Courage is resistance to fear, mastery of fear – not absence of fear.

Mark Twain
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Chair’s Report

What are the metrics that matter in judging the success of a department such of ours? Some would say quality of the care provided to our patients and nothing else; others, that what really counts is how we renew ourselves both by training the next generation of paediatricians and paediatric subspecialists and by recruiting the smartest and best faculty; and still others would measure our success by just how far we have been able to push the frontiers of new knowledge that make advances in health care and education possible. Most of us, however, would agree that it is the sum of all three plus more: integration, innovation, inspiration, and, yes, perspiration.

It is not an exaggeration to claim that our department remains committed to all of the above and continues to impress with its achievements. In the exciting milieu of The Hospital for Sick Children and University of Toronto, superbly supported by CEO Mary Jo Haddad and Dean Catharine Whiteside and their teams, it would be hard not to succeed. And let’s also not forget the secure funding that we receive through the comprehensive Alternate Funding Plan with the Ministry of Health and Long-Term Care of the Province of Ontario.

So what did we actually do this past year? From a clinical standpoint, I continue to be impressed by the ever-improving standards of care. A few examples only: the Sickle Cell Program saw more patients in the clinic but fewer in the Emergency Department, and it had fewer in-patient days; the Cystic Fibrosis Program and its adult counterpart at St. Michael’s Hospital are talking about median survival rates above 40 years of age; the SickKids Team Obesity Management Program is experiencing significant success helping teens avoid bariatric surgery for a while at least; and the Gastrointestinal Failure Team reports similar achievements. Meanwhile, wait times in the Emergency Department are down, and chemotherapy delays are a thing of the past. The list goes on, but so do the challenges in patient safety and continuous quality improvement.

Education scholarship is thriving in our department with increasingly more trainees seeking scholarship as a career path. The close interaction with the Learning Institute with its own scientists and simulation lab is well poised to support these individuals. The next challenge in teaching relates to the imminent opening of the Mississauga Academy of Medicine with the need for recruitment and training of a new group of teachers.
Research funding has steadily increased, leading to an associated surge in productivity in every type of research from understanding fundamental molecular and cellular processes to developmental biology, clinical trials, health services, health economics and health policy research. Of particular note is the incredible productivity of our Paediatric Medicine group: TARget! Kids, the Paediatric Outcomes Research Team, Complex Care and others.

The past year was an active one in recruitment, both of Division heads and junior faculty. The future looks very bright with Jim Whitlock from Vanderbilt moving in to lead the Division of Haematology/Oncology, Steve Porter from Harvard joining us as Head of the Division of Paediatric Emergency Medicine, and Lisa Robinson stepping up to Head of Nephrology. Add to these other new faculty such as Yaron Avitzur, Binita Kamath and Thom Walters in Gastroenterology, Hepatology and Nutrition, Komudi Siriwardena in Metabolics, Daniel Roth in Paediatric Medicine, Suzanne Beno in Paediatric Emergency Medicine, and Reshma Amin in Respiratory Medicine. And recruitment continues. At the same time as we welcome our new faculty, a big thank you is in order for those Division heads stepping down after their 10 years of outstanding leadership: Victor Blanchette in Haematology/Oncology; Denis Geary in Nephrology and Bill Mounstephen in Paediatric Emergency Medicine.

International health initiatives have expanded in the past year, most especially our relationship with Hamad Medical Centre in Doha, Qatar. Led medically by Denis Geary, this initiative is by all accounts highly successful. Participation in numerous other international activities continues, for example the Toronto Addis Ababa Academic Collaboration, which links many University of Toronto departments with their counterparts at the University of Addis Ababa in Ethiopia.

As we celebrate our successes, so we need to reflect on the challenges ahead: patient safety, quality improvement, outcomes analysis, access, and flow are some but not all aspects of clinical excellence and deserve our increasing attention. The pendulum in research training has swung away from fundamental science and towards newer areas of clinical investigation such as health services, health policy, health outcomes – all essential components of a robust research enterprise. Also, we must incorporate and evaluate new education technologies in our environment and make the best use of information technology.

This end-of-academic-year report offers me the opportunity to say a huge thank you to everyone who contributes so much to the vigour and vitality of our department. The faculty scored at the very top of job and institutional engagement in the recent Staff Engagement Survey, strong evidence of our department’s commitment to our patients, hospital and university.

With my deepest gratitude to all,

DENIS DANEMAN, MB, BCH, FRCP
Chair of Paediatrics, University of Toronto
Paediatrician-in-Chief, The Hospital for Sick Children
R.S. McLaughlin Chair in Paediatrics, at The Hospital for Sick Children
Porter: Clear Communications

Service excellence and high-quality care are priorities for the SickKids Emergency Department. Meeting these objectives is a challenge when there is high demand and the families seeking emergency care come from many different cultures, with many different expectations and needs. It’s a challenge that calls for innovation.

Meet the man for the job, Stephen Porter, the new Division Head of Paediatric Emergency Medicine. Recruited from Children’s Hospital Boston, he joined SickKids Sept. 1, 2010 with a vision that is rooted in family-centred care and effective integration of personnel, processes and resources.

SickKids has one of Canada’s busiest emergency departments, receiving almost 58,000 patients a year. Only a fraction of those cases can be admitted to SickKids. “The front door to SickKids is always open,” Porter says, “but not the backdoor that leads from Emerg to the hospital.”

The job of Emergency is to sort “the worried well from the critically ill” while always being prepared for the worst, such as a pandemic outbreak. Careful planning, top-notch teamwork, good intra-hospital collaboration, and innovative use of information technology are all critical, he says. And, above all, clarity in communications, which forms the basis of best practice in emergency medicine.

Porter’s CV shows an impressive list of credentials and achievements in clinical work and research. It also reveals that he earned his bachelor’s degree in biology and English literature. “I have a thing about words, always did,” he says. “One of the frustrating things in medicine is how to arrive at the right question and getting a reliable answer. I love to figure out the best way to gather and use information from parents.”

He did this in Boston with the 3-C (clear, concise communications) campaign that used a plain-language, single-page form which parents were asked to complete upon arrival. The form asks them to share their worries and questions, and identify the treatment they think might be needed. It is an excellent way to start a fruitful conversation with families, says Porter. He developed and tested the form at Boston, and it became a standard part of the registration process after he left. He is eager to see if it will add value for care at SickKids.

Other innovations are in the offing, for example, a way to address the information needs of families after discharge from emergency care. Porter plans to capture families’ email addresses in registration, then communicate with them electronically to best support them during their child’s home-based care. The email they receive will also include a link to the health information website, aboutkidshealth.ca.

Anyone could have thought of that but no one else did. Porter’s talent for creative solutions is exactly what SickKids needs as it strengthens its culture of innovation.
ROBINSON: INTEGRATING SCIENCE

Lisa Robinson is a scientist and clinician with exceptional communications skills and a natural inclination to look at the big picture. She was born and raised in Toronto and earned her medical degree at University of Toronto, followed by a paediatrics residency at University of Western Ontario in London and a fellowship in paediatric nephrology at Duke University in North Carolina where she completed her research training. She joined SickKids in 2002.

In April 2010 she was appointed Head of Nephrology to replace Denis Geary who is a leader of SickKids’ partnership with the Hamad Medical Corporation in Qatar to advise on the creation of a new, state-of-the-art children’s hospital. The transition has been smooth. “Denis is very wise and I talk to him a lot,” Robinson says.

This doesn’t mean it’s business as usual in Nephrology. Robinson has all kinds of ideas for improvement. She recognizes the need for integration of clinical, basic, and translational research, and under her leadership one of the staff nephrologists has started weekly rounds of integrated research. “It’s important for context that basic researchers and clinical researchers understand each other’s work and not be isolated in their own area. You have to think big; that’s how you innovate and find new treatments.”

On the clinical side, she is also looking at change. The increasing number of complex cases, including transplant patients, means that the demand for expertise is growing. Her plans include an additional nephrologist and a nurse practitioner to do in-patient work, and she wants to strengthen the fellowship program with more international partnerships. “We have trained people from all over the world and SickKids is a popular destination for nephrology specialists,” she says. “What the trainees see here in one year, they wouldn’t see at home in many years.”

Mentorship is important to Robinson. In 2006 she started an outreach program called Kids Science that deploys volunteer trainees to work with students of middle- and high-school age and inspire them to pursue a career in science or technology.

“Kids are turned off by science, and the problem is the way we teach it,” Robinson says. “Schools present science as a finished product but that’s the wrong idea. Scientists are constantly trying to do things better. In Kids Science we base our teaching on questions that the children ask. The results are fantastic – schools tell us our kids are more likely to take science courses than those who haven’t taken part in the program.”

Kids Science was supported by the Ontario Ministry of Research & Innovation the first three years. It is currently funded by the Research Institute, and Robinson trusts funding will continue to be available.

In this project and everything she does, Robinson tends to push the limit. “It’s a hospital-wide attitude. Where others may say no, we will say yes. If not at SickKids, where else would you find this approach? That’s part of what makes SickKids such an exciting place.”
WHITLOCK: BUILDING THE BEST IN THE WORLD

When Victor Blanchette completed his term as Head of Haematology/Oncology this year, SickKids interviewed a number of excellent candidates to fill the position. James Whitlock from Vanderbilt University Medical Center and the Monroe Carell Jr. Children’s Hospital at Vanderbilt in Nashville, Tennessee quickly emerged as number one.

His research interests include the biology and treatment of childhood acute leukaemias, the development of new drugs for the treatment of childhood cancers, and the biology and treatment of histiocytic disorders. He has received numerous honours and awards, and has authored or co-authored more than 80 manuscripts and book chapters.

SickKids wasn’t the only place that expressed an interest in recruiting Whitlock, but as it turned out Toronto had everything he was looking for. First of all, the city is home to leading faculty members, some of whom he already knew from his work with the international Children’s Oncology Group, including Sheila Weitzman, a world leader in histiocytosis.

In Whitlock’s words, scientists like Janet Rossant, SickKids’ Chief of Research, and Peter Dirks, Principal Investigator at The Arthur and Sonia Labatt Brain Tumour Research Centre, have helped to make Toronto the “world capital of stem cell research,” which matters a great deal to an oncologist when evidence is mounting that cancer is a stem cell disease.

As well, Whitlock and his wife, Debbie, recent empty-nesters, wanted to move to a “real city,” a place with more diversity and opportunities than Nashville. What sealed the deal, however, was the shared passion for helping children which he found at SickKids.

Medicine has been a personal journey for Whitlock; he knew he wanted to be a doctor from an early age, however, as he represented the first generation in his family to attend college and enter medicine, he had no footsteps to follow in so he made his own path. He has found a similar sense of purpose and ambition at SickKids.

“This is a world-class hospital with renowned specialists, a strong research institute, close ties to the community and an amazing institutional culture with visionary leadership,” he says. “The Haematology/Oncology program here is truly great – but it can be so much more. I think this will be the best childhood cancer and blood diseases program in the world. That is our goal.”

Whitlock isn’t just whistling Dixie. During his time at Vanderbilt, its paediatric oncology program tripled in size and ranked among the top 25 U.S. children’s cancer programs in the 2009-10 U.S. News & World Report survey. SickKids is already a leader in paediatric cancer research and treatment. It is reasonable to expect that even greater achievements will follow.
Hats Off! Successful teams are an inspiration inside and outside SickKids

MODEL COLLABORATION IN CYSTIC FIBROSIS RESEARCH

SickKids is famous for its contributions to the fight against cystic fibrosis. The gene defect that causes CF was discovered at SickKids in 1988; today some of the world’s leading CF scientists work at SickKids where they keep looking for new and better ways to treat the disease.

Even before the ground-breaking discovery by former SickKids scientist Dr. Lap-Chee Tsui and his team, SickKids was working on CF and had developed a great deal of knowledge about the disease and its treatment.

As the body of knowledge and expertise grew, SickKids decided to establish the Cystic Fibrosis Centre in 2007. Care, research and learning are integrated with one overriding goal to improve the life and lifespan of CF patients.

The centre is led by Felix Ratjen, Professor of Paediatrics, Head of Respiratory Medicine, H.E. Seller’s Chair in Cystic Fibrosis and Senior Scientist in Physiology & Experimental Medicine, and Christine Bear, Senior Scientist in Molecular Structure & Function and Professor of Physiology and Biochemistry.

Ratjen did most of his medical training in Germany. After a research fellowship at Children’s Hospital Boston, he was appointed Deputy Chief of the Department of Paediatrics at the University of Essen, Germany, in 1998 and Professor of Paediatrics in 2001. He served as Chief Executive of the scientific board of the German CF foundation in 2002-05 and was actively involved in the European Respiratory Society.

He accepted the offer to come to Toronto because of SickKids’ fine reputation in CF, he says. “The link at SickKids between clinical researchers and basic science researchers is unique. For example, the clinical research team is now working with basic scientists who use stem cells from patients’ skin to test drugs that can correct the basic defect in CF lungs. These tight collaborations help us to push ahead in pursuing new therapies.”

There is growing hope that CF can be controlled through the development of new drugs, says Ratjen. Earlier promises of gene therapy that would eradicate CF did not materialize, but a better understanding of the disease has led to new and exciting therapies, some of which are already being tested in patients.

Even before these therapies are brought to market, clinical excellence and research have been highly successful, so much so that CF is no longer considered a fatal childhood disease. Fifty years ago, patients were not expected to reach school age, while today’s median age of life expectancy for a child born with CF in Canada is over 40 years.

Ratjen says that about five years ago, the number of adult CF patients in Toronto exceeded the number of children with the disease for the first time. This landmark event happened earlier in Toronto than in many other centres around the world. Today SickKids has about 300 patients with cystic fibrosis compared to an adult population of 400 at the CF clinic at St. Michael’s Hospital in Toronto.

“Advances made in the last decade are enormous,” Ratjen says. “This is a success story and it is linked to the unique working relationship among scientists at SickKids.”
SICKKIDS STUDIES HEALTHY CHILDREN

A hospital treats sick people and makes them better, however, SickKids also studies children who are well and tries to understand what keeps them from getting sick.

A couple of years ago, Drs. Patricia Parkin, Jonathan Maguire and Catherine Birken agreed there was a need for information on how to maintain the good health that most people are born with. The problem is significant: by the end of childhood, 40 per cent of Canadian children are dealing with preventable conditions, including obesity, asthma, injury, behaviour problems or learning difficulties, all of which can affect people for the rest of their lives.

The three investigators established TARGetKids! (Toronto Applied Research Group), an initiative that will show which childhood conditions are associated with the most common adult diseases – heart attacks, strokes, diabetes and cancer – and how these diseases can be prevented at an early age. It is based on a reciprocal arrangement with community paediatricians and family physicians affiliated with the University of Toronto.

The project’s current focus is on obesity and vitamin D and iron deficiency. Data are captured from patients in community offices where parents fill in detailed questionnaires about their child’s health, nutrition, lifestyle and behaviour. Both children and parents provide height, weight and waist circumference, and children give blood samples that are tested for nutritional indicators including cholesterol, glucose, iron and vitamin D levels. Results come back in a couple of days and are shared with the community physicians, who otherwise wouldn’t have access to this kind of information. The project also offers community practitioners a meaningful way to work with SickKids on research and scholarship.

So far, 3,000 children up to the age of six have been recruited in the greater Toronto area from Village Park Paediatrics, Clairhurst Paediatrics, Danforth Paediatrics, Mount Sinai Family Medicine, St Joseph’s Health Centre and St Michael’s Family Medicine. The aim is to increase the number of study sites to include urban children across Canada.

The first set of comprehensive data will be presented at the 2011 annual meeting of the Canadian Paediatric Society; any number of journal articles, abstracts and presentations will follow in years to come, adding new knowledge about childhood health. “This is the first initiative of its kind,” says Parkin, director of the Research and Fellowship Program in Paediatric Medicine, senior associate scientist in Child Health Evaluative Sciences and associate professor. “There are no other primary care research networks like this in Canada.”

The project would not exist, she says, without the partnerships with the Applied Health Research Centre at St. Michael’s Hospital, the leading data coordinating centre at the University of Toronto, and Mount Sinai Services where blood samples are tested using cutting-edge, high-throughput laboratory technology.

Birken, who is a staff paediatrician, a project investigator in Child Health Evaluative Sciences and assistant professor, is focusing on obesity, which is a serious problem among youth: six years ago, 26 per cent of Canadian children aged two to 17 were overweight. TARGetKids! will help to show if public education programs or other interventions for pre-schoolers are lowering the number. “We are using knowledge translation to work on obesity prevention,” says Birken. “We hope to learn if we can develop tools for doctors in the community to identify high-risk children, and if there is a critical time to intervene.”

Vitamin D levels have been linked to respiratory infections, asthma, diabetes, multiple sclerosis, and some cancers. Maguire, a full-time physician at St. Michael’s, a part-time physician at SickKids and a scientist at both institutions, and an assistant professor, is the lead on the study of links between vitamin D and chronic health conditions.

He is also involved in the work on iron deficiency, which is led by Parkin. Early iron deficiency has been linked to delayed development, behaviour problems, school failure, lower employment, and an increased risk of stroke during childhood. Parkin and Maguire have already shown there is an association between bottle use and iron deficiency and that community physicians can influence when parents wean their children from the bottle, thereby helping to reduce tooth decay, obesity and iron deficiency.

TARGetKids! has created excitement in Canada’s research community; already the project has received more than $3.2 million from Canadian Institutes for Health Research, plus sizeable grants from the St. Michael’s Foundation, University of Toronto, Dairy Farmers of Ontario, Danone, and The Physicians’ Services Incorporated Foundation.
Providing the best level of education

Successful team: Education scholarship

Education is at the heart of the Department of Paediatrics, and central to this function is Dr. Rayfel Schneider, Associate Chair of Medical Education.

Under his committed and passionate leadership, the education office has thrived with a team that now includes Adelle Atkinson, Program Director for Postgraduate Medical Education, Stacey Bernstein, Director of Undergraduate Medical Education, Suzan Schneeweiss, Director of Continuing Education, Tina Martimianakis, Education Researcher, and Shelley Weiss, Director of Faculty Development.

The team is living proof that SickKids is much more than a hospital. Academic paediatric health sciences institution describes much better SickKids which has integrated patient care, research and education and taken paediatrics to a new level.

SickKids is considered a national and international leader in medical education. It houses a critical mass of leaders in education, and they are setting their sights high, says Schneider.

“We don’t think it’s enough only to educate paediatricians,” he says. “At SickKids we want to provide the best level of education and ensure that we enhance patient care.” And education scholarship, that is studying the impact of our educational endeavours, has become a preferred pathway for many entering an academic career in Paediatrics.

Success in Rayfel’s office is also measured in the awards his team members have won. This past year alone, Adelle Atkinson was the first recipient of the Sarita Verma Award for Advocacy and Mentoring in Postgraduate Medicine 2009-2010; Stacey Bernstein, the Wightman-Berris Academy Award for Individual Teaching Excellence 2009-2010; Tina Martimainakis: The 2010 Association of Medical Education of Europe (AMEE) Patil Award for best Research in Medical Education Presentation, “Interdisciplinarity: At the intersection of knowledge-production and identity formation”; and Suzan Schneeweiss: Division of Paediatric Emergency Medicine Clinical Practice Award 2009-2010.

Medical Education in Department of Paediatrics 2009-2010

- 224 medical students, increasing to 259 in 2011
- 76 core residents
- 71 sub-specialty residents
- 223 clinical fellows
Jaeggi and Jones promoted to Professors of Paediatrics

Edgar Jaeggi  
Associate Scientist, Physiology & Experimental Medicine  
Staff Cardiologist; Head, Fetal Cardiac Program

Nicola Jones  
Senior Scientist, Cell Biology  
Staff Gastroenterologist, Gastroenterology, Hepatology and Nutrition

Background – Born and raised in Switzerland, obtained medical degree from the University of Basel. Trained in general paediatric cardiology at the University Children’s Hospitals of Zürich and Geneva; Westmead Hospital in Sydney, Australia; Fetal and Interventional Cardiology at Sainte-Justine Hospital in Montreal, and Electrophysiology at SickKids. Joined clinical staff at University Hospital of Geneva in 1998, and returned to Toronto in 2002.

