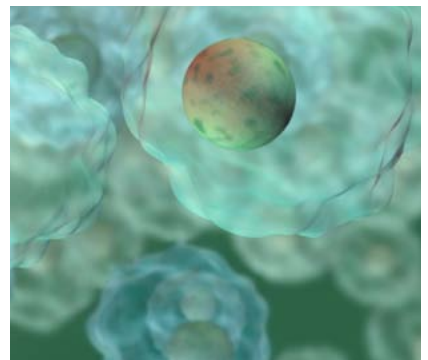
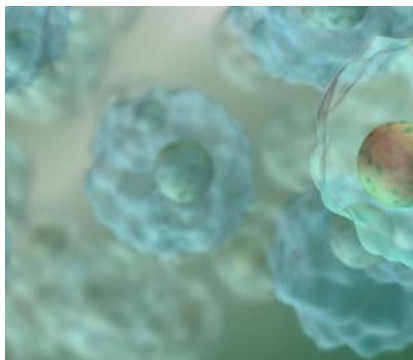
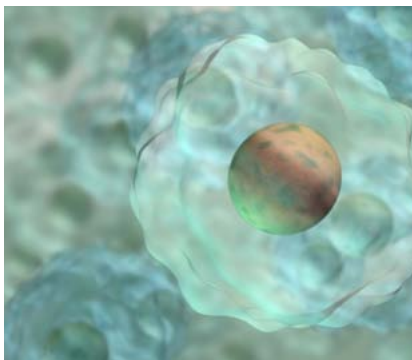
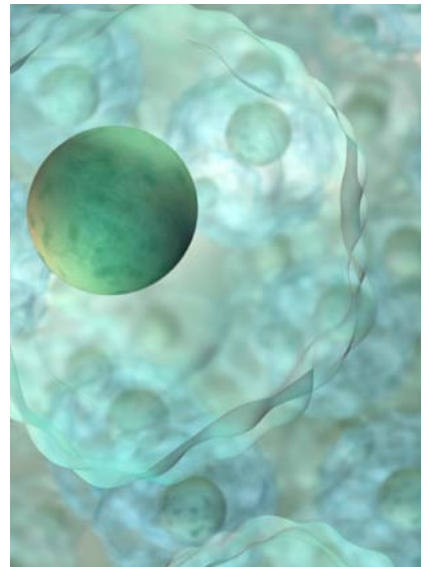
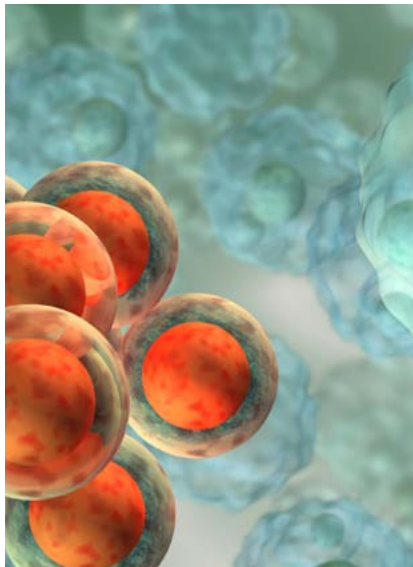
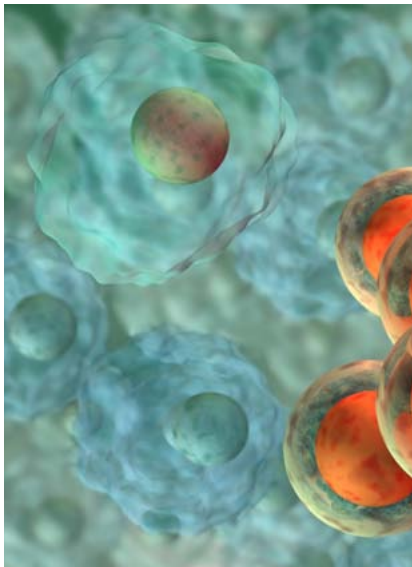


2010 Annual Report

DEPARTMENT OF PATHOLOGY — & — LABORATORY MEDICINE



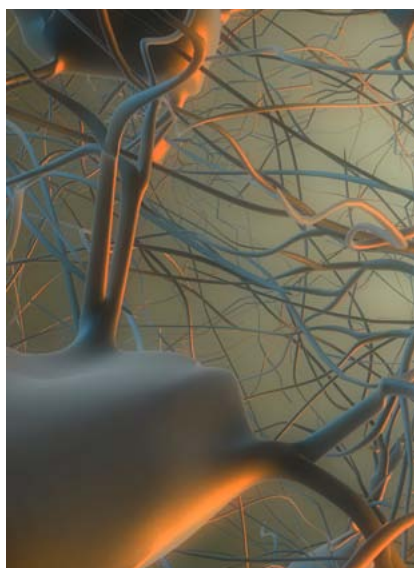


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Executive Summary

Department Structure and Organization:

The Department of Pathology and Laboratory Medicine (DPLM) comprises the medical and scientific staff for Calgary Laboratory Services (CLS). It is composed of 4 CLS Divisions and has 66 primary clinical MD appointees and 11 clinical PhD scientists. There are 34 members with University of Calgary GFT academic appointments and 43 with Clinical or Adjunct academic appointments, as well as one part-time locum. The Medical/Scientific staff are located at all acute-care hospital sites, at CLS' central laboratory facility the Diagnostic and Scientific Centre, and at the University of Calgary Health Sciences Centre, Heritage Medical Research Building, and Health Research Innovation Centre.

Accomplishments and Highlights:

Faculty members with primary appointments in the DPLM are active in research. We held \$1.64 million in external grant funding as principle investigators and published 117 peer-reviewed papers as well as 3 book chapters in 2010. The mean Impact Factor of the journals we published in for the year 2010 was 4.67.

We also make very significant contributions in teaching. Our postgraduate clinical training programs (Anatomic Pathology (AP) and Neuropathology Residency (NP) Training programs and Fellowship programs in a variety of areas) trained 16 Anatomic Pathology residents, 3 Neuropathology residents and 6 fellows in 2010. Our faculty contributed several thousand hours of post-graduate medical education and ~1200 hours of undergraduate medical education teaching.

One faculty member was promoted this year. We also had our second Alberta Heritage Foundation Medical Research (AHFMR) salary award recipient (two in the past two years) and our first endowed faculty member appointed (the Barb Ibbotson ACHF Investigator in Pediatric Hematology). Another one of our faculty members was the recipient of the Faculty of Medicine Smith Award for Senior Faculty.

This was an outstanding year for recruitment. A total of 5 new clinical and 3 new GFT faculty members were hired in 2010, including a new Section Head for Laboratory Informatics. Through improvements in efficiency, CLS was able to create three urgently needed new clinical faculty positions in the latter half of 2010; two of these new faculty members will be recruited in early 2011.

From a personal perspective, I underwent a formal review of my first term as joint academic and clinical Department Head and was reappointed for a second five year term. While I found it personally gratifying to have an opportunity to reflect on all we have accomplished as a Department, I also received helpful feedback which may allow me to provide improved leadership in my second term. I would like to personally thank everyone who provided feedback to the review process as well as Dr. Avrum Gottlieb, from the University of Toronto, for serving as my external reviewer. Over the past five years, we have recruited many excellent laboratory physicians and scientists, improved the clinical services we provide, strengthened our educational programs, and improved our research infrastructure and productivity.

On September 1, 2010, CLS Executive hosted a half-day research retreat to discuss CLS's vision for research; an educational retreat is planned for 2011.

Quality Programs:

CLS has a comprehensive quality assurance program. Laboratory-wide performance indicators are reported monthly and there is a formal critical incident reporting and resolution process. We also monitor several indicators of customer satisfaction.

Challenges:

Every year, we face the challenge of providing increased services without proportionate increases in funding. Operationally, our biggest challenges are capital funding and manpower shortages. Because of the large deficit within Alberta Health Services (AHS), purchasing necessary capital equipment, renovating old space, and developing new space continue to be problematic.

Late in 2009, we migrated from Cerner Pathnet Classic to our new Cerner Millennium Laboratory Information System (LIS); there were growing pains related to this new LIS system throughout 2010. Clearly, optimizing how we distribute our results to end-users will be a challenge for many years to come.

Considerable time was devoted throughout 2010 to develop an optimal model for provision of cancer pathology services within AHS Calgary Zone and CLS and there is more work to do in 2011.

On a sad note, two esteemed colleagues departed in early 2010. Dr. Omar Shokeir left his CLS Medical Director and Acting COO positions and Dr. Fred Swaine left his AHS, VP Labs position. Although I personally miss both, these positions have been ably filled by Ms. Paula Hall, Dr. Leland Baskin, and Ms. Tammy Hofer – a tribute to the “depth” of lab leadership at CLS and AHS.

Workforce Planning:

Meeting increasing workload and handling increased workload complexity without a significant increase in medical/scientific staff workforce has been our major challenge throughout my first term. Because pathology and laboratory medicine are services, we have no ability to control our own workload, as this is determined by numbers of surgical procedures, orders for laboratory tests, etc. To further complicate workforce matters, laboratory physicians are not fee for service, and, thus, there is no simple mechanism to fund new positions based upon workload expansion. Because of this, the Department of Pathology and Laboratory Medicine had been attempting to move toward an Academic Alternate Relationship Plan (AARP); however, this environment, which had waxed and waned, definitively shifted and the option to create new academic AARPs ended in 2010. Therefore, the CLS AARP Development Steering Committee held its final meeting on March 1, 2010 and then disbanded. I am grateful to the members of this committee for their years of service in an ever shifting environment.

There are several possible options to address future workforce needs and create newly funded positions; these include CLS, AHS, Alberta Health and Wellness (AHW) (after movement of the laboratory physician funding envelope into the Master Agreement), or a proposed new University of



Alberta (UofA)/University of Calgary (UofC) Faculty-wide AARP. None of these options are under our control. We know that we need funding for 8 new positions before the new South Health Campus opens next year.

To complicate matters even more, the pathology and laboratory medicine workforce across Canada is ageing and there are inadequate numbers of new graduates entering the workforce, and remuneration for pathologists has been stagnant for the past 2 years. Therefore, recruitment to replace retirements and retention will also be major challenges.

Future Directions and Initiatives:

Change continues to be fast and furious and it is also a time of great uncertainty. As a leading clinical laboratory in Alberta, we are trying to learn what roles we are to play within AHS. We have been asked by AHS to potentially provide services outside of our normal geographic limits and have provided them with feasibility studies; however, few decisions have been made. Both within Calgary and throughout Alberta, there are areas of laboratory test duplication that AHS may want to address which could result in laboratory closures, down-sizings, or mergers as well as redistribution of workload; changes of this nature would appear to provide an opportunity to improve efficiency, standardize services, and save money.

Opening dates for several of the large capital projects (expansions of Rockyview and Peter Lougheed Hospitals, the McCaig Tower at the Foothills Medical Centre, the South Calgary Hospital) are uncertain and, thus, planning for laboratory needs and/or actualizing laboratory services related to these capital projects has become increasingly problematic. Furthermore, funding for service expansion appears limited.

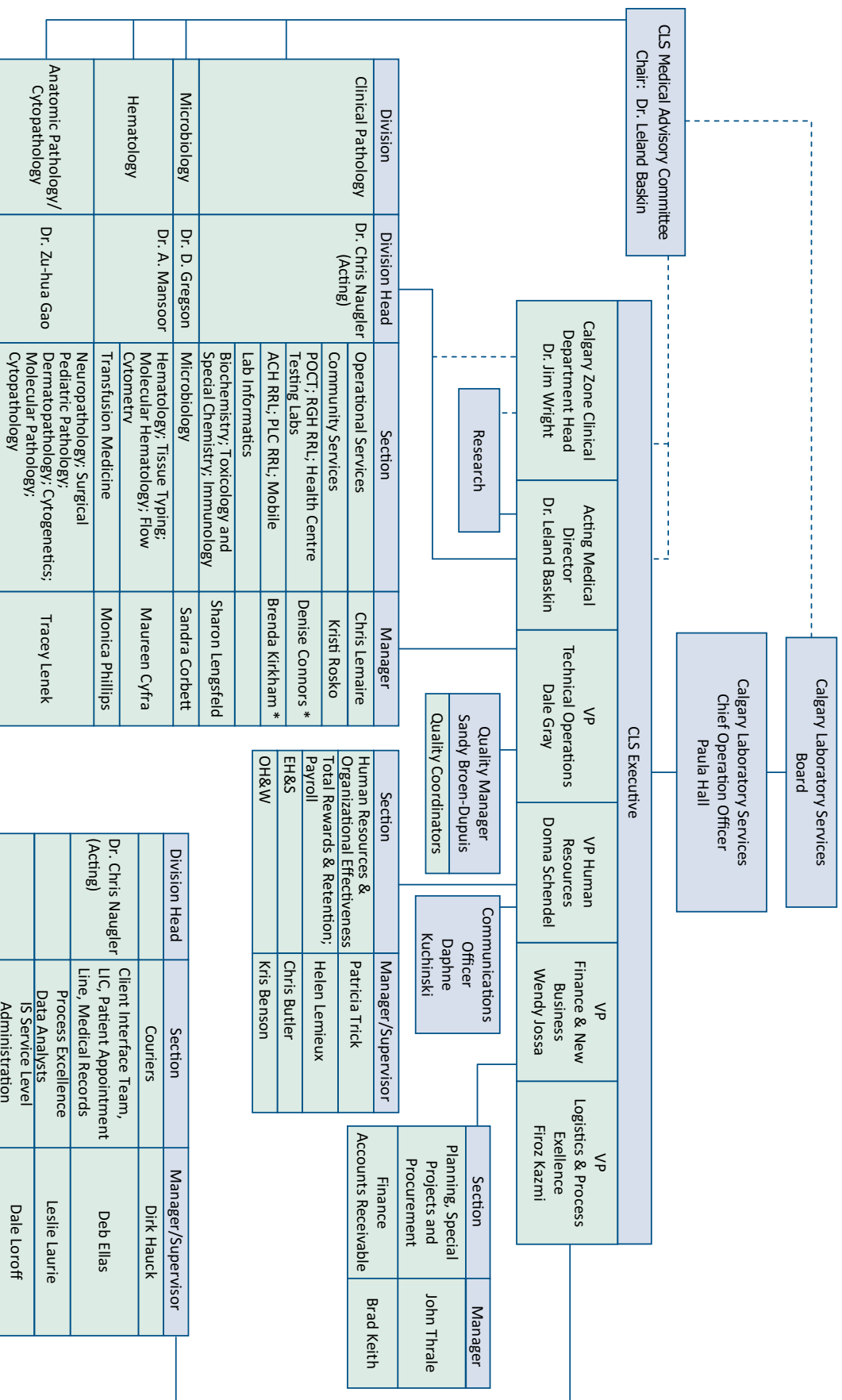
Regardless of change, uncertainty, and under-resourcing, the DPLM and CLS are leaders in laboratory service provision and innovation. Our regional integrated model for laboratory service provision is unique in Canada and we continue to be one of the top laboratories, not only in Canada but also North America. Through our Department's partnership with CLS, which once again achieved Top 50 Employer status in Alberta for 2010, we are achieving our joint mission of improving health and well-being through laboratory diagnostic excellence, education and research and we continue to make strides towards our joint vision of being world leaders in laboratory medicine.

James R. Wright, Jr., MD, PhD



Head, Department of Pathology & Laboratory Medicine
University of Calgary Faculty of Medicine/Alberta Health Services – Calgary Zone

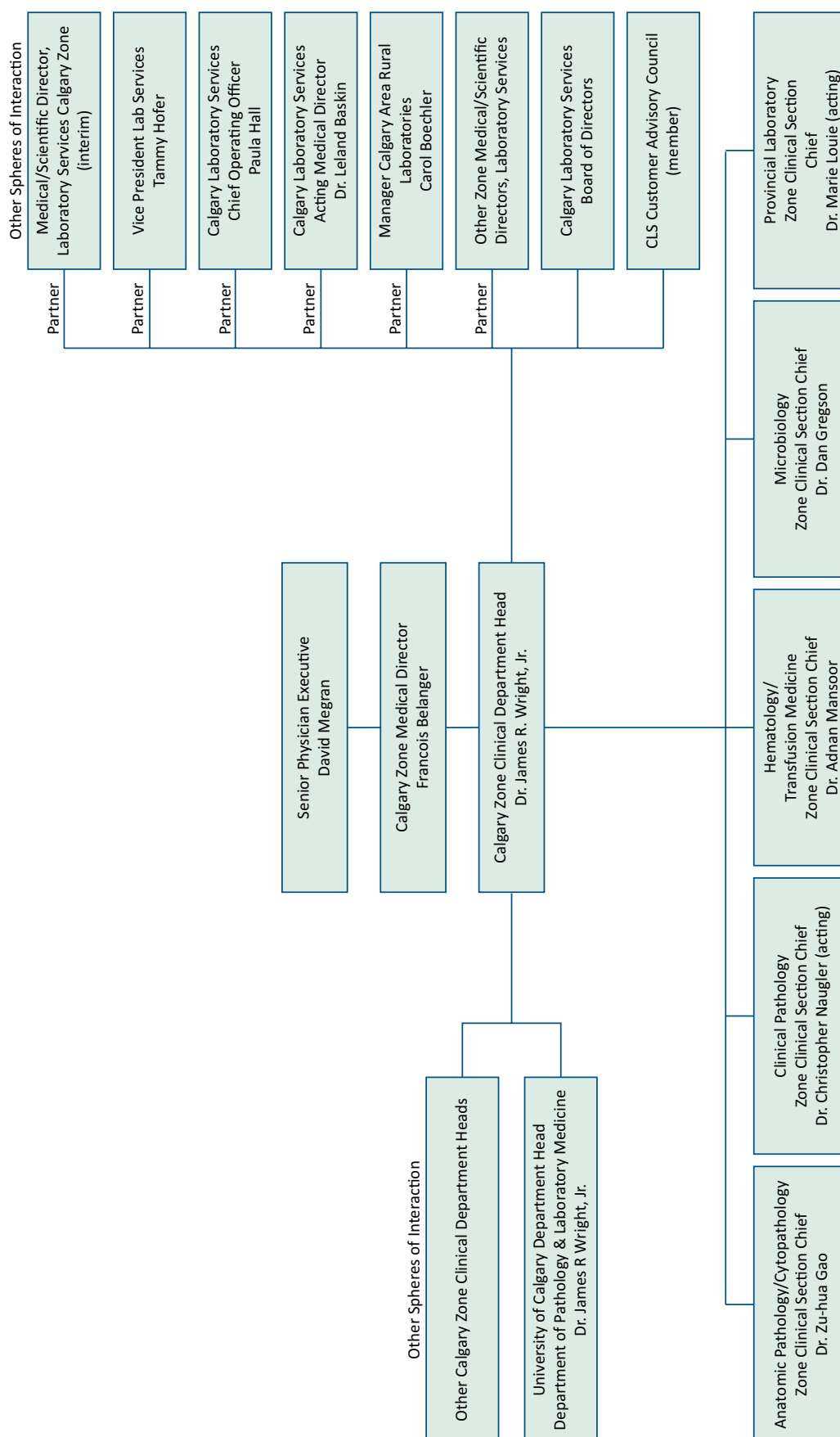
CLS GOVERNANCE AND REPORTING STRUCTURE



* Laine Leithhead will be co-managing with Denise Connors and Brenda Kirkham

January 5, 2011

AHS Calgary Zone Department of Pathology & Laboratory Medicine - Organizational Structure



Draft October 27, 2010

‘Partners’ refers to a model in which physician and operational leaders are complimentary partners in a respectful, inclusive and collaborative relationship, committed to the provision of accessible and quality patient-focused health services in a sustainable manner.

