taught by Faculty in Pathology and Molecular Medicine

#### Rehabilitation Medicine

**Rehabilitation Medicine 225** - Medical Science (Coordinator: Iain Young)

\* alternate year course, not given in 2004

## GRADUATE PROGRAM

**Peter Greer, Program Coordinator**

**Barb Saunders, Program Assistant**

Our faculty supervised 33 graduate students in 2004, more than 40% of whom were pursuing their PhD. This represents a significant shift in graduate enrolment towards PhD training and we intend to build on this momentum as we continue the expansion of the PhD program.

In June 2004, the Ontario Council on Graduate Studies conducted a detailed review of our graduate program. These periodic appraisals are undertaken at seven year intervals. Drs. Paul Lasko (McGill University) and Brian Clarke (McMaster University), the OCGS consultants, conducted the on-site review and assessed our MSc/PhD program to be of good quality. They offered valuable suggestions for development of the program and the implementation of several new initiatives has begun.

2004 was the first year in which the department participated in the CIHR-funded Protein Function Discovery Training Program and two of our students were enrolled. We also used the

CIHR-funded Transdisciplinary Cancer Research Training Program to recruit several new students. This latter program fosters collaboration between clinical and basic scientists and has successfully promoted training opportunities in translational cancer research.

In recognition of the terrific contributions that Bob Kisilevsky has made to the department over his illustrious career at Queen's, the department established a named endowed fund in his honour. The Robert Kisilevsky Research Fund now supports an award program for first year PhD students in Pathology and Molecular Medicine.

## **Courses**

**Pathology 822\*** - Experimental Cancer Diagnostics and Therapeutics (Coordinator: Bruce Elliott)

**Pathology 823** - Cancer Biology (Coordinator: Bruce Elliott)

**Pathology 824** - General Pathology for Non-Medical Students (Coordinator: John Rossiter)

**Pathology 826\*** - The Molecular Basis of Disease (Coordinator: Iain Young)

**Pathology 827** - Research Project in Pathology (Coordinator: Peter Greer)

\* alternate year course, not given in 2004

## **Graduate Students**

### **PhD Students (Supervisor)**

**Kristin Albert** (Leda Raptis) Stat3 regulation by the caveolae protein, Cav-1, in breast cancer

**Deborah Greer** (Scott Davey) Role of human G2 checkpoint protein HRAD9 as a sensor of genomic instability, and in the formation of nuclear foci induced by DNA damage and inhibition of replication fork progression

**Brandy Hyndman** (David LeBrun) Acetylation and protein – protein interactions involving the protein E2A

**Glenn MacLean** (Martin Petkovich) Cloning of Cyp26B1 and its role during murine embryogenesis

**Lee O'Brien** (David Lillicrap) Identification and characterization of mutations in the von Willebrand factor gene that affect von Willebrand factor multimer size

**Cynthia Pruss** (David Lillicrap) The role of von Willebrand factor in arterial thrombosis

**Fiona Rawle** (David Lillicrap) Improving Hemophilia A treatment: increasing efficacy and decreasing immunogenicity

**Patrick Smith** (Peter Greer/Tassos Anastassiades) Metabolic and gene expression modulation in cultured articular chondrocytes by N-acylation of GlcN

**John Tra** (Protein Function Discovery Program)

**Peter Truesdell** (Peter Greer) Understanding the diverse roles of the fps tyrosine kinase

**Adina Vultur** (Leda Raptis) Role of chaperones upon transformation and differentiation

**Kevin Weigl** (Susan Cole) Biochemical investigations of MRP1: analysis of glycosylation and topology

**Ted Wright** (Bruce Elliott) Inhibiting hepatocyte growth factor interaction with its receptor met in breast carcinoma cells

## **MSc Students (Supervisor)**

**Lilia Antonova** (Christopher Mueller) Stress and breast cancer: regulation of BRCA1 expression by hydrocortisone

**Aikaterini Anagnostopoulou** (Leda Raptis) The effect of Stat3 in normal and tumor cells and in the differentiation of mammary epithelial cells

**Rozanne Arulanandam** (Leda Raptis) Mechanism of Stat3 activation by cell-to-cell adhesion

**Audrey Boros** (Scott Davey) Characterizing the cellular defects associated with attenuated hRad9 function

**Fraser Clark** (Susan Cole) Examining the extracellular topology of multidrug resistance protein 1 (MRP1): a cysteine scanning mutagenesis approach

**Naomi Dore** (Martin Petkovich) Development of model systems to study the CYP26A1 promoter

**Taranjit Gujral** (Lois Mulligan) Molecular modeling of ret: mutations and mechanisms

**Angela Hui** (Bruce Elliott) c-src tyrosine kinase regulates cell-matrix adhesion-dependent activation of met and cell motility in breast carcinoma cells

**Leo Mok** (Roger Deeley) Elucidation of ABCA1 ATPase activity and the function of regulatory domain 1 using the Spodoptera frugiperda 21 cell line

**Shawna Organ** (Protein Function Discovery Program)

**Doug Richardson** (Lois Mulligan) ret internalization and sub-cellular localization: effects on downstream signaling

**Zoya Shapovalova** (Peter Greer) Involvement of fps and fer tyrosine kinases in neuronal cytoskeletal remodeling

**Sara Sharifpoor** (Bruce Elliott) Characterization of the function and regulation of Stat3 in autocrine HGF expression

**Jayda Sutton** (Don Maurice) PDE interactions with PKA and Epac relevance to cAMP inhibition of angiogenesis

**Ashley Theis** (Roger Deeley) Higher order structure of MRP1: application of cysteine-based techniques

**Xuefei Tian** (Lois Mulligan) Characterization of newly developed ret antibodies and application in ret-related tumours

**Stephanie Vander Pol** (David Lillicrap) Induction of immunological tolerance to factor VIII through tolerogenic antigen presentation

**Jimson Wong** (Scott Davey) Repair of oxidative DNA damage in fission yeast

**Julie Yome** (Lois Mulligan) Characterization of gene expression patterns associated with multiple endocrine neoplasia type 2B

## **MSc to PhD Transfer - Mini Masters Program (Supervisor)**

**Lilia Antonova** (Christopher Mueller) Stress and breast cancer: BRCA1 regulation by hydrocortisone

## **GRADUATING STUDENTS**

### **MSc Students (Supervisor)**

**Fraser Clark** (Susan Cole) Examining the extracellular topology of multidrug resistance protein 1 (MRP1): a cysteine scanning mutagenesis approach

**Naomi Dore** (Martin Petkovich) Development of model systems to study the CYP26A1 promoter

**Angela Hui** (Bruce Elliott) c-src tyrosine kinase regulates cell-matrix adhesion-dependent activation of met and cell motility in breast carcinoma cells

**Jimson Wong** (Scott Davey) Repair of oxidative DNA damage in fission yeast

**Julie Yome** (Lois Mulligan) Characterization of gene expression patterns associated with multiple endocrine neoplasia type 2B

### **PhD Students (Supervisor)**

**Deborah Greer** (Scott Davey) Role of human G2 checkpoint protein HRAD9 as a sensor of genomic instability, and in the formation of nuclear foci induced by DNA damage and inhibition of replication fork progression

**Lee O'Brien** (David Lillicrap) Identification and characterization of mutations in the von Willebrand factor gene that affect von Willebrand factor multimer size

## **Graduate Student Presentations**

**Anagnostopoulou, A.**, X. Liu, H. Laine and J.J.A. Holden. Serotonin-2A receptor gene does not play a role in the susceptibility of autism spectrum disorders. American Society of Human Genetics annual meeting, Toronto, ON

**Arulanandam, R.**, Vultur, A. and Raptis, L. Transfection procedures affecting Stat3 activity. 20<sup>th</sup> annual meeting on Oncogenes. Frederick, MD

**Clark, F.**, Deeley, R.G. and Cole, S.P.C. An extracellular topology study of multidrug resistance protein 1 (MRP1) using cysteine scanning mutagenesis. 7th Annual Meeting for Basic and Clinical Research Trainees, Faculty of Health Sciences, Queen's University

**Hyndman, B.D.**, Bayly, G.R., Casselman, R., Blobel, G.A. and LeBrun, D.P. E2A-PBX1 interacts directly with the KIX domain of CBP/p300 to induce proliferation in primary myeloid progenitors. Seventh Annual Meeting for Basic and Clinical Research Trainees, Faculty of Health Sciences, Queen's University

**Rawle, F.E.**, Labelle, A., Davie, E., Pratt, K.P. and Lillicrap, D. Prevention of anti-FVIII inhibitors via prior feeding of the FVIII C2 domain. American Society of Hematology annual meeting. San Diego, CA