Research – Current research areas include fetal intervention, fetal arrhythmias, and cardiovascular effects of intrauterine growth restriction. Prenatal treatment, for example by catheter intervention, is one of the most controversial and challenging issues in my field. It affects not one but two patients at the same time and risks and benefits must be considered very carefully.

All-time favourite scientist – Probably Dr. Abraham Rudolph, who has pioneered our understanding of fetal physiology and is still considered one of the most distinguished paediatric cardiologists in the world. I met him once when I was working as a fellow in Zürich and he visited us in Toronto in November 2010.

Why science? – For me, the question is more, ‘why medicine?’ It is through medicine that I came into science. We are all committed to trying to improve the well-being of our patients and I would hope that my research is contributing to finding new methods for improving the quality of life and the outcome of some of our patients.

Why SickKids? – SickKids is a world-renowned centre that offers tremendous clinical and research opportunities. I have held positions in five cardiac hospitals on three different continents in my professional career and none of them have offered the kinds of opportunities that you find at SickKids.

Background – Born in Cardiff, South Wales, grew up in Cobourg and Oshawa, Ontario. University of Toronto Faculty of Medicine, paediatrics training and paediatric gastroenterology fellowship at SickKids, PhD in Molecular and Medical Genetics Department at U of T.

Research – Enteric pathogens and how they interact with host cells to cause disease such as gastric cancer and inflammatory bowel disease. Human beings have more bacteria in their bodies than human cells – we are really more bacteria than human, sort of like condominiums for bacteria. These microorganisms are very beneficial but can also cause disease. I am interested in figuring out how to harness the beneficial features that promote health and how to prevent the diseases that these microorganisms can cause.

All-time favourite scientist – Leonardo da Vinci. He epitomizes a renaissance person and I admire his artistic abilities and how he integrated art and science. My favourite contemporary scientist is Dana Philpott from U of T, who is known for her work on innate immunity. She is very smart, a wonderful individual and a great role model for young people in science today.

Why science? – I had not intended on being a scientist but was exposed to research during my fellowship. I had an amazing mentor, Dr. Phil Sherman, the lab environment was fascinating and I realized it was what I wanted to do. I saw that by studying disease mechanisms I could be a more effective physician.

Why SickKids? – SickKids is a great place! There is collaboration everywhere. As a clinician I work with patients and families, and the link between clinicians and scientists is fantastic.
Medical Education Training and Scholarship

This past year, our Department proved once again why education is one of its core strengths. Our teachers, training programs and students are making an impact locally, nationally and internationally with their scholarly activity and their commitment to excellence in teaching and learning. This report serves to recognize the dedication of our teachers and educators. It documents their achievements and outlines promising new directions for research, innovation, teaching and application in medical education.

**ORGANIZATION**

Educational activities in the Department of Paediatrics are led by Dr. Rayfel Schneider, the Associate Chair (Education) and the Medical Education Advisory Committee (MEAC) (see organizational chart below). The MEAC works to enhance excellence in teaching and education, to increase the recognition of the educational achievements of our faculty within the Department and beyond, and to facilitate the academic promotion of faculty and the career development of clinical educators and teachers. It also establishes mentorship opportunities for faculty engaged in educational activities, fosters collaborations and networks with other groups interested in education, and provides advice and guidance to the chair with regard to educational priorities.

**MEDICAL EDUCATION ADVISORY COMMITTEE MEMBERSHIP 2009-2010**

Rayfel Schneider (Chair)
Adelle Atkinson
Stacey Bernstein
Robert Hilliard
Ann Jeffries
Karen Leslie
Tina Martimianakis
Jonathan Pirie
Angela Punnett
Lisa Robinson
Suzan Schneeweiss
Michelle Shouldice
Shelly Weiss

**EDUCATIONAL ADMINISTRATIVE STAFF**

Mary Antonopoulos, *Undergraduate Education*
Joanna Barnes, *Undergraduate Education*
Susan Jenkins, *Administrative Supervisor*
Sandra Layno, *Postgraduate Education*
Eleanor Mitchell, *Postgraduate Education/Education Scholarship*
Nicole Winters, *Continuing Education*

**Education Researchers**

Adam Dubrowski, PhD, *Education Researcher, Learning Institute*
Tina Martimianakis, PhD, *Education Researcher, Department of Paediatrics*
Maria Mylopoulos, PhD, *Education Researcher, Learning Institute*
Kathryn Parker, PhD, *Education Consultant, Learning Institute*

**Faculty pursuing formal training in education 2009-2010**

Adelle Atkinson (Education Scholars Program)
Angela Punnett (Masters in Education)
Michelle Shouldice (Masters in Education)
Melinda Solomon (Masters in Education)
Shelly Weiss (Education Scholars Program)

**Trainees pursuing formal training in education 2009-2010**

Vicky Breakey (Masters in Education)
Elly Berger (Masters in Education)
Clare Hutchinson (Masters in Education)
Sarah Schwartz (Masters in Education)
Catherine Walsh (PhD in Education)

**EDUCATIONAL TRAINING AND LEADERSHIP**

**Undergraduate Education**

Our undergraduate program, led by Dr. Stacey Bernstein, is actively building and enhancing the paediatric experiences for students throughout the four years of medical school training. There are currently 224 students in the first-year class, with enrolment expected to increase to 250 students beginning in 2011.

In 2008-2009 we were excited to launch the Pediatric Longitudinal Experience (PedLE) which we offered to all our first-year medical students. That year, 60 students spent three half days with community paediatricians or SickKids faculty. The program focused on increasing the students’ paediatric knowledge base and their comfort in interacting with children. The program also gave students an opportunity to get a sense
of what it is like to be a paediatrician. The PedLE was well received and highly rated by the students. The following year, 140 students applied for the 60 spots and we expanded the experience to offer placements for 70 students over four half days. Thirty four SickKids faculty and 20 community paediatricians participated in teaching.

In the second year, the Art & Science of Clinical Medicine II (ASCMII) course runs over five consecutive Thursday mornings five times per year. Last year 23 SickKids faculty, 11 clinical fellows and 31 community paediatricians taught ASCMII. We pushed back our starting time by half an hour to get two more hours of clinical experience for the students. Our tutors once again received exceptionally high teaching evaluation scores from the students.

For the 2010-11 year, we are planning to amalgamate two of the second-year courses – Pathobiology of Disease (PBD) and FMP (Foundations of Medical Practice) into a new and improved course called Mechanisms, Manifestations and Management of Disease (triple M-D). Hosanna Au has assumed leadership as manager of the paediatric weeks of the course.

The third-year clinical clerks are integrated into community hospitals with half of the class spending their full six-week rotation in one of 12 community hospital sites. The other half spends three weeks in community paediatric offices and three weeks at SickKids on the general paediatric wards, in Emergency Medicine or Adolescent Medicine. This year we sent six students to Credit Valley Hospital for their six-week placement. With rave reviews and less than a year to the opening of the Mississauga Academy of Medicine (MAM), we are sending eight students to Credit Valley Hospital for the 2010-11 academic year. The students and residents were hard at work this summer leading an initiative to develop a “Peds On the Go” handbook for the third-year clerks.

We have continued to subscribe to the paediatric online interactive cases developed by the Council of Medical Student Education in Pediatrics (COMSEP). All third-year clerks must complete 10 cases. The cases are very well received and most students do more than the assigned number of cases.

The students also spend 2-4 week blocks in the Electives Program, which is popular among U of T, national and international students. Over 226 elective students participated in 2009-2010. Our Social Paediatrics elective continued to be a popular and highly sought-out experience for clerks. In the revised clerkship curriculum, all core rotations are front-loaded in third year. The entire fourth-year class in 2011-12 will have electives from September to December 2011. We expect fierce competition for the coveted elective spots! All students will have “selectives” between January and April 2012.

POSTGRADUATE EDUCATION
The Postgraduate Paediatric Training Program in the Department of Paediatrics is led by Dr. Adelle Atkinson. This continues to be the largest training program in Canada with unparalleled resources both in the area of depth and breadth of patient experiences, as well as an outstanding teaching and research faculty. The program attracts the most outstanding, sought-after candidates in the country. Applicant numbers continue to increase yearly, including international medical graduates. The program is rich in diversity. Specifically, we have 75 core residents, 62 subspecialty residents, and 214 clinical fellows enrolled in the 2009-10 academic year. The Department of Paediatrics is home to 17 residency training programs accredited by the Royal College of Physicians and Surgeons of Canada.

The success of the training program is largely due to faculty engagement in the process. An active Residency Program Committee oversees the administration and running of the training program, and various subcommittees exist to ensure that each part of the program (resident selection, academic curriculum, evaluation, research, mentoring) are delivered in an evidence-based fashion with scholarship as a natural part of the process.
The curriculum of the program is in constant evolution responding to resident feedback, Ministry of Health & Long-Term Care priorities and the changing landscape of our community. The fourth year of the program has been redesigned and currently addresses the needs of our trainees who are pursuing a career in community paediatrics. There is an emphasis on a significant amount of community experience with distributed education, as well as other important areas, such as child maltreatment and paediatric psychiatry.

The academic half day has undergone an evolution over the last several years with the insertion of a number of “sub-curricula” to fully address all the CanMEDS roles. These include the Acute Care and Resuscitation Program (ACRP), Paediatric Psychiatry, Advocacy and soon a curriculum in Palliative Care as well as Dermatology. The ACRP continues to grow and mature and is the first program of its kind in Canada.

Resident scholarship continues to be of a high standard with all residents being engaged in scholarly activities, including clinical research, education, patient safety, quality assurance and patient advocacy. Some of our projects are initiated and led by our trainees, others by our teachers and educators. Some of the scholarly activities explore aspects of our programming and aim to improve our curriculum and teaching. Recently, the residents studied a portion of the ACRP in a scholarly way and had their work accepted in poster form at two national conferences. In a separate project, barriers to resident research are being explored. The aim of this study is to develop recommendations for improving the scholarly development of trainees. We have also started mapping the social paediatric content of the program. One of the aims of this study is to look at the attitudes and experiences related to teaching and learning social paediatric content.

A primary focus for the program this past academic year has been on teaching and evaluating the CanMEDS roles. There is a robust CanMEDS curriculum within the academic half day, which covers a wide variety of topics and a CanMEDS OSCE offered each spring with almost 100 trainees taking part in this evaluative activity.

Advocacy continues to be a focus of the program. There are currently four major advocacy projects underway under the leadership of the resident group. This year, a new initiative was undertaken by the residents to partner with the Gosford Park Public School which is located in a disadvantaged neighbourhood. All residents have the opportunity to participate in this and the other advocacy projects, which add important dimensions to resident training.

Last spring saw the first national Canadian Paediatric Subspecialty Match. The University of Toronto subspecialty programs matched 25 candidates, accounting for almost 40 per cent of all matched subspecialty positions across the country. The residents from our own Core Paediatric Program who entered the match did extremely well with a 100 per cent match rate. Outstanding candidates from other universities across Canada filled approximately 50 per cent of the University of Toronto matched positions. The subspecialty programs continued to attract excellent applicants from around the world.

CONTINUING EDUCATION

The goal of our continuing education office is to promote development and dissemination of continuing education activities locally, nationally and internationally. Our Continuing Education Committee (CEC), led by Suzan Schneeweiss, is comprised of both academic and community-based health care professionals. Library services also help to support CE activities. There is strong collaboration with the University of Toronto, Office of Continuing Education and Professional Development, and the Centre for Faculty Development. The CEC develops and supports a breadth of programming. Dr. Schneeweiss has also collaborated with the Office of CEPD at the University of Toronto to provide faculty development opportunities in continuing education. She worked with the Centre for Faculty Development to provide workshops on achieving higher level evaluations and use of an audience response system.

Faculty members of the Department of Paediatrics have been active in continuing education activities for the 2009-10 academic year. In addition, Dr. Savithiri Ratnapalan successfully conducted her third annual longitudinal Project Planning and Management Course. City Wide Rounds, organized by Drs. Mark Feldman and Michael Peer from the Division of Paediatric Medicine, continues to be a popular event, attracting 120 community-based paediatricians and taking place four times annually.
The Department of Paediatrics continues to have a strong commitment to excellence in continuing education with ongoing courses, conferences and faculty development activities. The Annual Paediatric Update (course director: Dr. Suzan Schneeweiss) was held April 14-17, 2010 and is the largest conference by the Department of Paediatrics attracting a local, national and international audience with over 250 participants.

There was outstanding faculty contribution with 80 members of our faculty presenting at this event. This year, a nephrology and urology subspecialty day, under the direction of Drs. Diane Hebert and Walid Farhat, was presented with a comprehensive look at the evaluation and management of common renal and urologic disorders in children.

Finally, many of our divisions have been engaged in a variety of continuing education events:

<table>
<thead>
<tr>
<th>Division</th>
<th>CE Leaders</th>
<th>Event</th>
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<tbody>
<tr>
<td>Adolescent Medicine</td>
<td>Dr. Debra Katzman</td>
<td>One-day conference reuniting past SickKids Adolescent Medicine fellows with the aim of creating a wider Adolescent Medicine community-of-practice and developing a spirit of global cooperation among colleagues</td>
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<tr>
<td>Bloorview Kids Rehab</td>
<td>Dr. Golda Milo-Manson</td>
<td>Two-day Child Development Update designed to link current developmental paediatric research and its translation into clinical paediatric practice</td>
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<tr>
<td>Clinical and Metabolic Genetics at The Hospital for Sick Children and Mount Sinai Hospital</td>
<td>Dr. David Chitayat</td>
<td>18th annual symposium on New Developments in Prenatal Diagnosis and Medical Genetics</td>
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<tr>
<td>Dermatology</td>
<td>Drs. Miriam Weinstein and Elena Pope</td>
<td>One-day Paediatric Dermatology Update aimed at community-based practitioners</td>
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<tr>
<td>Haematology/Oncology</td>
<td>Dr. Angela Punnett</td>
<td>Second annual Paediatric Chemotheapeutics Update</td>
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<tr>
<td>Motherisk Program</td>
<td>Dr. Gideon Koren</td>
<td>Motherisk Program 2010 - Pregnant and Lactating Women</td>
</tr>
<tr>
<td>Neonatology</td>
<td>Dr. Hilary White and Ms. Annette Martens</td>
<td>Annual Acute Care Transport Course which was held in conjunction with the Annual Paediatric Update</td>
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<tr>
<td>Neurology – Centre for Brain and Behaviour</td>
<td>Dr. Carter Snead</td>
<td>Three-day international symposium on brain injury in children</td>
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<tr>
<td>Paediatric Emergency Medicine</td>
<td>Dr. Amina Lalani</td>
<td>6th annual Paediatric Emergency Medicine Conference attracting more than 150 participants.</td>
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<tr>
<td>Paediatric Emergency Medicine</td>
<td>Dr. Sanjay Mehta and Dr. Suzan Schneeweiss</td>
<td>Advanced Pediatric Life Support course – delivered three times over the course of the year</td>
</tr>
<tr>
<td>Paediatric Emergency Medicine</td>
<td>Dr. Suzan Schneeweiss</td>
<td>Paediatric Emergency Procedural Sedation Course – delivered four times over the course of the year</td>
</tr>
<tr>
<td>Paediatric Emergency Medicine</td>
<td>Drs. Amina Lalani and Sanjay Mehta</td>
<td>Pediatric Emergency Trauma Course – held twice in the last academic year</td>
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<tr>
<td>Rheumatology</td>
<td></td>
<td>The Division celebrated 25 years of subspecialty programming and hosted a “Celebration of Excellence” during which former trainees were invited to participate in a two-day academic symposium covering the field of paediatric rheumatology</td>
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</table>
FACULTY DEVELOPMENT
The Faculty Development subcommittee of the Medical Education Advisory Committee, led by Karen Leslie, has developed and delivered an annual medical education day to promote faculty development in education. This event was started in 1999 by Dr. Jonathan Hellmann. Over the past 10 years, invited speakers have addressed a range of topics/themes including simulation-based learning, the role of technology in education, interprofessional education, the role of feedback in learning, team-based communication and mentoring. The objectives of the day are to inform Department members about developments in medical education and promote scholarship and research in medical education.

In 2010, Medical Education Day showcased emerging knowledge in medical education with a grand rounds presentation by Dr. Kevin Eva from McMaster University. Dr. Eva is the current editor of Medical Education, one of the premier medical education journals. Dr. Eva is widely known for his research in the area of assessment. He presented an engaging and thought-provoking grand rounds, followed by a practical workshop on assessment strategies. The day ended with two presentations of education research by Drs. Ann Jefferies and Tina Martimianakis.

In July 2010, Dr. Shelly Weiss was appointed Director of Faculty Development. In her new role, and with the support of the Faculty Development Committee, she will focus on evolving strategies to support and mentor faculty in their academic and clinical activities.

MEDICAL EDUCATION SCHOLARSHIP
This past year, Dr. Tina Martimianakis and members of the Educational Scholarship Enhancement Committee (ESEC) have worked to capture and document scholarship activity, as well as develop programming to enhance faculty skills in educational research, teaching, innovation and application. In September 2009, Medical Education Scholarship Rounds was launched. The rounds are accredited and provide a forum for members of the department to share their scholarly activity as well as take part in faculty development sessions designed to build skills in education research methodology. The sessions focused on such diverse topics as clinical excellence, expertise, educational program evaluation, interviewing methodology, experimental methods and ethical guidelines, drawing heavily on the expertise of educators within the Department.

In addition, a database was created to capture scholarly activity. Several presentations regarding our Department’s educational strengths and contributions were delivered drawing on empirical data from this database, showcasing our educational activities and productivity, but also pointing to opportunities for growth.

LEADERSHIP IN EDUCATION BEYOND THE DEPARTMENT OF PAEDIATRICS
Several of our faculty members hold key leadership positions in education beyond the Department of Paediatrics, demonstrating our growing capacity to inform educational practice more broadly. Dr. Karen Leslie began her term as Director of the Centre for Faculty Development (CFD) in the fall of 2009. In this new role, she has enhanced the programming available through the CFD and led many exciting new initiatives. Dr. Jay Rosenfield continues as Vice-Dean of Undergraduate Medical Education at the University of Toronto. In November 2009, Dr. Norman Rosenblum was appointed Associate Dean, Physician Scientist Training, at the Faculty of Medicine.

Dr. Susan Tallett holds the position of Chief of Education of the SickKids Learning Institute and chairs the Education Subcommittee and the Continuing Professional Development Committee of the Canadian Paediatric Society. Finally, Dr. Jonathan Pirie co-leads the procedural lab in the Learning Institute’s simulation program.

HONOURS AND AWARDS
International

Martimianakis MA: Association for Medical Education in Europe (AMEE) Patil Award for best Research in Medical Education. Presentation - “Interdisciplinarity: At the intersection of knowledge-production and identity formation”, August 2010.

National

Jarvis A: Michel Weber Education Award for Sustained Contribution to Paediatric Education in Canada, Canadian Paediatric Society, 2010.

Jarvis A: First Recipient, Paediatric Emergency Section Education Award, Canadian Paediatric Society, Award was created and named in Dr. Jarvis’ honour for sustained contribution to education in the subspecialty, 2010.

Walsh C: Canadian Child Health Clinician Scientist Program Doctoral Award from the Canadian Institutes of Health Research, 2009.

Provincial

University

Bernstein S: Wightman-Berris Academy Undergraduate Individual Teaching Award, University of Toronto, 2010.

Jarvis A: Clinical Inter-professional Collaboration and Education Award, Michener Institute of Applied Health Sciences, PALS Advisory Team (Chairperson), 2009.

Jarvis A: University of Toronto Medical Society created an annual prize in Dr. Jarvis’ name in honor of her contribution as Associate Dean, Health Professions Student Affairs, Faculty of Medicine, for students who demonstrate outstanding qualities of caring and support offered to their peers, 2009.

Walsh C: University of Toronto Standardized Patient Program’s 25th Anniversary Grant, 2010.


Weitzman S: Excellence in Postgraduate Medical Education Award, University of Toronto, 2010.