Accomplishments and Highlights

Ongoing Education and Learning

Educational Programs Provided by the Department of Pathology & Laboratory Medicine

The medical and scientific staff of CLS are responsible for a wide array of educational activities that include: residency training programs in Anatomic Pathology and Neuropathology, mandatory rotations (e.g. hematopathology) for a number of other residency programs, lectures and small group sessions in a number of undergraduate courses, the Medical Sciences 515/Biology 515 Course, parts of the Bachelor of Health Sciences program, supervision of elective rotating residents from other programs and rotating clinical clerks, training of fellows and graduate students, and Continuing Medical Education events.

Anatomic Pathology Residency Training Program (Program Director, Dr. Lisa DiFrancesco):

The Post Graduate Year (PGY)-1 year is designed to provide exposure to most of the medical and surgical services that rely heavily on the pathology laboratory and to prepare the resident for the Medical Council of Canada qualifying examination part II. The PGY-2 and PGY-3 years constitute the core training with integrated rotations of autopsy and surgical pathology. During the PGY-4 year, the resident embarks upon mandatory rotations (Pediatric Pathology, Forensic Pathology, Cytopathology, and Electron Microscopy) and elective rotations (Neuropathology, Dermatopathology, Hematopathology, Flow Cytometry, Molecular Pathology, research). The PGY-5 year may be spent in a variety of electives, which may include any one of the clinical laboratory subspecialties, a clinical rotation, a research rotation or one or more rotations in subspecialty pathology. Involvement in research activities is an integral part of the program and starting in the PGY-3 year, the residents are expected to present their research findings at the annual pathology residents' research day. Funding is available to present their work at North American meetings. The program is designed to give graded responsibility to the resident so that in the final year of training the resident will be expected to perform to the level of a junior faculty member, recognizing that faculty resident supervision is always occurring. In addition to one-on-one teaching, clinical pathological conferences and subspecialty rounds, there are co-ordinated didactic teaching sessions held in a weekly academic half-day (protected time). The residents write the yearly American Society of Clinical Pathology exam and participate in regular in-training evaluations that mimic the Royal College of Physicians and Surgeons of Canada exam. A philosophy of independent self-directed learning underlies the program.

Two excellent new trainees were accepted into the program beginning July 2010. Although no residents graduated in 2010, three will graduate in 2011. All three residents who graduated in 2009 completed external fellowships in the USA and all have faculty appointments at Canadian medical schools. There are currently 16 AP residents in the program.

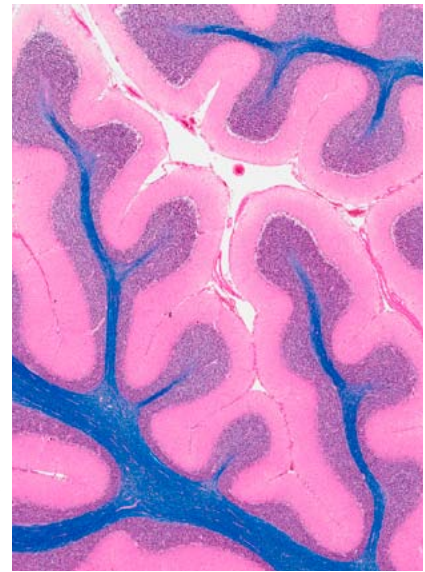
The program was given full approval by the Royal College of Physicians and Surgeons of Canada in 2010.

Neuropathology Residency Training Program (Program Director, Dr. Jeffrey Joseph):

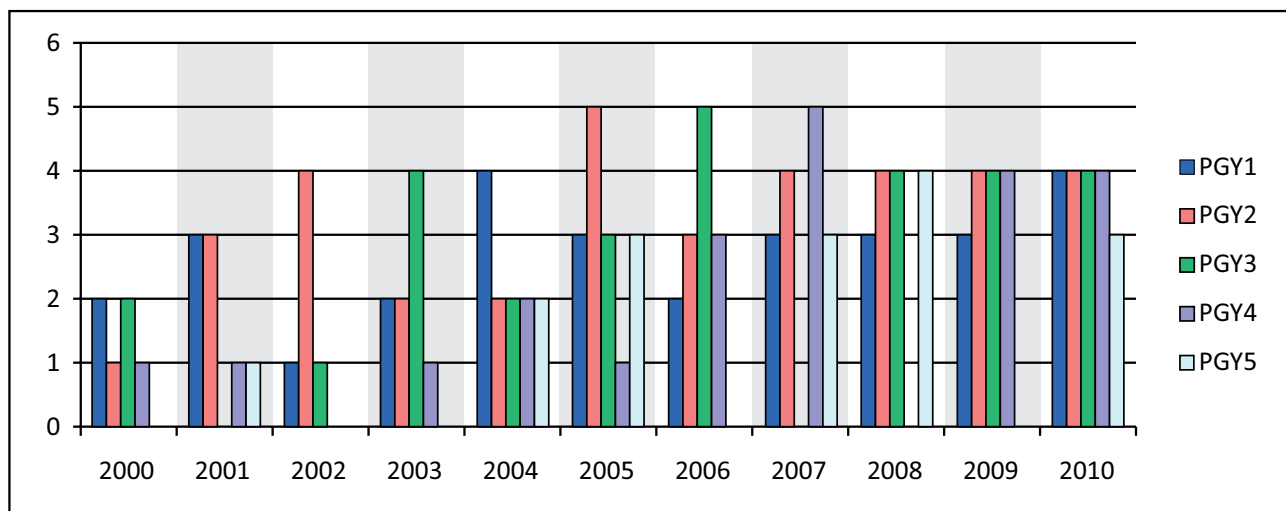
Neuropathology is a five-year program leading to certification in Neuropathology by the Royal College of Physicians and Surgeons of Canada. However, earlier this decade, Neuropathology was in the process of being phased out as a specialty program by the Royal College and becoming a subspecialty of Anatomic Pathology. Therefore, for several years new residents were not accepted into Canadian Neuropathology Programs, but those remaining in programs continued until the end of their five-year program. Currently, Neuropathology training programs are once again open for business. Our last resident graduated in 2009, at which time Dr. Jeff Joseph took over the leadership of the residency training program and, after holding a retreat to determine best

educational practices, he retooled the empty program. On June 30, 2010, there were 0 residents in the program and, one day later on July 1, 2010, there were 3 (2 PGY-1's matched and 1 PGY-3 transferred in). Overnight, the program transitioned from inactive to, based upon 3 residents, the most active training program in Canada.

The University of Calgary program includes one year of clinical medicine, one year of anatomic pathology and three years of neuropathology training, that includes two core years with graded responsibility in the reporting of surgical and autopsy cases, nerve, muscle and eye material. The fifth year is an elective year and may be spent in service or clinical rotations but participation in research activities ongoing within the department is encouraged. These include research into neuro-degenerative disorders, neuro-regeneration, cerebral ischemia, neuro-oncology and developmental disorders. Trainees gain experience in applications of new technologies in the study of pathogenesis of disease including immuno-pathology, molecular pathology, electron microscopy, flow cytometry and image analysis. Medical-legal and diagnostic consultations are an integral component of this program as is participation in under-graduate and postgraduate teaching programs. The Neuropathology training program was reviewed in 2007 and received an accreditation category of "Provisional Approval with Internal Review" from the Royal College of Physicians and Surgeons of Canada. The program will be reviewed again in 2011.



Resident History/Growth



Medical Sciences 515/Biology 515 Course (Course Director: Dr. Travis Ogilvie):

The Department is responsible for the development and teaching of this course and it continues to be very well received by students. This year's enrollment was 27 students. The basis of the course is the cellular and molecular mechanisms underlying basic human disease processes and how these can be influenced by lifestyle and environmental factors and the ways in which this knowledge can be used in the laboratory diagnosis of disease. Our faculty provided 42 hours of lectures in this course. Leadership of this course is currently being transitioned from Dr. Travis Ogilvie (2010) to Dr. Guangming Han (2011). We would like to thank Dr. Ogilvie for seven years as Director of this course.

Undergraduate Medical Education (Department Representative: Dr. Hua Yang/Vacant):

The University of Calgary undergraduate teaching program for medical students follows an integrated approach in accordance with the requirements of the Medical Council of Canada. Pathology is part of the basic sciences component of the curriculum and is taught as part of each integrated course. Small group teaching, as an essential part of pathology teaching, requires an increased teacher-student ratio. The increasing size of the medical student classes (2010 intake 170 students) has resulted in a significant increased demand for teaching time.

Department members are involved in teaching (lectures and small group sessions) for a number of courses including but not limited to: Cardiovascular, Respiratory System, Applied Evidence Based Medicine, Trial Advocate Course, Renal, Neurosciences, Blood, Molecular Biology of Cancer, Cancer Biology, Pathobiology, Directed Path Research Projects, Integrative Course, Pathology of Neoplasia, Pathology of Hepatobiliary Diseases, Endocrine, Gastrointestinal, Introduction to Medicine, Reproduction, Gynecological Pathology, Environmental Pathology, Upper Respiratory Tract Infections, Pneumonia and Pulmonary Infections, Human Genetics and Musculoskeletal/Skin.

In a typical year, the Department of Pathology & Laboratory Medicine faculty members provide about 1,200 hours of undergraduate medical education teaching.

Postgraduate Clinical Trainees

Geographic Full Time (GFT) faculty members provide greater than 2,000 hours of teaching per year to support postgraduate clinical trainees, including department residency training programs, rotating residents and fellows. Clinical faculty members also make very extensive contributions to teaching residents and fellows; although this time has not been quantified, it is likely similar in magnitude.

Fellows

The Department Fellowship Committee selects qualified applicants for two CLS funded positions. The Department of Pathology & Laboratory Medicine currently offers fellowships in Cytogenetics, Cytopathology, Surgical Pathology, Histocompatibility, Hematopathology, Renal/Transplant Pathology, Urology, and Pediatric Pathology. The Histocompatibility Fellowship is accredited by the American Society of Histocompatibility and Immunogenetics (ASHI) as a Director Training Program. The Cytogenetics Fellowship is accredited by the Canadian College of Medical Geneticists. Dr. Kevin Laupland completed his term as Fellowship Committee Chair in December 2010; the Department wishes to thank him for 4+ years of service. A new Chair will be appointed for 2011; Dr. Keith Brownell has accepted this role.

During 2010 the following clinical fellows were trained at CLS:

Fellow	Specialty Area	Supervisor	Funding Source	Year
Sar, Aylin	Molecular Pathology	D. Demetrick	Other	2010 - 2012
Warawichawong, Suchin	Renal/Transplant	H. Benediktsson	Other	2008 - 2010
Khan, Faisal Masood	Histocompatibility	N. Berka	CLS	2008 - 2010
Liacini, Abdelhamid	Histocompatibility	N. Berka	CLS	2010 - 2011
Mohammadtaheri, Zohreh	Hematopathology	I. Auer	CLS	2010 - 2011
Wang, Cheng	Cytopathology	M. Duggan	CLS	2010 - 2011

Graduate Students

There is no Pathology program in the Faculty of Graduate Studies, however, graduate students are supervised by members of the Department.

Faculty	Graduate Students	
	Supervisor	Committee Member
Auer, Roland		A. Reid (PhD)
Bismar, Tarek	A. Al-Mami (MSc)	
Chan, Jennifer		J. Kelly (PhD) M. Blough (PhD) M. Mobahat (MSc)
Church, Deirdre		J. Leal (MSc)
Demetrick, Doug		M. Al-Shalalfa (PhD) J. Zeng (PhD)
Green, Francis	P. Choudhart (MSc)	D. Polley (MSc) C. Fahey (MSc)
Gregson, Dan		T. Lye (PhD) K. Wilkinson (MSc)
Kelly, Margaret		C. Downey (PhD)
Lyon, Andrew		A. Metcalf (PhD)
Lyon, Martha	H. Wilde (MSc)	
Pitout, Johann	G. Peirano (PhD)	
Wright, Jim		W. Almishri (PhD)
Zhang, Kunyan	K. Wu (PhD) C. Anderson (MBT)	J. Kim (MSc)

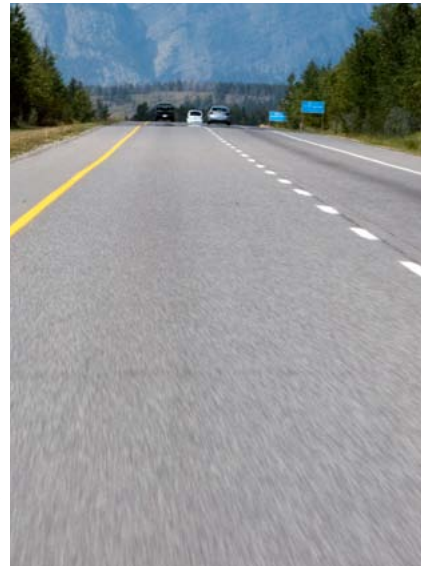
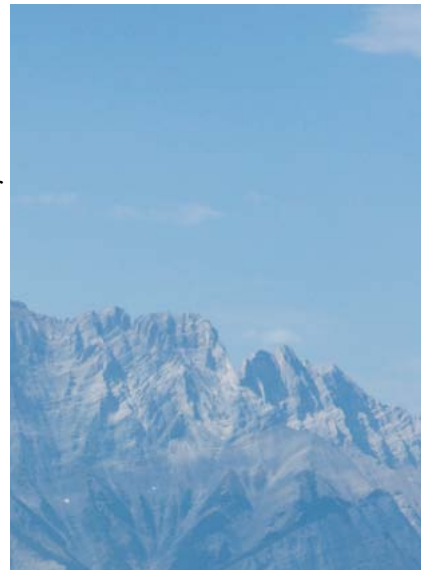
Continuing Medical Education

Department members participate in Continuing Medical Education (CME) events at many levels: (1) Accredited weekly CME rounds that are video-conferenced to each of the hospital sites and host local and visiting speakers (accredited with the Royal College of Physicians and Surgeons of Canada); (2) Pediatric GI Pathology rounds (RCPSC accredited), Renal/Neuro rounds, Pediatric Grand Rounds (RCPSC accredited), Pediatric Pathology Review Sessions (RCPSC accredited), and Liver rounds (RCPSC accredited) are held monthly; (3) bi-weekly Sarcoma Tumor Group Rounds; (4) weekly rounds for Pediatric Gross Neuropathology, Neuro (slide session), cytopathology, gross pathology, renal biopsy (RCPSC accredited), lymphoma (not accredited, but documented), gynecology/oncology, CPC, Breast Tumor Group (RCPSC accredited), Interstitial Lung Disease rounds (RCPSC accredited), Pediatric Oncology Tumour Boards (RCPSC accredited), and autopsy (RCPSC accredited); (5) Friday morning Surgery Pathology rounds (RCPSC accredited); (6) California Tumor Registry slide set (ACCME accredited); (7) Quarterly Combined Surgery -Pathology Rounds (RCPSC accredited); (8) College of American Pathologists - Pathology In Practice Program; and (9) Society for Pediatric Pathology Slide Survey (AMA Category 1 accredited); (10) the Banff Pathology Update Course (RCPSC and ACCME accredited).

We have several named CME Lectureships attracting world-renowned external speakers. This year's Ben Ruether lecturer was Dr. Dan Arbor from Stanford; the Paul Kneafsey lecture was, unfortunately, cancelled this year.