**Shapovalova, Z.**, Gao, Y., Mewburn, J. and Greer, P.A. Involvement of fps/fes and fer tyrosine kinases in semaphorin 3A signaling. The American Society for Cell Biology 44<sup>th</sup> annual meeting. Washington, DC



**Truesdell, P.,** Francis, S.M. and Greer, P.A. The fps/fes protein tyrosine kinase is a component of the adherens junction in the murine mammary gland during lactation. The American Society for Cell Biology 44<sup>th</sup> annual meeting. Washington, DC

**Visram, H.,** Ableson, A., **Truesdell, P.,** Eisenhauer, E., George, R.L., Greer, P.A. and Sangrar, W. A systems biology approach for developing breast cancer therapeutics. American Society for Cell Biology 44<sup>th</sup> annual meeting. Washington, DC

**Vultur, A.,** Arulanandam R., Cao, J., Turkson, J., Jove, R. and Raptis, L. Stat3 activation in cells expressing the large tumor antigen of simian virus 40. 20<sup>th</sup> annual meeting on Oncogenes. Frederick, MD

**Vultur, A.,** Turkson, J., Jove, R., Elliott, B. and Raptis, L. Cell to cell adhesion modulates Stat3 activity in breast carcinoma cells. 20<sup>th</sup> annual meeting on Oncogenes. Frederick, MD

**Vultur, A.,** Turkson, J., Jove, R., Elliott, B. and Raptis, L. Cell to cell adhesion modulates Stat3 activity. 95<sup>th</sup> American Association for Cancer Research annual meeting. Orlando, FL

## **POSTGRADUATE PROGRAM**

**Caroline Rowlands, Program Coordinator and Director, Anatomic and General Pathology Programs**

**Lois Shepherd, Director, Hematopathology Program**

The department offers residency programs in Anatomic Pathology, General Pathology and Hematopathology which are fully accredited by the Royal College of Physicians and Surgeons of Canada. These are intensive and highly integrated programs which provide training opportunities for both academic and community hospital-based careers.

The department has made great strides towards achieving the critically important objective of fully reconstituting its residency training program. Our current enrolment is 10 residents, representing five fold growth over the last two years, and we project a further increase in enrolment next year. A space plan to accommodate this expansion has been developed and we are investing in the necessary infrastructure including modernization of both individual and multihead teaching microscopes. Both the Hematopathology and General Pathology programs underwent successful internal academic reviews in 2004. A residency training site was established at a regional partner hospital, providing a new opportunity for residents to acquire experience in the community setting

### **Postgraduate Trainees**

**Anatomic Pathology**

**Reza Behjati, PGY2**

**Jerry Chen, PGY1**

**Christopher Davidson, PGY1**

**Patricia Farmer, PGY5**

**Brian Gannon, PGY3**

**Marosh Manduch, PGY2**  
**Navid Nasser, PGY2**  
**Andrew Schell, PGY2**

**Hematopathology**  
**Hessah Al-Sulami, PGY3**  
**Kristin Roland, PGY4**

### **Resident Presentations**

**Brian Gannon**, Aspergillus fumigatus pacemaker endocarditis: a rare complication of pacemaker implantation. Canadian Association of Pathology annual meeting, Montreal, PQ

## **POSTDOCTORAL TRAINING PROGRAM IN CLINICAL AND LABORATORY GENETICS**

**Karen Harrison, Cytogenetics Coordinator**  
**Sherry Taylor, Molecular Genetics Coordinator**

Kingston General Hospital and Queen's University are together accredited by the Canadian College of Medical Geneticists to provide postdoctoral training programs in clinical and laboratory genetics. The clinical genetics program provides training to physicians in the diagnosis and management of genetic conditions. The laboratory genetics program provides in-depth training in the technology and application of diagnostic cytogenetics and molecular genetics to clinical service.

**Trainee in Laboratory Genetics**  
Shulin Zhang

## **OUTREACH EDUCATION PROGRAMS**

**Fiona Rawle, Coordinator of Enrichment Courses**

The department has expanded to three courses the outreach education program it provides to Ontario high school and elementary school students. The ABC course is directed to grade 5/6 students and uses plastinated human tissue and microscopic slides to illustrate how the science of pathology can gather and process evidence for human disease and forensic purposes. The SEEDS course uses a case format to introduce grade 7/8 students to various aspects of anatomy, genetics, infectious disease and forensic pathology. A Hands-on-Pathology course is provided for grade 11/12 students. The latter program provides an opportunity for students to develop their skills of observation, interpretation and integration in the context of a detailed analysis of the cause of death in a forensic case. These programs are coordinated, developed and delivered by our graduate students. The very high regard in which these courses are held is a reflection of both the commitment of our graduate students to the programs and the very high quality of their teaching.

**Instructors**

**ABC (Grade 5)** – Taran Gujral, Angela Hui, Lee O'Brien, Cindi Pruss, Fiona Rawle, Doug Richardson, Ashley Theis, Stephanie Vander Pol

**Seven-Eight Enrichment Day Studies (SEEDS) (Grade 7/8)** – Fiona Rawle, Ashley Theis, Stephanie Vander Pol

**EMC (Grade 12)** – Angela Hui, Lee O'Brien, Fiona Rawle, Doug Richardson, Ashley Theis

## RESEARCH

Our Department has a highly successful research program which is focused on several key areas: cancer biology; molecular hemostasis, genetics; amyloidogenesis; and, cholesterol metabolism. The types of research conducted are widely varied and include basic investigations of the molecular pathogenesis and pathophysiology of disease, translational oncologic research and the development of novel rational therapies based on an understanding of the molecular mechanisms of disease.

Our research funding in 2004 approximated \$4.4M. Funding granted departmental researchers by the major national agencies exceeded \$3M and, over the last six years, the department has seen a greater than 80% increase in the total value of competitive external research grants.

A principal strategic research objective of the department is to develop our capability and productivity in translational research. We established an Experimental Pathology Unit, the purpose of which is to facilitate translational oncologic research, and Dr. David LeBrun was appointed its first Director. This Unit is centered on a Tissue Microarray Facility which has been created through a partnership with the National Cancer Institute of Canada – Clinical Trials Group Tumour Bank. The Queen's Gene Microarray Service, under the directorship of Harriet Feilotter, has been consolidated within our department. Our tumour banking enterprise is expanding. The department currently administers a bank of formalin-fixed, paraffin-embedded tumour samples for the NCIC-Clinical Trials Group and we have an objective of becoming a collection site for the tumour bank program of the Ontario Cancer Research Network.

Total Research Funding	\$4,381,902
Total Number of Awards	77
Canadian Institutes of Health Research/Medical Research Council of Canada	\$2,454,655
National Cancer Institute of Canada	\$ 469,906
Heart and Stroke Foundation of Ontario/Canada	\$ 353,934
Industry	\$ 72,500
Other	\$1,030,907

### **Postdoctoral Research Fellows (Supervisor)**

**Gwenaelle Conseil** (Susan Cole)  
**Yan Gao** (Peter Greer)  
**Roma Gurusankar** (Scott Davey)  
**Tozammel Hogue** (Susan Cole)  
**Akio Nakajima** (Susan Cole)  
**Maha Othman** (David Lillicrap)  
**Lei Qin** (Roger Deeley)  
**Alice Rothnie** (Susan Cole)  
**Masaru Shibata** (David Lillicrap)  
**Yinfei Tan** (Peter Greer)  
**Bin Wang** (Susan Cole)