Departmental
Chitayat D: Continuing Medical Education Award to the faculty member who has demonstrated excellence in course coordination or teaching in a Department of Paediatrics/University of Toronto Continuing Education sponsored event.

Feldman: Marvin Gerstein Award to a part-time member of the Department of Paediatrics who has demonstrated excellence in teaching as nominated by core paediatric residents.

Friedman J: Harry Bain Award for Excellence in Clinical Teaching to a full-time member of the Department of Paediatrics who has demonstrated excellence in teaching as nominated by core paediatric residents.

Gans M: Postgraduate Community Teaching Award in recognition of excellence in the teaching of paediatric residents within community-based hospitals and offices.

Hamilton J: POWER Teacher Award, Department of Paediatrics, University of Toronto: Outstanding Contributions to Postgraduate Teaching, 2010.

Jacobson S: POWER Teacher Award, Department of Paediatrics, University of Toronto: Outstanding Contributions to Postgraduate Teaching, 2010.

Jarvis A: Continuing Medical Education Award to the faculty member who has demonstrated excellence in course coordination or teaching in a Department of Paediatrics/University of Toronto Continuing Education sponsored event.
Jarvis A: Continuing Education Award for Sustained Excellence and Contribution, Department of Paediatrics, University of Toronto, 2010.

McNamara P: POWER Teacher Award, Department of Pediatrics, University of Toronto: Outstanding Contributions to Postgraduate Teaching, 2010.

Mendoza R: Subspecialty Teaching Award to the faculty member who has demonstrated commitment to excellence in teaching the subspecialty residents and clinical fellows.

Nofech-Mozes Y: The Undergraduate Community Teaching Award in recognition of excellence in the teaching of medical students within community-based hospitals and offices.

Punnett A: R.H.A. Haslam Preclerkship Teaching Award to the faculty member who has demonstrated excellence in preclerkshop teaching.

Roberts W: POWER Teacher Award, Department of Paediatrics, University of Toronto: Outstanding Contributions to Postgraduate Teaching, 2010.

Saunderson J: The Lionel Weinstein Clerkship Teaching Award to the faculty member who has demonstrated excellence in clerkship teaching.

Scolnik D: POWER Teacher Award, Department of Paediatrics, University of Toronto: Outstanding Contributions to Postgraduate Teaching, 2010.

Sung L: POWER Teacher Award, Department of Pediatrics, University of Toronto: Outstanding Contributions to Postgraduate Teaching, 2010.

Tse S: PERLs Award (Paediatric Educational Resident Lecture Series Award) to the faculty member who has demonstrated commitment to excellence in teaching at the Paediatric academic sessions.

Tse SML: Department of Paediatrics Scholarship for Education Scholar Program, Centre for Faculty Development, University of Toronto, 2010.

Wales P: POWER Teacher Award, Department of Paediatrics, University of Toronto: Outstanding Contributions to Postgraduate Teaching, 2010.

Walsh C: Department of Paediatrics Research Fellowship Award, Hospital for Sick Children, 2009.

Divisional

Al-Zaidy S: CanMeds Trainee Award, Division of Neurology, Hospital for Sick Children, 2010.

Benseler S: James C. Fallis Teaching Award, Division of Paediatric Emergency Medicine, The Hospital for Sick Children, 2009-2010.

Donner E: CanMeds Faculty Award, Division of Neurology, Hospital for Sick Children, 2010.


Goh E: Joe T.R. Clarke Award (Teaching Excellence), Division of Clinical and Metabolic Genetics, May 2010.

Jefferies A: Excellence in Teaching Award, Neonatal-Perinatal Division, University of Toronto, June 2010.


Punnett A: Alvin Zipursky Teaching Award, Division of Haematology/Oncology, The Hospital for Sick Children, 2010.

**EDUCATIONAL FUNDING**

In the past academic year, our faculty, residents and fellows also had significant grant capture with 42 awards totaling $2,284,167.64 (multi-year funds have been adjusted to reflect monies allotted for one academic year in the calculation of this total) to pursue research in education.

**Paediatric Consultants Education Research Grant, SickKids**

In the 2009-2010 academic year, four Paediatric Consultants Education Research Grants were awarded to faculty members pursuing research which promises to increase understanding of educational phenomenon and contribute to theory building on such topics as research methods, attitudes and perceptions to teaching, career decision-making and technologically enhanced learning. The projects awarded also hold potential to enhance our local educational practices.

Dubrowski A: Testing the effectiveness of an Internet mediated, video based, educational networking instrument in preparing trainees for simulation-based teaching of fundamental technical skills. A randomized control study ($5,000).

Shouldice M: Career decision making in pediatric residency ($5,000).

Thull-Freedman J: Understanding the paediatric literature: What statistical and epidermiological concepts do clinicians need to know? ($4,500).

Weiss S: Attitudes, experiences and perceptions of faculty with a revised curriculum incorporating the CanMEDS competencies ($4,890).

**Educational Development Fund, UoT**

The Educational Development Fund aims at “catalyzing initiatives that immediately and directly impact University of Toronto Faculty of Medicine education and teaching programs through innovation and development”. In a highly competitive year, the following project received funding:

The interprofessional OSCE development simulation tool (part II). Simmons B, Reeves S, Wagner S. Educational development fund - University of Toronto/The University of Toronto Office of Interprofessional Education ($16,827 2009)

Preparation for a career in academic medicine: Understanding the process of peer-group mentoring for postgraduate trainees. Leslie K, Breakey V, Lingard L. Education Development Fund ($5,280 2009)

**Other Funding Sources**

An important component of our educational research activity involves collaborations that span departments and institutions. Furthermore, our faculty were involved in collaborative research projects that were merited with funding from a variety of sources including the Royal College, Canadian Institutes of Health Research and the Ministry of Health.


A comparison of debriefing methods following simulated neonatal resuscitation. Williams C. NRP Research Grant ($16,180 2010)


An interprofessional team orientation experience. Mehta A, Honeyford L, Punnett A. C17 Education Grant Competition ($1,910 2009-2010)

Assessment and evaluation of a pilot interprofessional OSCE (iOSCE). Simmons B, Reeves S, Wagner S. Undergraduate Medical Education Curriculum Renewal Fund – University of Toronto/The University of Toronto Office of Interprofessional Education ($19,141 2009)

Assessment and evaluation of a pilot interprofessional OSCE (iOSCE). Simmons B, Reeves S, Wagner S. Matching Funds Medical Council of Canada/The University of Toronto Office of Interprofessional Education ($10,000 2009)

Canadian Child Health Clinician Scientist Program. Rosenblum N, Lee S. Canadian Institutes of Health Research ($4,500,000 2002-2015)


Evaluation of case-based Interprofessional Education (IPE) sessions: Development and implementation. Wagner S, Reeves S, Simmons B. Undergraduate Medical Education Curriculum Renewal Fund – University of Toronto/The University of Toronto Office of Interprofessional Education ($13,951 2009)

Exploring adaptive expertise in inter-professional team practice. Mylopoulos M. SickKids Research Institute New Ideas Grant ($27,612 2009)

Faculty development to support capacity building for Interprofessional education. Leslie K. Reeves S, Silver I, Merkley J, Richardson D, Wagner S, Andrews M, Kwan D. Ministry of Health and Long-Term Care ($310,000 2009-2010)


Resuscitation competencies in inter-professional education (ReCIPE). Simmons B, Reeves S, Deland M. Neonatal Resuscitation Program Research Grant – Canadian Paediatric Society ($17,590 2009-2010)

Self-regulated motor learning: Mechanisms and application. Dubrowski A. Natural Sciences and Engineering Research Council ($75,000 2008-2013)

Sustainability grant for IPE development at the University of Toronto Office of Interprofessional Education. Oandasan I, Wagner S, Lowe M, Sinclair L, Tassone M, Simmons B, Parker K. Ontario Ministry of Training for Colleges and Universities ($150,000 2009)
System level evaluation of the ACPAC program graduates: Determining collaborative practice behavior following the introduction of an APP in arthritis care across diverse clinical settings in Ontario: Lundon K, Shupak R, Lineker S, Schneider R, Passalent L, Sinclair L, Kennedy C. Canadian Initiative for Outcomes in Rheumatology Care (49,898 2010-2011)

The interprofessional OSCE development simulation tool (part I). Simmons B, Reeves S, Wagner S. Network of Excellence in Simulation for Clinical Teaching and Learning/The University of Toronto Office of Interprofessional Education ($49,200 2009)

Utilizing teaching evaluations to promote faculty development in teaching. Leslie K, Lief S, Pittini R, Reeves S, Schriever M. Undergraduate Medical Education Curriculum Renewal Fund ($19,630 2009)

**SHARING OUR KNOWLEDGE DISCOVERIES**

Our educational research and scholarship is disseminated regularly in leading clinical and educational journals. This past academic year, our faculty and residents the following peer-reviewed publications and two book chapters.

**Peer Review Publications**


Coffey M, Tallett S, Thompson K, Matlow A: Knowledge and attitudes of paediatric residents toward disclosure of adverse events. Canadian Paediatric Society, Ottawa, ON. Paediatric Child Health 2009: 14: p 41A.


Book Chapters

Education scholarship can take many forms, including the development or dissemination of knowledge related to faculty and student relations, student learning and teaching, curriculum and program development, assessment and program evaluation, and educational policies, among other things.

This section highlights forms of educational scholarship taking place in our Department, including promising new directions in educational innovation, which have not been captured under the sections of awards, grants and publications.

**Enhancing Educational Methods and Pedagogy**

Our Department has a dedicated group of educators with expertise in educational methods and pedagogy. During the past year, they have contributed to skill building in education within the department, the university and internationally.

Dr. Zia Bismilla delivered a number of presentations and workshops on simulation and health professional assessment at the Sickkids Learning Institute, the Wilson Centre, and the Pediatric Academic Society.

In April 2009, Dr. Adam Dubrowski led a group of specialists in education theory, simulation design and simulation-based education and training to Addis Ababa University (AAU), Ethiopia to conduct a four-day course. Dr. Dubrowski also contributed to the development and delivery of the Simulation Research Refined: The Network of Excellence in Simulation for Clinical Teaching and Learning (NESCTL) and the Wilson Centre Atelier. This four-day intensive program in advanced simulation-based education research guided participants through some of the most relevant theories of learning, performance assessments and performance affecting factors.

Drs. Tina Martimianakis and Maria Mylopoulos contributed in the development and teaching of the 2010 Wilson Centre Atelier – Qualitative Research in Depth. This advanced four-day workshop familiarized participants with educational, cognitive science, rhetorical and social science theories relevant to educational research and provided skill building opportunities for evolving theory-based qualitative educational research. Tina Martimianakis developed and delivered with colleagues an invited pre-conference workshop for the Association for Medical Education in Europe on qualitative methodology (with Ayelet Kuper, Nancy McNaughton, Mathieu Albert and Sarah Whyte).

Dr. Ann Jeffries developed and delivered a series of education related workshops, including Enhancing Assessment and Evaluation in Inter-Professional Education at the Association of Medical Education in Europe (with B. Simmons and S. Wagner), Becoming a Successful Educator and Incorporating International Medical Graduates into a Canadian Residency Program at the Annual Conference of the Royal College of Physicians and surgeons of Canada (with A. Atkinson and R. Hilliard), and Moving Your Career Ahead as a Clinician-Teacher/Educator for the Centre for Faculty Development (with R. Hilliard and K. Leslie).

**Curriculum and Program Development**

Educators in our Department focus a lot of their energy on reviewing, revising and developing programming for all levels of trainees that is grounded in the most up-to-date basic and clinical research and is developed, delivered and assessed according to current educational theories and practices. Furthermore, members of our faculty are contributing to the development of educational programming and learning standards and objectives at the university, national and even international level. The following are only some examples of activities that fall in this category:
Dr. Shinya Ito, in collaboration with three institutions in Europe, is leading an international initiative involving 20 institutions with a plan to formulate a program for global training of paediatric clinical pharmacologists to improve paediatric drug therapy. The proposal has received funding from the European Union. The development of the curriculum and innovative learning environments, as well as the implementation of the program, will evolve over the next five years.

At the national level, Dr. Jay Rosenfield, through his position as Co-Chair of the Task Force on Implementation Strategy, Future of Medical Education in Canada, is coordinating a process of curriculum renewal of undergraduate medical training across Canada.

Within our Department, a number of educational innovations and curricular changes were made last year that work to enhance our training programs or educate families and patients. For example, Dr. Susanne Benseler developed and implemented the clinical research tools (CRT) curriculum for paediatric and adult rheumatology fellows. Collaborating with AboutKids-Health, she also developed an online educational tool for patients with CNS vasculitis and their families.

Dr. Anne Opavsky conceptualized, and oversaw the development and launch of e-fecction, a quarterly newsletter produced by the Division of Infectious Diseases to enhance understanding and learning on topics related to prevention, diagnosis and management of infectious disease. E-fecction articles are contributed by members of the Division (including staff, fellows and nurses) and designed for community and hospital-based physicians, fellows, residents, medical students, and other health care workers.

Dr. Simon Ling implemented a formal curriculum for fellows in paediatric gastroenterology. The design of this curriculum was initiated by Nicola Jones and had input from all faculty and fellows.

Dr. Gideon Koren has created and led a number of educational programs including the NIH-CIHR Summer Institute in Maternal-Fetal Pharmacology, a new model for Critical Appraisal rounds in clinical pharmacology and workshops on screening and diagnosing of FASD.

Dr. Anu Wadhwa led an interprofessional team in the complete restructuring, development and implementation of the outpatient experience of the Infectious Diseases fellows. In addition to the ‘medical expert’ CanMEDS competency, this new Continuity of Care curriculum has been designed to specifically incorporate teaching an evaluation in the CanMED ‘manager’ competency. In addition, Dr. Wadhwa developed and presented a four-part interactive series to the Infectious Diseases fellows, aimed at improving and evaluating their skills in physician communication.

**Educational Assessment and Evaluation**

In the area of assessment and evaluation we have a growing focus on using existing modalities or developing new tools to assess learning of complex tasks, including specialized procedures or working in teams.

As part of her PhD thesis work, Dr. Catherine Walsh, Fellow in Gastroenterology, Hepatology and Nutrition, is currently developing an evaluation tool for training in colonoscopy and researching the process of teaching procedural skills, including studies of optimal training of feedback to trainees.

Drs. Brian Simmons, Susan Wagner and Ann Jefferies are evolving approaches for using the OSCE to assess CanMEDS competencies. Brian Simmons is also developing, with a number of collaborators across the university, approaches to assessing interprofessional education.

Dr. Kathryn Parker is leading a number of evaluation initiatives at the Learning Institute with hospital-wide focus. For example, this past year Kathryn has evolved the Learning Institute strategy map and balanced scorecard, led the development of quality indicators for education, and developed a strategic framework for evaluating organizational strategic change and innovation.
DIVISION HEAD
Dr. Debra K. Katzman

FULL-TIME
Dr. Eudice Goldberg
Dr. Miriam Kaufman
Dr. Karen Leslie
Dr. Cathleen Steinegger

PART-TIME
Dr. Miriam Rossi
Dr. Rahul Saxena
Dr. Ellie Vyver

CLINICAL FELLOWS
Dr. Ian Chen, DO
Dr. Herbert Joseph Bonifacio
Dr. Alene Toulany
Dr. Trish Tulloch
Dr. Asha Pemberton-Gaskin

ADMINISTRATIVE STAFF
Denise Ferreira
Melissa Keown
Burnett Wint
The Division of Adolescent Medicine provides state-of-the-art, comprehensive specialty care to patients up to 18 years of age, focusing its clinical activities in five programs: Eating Disorders, Good 2 Go, Substance Abuse, Young Families and SickKids Interprofessional Team for Youth (SITY). All of these are comprehensive and interdisciplinary programs with strong clinical, educational and research activities.

**EATING DISORDERS PROGRAM**

The Eating Disorders Program at SickKids continues to provide interdisciplinary, family-based treatment to children and adolescents with a wide range of eating disorders and complex eating problems. Clinical services range from consultation and outpatient programs to intensive day hospital and in-patient services. Multifamily group therapy continues to be a vital component of eating disorder care and allows for families to receive comprehensive treatment and support in a timely manner. The Eating Disorders Program provides training in the care of these complex patients to medical students, paediatric residents and subspecialty residents, as well as to a wide range of interdisciplinary trainees. Additionally, the Ontario Community Outreach Program (a collaborative of SickKids, University Health Network and the MOHLTC) trains health care professionals around the province to assess and treat patients with eating disorders, which allows many families to receive excellent treatment in their home community. The Eating Disorders Program has an active research agenda. Our primary areas of research include the biological underpinnings of eating disorders, medical and psychological interventions for eating disorders and determinants of outcomes.

**GOOD 2 GO TRANSITION PROGRAM**

The goal of the Good 2 Go Transition Program is to prepare all youth with chronic health conditions to leave SickKids by the age of 18 years with the necessary skills and knowledge to advocate for themselves or through others, maintain health-promoting behaviours and utilize adult health care services appropriately and successfully. Due to an increase in the volume of clinics requesting assistance in developing transition initiatives, a Clinical Nurse Specialist joined the team in August 2009. In addition, a new team lead joined the Good 2 Go Transition Program in June 2010.

The team continues to develop and customize new resources, including colourful clinic posters and timelines to encourage patients, families and practitioners to begin preparing for transition to adult care at an early age. Other resources include the transition “Getting Ready for Adult Care” booklet, transition readiness checklists, graduation certificates, transfer letters, and the MyHealth Passport. For many of these resources, hospital programs work closely with the Good 2 Go team to customize the tools for their specific clinic population. For example, the timeline has been customized for more than nine hospital programs and the MyHealth Passport for more than 40 clinics/conditions.

The team also works directly with many teams throughout the hospital to plan and implement patient/family education days and transfer clinics (an opportunity for patients to meet adult providers). Direct patient care is provided for especially complex transition cases referred to the program from throughout the hospital through the Transitions Treatment Clinic.

The Good 2 Go team held the second annual, hospital-wide EmployABLE event in collaboration with Ontario’s Mazemaster/Youth@bilities at the hospital in May 2010. This full-day event drew over 100 youth, and was designed to motivate adolescents with chronic health conditions to develop skills for successful job search. This year the event included motivational speakers, opportunities to learn interview skills, a forum for networking with potential employers and a variety of discussions on accommodations in the workplace as they relate to medical conditions. Negotiations with Mazemaster/Youth@bilities have also started to develop a monthly career clinic designed to provide individual support and vocational counselling for youth with special health care needs.

The team continues to seek and receive outside funding for specific initiatives and research projects. Manulife Financial funded a project on clinical pathways (i.e., guidelines to facilitate patient transitions designed to be used by health care providers at clinic visits throughout SickKids) is being developed in conjunction with IT services. The team received funding from the Kidney Foundation of Canada to work collaboratively with staff from the University Health Network to explore the best way to modify an existing adult self-
management program for youth who have chronic health conditions. Over the past year, focus groups and initial self-management group sessions took place and the intervention will be expanded to include patients with diabetes.

The team collaborates with many programs/clinics within the hospital and with community partners (e.g. Holland Bloorview, Mazemaster/Youth@bilities). Additionally, they offer supervision and mentorship to several interdisciplinary trainees in the area of transition. This year a nursing masters’ and social work masters’ student and the Adolescent Medicine Fellows will be working closely with the team in various clinical and research projects. Additional educational efforts include an introduction to transition during SickKids’ Nursing Orientation Sessions (led by Good 2 Go Staff), and rounds/training of psychology and social work interns.

The upcoming year (2010-2011) marks the fifth year of the Good 2 Go Transition Program and a celebration event will be planned to recognize the efforts of staff throughout the hospital and collaborative adult programs who serve as champions promoting transition initiatives.

SUBSTANCE ABUSE PROGRAM
The Substance Abuse Program continues to provide clinical assessment and ongoing treatment to adolescents and their families who are experiencing difficulties as a result of alcohol and other substance abuse. Services provided include outpatient counselling, comprehensive health assessment and follow-up, intensive day treatment, as well as parent support and counselling.