The Banff Pathology Update Course is an annual three-day course held in Banff that provides an in depth and comprehensive review of an important topic in Anatomic Pathology each year. Since the year 2000, it has been a joint effort between the Department of Pathology & Laboratory Medicine, University of Calgary and the Department of Laboratory Medicine & Pathology, University of Alberta. 2010 was our year and the

2010 Banff Lymph Node Pathology Course was an exceptional success, providing a world class review of Lymph Node Pathology with a combination of internationally renowned external speakers and outstanding internal speakers. The course was held back-to-back with the Society for Pediatric Pathology (SPP) Fall meeting and we shared a half day session on Pediatric Lymph Node Pathology. This allowed us to split the cost of external speakers and infrastructure between the two meetings and gain economies of scale. The attendance was by far the biggest ever in the ten year series. The 187 Banff Course registrants far exceeded the previous record of 122 registrants for the ENT/Thyroid course in 2006. This year we had registrants from all Canadian provinces except PEI and Quebec; 77 of the registrants were from the Province of Alberta, demonstrating that the Banff Course is an important CME event for Alberta pathologists. However, we also had a record 53 registrants from the USA and 8 European/Austral-Asian registrants. The reviews of this course were outstanding. Our favorite comment in the post course evaluation forms was someone who noted that this was the best CME event he/she had attended in over 30 years of attending CME events. With the additional registrants for the SPP meeting, we actually had over 300 in attendance at the shared session. Special credit goes to Dr. Adnan Mansoor who was responsible for the design of the curriculum. The Program is shown as Appendix 1.3.



As noted above, the **2010 Society for Pediatric Pathology (SPP) Fall Meeting** was held in Banff immediately following the Banff Course. Scientifically, the meeting was excellent. The program for the meeting is shown in Appendix 1.3. The banquet was held at the top of Sulfur Mountain gondola providing the guests dinner with an awesome view. Many of the registrants called it the best SPP fall meeting ever and the Chair of the meeting was given a special Presidential Award, the first ever awarded in the history of the Society, for organizing such an outstanding SPP meeting. The local organizing committee included several DPLM faculty members including Drs. Pinto, Sienko, Trevenen, Yu, and Wright (Chair). Combined, the Banff Course and SPP Fall Meeting were a huge financial success, generating a substantial net profit which will be used to subsidize our future Banff Courses.

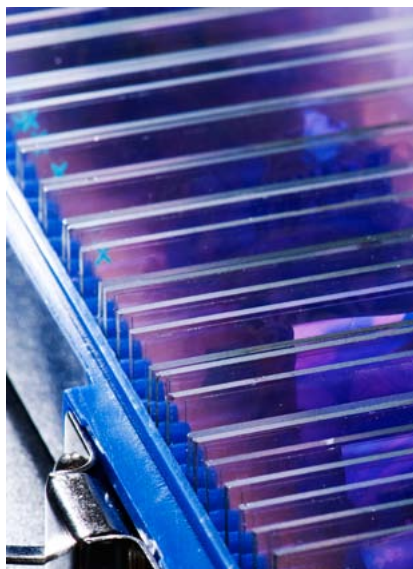
Research (CLS and Externally Funded)

The GFT and Clinical Faculty members within the Department of Pathology & Laboratory Medicine perform research at both CLS and the University of Calgary; however, CLS is a clinical laboratory and, thus, primarily supports research by providing protected time to its academic medical and scientific staff. CLS does not have a mandate to provide dedicated research equipment and laboratory facilities; this is the role of the University of Calgary, Faculty of Medicine. Much of the research within the Faculty of Medicine is organized into research institutes and these institutes control most of the Faculty's research infrastructure and laboratory space. Therefore, integration of Departmental faculty into the Faculty of Medicine's Institute model is critical for research success but it has also proven to be a major challenge, as many of our current faculty member's research interests fall outside of scope of the strategic research priorities of one of the Institutes. These misalignments are not only a problem for our Department and CLS but also for the Faculty of Medicine as a whole. Pathology and Laboratory Medicine sit squarely at the crossroads between clinical practice and basic

sciences; therefore, pathology departments should enable human research. When a pathology department fails in this, it adversely affects the whole medical school and exciting collaborative opportunities are lost. One of our major overall goals over the past few years has been to work very closely with Institute Directors to be certain that new academic recruits to our Department are a “good fit” and welcomed with open arms into a research institute and then are supported and mentored within.

In 2010, nine Department members (Drs. Auer, Bismar, Chan, Demetrick, Green, Kelly, Khan, Wright, Zhang) have research laboratories within the Faculty of Medicine Health Sciences Centre, Heritage Medical Research Building, or the Tom Baker Cancer Centre; these laboratories are associated with Faculty of Medicine Research Institutes or groups, including Hotchkiss Brain Institute; Southern Alberta Cancer Research Institute; Alberta Children’s Hospital Institute of Maternal & Child Health; Institute of Infection, Immunity and Inflammation; Immunology Research Group; Respiratory Research Group; and Julia MacFarlane Diabetes Research Centre. Using laboratory space provided by Calgary Laboratory Services and epidemiological data, the Division of Microbiology has a strong research presence within the Infectious Disease Research Group and the Division of Clinical Pathology has developed new expertise in Lab Informatics and utilization.

CLS recognizes that research is an integral part of quality patient care, and that academic laboratory medicine



plays a crucial role in developing new knowledge and clinical applications. Therefore, many of its GFT and Clinical Faculty perform clinical research related to the practice of pathology and laboratory medicine. CLS has a contractual commitment to support research, through its Affiliation Agreement with the University of Calgary and the Alberta Health Services – Calgary Zone. Clinical research programs are coordinated in partnership with research groups and with CLS. The CLS Research Department provides services for and supports the following types of research: (1) Industry-

sponsored clinical trials, (2) Internal research conducted by CLS staff and funded by CLS, (3) Health foundation grant-based research, (4) CLS research competition, and (5) External requests for epidemiology-based research. On an annual basis CLS supports ~800 studies including clinical trials and grant-funded research.

CLS Research Department

The CLS Research Department, reporting to the acting Medical Director, supports over 800 ethically approved Clinical Trials and grant based research projects conducted by researchers in the Calgary region. CLS research support for Clinical Trials ranges from specimen collection, processing, storing, and shipping samples to lab testing and data release. By supporting Research and Clinical Trials, CLS has an opportunity to provide the best possible evolving patient care and to expand its reputation for innovative and advanced diagnostics.

Research Department staff located at the Special Services Building, Foothills Medical Centre, including 2 Medical Laboratory Technologist II’s, and 2 Medical Laboratory Assistants I’s provide laboratory and customer service support for research activity in the Calgary area.

The Holy Cross Research Laboratory located at the Holy Cross Centre, consists of 1 MLA II and 3 MLA I's who support the Tomorrow Project, a large national cancer research program. This laboratory also supports the move and expansion of Research and Clinical trial programs from the Clinical Trial Unit, TBCC.

The Research eProcurement Coordinator, Chung-Sze Seck assists researchers by ordering scientific supplies and equipment in PeopleSoft to support research activities of CLS/U of C GFT medical and scientific staff. Rhonda L. Jackson succeeded Carol MacLaren as Supervisor and Research Administrator in 2010.

AP Research Lab (APRL)

Shuhong Liu, PhD, Research Laboratory Specialist for the APRL, located at the HMRB, University of Calgary, is providing research support to 8 Anatomic Pathologists with more than ten projects in immunohistochemistry and dedicates 0.25 of her time to Dr. Tarek Bismar's research. She has run immunohistochemistry stain requests by pathologists for 50 different antibodies for 2010 at APRL. Shuhong developed immunohistochemistry methods for 39 new antibodies, 27 of them have been applied to clinical research projects. A protocol for one of the neuronal markers (Nestin) had been passed to the AP immunohistochemistry lab for clinical diagnostic use.

The Research department purchased a new antigen retrieval unit (2100 Retriever) for the APRL to assist Shuhong and improve the quality of APRL service.

APRL Workload has increased significantly:

	2008	2009	2010
No. Pi	2	6	9
No. Project	3	8	10
No. Total Antibodies	12	34	50
No. New Antibodies	12	32	39
No. Methods Developed	12	32	27
No. Ihc Slides	50	~300	~600
TMA's Constructed	2	3	11

CLS Research Planning Session

As part of the CLS commitment to research, the Executive team sponsored a Research Planning day on September 1, with the goal of reviewing the current state of research activities and brainstorming priority activities going forward for the organization. Many DPLM faculty members were in attendance.

2010 CLS Research Competition

The CLS Research Department announced award results for the thirteenth annual CLS Health Services Research Funding Competition. The objective of the competition is to support research that has direct implications for improving the efficiency and effectiveness of laboratory services and the delivery of patient care and outcomes. A total of twenty applications were submitted and ten were awarded funding.

The competition involves a competitive peer-reviewed ranking process. Successful applications must be relevant to the competition and demonstrate scientific merit. Comprehensive projects are sent out for external expert review. A total of \$153,019 was awarded to researchers this year.

Past Competition Highlights

Ninety-nine projects have received funding through the Competition since it began in 1998. Fifty-five projects are now complete. The Competition continues to attract a number of excellent applications submitted by teams of investigators from CLS, Alberta Health Services and the University of Calgary.

Publications

Thirty-eight peer-reviewed publications have resulted from projects funded through the Competition since 1998 and fifty-eight abstracts have been published or have been presented at national or international conferences. An additional \$6,581,010 in funding has been obtained from external research granting agencies based on the results of pilot projects funded through this competition.

Summer Studentships

The Research Department offers two summer student award programs. The first competition is open to students registered in the Master of Biomedical Technology program at the University of Calgary and serves as a practicum for experience in a Biotechnology company. Three students were awarded funding for their practicums with CLS.

A second competition supports undergraduate summer students. CLS funded two students this year. The students are given the opportunity to participate in medical and health research in Calgary during the summer months with the hope that they will consider formal training and a career in medical or health research. CLS researchers willing to supervise a student and anyone interested in this program are encouraged to check the CLS website.

Master of Biomedical Technology Competition

Supervisor	Student	Project
Dr. Nouredine Berka	Meena Assad	Effect of Killer cell immunoglobulin like receptor (KIR) and Human leukocyte antigen (HLA) ligand incompatibility on human renal transplantation.
Dr. Johann Pitout	Jessica Hung King Sang	Characterization of <i>Klebsiella pneumoniae</i> producing Extended-Spectrum b-lactamases from Calgary over a 10-year period.
Dr. Jennifer Chan	Colleen Anderson	From tissue bank to biobank – expanding the scope of the Calgary Brain Tumor and Tissue Bank.

Calgary Laboratory Services Undergraduate Competition

Supervisor	Student	Project
Dr. Tarek Bismar	Jessica Barker	Molecular Pathways of Hormone Refractory Prostate Cancer.
Dr. Margaret Kelly	Simon Hasan	The value of IL-17A in diagnosis and prognosis of Hypersensitivity Pneumonitis.

External Research Funding

Department members with primary appointments in the DPLM held \$1.64 million in competitive grant funding as principle investigators in 2010. For a complete list of Departmental research grant holdings, both as principle investigator and as co-investigator, please refer to Appendix 1.4.

Publications

Department members published 117 peer-reviewed papers, and 3 book chapters in 2010 (Appendix 1.5). This is very impressive increase in academic productivity compared to previous years. In 2005 and in 2006, we had a total of 60 and 59 peer-reviewed publications, respectively. Since then, we have steadily increased our publication numbers every year. Cumulatively, our numbers of peer-reviewed publications has increased by 95% since 2005. Furthermore, the quality of journals we publish in has improved. The Mean Impact factor for the journals we published in for the year 2010 was 4.67 while in 2005 it was 2.87.

The Department of Pathology & Laboratory Medicine members have also presented many scientific papers at prestigious national or international meetings.

Promotions

Dr. Lisa DiFrancesco was promoted to Associate Professor. The Department congratulates Dr. DiFrancesco and thanks her for her academic contributions.

Dr. Jeff Joseph was the recipient of the 2010 Smith Distinguished Award for Senior Faculty, the Faculty of Medicine's top award for total academic excellence. This is the first time a member of our Department has received this prestigious award. Congratulations to Dr. Joseph!

Challenges

CLS welcomed its new owner, Alberta Health Services, effective April 1, 2009. CLS is used to transformational challenges – from its formation in 1996 from a complicated mixture of hospital – community and public – private laboratories into an integrated Public Private Partnership to becoming a wholly-owned subsidiary of the Calgary Health Region in 2006 – the robustness and professionalism of CLS people met the challenges and succeeded. Although an undeniable challenge to create, CLS views the prospect of a single-province wide system as an opportunity to improve, grow, and rationalize service. As a laboratory system that performs 20,000,000 tests per year, CLS does have challenges including:

- Providing excellent laboratory service with accurate and timely results to our patients and their physicians.
- Ensuring that CLS operates as efficiently and economically as possible.
- Training, recruiting and retaining enough competent and qualified medical/scientific, technical and support staff.
- Making efficiencies, gains and savings, through process excellence, especially lean sigma, durable and transformative.
- Planning, funding, staffing and actualizing laboratory service at CLS' new facilities, including the South Calgary Health Centre, the South Health Campus, the McCaig Tower at the Foothills Medical Centre, and expansions of the Rockyview and Peter Lougheed Hospitals.
- Replacing aging analyzers and other laboratory equipment along with deployment of new technologies when capital funds are scarce.
- Making necessary improvements to the new Cerner Millennium Laboratory Information System.
- Discerning, meeting and exceeding the needs for quality and value of our owner, and by far our biggest customer, AHS.
- Exploring possibilities to expand our business.

Workforce

CLS Medical Laboratory Technologists (MLT)/Medical Laboratory Assistants (MLA) Education Program (Submitted by Ingrid Buchholz, Supervisor Clinical Education)

CLS ensures workforce needs by partnering with the educational institutes of Southern Alberta Institute of Technology (SAIT) and Alberta Business and Education Services (ABES). CLS provides practicum placements for up to 80 Medical Laboratory Assistant (MLA) students annually. CLS also supports the placement of SAIT Medical Laboratory Technology (MLT) students. In 2010, 38 MLT students successfully completed practicum. For the upcoming 2011 practicum year 42 students have been scheduled at CLS.

Five MLT head preceptors representing each technical division collaborate throughout the practicum year with SAIT instructors to ensure that CLS delivers a standardized teaching program. To help accommodate the teaching of MLT students, 4 small simulated labs are utilized. They are located at the Diagnostic Scientific Center (DSC) in the Divisions of Hematology and Microbiology and at the Alberta Children's Hospital (ACH) in the Divisions of Transfusion Medicine and Urinalysis. Under the guidance of designated preceptors, students are able to actively practice MLT skills in a stable environment while still being close in proximity to the hub of activity in a medical diagnostic laboratory. Two of the simulated labs utilize state-of-the-art audiovisual equipment; digital camera, microscope and network connection to LCD screen to enhance student teaching. It has also been beneficial for CLS staff to utilize these simulated lab rooms for reviewing teleconferences and presenting clinical education sessions.

In 2010, CLS began partnering with SAIT to achieve accredited status by the Canadian Medical Association (CMA) Conjoint Accreditation Services for the current Medical Laboratory Assistant Program. An onsite inspection by the CMA Committee is scheduled for November 2011.

CLS supports preceptor education throughout the organization. In 2010 preceptors attended a three part in-house workshop facilitated by the CLS Organizational Effectiveness Consultant on the roles of a preceptor and learned useful tools for teaching the adult learner. SAIT offers a new on-line MLT preceptor development course for CLS employees desiring to broaden their knowledge of competency based learning. This course is recognized by the Alberta College of Medical Laboratory Technologists (ACMLT) for use in the continuing competence program mandated by the Health Professions Act (HPA).

CLS has facilitated the recent installation of the Millennium TRAIN environment at both ABES and SAIT schools. Instructors and students now have the ability to incorporate this LIS system in the classroom setting which has facilitated just-in-time training before practicum commences.

In 2011, DPLM and the University of Calgary plan to file paperwork to initiate a National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) M.Sc. degree for Pathology Assistants, in which CLS would be the clinical training site. This would meet a critical clinical need for CLS, the Province of Alberta, and nationally.


Medical and Scientific Staff

In 2004, CLS hired Social Sector Metrics, a consulting company used by the former Calgary Health Region for physician workforce planning in all of its clinical departments, to perform a medical/scientific workforce study for CLS; this detailed analysis was completed in August 2005. The study analyzed current workload levels based on both a detailed seven-week sample time study and national/international benchmarks for the practice of pathology and laboratory medicine. In addition to determining recruitment needs to result in a sustainable work week (defined as one full-time equivalent working 50 to 55 hours/week), the study also projected additional staffing needs based upon projected Calgary and area population growth, other demographic

changes, known program expansions, etc resulting in our Medical and Scientific Staff Workforce Plan 2005-2010. According to this detailed analysis, current medical/scientific staff are working at an unsustainable pace and additional staff are necessary to bring the workload levels down to the upper limits of national/international standards. Because pathology and laboratory medicine are services, we have little ability to control workload as this is determined by numbers of surgical procedures, orders for laboratory tests, etc. To further complicate workforce matters, laboratory physicians are not fee for service and have been funded from the Regional budget, and, thus, there is no simple mechanism to fund new positions based upon workload expansion. Nevertheless, there are no waitlists and the work gets done by more and more over-worked laboratory physicians and scientists. If this trend cannot be reversed, it increases the risk for “lab error”.

The workforce study demonstrated that CLS needed to expand its medical/scientific workforce by an additional 11 FTE in 2006 (roughly a 15 per cent increase in staffing) and needed to create 2.5 additional FTE in 2007, an additional 3.25 FTE in 2008, an additional 3.5 FTE in 2009, and an additional 2.4 FTE in 2010. Attempts to find and earmark Regional or AHS funding for any workforce expansion in the past 5 years have failed because of other more pressing needs; however, occasional new positions have been internally funded by CLS based upon improved organizational efficiencies and LEAN savings, including 3 in the last 6 months. We also project that we will need an additional 8 FTE to staff the South Health Campus opening in 2012.