**Chris Westlake** (Roger Deeley)  
**Peng Wu** (Susan Cole)  
**Jessica Wyles** (Susan Cole)

## RESEARCH FUNDING

<b>Researcher Name</b>	<b>Sponsor</b>	<b>Title</b>
Susan Cole	Canadian Institutes of Health Research	Proteomics and protein function discovery training program
Susan.Cole	Canadian Institutes of Health Research	Canada Research Chair in Cancer Biology (Tier I)
Susan Cole	Canadian Institutes of Health Research	Novel aspects of nitroglycerin action: nitrate transport, apoptosis and nitrosative stress
Susan Cole	National Cancer Institute of Canada	Investigations of DNA topoisomerase II and drug resistance
Susan Cole	Canadian Institutes of Health Research	Multi-user equipment/maintenance grant
Susan Cole and Roger Deeley	Canadian Institutes of Health Research	Investigations of MRP-mediated drug resistance and xenobiotic transport
Christine Collier	Queen's University	Elevated homocysteine in dementia: a randomized, double blind, placebo controlled, pilot treatment trial with B-vitamins
Roger Deeley	Canada Foundation for Innovation/Ontario Innovation Trust	Protein function discovery
Roger Deeley	Heart and Stroke Foundation of Ontario	Functional studies of the ATP binding cassette transporter, ABCA 1
Roger Deeley and Susan Cole	Canadian Institutes of Health Research	MRP mediated multidrug resistance
Bruce Elliott, Susan Cole and Roger Deeley	Canadian Institutes of Health Research	Maintenance of fluorescence activated cell sorter and confocal microscope: a multi-user facility
Bruce Elliott	Canadian Breast Cancer Research Alliance	Novel interaction between Met and cell adhesion signaling in invasive cancer. A possible therapeutic target
Bruce Elliott	Canadian Institutes of Health Research	Targeting a novel activating function of stat3 in autocrine HGF expression in breast cancer. A possible therapeutic target
Harriet Feilotter	Queen's University	Investigation into the uses of non frozen material for use in microarray experimentation
Harriet Feilotter, Karen Harrison and David LeBrun	Ontario Cancer Research Network	Multi-dimensional profiling of follicular lymphoma
Harriet Feilotter and David LeBrun	Queen's University	A study to assess the use of archival tissue for DNA microarray experimentation
Harriet Feilotter and Scott Davey	Queen's University	Development of a novel screen for BRCA1 heterozygotes in blood lymphocytes

<b>Researcher Name</b>	<b>Sponsor</b>	<b>Title</b>
Peter Greer	National Cancer Institute of Canada	A molecular and genetic analysis of the <i>fps</i> proto-oncogene
Peter Greer	Canadian Institutes of Health Research	A molecular and genetic analysis of the <i>fer</i> proto-oncogene
Peter Greer	Canadian Institutes of Health Research	Genetic and cell biological analysis of calpain
Karen Harrison, Harriet Feilotter and John Rossiter	Queen's University	Molecular investigation of oligodendrogliomas using CGH microarray and molecular cytogenetic technology
Karen Harrison, Phillip Isotalo and Sandip SenGupta	Queen's University	Molecular cytogenetic screening of breast cancers for HER-2/neu gene amplification: evaluation of the effect of archival time
Tadaaki Hiruki and Lewis Tomalty	Queen's University	Freedom of information: repurposing static print reference material for dynamic mobile use in healthcare
Phillip Isotalo	Queen's University	Folate metabolism and carcinogenesis
Phillip Isotalo and Bruce Elliott	Kingston General Hospital	Gene expression profiles associated with met and Stat3 signaling networks in invasive human breast cancer
Phillip Isotalo and Bruce Elliott	Queen's University	Ezrin and met expression profile in invasive human breast cancer
Robert Kisilevsky	Heart and Stroke Foundation of Ontario	Acute phase SAA and cholesterol metabolism during inflammation
Robert Kisilevsky	Canadian Institutes of Health Research	SAA2.1 peptide therapeutics: two lead drug development candidates for the prevention and/or regression of atherosclerosis
Robert Kisilevsky	Canadian Institutes of Health Research	SAA2.1: a novel drug development candidate to prevent atherosclerosis
Robert Kisilevsky	Institute for the Study of Aging (USA)	Novel glycosaminoglycan precursors as anti-amyloid agents
Robert Kisilevsky	Canadian Institutes of Health Research	Amyloidogenesis: an analysis of the causative factors in an experimental murine model
David LeBrun	National Cancer Institute of Canada	The role of acetylation in regulating the leukemogenic protein E2A-PBX1
David LeBrun	Canadian Institutes of Health Research	Biophysical characterization of the E2A-CBP protein-protein interaction in acute lymphoblastic leukemia

<b>Researcher Name</b>	<b>Sponsor</b>	<b>Title</b>
David LeBrun	Canadian Institutes of Health Research	Elucidation of biochemical, biophysical and biological aspects of the interaction between E2A transcription factors and CBP/p300
David Lillicrap	Heart and Stroke Foundation of Ontario	Influence of genotype and environment on endothelial cell expression of von Willebrand factor
David Lillicrap	Canadian Hemophilia Society.	Aminoglycoside antibiotic treatment to suppress nonsense mutations in severe hemophilia
David Lillicrap	Health Canada, Lab Centre for Disease Control	A national hemophilia mutation testing program
David Lillicrap	Canadian Institutes of Health Research	Gene therapy for hemophilia A: studies of efficacy and the host immune response
David Lillicrap	Industry	Evaluation of a DNA microarray-based strategy for genotype determination in hemophilia
David Lillicrap	Canadian Institutes of Health Research	Pathophysiologic mechanisms of von Willebrand factor biosynthesis
David Lillicrap	National Centers of Excellence	Genetically modified, autologous stem cell populations for hemophilia A
David Lillicrap	Heart and Stroke Foundation of Ontario	Collaborative studies of hemostasis, fibrinolysis and vascular cell growth and function
David Lillicrap	Canadian Hemophilia Society	Impact of von Willebrand disease in the primary care setting
Lois Mulligan	Canadian Institutes of Health Research	Developing and characterizing models for ret receptor functions
Lois Mulligan, John Rossiter and Peter Greer	Canadian Institutes of Health Research	Investigating functional differences between ret receptor isoforms in cell growth and development
Lois Mulligan, John Rossiter and Peter Greer	National Cancer Institute of Canada	Investigating functional differences between ret receptor isoforms in cell growth and development
Lois Mulligan	Queen's University Summer Work Experience Program	Research assistant funding
Lois Mulligan, Susan Cole, Roger Deeley and Peter Greer	Canadian Institutes of Health Research	Transdisciplinary training program in cancer research
Dilys Rapson	Industry	Waveform analysis of the aPTT in critically ill hospitalized patients
Sandip SenGupta	Canadian Institutes of Health Research	Molecular epidemiology of breast cancer
Sherry Taylor	Ontario Women's Health Council	Genetics education for health care providers
Sherry Taylor	Ontario Women's Health Council	Research on a new genetic mutation screening technique for hereditary breast and ovarian cancer
Xiaolong Yang	Canadian Foundation for Innovation	Molecular and cellular function of tumor suppressor genes

<b>Researcher Name</b>	<b>Sponsor</b>	<b>Title</b>
Iain Young	National Cancer Institute of Canada, Clinical Trials Group	Tissue bank contract
Dick Zoutman	US Health, Centre for Disease Control and Prevention	Assessment of diagnostic/treatment algorithm for urinary infections
Dick Zoutman	Health Canada	Relationship between infection control resources and clinical outcomes
Dick Zoutman	Health Canada	Canadian surgical wound surveillance
Dick Zoutman	Ontario Ministry of Health	SARS outbreak epidemiologic investigators
Dick Zoutman	Health Canada	Clostridium difficile – national surveillance project
Dick Zoutman	Canadian International Development Agency	Strengthening infection control in the Balkans

## Visiting Lecturers

**Imogen Coe**, York University, Toronto, ON

**James Donnelly**, New York University School of Medicine, NY

**Gen-Sheng Feng**, The Burnham Institute, La Jolla, California

**Leonard Foster**, University of Southern Denmark

**Jody Haigh**, Samuel Lunenfeld Research Institute, Toronto, ON

**Robert Haché**, Ottawa Health Research Institute, Ottawa, ON

**Qing-Hy He**, University of Hong Kong

**Stephen Hill**, McMaster University, Hamilton, ON

**David Kaplan**, University of Toronto, Toronto, ON

**Bhushan Kapur**, University of Toronto, Toronto, ON

**Paul Lasko**, McGill University, Montreal, PQ

**Robert Liao**, Washington University School of Medicine, St. Louis, MI

**Andrew MacRae**, The Research Institute at Lakeridge Health Inc., Oshawa, ON

**Kanchana Manickam**, Regina Qu'Appelle Health Region, Regina, SK

**Morris Manolson**, University of Toronto, Toronto, ON

**Michael F. Moran**, University of Toronto, Toronto, ON

**Andras Nagy**, Samuel Lunenfeld Research Institute, Toronto, ON

**David S. Park**, University of Ottawa, Ottawa, ON

**John Veinot**, University of Ottawa, Ottawa, ON



## **The Nathan Kaufman Lecture**

Nathan Kaufman was born in Lachine, Quebec and educated at McGill University graduating with a medical degree in 1941. He interned at the Royal Victoria Hospital and then served as a Medical Officer to a tank battalion in Western Europe and was honoured with an MBE. After 18 months as a pathology resident at the Jewish General Hospital in Montreal he moved with his wife Rita to the Cleveland Metropolitan General Hospital to complete his residency. He then joined the Faculty at Case Western and quickly began a successful and satisfying career in iron metabolism research, medical education and laboratory administration. In 1967 after 7 years as a Professor at Duke University, he was recruited by Dean Harry Botterell to succeed Bob More as the Head of Pathology at Queen's.