The program provides education and training to a variety of learners, including medical students, core and subspecialty paediatric trainees, child and youth counselor and nurse practitioner students to name a few. Members of the program are also engaged in the provision of continuing education locally, nationally and internationally. This ranges from engaging paediatric residents through the use of role playing, to presenting to advanced practice nurses about the adolescent brain and the effects of substance abuse. Outreach community education has included presentations and sessions with middle and high school students, teachers, group home staff, probation officers and parent groups. The program is shifting the focus of the outreach education efforts to target those professionals working with adolescents in order to provide them with the knowledge and skills with which to enhance the work they currently do with this complex patient population.

Integral to the clinical work is the ongoing pursuit to develop new knowledge about how best to deliver care to adolescent and their families. These objectives are pursued in research projects that look at evaluation of family-based programs and program outcomes in this high-risk population.

SICKKIDS INTER-PROFESSIONAL TEAM FOR YOUTH: SITY
The SickKids Interprofessional Team for Youth (SITY) provides youth with access to expert adolescent health care services from our team of highly skilled interprofessional healthcare providers. The team addresses a wide spectrum of concerns including illness-specific issues for youth with chronic health conditions, the identification and reduction of high-risk health behaviours and advocacy efforts. Increasingly, the SITY team is being consulted regarding youth with clinical conditions that are considered diagnostic dilemmas.

SITY also provides clinical services in collaboration with renal, cardiac and lung transplant programs, the HIV and SLE clinics and through in-patient consultations. The clinic has been actively involved with the newly developed STOMP clinic. SITY has an established link to the Substance Abuse Program, addressing the complex medical needs of these adolescents.

In addition, SITY continues to build partnerships with local agencies such as Toronto Children’s Aid Society and the Triangle School Program of the Toronto District School Board in an effort to enable youth in the downtown core to access health information and necessary health services otherwise unavailable to them.

This year marks the debut of the Continuity of Care Clinic (C3) for Adolescent Medicine subspecialty residents focusing on continuity of care for medical services, ongoing counselling to youth, and enhancing the ability for successful interventions.
Finally, this year, representatives of the SITY team will be influencing adolescent health at the international level by providing a five-day curriculum to student health advisors in Singapore.

THE YOUNG FAMILIES PROGRAM
The Young Families Program (YFP) focuses on providing health care, advocacy, support and education to high-risk adolescent parents and their children. The YFP collaborates with several agencies including prenatal homes and child protection agencies. In particular, the YFP provides a consultation clinic alongside St. Michael's Hospital Inner City team at The June Callwood Centre for Teenagers and provides clinical care, education and policy recommendations.

The YFP, in collaboration with Suspected Child Abuse and Neglect (SCAN) team, has created the High Risk Project - a clinical research project that has resulted in a developmentally-appropriate standardized approach to clinical assessment, education and ongoing care of patients. The team is embarking on the intervention phase with an emphasis on maternal and infant mental health and child-parent relationships. The YFP has developed a collaboration with the Infant Mental Health Team in the Department of Psychiatry, meeting the needs of the most vulnerable at-risk youth and their children.

The interprofessional team members continue to provide resources and education to health professionals in a variety of settings through structured clinical experiences, conference presentations and committee participation and affiliation with several faculties at the University of Toronto. Teaching of all disciplines is occurring in the clinic setting, and increasingly in the community sites where high-risk youth are presently underserviced. Recent collaborative research relationships with faculty members from the Lawrence S. Bloomberg Faculty of Nursing, University of Toronto, will support expansion of our research capacity in the field of high-risk adolescent parents and their children.

The Young Families Program is a designated site for the new Social Paediatrics Program where medical students and residents learn to integrate the principles of the social determinates of health to a vulnerable high-risk population. In addition, members of YFP are working with the social paediatrics team to integrate innovative models of health care into community sites such as schools and child protection clinics.

OUR TEAM
The Division of Adolescent Medicine at SickKids is the largest division of adolescent medicine in Canada, with a diverse interprofessional clinical team and staff. Members of the interprofessional team provide quality care to adolescents and their families in a teen-friendly setting. This integrated approach is essential to promoting comprehensive health care to adolescents and their families.

RESEARCH
The Division of Adolescent Medicine has integrated research into a more fundamental and focused component of its work. Key research areas include biological studies of eating disorders and their medical consequences with specific emphasis on osteoporosis and brain structure and function, epidemiology of early-onset eating disorders, evaluation of family-based treatments for adolescents with eating disorders; approaches in understanding and evaluating the process of health care transition for youth with special health care needs; and the evaluation of faculty development and mentoring.

Other areas of research include the Young Families' High-Risk Project that is geared to help understand the medical and psychological characteristics of this high-risk population. Several research projects have been undertaken by the Substance Abuse Program including the GAIN-Short Screener Project, Strengthening Families Project, which is a collaborative project with Health Canada looking at long-term outcomes of patients in day treatment, and a quality improvement project evaluating parents’ educational needs in an effort to develop parent psychoeducation program on adolescent substance use and abuse.
TEACHING AND EDUCATION

The Division provides training opportunities to a diverse group of learners including undergraduate and postgraduate medical trainees from medicine (Paediatrics, Psychiatry and Family Medicine), nursing, psychology, social work, nutrition, art therapy and child youth counsellor training programs. Members of the Division continue to make important educational contributions to local, provincial, national and international committees, and have leadership roles at the Centre for Faculty Development, the Royal College of Physicians and Surgeons of Canada, Canadian Paediatric Society Adolescent Health Committee, American Academy of Pediatrics Section on Adolescent Medicine, the Society for Adolescent Medicine, the Canadian Association for Adolescent Health, the Canadian Association for Medical Education and the Academy for Eating Disorders.

The Division of Adolescent Medicine has played an integral role in the social paediatrics initiative at SickKids. Dr. Eudice Goldberg represents the lead for Adolescent Medicine and has participated in community initiatives with Dr. Lee Ford Jones and others, representing the “youth component” of the program. Initiatives underway include looking at violence and mental health needs in the Jane-Finch corridor and the development of school-based clinics in Ontario. In addition, the YFP is a designated site for social paediatrics electives. The Division of Adolescent Medicine continues to play an integral role at SickKids and the University of Toronto in the area of youth advocacy.

In January 2009, The University of Toronto subspecialty training program in adolescent medicine was accredited by the Royal College of Physicians and Surgeons of Canada. To date, it is one of four in adolescent medicine in Canada to be recognized by the college. The program underwent an interval review in September 2010. Members of the Division have taken a leadership role in the development of the first RCPSC subspecialty examination in adolescent medicine. The first examination was offered in September 2010. The first SickKids fellows to complete the newly accredited subspecialty training program will graduate in summer of 2011.

This past year, the Division hosted the first Fellow’s Day, “Exploring Adolescent Health Together and Globally.” The goal of this one-day educational conference was to bring together past and current SickKids’ fellows from around the world to share successes and challenges in the work we do with adolescents and their families. Approximately 30 fellows participated in this exciting day, representing Barbados, Canada, Costa Rica, India, Israel, Jamaica, New Zealand, Saudi Arabia, and Turkey.

The Division has been involved in developing an adolescent medicine program with the Hamad Medical Corporation in Qatar. Until now, paediatrics in Qatar only included children up to the age of 14; so this will be a new subspecialty in the region. An interprofessional group within the Division at SickKids has been meeting internally and also by teleconference with a group in Qatar. The Division will send a physician and nurse practitioner to Qatar for an in-depth needs assessment and other teams will follow up with action plans.

The Division launched its quarterly newsletter Adolessence which provides information about divisional programs, services and events. It also offers updates on events involving the Division. The newsletter has been widely disseminated in an effort to inform our colleagues throughout the Hospital about the many initiatives happening in the Division of Adolescent Medicine.
HONOURS AND AWARDS
Kaufman M: Recipient of the Arbor Award, University of Toronto.

PUBLICATIONS


**BOOKS AND BOOK CHAPTERS**


**FUNDING**


Development of specialized transition program for HIV+ patients. *Gilead Foundation* ($24,000 2009)


Faculty development to support capacity building for Interprofessional education. Leslie K, Reeves S, Silver I, Merkley J, Richardson D, Wagner S, Andrews M, Kwan D. Ministry of Health and Long-Term Care ($310,000 2008-2009)


Further development of the MyHealth Passport. Good 2 Go Transition Program. John Deere Foundation ($50,000 2008-2013)


Mobile phone-based self-management system for adolescents with Type I Diabetes Mellitus: A home-based self-care tool that links the client and family with their health care team. Cafazzo J, Palmert M, Katzman DK, Leonard K, Casseleman M. Care to Know Centre, Saint Elizabeth Health Care ($119,000 2009-2010)


Preparation for a career in academic medicine: Understanding the process of peer-group mentoring for postgraduate trainees. Leslie K, Breakey V, Lingard L. Education Development Fund ($5,280 2009)


The development and evaluation of an internet site to enhance the transfer and transition from pediatric to adult-focuses cardiology care. Good-2-Go Transition Program. Labatt Heart Centre Innovation Fund ($25,000 2009-2011)

Utilizing teaching evaluations to promote faculty development in teaching. Leslie K, Lieff S, Pittini R, Reeves S, Schribeer M. Undergraduate Medical Education Curriculum Renewal Fund ($19,630 2009)
Division of Cardiology

DIVISIONAL OVERVIEW

The Division of Cardiology was formally established in the 1940s and is now one of the largest and most successful in the world. Its philosophy has remained unchanged since its inception over 60 years ago: to provide the highest quality care in an evidence-based environment of clinical innovation and scientific discovery. The Division is not only performing at the highest clinical standard, but is now better positioned to drive innovation and scientific discovery than at any other time in its history.

While the Division is an integral part of the Department of Paediatrics, it also forms a key part of the Labatt Family Heart Centre, which was officially opened two years ago. Incorporating the Division of Cardiology, the Division of Cardiac Surgery, the Division of Cardiac Critical Care and The Toronto Congenital Cardiac Centre for Adults, the heart centre is already one of the best organized and cohesive in the world. However, there is much more investment and development required before it will have reached its goals. Nonetheless, over the past decade, the divisional activities, in close collaboration with surgical and intensive care colleagues and all the other members of the heart centre, have contributed to our markedly improved preoperative diagnosis and postoperative outcomes for children undergoing cardiac surgery. In addition, our activities have led the field in development of therapeutic catheter techniques, made important contributions to our understanding of fetal cardiac medicine, established one of the largest paediatric cardiac transplantation centres worldwide, and won international recognition for contributions in the field of epidemiology of acquired and congenital heart disease and surgical outcomes. Each of these areas has provided the substrate for the large clinical research output of the Division which is underpinned by a world class laboratory science program. One of the recent exciting clinical developments was the commissioning of an integrated suite of catheter laboratories and magnetic resonance scanning facilities. This unique fusion will allow simultaneous multi-mode research, investigation and treatment, setting the scene for MRI-guided interventional procedures and physiologic measurements in children.

The cardiovascular research focus within the SickKids Research Institute has made fundamental contributions to our understanding of the cellular biology and molecular genetics of pulmonary vascular bed, with recent diversification to include the study of the fetal myocyte, detailed study of the intercellular structure of the heart and vessels, electrophysiology of the developing heart and immunology of cardiac transplantation. High-quality basic and translational research, with an emphasis on direct clinical applicability, will continue to form the bedrock of our academic program. As an example, the biology of a new technique, remote ischemic preconditioning, has been explored and translated to clinical trials here at SickKids. The heart centre is making a major investment in the development of biobanking facility in which DNA and tissue samples will be held for future fundamental, translational and clinical research investigations. Aside from this thematic funding, the heart centre supports many proposals for clinical innovation and seed-funding for scientific programs via its endowment, with the expectation that patient and family satisfaction will improve and the quality of research and its ability to garner external peer-reviewed funding will be enhanced.

The Royal College-accredited Paediatric Cardiology Training Program is the largest in Canada and one of the largest and most sought after in North America. As such, its fellows have populated cardiology groups throughout the world, many going on to become leaders of our specialty.

The single most important development of the last decade, however, has been the establishment of the Labatt Family Heart Centre. Following a series of important internal initiatives, the extraordinary generosity of the Labatt family has funded the redevelopment and future activities of the heart centre at SickKids.
PUBLICATIONS


Sarkola T, Redington AN, Keeley F, Bradley TJ, Jaeggi ET: Transcutaneous very high resolution ultrasound to quantify arterial wall layers in muscular and elastic arteries: Validation of a method. Atherosclerosis 2010: July 7 [Epub ahead of print].


**BOOKS AND BOOK CHAPTERS**


**FUNDING**


Can post-operative biventricular pacing improve cardiac output and decrease mechanical ventilation in children with electro-mechanical dyssynchrony after surgical repair of atrioventricular septal defect? Friedberg M, Stephenson EA. **Labatt Family Heart Centre Innovation Funding** ($48,640.50 2010-2012)


Echocardiographic assessment of diastolic dysfunction in children with congenital heart disease. Golding F. **Labatt Family Heart Centre Innovation Fund** ($25,000 2010)

Environmental factors affecting cardiac development. Understanding the mechanisms of cardiac malformations. Mital S. **Labatt Family Heart Centre Innovation Fund** ($34,300 2010)
Establishment of normal values for echocardiography ventricular and vascular functional research. Mertens L, Friedberg MK, Bradley TJ, Jaeggi ET. Labatt Family Heart Centre Innovation Fund ($48,000 2010-2013)

Genetics of heart disease in children. Mital S. Labatt Family Heart Centre Innovation Fund ($450,000 2010-2013)

GenomeHeart. An international network to study cardiac malformations. Mital S. Ontario Ministry of Research and Innovation International Strategic Opportunities Program ($149,880 2010-2013)


Longitudinal assessment of the effects of bi-ventricular pacing in AVSD – 3rd round. Friedberg M, Stephenson E. Labatt Family Heart Centre Innovation Fund ($48,460.50 2010)

Molecular expression and epitopes in congenital heart block. Hamilton R, Jaeggi E, Silverman ED. ICRH Mandate Bridge Funding ($100,000 2010-2011)


Pilot study to evaluate the effect of peri-operative diastolic function on post-surgical course in infants with hypoplastic left heart syndrome. Friedberg M, Mertens L, Schwartz S, Jaeggi E, Fernandes F. Labatt Family Heart Centre Innovation Fund ($44,868 2009-2011)


Transplant Centre Biobank. Mital S. SickKids Transplant Centre ($300,000 2010-2012)

Ventricular-ventricular interactions and their modulation for enhancement of right ventricular performance in pulmonary arterial hypertension. Friedberg M, Redington A, Humpl T, Mertens L. Canadian Institutes of Health Research ($298,500 2010-2013)
DIVISIONAL OVERVIEW

The Division of Clinical and Metabolic Genetics provides excellent clinical care and supports a variety of research, educational and administrative programs.

In August of 2009, the Division welcomed Dr. Komudi Siriwardena, staff geneticist, who joined the genetic metabolic team. Dr. Annette Feigenbaum moved to the United States in June 2010 but will continue with ongoing research projects.

Research endeavours in the Division are a vital part of our program and currently focus on the translation of new genomic information for patients and their families. There is continuing increase in the use of microarrays for genetic testing. The influx of genomic data for many of our patients has affected our patterns of practice. There are many new challenges in the interpretation of entirely novel data in clinical settings.

The Ninth Annual Starbucks Clinical Research Summer Students Competition was awarded to Dr. Andreas Schulze, Quantitative in vivo magnetic resonance (MR) spectroscopy of the brain in children as standard of care at SickKids; Dr. Julian Raiman, Treatment of X-linked adrenoleukodystrophy (XALD) with Lovastatin; Dr. Sarah Bowdin, Molecular genetic testing in a cohort of paediatric patients with cardiomyopathy; and Dr. Rosanna Weksberg, Assisted Reproduction: Does folate metabolism play a role in determining risks to offspring?

A new annual research seed grant competition named for Dr. Rosanna Weksberg was established. The award was established to promote innovative academic, scholarly and research related projects in the field of genetics. Funding will be provided via donated funds to support novel research ideas that may not be funded through conventional funding agencies. The first awardees were Dr. Roberto Mendoza, Dr. Julian Raiman and Dr. Andreas Schulze. A criteria for submission to this competition is that there must be at least one trainee (resident, fellow or genetic counselling student) as part of the research team.

We have participated in several initiatives with other subspecialties at SickKids to organize the genetic service in parallel with their respective clinics. These clinics include Orthopaedic Surgery, Neurology and Cardiology.

As with many clinics at SickKids, transitioning our patients to adult facilities requires careful planning. The Genetic Metabolic team has developed a genetic metabolic passport with the Good2Go team for patients between the ages of 16 and 18. A transition strategy includes a readiness checklist, GMD passport, formal genetic counselling, discussion of the adult transfer plan, as well as planning a meet and greet visit to the adult genetics program at Toronto General Hospital just prior to their last metabolic clinic visit at SickKids. In addition, the Genetic Metabolic team, led by Dr. Hanna Faghfoury, is currently developing a transitional care checklist for genetic metabolic patients aged 13 to 15. The checklist is for the team to use with this age group to identify areas for discussion in the areas of medical needs, diet, psychosocial and schooling. Tools from the Good2Go program will be utilized, including the readiness checklists and Myhealth passport. The Phenylketonuria team held their annual education day in conjunction with SickKids Specialty Food Shop in April. Families were able to take part in cooking demonstrations and hear from experts in the field.
A number of divisional members were honoured at this year’s Department of Paediatric Awards Day. Dr. David Chitayat received the Continuing Education Award for Excellence in Long-term Contributions in Course Coordination. Dr. Roberto Mendoza received the Subspecialty Teaching Award which recognizes educational excellence in clinical teaching by a full-time faculty member in the Department of Paediatrics within a subspecialty program. Dr. Elaine Goh received the CanMEDS Competencies Award which honours a trainee (core paediatric and paediatric subspecialty residents and fellows) who exemplifies one or more of the non-medical expert competencies embodied in the Royal College of Physicians and Surgeons of Canada. Dr. Brian Chung received the Residents Research Day Award for excellence in resident, subspecialty and fellow research. Deb Taylor received the Paediatric Administrative Award in recognition of outstanding performance and excellence in all aspects of administration.

In addition, three teaching awards to honour excellence in teaching within the Division were established. These awards were voted on by the trainees and students. The Margaret M. Thompson Award, presented to a staff member for excellence in teaching, was awarded to Dr. Roberto Mendoza. The Joe T.R. Clarke Award, presented to a trainee for excellence in teaching, was awarded to Dr. Elaine Goh, and the Interprofessional Teaching Award, presented to an interprofessional staff member for excellence in teaching, was awarded to Ms. Stacy Hewson, genetic counsellor with the Genetic Metabolic program.

Dr. Daune MacGregor received two awards this year - The College of Physicians and Surgeons of Ontario’s Council Award and the Paediatric Chairs of Canada’s National Paediatric Academic Leadership – Clinical Practitioner Award. The CPSO Council Award is given to a physician who has demonstrated excellence and comes closest to meeting the society’s vision of an “ideal physician.” The PCC’s Leadership Award recognizes Dr. MacGregor’s outstanding contributions to leadership in clinical care, professional activities and education and training.

Two of our interprofessional staff members were also presented with awards this year. Ms. Cheryl Shuman, Director of Genetic Counselling, was awarded the Leadership Award from the Canadian College of Genetic Counsellors. This award is in recognition of exceptional initiative and creativity in expanding the scope and visibility of the genetic counselling profession in Canada and a significant contribution to the professional development of its members. Ms. Dawn Cordeiro, a nurse with the Genetic Metabolic program, received a Daisy Award in 2009. The Daisy Award is presented to a nurse at SickKids who demonstrates extraordinary skill and compassionate care.

HONOURS AND AWARDS
Chitayat D: Continuing Education Award for Excellence in Long-term Contributions in Course Coordination, Department of Paediatrics, University of Toronto, The Hospital for Sick Children, June 2010.

Goh E: Gorlin Award for Best Trainee Presentation, David W. Smith Workshop, 2009.