Because there is no current mechanism to address the real medical and scientific manpower needs at CLS, the CLS Medical Staff voted to explore moving toward an Academic Alternate Remuneration Plan (ARP) and created a Departmental ARP Development Steering Committee in February 2006. This Committee met on and off for 4 years and spent many hundreds of hours trying to develop a model that would be acceptable to all parties (CHR, Health Boards of Alberta, AHS, Alberta Medical Association, the Alberta Society of Laboratory Physicians and our Medical Staff).



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This proved impossible in the shifting scenes of Alberta politics and the Committee held its last meeting on March 1, 2010. The Department would like to thank Dr. Duane Barber for Chairing this Committee for 4 years and also the Committee members for their time and contributions. Finally we would also like to thank CLS for funding our external consultant, Social Sector Metrics. The DPLM is currently participating in the possible development of a Provincial Faculty-Wide Academic Alternate Relationship Plan (Interfaculty Department Working Committee).

Finally, to complicate matters even more, the pathology and laboratory medicine workforce across Canada is aging and there are inadequate numbers of new graduates entering the workforce. Therefore, recruitment to replace retirements and retention will also be major challenges. This will be made more difficult because salaries for pathologists have remained stagnant for the past two years. We will also need to increase the number of residents and fellows that we train in Calgary, and this initiative will further increase our short-term workload.

Considering the fact that we started out almost 20% understaffed in 2005, have not received any external help to rectify this, and have experienced ~40% overall increase in total workload in the past five years, it is astounding that we are actually coping. How are we managing? The combination of occasional new positions

funded by CLS, the judicious use of locums, holding faculty members accountable for their protected time, and increasing the percentage of Clinical Faculty has helped address workload issues. Five years ago, the DPLM was 46% GFT faculty members, one of the highest percentages of any clinical department at Uof C; yet, even with this high percentage of academic faculty, we were not one of the “high fliers” in the Faculty of Medicine and did not seem to be getting “bang for our buck”. The use of “our buck” is deliberate as almost all of the funding for GFT faculty members comes from CLS, rather than the University. Therefore, we have set the bar very high for hiring GFTs and now preferentially hire clinical faculty members. Since 2005, 73% of our hires have been Clinical faculty. Slowly replacing GFT faculty members, who have contractually protected time for academic pursuits with Clinical Faculty who do not, has helped us meet our increasing workload requirements. By also setting the bar higher and hiring Clinical Faculty members who want to teach and do clinical research, our academic output has still flourished. However, this approach is not sustainable as soon both clinical service and academics will suffer.

Workforce Planning

Summary of Recruitment in 2010

The year 2010 was a big year for recruitment, even though it began with a hiring freeze.

First of all, we filled one important leadership position. Dr. Chris Naugler, a GFT Assistant Professor from the Dalhousie University, was recruited to the position of Section Head, Laboratory Informatics, in the Division of Clinical Pathology. Dr. Naugler is also a general pathologist and therefore simultaneously filled two needs. Laboratory Informaticians are rare and our search took > 4 years. We are glad we waited and got a good one!

Second, the DPLM hired its first endowed faculty member, Dr. Faisal Khan. Dr. Khan is a graduate of our CLS Histocompatibility Fellowship program and was the successful candidate for an endowed faculty research position in the UofC Alberta Children’s Hospital Research Institute of Child and Maternal Health. His title is the Barb Ibbotson ACHF Investigator in Pediatric Hematology.

We recruited one other GFT faculty member, Dr. Yinong Wang. Dr. Wang graduated from the Yale AP residency training program in 2009 and then completed a one year fellowship in cytopathology. In addition to a strong publication record in transplantation immunology, he has tremendous breadth of clinical skills, and has recently spent 6 weeks at the Mayo Clinic developing cardiovascular pathology skills.

In addition we recruited several new clinical faculty members with cytopathology skills including Dr. Dan Fontaine, a Clinical Associate Professor and one of Canada’s leading cytopathologists from Memorial University; Dr. Marie Dvorakova, a Clinical Assistant Professor who completed her general pathology and fellowship training at the University of Pittsburgh; Dr. Ivan Chebib, a Clinical Assistant Professor who completed his AP residency with us in 2009 and then completed a Cytopathology Fellowship at Massachusetts General Hospital, Boston MA in 2010; and Dr. Guangming Han, who completed an AP Residency at University of British Columbia in 2009 and a Gynecologic Pathology fellowship at Memorial Sloan-Kettering Cancer Center, New York in 2010.

Finally, the Division of Clinical Pathology recruited Dr. Alex Chin, a Clinical Chemist who received his PhD from University of Calgary and then completed a postdoctoral fellowship in Clinical Chemistry at Emory University.

With the departure of Dr. Omar Shokeir, Dr. Leland Baskin, Head of the Division of Clinical Pathology, also served as Acting Medical Director for CLS for most of 2010. We would like to thank Dr. Shokeir for several years of bold leadership which helped transform CLS into a very strong academic partner for the DPLM. THANK YOU Omar!!!

A notable retirement is Dr. Roland Auer, who leaves us after 25 years of service as an academic neuropathologist. We wish him the best of luck in his future endeavors.

For a complete list of Departmental recruitments and departures, see Appendix 1.6.

Current Needs

We are thankful to CLS Executive and the CLS Board for their commitment of funding to create a new clinical faculty position in the Division of Hematology/Transfusion Medicine and in the Division of Medical Microbiology. Both of these recruitments, as well as a replacement neuropathologist position and a locum medical microbiologist position, were on-going in the last quarter of 2010. We are expecting to finalize these recruitments in early 2011.

Known needs are for additional depth in hematology focusing on transfusion medicine and clinical pathology focusing on utilization. We will also need to recruit additional subspecialty expertise in Breast Pathology and hope to create an endowed Chair in Pathology Safety and Quality Improvement. An additional Medical Microbiologist is needed to help with increasing rural work.

We anticipate that we will need to recruit 8 FTE for the opening of the new South Health Campus. The timing of these recruitments will be dependent upon funding from either AHS or AHW. CLS cannot be expected to create additional new positions through enhanced efficiencies.

Appendices

1.1 Departmental Committees

Applications Review Committee

Dr. James R. Wright, Jr., Chair, Regional Clinical Department Head, Department of Pathology & Laboratory Medicine
Dr. Leland Baskin, Acting Medical Director, Calgary Laboratory Services
Dr. Zu-hua Gao, Division Chief, Anatomic Pathology/Cytopathology
Dr. Christopher Naugler, Acting Division Chief, Clinical Pathology
Dr. Adnan Mansoor, Division Chief, Hematology/Transfusion Medicine
Dr. Dan Gregson, Division Chief, Microbiology
CRMSA Representative (can be any member already part of the Committee)

CLS Medical Advisory Committee

Dr. Leland Baskin, Chair, Acting Medical Director, Calgary Laboratory Services
Dr. Zu-hua Gao, Division Chief, Anatomic Pathology/Cytopathology
Ms. Paula Hall, Chief Operating Officer, Calgary Laboratory Services
Dr. James R. Wright, Jr., ZCDH, Department of Pathology & Laboratory Medicine
Dr. Richard Krause, Section Head, Biochemistry
Dr. Christopher Naugler, Acting Division Chief, Clinical Pathology
Dr. Adnan Mansoor, Division Chief, Hematology/Transfusion Medicine
Dr. Dan Gregson, Division Chief, Microbiology
Dr. Travis Ogilvie, Site Leader, FMC
Dr. Shaun Medlicott, Site Leader, PLC
Dr. Allan Oryschak, Site Leader, RGH
Dr. Cynthia Trevenen, Site Leader, ACH
Mr. Dale Gray, VP Technical Operations
Ms. Sandy Broen-Dupuis, Quality Manager

Department of Pathology & Laboratory Medicine Clinical Safety Committee

Dr. Leland Baskin, Chair, Acting Medical Director, Calgary Laboratory Services
Dr. James R. Wright, Jr., ZCDH, Department of Pathology & Laboratory Medicine
Ms. Paula Hall, Chief Operating Officer, Calgary Laboratory Services
Sandy Broen-Dupuis, Manager, Research and Quality
Ms. Madeleine Hammermeister, Clinical Safety Advisor, Calgary Laboratory Services
Ms. Carol Boechler, Manager, Calgary Zone Rural Laboratories
Dr. Amid Abdullah, Consultant Pathologist, Calgary Zone Rural Laboratories
Optional members as required: Calgary Laboratory Services Clinical Division representatives, Transfusion Safety Office representatives

CLS Department of Pathology & Laboratory Medicine Business Meeting

Quarterly meeting of all laboratory medicine medical and scientific staff in the Region. Co-chaired by the Department Head and CLS VP Medical Operations

Anatomic Pathology Residency Training Committee

Dr. Lisa DiFrancesco, Chair
Dr. Andrea Bruecks
Dr. Sam Andrews
Dr. Travis Ogilvie
Dr. Iwona Auer-Grzesiak

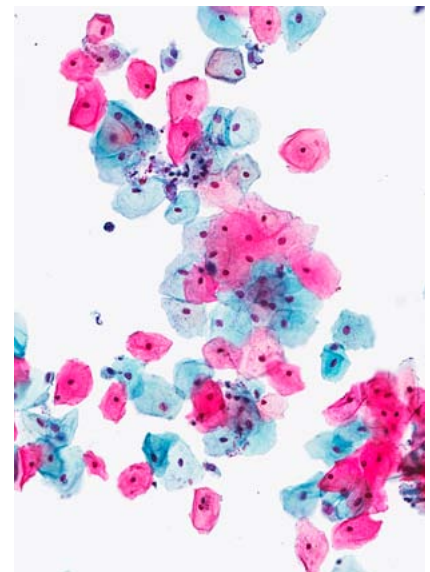
Dr. Anna Sienko (PLC)
Dr. Asli Yilmaz (RGH)
Dr. Hallgrimur Benediktsson
Dr. Marc Dupre
Dr. Jeffrey Joseph
Chief Resident (rotates)
Senior Resident (rotates)
Junior Resident (rotates)
Dr. Jim Wright (Ex-officio)

Neuropathology Residency Training Committee

Dr. Jeffrey Joseph, Chair
Dr. Roland Auer
Dr. Arthur Clark
Dr. David George
Dr. Jennifer Chan
Dr. Harvey Sarnat
Dr. Jim Wright (ex-officio)

Fellowship Committee

Dr. Kevin Laupland (Chair)
Dr. Leland Baskin
Dr. Hallgrimur Benediktsson
Dr. Deirdre Church
Dr. Jeffrey Joseph
Dr. Maire Duggan
Dr. Zu-hua Gao
Dr. Adnan Mansoor
Dr. Steve Rasmussen
Dr. Birgitte Roland
Dr. Harvey Sarnat (Member-at-large)
Dr. Iwona Auer-Grzesiak
Dr. Nourredine Berka
Dr. Alfredo Pinto-Rojas
Dr. Jim Wright (ex-officio)



1.2 Division Sections/Programs and Membership

1.2.1 Division of Anatomic Pathology/Cytopathology

Division Head: Dr. Zu-hua Gao

Committees:

Anatomic Pathology & Cytopathology Planning & Operations Committee, Chair, Dr. Zu-hua Gao
Autopsy Group Meeting, Chair – Dr. Martin Köbel
Anatomic Pathology Quality Assurance Committee, Chair – Dr. Zu-hua Gao
Division of Anatomic Pathology & Cytopathology Business Meeting, Chair – Dr. Zu-hua Gao
Cytopathology Medical Staff Meeting, Chair – Dr. Ranjit Waghray
Cytopathology Quality Assurance Committee, Chair – Dr. Zu-hua Gao
Colposcopy, STD, Family Planning User Group, Chair – Dr. Zu-hua Gao

Division Members (as at December 31, 2010)

Medical Staff	GFT/Clinical	Rank	Site	Special Expertise
Barber, Duane	Clinical	Assoc. Professor	DSC	Dermatopathology
Benediktsson, Hallgrimur	GFT	Professor	FMC	Renal Pathology, Transplantation
Bismar, Tarek	GFT	Assoc. Professor	RGH	Genitourinary Pathology, Anatomic Pathology
Brown, Holly	Clinical	Assist. Professor	DSC	Dermatopathology
Bruecks, Andrea	Clinical	Assoc. Professor	DSC	Dermatopathology
Chan, Jennifer	GFT	Assist. Professor	FMC	Neuropathology
Chebib, Ivan	Clinical	Assist. Professor	FMC	Surgical Pathology, Cytopathology
Clark, Arthur	GFT	Professor	FMC	Neuropathology
Demetrick, Douglas	GFT	Assoc. Professor	HSC	Molecular Pathology
DiFrancesco, Lisa	GFT	Assist. Professor	FMC	Endocrine, Lymphoma, Soft Tissue & Bone Pathology
Dong, Wei-Feng	Clinical	Assist. Professor	FMC	Breast Pathology
Duggan, Máire	GFT	Professor	FMC	Cytopathology, Gynecological Pathology
Dupre, Marc	Clinical	Assist. Professor	PLC	Gastrointestinal Pathology, Surgical Pathology
Dvorakova, Marie	Clinical	Assist. Professor	DSC	Cytopathology
Eidus, Leslie	Clinical	Assoc. Professor	RGH	Gastrointestinal Pathology
Falck, Vincent	GFT	Assoc. Professor	FMC	Gastrointestinal Pathology, Surgical Pathology
Fontaine, Daniel	Clinical	Assoc. Professor	DSC	Cytopathology
Gao, Zu-hua	GFT	Assoc. Professor	FMC	Gastrointestinal Pathology, Hepatopathology
George, David	Clinical	Assoc. Professor	FMC	Neuropathology, Renal Pathology
Gorecki, Margaret	Clinical	Assist. Professor	DSC	Surgical Pathology, Cytopathology
Gough, James	Clinical	Professor	FMC	Renal Pathology, Cytopathology, Surgical Pathology
Green, Francis	GFT	Professor	FMC	Pulmonary Pathology, Autopsy
Guggisberg, Kelly	Clinical		DSC	Anatomic Pathology, Dermatopathology
Gui, Xianying (Sean)	Clinical	Assist. Professor	FMC	Gastrointestinal Pathology, Surgical Pathology
Han, Guangming	Clinical	Assist. Professor	FMC	Gynecological Pathology
Joseph, Jeffrey	GFT	Professor	FMC	Neuropathology
Kelly, Margaret	GFT	Assist. Professor	FMC	Surgical Pathology, Pulmonary Pathology
Khalil, Moosa	Clinical	Assoc. Professor	FMC	Cytopathology, Surgical Pathology
Köbel, Martin	GFT	Assist. Professor	FMC	Gynecological Pathology, Autopsy Pathology

Medical Staff	GFT/Clinical	Rank	Site	Special Expertise
Kulaga, Andrew	Clinical	Assist. Professor	RGH	Genitourinary Pathology, Surgical Pathology
Medlicott, Shaun	Clinical	Assoc. Professor	PLC	Gastrointestinal Pathology
Meier, Lucja	Clinical	Assist. Professor	DSC	Cytopathology, Surgical Pathology
Ogilvie, Travis	GFT	Assist. Professor	FMC	Breast Pathology, Gynecological Pathology, Molecular Pathology
Oryschak, Allan	Clinical	Assoc. Professor	RGH	Breast Pathology, Genitourinary Pathology, Ophthalmic Pathology
Paslawski, Doreen	Clinical	Assist. Professor	RGH	Breast Pathology, Genitourinary Pathology, Surgical Pathology
Pinto-Rojas, Alfredo	GFT	Assoc. Professor	ACH	Pediatric Pathology, Pediatric Hematology
Rasmussen, Steve	Clinical	Assoc. Professor	RGH	Ophthalmic Pathology, Surgical Pathology
Roland, Birgitte	GFT	Assoc. Professor	DSC	Cytogenetics
Sienko, Anna	Clinical	Professor	PLC	Surgical Pathology, Cytopathology
Trevenen, Cynthia	GFT	Assoc. Professor	ACH	Pediatric Pathology
Trotter, Martin	GFT	Assoc. Professor	DSC	Dermatopathology
Trpkov, Kiril	GFT	Assoc. Professor	RGH	Genitourinary Pathology, Lymphoma, Soft Tissue & Bone Pathology
Urbanski, Stefan	GFT	Professor	FMC	Gastrointestinal Pathology, Hepatopathology, Pulmonary Neoplasia
van den Berghe, Janette	Clinical	Assist. Professor	DSC	Cytogenetics
Waghray, Ranjit	Clinical	Assoc. Professor	PLC	Surgical Pathology, Cytopathology
Wang, Yinong	GFT	Assist. Professor	DSC	Cytopathology, Cardiac Pathology
Wright, James	GFT	Professor	DSC	Pediatric and Perinatal Pathology
Yang, Hua	Clinical	Assist. Professor	FMC	Breast Pathology
Yilmaz, Asli	GFT	Assist. Professor	RGH	Urological Pathology, Surgical Pathology, Ultra-structural Pathology
Yu, Weiming	GFT	Assoc. Professor	ACH	Pediatric Pathology, cardiac pathology

Cross-appointments in the Division of Anatomic Pathology/Cytopathology include:

- Dr. Anthony Magliocco, Assoc. Professor 0.2 FTE, surgical pathology, primary appointment in the Department of Oncology.
- Dr. Harvey Sarnat, Professor, 0.1 FTE, neuropathology (pediatric and adult), primary appointment in the Department of Pediatrics.

Workload

	Specimens	% change (vs. 2009)
Anatomic Pathology	400,974 (blocks)	+1.9%
Pap Smears	205,551	-15%
Non-Gyne Cytology	10,106	+5.2%

Accomplishments

Technical

- Southern Alberta Liquid Based PAP Consolidation – Lethbridge June 1, 2010 & Medicine Hat September 1, 2010.
- Anatomic Pathology Routine Technical Operation Centralization – ACH June 7, 2010; PLC June 8, 2010 and RGH July 12, 2010.
- Renovations required in both Cytology and Anatomic Pathology to accommodate the consolidation/centralization process.
- Careers New Generation Student (2nd year of sponsorship) – internship in AP-DSC from July-August/10.
- MLT Student Program for AP was transferred to ACH June 7, 2010.
- A procedure for “Monitoring Breast Fixation” was established as a quality control measure for estrogen and progesterone receptor status.
- Research LEAN project: decrease TAT to 20 days for requested block/slide retrieval from Iron Mountain.