His accomplishments at Queen's were numerous. They included the development of the NCIC Cancer Research Unit, recruitment and nurturing of many senior faculty, distinguished service to senior committees of the Hospital, University and the Medical Research Council of Canada, and expansion of our research and training programs. During his twelve years at Queen's, Dr. Kaufman became internationally recognized for his distinguished leadership as Editor of Laboratory Investigation, President of the US-Canadian Academy of Pathology and the International Academy of Pathology. On leaving Queen's he moved to Augusta as the first full-time Secretary/Treasurer of the USCAP. He has been recognized by the USCAP for his numerous contributions and was honoured with the establishment of the Nathan Kaufman Timely Topics Lecture which is delivered annually at the USCAP meeting.

Through this lectureship the Department honours Nathan Kaufman's extraordinary influence in shaping the scholarly life of our department and his international contributions to academic pathology.

2004 Dietrich Keppler, German Cancer Centre, University of Heidelberg, Heidelberg, Germany

2003 Ulf Lindahl, Uppsala University, Uppsala, Sweden

2002 Janet Rossant, Samuel Lunenfeld Research Institute, Mount Sinai Hospital, Toronto, ON

2000 Errol Friedberg, Southwestern Medical School, TX

## **The M. Daria Haust Lecture**

M. Daria Haust was born in Poland, and graduated summa cum laude from medical school of Heidelberg University in 1951. After emigrating to Canada with her husband in 1952, she entered a rotating internship at the Kingston General Hospital. She undertook a year of atherosclerosis research with Dr. Robert More and then enrolled in the general pathology residency program at Queen's. In 1959 she achieved specialty certification from the Royal College of Physicians and Surgeons and also obtained an MSc-degree from Queen's. Following a postdoctoral fellowship in pediatric pathology with Dr. Benjamin Landing at the Cincinnati Children's Hospital, Dr. Haust joined the Faculty at Queen's in 1960. She successfully nurtured

two sons, embarked on a career in experimental atherosclerosis and pediatric pathology and, in 1967, moved to the University of Western Ontario where she remains active as Professor Emeritus.

Dr. Haust has had a distinguished career in basic research in several areas including atherosclerosis, the process of elastogenesis, and the pathogenesis of several genetic diseases. She is a highly regarded educator and has played important roles in the establishment of national and international scientific societies. She also served on a number of Editorial Boards of scientific journals and was invited to lecture around the globe on countless occasions. Her scientific contributions have been honoured by a multiplicity of distinctions (e.g., the Canada Council Killam Prize in Medicine; Gold Medal Award from the International Atherosclerosis Society; Honorary membership of the Academy of Science of Heidelberg; Best Teacher Awards at the University of Western Ontario; the William Boyd Lectureship of the Canadian Association of Pathology; the Andreas Vesalius Medal by the University of Padua; Honorary Professorship of Medicine from the University of Chile, and many others). Dr. Haust's biography, as one of the Founders of Pediatric Pathology, appeared in 2001, and a Festschrift in her honour with contributions from 14 international scientists was published in a scientific journal in 2002. In 2004 she received the Distinguished Pathologist Award from the US/Canadian Academy of Pathology. She is the recipient of honorary degrees in medicine from three mediaeval Universities (Jagiellonian University, Krakow; Charles University, Prague; Havana University, Havana).

Through this lectureship the Department honours Daria Haust's scholarly achievements, her contributions to her profession, and her continuing passionate devotion to our department and to Queen's University.

- 2003 Luc Oigny, Pediatric and Molecular Pathologist, Department of Pathology and Cellular Biology, Université de Montréal and Hôpital Sainte-Justine, Montréal, Québec
- 2001 Kurt Benirschke, Emeritus Professor of Pathology and Reproductive Medicine, University Medical Center, San Diego, California

## **Invited Lectures and Representations by Faculty**

### **Susan Cole**

Institute of Parasitology, McGill University, Québec, QC

American Society for Pharmacology and Experimental Therapeutics Symposium, Washington, DC

Laboratory of Cell Biology, National Cancer Institute, National Institute of Health, Bethesda, MD

Department of Pharmaceutical Sciences, University of Toronto, Toronto, ON

Department of Biopharmaceutical Sciences, University of Illinois at Chicago, Chicago, IL

Indiana University Cancer Center, Indianapolis, IN

Department of Biopharmaceutical Sciences, University of California at San Francisco, San Francisco, CA

Institut de Recherches Servier, Croissy sur Seine, France

9th Symposium of the Institut de Chimie des Substances Naturelles (ICSN), Gif-sur-Yvette, France

Department of Pharmacology, Cambridge University, Cambridge, UK

H. Lee Moffitt Cancer Center & Research Institute, - 3rd Biennial Meeting, St. Petersburg Beach, FL

ABC Gene Workshop, National Cancer Institute-National Institute of Health, Frederick, MD

Department of Medical Sciences-Oncology, University of Alberta, Edmonton, AB

### **Christine Collier**

MDS, Toronto, ON

Ontario Society of Clinical Chemists Annual Meeting, Mount Sinai Hospital, Toronto, ON.

### **Roger Deeley**

IBC Life Sciences Conference, Boston MA

Laboratory of Molecular Carcinogenesis, National Institute of Environmental Health Sciences, Research Triangle Park, NC

### **Peter Greer**

University of Toronto, Toronto, ON

### **David Lillicrap**

Current Issues Facing Coagulationists: Workshop 2004. London, UK

University of Texas, Hemophilia Program

First Saudi Symposium on Hemostasis and Thrombosis, via videoconference to Saudi Arabia

European Union von Willebrand Disease Consortium, Vicenza, Italy

Blood Research Center, Milwaukee, WI

Pre-SSC Educational Symposium, Venice, Italy

International Society on Thrombosis and Haemostasis, Scientific and Standardization

Committee, Factor VIII and von Willebrand Factor Subcommittees, Venice, Italy

Hospital for Sick Children, Toronto, ON

Blood Research Institute, Milwaukee, WI

Pediatric Haemostasis and Thrombosis Symposium, Hospital for Sick Children, Toronto, ON

XXVI International Congress of the World Federation of Hemophilia, Bangkok, Thailand  
National Hemophilia Foundation 56<sup>th</sup> Annual Meeting, Dallas, TX

**Samuel Ludwin**

Management of MS: Concepts and Reality, Miami, FL  
National Neurology Collaborative on Health and the Environment (CHE) Conference, Mont  
Tremblant, PQ  
European Congress of Neuropathology, Amsterdam, Holland

**Lois Mulligan**

Canadian Diabetes Association/Canadian Society of Endocrinology and Metabolism Annual  
Meetings, Quebec City, QC  
48<sup>th</sup> Annual Conference of the Canadian Society of Clinical Chemists, London, ON  
Division of Human Cancer Genetics, Ohio State University, Columbus, OH

**Lois Shepherd**

National Cancer Institute of Canada – Clinical Trials Group Annual Spring Meeting  
Canadian Cancer Society, Toronto, ON

**Dick Zoutman**

In Sight Conference on Infection Control, In Sight Conferences, Toronto, ON  
Hannah History of Medicine Happening: SARA Symposium, Queen's University  
Ontario Hospital Association Infection Control Conference, Toronto, ON  
Ontario Hospital Association Patient Safety Conference, Toronto, ON  
International Federation of Infection Control Scientific Meeting, International Federation of  
Infection Control, Porec, Croatia

## Publications

B. Wang, **A. Boag**, M. Idrees, **I.D. Young**, P. Unger. Urachal malignant fibrous histiocytoma: a case report with literature review. *Archives of Pathology and Laboratory Medicine*, 128: 456, 2004.

J.D. Campbell, K. Koike, C. Moreau, M.S.P. Sansom, **R.G. Deeley**, **S.P.C. Cole**. Molecular modeling correctly predicts the functional importance of Phe<sup>594</sup> in transmembrane helix 11 of the multidrug resistance protein, MRP1 (ABCC1). *Journal of Biological Chemistry*, 279: 463, 2004.

K. Koike, G. Conseil, E.M. Leslie, **R.G. Deeley**, **S.P.C. Cole**. Identification of proline residues in the core cytoplasmic and transmembrane regions of multidrug resistance protein 1 (MRP1/ABCC1) important for transport function, substrate specificity, and nucleotide interactions. *Journal of Biological Chemistry*, 279: 12325, 2004.