Goh E: CanMEDS Competencies Award, Paediatric Subspecialty Resident, Department of Paediatrics, University of Toronto, The Hospital for Sick Children, June 2010.

Goh E: Joe T.R. Clarke Award (Teaching Excellence), Division of Clinical and Metabolic Genetics, May 2010.


Mendoza-Londono R: Subspecialty Teaching Award for Excellence in Clinical Teaching, Department of Paediatrics, University of Toronto, The Hospital for Sick Children, June 2010.


Raiman J: Toronto EMS Citizenship Award, 2010.

PUBLICATIONS


**BOOKS AND BOOK CHAPTERS**


**FUNDING**

A phase 2, fixed-sequence, open-label, switch-over study of the safety and tolerability of HPN-100 compared to sodium phenylbutyrate in children 6–17 years of age with urea cycle disorders, with a long-term safety extension. Feigenbaum A. **Hyperion Therapeutics** ($31,878 2009-2011)

A phase 3, randomized, double-blind, cross-over, active-controlled study of the efficacy and safety of HPN-100, glyceryl tri-(4-phenylbutyrate), for the treatment of adults with urea cycle disorders (Help UCD) Feigenbaum A. **Hyperion Therapeutics** ($30,660/patient 2010-2012)

A phase 3, open-label study of the safety of HPN-100 for the long-term treatment of urea cycle disorders (Treat UCD) Feigenbaum A. **Hyperion Therapeutics** ($33,560/patient 2010-2012)


Brain and whole body anatomy study in AGAT and GAMT mice with high-resolution magnetic resonance imaging. Schulze A. **Mead Johnson/Weston Endowment 2010** ($13,790 2010)

Canadian Molecular Cytogenetics Platform. Friedman JM, Chitayat D. **Canadian Foundation for Innovation** ($4,512,925 2005-2010)

Common pathways of human DNA double strand break repair and telomere maintenance. Meyn MS. **Canadian Cancer Society/SickKids Research Institute** ($122,877 2009-2014)

Constitutional epigenetic and genetic errors and the risk of paediatric cancer. Weksberg R. **SickKids Foundation New Ideas Grant** ($50,000 2009-2010)


Delineating the natural history of caffey disease. Mendoza R, Guerin A. Dr. R. **Weksberg Research Grant Competition** ($6,980 2010-2011)
Developing and implementing a transitional care checklist in the genetic metabolic clinic at The Hospital for Sick Children.
Raiman J, Faghfoury H, Burr L, Sappleton K. Dr. R. Weksberg Research Grant Competition ($6,180 2010-2011)

DNA damage responses in human hematopoietic stem and progenitor cells – A pilot study. Meyn MS. SickKids Cancer Center New Ideas Grant ($49,600 2009-2010)

DNA sequencing as a diagnostic tool for FBP1 gene mutations in Costa Rican patients with fructose-1, 6-bisphosphatase deficiency. Schulze A, Badilla R, Stockley T. Dr. R. Weksberg Research Grant Competition ($6,880 2010-2011)

Factors associated with making a diagnosis in patients presenting with cleft lip and palate or cleft palate alone. Bowdin S. Starbucks Summer Studentship Award ($5,000 2010)


Lysosomal storage disease chart review. Raiman J. Starbucks Summer Studentship Award ($4,800 2010)

Organization for the study of sex-differences, third annual meeting. Weksberg R. Canadian Institute of Health Research ($15,000 2009)

Patient iPSC cells with copy number variations to model neuropsychiatric disorders. Ellis J, Scherer S, Weksberg R. National Institutes of Health ($207,388 2009-2011)

PKU 015. A phase 3b open-label study to evaluate the effect of Kuvan® on neurocognitive function, maintenance of blood phenylalanine concentrations, safety, and population pharmacokinetics in young children with phenylketonuria. Feigenbaum A. Biomarin ($38,780/patient 2009-2016)


Quantitative in vivo magnetic resonance (MR) spectroscopy of the brain in children as standard of care at SickKids. Schulze A. Starbucks Summer Studentship Award ($4880 2009)

The SickKids Research Institute infrastructure grant. Meyn MS, Rossant J. Canadian Foundation for Innovation ($91,119,176 2008-2013)

Treatment of GAMT (guanidinoacetate methyltransferase) deficiency with high-dose ornithine to reduce the accumulation of the neurotoxin guanidinoacetate by inhibition of the AGAT enzyme (arginine:glycine amidinotransferase). Schulze A. Heinz/Mead Johnson/Weston Endowment 2010 ($13,000 2010)
<table>
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<tr>
<th>DIVISION HEAD</th>
<th>Dr. Shinya Ito</th>
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</table>
| FULL-TIME             | Dr. Gideon Koren  
|                       | Dr. Irena Nuiman  
|                       | Dr. Margaret Thompson  |
| PART-TIME             | Dr. David Juurlink  
|                       | Dr. Lisa Thurgur  |
| SCIENTIFIC STAFF      | Dr. Patricia Harper |
| CROSS-APPOINTEES/     | Dr. Sylvain Baruchel  
| CLINICAL              | Dr. Sheila Jacobson  
|                       | Dr. Prashant Joshi  
|                       | Dr. Christopher Parshuram  
|                       | Dr. Savithiri Ratnapalan  |
| CROSS-APPOINTEES/     | Dr. Denis Scolnik  
| SCIENTIFIC            | Dr. Marco Sivilotti  |
|                       | Dr. Lidia Derewlany  
|                       | Dr. Alejandro Nava-Ocampo  |
| CLINICAL FELLOWS      | Dr. Facundo Garcia  
|                       | Boumissen  |
|                       | Dr. Shahnaz Chaudhry  |
The Division of Clinical Pharmacology and Toxicology focuses on a wide range of drug-related issues in pediatrics. The Division is one of the largest and the most active pediatric pharmacology programs internationally. Our major clinical activities include a consultation service, the Motherisk program (a reproductive toxicology program), the Ontario Poison Centre, and DART (Drug Allergy, Reactions, and Toxicity) clinic in collaboration with the Division of Allergy and Immunology to provide specialized outpatient follow-up and management for those with various drug/toxin-related problems. The two information centres receive annually about 35,000 (Motherisk) and 75,000 (Poison Centre) inquiries, which have reached the limit of the response capacity of the systems. Motherisk Program directed by Dr. Gideon Koren continues to generate and disseminate new knowledge in the field of drug safety for fetus and breastfeeding babies. The 25th anniversary of the Motherisk program was celebrated during the annual Motherisk Update conference, which attracted more than 200 participants. The Ontario Poison Centre led by Dr. Margaret Thompson has now become a hub to medical toxicology training in Canada, attracting many residents and fellows nationally and internationally.

Research in the Division includes drug metabolizing enzymes and their regulation, drug transporters, placental and mammary gland drug transport and metabolism, and reproductive toxicology and teratology. The breadth and depth of these basic and clinical research programs are shown in the publications (over 60) and funding records (over 2 million during this time period). Our Division members serve as editor and associate editor of key journals in the discipline, showing strong leadership in the field.
HONOURS AND AWARDS


Nulman I: Schwarz-Reisman SickKids Scholar Award, Hospital for Sick Children, 2009.

PUBLICATIONS


Koren G: ACP Journal Club. SSRIs in early pregnancy were associated with increased risk for septal heart defects but not major congenital malformations overall. Annals of Internal Medicine 2009: 151: JC6-JC15.


Shor S, Nulman I, Kulaga V, Koren G: Heavy in utero ethanol exposure is associated with the use of other drugs of abuse in a high-risk population. Alcohol 2009: December 21 [Epub ahead of print].


BOOK CHAPTERS

FUNDING


Biologically-based outcome predictors in Juvenile radiopathic arthritis. Rosenberg J, Koren G. Canadian Institutes of Health Research ($1,250,000 2007-2012)


Centre for the study of complex childhood diseases (CSCCD). Post M, Koren G. Canadian Foundation for Innovation ($2,400,000 2007-2010)

Developing a national screening tool kit for those identified and potentially affected by FASD. Koren G. Public Health Agency of Canada ($708,000 2007-2012)

Drugs and human milk. Ito S. Canadian Institutes of Health Research ($376,323 2007-2010; $602,292 2010-2015)

Environmental Team Grant: Effects of brominated flame retardants on reproductive health on development. Koren G, Goodyer C. Canadian Institutes of Health Research ($2,500,000 2010-2015)

Baseline biomonitoring studies and a survey of child-youth health as prerequisites to epidemiological studies to assess the health risk of the Attawapiskat first nation and Walpole island first nation. Koren G, Bend J, Rieder M. First Nation & Inuit Branch ($249,000 2009-2010)
<table>
<thead>
<tr>
<th>Research Project</th>
<th>Funding</th>
<th>Institution/Agency</th>
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<tr>
<td>Genotype specific approaches to therapy in childhood -</td>
<td>$105,000/year 2009-2014</td>
<td>Canadian Institutes of Health Research</td>
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<tr>
<td>Canadian Pharmacogenomic Network for Drug Safety. Ito S.</td>
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<td>Koren G.</td>
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<td>Neurodevelopment of children exposed in utero to chemotherapy for maternal breast</td>
<td>$436,257 2010-2012</td>
<td>Canadian Breast Cancer Foundation</td>
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<td>cancer. Nulman I.</td>
<td></td>
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<tr>
<td>Novel transcriptional control of human CYP3A. Ito S.</td>
<td>$340,540 2007-2010</td>
<td>Canadian Institutes of Health Research</td>
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<td>Obstetric Pharmacology Research Network: An RCT of diclectin for nausea and</td>
<td>$9,200,000 2007-2010</td>
<td>Duchesnay Inc./National Institutes of Health</td>
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<td>vomiting in pregnancy. Koren G.</td>
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<td>Pain in preterm infants in development and effects. Grunan R, Koren G.</td>
<td>$1,304,369 2007-2012</td>
<td>National Institutes of Health</td>
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<td>Pharmacokinetics of folate in pregnancy. Koren G.</td>
<td>$96,000/year 2006-2012</td>
<td>Duchesnay Inc.</td>
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<td>Pilot Project - Diagnosis of FASD in children in the care of</td>
<td>$55,000/year 2009-2011</td>
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<td>Children’s Aid Society of Toronto and Catholic Children’s Aid Society. Nulman I.</td>
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<td>Population pharmacokinetics of benznidazole in children with Chagas disease.</td>
<td>$25,000 US 2008-2010</td>
<td>Thrasher Research Fund</td>
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<td>Bournissen F, Koren G.</td>
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<td>Studies on pregnancy exposure to medications and vaccines. Koren G, Chambers C.</td>
<td>$5,300,000 US 2004-2012</td>
<td>Organization of Teratology Information Services</td>
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<td>The association between fatty acid ethyl esters in meconium and the diagnoses</td>
<td>$54,950 2008-2011</td>
<td>Canadian Foundation on Fetal Alcohol Research</td>
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<td>of FASD in an at-risk Canadian population. Nulman I.</td>
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<td>The effect of supra-therapeutic doses of Diclectin on child’s</td>
<td>$487,600 2005-2010</td>
<td>Duchesnay Inc.</td>
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<td>neurodevelopment. Nulman I.</td>
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<td>Pharmacokinetics of folate in pregnancy. Koren G.</td>
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<td>Duchesnay Inc. ($96,000/year 2006-2012)</td>
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<td>Use of antidepressant medications during pregnancy and lactation: Development</td>
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<td>of an evidence-based decision tool. Grigoriadis S, Koren G.</td>
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<td>of an evidence-based decision tool. Grigoriadis S, Koren G.</td>
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<td>The Ivey Chair in Molecular Toxicology. Koren G.</td>
<td>$250,000/year 2004-2014</td>
<td>Canadian Institutes of Health Research</td>
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<td>The role of placenta in fetal toxicology. Koren G.</td>
<td>$584,309 2007-2011</td>
<td>Canadian Institutes of Health Research</td>
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<tr>
<td>Use of antidepressant medications during pregnancy and lactation: Development</td>
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</table>
DIVISION HEAD
Dr. Darcy Fehlings

FULL-TIME
Dr. Evdokia Anagnostou
Dr. Douglas Biggar

Dr. Ryan Hung
Dr. Elizabeth Jimenez
Dr. Anne Kawamura
Dr. Alvin Loh
Dr. Laura McAdam

Dr. Golda Milo-Manson
Dr. Angela Orsino
Dr. Wendy Roberts
Dr. Jay Rosenfield
Dr. Peter Rumney

PART-TIME AND/OR COMMUNITY PHYSICIANS:
Dr. Paige Church
Dr. Janine Flanagan
Dr. Cynthia Goldfarb
Dr. Mark Handley-Berry

PART-TIME AND/OR COMMUNITY PHYSICIANS:
Dr. Golda Milo-Manson
Dr. Angela Orsino
Dr. Wendy Roberts
Dr. Jay Rosenfield
Dr. Peter Rumney

Dr. Nicola Jones-Stokreef
Dr. Peggy Kirkpatrick
Dr. Donald O'Leary
Dr. Anne Richards
Dr. Clive Schwartz
Dr. David Shawn
Dr. Diann Superina-Bell
Division of Developmental Paediatrics

DIVISIONAL OVERVIEW

The Division of Developmental Paediatrics is situated at Holland Bloorview Kids Rehabilitation Hospital. The Division consists of full-time physicians as well as a community section of developmental paediatricians. The main clinical focus of the Division is on childhood developmental disorders, such as cerebral palsy and autism spectrum disorders. In addition, there is a paediatric rehabilitation component with the acquired brain injury and neuromuscular programs.

Within the Division, there is a strong commitment to education. Under the leadership of Dr. Anne Kawamura as program director, the fully accredited subspecialty residency program in developmental paediatrics is the largest in Canada. There is also a commitment to training paediatric, physiatry, and neurology residents and medical students in applied childhood disability.

The Division members actively lead applied clinical research in childhood disability studies, in association with the Holland Bloorview Research Institute led by Dr. Colin Macarthur.

HONOURS AND AWARDS

Biggar D: Dr. David Green Award, Muscular Dystrophy Canada, July 2009.

Biggar D: Physiatry Residency Program, Best contribution to the program quality, June 2010.

Fehlings D: Top scientific poster, Annual Meeting for the American Academy for CP and Developmental Medicine, 2009.

Fehlings D: Honourary Member, European Academy of Childhood Disability, 2010.


Roberts W: Professional Award for Excellence in Research, Ontario Association on Developmental Disabilities Research Special Interest Group, 2010.

Roberts W: Power Teacher, Award for Outstanding Contributions to Postgraduate Teaching, Department of Paediatrics, University of Toronto, 2010.

PUBLICATIONS


CROSS-APPOINTEES/ SCIENTIFIC STAFF

Dr. Jessica Brian
Dr. Colin Macarthur
Dr. Patricia McKeever

FELLOWS

Dr. Ghassan Abu-Kwaik
Dr. Michal Begin
Dr. Nirit Brosh-Katz
Dr. Melissa Carter
Dr. Andrea Garbutt

Dr. Joeline Huber
Dr. Sharon Smile
Dr. Elizabeth Young

ADMINISTRATIVE STAFF

Maureen Hodge
Barbara Zimnowodzki

ADMINISTRATIVE STAFF AT BLOORVIEW KIDS REHAB

Merlene Chin
Joanne Jenah
Romana Kmetova
Sharon Guellette


FUNDING


A pilot dose finding study of pioglitazone in children with ASD. Anagnostou E, Brian J, Dupuis A. Dean’s Fund ($10,000 2010-2011)


Active video games for promotion of physical activity in children and youth with disabilities: Risks and benefits. Biddiss E, McKeever P, Wright V, Chau T, Fehlings D. Canadian Institutes of Health Research ($147,272 2010-2013)


Autism comes to the hospital: Experiences of hospital care from the perspectives of children and adolescents with autism spectrum disorder, their parents and health care providers. Muskat B, Nicholas D, Roberts SW, Stoddart K, Zwaigenbaum L. SickKids Foundation and the Institute of Human Development, Child and Youth Health - Canadian Institutes of Health Research ($190,000 2010-2012)


Biometric authentication using handwriting biomechanics. Chau T, Anagnostou E, Fleury A. Natural Sciences and Engineering Research Council of Canada ($340,000 2010-2013)

Canadian Injury Indicators Development, Phase II. Pike I, Macpherson A, Macarthur C, Warda L, Babul S, Goodman D, Raina P. Canadian Institutes of Health Research ($225,000 2008-2011)

Children’s, parent’s and rehabilitation professionals’ beliefs regarding the value of walking: CIHR training grant in autism research. Fombonne E, Bryson S, Paterson A, Scherer S, Roberts W, Szatmari P, Smith I, Moore C. Canadian Institutes of Health Research ($1,950,000 2009-2015)


Final stages of the development of the GMFM challenge module: A new advanced motor skills test for children with cerebral palsy. Wright V, Fehlings D. *Physiotherapy Foundation of Canada* ($2,000 2010-2011)


Genome wide DNA methylation profiling in autism. Weksberg R, Roberts SW, Scherer S. *Canadian Institutes of Health Research* ($649,518 2008-2011)


Long term follow-up of boys with Duchenne muscular dystrophy. Biggar WD. Cooperative International Neuromuscular Research Group ($6,000 2007-2012)


The experience of autism over the course of paediatric development. Nicholas D, Roberts SW, McKeever P. SickKids Foundation ($95,996 2008-2010)


The lived experience of mothers of children with autism. Nicholas D, Roberts SW, McKeever P. Social Sciences and Humanities Research Council ($154,000 2008-2011)

DIVISION HEAD
Dr. Mark R. Palmert

FULL-TIME
Dr. Denis Daneman
Dr. Jill Hamilton

Dr. Farid Mahmud
Dr. Kusiel Perlman
Dr. Etienne Sochett
Dr. Diane Wherrett

PART-TIME
Dr. Jacqueline Curtis
Dr. Susan Kirsch
Dr. Dror Koltin
Dr. Stacey Urbach

GYNAECOLOGY
Dr. Lisa Allen
Dr. Nicolette Caccia
Dr. Sari Kives
Dr. Alexandra Nevin-Lam
Dr. Melanie Ornstein
Dr. Rachel Spitzer

CROSS-APPOINTEES
Dr. Amira Klip
Dr. Joanne Rovet

HONOURARY
Dr. Robert Ehrlich
Division of Endocrinology

DIVISIONAL OVERVIEW

The past academic year was productive for the Division of Endocrinology with ongoing development of existing programs and new innovations. We continued our efforts to train future endocrinologists from Canada and around the world. This year, we had 10 trainees in our subspecialty training program: three Canadians, three Israelis, two Irish, one Kuwaiti and one German.

Our areas of clinical focus continue to be: (i) Diabetes: our comprehensive program provides ongoing care to more than 1,000 children and teens with diabetes, including a program for comprehensive assessment and treatment of adolescents with chronically poor diabetes control. New programs for youth with type II diabetes and medication-induced diabetes are also being developed; (ii) General Endocrinology: emphasizing the areas of growth, thyroid disease, disorders of sex development, pubertal disorders and reproductive health; (iii) Calcium: the Calcium-Bone and Bone Health Clinics assess children with abnormal bone health from a wide variety of causes as part of the multidisciplinary Bone Health Centre; and (iv) Gynecology Section: provides care to pre-teen and adolescent girls across a wide spectrum of disorders.

We continued to develop further our pathways for the care of children with thyroid cancer in collaboration with Oncology, Otolaryngology and Nuclear Medicine; to enhance our program designed to provide care to survivors of paediatric cancer who develop endocrine abnormalities; and to develop further our obesity program.

An important innovation this year was the launch of the SickKids Team Obesity Management Program. STOMP is an interdisciplinary medical-surgical program for obese children and youth. The program is intended for children and adolescents with complex, severe obesity defined as: greater than the 99th percentile for BMI, or greater than the 95th with an associated severe medical or psychosocial co-morbidity or additional chronic illness impacted by obesity (e.g. solid organ transplant, brain tumour-related hypothalamic obesity). STOMP is an intensive two-year program focusing on healthy lifestyle psychoeducation and cognitive behavioural therapy with access to surgical intervention (lap band bariatric procedure). The interdisciplinary team consists of three physicians (endocrinology, general paediatrics and general surgery), an exercise therapist, psychologist, dietitian, social worker, information coordinator and nurse practitioner.