Autopsy Service

- Maintained turnaround times in adult autopsy with no backlog for adult autopsy cases as of November 1, 2010.
- 10% decrease of autopsy numbers (as today 179 compared to Nov 04, 2009 = 198).
- There is an increase of the complexity of cases over the years including Photo documentation for case presentation at CPC and M&M rounds.
- Covered autopsy service from Lethbridge and Medicine Hat.

Cancer Cytogenetics

- Several new FISH probes were introduced for sarcomas, brain tumors, and leukemias.
- The lab received an increased number of specimens from outside the Calgary area.
- Turnaround times for FISH testing have improved significantly.
- FISH testing post bone marrow transplant has been reduced, and plasma cell myeloma testing has been modified, both in response to the needs of clinicians and pathologists.
- Improvements have been made to the Helix module of Millennium, especially in reporting.
- Drs. Janette van den Berghe and Birgitte Roland presented a workshop at the Banff Pathology Course 2010 Lymphnode Pathology, entitled “FISH technology and its application to surgical pathology and hematopathology”.

Surgical Pathology

- TBCC consults as of September 20, 2010 under CLS supervision/responsibility:
 - CLS establishment of new more efficient consult process.
 - CLS establishment of TBCC Consult Rota with point person for given subspecialty.
 - CLS establishment of list of pathologists with areas of expertise listed.
 - New CLS consult forms for TBCC consults.
 - CLS establishment of dedicated TBCC Consult Desk.
 - CLS wider distribution of TBCC Consult Rota, new consult form to Oncologists.
 - In progress: meetings to establish common ground of computer “communication” between CLS and TBCC to expedite patient information/pathology reports and special tests.

- Standardization of all breast resection inking code of margins and tissue section submission.
- Standardization of lung biopsy and endometrial biopsy tissue sections/stains.
- Inking of all GI biopsies with ink color dictated in gross description.
- Standardization of “routine cases” tissue section cutting thickness for all CLS sites (same thickness for tissues sections at FMC, DSC, PLC & same tissue thickness for cases at RGH, ACH).
- New forms for “Internal Consults” and “External Consults”.
- Standardized gross dictation template to ensure accurate patient identification.
- Dr. Kiril Trpkov was an invited speaker at the XXVIII International Congress of the International Academy of Pathology (IAP) in Sao Paulo, Brazil, October 10-15, 2010 (Slide seminar, Prostate and testis pathology).
- Dr. Kiril Trpkov was on the planning committee for the Companion meeting of the International Society of Urologic Pathology (ISUP), held during the USCAP 2010 annual meeting in Washington, March 20-26, 2010.
- Dr. Asli Yilmaz and Dr. Kiril Trpkov were faculty and co-directors of a workshop “Practical approach to diagnostic problems in prostatic and testicular pathology, at the annual meeting of the Canadian Association of Pathologists (CAP), July 10-13, 2010, Montreal.
- Dr. Zu-Hua Gao was the invited speaker for biannual IAP Thailand academic meeting in Kon Kaen during 8-10 December 2010.
- Dr. Margaret Kelly was an invited speaker at the following meetings:
 - Understanding the immunopathology of Hypersensitivity Pneumonitis. Sixth Annual Research Day of the Snyder Institute University of Calgary, October 2010.
 - The role of pulmonary structural cells in pulmonary fibrosis in a model of Hypersensitivity Pneumonitis. Eur Respir Society Annual Congress Barcelona, September 2010.
 - Invited Round Table Discussion: Acute Severe Asthma. ATS, New Orleans, 2010.

Divisional Research Committee

Since its inception in mid 2008, the Divisional Anatomical Pathology (AP) Research Committee, chaired by Dr. Kiril Trpkov was instrumental in facilitating and supporting internal, primarily pilot research projects and coordinating other AP Division research activities. The committee supported 17 internal research projects in 2009 and 14 in 2010, for a total of 31 internal projects in 2009-2010. Another initiative for 2010 was to streamline the Ethics approval process for anatomic pathology research projects and this effort was led by Dr. Doug Demetrick.

The Anatomic Pathology Research Laboratory (APRL) is an asset for CLS and has made the approval of multiple internal projects possible by alleviating the workload of our main AP lab and our immunohistochemistry (IHC) lab. The workload of APRL has increased steadily and significantly since its inception.

Pediatric Pathology

- ACH was the site of a 3 day Pediatric Cardiac Pathology conference in July 2010, featuring Dr. Robert H. Anderson, an internationally renowned expert in Pediatric Cardiac Morphology. Central to the success of the conference was the availability of a large collection of teaching specimens demonstrating a variety of congenital heart defects. The conference attracted Pediatric Cardiology residents and teaching staff from Vancouver, Edmonton and Toronto and provided a unique opportunity to correlate specific heart defects with 3-D imaging. The ACH Pathology staff members were responsible for many of the organizational details for this event, which was considered a great success by the participants.
- ACH hosted the Fall meeting of the Society for Pediatric Pathology (SPP), held in the Rimrock Resort in Banff, Alberta in September 2010. The meeting participants shared a Saturday morning symposium with the Banff Pathology Update course, which this year had the largest attendance on record. Attendance for the SPP portion of the meeting was also excellent with over 100 registrants. Several tours of the

ACH were offered to the registrants and preliminary feedback about the meeting has been quite positive. One of our local pathologists, Dr. Alfredo Pinto, co-chaired one of the platform sessions. The Perinatal Symposium held on the Sunday morning was also well attended.

- Dr. Alfredo Pinto visited the Oklahoma Children's Hospital for one week to complete a review of the current developments in Ewing's sarcoma. The review will be published in January 2011 in the journal "Sarcoma".
- Another highlight, on a more personal level, was the receipt of a letter of appreciation from an ACH social worker to the ACH Pathology staff, thanking them for their assistance in helping support a family in severe distress over the death of their child. While this was not a unique occurrence, its acknowledgement in writing was unusual, as most of these activities are an expected part of family-centered care but do not usually receive widespread attention.

Neuropathology

- The neuropathology section developed a new residency program, using recent Royal College of Physicians and Surgeons of Canada (RCPSC) guidelines. In February, we were able to match two Canadian graduates in the first round of the CaRMS match (Dr. Mark Ballard and Dr. Laura Davies). Calgary was the only program in Canada to match Canadians to their neuropathology training program. In June, we also accepted as a transfer another neuropathology resident (Dr. Mircea Iftinca), who had been in the Vancouver program. In May, the head of the residency-training program in Calgary (Jeffrey T. Joseph MD PhD) participated in an RCPSC workshop for Canadian Neuropathology residency programs and had major input into the future structure of this residency. Many of these changes were given final approval in a second RCPSC meeting in October. Finally, one of our neuropathology residents (Dr. Laura Davies) was able to obtain outside funding and is currently pursuing a PhD in multiple sclerosis research in Germany.
- In conjunction with Alberta Health Services, the neuropathology section helped draft provincial guidelines and policies for the handling and processing of prion disease specimens, including Creutzfeldt-Jakob disease.
- The section of neuropathology established a professional relationship with the Office of the Chief Medical Examiner in Calgary. The neuropathology section acts as consultants in neuropathology to the Medical Examiner on a monthly schedule.
- Dr. Jennifer Chan secured an Alberta Heritage Foundation grant that will allow her to continue her research on pediatric brain tumors. This grant will provide salary and supply support for five years.
- The neuropathology section has been involved in setting up new cancer testing. The section was involved in setting up molecular diagnostic testing for IDH mutations in primary brain tumors and in obtaining the pHH3 antibody that is specific for mitotic figures. The section is also in the preliminary stages of establishing provincial standards for synoptic reporting related to brain tumors.
- Dr. Jeffrey T. Joseph was the recipient of the 2010 Smith Distinguished Award for Senior Faculty.
- Presentations at Canadian Association of Neuropathologist meeting, 2010
 - Clinical, pathological, and molecular aspects of a patient with Gerstmann-Straussler disease and a novel mutation. D.M. Pearson, M.B. Coulthart, A.W. Clark, G.H. Jansen and J.T. Joseph
 - Mitotic Counts and the Accuracy of Tumour Grading. J.T. Joseph
 - A comparative autopsy study of vasculopathy in CADASIL and in subcortical arteriosclerotic leukoencephalopathy (SAL). A.W. Clark, J.N. Scott, D.G. Patry and B. Curry
 - IgG4-Related Sclerosing Pachymeningitis. M. Iftinca, J.N. Scott, R. Midha and A.W. Clark
 - Gordon Mathieson Invited Member Lecture: Markers of Neuronal Maturation in Developing Human Brain and Malformations. Dr. Harvey Sarnat

Dermatopathology

Besides sign-out of dermatopathology cases, transfer cases and consultation service (interdepartmental and external) as well as QA-activities (multi-header rounds), we pursued the following tasks:

- Teaching:
 - Training of residents from pathology and dermatology as well as medical students during electives individually at the microscope, slide sessions, didactics (Group), and on-line training - Dr. Martin Trotter.
 - Residency training committees for AP and dermatology – Dr. Andrea Bruecks.
 - Research coordinator for AP residents – Dr. Martin Trotter.
 - Fellowship program. (Dr. Martin Trotter responsible, training through Group)
 - Medical school lecturer – Dr. Martin Trotter.
 - Participation in “patient viewing rounds” of the Dermatology Section. (Group)
 - TBCC Cutaneous Tumor Group rounds. (Dr. Duane Barber responsible, and Group)
 - Provincial Cutaneous Tumour Group – Drs. Martin Trotter and Andrea Bruecks.
- Presentation: Canadian Ophthalmological Society Annual Meeting and Exhibition 2010 - Canadian Society of Oculoplastic & Reconstructive Surgery, Quebec City: “Extranodal natural killer/T-cell lymphoma, nasal-type - presenting as a medial canthal swelling” C. Archibald (presenter), K. Punja, Dr. Holly Brown.
- Dr. Martin Trotter:
 - Organized program for March 5, 2010 Resident retreat in Banff. Topic: “Resident Research”.
 - MLT Continuing Education presentation “Immunohistochemistry for Melanocytic Lesions”
 - Invited presentation: “Immunohistochemistry in Skin Pathology” - cIQc/CAP-ACP Diagnostic Immunohistochemistry Meeting, Montreal, PQ, July 8-9, 2010.
 - Invited presentation: “Cutaneous T-cell lymphomas: Clinicopathologic subtypes and diagnostic challenges” - The Banff Pathology Course, Lymph Node Pathology, Banff, AB, September 1-4, 2010.
- Dr. Andrea Bruecks: Invited presentation: “Tumors of Cutaneous Appendages” to the Eighth Meeting of the Association of Directors of Pathology of China, Shanghai, October 22-24, 2010.

Anatomic Pathology Residency Training Program:

- A very successful Resident’s Retreat/Ski Day weekend was held in Banff, Alberta. The theme was “research”, and the retreat was very well attended by staff and residents.
- Three residents (Drs. Bures, Hamilton, and Franko) attended the USCAP meeting in Washington, DC. Drs. Bures and Hamilton presented posters at the meeting.
- Dr. Amy Bromley won one of two Resident’s Leadership Awards. She received a scholarship from the Doc’s Café, and was honored at the CAPA Spring Dinner.
- The Residency Program underwent an Internal Review (Royal College Accreditation), and was ultimately given Full Approval. The reviewers had many very positive things to say about the training program.
- Dr. Amy Bromley was awarded one of the few Resident positions in the Teaching Scholars in Medicine Course.
- Two new residents (Drs. Lik Han Lee and Adrian Box) joined the Anatomical Pathology Training Program as PGY1s, bringing the total number of AP residents to 16.
- Four of our residents (Drs. Davide Salina, Yunru Li, Karen Naert, Leslie Hamilton) attended and presented posters at the annual meeting of the Canadian Association of Pathologists (CAP) in Montreal, Quebec. Dr. Hamilton presented two posters. Dr. Davide Salina won the Canadian Chairs Award in Experimental Pathology for his abstract: “The Mechanism of Neutrophil DNA NET formation, an Ultrastructural Study”.
- Drs. Denise Ng and Amy Bromley attended a new 2 day “Ocular Pathology” course held in Edmonton, Alberta.

- All AP residents attended the Banff Conference, and took advantage of learning from the world renowned speakers in the field of Hematopathology.
- Dr. Amy Bromley attended the International Conference on Residency Education in Ottawa, Ontario. She also participated in the Chief Resident's Workshop at this meeting.
- After a long hiatus, the Journal Club was re-established, and will continue on a quarterly basis.

1.2.2 Division of Hematology/Transfusion Medicine

Division Head: Dr. Adnan Mansoor

Division Members (as at December 31, 2010)

Medical Staff	GFT/Clinical	Rank	Site	Special Expertise
Auer-Grzesiak, Iwona	Clinical	Assoc. Professor	FMC	Flow Cytometry, Lymphoma
Berka, Nouredine	Adjunct	Assist. Professor	DSC	Tissue Typing
Fourie, Thomas	Clinical	Assist. Professor	FMC	Hematological Pathology, Flow Cytometry
Jiang, Xiu Yan (Sue)	Clinical	Assist. Professor	DSC	Hematopathology
Khan, Faisal	GFT	Assist. Professor	HSC	Pediatric Hematology
Mansoor, Adnan	GFT	Assoc. Professor	FMC	Hematopathology
Prokopishyn, Nicole	Clinical	Assist. Professor	FMC	Stem cell lab
Shabani-Rad, Meer-Taher	Clinical	Assist. Professor	FMC	Hematopathology
Sinclair, Gary D.	Adjunct	Assoc. Professor	DSC	Supervisor, Molecular Hematology

Workload (Approximate):

Hematology Specimens	3,533,072
Transfusion Medicine Tests	217,422
Flow-Cytometry Tests	12,881
Tissue Typing Tests	17,707

Accomplishments

Flow Cytometry

- Implemented FCS Express Leukemia/Lymphoma reporting into clinical service.
- Eliminated need for printouts from analyzers due to change to FCS Express reporting from off-line PC's.
- Implemented TIC (Tech-in-charge) system to maintain a senior technologist presence in laboratory to oversee daily operations.
- Created paperless Antibody QC process and documentation system.
- Implemented new competency program for instrument QC and manual pipetting techniques.
- Moved to CD4 PLG gating strategy to extend specimen stability from 32 to 72 hours.
- Started CLTA4 study, a multi-site research project.
- Lab Scientist presented Flow Cytometry talks in Melbourne, Australia, Seoul, Korea, Singapore, Moncton, Toronto and Edmonton.
- Held annual Flow Users group meeting, Prairie Flowers, in conjunction with the Banff Pathology course.
- Trained 12+ residents/fellows in the Flow Cytometry Training program.
- Performed sorting services for ACH Diagnostics lab.
- Participated in Continuing Education through Teleconferences, Hematology Rounds and Webinar Lunch and Learns (x4).

- Re-developed PNH testing and reporting according to new Consensus Protocol guidelines. Lab Scientist participated with other Canadian and US institutions to develop the Consensus Protocol.

Hematology and Special Coagulation

- Implemented new Hematology Analyzers at ACH, SCHC, ACHC and CCHC.
- Completed Millennium Rev Upgrade.
- Participated in SHC Planning.
- Reviewed the Cellavision – Automated digital cell morphology.
- Evaluated the Test 1 ESR analyzer.
- Evaluated LabUMat & Urised Urinalysis system.
- Completed the RPF process for new Urinalysis analyzers.
- Hematology technologists have attended the TBCC Hematology rounds.
- DSC Hematology technologists completed 20.5 hrs of continuing education through teleconferences, CAP slide reviews and presentations conducted by Hematopathologists.
- Dr. Mansoor organized lectures for staff on Lymphocyte morphology.
- We evaluated and are using the new MAP tubes.
- We evaluated Thrombotic method for manual platelets.
- ACH is now doing their own urine and stool samples for eosinophils.
- Special Hematology revised protocol for Alpha Thalassemia send outs to decrease number of samples referred out.
- Special Hematology validated and implemented Helena Quick Gels — new method for Hgb. Electrophoresis.

Molecular Hematology

The Molecular Hematology Laboratory provides advanced molecular and biochemical testing in the area of blood coagulation, as well as molecular analysis for diagnosis and monitoring of patients with hematologic malignancies. As a regional centre for testing in hemostasis, the laboratory offers DNA molecular diagnostics for inherited disorders such as hemophilia A and B, von Willebrand disease, and for inherited risk factors in thrombosis. The laboratory works closely with the Special Coagulation laboratory at CLS to provide integrated reporting and interpretation of functional, antigenic and molecular data.

The laboratory also provides advanced molecular analysis for diagnosis of patients with myeloproliferative neoplasms and leukemias, and for monitoring patients for; treatment response after tyrosine kinase inhibitors or chemotherapy, and disease recurrence and graft survival after bone marrow/stem cell transplantation.

- Validated and implemented STR-based chimerism analysis on Flow separated cells for determination of cell subset donor chimerism after allogeneic transplantation.
- Collaboration with Pediatric Stroke Program ACH, performing inherited risk factor for thrombosis testing for patient cohort.
- Increased laboratory staffing by 0.5 FTE and acquired 2 new thermocyclers through funding from ACH Cancer Care Moonshoot Program.
- Streamlined process for ordering HIT antibody testing including direct ordering and patient history completion via SCM interface.
- Initiated the addition of FLT3 and NPM1 mutation test ordering and resulting through HELIX module in Cerner Millennium to reduce paper reporting.
- Enhanced QC for quantitative PCR assays by including commercially available, validated high, low and negative controls for BCR-ABL1 transcript analysis.
- Converted all current PCR cycle programs for use on 3 new thermocyclers
- Continued the ongoing revision of molecular methods manual.