K. Koike, **R.G. Deeley**, **S.P.C. Cole**. Mapping of the MRPm5 epitope to the cytosolic region between transmembrane helices 13 and 14 in the drug and organic anion transporter, MRP1 (ABCC1). *Biochemical and Biophysical Research Communications*, 315: 719, 2004.

A. Haimeur, G. Conseil, **R.G. Deeley**, **S.P.C. Cole**. The MRP-related and BCRP/ABCG2 multidrug resistance proteins: biology, substrate specificity and regulation. *Current Drug Metabolism*, 5: 21, 2004.

A. Haimeur, G. Conseil, **R.G. Deeley**, **S.P.C. Cole**. Mutations of charged amino acids in or proximal to the transmembrane helices of the second membrane spanning domain differentially affect the substrate specificity and transport activity of the multidrug resistance protein, MRP1 (ABCC1). *Molecular Pharmacology*, 65: 1375, 2004.

Q. Mao, G. Conseil, A. Gupta, **S.P.C. Cole**, J.D. Unadkat. Functional expression of the human breast cancer resistance protein in *Pichia pastoris*. *Biochemical and Biophysical Research Communications*, 320: 730, 2004.

D. Situ, A. Haimeur, G. Conseil, K.E. Sparks, D. Zhang, **R.G. Deeley**, **S.P.C. Cole**. Mutational analysis of ionizable residues proximal to the cytoplasmic interface of membrane spanning domain 3 of the multidrug resistance protein, MRP1 (ABCC1): Glutamate 1204 is important for both the expression and catalytic activity of the transporter. *Journal of Biological Chemistry*, 279: 38871, 2004.

P.W. Causey, M.C. Bair, **S.P.C. Cole**. Synthesis, characterization and assessment of cytotoxic properties of a series of titanocene dichloride derivatives. *Organometallics* 23: 4486, 2004.

G. Conseil, **R.G. Deeley**, **S.P.C. Cole**. Role of two adjacent cytoplasmic tyrosine residues in MRP1 (ABCC1) transport activity and sensitivity to sulfonylureas. *Biochemical Pharmacology* (in press).

E.M. Leslie, **R.G. Deeley**, **S.P.C. Cole**. Multidrug resistance proteins in toxicology: role of P-glycoprotein, MRP1, MRP2 and BCRP (ABCG2) in tissue defense. *Toxicology and Applied Pharmacology* (in press).

J.S. Eisen, M.L.A. Sivilotti, K.U. Boyd, D.G. Barton, C. Fortier, **C. Collier**. Does urine drug screening alter the management of emergency department patients? *Canadian Journal of Emergency Medicine* (in press).

R.L. Houlden, B.J. Raja, **C.P. Collier**, A.F. Clark, J.M. Waugh. Medical students' perceptions of an undergraduate research elective. *Continuing Medical Teaching Education*, 26(07): 659, 2004.

D-W. Zhang, K. Nunoya, M. Vasa, H-M. Gu, A. Theis, **S.P.C. Cole**, **R.G. Deeley**. Transmembrane helix 11 of multidrug resistance protein 1 (MRP1/ABCC1): identification of polar amino acids important for substrate specificity and binding of ATP at nucleotide binding domain 1. *Biochemistry* 43: 9413, 2004.

E. Lin, A. Hui, E. Tremblay, E. Schaefer, **B.E. Elliott**. Disruption of Ca<sup>2+</sup> -dependent cell-matrix adhesion enhances c-Src kinase activity, but causes dissociation of the c-src/FAK complex and dephosphorylation of tyrosine-577 of FAK in carcinoma cells. *Experimental Cell Research*, 293: 1, 2004.

T.G. Wright, J. Tsai, Z. Jia, **B.E. Elliott**. Inhibition by copper(II) binding of hepatocyte growth factor interaction with its receptor met in breast carcinoma cells. *Journal of Biological Chemistry*, 279: 32499, 2004.

**B.E. Elliott**, H. Qiao, D. Louvard, M. Arpin. Co-operative effect of ezrin and c-Src in deregulation of cell-cell contacts and scattering of mammary carcinoma cells. *Journal of Cellular Biochemistry*, 92: 16, 2004.

**B.E. Elliott**, J. Meens, **S.K. SenGupta**, D. Louvard, M. Arpin. The membrane-cytoskeletal crosslinker protein ezrin is required for metastasis of mammary carcinoma cells. *Breast Cancer Research* (in press).

J. Srivastava, **B.E., Elliott**, D. Louvard, M. Arpin. Src-dependent ezrin phosphorylation in adhesion-mediated signalling. *Molecular Biology of the Cell* (in press).

**H. Feilotter**. Microarrays in veterinary diagnostics. *Animal Health Research Reviews* (in press).

F. Demarchi, C. Bertoli, **P.A. Greer**, C. Scheider. Ceramide triggers an NF- $\kappa$ B dependent survival pathway through calpain-mediated degradation of p105. *Cell Death and Differentiation* (in press).

**W. Sangrar**, Y. Gao, B. Bates, R.A. Zirngibl, **P.A. Greer**. Activated Fps/Fes tyrosine kinase regulates erythroid differentiation and survival. *Experimental Hematology* 32: 935, 2004.

**W. Sangrar**, Y. Senis, J. Samis, Y. Gao, M. Richardson, D.H. Lee, **P.A. Greer**. Hemostatic and hematological abnormalities in gain-of-function fps/fes transgenic mice are associated with the angiogenic phenotype. *Journal of Thrombosis and Haemostasis* 2: 2009, 2004.

H. Huynh, N. Bottini, S. Williams, V. Cherepanov, L. Musumeci, K. Saito, S. Bruckner, E. Vachon, X. Wang, J. Kruger, C.-W. Chow, M. Pellicchia, E. Monosov, **P.A. Greer**, W. Trimble, G.P. Downey, T. Mustelin. Control of vesicle fusion by a tyrosine phosphatase. *Nature Cell Biology* 6: 831, 2004.

G. Xu, A. Craig, **P.A. Greer**, M. Miller, P. Anastasiades, J. Lilien, J. Balsamo. Continuous association of cadherin with  $\beta$ -catenin requires the non-receptor tyrosine kinase fer. *Journal of Cell Science* 117: 3207, 2004.

L. Fan, C. Di Ciano-Oliveira, S.A. Weed, A.W.B. Craig, **P.A. Greer**, O.D. Rotstein, A. Kapus. Actin depolymerization-induced tyrosine phosphorylation of cortactin: the role of fer kinase. *Biochemical Journal* 380: 581, 2004.

**W. Sangrar**, J. Mewburn, S.G. Vincent, J.T. Fisher, **P.A. Greer**. Vascular defects in gain-of-function *fps/fes* transgenic mice correlate with PDGF- and VEGF-induced activation of mutant *fps/fes* kinase in endothelial cells. *Journal of Thrombosis and Haemostasis* 2: 820, 2004.

A. Vulture, J. Cao, R. Arulanandam, J. Turkson, R. Jove, **P.A. Greer**, A. Craig, **B. Elliott**, **L. Raptis**. Cell to cell adhesion modulates Stat3 activity in normal and breast carcinoma cells. *Oncogene* 23: 2600, 2004.

J.J. Haigh, M. Ema, K. Haigh, M. Gertsenstein, **P.A. Greer**, J. Rossant, A. Nagy, E.F. Wagner. Activated *fps/fes* partially rescues the in vivo developmental potential of *flk1* deficient vascular progenitor cells. *Blood* 103 (3): 912, 2004.

T. Bardell, L.C., **D. Hurlbut**, D. Jalink, W.P. Paterson. GI stromal tumor unmasked by argon plasma coagulation of vascular ectasia. *Gastrointestinal Endoscopy*, 59(7): 920, 2004.

C.D. O'Hara, M.W. Allegretto, G.D. Taylor, **P.A. Isotalo**. Epiglottic histoplasmosis presenting in a nonendemic region: a clinical mimic of laryngeal carcinoma. *Archives of Pathology and Laboratory Medicine*, 128: 574, 2004.

**P.A. Isotalo**, R.L. George, R. Walker, **S.K. SenGupta**. Malignant phyllodes tumor with liposarcomatous differentiation. *Archives of Pathology and Laboratory Medicine* (in press).

**R. Kisilevsky**, W.A. Szarek, J.B. Ancsin, E. Elimova, S. Marone, S. Bhat, A. Berkin. Inhibition of AA amyloidogenesis in vivo and in tissue culture by 4-deoxy analogues of peracetylated 2-acetamido-2-deoxy  $\alpha$ - and  $\beta$ -D-glucoses. *American Journal of Pathology*, 164: 2127, 2004.