Our research efforts have targeted the following areas: (i) prediction and prevention of type 1 diabetes: our group is involved in the multinational TrialNet and TRIGR study groups; (ii) implications and treatment of insulin resistance and obesity among children and adolescents and the evolution of these abnormalities in young children; (iii) identification of factors affecting metabolic control and the early complications of diabetes; (iv) psychosocial and psychological outcomes in diabetes and other endocrine disorders; (v) evaluation of disorders of calcium and bone mineral metabolism in paediatrics; and (vi) clinical and laboratory-based investigation of complex genetic traits, with an emphasis on identification of genes that regulate the timing of puberty.
HONOURS AND AWARDS

Daneman D: Frederick Kenny Visiting Lecturer, Children’s Hospital/University of Pittsburgh.

Daneman D: John F. Crigler Visiting Lecturer, Boston Children’s Hospital/Harvard Medical School.

Daneman D: ISPAD (International Society for Pediatric and Adolescent Diabetes) Prize for Achievement.

Daneman D: Alvin B Hayles Visiting Lecturer, Mayo Clinic Medical School.

Hamilton J: Hospital for Sick Children Foundation: Humanitarian Award Nomination for Family Advisory Committee Award, 2009 (nominated by patients and their families for providing family-centred care).

Hamilton J: POWER Teacher Award, Department of Pediatrics, University of Toronto: Outstanding Contributions to Postgraduate Teaching, 2010.

PUBLICATIONS


BOOKS AND BOOK CHAPTERS


**FUNDING**

Adolescent type 1 diabetes cardio-renal intervention trial (AdDIT). Daneman D. *The Hospital for Sick Children* ($91,020 2008-2012)

Adolescent diabetes intervention trial (AdDIT) (retinopathy and cardiovascular). Daneman D, Curtis J, Mahmud F, Sochett E. **Canadian Diabetes Association** ($85,000 2009-2012)


Adolescent type 1 diabetes cardio-renal intervention trial (AdDIT). Daneman D, Curtis J, Sochett S, Mahmud F. **Brainchild Foundation** ($20,632 2010-2012)

Autonomic nervous system regulation in adolescents and children treated for craniopharyngioma. Hamilton J, McCrindle B, Syme C. **Brainchild Foundation** ($20,632 2010-2012)

Bypassing insulin resistance of muscle cells caused by ceramide, oxidative stress and macrophage-co-culture. Klip A. **Canadian Diabetes Association** ($300,000 2006-09)

Brain function in FASD: Neuroanatomy of Memory Mapping. Rovet J. **Canadian Foundation for Fetal Alcohol Research** ($64,000 2008-2010)

CASE Center for transdisciplinary research on energetics and cancer: Determinants of obesity and metabolic dysfunction in adolescents. Berger N, Redline S, Palmert MR. **National Institutes of Health/National Cancer Institute** ($1,529,233 2005-2010)

Comparison of continuous versus cyclical use of a 30-MCG ethinyl estradiol 0.15 mg desogestrel oral contraceptive pill in adolescents. Allen L, Brown C. **Akzo Nobel – Organon Canada** ($24,500 2006-2011)

Comparison of continuous versus cyclical use of a 30-MCG ethinyl estradiol 0.15 mg desogestrel oral contraceptive pill in adolescents. Allen L, Brown C. **Physicians’ Services Incorporated Foundation** ($70,500 2006-2011)


Exploring the mechanisms of risk for type 2 diabetes in adolescents. Hamilton J, O’Gorman C. **Adrian and Rita Hudson Fund at the Toronto Community Foundation** ($38,611 2009-2010)

Gene by environment interactions that modulate pubertal timing. Palmert MR, Grasemann C. **The Hospital for Sick Children Research Training Centre** ($80,000 2009-2010)
Gene by Environment interactions that modulate pubertal timing. Palmert MR, Wang M. Institute of Medical Science Summer Undergraduate Student Research Award ($2,400 2009-2009)

Genetic factors that regulate the onset of puberty. Palmert MR. National Institutes of Health/National Institute of Child Health and Human Development ($1,633,256 2005-2010)

Growth hormone therapy and bone quality in pediatric osteoporosis. Sochett E, Grynpas M. Eli Lilly Canada ($125,000 2006-2009)

Hemodynamic modulation in type 1 diabetes. Miller J, Sochett E, Cherney D. Canadian Institutes of Health Research ($127,603.17 2007-2012)


Intracellular compartment plasticity and signal transmission in insulin action. Klip A. Canadian Institutes of Health Research ($759,560 2005-2010)

Interplay between fatty acids and macrophages in the genesis and relief of muscle cell insulin resistance Klip A. Canadian Diabetes Association ($255,000 2009-2012)

JDRF (Juvenile Diabetes Research Foundation) and Diabetes UK (AdDIT) Study, Daneman D. Juvenile Diabetes Research Foundation and Diabetes UK ($85,000 2008-2012)

Mapping brain function in Fetal Alcohol Spectrum Disorders: Neuroanatomy of memory. Rovet, J. Canadian Institutes of Health Research ($100,000 2008-2010)

Mobile phone-based self-management system for adolescents with Type 1 diabetes mellitus: A home-based self-care tool that links the client and family with their health care team. Cafazzo J, Palmert MR, Katzman D. Applied Client-Focused Team (ACT) Grant, St. Elizabeth's Care to Know Center ($119,000 2009-2010)


Regulation of muscle glucose transporters by Rac and Rab during insulin action and lipotoxicity. Klip A. Canadian Institutes of Health Research ($724,217 2010-2015)

The role of eyes and gaze in normal and abnormal social cognition development. Rovet J. Canadian Institutes of Health Research ($100,000 2009-2011)


The GH Monitor Registry. Hamilton J (Principal Investigator SickKids site). Serono Canada Incorporated (Funding is distributed on a per patient basis) ($6,200 2005-2010)

The GLUT4 interactomes and their metabolic implications. Klip A. Canadian Institutes of Health Research ($818,206 2007-2012)


The role of eyes and gaze in normal and abnormal social cognition development, Rovet J. Canadian Institutes of Health Research ($100,000 2009-2011)

Type 1 Diabetes in Adolescents and Youth (TODAY). Palmert MR, Dahms W. National Institutes of Health/National Institute of Diabetes and Digestive and Kidney Diseases ($3,240,000 2002-2010)

Type 1 Diabetes genetics consortium. Wherrett DK. National Institutes of Health contract with Benaroya Research Institute ($15,000 US 2004-2009)

Type 1 Diabetes TrialNet Toronto Clinical Centre. Wherrett DK. National Institutes of Health ($500,000 2009-2010)

Type 1 Diabetes TrialNet. Toronto Clinical Centre. Wherrett DK. National Institutes of Health ($2,100,000 + $100,000 per year 2009-2014)

Use of ACASI to gather information on risk behaviours in a referral population of pregnant Canadian adolescents. Spitzer RF. Physicians’ Services Incorporated Foundation ($37,800 2010-2012)

DIVISIONAL OVERVIEW

The Division of Gastroenterology, Hepatology and Nutrition provides subspecialty clinical care to children and adolescents with gastrointestinal, pancreatic, hepatologic and nutritional disorders, including those who have undergone liver and/or small bowel transplantation. Clinical volumes and patient complexity have increased steadily, with busy in-patient, ambulatory and procedural practices. The year 2009-2010 was one of change for the Division, marked by the appointment of three new full-time faculty members. The Division welcomed Dr. Yaron Avitzur, as Medical Director, Intestinal Failure and Transplant Program; Dr. Binita Kamath as a Clinician/ Investigator in the Hepatology program; Dr. Thomas Walters as Co-Director of the Inflammatory Bowel Diseases Program and Director of Endoscopic Procedures.

The Division is responsible for the University of Toronto fellowship training program in Paediatric Gastroenterology, Hepatology and Nutrition, which has an international reputation for training academic subspecialists. The program, which usually accepts four new fellows annually, consists of one year of intensive clinical training and two or more years of training in basic or clinical research. The clinical component includes training in endoscopic procedures, inpatient management of complex patients including those awaiting and undergoing liver transplantation and those with inflammatory bowel disease; ambulatory clinics (including general GI, IBD, hepatology, transplantation, feeding disorders, and nutrition). To complement their clinical or basic science research training, fellows are encouraged to complete a post-graduate degree (MSc or PhD) at either the Faculty of Health Promotion, Management and Epidemiology (HPME) or the Institute for Medical Sciences at the University of Toronto. The emphasis placed on academic scholarly work during training is aimed at preparing fellows for careers in academic paediatric gastroenterology both in Canada and around the world.

Divisional faculty conduct research which spans the spectrum from basic and translational to patient-based in such areas as inflammatory bowel disease, exocrine pancreatic diseases, liver diseases, GI microbiology and immunology, nutritional metabolism and nutrient requirements. Increasingly, faculty collaborate in or lead large multi-centre research consortia addressing both pathogenesis and treatment of childhood liver disease, cystic fibrosis, and inflammatory bowel disease.

HONOURS AND AWARDS

Durie P: Henry Lynch Lifetime Achievement Award, Division of Gastroenterology, Hepatology and Nutrition, University of Pittsburgh, 2010.

Durie P: Physician Researcher Award for Research Excellence, Department of Pediatrics, University of Toronto, 2010.

Griffiths A: Richard Rowe Award for Clinical Excellence in Paediatric Medical Care, Department of Pediatrics, 2010.

Sherman P: NASPGHAN Harry Shwachman Award, 2010.


Zlotkin SH: Danone Institute Distinguished Nutrition Leadership Award, 2010.


Bandsma R: Canadian Institutes of Health Research Fellowship Award, 2010.

Bandsma R: Banting and Best Fellowship, 2010.


Ooi K: Clinical Research Award, Research Day, Department of Paediatrics, University of Toronto, Canada, 2010.


Sherlock M: Inflammatory Bowel Disease Fellowship – awarded by the Canadian Association of Gastroenterology/Canadian Institutes of Health Research/UCB Pharma, 2010.

Walsh C: Canadian Child Health Clinician Scientist Program Doctoral Award from the Canadian Institutes of Health Research, 2009.

Walsh C: Department of Paediatrics Research Fellowship Award, Hospital for Sick Children, 2009

Walsh C: University of Toronto Standardized Patient Program’s 25th Anniversary Grant, 2010


**PUBLICATIONS**


Turner D, Griffiths AM, Steinhart H, Otley AR, Beaton DE. Mathematical weighting of a clinimetric index (Pediatric Ulcerative Colitis Activity Index) was superior to the judgmental approach. Journal of Clinical Epidemiology 2009: 62(7): pp 738-744.


Turner D, Shah P, Zlotkin S, Griffiths AM: Omega-3 fatty acids (fish oil) for maintenance of remission in inflammatory bowel disease: a systematic review and meta-analyses. Inflammatory Bowel Disease 2010: June 17 [Epub ahead of print].


BOOKS AND BOOK CHAPTERS


FUNDING
A model to predict outcome of liver disease in Alagille syndrome. Kamath B. American Liver Foundation ($50,000/year 2009-2011)

A multi-center group to study acute liver failure in children. Ng V, Fecteau A. National Institutes of Health ($10,800 US 2009-2010)
A multi-center group to study acute liver failure in children.
Squires R, Ng V, Avitzur Y. National Institutes of Health
($10,800 US 2005-2010)

A multi-disciplinary human study on the genetic, environmental and microbial interactions that cause IBD. Croitoru K, Griffiths AM, Ropelski M, Moyeddi P. Crohn’s and Colitis Foundation of Canada ($5,600,000 2007-2012)

A prospective study of linear growth in paediatric IBD.
Denson LA, Griffiths AM. Crohn’s and Colitis Foundation of America ($150,000/year 2007-2010)

A randomized, double-blind, placebo controlled, multiple dose study of VX-809 to evaluate safety, pharmacokinetics and pharmacodynamics of VX-809 in Cystic Fibrosis subjects homozygous for the deltaF508-CFTR gene mutation. Durie P. Vertex Pharmaceuticals, Inc. ($80,000 US 2009-2010)

A study of late rejection and medication non-adherence and after pediatric multi-organ transplantation. Pollock-BarZiv S, Ng V, Dipchand A, Solomon M, Hebert D. Astellas Investigator-Initiated Study Grant ($25,000 2009-2010)

Adalimumab in pediatric Crohn’s disease: A multicentre study. Griffiths AM. Abbott Laboratories (per patient remuneration; anticipated $90,000 2007-2009)


Childhood Liver Disease and Research Network (ChiLDREN) Consortium. Sokol R, Ng V, Avitzur Y. National Institutes of Health ($146,620 2009-2010)


Constipation and toilet training in autism. Marcon M, Green P, Barreria L, Moroz L, Brian J. ATN AIR P funding, Surrey Place Centre ($39,783 2010-2011)


Diagnosing Cystic Fibrosis in neonates and adults: Where do we draw the line? Durie P, Tullis E, Ratjen F. Canadian Cystic Fibrosis Foundation ($120,000/year 2008-2011)

Early predictors of outcome of biliary atresia. Nightingale S, Ng VL. The Royal Australasian College of Physicians ($5,000 2009-2010)


Epithelial cell signaling responses to attaching-effacing intestinal pathogens. Sherman PM. Canadian Institutes of Health Research ($752,500 2008-2013)

Functional outcomes after pediatric liver transplantation. Ng V, Fecteau A. National Institutes of Health ($3,000 US 2009-2010)


Non-invasive tests for the diagnosis of esophageal varices. Ling S, Avitzur Y. Canadian Institutes of Health Research, Synthesis Grant: Knowledge Translation ($68,865 2008-2009)

Genetic predictors of time to recurrence following ileal resection in early onset Crohn disease. McLeod R, Griffiths AM. Crohn's and Colitis Foundation of Canada ($150,000/year 2007-2010)


Outcomes in severe pediatric ulcerative colitis: A multicenter study. Griffiths AM. Schering Canada ($350,000 2007-2009)

Pathobiology and ribosomal insufficiency in Shwachman-Diamond syndrome. Rommens J, Durie P. Canadian Institutes of Health Research ($124,238/year 2010-2015)

Prediction by ultrasound of the risk of hepatic cirrhosis in cystic fibrosis (‘PUSH’). Ling SC, Durie P, Navarro O. Cystic Fibrosis Foundation/National Institutes of Health ($333,000 2009-2013)

The contribution of genetic modulators of disease severity in cystic fibrosis to other diseases with similarities of clinical phenotype. Durie P, Zielenski J. Genome Canada ($5,787,662 2005-2010)

Protocol AI463-08 “Evaluation of the pharmacokinetics, safety, tolerability and efficacy of entecavir (ETV) in pediatric subjects with chronic hepatitis B virus (HBV) infection who are HBeAg positive”. Ling SC. Bristol-Myers Squibb ($25,000/patient 2007-2013)

The impact of an intestinal rehabilitation program on the intestine transplant waiting list. Avitzur Y, Wang J. University of Toronto’s Comprehensive Research Experience for Medical Students Grant ($2,750 2010)

Risk stratification and identification of immunogenetic and microbial markers of CD. Kugathasan S, PRO-KIDS Consortium, Walters TD. Chron’s and Colitis Foundation of Canada Special Purpose Grant ($1,000,000/year 2009-2012)

The role of adherens junction protein in IBD. Muise A. Crohn’s and Colitis Foundation of Canada/ Canadian Association of Gastroenterology/Canadian Institutes of Health Research ($115,000/year 2008-2012)

Role of ATG16L1 in Crohn disease. Jones NL. Crohn’s and Colitis Foundation of Canada ($150,000/year 2008-2011)

The role of Crohn’s disease genes in intestinal failure and allograft rejection. Muise A, Avitzur Y. The Hospital for Sick Children, Transplant Center Grant ($12,500 2009-2010)

Role of autophagy during H. pylori infection and disease. Jones NL. Canadian Institutes of Health Research ($103,575/year 2008-2013)

The role of NADPH oxidases in Crohn’s disease. Jbrumell J, Muise A. Canadian Institutes of Health Research ($192,840/year 2009-2014)

Role of probiotics in the management of experimental inflammatory bowel disease. Sherman PM. Crohn’s and Colitis Foundation of Canada “Fay Shapiro Cutler Grant-In-Aid of Research” ($375,000 2007-2010)

Therapeutic biomaterials for regenerative medicine. Sefton M, Sherman PM. Ontario Research Fund & Rimon Therapeutics Inc. ($6,500,000 2009-2014)

Sprinkles project support. Zlotkin S. HJ Heinz Company Foundation ($300,000 US/year 2008-2009)

Tier 1 (renewal). Sherman PM. Canada Research Chair ($1,400,000 2008-2015)


Understanding the genes involved in Inflammatory Bowel Disease. Muise A. Ontario Ministry of Research and Innovation ($25,000/year 2009-2014)

Studies of the proteins involved in Inflammatory Bowel Disease. Muise A. Canadian Child Health Clinician Scientist Program ($5,000/year 2008-2012)
DIVISION HEAD
Dr. Victor Blanchette

FULL-TIME FACULTY
Dr. Oussama Abia
Dr. Sarah Alexander
Dr. Ute Bartels
Dr. Sylvain Baruchel
Dr. Eric Bouffet
Dr. Leonardo Brandão
Dr. Manuel Carcao
Dr. Helen Chan
Dr. John Doyle
Dr. Ygal Dror
Dr. Adam Gassas
Dr. Ron Grant
Dr. Abha Gupta
Dr. Johann Hitzler
Dr. Annie Huang
Dr. Meredith Irwin
Dr. Walter Kahr
Dr. Melanie Kirby
Dr. David Mankin
Dr. Ahmed Naqvi
Dr. Paul Nathan
Dr. Isaac Odame
Dr. Angela Punnett
Dr. Tal Schechter-Finkelstein
Dr. Lillian Sung
Dr. Uri Tabori
Dr. Sheila Weitzman
Dr. Suzan Williams
Division of Haematology/Oncology

DIVISIONAL OVERVIEW
The Division of Haematology/Oncology provides a diagnostic service and specialist care for children under 18 with cancer (paediatric oncology) and non-malignant blood disorders (paediatric haematology). The Division is the largest of its kind in Canada and among the largest of such programs worldwide. Approximately 300 new cancer cases are registered in the paediatric oncology program each year, and the Division is the designated centre for haematopoietic stem cell transplantation for patients under 18 years of age in the Province of Ontario. The majority of the approximate 100 transplants performed each year are for children with cancer; fewer are performed for children with severe immunodeficiency disorders or genetic diseases. The number of in-patient days for paediatric haematology/oncology cases is approximately 15,000/year and the number of ambulatory care visits just over 20,000.

Reflecting the size and diversity of its clinical services, the Division is organized into six sections and three programs: the leukemia/lymphoma section (Section Head, Dr. Sheila Weitzman); the solid tumour section (Section Head, Dr. Ron Grant); the neurooncology (brain tumour) section (Section Head, Dr. Eric Bouffet); the blood and marrow transplantation section (Section Head, Dr. John Doyle); the haematology section (Section Head, Dr. Victor Blanchette); the in-patient services section (Section Head, Dr. Sarah Alexander); the long-term follow-up (Aftercare) program (Program Head, Dr. Mark Greenberg); the new agents and innovative therapies program (Program Head, Dr. Sylvain Baruchel); and the cancer genetics program (Program Head, Dr. David Malkin). The Haematology section has large programs in paediatric thrombosis and hemostasis, the paediatric hemoglobinopathies and the inherited and acquired paediatric marrow failure syndromes and myelodysplasias. The Division is an active member of the ChilDr.en’s Oncology Group (COG), the largest paediatric cancer clinical trials group in North America (SickKids Principal Investigator, Dr. Ron Grant), and is committed to the improvement in outcomes and quality of life in children with cancer through participation in ethics-approved, prospective clinical trials. The Division is a member of the paediatric oncology Phase I Consortium of COG (Principal Investigator, Dr. Sylvain Baruchel) and an active participant in activities of the Société Internationale d’Oncologie Pédiatrique (SIOP), the Histiocyte Society and the Berlin Frankfurt Munster (BFM) paediatric leukemia clinical trials group. The Division, in collaboration with the Pediatric Oncology Group of Ontario (POGO), supports a network of paediatric oncology satellite centres in the Greater Toronto and surrounding areas. Satellite centres in sickle cell disease are established in Rouge Valley hospital and William Osler Health Centre. Major achievements in the past year included the introduction of family-centred patient rounds on the in-patient haematology/oncology units and the establishment of an out-patient haematology/oncology day hospital.