- Expanded QA program to include Leukemia panel for FLT3, NPM1, JAK2 and PML-RARA transcripts, and specimens from ASHI for hematopoietic chimerism determination with 100% score in all PT challenges.
- Continued to expand specialized testing on a fee for service basis for extra-regional clients.
- Continued LEAN Six Sigma implementation for improved efficiency including streamlining workflow and QC for Factor V Leiden PCR assays in collaboration with Special Coagulation.
- Decommissioned radioisotope laboratory/decay room and arranged for disposal of all sealed and non-sealed radioisotope sources.
- Laboratory participation in combined Hematology/Chemistry continuing education event.
- Trained 2 new technologists in the molecular laboratory.
- Hematopathology resident/fellowship training program specialized laboratory coordinator and molecular hematology preceptor for 8 trainees.
- Contributed to Pediatric Hematology Oncology BMT Core Curriculum Teaching Program at ACH.

Tissue Typing

- Passed 2010 Interim ASHI Laboratory Accreditation.
- Worked with AHS to choose a tissue typing HLA LIS solution (Histotrac).
- Participated in successfully transplanting incompatible renal transplant pairs by working with the national LPDE (Living Paired Donation Exchange).
- Presented Abstract at National and International Conferences including the American. Histocompatibility and Immunogenetics, International Transplant Conference, Canadian Society of Transplantation, and the American Transplant Congress.
- Published a major paper that was featured in the cover page of journal transplantation.
- Continuing education through teleconferences, Bone Marrow, Renal Weekly Rounds, and Hematology Education Session.
- Trained a new technologist on tissue typing benches.
- Trained Histocompatibility Fellow on serology, luminex, molecular typing benches.
- Trained three technologists in Flow Cell Crossmatch.
- Trained two technologists on sequence base typing.
- Rotated Fellows, Residents, and Nurses in tissue typing.
- Mentored thesis research of two students for the completion of a MS of biotechnology.
- Maintained ABHI technologist board certificate for seven technologists.
- Leaned operational by 19% by introducing algorithm changes and closely monitoring reagents use and purchase.
- Performed beta testing for a vendor of a medium resolution HLA molecular genotyping automated platform.
- Represented Calgary in HLA national committee for living donor exchange program and highly sensitized patients program.
- Elected by ASHI Accreditation board as the first Canadian ASHI commissioner.
- Acquired grant funding for 3 research projects.

1.2.3 Division of Clinical Pathology

Division Head: Dr. Leland Baskin/Acting Division Head: Dr. Christopher Naugler

The Divisions of General Laboratory and Clinical Biochemistry were combined into one Division and re-named to Clinical Pathology during 2010. Dr. Leland Baskin was the Division Head of both Divisions until Dr. Christopher Naugler joined the Department at which time he became Acting Division Head.

Committees:

- Chemistry Quality Utilization and Management Committee: Drs. Andrew Lyon, Richard Krause, Valerian Dias, Alex Chin, Christopher Naugler, Leland Baskin
- Clinical Biochemistry Update: Drs. Andrew Lyon, Richard Krause, Valerian Dias, Martha Lyon, Leland Baskin, Alex Chin, Christopher Naugler
- First Trimester Testing Committee: Dr. Richard Krause
- First Trimester Testing Steering Committee: Dr. Richard Krause
- Quality and Utilization Process Excellence Committee: Drs. Richard Krause, Leland Baskin, Christopher Naugler
- Medical Advisory Committee: Drs. Richard Krause, Leland Baskin, Christopher Naugler
- CLS Leaders Meetings: Drs. Richard Krause, Leland Baskin, Christopher Naugler
- Fellowship Committee: Drs. Christopher Naugler, Leland Baskin
- Point of Care Testing: Drs. M. Lyon, Richard Krause, Lyle Redman
- Alberta Toxicology Centre Steering Committee: Dr. Andrew Lyon
- General Laboratory Monthly Staff Meeting: Chair – Dr. Leland Baskin/Dr. Christopher Naugler
- Department Clinical Safety Committee: Dr. Hua Yang, Chair
- Electronic Health Record Laboratory Advisory Committee (ELAC): Dr. Leland Baskin

Division Members (as at December 31, 2010)

Medical Staff	GFT/Clinical	Rank	Site	Special Expertise
Abdullah, Amid	Clinical	Assist. Professor	DSC	General Pathology
Baskin, Leland	Clinical	Assoc. Professor	DSC	Chemical Pathology, General Pathology
Chin, Alex	Clinical	Assist. Professor	DSC	Clinical Chemistry
Dias, Valerian	Adjunct	Assoc. Professor	DSC	Clinical Toxicology, Special Chemistry
Gorombey, Steve	Clinical	Assist. Professor	DSC	Cytopathology, General Pathology
Krause, Richard	Adjunct	Assist. Professor	DSC	Clinical Chemistry
Larsen, Erik	Clinical	Assist. Professor	RGH	General Pathology
Lyon, Andrew	GFT	Assoc. Professor	DSC	Clinical Chemistry
Lyon, Martha	GFT	Assoc. Professor	ACH	Pediatric and Neonatal Clinical Chemistry, Point of Care
Mourad, Walid	Clinical	Professor	DSC	General Pathology, Hematopathology, Cytopathology
Naugler, Christopher	GFT	Assist. Professor	DSC	Lab Informatics, General Pathology
Redman, Lyle	Clinical	Locum	DSC	Clinical Chemistry

Workload

Workloads for most tests have continued to increase over the past 12 months. Some representative statistics are:

- 15,752,389 chemistry tests in blood, urine and body fluids (0.78% increase over 2009)
- 101,752 ECGs (1.14% increase over 2009).

Accomplishments

Professional Staff Changes

- Drs. Andrew Lyon and Martha Lyon returned to work in August from a one year sabbatical.

- Three new medical staff to the Division: Dr. Alex Chin, Dr. Marie Dvorakova, and Dr. Christopher Naugler.

Education

- Informatics clinical elective (4 weeks) developed for laboratory medicine residents in cooperation with medical and technical staff. First resident scheduled started in March 2011.
- An application for a new General Pathology Residency Training program is in the application stages. The first residents will enter the program in July 2013 or July 2014.
- A clinical pathology newsletter was developed under the editorship of Dr. Alex Chin. Staff are encouraged to submit brief, informative articles targeting the community and hospital-based clinicians.

Reports from the Managers

- A major upgrade to the Millennium laboratory operating system was completed in February.
- 2nd generation butterfly needles implemented December 2010, since implementation only 1 needle stick injury, and translates to 87% reduction for same time previous year.
- Replacement of the aging HmX hematology instruments at South Calgary & Airdrie Testing Labs with new LH500 instrumentation.
- Cochrane Testing Lab due to open February 15, 2011.
- Changes implemented to 24-hr urine collection, ordering and resulting analytes. This resulted in reducing the number of recollects and improving reporting of results implemented chart interpretive comments for fasting biochemistry tests. This resulted in patients not needing to come back for fasting blood work.
- Implemented a Fecal Immuno Testing Pilot Project.
- Implemented testing of extra regional pseudocholinesterase specimens.
- Reviewed and implemented allergen ordering limitations to streamline utilization and costs without impacting medical utility.
- Implemented plasma metanephrine testing.
- Installed a Triple Q instrument in the Analytical Toxicology area which improved the sensitivity, precision and efficiency of the assays.
- All ACH RRL staff trained to perform serological testing and product manipulation in Transfusion Medicine. Provision of on-site TM testing 24/7 at ACH. Official date of change was January 4, 2011.
- Medical Records implemented a number of new procedures including improved TAT material retrievals for Research and enhancement of records database for tracking tissue blocks, slides and off-site storage.
- The Patient Appointment Line implemented an on-line booking system for patients in September 2010.
- Laboratory Information Centre improved staff management and queue management. (education to clinics with auto-fax to priority requests), and worked with various areas of the organization to ensure only legitimate fax requests are entered in to the LIS.
- Developed education materials outlining lab services for Community Pharmacists and began registering pharmacists as providers who can order lab tests (first in Alberta).
- In addition to our current patient appointment line service, CLS now offers a web based option accessible from our web site at www.calgarylabservices.com.
- Expanded hours of service for Patient Service Centres.
- Enhanced Mobile Collection Services.
- Provision of mobile collection services to the new Garrison Green Long Term Care Center All Health Centre testing laboratories now offer on site D- Dimer testing, which expedites the treatment and discharge or transfer of patients seen in the Urgent Care Centres.
- Expansion of Intra-Operative Parathyroid Hormone analysis during parathyroidectomy surgery at PLC and RGH.
- New Health Centre Testing Laboratory (HCTL) opened in Cochrane.
- A number of quality initiatives completed including increased staff awareness of the laboratory's role in patient.

- Conducting a formal evaluation of lancet devices in response to concerns reported in the Safety Learning Reporting system regarding extended bleeding after neonatal blood collections. Performing a urine container audit in response to problems identified through the Safety Modified Laboratory Information System registration screens to prevent/reduce registration errors that can result in an overlay of one patient's results on another patient's record. Implemented a new add-on test process for orders from Emergency Departments and Urgent Care Centres to standardize the process, make it more efficient and implement a tracking mechanism for add-on testing Point of Care Testing (POCT).
- Point of Care Testing supported the set up and validation of twenty new Blood Gas Analyzers within the acute care sites.

1.2.4 Division of Microbiology

Division Head: Dr. Dan Gregson

Committees

- AHS, Regional IP & C Committee – Dr. Dan Gregson
- CLS, Microbiologists Divisional Group – Chair, Dr. Dan Gregson
- CLS, Microbiology Medical/Technical/Quality – Chair, Dr. Dan Gregson
- Quality and Utilization Process Excellence Committee – Dr. Dan Gregson
- Provincial, Member, ID Division Committee – Dr. Dan Gregson
- Provincial, MicroNet Committee – Chair, Dr. Dan Gregson
- Provincial, Consultant, Microbiology Laboratory Proficiency Testing Program (LPTP), College of Physicians & Surgeons of Alberta – Dr. Deirdre Church
- Provincial, Member (GFT), AMA Representatives Forum – Dr. Deirdre Church
- Provincial, Member, CPSA Advisory Committee on Lab Medicine – Dr. Dan Gregson
- UofC, Infectious Disease Research Group – Dr. Dan Gregson, Dr. Deirdre Church, Dr. Johann Pitout
- UofC, Member, UofC Adult ID Residency Training Committee – Dr. Julie Carson
- UofC, Member, UofC Advisory Selection Committee – Dr. Julie Carson
- UofC, Member, UofC Pediatric ID Residency Training Committee – Dr. Julie Carson

Division Members

Medical Staff	GFT/Clinical	Rank	Site	Special Expertise
Carson, Julie	Clinical	Asst. Professor	DSC	Mycology, Enterics, Wounds
Church, Deirdre	GFT	Professor	DSC	Medical Microbiology, HIV Diagnostics, STDs, Anaerobes, Mycology
Gregson, Daniel	GFT	Assoc. Professor	DSC	IP&C Surveillance, Virology, Serology, Informatics, Sterile Fluids, Respiratory
Pitout, Johann	GFT	Professor	DSC	Antibiotic Susceptibility/ARO Bacteriology, Parasitology

Cross-appointment: Dr. Otto Vanderkooi, Asst Prof, 0.2 FTE, Pediatric Microbiology/Cystic Fibrosis, primary appointment in the Department of Pediatrics.

Workload

One of the challenges Microbiology has faced since the implementation of the new Cerner Pathnet Millennium Laboratory Information System in December 2009, is the inability to obtain complete specimen workload numbers and the positivity rate.

Accomplishments

- Implementation of the new Cerner Pathnet Millennium Laboratory Information System. Cerner Pathnet Classic was retired and replaced by newer technology.
- Due to toxicity and mutagenicity of ethidium bromide in our current PCR assay gel stain, a new agarose gel stain SYBR Safe, was implemented.
- Implementation of new vancomycin BHI plates used for vancomycin resistant screening, as the current plate was not performing satisfactorily.
- Implementation of ERIC PCR for molecular typing of *P. aeruginosa* for infection control and epidemiology purposes. ERIC PCR is a more efficient and faster method than the traditional PFGE that was being performed.
- Implementation of QIAquick PCR for purification of PCR products. The QIAquick PCR is less labor intensive and an overall cost savings of 50% was achieved.
- Effective May 02, 2010, all malaria specimens were transported from Lethbridge to CLS Microbiology to be read and reported.
- Due to an escalation of MRSA/VRE activity seen in the Calgary acute care hospitals, a point prevalence screen was performed in August 2010. The last zone wide point prevalence screen was completed in 2002. Statistics were compiled and revealed for each known person with these organisms, there were 2 additional colonized persons of whom neither Infection Prevention and Control nor unit staff were aware. Based on these results, new MRSA/VRE admission screening was implemented on all surgical and medical units at RGH, PLC and FMC, resulting in an additional 26,909 nasal screens for MRSA and 31,929 rectal screens for MRSA/VRE annually to be processed by CLS Microbiology.
- Purchase of a Veriti Thermal cycler to replace the 9800 thermal cyclers. The Veriti Thermal cycler provides better optimization, is faster and easier to program, over all improving the process.
- Implementation of the TechLab Clostridium difficile antigen test and BD GeneOhm PCR confirmation assay to improve the detection of Clostridium difficile from stool specimens.
- Purchase of a new -20 degree freezer to replace the current older model which was no longer able to sustain the correct temperature, impacting the quality of antibiotic strips and discs.
- Methonal fixation for gram staining slides replaced the traditional heat fixation of slides, resulting in better morphology and more clearly defined cells.
- New Vitek computers were installed as the vendor was no longer supporting the existing ones. A new interface to Cerner Pathnet Millennium was also built, resulting in fewer errors when transferring information from the Vitek to Millennium. The new windows based computers are also easier to navigate. The Vitek computers were obtained by trading in equipment due to the lack of capital funds available to purchase new equipment.
- A new test, Helicobacter pylori stool antigen test was implemented in CLS Microbiology. Previously specimens were sent to Focus Laboratories in the USA for testing. We were able to implement this test, achieving a 50% cost savings and improve the TAT for results.
- A neutropenic rule was built in Millennium to provide the Microbiologists with the neutrophil count. This history can impact clinical decision making regarding reporting isolates and susceptibility patterns.
- The PrepMan Ultra DNA extraction method replaced the current Qiagen extraction kit, resulting in a decrease in reagent costs and TAT for extraction when performing Spa-typing.
- CLS Patient Instruction sheets were revised to include directions for patients to document the date and time of specimen collection on the requisitions provided with the collection kits, as well as on the actual specimen.
- Eight changes to SCM order screens were done to improve the ordering practices and information to Microbiology regarding testing required. Further change requests are in queue with pending implementation.
- Added a new interfaced, freetext field to every Micro form titled: 'Additional Info to Lab'.
- Changed existing field label 'Patient Info to Lab' back to 'Health Issues'.
- M NOSE: Added new field 'Planning Decolonization?', as Yes/No dropdown (defaulted to No).

- M OP: Ova and Parasite form - single drop down indications field with the following indications:
 - Travel
 - GI Consultation
 - Immigration/Refugee
 - Travel Clinic
 - Immunosuppression
 - Bloody Stool
 - Other: please Specify
- M FLUID: added interfaced anatomical site field.
- M EAR: Addition of 'Ruptured Otitis Media', 'Mastoiditis', 'Malignant Otitis Externa' fields for Ear (external).
- Bacterial Culture. These fields will be Yes/No dropdowns with no default.
- SCM change - A specimen type of CSF has the Cryptococcal Antigen CSF testing method performed.
- Users searching for Cryptococcal Antigen CSF test to be directed the Common CSF Investigations order set.