**J.B. Ancsin**, **R. Kisilevsky**. A binding site for highly sulfated heparan sulfate is identified in the N-terminus of the circumsporozoite protein. *Journal of Biological Chemistry*, 279: 21824, 2004.

**R. Kisilevsky**, W.A. Szarek, **J.B. Ancsin**, R. Vohra, Z. Li, S. Marone. Novel glycosaminoglycan precursors as anti-amyloid agents, part IV. *Journal of Molecular Neuroscience*, 24: 167, 2004.

E. Elimova, **R. Kisilevsky**, W.A. Szarek, **J.B. Ancsin**. Amyloidogenesis recapitulated in cell culture: a peptide inhibitor provides direct evidence for the role of heparan sulfate and suggests a new treatment strategy. *FASEB Journal* 18: 1749, 2004.

R. Bayly, L. Chuen, R.A. Currie, B.D. Hyndman, R. Casselman, G.A. Blobel, **D.P. LeBrun**. E2A-PBX1 interacts directly with the KIX domain of CBP/p300 in the induction of proliferation in primary hematopoietic cells. *Journal of Biological Chemistry*, 29(53): 55362, 2004.

B. Brown, C.X. Shi, F.E.M. Rawle, S. Tinlin, A. McKinven, F.L. Graham, **D. Lillicrap**. Factors influencing therapeutic efficacy and the host immune response to helper-dependent adenoviral gene therapy in hemophilia A mice. *Journal of Thrombosis and Haemostasis*, 2: 111, 2004.

B. Brown, C.X. Shi, S. Powell, **D. Hurlbut**, F.L. Graham, **D. Lillicrap**. Helper-dependent adenoviral vectors mediate therapeutic Factor VIII expression for several months with minimal accompanying toxicity in a canine model of severe hemophilia A. *Blood*, 103: 804, 2004.

F.E.M. Rawle, **D. Lillicrap**. Preclinical animal models for hemophilia gene therapy: predictive value and limitations. *Seminars in Thrombosis and Haemostasis*, 30: 205, 2004.

J.M. Teitel, D. Barnard, S. Israels, **D. Lillicrap**, M.C. Poon, J. Sek. Home management of haemophilia. *Hemophilia*, 10: 118, 2004.

L.A. O'Brien, K. Benford, H. Racz, **D. Rapson**, **C. Hough**, **D. Lillicrap**. A type 2A (group II) von Willebrand factor disease mutation (L1503Q) associated with a minimal loss of high molecular weight von Willebrand factor multimers. *Journal of Thrombosis and Haemostasis*, 2: 1135, 2004.

**P.D. James**, L.A. O'Brien, C.A. Hegadorn, C. Notley, G.D. Sinclair, **C. Hough**, M-C Poon, **D. Lillicrap**. A novel type 2A von Willebrand Factor mutation located in the last nucleotide of exon 26 (3538G>A) causes skipping of two non-adjacent exons. *Blood*, 104: 2739, 2004.

**D. Lillicrap**. Inside Blood: testing novel hemophilia therapies: of mice and men. *Blood*, 104: 2614, 2004.

P. Ye, A.R. Thompson, R. Sarkar, Z. Shen, **D. Lillicrap**, R.J. Kaufman, H.D. Ochs, D.J. Rawlings, C.H. Miao. Naked DNA transfer of Factor VIII induced transgene-specific, species-independent immune response in hemophilia A mice. *Molecular Therapeutics*, 10: 117, 2004.

I. Hedlun-Treutiger, S. Revel-Vilk, V.S., Blanchette, J.A. Curtin, **D. Lillicrap**, M.L. Rand. Reliability and reproducibility of classification of children as "Bleeders" versus "Non-Bleeders" using a questionnaire for significant mucocutaneous bleeding. *Journal of Pediatric Hematology and Oncology*, 26: 488, 2004.

F.E.M. Rawle, C.X. Shi, B. Brown, A. McKinven, S. Tinlin, F.L. Graham, **C. Hough**, **D. Lillicrap**. Heterogeneity of the immune response to adenovirus-mediated Factor VIII gene therapy in different inbred hemophilic mouse strains. *Journal of Genetic Medicine*, 6: 1358, 2004.

J. Sutherland, L.A. O'Brien, **D. Lillicrap**, D.F. Weaver. Molecular modelling of the von Willebrand factor A2 domain and the effects of associated type 2A von Willebrand disease mutations. *Journal of Molecular Graphics and Modelling*, (Online), 10(4): 259, 2004.

M.W. Skinner, **D.P. Lillicrap**, J. McMillan, M. Castro Ozelo, G.F. Pierce. What is a cure and how do we get there? *Haemophilia*, 10(Suppl 4): 115, 2004.

E.J. Favaloro, **D. Lillicrap**, M.A. Lazzari, M. Cattaneo, C. Mazurier, A. Woods, S. Meschengieser, A. Blanco, A.C. Kempfer, A. Hubbard, A. Chang,. Von Willebrand disease: laboratory aspects of diagnosis and treatment. *Haemophilia*, 10(Suppl 4): 164, 2004.

**C. Hough**, C. Cuthbert, C. Notley, C. Brown, E. Berber, **D. Lillicrap**. Cell type-specific regulation of von Willebrand factor expression by the E4BP4 transcriptional repressor. *Blood* (in press).

J. Huh, K. Yao, L. Quigley, **S.K. Ludwin**, H.F. McFarland, P.A. Muraro, R. Martin, K. Ito. Limited repertoire of HLA-DRB1 \*0401-restricted MBP111-129 specific T cells in HLA-DRB1 \*0401 Tg mice and their pathogenic potential. *Journal of Neuroimmunology*, 151(1-2): 94, 2004.

J.A. Quandt, M. Baig, K. Yao, K. Kawamura, J. Huh, **S.K. Ludwin**, H.J. Bian, M. Bryant, L. Quigley, Z.A. Nagy, H.F. McFarland, P.A. Muraro, R. Martin, K. Ito. Unique clinical and pathological features in HLA-DRBA \*0401-restricted MBP111-129 specific humanized TCR transgenic mice. *Journal of Experimental Medicine*, 200(2): 223, 2004.



C. Stadelmann, **S.K. Ludwin**, T. Tabira, A. Guseo, C.F. Lucchinetti, L. Lee-Össy, A.T. Ordinario, W. Brück, H. Lassmann. Hypoxic preconditioning explains concentric lesions in Balo's type of Multiple Sclerosis. *Brain* (in press).

R. Stupp, W.P. Mason, M.J. van den Bent, M. Weller, B. Fisher, M.J.B. Taphoorn, K. Belanger, A.A. Brandes, J.G. Cairncross, C. Marosi, U. Bogdahn, J. Curschmann, T. Gorlia, R. Janzer, **S.K. Ludwin**, A. Allgeier, D. Lacombe, E. Eisenhauer, R.O. Mirimanoff. Radiotherapy plus concomitant and adjuvant Temozolomide for patients with newly diagnosed glioblastoma: results of a randomized Phase III trial of the European Organisation for Research and Treatment of Cancer (EORTC) Brain Tumor and Radiotherapy Groups and National Cancer Institute of Canada Clinical Trials Group. *New England Journal of Medicine* (in press).

L.C. Hookey, **D.J. Hurlbut**, A.G. Day, **P.N. Manley**, W.T. Depew. One bite or two? A prospective trial comparing colonoscopy biopsy technique in patients with chronic ulcerative colitis. *American Journal of Gastroenterology* (in press).

S.M. Myers, **L. Mulligan**. The ret receptor is linked to stress response pathways. *Cancer Research*, 64: 4453, 2004.

J.B. Vanhorne, S.D. Andrew, **K.J. Harrison**, **S.A.M. Taylor**, B. Thomas, T.J. McDonald, P.J. Ainsworth, **L.M. Mulligan**. A model of GFR $\alpha$ 4 function and a potential modifying role in multiple endocrine neoplasia 2. *Oncogene* (in press).

L.A. Patrick, L.M. Gaudet, A.E. Farley, **J.P. Rossiter**, **L.L. Tomalty**, G.N. Smith. Development of a guinea pig model of chorioamnionitis and fetal brain injury. *American Journal of Obstetrics and Gynecology* 191: 1205, 2004.

C. Frank, M. Melanson, **J.P. Rossiter**. Primary care diagnosis of Amyotrophic Lateral Sclerosis in the elderly. *Geriatrics Today*, 7(4): 123, 2004.