The Division is the largest Royal College of Physicians and Surgeons of Canada-accredited training program for the specialty paediatric haematology/oncology in Canada. The Division’s Training Program Director is Dr. Angela Punnett. The Education Program in the Division also includes a large international training program in paediatric haematology/oncology and offers subspecialty training opportunities in areas such as paediatric leukemias/lymphomas, neurooncology, cancer genetics, blood and marrow transplantation and paediatric thrombosis and hemostasis.

Research in the Division spans basic science to clinical care with a special focus on translational research. Approximately one-half of the Division’s 29 full-time faculty have appointments as clinician scientists or clinician investigators in the Department of Paediatrics with parallel appointments in SickKids Research Institute. Research in the Division is multidisciplinary, involving health-care professionals with expertise in a variety of areas (e.g. nursing, psychology, social work, pharmacy). The Division is committed to facilitating knowledge exchange through international partnerships with a particular focus on countries lacking the health-care resources available in Canada. The Comprehensive Cancer Centre, with its focus on promoting excellence across the spectrum of clinical care, education and research related to paediatric cancer, completed a successful second year.

CROSS-APPOINTEES / PART-TIME
Dr. Stephen Comay
Dr. Lee Ann Gallant
Dr. Mark Greenberg
Dr. David Hodgson

CLINICAL AND RESEARCH FELLOWS
Dr. O. Al-Sharif
Dr. Q. Alharbi
Dr. M. Ali
Dr. P. Angelini
Dr. K. Ashraf
Dr. M. Assim
Dr. L. Avila

Dr. Dr. Nicole Inch
Dr. Normand Lapeniere
Dr. Barbara-Ann Millar
Dr. Aubrey Maze
Dr. Jill Solomon

Dr. Dr. F. Al-Abbas
Dr. S. Al-Afghani
Dr. A. Al-Anazi
Dr. R. Al-Mahmoud
Dr. A. Al-Anazi

Dr. Dr. L. Avila
Dr. Dr. V. Breakey
Dr. Dr. B. Boonyawat
Dr. Dr. S. Gupta

Dr. Dr. J. Baker
Dr. Dr. W. Ballourah
Dr. Dr. B. Boonyawat
Dr. Dr. V. Breakey
Dr. Dr. P. Gibson
Dr. Dr. S. Gupta

Dr. Dr. A. Al-Anazi
Dr. Dr. P. Angelini
Dr. Dr. K. Ashraf
Dr. Dr. M. Ali
Dr. Dr. L. Avila
Dr. Dr. J. Baker

Dr. Dr. L. Avila
Dr. Dr. V. Breakey
Dr. Dr. B. Boonyawat
Dr. Dr. S. Gupta
Dr. Dr. J. Baker

Dr. Dr. A. Al-Anazi
Dr. Dr. P. Angelini
Dr. Dr. K. Ashraf
Dr. Dr. M. Ali
Dr. Dr. L. Avila
Dr. Dr. J. Baker
This year marked the end of the term of Dr. Victor Blanchette as Division Head. Following an external review of the Division and an international search, Dr. Jim Whitlock was appointed as the new Chief of the combined Division of Haematology/Oncology. Dr. Whitlock is an internationally acclaimed paediatric haematologist/oncologist with a special interest in paediatric leukemias/lymphomas, the histiocytic disorders of children and paediatric cancer clinical trials. The administrative team for the Division comprises the Division Head, Judy van Cleave (Director, Child Health Services) and Lucy Holford (Administrator, Administrative and Support Services).

HONOURS AND AWARDS
Bartels U: Junior Faculty Award for Clinical Excellence in Paediatric Medical Care, Hospital for Sick Children, 2009.
Punnett A: RHA Haslam Preclickrship Teaching Award, 2010.
Punnett A: Alvin Zipursky Teaching Award, Division of Haematology/Oncology, Hospital for Sick Children, 2010.
Sung L: POWER Teaching Award, The Hospital for Sick Children, 2010.
Weitzman S: Excellence in Postgraduate Medical Education Award, University of Toronto, 2010.

PUBLICATIONS


Durbin AD, Hannigan GE, Malkin D: Oncogenic ILK: Tumor suppression and all that JNK. Cell Cycle 2009: 8: pp 4060-4066.


BOOKS AND BOOK CHAPTERS


**FUNDING**

A 5-year observational study (registry) of children aged 2 to < 6 years at enrollment with transfusional hemosiderosis treated with deferasirox. Araosmigh-Bensafson C, Lawniczek T, Hmissi A, Odame I. **Novartis** ($2,400/patient 2008-2012)

A group wide phase II study of ET-743 in recurrent pediatric sarcoma. Baruchel S. **Children's Oncology Group** ($75,000 2007-2010)

A multi-centre, open-label, single-arm, and multiple dosing trial on efficacy and safety of monthly recombinant factor XIII (rFXIII) in subjects with congenital factor XIII deficiency - safety extension trial. Carcao M, Blanchette V. **Novo Nordisk** ($12,647.60/patient 2010-present)

A multicentre, randomized, open-label phase II trial evaluating deferasirox compared with deferoxamine in patients with cardiac iron overload due to chronic blood transfusions. Maseruka H, Jehl V, Lawniczek R, Odame I. **Novartis** ($12,343/patient 2009-2011)


A phase I study of vinblastine in combination with rapamycin in pediatric patients with recurrent or refractory solid tumors including CNS tumors. Baruchel S. **Solving Kids Cancer NYC, James Birrell Fund** ($121,690 2009-2010)

A Phase I/II study of CP751,851 and IGF IR antibody in refractory/recurrent solid tumors. Baruchel S. **Pfizer** ($22,349/patient 2008-2010)


A pilot prospective study of measurement of ovarian function in adolescent females receiving cancer therapy. Gupta A, Lee-Chong A, Allen L, Traubici J, Kives S. **Comprehensive Cancer Center Adolescent Transition Care Program Competition** ($50,000 2009-2010)

A prospective non-interventional study to describe health-related quality of life of youth and young adults with moderate or severe hemophilia A using recombinant factor VIII (Helixate FS). St. Louis J, Young N, Blanchette V. **CSL Behring** ($296,388 2009-2013)
A prospective study of the multidimensional quality of life in pediatric HSCT recipients. Schechter T, Doyle J, Gassas A. **Canadian Institutes of Health Research** ($5,000 2009-2010)

A randomized controlled multicenter non-inferiority trial of twice daily low dose dexamethasone versus high dose dexamethasone for symptom control in children undergoing cranial or craniospinal radiation after complete or near complete resection of a brain tumour. Bartels U. **C17 Research Network** ($120,000 2009-2011)

A three-month prospective open label study of therapy with Fragmin® (Dalteparin Sodium Injection) in children with malignancies and venous thromboembolism. Brandão LR, Williams S. **Eisai Inc.** ($8,000/patient 2010-2014)

Advanced body-machine interfaces for voiceless communications. Chau T, Bouffet E, Panacis Medical. **Ontario Centres of Excellence** ($240,000 2008-2011)

An international Phase II trial investigating nimotuzumab in pediatric patients with recurrent diffuse pontine glioma (DIPG). Bouffet E, Baruchel S. **YM Bioscience** ($12,000/pt 2007-2010)

An interprofessional team orientation experience. Mehta A, Honeyford L, Punnett A. **C17 Education Grant Competition** ($1,910 2009-2010)


Atypical hemolytic uremic syndrome: A new pathological role for complement and coagulation control in platelets. Licht CPB, Kahr WHA. **Heart and Stroke Foundation of Canada** ($123,510 2009-2011)

Biochemical and genetic analyses of JPO2, a novel of c-Myc oncogene interacting protein. Huang A. **National Cancer Institute of Canada** ($440,082 2006-2010)

Canadian family physicians attitudes and knowledge regarding the care of adult survivors of childhood cancer: a survey study. Nathan PC, Henderson T, Daugherty C, Del Giudice L, Grunfeld E. **Pediatric Oncology Group of Ontario Seed Funding Grant** ($14,000 2010-2011)

Characterization of JPO2, a novel c-Myc co-transforming protein. Rodrigues T and Huang A. **Canadian Institute of Health Research Doctoral Research Awards** ($63,000 2007-2010)

Characterization of novel oncogenic loci in childhood primitive neuroectodermal brain tumors. Huang A. **Canadian Institute of Health Research** ($450,000 2009-2013)

Characterizing ALL stem cells. Guidos C, Danska J, Hitzler J. **Ontario Institute of Cancer Research** ($630,000 2008-2012)

Child Health Research Institute [Infrastructure for new Research Building]. Rossant J, Malkin D, + 24 other co-applicants. **Canada Foundation for Innovation** ($91,000,000 2008-2013)

Childhood Cancer Survivor Study (CCSS) expansion. Robison L, Nathan P. **National Institutes of Health/National Cancer Institute** ($27,365,542 2005-2010)

ChiMES - Understandability and content validity. Sung, L, Tomlinson, D. **Pediatric Oncology Group of Ontario** ($14,992 2009-2010)


Combined telomerase inhibition and drug screen as novel therapies for tumor initiating cells in pediatric nervous system tumors. Tabori U. *Canadian Institutes of Health Research* ($300,000 2010-2014)


Defining the clinical phenotype of inherited marrow failure syndromes and the risk factors for severe hematological complications and cancer by the Canadian Marrow Failure Registry (CIMFR). Dror Y. *C17 Research Network* ($120,300 2009-2011)

Delivery of rFVIII via direct incorporation into platelets. Kahr WHA. *Bayer Canada* ($230,000 2009-2011)


Determination of the extent and role of monoallelic gene expression in low and high grade pediatric brain tumors. Tabori U. *Comprehensive Cancer Centre, The Hospital for Sick Children* ($50,000 2009)

Developing an on-line self-management and transitional care program for adolescents with cancer. Stinson J, Gupta A, Sung L, Dettmer E. *Comprehensive Cancer Center, The Hospital for Sick Children* ($43,750 2009-2010)


Development of efficacy parameters for the maintenance phase of Acute Lymphoblastic Leukemia (ALL) treatment. Hitzler J, Lee-Chong A, Lieberman M, Zagorski B, Nathan PC. *Comprehensive Cancer Centre, The Hospital for Sick Children* ($7,000 2010-2011)

DIPG Think Tank Meeting. Bartels U. *Brainchild Foundation* ($25,000 2010-2011)

Discovery and characterization of C19MC a novel oncogenic miRNA locus in malignant brain tumors. Huang A. *Canadian Institutes of Health Research* ($520,000 2010-2014)

DNA Copy Number Variation in Li-Fraumeni Syndrome. Malkin D. *Canadian Institutes for Health Research* ($784,000 2009-2013)

Early Researcher Award. Nathan PC. *Ministry of Research and Innovation* ($100,000 2010-2013)

Examining the relationship between white matter integrity and the speed of neural processing in healthy children and children with brain tumours. Mabbott DJ, Dockstader C, Tabori U, Bouffet E. *Comprehensive Cancer Centre, The Hospital for Sick Children* (49,971 2010-2011)


FDG-PET/CT in the evaluation of post-transplant lymphoproliferative disorder in children following solid organ transplantation. Shammas A, Charron M, Punnett A, Hong T. *Comprehensive Cancer Centre, The Hospital for Sick Children* ($50,000 2010-2011)


Genetic alterations converge on cell adhesion pathways in childhood sPNET. Huang A. *Brain Tumor Society* ($200,000 2008-2010)


Genetic determinants of predisposition to childhood brain tumor initiation and progression. Tabori U, Malkin D. *Brainchild Foundation* ($60,000 2008-2010)

Genetic epidemiology of osteosarcoma. Spector L, Malkin D, Ross, J, Sklar C, Nagarajan R. *National Institutes of Health* ($1,000,000 2006-2011)


Genetic predisposition for bone marrow failure. Dror Y. *Donor-directed funds* ($20,000 2008-2010)

Genome-wide analysis of bone marrow failure-related genetic alterations in inherited marrow failure syndromes. Dror Y, Beyene J, Shago M. *Canadian Institutes of Health Research* ($357,000 2010-2013)


Identification of educational and infrastructural barriers to prompt antibiotic administration of children with cancer with fever and neutropenia. Gupta S, Punnett A. *C17 Education Grant Competition* ($2,400 2009-2010)


Integrative genomics for health research – Phase II. Scherer S, Malkin D +8 other co-PIs. Canada Foundation for Innovation ($19,989,710 2009-2013)

International rare histiocytic disorders registry. Abla, O. Histiocytosis Association of America/Histiocytosis Association of Canada (23,000 2009-2010)

Modulation of p73 by cyclo-oxygenase inhibitors in neuroblastoma. Irwin MS. National Cancer Institute of Canada/Canadian Cancer Society ($373,829 2008-2011)


Molecular determinants of Li-Fraumeni Syndrome-associated cancers. Malkin D. Canadian Institutes for Health Research ($750,150 2010-2015)

Molecular determinants of tumor formation in Li-Fraumeni Syndrome. Malkin D. National Cancer Institute of Canada ($423,000 2007-2010)


p73 modulatory proteins: Roles in apoptosis and chemosensitivity. Irwin MS. National Cancer Institute of Canada/Canadian Cancer Society Research Institute ($427,500, 2010-2013)


Phase II study of high dose chemotherapy with cyclosporin for vision-threatening intraocular retinoblastoma. Chan HSL, Gailie BL. Terry Fox Research Institute ($151,816 2010-2012)


Post-marketing observational study on children treated with Exjade. Kirby-Allen M, Odame I. Novartis ($20,000 2008- 2011)


Predicting late effects of individual cancer survivors. Yasui Y, Greenberg M, Mcbride M, Nathan PC. Canadian Institutes of Health Research ($109,049 2010-2012)

Predicting the risk of infection in children receiving chemotherapy for acute myeloid leukemia. Sung L. Canadian Institutes of Health Research ($300,000 2009-2014)
Prediction of tumor resistance and normal brain sensitivity to cranial irradiation in pediatric brain tumors. Tabori U. **Brainchild Foundation** ($50,000 2009-2011)

Predictors of functional and neuro-cognitive outcomes in long term survivors of pediatric low grade gliomas. Tabori U, Mabbott DJ, Rubin J, Gutmann D, Bouffet E. **Pediatric Brain Tumour Foundation of the United States** ($100,000 2008-2010)


Prognostic and therapeutic implications for telomere maintenance and telomerase inhibition in pediatric high grade gliomas. Tabori U. **Canadian Institutes of Health Research** ($385,811 2008-2011)

Quantitative non-invasive MRI measurements of cerebrovascular reactivity in children with sickle cell disease. Kassner A, Williams S, Shroff M, deVeber G. **Canadian Institutes of Health Research** ($94,000 2010-2011)

Randomized study of first TIME Immunotolerance Induction in patients with severe type A haemophilia with inhibitor at high risk of failure: comparison of induction of immune tolerance with FVIII concentrates with or without Von Willebrand factor. Carcao M. **City of Hope Medical Centre** (1000/patient 2009-present)


Role of p73 in neuroblastoma and sensitivity to therapy. Irwin MS. **Elsie Winifred Crann Memorial Trust Award for Research in Life Sciences, University of Toronto** ($35,000 2008-2010)

Role of SATB2-p63 Interaction in HNSCC and chemosensitivity. Irwin MS. **Cancer Research Society** ($120,000 2008-2010)


Severe iron-deficiency anemia in infants and young children: Canadian Pediatric Surveillance Program. Zlotkin S, Parkin P, McCourt C, Wong S, Grabowski J, Carcao M, Bellettrutti M. **Canadian Paediatric Society/ Public Health Agency of Canada** (In-kind 2009-2011)

Silent Infarct Transfusion (SIT) trial in patients with Sickle Cell Disease. Debaum M, Odame I. **National Heart, Lung and Blood Institute** ($13,000/patient 2009-2010)

Studies of alpha granule formation in human megakaryocytes and platelets. Kahr WHA. **Canadian Institutes of Health Research Canada** ($689,721 2010-2015)

TCD with transfusions changing to hydroxyurea (TWITCH). Williams S, Odame I. **National Heart, Lung, and Blood Institute** ($23 million 2009-2014)

Teens taking charge: Developing an online self-management and transitional care program for adolescents with cancer. Stinson J, Sung L, Gupta A, Dettmer E. Comprehensive Cancer Centre, The Hospital for Sick Children ($50,000 2009-2010)

Thalassemia clinical research network registry. Kirby M. National Institutes of Health ($45,696 2005-2010)


The genetic basis of severe sickle cell disease: The never lost international cohort study. Kirby M. Children’s Discovery Institute ($149,968 2008-2012)


The role of SBDS in promoting cell survival. Dror Y. Canadian Institutes of Health Research ($250,000 2006-2011)

The role of VPS33B in platelet alpha granule formation. Kahr WHA. Canadian Institutes of Health Research ($441,912 2006-2010)

The roles of the novel p53 family proteins in cancer and chemosensitivity. Irwin MS. Canada Research Chair ($500,000 2008-2013)

The utility of a pan-fungal PCR assay in detecting fungemia in at-risk patients. Doyle J, Richardson S, Allen U. Paediatric Consultants Grant ($9,772 2009-2010)

The Von Willebrand Disease (VWD) international prophylaxis (VIP) study. Carcao M. Rho Inc. ($2,500 US/patient 2009-present)


Validation of the Children’s International Mucositis Evaluation Scale (ChIMES). Sung L, Beyene J, Feldman B, Tomlinson D. Canadian Institutes of Health Research ($313,000 2010-2013)


DIVISION HEAD
Dr. Chaim Roifman

FULL-TIME
Dr. Adelle Atkinson
Dr. Eyal Grunebaum
Dr. Julia Upton

PART-TIME
Dr. Maria Asper
Dr. Stephen Feanny
Dr. David Hummel
Dr. Sasson Lavi

CLINICAL ASSISTANT
Dr. Vy Kim

CLINICAL FELLOWS
Dr. Nashat Al Sukaiti
Dr. Kyla Hildebrand
Dr. Melanie Makhija

IMMUNOLOGY AND ALLERGY NURSES
Anne Kasprzak
Brenda Reid

SENIOR SCIENTIST
Dr. Amos Cohen

RESEARCH ASSOCIATE
Dr. Nigel Sharfe
Division of Immunology/Allergy

DIVISIONAL OVERVIEW
The Division of Immunology and Allergy remains at the forefront of innovation in primary immune deficiencies (PID). As the founder and Director of the Canadian Centre for PID, Jeffrey Modell Centers Network and the Canadian Immunodeficiency Society, Dr. Chaim Roifman’s national and international programs support research, while facilitating early recognition, diagnosis, and effective treatment of primary immune deficiencies.

The Primary Immunodeficiency Program at SickKids is the largest of its kind in Canada and one of the largest in the world. Medical services are provided to over 2,000 outpatients referred from physicians and hospitals nationally. This number has steadily increased by 30 percent over the last 10 years. With a total of nine clinics per month, evaluation of our complex patients is enhanced by providing extensive time and attention to their conditions.

The Allergy Program at SickKids is a referral-based clinic for the diagnosis and management of children with complex allergic diseases, including multiple drug allergies, latex allergy, anaphylaxis, food challenges, urticaria (chronic, idiopathic, cold/heat induced, etc.), and asthma. To assess this diverse group, three clinics are available to patients and families. They see 900 patients a year, and 500 patients are referred to external clinics. This year was challenging due to the H1N1 pandemic, causing an increased demand for the influenza vaccine in egg allergic patients. Dr. Julia Upton, a physician in our Division, along with the allergy team, managed to include a fourth H1N1 clinic, ensuring that all these additional high-risk patients were vaccinated. This was a major achievement.