1.2.5 Division of Provincial Lab of Southern Alberta

Division Members

Medical Staff	GFT/Clinical	Rank	Site	Special Expertise
Louie, Marie	Cross-Appointed	Assoc. Professor	FMC	Microbiology
Tellier, Raymond	Cross-Appointed	Assoc. Professor	FMC	Microbiology

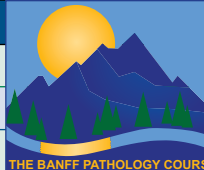
1.2.6 Division of Toxicology

Division Members

Medical Staff	GFT/Clinical	Rank	Site	Special Expertise
Vacant	Region, Cross-Appointed		HSC	Toxicology

1.3 Banff Pathology Course(2010 Banff/SPP Fall Meeting, 2011 Speakers)

2010 Banff Pathology Course Program

Time	Event	
Thursday, September 2, 2010		
6:30 - 7:30 am	Registration & Breakfast	
7:30 - 7:45	Dr. Jim Wright - Introductory Remarks & Welcome	
7:45 - 8:35	Dr. Adnan Mansoor “Immune System: Structure and Function”	
8:35 – 9:25	Dr. Elaine Jaffe “Practical Application of Immunohistochemical Markers in Diagnostic Lymph Node Pathology”	
9:25 - 10:15	Dr. Sherrie Perkins “Ancillary Techniques in Lymphoma Diagnosis-Algorithmic Approach and Efficient Utilization”	
10:30 - 11:20	Dr. Lawrence Weiss “Reactive and Atypical Lymphoid Hyperplasia”	
11:20 - 12:10 pm	Dr. Randy Gascoyne “Diffuse Large B-cell Lymphoma. Subtypes, Variants and Mimics”	
12:10 - 1:00	Dr. Lawrence Weiss “Small B-cell Lymphoma. Morphological Spectrum and Approach for Adequate Sub-classification”	

Time	Event
1:00 – 1:30	Lunch (Pick Up Previously Purchased Box Lunches)
1:30 - 3:00 pm	<p>Workshop: Fluorescent In-Situ Hybridization (FISH)</p> <p>Drs. Birgitte Roland & Janette van den Berghe “FISH Technology 101 & its Application in Surgical Pathology & Hematopathology”</p> <p>Dr. Raymond Lai “Clinical Utility of FISH & Other Molecular Diagnostic Tools in Laboratory Management of Patients with Chronic Myeloproliferative Disorders”</p>
5:30 - 7:30 pm	Wine & Cheese Reception
Friday, September 3, 2010	
6:30 - 7:30 am	Registration & Breakfast
7:30 - 7:45	Dr. Hallgrimur Benediktsson - Introductory Remarks
7:45 - 8:35	Dr. Elaine Jaffe “T/NK-cell Lymphomas - an overview”
8:35 - 9:25	Dr. Raymond Lai “Diagnostic Strategies for Non-Hodgkin Lymphoma with Anaplastic Morphology”
9:25 - 10:15	Dr. Martin Trotter “Cutaneous T-cell Lymphomas: Clinico-Pathologic Subtypes and Diagnostic Challenge”
10:30 - 11:20	Dr. Randy Gascoyne “Extra-Nodal B-cell Lymphomas. Distribution, diagnosis and challenges in the interpretation of small biopsies”
11:20 - 12:10	Dr. Walid Mourad “Fine needle Aspiration Cytology and Lymphoma Diagnosis. Practical Applications and Limitation”
3:00 - 5:00	<p>Workshop: Flow Cytometry</p> <p>Dr. Iwona Auer-Grzesiak, Clinical Associate Professor “Application of Flow-Cytometry in Diagnosis and Management of Hematological Malignancies”</p> <p>Joanne Luider, Laboratory Scientist, Calgary Laboratory Services “Case Presentations in Pathology”</p>
6:30-7:30 pm	Cocktails (Cash Bar)
7:30 PM	Banquet
Saturday, September 4, 2010	
6:30 - 7:15 am	Registration & Breakfast
7:15 - 7:30	Dr. Jim Wright - Introductory Remarks & Welcome
7:30 - 8:15	Dr. Elaine Jaffe “2008 WHO Classification of Lymphomas. An Overview”
8:15 - 9:00	Dr. Lawrence Weiss “Hodgkin Lymphoma and Differential Diagnosis”
9:00 - 9:45	Dr. Sherrie Perkins “Pediatric Non-Hodgkin Lymphoma. Recent advances and new entities”
10:00 - 10:45	Dr. Lawrence Weiss “EBV Associated Lymphoproliferative Disorders. Update and Clinical Significance of New Entities”
10:45 - 11:30	Dr. Sherrie Perkins “Reactive Lymphoproliferative Lesions in Children”
11:30 - 12:15 pm	Dr. Ron Jaffe “The Spectrum of Histiocytic Processes in Childhood”
12:15 – 12:45	Question and Answer Period with Panel
12:45 – 1:00	Closing Remarks

2010 SPP Fall Meeting Program

Time	Event
Friday, September 3, 2010	
2:00 – 6:00 pm	SPP Registration
6:30 – 8:00 pm	Welcome Reception (cash bar)
8:00 am – 6:00 pm	SPP Committee Meetings
Saturday, September 4, 2010	
Shared Session Banff Pathology Course And Society For Pediatric Pathology Symposium (See Above)	
2010 SPP Fall Meeting Program	
1:00	Lunch — Posters available for viewing
1:30 - 1:45	General Announcements & Introductory Remarks
1:45 - 3:00	<p>Platform Presentations – Session 1</p> <p>Ljungan Virus Antigen Detected in Brain and Spinal Cord from Cases of Stillbirth E Sbrana, HK Hawkins, JE Moss, GR Saade, B Niklasson, University of Texas Medical Branch, Galveston, TX, USA; Uppsala University, Uppsala, Sweden; Apodemus AB, Stockholm, Sweden</p> <p>Immunohistochemical Expression of SALL4 in Wilms Tumors, Nephrogenic Rests, and Fetal and Postnatal Renal Cortices Jeremy Deisch [1], Jack Raisanen [1], Dinesh Rakheja [1,2], [1] University of Texas Southwestern Medical Center, Dallas, TX, [2] Children's Medical Center, Dallas, TX</p> <p>Diagnostic Pitfalls of Pan-Myeloid Antigen Negative Acute Megakaryoblastic Leukemia N Cetin, HR Mahler, RB Lorschach, Arkansas Children's Hospital, University of Arkansas for Medical Sciences, Little Rock, AR</p> <p>Loss-Of-Function Mutations In PTPN11 Are Responsible For The Hereditary Bone Tumor Syndrome Metachondromatosis M Bowen(1), ED Boyden(1), IA Holm(1), B Campos-Xavier(2), L Bonafé(2), S Ikegawa(3), V Cormier-Daire(4), R Savarirayan(5), S de Sousa(6), HP Kozakewich(1), JR Kasser(1), ML Warman(1), KC Kurek(1), 1-Children's Hospital Boston and Harvard Medical School, Boston MA; 2-Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland; 3-RIKEN, Tokyo, Japan; 4-Groupe Hospitalier Necker-Enfants Malades, Paris, France; 5-Royal Children's Hospital, Melbourne, Australia; 6-Hospital Pediátrico de Coimbra, Coimbra, Portugal</p> <p>Pathology of CNS Posttransplant Lymphoproliferative Disorders: Lessons from 6 Pediatric Autopsies Gabriela Gheorghe1, Oana Radu2, Ronald L. Hamilton2, Ronald Jaffe2, James F Southern1, John Ozolek2, Departments of Pathology, Children's Hospital of Wisconsin1 Medical College of Wisconsin and Children's Hospital of Pittsburgh2 of the University of Pittsburgh Medical Center</p> <p><i>Moderators:</i> Michael Covinsky (University of Texas-Houston); Jennifer Black (Vanderbilt)</p>

Time	Event
3:15 - 4:30	<p>Platform Presentations – Session 2</p> <p>Hirschsprung’s Disease via the Lens of Proteomics Rong Fan et al, Department of Pathology, Indiana University</p> <p>Platform Presentations – Session 2</p> <p>Nestin in Peripheral Nerve Sheath Tumors: a Marker of Tumor Progression? *Jailan Osman, MD, Susana Galli, MD, **Brigitte Widemann, MD, Maria Tsokos, MD, *Department of Pathology at Arkansas Children’s Hospital, Laboratory of Pathology; and **Pediatric Oncology Branch, National Cancer Institute, National Institute of Health, Bethesda, Maryland</p> <p>Seven Cases of Colorectal Adenocarcinoma in Children with Diverse Pathological Subtypes and MSH Gene Abnormalities CK Steelman, RS Gonzalez, LB Rapkin, HM Katzenstein, BM Shehata, Emory University School of Medicine, Atlanta, GA; Children’s Healthcare of Atlanta, Atlanta, GA</p> <p>Cervical Ribs Are More Prevalent in Stillborn Fetuses than in Liveborn Infants and Are Strongly Associated with Fetal Aneuploidy LV Furtado, JM Opitz, LK Erickson, BH Shirts, HM Thaker, Departments of Pathology and Pediatrics, The University of Utah, Salt Lake City, UT</p> <p>The Need To Sub-Classify Syncytial Knots: Wave-Like Syncytial Knotting In Distal Villous Hypoplasia B Fitzgerald, K Levytska, M Walker, D Baczyk, J Kingdom, S Keating, Mount Sinai Hospital, Toronto</p> <p><i>Moderators:</i> Gino Somers (Sick Kids, Toronto); Alfredo Pinto (Calgary)</p>
4:40 - 5:30	<p>Lotte Strauss Lecture</p> <p>Dr. Cynthia Hawkins</p> <p>“Genetic Analysis of Pediatric Brainstem Gliomas”</p> <p>The purpose of the Dr. Lotte Strauss Prize is to recognize meritorious work by any individual 40 years of age or younger in a subject germane to pediatric pathology. The work must be accepted for publication or published during the year preceding the Spring meeting at which the award is presented.</p>
5:30 pm	SPP Registration Desk Closes
5:30 - 7:00	Banff Gondola to the top of Sulfur Mountain
6:00 - 7:00	Cocktails (cash bar)
7:00 - 9:00	SPP Banquet
8:30 - 10:00	Banff Gondola back to base (5 min walk to Hotel)
Sunday, September 5, 2010	
7:00 - 8:00 am	Breakfast
7:00 - Noon	SPP registration Desk

Time	Event
7:00 AM - 1:00 pm	Posters Available for Viewing
7:25 - 8:10 am	COG Update Dr. Amy Heerema-McKenney “Pediatric Acute Myeloid Leukemia: COG Experience with the 2008 Classification”
8:10 - 8:15	Announcements
8:15 - 9:30	Platform presentations Session 3 LAIR2-Positive Extravillous Trophoblast Migrate to the Implantation Site and Invade Maternal Decidual Vessels LN Nguyen, S Founds, WT Parks, University of Pittsburgh, Pittsburgh, PA Pale Avascular Villi Provide Insights Into The Pathogenesis of Placental Fibrinoid Deposition B Fitzgerald, D Baczyk, M Walker, P Shannon, J Kingdom S Keating, Mount Sinai Hospital, Toronto Immunohistochemical Study of Vascular Architecture and Mib-1 Proliferation Index in Early Spontaneous Miscarriages Bonasoni MP, Negri F, Savioli C, Rossi A, Gambini C., Unit of Pathology, Gaslini Pediatric Hospital, Genova, Italy Maternal Serum C-Reactive Protein In The Second And Third Trimester: Correlations With Placental Inflammation At Delivery LM Ernst, K Wolfe, WA Grobman, JL Hall, AEB Borders, Northwestern University Feinberg School of Medicine Correlation Between Cerebral and Placental Damage in Fetuses Congenitally Infected by Cytomegalovirus Gabrielli L, Bonasoni MP, Santini D, Baccolini F, Piccirilli G, Chiereghin A, Petrisli E, Guerra B, Dolcetti R, Gardini G, Landini MP, Lazzarotto T., Operative Unit of Microbiology, Operative Unit of Pathology, Department of Obstetrics and Gynecology, St. Orsola Malpighi University Hospital, Bologna, Italy. Operative Unit of Pathology, St. Maria Nuova Hospital, Reggio Emilia, Italy. Division of Experimental Oncology, Centro di Riferimento Oncologico, Aviano, Italy <i>Moderators:</i> Debra Heller (University of Med/Dentistry of New Jersey); Sarah Keating (Mt Sinai, Toronto)
9:30 - 10:15	Break & Poster Viewing
10:15 - 11:45	Poster Discussion <i>Moderators:</i> Pat Kirby (Iowa); Jim Wright (University of Calgary, Calgary)
11:45 - 12:00	Awards
12:00 - 1:00 pm	Lunch (Pick Up Previously Purchased Box Lunches)
1:00 - 5:00	Perinatal Pathology Symposium (Separate Registration Required)
5:00 - 6:00	Perinatal Section Meeting
7:30 pm	Informal Slide Viewing Session for perinatal pathologists

2011 Banff Pathology Course Speakers	
Valerie A. Capstick, MD	Associate Professor, Obstetrics & Gynecology University of Alberta, Edmonton, AB
Terence J. Colgan, MD	Professor, Lab Medicine and Pathobiology University of Toronto, Toronto ON
Dean Daya, MD	Professor, Obstetrics & Gynecology McMaster University, Hamilton, ON
Máire A. Duggan, MD	Department of Pathology & Laboratory Medicine University of Calgary, Calgary, AB
Blake Gilks, MD	Professor, Department of Pathology & Laboratory Medicine University of British Columbia, Vancouver, BC
Martin Köbel, MD	Department of Pathology & Laboratory Medicine University of Calgary, Calgary, AB
Marisa Nucci, MD	Associate Professor, Department of Pathology Harvard Medical School, Boston, MA

1.4 Research (CLS and Externally Funded)

2010 CLS Health Services Research Funding Competition Projects Awarded Funding

Principal Investigator/ Co-Investigators	Topic	Budget
Dr. Deirdre Church /Dan Gregson, Julie Carson	Development and Validation of an ITS Broad- Range PCR assay for Detection of Aspergillus and Other Fungi Causing Invasive Pulmonary Disease in Immunocompromised Patients.	\$8,460.00
Dr. Maitreyi Raman /Kevin Rioux, Valerian Dias, Tanis Fenton	The Vitamin A Absorption Test and Fecal Volatile Organic Compounds: Clinical and The Vitamin A Absorption Test and Fecal Volatile Organic Compounds: Clinical and laboratory methods to assess Fat Malabsorption.	\$9,939.00
Dr. Meer-Taher Shabani-Rad /Adnan Mansoor, Monica Phillips	Blood Utilization Management Plan (BUMP), A Step Forward to Clinical and Provincial Validation.	\$9,500.00
Dr. Abdelhamid Liacini /Faisal Khan, Serdar Yilmaz, Nouredine Berka	The functional polymorphisms of IL17A, IL17F genes and chronic kidney allograft rejection	\$9,161.00
Dr. Faisal Khan /John Gill, Nouredine Berka	Sensitivity, specificity and predictive potential of the pharmacogenetic test based on HLA-B*5701 and Heat shock protein- 70 M493T (Hsp- 70 M493T) genotyping for Abacavir Hypersensitivity in HIV-1 positive patients.	\$9,462.00
Dr. Sean Gui	New Markers for Distinguishing Colitis-Associated from Sporadic Colorectal Dysplasia/ Neoplasia.	\$10,000.00
Dr. Nouredine Berka /Faisal Khan, Jan Storek, Victor Lewis	Impact of donor-recipient compatibility for HLA-DPBI on the outcome of allergenic Hematopoietic cell transplantation.	\$9,475.00
Dr. Johann Pitout /D. Gregson	Detection of clone ST131 among extended-spectrum β -lactamase (ESBL)- producing Escherichia coli isolated from blood in Calgary and Rotterdam	\$34,870.00
Dr. Martin Köbel /Y. Li	Biomarker enhanced classification of endometrial and ovarian carcinomas.	\$27,512.00
Dr. Douglas Demetrick	DNA Microarrays for Identifying Complex Genomic Alterations in Cancer Specimens: Aim #1.	\$24,640.00

The next table showcases external research grants held by Department of Pathology & Laboratory Medicine/ Calgary Laboratory Services researchers during 2010.

External Research Grants and Awards (includes multiple years and co-investigators) Does not include those of cross-appointments.

Medical Staff	Year	Funding Source	Total Award	*PI/Co-Inv
Berka, Noureddine				
"A prospective study of endothelial progenitor cells (EPCs) in pre-eclampsia and pregnant women who smoke"	2009-11	ACH Research Foundation	\$30,000	Co-Inv
Bismar, Tarek				
"Molecular signatures of TMPRSS2-ERG hormone refractor prostate cancer and the regulation of TMPRSS2-ERG in hormone"	2008-10	Prostate Cancer Institute	\$100,000	PI
"Molecular signatures platform to characterize aggressive and indolent prostate cancer"	2008-11	Canadian Foundation of Innovation	\$153,000	PI
"miRNA Predictors of Lethal Hormone Refractory Prostate Cancer"	2010-12	Prostate Cancer Canada	\$120,000	PI
"Combined role of TMPRSS2-ERG fusion gene and PTEN genomic deletions in prostate cancer development, progression and metastasis"	2008-11	Prostate Cancer Research Foundation USA	\$238,600	PI
Chan, Jennifer				
"MicroRNAs in Medulloblastoma"	2009-12	Kids Cancer Foundation of Alberta	\$300,000	PI
"MicroRNA functions in cerebellar development and disease"	2010-13	Alberta Heritage Foundation Establishment Grant	\$360,000	PI
"MicroRNA functions in cerebellar development and disease"	2010-17	Alberta Heritage Foundation Clinical Investigator Award	\$770,000	PI
Church, Deirdre				
"Antibiotic resistance organism research Fund"	2000-10	Calgary Health Trust	\$963,147	PI
"Infection of the Gut by HIV-1"	2008-11	CIHR	\$ 144,100	Co-Inv
Demetrick, Douglas J.				
"Angiogenesis Factor Polymorphisms: Role in the Development of Rapid Metastasis in Breast Cancer"	2007-10	Canadian Breast Cancer Research Initiative	\$429,000	PI
"Association of patient genotype with rapid skeletal metastasis in Breast Cancer"	2009-11	Alberta Breast Cancer Research Initiative	\$257,853	PI
"Characterization of Putative Hypoxia-regulated Cell Growth Regulatory Genes"	2010	AHFMR Summer Studentship	\$6,000	PI
Duggan, Máire				
"Polyps of the Vagina & Uterine Cervix: a clinico pathologic analysis."	2009	Calgary Health Trust	\$3,947	PI