P. Rasalingam, **J.P. Rossiter**, T. Mebatsion, A.C. Jackson. Comparative pathogenesis of the SAD-L16 strain of rabies virus and a mutant modifying the dynein light chain binding site of the rabies virus phosphoprotein in young mice. *Virus Research* (in press).

P. Rasalingam, **J.P. Rossiter**, A.C. Jackson. Recombinant rabies virus vaccine strain SAD-L16 inoculated intracerebrally in young mice produces a severe encephalitis with extensive neuronal apoptosis. *The Canadian Journal of Veterinary Research* (in press).

S.W. Taylor, R.M. Smith, G. Pari, W. Wobeser, **J.P. Rossiter**, A.C. Jackson. Neuroimaging highlight: herpes simplex encephalitis. *Canadian Journal of the Neurological Sciences* (in press).

N.K. Bjorklund, J.A. Evans, C.R. Greenberg, **L.E. Seargeant**, C.E. Schneider, B.N. Chodirker. The C677T methylenetetrahydrofolate reductase variant and third trimester obstetrical complications in women with unexplained elevations of maternal serum alpha-fetoprotein. *Reproductive and Biology and Endocrinology*, 2: 65, 2004.

M. Crump, T. Baetz, A. Belch, S. Couban, R. Meyer, K. Imrie, K. Howsan-Jan, R. Myers, G. Adams, K. Ding, N. Paul, **L. Shepherd**, J. Iglesias. Gemcitabine, Dexamethasone, and Cisplatin in patients with recurrent or refractory aggressive histology B-Cell Non-Hodgkin lymphoma: a Phase II study by the National Cancer Institute of Canada Clinical Trials Group (NCIC-CTG). *Cancer* 101(8): 1835, 2004.

J.R. Goffin, C. Savage, D. Tu, **L. Shepherd**, T.J. Whelan, I.A. Olivotto. The difference between study recommendations, stated policy, and actual practice in a clinical trial. *Annals of Oncology*, 15(8): 1276, 2004.

F. Efficace, P. Therasse, M.J. Piccart, C. Coens, K. van Steen, M. Welnicka-Jaskiewicz, T. Cufer, J. Dyczka, M. Lichinitser, **L. Shepherd**, H. de Haes, M.A. Sprangers, A. Bottomley. Health-related quality of life parameters as prognostic factors in a nonmetastatic breast cancer population: an international multicenter study. *Journal of Clinical Oncology*, 22(16): 3381, 2004.

K.M. Wasan, **L. Shepherd**, et al. The influence of letrozole on serum lipid concentrations in postmenopausal women with primary breast cancer who have completed 5 years of adjuvant tamoxifen - NCIC CTG MA.17L. *Annals of Oncology* (in press).

J.C. Byrd, K. Rai, B.L. Peterson, F.R. Appelbaum, V.A. Morrison, J.E. Kolitz, **L. Shepherd**, J.D.Hines, C.A. Schiffer, R.A. Larson. Addition of rituximab to fludarabine may prolong progression-free survival and overall survival in patients with previously untreated chronic lymphocytic leukemia: an updated retrospective comparative analysis of CALGB 9712 and CALGB 9011. *Blood* (in press).

**L. Shepherd**, D.J. Flynn, A.M. Smith. An unusual occurrence in transfusion of autologous whole blood and pentaspan 7. Beware!! *Canadian Journal of Anesthesia* (in press).

M.J. Nowaczyk, S. Zeesman, A. Kam, A., **S.A.M. Taylor**, R.F. Carter, D.T. Whelan. Boy with 47 XXY, del 15(q11.2q13) karyotype and Prader-Willi Syndrome. A new case and review of literature. *American Journal of Medical Genetics*, 125: 73, 2004.

S. Zeesman, D.T. Whelan, L. Zwaigenbaum, **S.A.M. Taylor**. Paternal transmission of Fragile X syndrome. *American Journal of Medical Genetics*, 129A: 184, 2004.

**X. Yang**, K. Yu, Y. Hao, D-M. Li, R. Stewart, K. Insogna, T. Xu. LATS1 tumor suppressor affects cytokinesis by inhibiting LIMK1. *Nature Cell Biology*, 6: 609, 2004.

D. Hunter, **D. Zoutman**, J. Whitehead, J. Hutchings, K. MacDonald. Health effects of anthrax vaccinations in the Canadian Forces. *Military Medicine*, 169(10): 833, 2004.

A. Bassili, D. Ford, B. du Prey, **D. Zoutman**. Antimicrobial recommendations by health care providers in Kenya. *American Journal of Health System Pharmacy*, 61: 304, 2004.

A.M. Arthur, **D.E. Zoutman**. West Nile Virus in Canada, 2000-2003: The impact of an emerging infectious disease. *Canadian Journal of Infection Control*, 19(1): 16, 2004.

**D.E. Zoutman**, A. Matlow. Responses to future epidemics, scourges and pestilence: putting the fiscal cart behind the safety horse. *Canadian Journal of Infection Control*, 19(1): 60, 2004.

M. Whelan, **D.E. Zoutman**. Lyme disease in North America: a review. *Canadian Journal of Infection Control*, 19(2): 80, 2004.

A. Matlow, **D. Zoutman**. Surgical site infections: an obvious target for quality improvement and patient safety initiatives. *Canadian Journal of Infection Control*, 19(4): 208, 2004.

D. Boyd, P. Kibsey, D. Roscoe, M. Mulvey, the Canadian Nosocomial Infection Surveillance Program (includes **D. Zoutman**). Enterococcus faecium N03-0072 carries a new VanD-type vancomycin resistance; characterization of the vanD5 operon. *Journal of Antimicrobial Chemotherapy* (in press).

D.A. Boyd, S. Tyler, S. Christianson, A. McGeer, M.P. Muller, B.M. Willey, E. Bryce, M. Gardam, P. Nordmann, M.R. Mulvey, the Canadian Nosocomial Infection Surveillance Program (includes **D. Zoutman**). Complete nucleotide sequence of a 92-kb plasmid harboring the extended spectrum beta-lactamase CTX-M-15 involved in a long-term care outbreak in Toronto. *Antimicrobial Agents and Chemotherapy* (in press).

G.D. Taylor, Canadian Hospital Epidemiology Committee, the Canadian Nosocomial Infection Surveillance Program (includes **D. Zoutman**). Incidence of bloodstream infection in multcentre inception cohort of hemodialysis patients. *American Journal of Infection Control* (in press).

M.R. Mulvey, the Canadian Hospital Epidemiology Committee, the Canadian Nosocomial Infection Surveillance Program (includes **D. Zoutman**). Characterization of extended-spectrum beta-lactamase Class A producing Escherichia coli and Klebsiella spp. in Canadian hospitals. *Antimicrobial Agents and Chemotherapy* (in press).

## **Book Chapters**

**S.P.C. Cole**, I.F. Tannock. Drug resistance. In: *The Basic Science of Oncology*, 4<sup>th</sup> edition. Eds. I.F. Tannock, R.P. Hill, R.G. Bristow and L. Harrington]. Chapter 18, McGraw-Hill. (in press).

J. Carpenter, **T. Hiruki**, M. Krall, D. Smith. "Fix Pharmacy!" In: *Transforming Health Care Through Information*, 2<sup>nd</sup> edition. Eds. Lorenzi, N.M., Ash, J.S., Einbinder, J., McPhee, W., Einbinder, L. Springer Verlag, pp. 197-198, 2004.

**R. Kisilevsky**, **S.P. Tam**. The mobilization of cholesterol released at sites of tissue injury, In: *Cell Growth and Cholesterol Esters*. Eds. S. Dessi and A. Pani, Landes Publishing Co, pp. 50-64, 2004.

**R. Kisilevsky**. The Amyloidoses, In: *Pathology*, 4<sup>th</sup> edition. Eds. Rubin, E. Gorstein, F., Strayer, D., and Schwarting, R., Lippincott, Williams and Wilkins, Philadelphia, pp. 1186–1200, 2004.

**R. Kisilevsky**. Chapter 17: Preparation and propagation of amyloid enhancing factor, In: *Methods in Molecular Biology*, Volume 299, *Amyloid Proteins: Methods and Protocols*. Eds. Sigurdsson, E.M., Humana Press, Totowa New Jersey, pp. 237-241, 2004.

**D. Lillicrap**. The basic science, diagnosis and clinical management of von Willebrand disease. *World Federation of Hemophilia Monograph*, September 2004.

**D. Lillicrap** and A.R. Thompson. Gene therapy for the hemophilias. *World Federation of Hemophilia Monograph*, October 2004.

**P.D. James** and **D. Lillicrap**. Molecular diagnosis of inherited bleeding and thrombotic disorders practical haemostasis and thrombosis. Eds. O'Shaunessey, D., Makris, M., Lillicrap, D. Publisher Blackwell Medical Publishing. January 2004.

**D. Lillicrap**. The basic science, diagnosis and clinical management of von Willebrand disease. *World Federation of Hemophilia Monograph*, September 2004.

**D. Lillicrap**, A.R. Thompson. Gene therapy for the hemophilias. World Federation of Hemophilia Monograph, October 2004.

O. Gimm, **L.M. Mulligan**, S. Suster, P. Komminoth, C. Morrison, K. Sweet. Multiple endocrine neoplasia 2. In: WHO Classification of Tumors of Endocrine Organs. Eds. Delellis RA, Lloyd RV, Heitz PU, Eng C. IARC Press: Lyon, pp. 211-217, 2004.

**L.M. Mulligan**. From Genes to Decisions: Evolving views of genotype based management in MEN 2. In: *Molecular Basis of Thyroid Cancer*. Ed. Farid N. Kluwer Academic Publishers: Norwell (in press).

**M. Daria Haust, David M. Robertson, Iain D. Young**. The role of the Department of Pathology in the advancement of patient care, education, and research of the Faculty of Medicine at Queen's University: 1954-2004. In: Queen's University School of Medicine: A Scrapbook of Memories, 1954-2004: an Historical Tribute to the Sesquicentennial /compiled by Donald B. Jennings, Chapter 30, pp. 197-204, 2004.

# **LABORATORY MEDICINE AND CLINICAL SERVICES**

Through its divisions of Anatomic Pathology, Hematopathology, Clinical Chemistry, Microbiology and Genetics, the department provides services in Laboratory Medicine, Infection Control and Clinical Genetics to both the Academic Health Sciences Centre and the broader region of southeastern Ontario. In 2004, the Clinical Laboratory Services Program underwent an extremely rigorous operational assessment as part of the regular Ontario Laboratory Accreditation review process. Not only did the laboratories receive the maximum possible five-year accreditation at the conclusion of the review but the number of recommended modifications to laboratory policies and procedures was extremely small. Given the extent and complexity of the laboratory services we provide, this represents a superb achievement for the Clinical Laboratory Services Program and attests to the high quality of our diagnostic work.

The severe budget constraints faced by the hospital during the last several years has challenged our ability to introduce new technology and keep abreast of advances in tertiary level laboratory medicine. The department has undertaken a strategic initiative to develop new programs to bridge “quality gaps” in several diagnostic areas, particularly those dependent on rapidly advancing molecular technology. A key achievement was the establishment of a molecular diagnostic unit in the Division of Microbiology and the introduction of this technology into routine practice.

In our Regional Laboratory Outreach Program, we extended our laboratory directorship services to Weeneebayko Regional Hospital in Moosonee. Our Infection Control Program was introduced into a regional partner health care institution and we have spearheaded a proposal to the Ministry of Health to establish an infection control network within our region.

## **Clinical Leadership**

Iain Young, Department Head

Sandip SenGupta, Deputy Head and Medical Director, Clinical Laboratories

### **Division of Anatomic Pathology**

Sandy Boag, Service Chief

David Dexter, Clinical Director, Regional Forensic Unit and Autopsy Service

Caroline Rowlands, Clinical Director, Cytology

### **Division of Hematopathology**

Dilys Rapson, Service Chief

Lois Shepherd, Clinical Director, Blood Bank and Transfusion Medicine

### **Division of Clinical Chemistry**

Lorne Seargeant, Service Chief

### **Division of Microbiology**

Dick Zoutman, Service Chief and Clinical Director, Infection Control

**Division of Genetics**

David Lillicrap, Service Chief

Karen Harrison, Laboratory Coordinator and Clinical Director, Cytogenetics

Sherry Taylor, Clinical Director, DNA Diagnostics

**Regional Laboratory Outreach Program**

Sandip SenGupta, Clinical Director

David Dexter, Laboratory Director, Kingston MDS Laboratories

Dilys Rapson, Laboratory Director, Lennox and Addington Hospital

Mike Raymond, Laboratory Director, Weeneebayko Regional Hospital

Sandip SenGupta, Laboratory Director, Perth/Smiths Falls Hospital and Ongwanada

Dick Zoutman, Laboratory Director and Medical Director of Infection Control, Providence Continuing Care Centre

# AWARDS, HONOURS AND ACHIEVEMENTS

## Faculty

### Personnel Awards

**Susan Cole**, Canada Research Chair, Tier I, Cancer Biology.

**Roger Deeley**, Stauffer Research Professor, Faculty of Health Sciences, Queen's University.

**David Lillicrap**, Canada Research Chair, Tier I, Molecular Hemostasis.

**David Lillicrap**, Career Investigator Award, Ontario Heart and Stroke Foundation.

### International

#### **Susan Cole**

Elected to the Nominating Committee of the American Association for Cancer Research.

Co-Chair, Minisymposium on "Novel Mechanisms of Drug Resistance and Functional Characterization", 95<sup>th</sup> Annual Meeting of the American Association for Cancer Research, Orlando, FL.

Chair, Session on "Natural Products and Anticancer Drugs", 9<sup>th</sup> Symposium of the Institut de Chimie des Substances Naturelles, Gif-sur-Yvette, France.

Discussion Leader, 2<sup>nd</sup> Gordon Research Conference on "Multi-Drug Efflux Systems", Oxford University, England.

Elected Co-Chair, 3<sup>rd</sup> Gordon Research Conference on "Multi-Drug Efflux Systems" (2006).

#### **M. Daria Haust**

Received the 2004 USCAP Distinguished Pathologist Award. This award recognizes 'distinguished service in the development of the discipline of pathology and is presented to an individual who is recognized as making major contributions to pathology over the years'.

#### **Samuel Ludwin**

Delivered the 2004 Ellworth E. Alvord Lecture in Neuropathology at the University of Washington, Seattle, WA.

Delivered the lecture "Use of Animal Models" at the Gordon Conference on Myelin, Lucca, Italy.

As a symposium speaker, delivered the lecture "Classifications of MS – What is Their Significance?" at the Americas Commission on Treatment and Research in Multiple Sclerosis, Toronto, ON

Chair, Annual Meeting of the Myelin Project, Nice, France.

Past President, International Society of Neuropathology.

### National

#### **Christine Collier**

Received the 2004 Award for Education Excellence from the Canadian Society of Clinical Chemists.

President, Ontario Society of Clinical Chemists.

**Roger Deeley**

Director, Division of Research, Cancer Care Ontario.

**David Lillcrap**

Chair, von Willebrand Disease Scientific Subcommittee of the Association of Hemophilia Clinic Directors of Canada.

**Samuel Ludwin**

Chair, Medical Advisory Committee, Canadian Multiple Sclerosis Society.

**Sandip SenGupta**

Past President, Canadian Association of Pathologists.

**Lois Shepherd**

Vice-President, Canadian Society of Transfusion Medicine.

Physician Coordinator of Multicentered Phase III Clinical Trials, National Cancer Institute of Canada – Clinical Trials Group.

**Dick Zoutman**

Co-Chair, Provincial Infectious Diseases Advisory Committee.

**University****Lewis Tomalty**

Received the Aesculapian Lectureship Award for teaching excellence in Phase IIa of the undergraduate medical curriculum.

Received the Reddick Award for excellence in nursing education from the School of Nursing.

**Graduate Students****Trainee Personnel Awards**

**Lilia Antonova**, Canadian Breast Cancer Foundation Fellowship

**Glen MacLean**, R.S. McLaughlin Fellowship

**Fiona Rawle**, Canadian Blood Services Fellowship

**Stephanie Vander Pol**, Franklin Bracken Fellowship and Canadian Blood Services Fellowship

**Adina Vultur**, Ontario Graduate Scholarships in Science and Technology

**Ted Wright**, R.S. MacLaughlin Fellowship

**Daria Haust Award**

**Zoya Shapovalova**

**Robert Kisilevsky Award**

**Lilia Antonova**

**Cynthia Pruss**

**Postdoctoral Trainees**

**George Christian Hoffman Fellowship**

**Akio Nakajima**



**Staff**

**Sandra Powell**, Research Assistant to David Lillicrap, was co-winner, with Joan Tremblay, Facility Manager, Animal Care Services at Queen's, of a Premier's Award made through the Kingston First Capital Challenge, a prestigious competition for entrepreneurs with new and innovative ideas. Their business case for an animal blood bank, only the second of its kind in Canada, won them the \$50,000 prize, and resulted in the creation of Kingston's Lifestream Animal Blood Bank Inc.