Medical Staff	Year	Funding Source	Total Award	*PI/Co-Inv
Falck, Vincent				
“Barrett’s esophagus: Incidence and Prevalence in Calgary and Southern Alberta”	2004-10	Bonnie Laing Fund and O’Brien Center	\$7,400	PI
“A Multi-Center, Single-Blind, Randomized Study Comparing Thymectomy to no Thymectomy in Non-Thymomatous Myasthenia Gravis (MG) Patients Receiving Prednisone”	2006-11	National Institute of Health	\$3,400 Per accrued patient	Co-Inv
Green, Francis				
“High resolution microscopy of human cancer”	2004-10	Anonymous Foundations	\$428,373	PI
“Treatment of acute asthma with perfluoro-carbon/carbon dioxide formulations”	2008-10	AHFMR ForeFront Program	\$109,000	PI
“Novel formulations for the treatment of acute asthma”	2009-10	AHFMR ForeFront Award Phase II	\$26,500	PI
“Novel formulations for the treatment of acute asthma”	2009-10	Southern AB Intellectual Property Network Grant Award	\$15,000	PI
“Treatment of acute asthma with perfluoro-carbon/carbon dioxide formulations”	2010-11	The Lung Association – AB & NWT	\$30,000	PI
Kelly, Margaret				
“The Innate Immune Response in the Pathogenesis of Hypersensitivity Pneumonitis.”	2009-16	AHFMR	\$1,170,000	PI
“The role of IL-17 and neutrophilic airway inflammation in airway remodeling in a mouse model of chronic allergen exposure”	2009-11	GlaxoSmithKline	\$60,000	PI
Köbel, Martin				
“A Pan-Canadian platform for the development of biomarker-driven subtype specific management of ovarian carcinoma”	2010-11	Terry Fox Research Institute	\$900,000	Co-Inv
Lyon, Andrew				
“Feasibility Study for Development of a Conception Cohort to Study Utilization of Prenatal Screening”	2009-11	CIHR	\$25,000	PI
“Preterm birth and healthy outcomes”	2008-13	AHFMR	\$5,000,000	Co-Inv
Mansoor, Adnan				
“Predicting benefit and improving outcomes of high dose therapy (HDT) and autologous stem cell transplantation (SCT) for Lymphoma (NHL) and Myeloma (MM) patients through tissue arrays based classification, sensitive detection of minimal residual disease (MRD) and reovirus purging”	2008-11	Terry Fox Research Institute	\$625,875	Co-PI

Medical Staff	Year	Funding Source	Total Award	*PI/Co-Inv
"Expression of CD-20-related genes in Lymphocytic Neoplasm."	2008-11	CIHR	\$152,875	Co-Inv
"Therapeutic targets and Prognostic markers for MCellL."	2008-11	CIHR	\$310,000	Co-Inv
Pitout, Johann				
"CTXM-M-15 producing Escherichia coli" in Canada	2008-10	Merck Frosst Canada Ltd.	\$27,500	PI
Wright, Jr., James				
"Protein characterization using advanced mass spectrometry: a core facility to advance medical research"	2007-12	Canadian Institutes for Health Research	\$327,450	Co-Inv
Zhang, Kunyan				
"MRSA Colonization in African American College Youth"	2009-10	National Institute of Health	\$30,000	Co-Inv
"Real-Time PCR for Rapid Detection of Antibiotic Resistant Organisms"	2009-10	Calgary Health Trust	\$60,000	Co-Inv
Molecular characterization of the Malaysian MRSA strains from animals and humans	2009-10	Universiti Putra Malaysia	\$2,500	PI
"Dissecting the mechanism of the tissue injury (abscess) caused by Staphylococcus aureus- Bacterial factors or host immune response?"	2010	AHFMR 2010 Summer Studentship Award	\$5,200	PI
Community-associated MRSA in Europe: Multi-resistance, Virulence and Patient Risk Profiles-A Collaborative Project	2010-11	EURO-ASPIRE	€100,00	Site-Investigator
"Molecular assay development and their applications in Centre for Antimicrobial Resistance (CAR) Program"	2007-12	AHS CAR Program	\$300,000	PI
"The Alberta Sepsis Network."	2009-14	AHFMR	\$4,998,191	Co-Inv

1.5 Publications

Peer-Reviewed Publications (does not include those of cross appointments)

1. Ahn BY, Elwi AN, Lee B, Trinh DL, Klimowicz AC, Yau A, **Chan JA**, Magliocco A, Kim SW. Genetic screen identifies insulin-like growth factor binding protein 5 as a modulator of tamoxifen resistance in breast cancer. *Cancer Res.* 70(8):3013-9, 2010
2. Alkushi A, **Köbel M**, Kalloger SE, Gilks CB. High grade endometrial carcinomas: serous and grade 3 endometrioid carcinomas have different immunophenotypes and outcomes. *Int J Gyn Pathol.* 29(4):343-50, 2010
3. Austin N, **DiFrancesco LM**, Herzog W. Microstructural damage in arterial tissue exposed to repeated tensile strains. *J Manipulative Physiol Ther.* 33:14-9, 2010
4. Bigelow L, Wolkowski C, **Baskin L**, Gorko M. Lean Six Sigma: Sustaining the Gains in a Hospital Laboratory. *Clin Leadersh Manag Rev.* 24(3):1-14, 2010
5. **Bismar TA**, **Trpkov K**. TMPRSS2-ERG in transition zone prostate cancer. *Mod Pathol.* 23(7):1040-1, 2010
6. Bolton KL, Garcia-Closas M, Pfeiffer M, **Duggan MA**, Howat WJ, Hewitt SM, Yang R, Corneilson R, Anzick SL, Meltzer P, Davis S, Lenz P, Figueroa J, Pharoah PPD, Sherman M. Assessment of automated image analysis of breast cancer tissue microarrays for epidemiologic studies. *Cancer Epidemiol Biomarkers Prev.* 19: 992-999, 2010
7. Box AH, Kim S-M, **Demetrick DJ**. AKT Loss in Human Epithelial Cells Treated with Severe Hypoxia. *Biochim Biophys Acta.* 1803(8):951-9, 2010
8. Brimo F, Vollmer RT, Friszt M, Corcos J, **Bismar TA**. Syndecan-1 expression in prostate cancer and its value as biomarker for disease progression. *BJU Int.* 106(3):418-23, 2010
9. Brown LA, Johnson K, Leung S, **Bismar TA**, Benítez J, Foulkes WD, Huntsman DG. Co-amplification of CCND1 and EMSY is associated with an adverse outcome in ER-positive tamoxifen-treated breast cancers. *Breast Cancer Res Treat.* 121(2):347-54, 2010
10. **Carson JA**, Peets AD, Grant V, McLaughlin K. Patient-examinee gender interactions are more likely in “gender-sensitive” objective structure clinical examination stations. *Academic Medicine.* 85(11):1772-1776, 2010
11. Chaubey VP, **JD Pitout**, B Dalton, T Ross, **DL Church**, **DB Gregson** and KB Laupland. Clinical outcome or empiric antimicrobial therapy of bacteremia due to extended-spectrum beta-lactamase producing *Escherichia coli* and *Klebsiella pneumoniae*. *BMC Res Notes.* 27(3):116. 2010
12. **Chebib I**, Chu P, **Duggan MA**, **DiFrancesco L**. Primary signet ring cell adenocarcinoma of the Endometrium: case report and review of the literature. *Int J Gynecol Pathol.* 29:269-272, 2010
13. Chen YB, Rickman DS, Banerjee S, Pan Y, Moss B, Sboner A, Perner S, Lafargue C, Mertz KD, Setlur SR, Sircar K, Gerstein MB, **Bismar TA**, Rubin MA, Demichelis F. Transcriptome characterization of castration resistant prostate cancer reveals Trefoil factor 3 as a target of ERG rearrangement. *Neoplasia.* 12(12):1031-40, 2010
14. **Church DL**, D Emshey, T Lloyd and **JD Pitout**. Evaluation of direct inoculation of BBL CHROMagar Salmonella (CHROMSal) compared to selenite broth enrichment (Sel) with sub-culture to CHROMSal (Sel-CHROMSal) and Hektoen enteric (Sel-Hek) agar for routine detection of enteric Salmonella spp. *Diagn Microbiol & Infect Dis.* 68(1):13-9 2010

15. Csorba TR, **Lyon AW**, Hollenberg MD. Autoimmunity and the pathogenesis of type 1 diabetes. *Crit Rev Clin Lab Sci.* 47:51-71, 2010
16. Cui SX, Qu XJ, **Gao ZH**, Zhang YS, Zhang XF, Zhao CR, Xu WF, Li QB, Han JX. Targeting aminopeptidase N (APN/CD13) with cyclicimide peptidomimetics derivative CIP-13F inhibits the growth of human ovarian carcinoma cells. *Cancer Lett.* 292:153-162, 2010
17. Davis BR, Yan Q, Bui JH, Felix K, Moratto D, Muul LM, **Prokopishyn NL**, Blaese RM, Candotti M. Somatic Mosaicism in the Wiskott-Aldrich Syndrome. Molecular and Functional Characterization of Genotypic Revertants. *Clin Immunol.* 135(1):72-83, 2010
18. Donnelly BJ, Saliken JC, Brasher PMA, Ernst SD, Rewcastle JC, Lau H, Robinson J, **Trpkov K**. A randomized trial of external beam radiotherapy versus cryoablation in patients with localized prostate cancer. *Cancer.* 116(2):323-30, 2010
19. Donovan LE, Brain P and **Duggan MA**. Isolated LH elevation in a woman with secondary amenorrhea: a clue to the diagnosis of an Inhibin producing Thecoma and insights into the influence of Inhibin B on LH. *Fertil Steril.* 94:1097, 2010
20. **Duggan MA** and Doig C. Pathology Reviews in the Research Context: future directions. *Surgery.* 147: 887-889, 2010
21. **Falck VG, Trotter MJ**. Anything not worth doing. *Canadian Journal of Pathology.* 2(2):19-20. (Invited Editorial), 2010
22. Fauth C, **Bruecks A**, Arlette J, Temple WJ, **DiFrancesco LM**. Superficial leiomyosarcoma. *J Cutan Pathol.* 37:269-76, 2010
23. Fenton TR, Eliasziw M, **Lyon AW**, Tough SC, Brown JP and Hanley DA. Low urine pH and acid excretion do not predict bone fractures or the loss of bone mineral density: a prospective cohort study. *BMC Musculoskeletal Disorders.* 11:88, 2010
24. Figueroa JD, Flanders KC, Garcia-Closas M, Anderson WF, Yang XR, Matsumo RK, **Duggan MA**, Pfeiffer RM, Ooshima A, Corneilson R, Gierach GL, Brinton LA, Lissowska J, Peplonska B, Wakefield LM, Sherman ME. Expression of TGF-beta signalling factors in invasive breast cancer: relationship with age at diagnosis and tumor characteristics. *Breast Cancer Res Treat.* 121:727-735, 2010
25. Franko A, Magliocco AM, Duan Q, **Duggan MA**. WT1 immunoprofiling and comparison of Malignant Mixed Mullerian Tumors of the Female Genital Tract. *Int J Gynecol Pathol.* 29:452-458, 2010
26. Fraser H, Neshev E, Storr M, **Urbanski SJ**, Andrews CN. A novel method of full-thickness gastric biopsy via a percutaneous, endoscopically assisted, transenteric approach. *Gastrointest Endosc.* 71(4):831-4, 2010
27. Friedenreich CM, Cook LS, Magliocco AM, **Duggan MA**, Courneya KS. Case-control Study of Lifetime Total Physical Activity and Endometrial Cancer Risk. *Cancer Causes and Control.* 21:1105-1116, 2010
28. Gage JC, **Duggan MA**, Nation JG, Gao S, Castle PE. Detection of cervical cancer and its precursors by endocervical curettage in 13,115 colposcopically guided biopsy examinations. *Am J Obstet Gynecol.* 203:481.e1-9, 2010
29. Goutagny S, Yang HW, Zucman-Rossi J, **Chan J**, Dreyfuss JM, Park PJ, Black PM, Giovannini M, Carroll RS, Kalamarides M. Genomic profiling reveals alternative genetic pathways of meningioma malignant progression dependent on the underlying NF2 status. *Clin Cancer Res.* 16(16):4155-64, 2010

30. **Green FH**, Williams DJ, James A, McPhee LJ, Mitchell I, Mauad T. Increased myoepithelial cells of bronchial submucosal glands in fatal asthma. *Thorax* 65(1):32-38, 2010
31. **Guggisberg K**, Jordan RC. Mantle cell lymphoma of the oral cavity: case series and comprehensive review of the literature. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 109(1):98-104, 2010
32. Hemmelgarn BR, Zhang J, Manns BJ, James MT, Quinn RR, Ravani P, Klarenbach SW, Culleton BF, **Krause R**, Thorlacius L, Jain AK, Tonelli M. Nephrology Visits and Health Care Resource Use Before and After Reporting Estimated Glomerular Filtration Rate. *JAMA.* 303(12) 1151-1158, 2010
33. Hilner JE, Perdue LH, Sides EG, Pierce JJ, Wagner AM, Aldrich A, Loth A, Albret L, Wagenknecht LE, Nierras C, Akolkar B; T1DGC (**N. Berka** member). Designing and implementing sample and data collection for an international genetics study: the Type 1 Diabetes Genetics Consortium (T1DGC). *Clin Trials.* 7(1 Suppl):S5-S32, 2010
34. Hinnell C, Almekhlafi M, **Joseph JT**, Bell R, Sharma P, Furtado S. Concurrence of high-grade brain-stem glioma and multiple sclerosis. *Can J Neurol Sci.* 37(4):512-4, 2010
35. Hirota SA, Fines K, NG J, Traboulsi D, Lee J, Ihara E, Yan L, Willmore WG, Chung D, Scully MM, Louie T, **Medlicott S**, Lejeune M, Chadee K, Armstrong G, Colgan SP, Muruve DA, MacDonald JA, Beck PL. Hypoxia-inducible factor signalling provides protection in *Clostridium difficile*-induced intestinal injury. *Gastroenterol.* 139:259-269, 2010
36. Ho J, Fox D, Innes A M, McLeod R, Butzner D, Johnson N, **Trevenen C**, Kendrick V and Cole D E C. Kabuki syndrome and Crohn disease in a child with familial hypocalciuric hypercalcemia. *J Pediatr Endocrinol Metab.* 23(9):975-979, 2010
37. Hrytsenko O, Pohajdak B, **Wright JR Jr.** Production of transgenic tilapia homozygous for a humanized insulin gene. *Transgenic Res.* 19: 305-6 (technical report), 2010
38. Hrytsenko O, Pohajdak B, Xu B-Y, Morrison C, van Tol B, and **Wright JR Jr.:** Cloning and molecular characterization of the glucose transporter 1 in tilapia (*Oreochromis niloticus*). *Gen Comp. Endocrinol.* 165:293-303, 2010
39. Hwang J, Puttagunta L, **Green F**, Shimanovsky A, Barrie J, Long R. Bronchial anthracofibrosis and tuberculosis in immigrants to Canada from the Indian subcontinent. *Int J Tuberc Lung Dis.* 14(2):231-237, 2010
40. Hyde A, **Fontaine D**, Stuckless S, Green R, Pollett A, Simms M, Sipahimalani P, Parfrey P, Younghusband B. A histology-based model for predicting microsatellite instability in colorectal cancers. *Am J Surg Pathol.* 34(12):1820-9, 2010
41. Johnson JR, Johnston BD, Kuskowski MA, **Pitout JDD.** In vitro activity of available antimicrobial coated Foley catheters against *Escherichia coli*, including strains resistant to extended spectrum cephalosporins. *J Urol.* 184:2572-7, 2010
42. Kallas M, **Green F**, Hewison M, White C, Kline G. Rare causes of calcitriol mediated hypercalcemia: a case report and literature review. *J Clin Endocrinol Metab.* 95(7):3111-7, 2010
43. Kamenetsky I, Rangayyan RM, **Benediktsson H.** Analysis of the glomerular basement membrane in images of renal biopsies using the split-and-merge method: a pilot study. *J Digit Imaging.* 23(4):463-74, 2010
44. Kelemen LE, Goodman MT, McGuire V, Rossing MA, Webb PM; Australian Cancer Study (Ovarian Cancer) Study Group, **Kobel M**, Anton-Culver H, Beesley J, Berchuck A, Brar S, Carney ME, Chang-Claude J, Chenevix-Trench G; Australian Ovarian Cancer Study Group, Cramer DW, Cunningham

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Book Chapters

1. **Demetrick DJ**, Murthy SK, and **DiFrancesco LM**. Fluorescence in situ Hybridization of LCM-Isolated Nuclei from Paraffin Sections. *Reliable Lab Solutions: Techniques in Confocal Microscopy*. (Ed: M. Conn). Academic Press/Elsevier, Oxford. Chapter 31:489-497, 2010
2. Colbourne F, **Auer RN**. Transient Global Cerebral Ischemia Produces Morphologically Necrotic, Not Apoptotic Neurons. In Fujikawa D.G. (Ed). *Acute Neuronal Injury: The Role of Excitotoxic Programmed Cell Death Mechanisms*. New York: Springer. Chapter 8:121-130, 2010
3. **Auer RN**. Hypoglycemic Brain Damage. In Fujikawa D.G. (Ed). *Acute Neuronal Injury: The Role of Excitotoxic Programmed Cell Death Mechanisms*. New York: Springer. Chapter 13:203-210, 2010

1.6 Medical Staff Recruitment

Medical Staff	Start Date	GFT/Clinical	Primary Division
Chebib, Ivan	2010 July	Clinical	Anatomic Pathology/Cytopathology
Wang, Yinong	2010 July	GFT	Anatomic Pathology/Cytopathology
Naugler, Christopher	2010 July	GFT	Clinical Pathology
Han, Guanging	2010 August	Clinical	Anatomic Pathology/Cytopathology
Dvorakova, Marie	2010 August	Clinical	Anatomic Pathology/Cytopathology
Chin, Alex	2010 August	Clinical	Clinical Pathology
Fontaine, Daniel	2010 October	Clinical	Anatomic Pathology/Cytopathology
Khan, Faisal	2010 October	GFT	Hematology/Transfusion Medicine

Medical Staff - Departures

Medical Staff	Start Date	GFT/Clinical	Primary Division
Auer, Roland	2010 November	GFT	Anatomic Pathology/Cytopathology
Schell, Andrew	2010 November	Clinical	Anatomic Pathology/Cytopathology
Shokeir, Omar	2010 January	Clinical	General Laboratory