The Hypogammaglobulinemia Program at SickKids is recognized globally for its innovative approach and long-term follow up of over 200 patients. We transformed the therapy of these patients from multiple hospital-based admissions, to visits to the short-stay unit and eventually, treatment in their own community. The proficiency of our team, coupled with convenient care at a medical centre close to home, provide our patients with the personalized treatment they require. To further develop this program, implementation of a home therapy program is underway. Funding by the Canadian Immunodeficiency Society (CI Society) has permitted the completion of a provincial patient survey to assess such a model in Ontario. Final analysis is underway and a clinical trial is under development. As a leader in gammaglobulin treatment, Dr. Roifman acted as lead investigator in multiple international clinical trials. As a result, we have just completed a study of the efficacy and safety of Omrigam, a novel form of IVIg, and are in the preparatory stages of participating in a Baxter Multicentre trial for subcutaneous gammaglobulin infusions.

Innovative protocols in stem cell and gene therapy, pioneered at SickKids by Dr. Roifman, have positioned the Bone Marrow Transplantation (BMT) Program as a benchmark world-wide. We have demonstrated that matched unrelated transplants are successful in 80 per cent of cases and are superior to other modalities of BMT for multiple forms of PID (JAMA 2006; Immunol Res 2007; BMT 2008). This year we demonstrated its success in Omenn syndrome, which has proven to be even better than in other forms of SCID (Immunol Res 2009). Similarly, we have reported effective management of lung disease in partial ADA deficiency via PED-ADA therapy and liver disease via immunosuppression (JACI 2009). Finally, we described a rare adverse reaction of aplastic anemia following varicella vaccine in a PID patient (Pediatr Infect Des J 2009).
With such life-altering advancements in the care and quality of life of patients, Dr. Chaim Roifman, Division Head for 20 years, remains a member of the IUIS Committee for Primary Immunodeficiency (previously WHO). Here, he contributes to the creation of worldwide guidelines and classification for immune deficiency (JACI 2009:124:1161-78). The Immunology and Allergy Clinics of North America similarly recognized these accomplishments as Dr. Chaim Roifman was guest editor for both 2010 volumes.

Research remains an integral pillar of our Division. Under the guidance of Dr. Chaim Roifman, The Jeffrey Modell Research Laboratory for the Diagnosis of PID (Canadian Centre for PID) continues to thrive. In 2009, we performed 2,096 tests for the evaluation of immunity in PID patients as well as 312 molecular sequences for possible immunodeficiency. Defining novel phenotypes and genotypes of primary immunodeficiencies remains the fundamental goal of this centre. As a result, we have characterized the pathophysiology and autoimmunity of Omenn syndrome (Blood 2009, JACI 2009), identified that ADA-SCID bone manifestations are a product of a RANK/OPG imbalance (Blood 2009), and discovered a novel phenotype of combined immunodeficiency associated with facial dysmorphism, optic nerve atrophy, skeletal abnormalities and developmental delay (Clinical Genetics 2009).

Advancements in gene and protein therapy were made in Dr. Eyal Grunebaum’s laboratory. Using samples from adenosine deaminase (ADA) deficient patients and mice, treated successfully with gene therapy, Dr. Grunebaum and his colleagues were able to demonstrate the role of ADA in bone development (Blood 2009). Furthermore, with The Chaim Roifman Scholar Award granted to Dr. Grunebaum in 2010 by the Canadian Immunodeficiency Society, Dr. Grunebaum’s group developed a novel method to deliver full-length ADA into cells, providing hope for an effective alternative treatment for ADA-deficient patients. In addition, using normal and purine nucleoside phosphorylase-deficient immune cells, before and after gene therapy, Dr. Grunebaum’s lab developed a new method to assess responses of immune cells which avoided the use of radioactive material, thereby providing a safer tool to evaluate immune responses (J Immunological Methods 2009).

With such outstanding advancements, it is no surprise that Dr. Grunebaum was awarded the Fred Rosen/Jeffrey Modell/NIH research grant in 2009.

Education remains a major focus for every member of the Division. With a flawless certification record by the Royal College of Physician and Surgeons of Canada since 1990, our program provides exceptional training in clinical as well as laboratory immunology. By preparing outstanding academic and non-academic specialists in Immunology and Allergy, we continue to attract over 25 brilliant candidates every year from across the world. To accommodate these additional national and international fellows, The CI Society-Talecris Fellowship Program has supported our division for over a decade. These trainees have the opportunity to participate in a flexible program which can be predominantly research oriented.
Our commitment to education far exceeds these training programs. As the Chair of the Jeffrey Modell Centers Network, Dr. Chaim Roifman established The Robert A. Good/Jeffrey Modell Fellowship in Immunodeficiency and Transplantation. This international program began in 2009 and provided matching funds for several Immunology fellowship positions each year globally. Our very own Amit Nahum was honoured in 2009 and is now Assistant Professor of Paediatrics and Director of Immunology at Kaplan Medical Centre in Israel. In addition, the Jeffrey Modell Canadian Immunodeficiency Network implemented Primary Immunodeficiency Video Conference rounds. Since 2008, these Royal College-accredited quarterly seminars, hosted by SickKids, link immunologists and trainees across Canada for discussions of complex cases. Participation is accessible through telehealth video conferencing and web casting, with an average of 60 participants and nine national sites.

Dr. Adelle Atkinson, now beginning her fifth year as the Director of Post Graduate Education in the Department of Paediatrics, continues to excel as an outstanding educator. In recognition of her achievements, she was promoted to Associate Professor in July 2009 and in the Spring of 2010, she received the Sarita Verma Award for mentorship and advocacy. Over the last year, she has been invited to present at international conferences in the area of postgraduate medical education and faculty development on topics such as residency selection, professionalism, clinical teaching and feedback. Dr. Atkinson runs a novel clinic studying drug allergies in medically complex patients, providing an important clinical service to this tertiary care population.

Thanks to the support of The Donald & Audrey Campbell Chair, the Jeffrey Modell Foundation, the CI Society, Canadian Institutes of Health Research, March of Dimes, and the Canadian Centre for Primary Immunodeficiency, children with primary immunodeficiency are diagnosed earlier and receive state of the art treatment in a timely fashion.

**HONOURS AND AWARDS**

Roifman CM, Dream Makers Award, Jeffrey Modell Foundation, New York, 2009.


Atkinson A: Associate Professor, University of Toronto, 2009.

Grunebaum E, Associate Professor, University of Toronto, 2009.

**PUBLICATIONS**


**BOOKS AND BOOK CHAPTERS**


**FUNDING**

A clinical study of the pharmacokinetics, efficacy and safety of immune globulin intravenous (human) Omr-IgG am'99 IgIV in subjects with primary immune deficient diseases. Grunebaum E, Somech R. **FFF Enterprises** ($55,000 2007-2009)
CI Society Talecris Treatment and Bone Marrow Transplant Centre for Primary Immunodeficiency. Roifman CM. Canadian Immunodeficiency Society ($150,000 2009-2012)

Correcting PNP deficiency by intracellular delivery of PNP fused to protein transduction domains. Grunebaum E. US Immunodeficiency Network ($330,000 2006-2009)

Correcting purine nucleoside phosphorylase deficiency by prolonged intracellular enzyme replacement therapy. Grunebaum E. March of Dimes ($390,000 2007-2010)


Genetics of primary immunodeficiency. Roifman CM. Canadian Immunodeficiency Society ($100,000 2007-2010)

Home immunoglobulin therapy. Roifman CM. Canadian Immunodeficiency Society ($430,000 2007-2011)

Immune and non-immune abnormalities associated with purine nucleoside Phosphorylase deficiency. Grunebaum E, Roifman CM. Jeffrey Modell Foundation/National Institutes of Health/National Institute of Allergy and Infectious Diseases ($250,000 2009-2011)

Jeffrey Modell Centres Network. Roifman CM. Jeffrey Modell Foundation ($15,000 2009)

Jeffry Modell Canadain Immunodeficiency Network. Roifman CM. Canadian Immunodeficiency Society ($12,672 2009)

JMFRAG Research Fellowship. Roifman CM. Jeffrey Model Foundation and Robert A Good Society ($37,500 2009)

Jeffrey Modell Research Laboratories for the diagnosis of primary immunodeficiencies. Roifman CM. Jeffrey Modell Foundation ($125,000 2009-2011)

Optimizing hematopoietic stem cell transplantation -the cord advantage. Grunebaum E. Elizabeth Rose Herman Endowment Fund ($29,000 2008-2010)

Talecris fellowship in Immunology. Roifman CM. Canadian Immunodeficiency Society ($100,000 2009)
DIVISION HEAD
Dr. Upton Allen

FULL-TIME
Dr. Sean Ari Bitnun
Dr. Anne Opavsky
Dr. Dat Tran
Dr. Anupma Wadhwa
Dr. Valerie Waters
Dr. Stanley Read
Dr. Alana Rosenthal

PART-TIME
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Dr. Anne G. Matlow

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Georgina MacDougall
Pat Malloy

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Kayleigh D’Amour
Suganya Lee
Brenda O’Doherty

RESEARCH ASSOCIATES
Nasser Khodai Booran
Paul Pedulla

SOCIAL WORKER
Robyn Salter
DIVISIONAL OVERVIEW

The Division of Infectious Diseases is a leader in clinical, educational and research activities locally, nationally and internationally. The Division has active in-patient as well as ambulatory consultant services that include teams that focus on general infectious diseases and infectious diseases in immunocompromised infants, children and youth, respectively. We are a resource for issues related to infectious disease outbreaks, including new and emerging infectious, infection control and the specialized areas of HIV, congenital infections, management of infectious complications or organ transplantation, and the ever-increasing problem of multi-drug resistant tuberculosis.

Division members have a leading role in national and international epidemiological, clinical, research advisory and related committees (e.g., the Infectious Diseases Society of America, the Canadian Paediatric Society, Health Canada, the American Society for Transplantation, the International Pediatric Transplant Association and the Government of the Bahamas).

Our research initiatives are structured around themes that include host susceptibility and related factors and innovative antimicrobial and associated therapies. Specific research initiatives include multi-centred paediatric HIV studies related to maternal-to-child transmission and studies on new antiretrovirals, vaccine studies and research into the mechanisms of host susceptibility to viral infections. These infections include viral myocarditis, influenza illness, HIV, EBV-related post-transplant lymphoproliferative disorder (PTLD) and encephalitis. Multicentred trials related to the diagnosis and prevention of infections in transplant patients are ongoing, as well as participation in national surveillance studies (IMPACT) and national collaborative paediatric studies through the Paediatric Investigators Collaborative Network on Infections in Canada (PICNIC). Our research in infection control includes the clinical and molecular epidemiology of paediatric nosocomial infections.

The Division continues to have a leadership role in structuring the approach to the management of major emerging and resurgent infectious disease threats. In this regard, the Division has been actively involved in influenza pandemic planning efforts at SickKids as well as provincially and nationally. Indeed, members of the Division had pivotal local, provincial, national and international leadership roles in the H1N1 pandemic of 2009.

In the area of education, representatives from our Division continue to play a key role in activities of the Royal College of Physicians and Surgeons of Canada, and in many areas of undergraduate, graduate, post-graduate and continuing medical education activities. Faculty members continue to hold editorships, visiting professorships and related academic honours nationally and internationally.

HONOURS AND AWARDS

Opavsky A: The coxsackie-adenovirus receptor in heart infection and heart failure Heart and Stroke Foundation Clinician Scientist Award ($166,000 2007-2010).

PUBLICATIONS


Allen UD, Onyett H, MacDonald N, Moore D, members of the Canadian Paediatric Society Infectious Diseases and Immunization Committee. Questions and answers on pandemic (H1N1) 2009 Influenza: The illness and antiviral drugs. http://www.cps.ca/english/H1N1_IllnessAntiviral.htm

Allen UD, Onyett H, MacDonald N, Moore D, members of the Canadian Paediatric Society Infectious Diseases and Immunization Committee. Pandemic influenza (H1N1) 2009 and infection control controversies: Working with ongoing change: Practice point. November, 2009 (http://www.cps.ca/english/H1N1_IllnessAntiviral.htm)

Allen UD, Onyett H, MacDonald N, Moore D, members of the Canadian Paediatric Society Infectious Diseases and Immunization Committee: Pandemic influenza (H1N1) 2009 and infection control controversies: Dispelling myths held by parents about the influenza vaccine. Practice Point. November, 2009 http://www.cps.ca/english/H1N1_IllnessAntiviral.htm

Allen UD, Onyett H, MacDonald N, Moore D, members of the Canadian Paediatric Society Infectious Diseases and Immunization Committee: Questions and Answers on Pandemic (H1N1) 2009 Influenza: Protecting young babies from influenza: Practice Point. November, 2009 http://www.cps.ca/english/H1N1_IllnessAntiviral.htm

Allen UD, Onyett H, MacDonald N, Moore D, members of the Canadian Paediatric Society Infectious Diseases and Immunization Committee: Questions and answers on pandemic (H1N1) 2009 influenza: Canada’s eight-step vaccine safety program: Vaccine literacy: Practice Point. November, 2009 http://www.cps.ca/english/H1N1_IllnessAntiviral.htm

Allen U, the Influenza Management Team: H1N1 questions and answers for immunocompromised and other high-risk children with chronic medical conditions. Hospital for Sick Children. http://kidweb.sickkids.ca/pandemicflu/custom/H1N1HighRiskQandA.pdf


BOOKS AND BOOK CHAPTERS


FUNDING


A pilot study of genetic determinants of severe influenza in children. Tran D, Paterson A, Beyene J, Richardson S, Schuh S. University of Toronto Dean’s Fund - New Staff Grant ($10,000 2007-2012)

Assessing the breadth and depth of cystic fibrosis-associated polymicrobial respiratory tract infections. Gutttman D, Waters V. Canadian Institutes of Health Emerging Team Grant (2,500,000 2010-2015)


Defining the role of Stenotrophomonas maltophilia in cystic fibrosis patients. Waters V. Canadian Cystic Fibrosis Foundation ($81,290 2009-2011)

Does complicated pneumonia lead to chronic lung disease? Cohen E, Weinstein M, Mahant S, Dell Sh, Traubici J, Wadhwa A. Pediatric Consultants Grant ($9,900 2010-2011)

Effect of omega-3 fatty acid supplementation on hypertriglyceridemia in HIV-infected children taking highly active antiretroviral therapy (HAART): A randomized cross-over study. Read S, Bitnun A, Brophy J. Physicians Services Incorporated Foundation ($32,000 2008-2011)


Genetic predictors of severe respiratory illness from pandemic H1N1 influenza infection. Tran D, Paterson A. Public Health Agency of Canada ($99,930 2010-2011)

Heart failure and the coxsackie-adenovirus receptor (CAR): Insights through a novel heart targeted CAR transgenic mouse. Opavsky MA. Heart and Stroke Foundation Grant-in-Aid ($278,151 2007-2010)


Preclinical characterization of multimeric ribozymes as potential preventive and therapeutic agents for HIV infection. Joshi S, Read S. Canadian Institutes of Health Research (236,234 2009-2012).

Predicting the risk of infection in children receiving chemotherapy for acute myeloid leukemia. Sung L, Allen U, Beyene J. Canadian Institutes of Health Research ($817,963 2008-2012)

RSV Infection among transplant recipients and other high-risk compromised hosts. Allen UD, Robinson J. Abbott Canada ($236,000 2008-2010)

Randomized double blind controlled trial of the use of a biofilm antimicrobial susceptibility assay to guide antibiotic therapy in chronic Pseudomonas aeruginosa infected cystic fibrosis patients (Hospital for Sick Children and St Michael’s Hospital). Waters V. Innovotech Inc./National Research Council Industrial Research Assistance Program ($200,000 2009-2012)


The utility of pan-fungal PCR in detecting fungemia in at-risk pediatric patients. Doyle J, Richardson S, Upton A. Paediatric Consultants Grant ($9772 2009)


DIVISION HEAD
Dr. Shoo Lee

THE HOSPITAL FOR SICK CHILDREN

FULL-TIME
Dr. Jacques Belik
Dr. Jonathan Hellmann
Dr. Andrew James
Dr. Kyong-Soon Lee
Dr. Linh Lee
Dr. Patrick McNamara
Dr. Aideen Moore
Dr. Keith Tanswell
Dr. Christopher Tomlinson
Dr. Hilary Whyte

PART-TIME
Dr. Rosemary Moodle

CROSS APPOINTEES
Dr. Bonnie Stevens

ADJUNCT
Dr. Xiaoping Luo

HONORARY FACULTY
Dr. Max Perlman
Dr. Paul Sawyer
Dr. Arne Ohlsson
DIVISIONAL OVERVIEW

The Division of Neonatology welcomes Dr. Simone Vaz to the faculty at Mount Sinai Hospital and Dr. Eugene Ng as a full-time faculty member at Sunnybrook Health Sciences Centre and Dr. Shoo Lee, who was appointed Chief of the Department of Newborn and Developmental Paediatrics at Sunnybrook Health Sciences Centre.

The Division of Neonatology wishes to thank Dr. Rosemary Moodie, Dr. Shaheen Doctor and Dr. Maggie Shu for their service and significant contributions and they deserve our enormous thanks and best wishes.

The three level III NICUs at The Hospital for Sick Children, Mount Sinai Hospital and Women’s College Hospital site continue to suffer from a shortage of sufficient level III NICU beds to adequately meet the maternal and neonatal needs of our catchment area, which has continued to result in regrettable deferrals of patients out of region, province and country. The Ministry of Health and Long-Term Care commissioned a Neonatology Task Force, with province-wide representation including representatives from the three Toronto NICUs, to address the issue of current level III NICU bed requirements across the province, and the predicted increase in requirements over the next 10–15 years. This was delivered in 2007. The Ministry of Health and Long-Term Care responded by announcing 28 additional neonatal beds for the province, including three additional NICU beds for Mount Sinai and three for SickKids. All six additional beds have been opened.

Mount Sinai Hospital was awarded the Ontario Human Milk Bank, and will be establishing it in partnership with SickKids and Sunnybrook Health Sciences Centre. The Milk Bank will be led by Dr. Sharon Unger. It will be the first in Ontario and one of only two in Canada.

The integrated University of Toronto Neonatal Follow-Up Program was established under the leadership of Dr. Elizabeth Asztalos. The program will integrate the neonatal follow-up programs at the three NICUs (Mount Sinai, SickKids, Sunnybrook). Dr. Edmond Kelly (Mount Sinai), Dr. Linh Ly (SickKids) and Dr. Paige Church (Sunnybrook) were appointed Directors of the Neonatal Follow-Up Clinics at their respective hospitals. A common neonatal follow-up protocol will be adopted at all follow-up clinics. New clinics will be established at SickKids and Mount Sinai to replace the joint follow-up clinic at SickKids.

The Division’s Neonatal-Perinatal Fellowship Training Program continues to train the largest number of subspecialty trainees in neonatology of any centre in Canada, under the leadership of Program Director, Dr. Martin Skidmore.

The Division established the new Clinician-Scientist Scholar Training Program under the leadership of Dr. Robert Jankov. The program is designed for neonatal fellows who have completed the Royal College-required training program in neonatal perinatal medicine and are interested in pursuing further research training to establish a career in research. The inaugural candidate in the program is Dr. Constance Williams.

The Maternal-Infant Care (MiCare) Research Centre was established at Mount Sinai Hospital. The centre coordinates several national and international research networks and will also provide research support to members of the Division, including research nurses and coordinator support, statistical and methodologic consultations, database establishment and maintenance, computer programming and other support.

The Division continues to be well supported by major funding agencies for its various foci at the three sites, including lung biology, epidemiology, outcomes-based research and clinical trials.

This year we had 112 publications, and received grant funding of $126,992,072. This represents increase of 31% and 54.8% respectively compared to previous year.
HONOURS AND AWARDS

Asztalos E: Associate Professor, Department of Obstetrics and Gynecology, Faculty of Medicine, University of Toronto, November 2009.

Doctor S: Medical Director, Neonatal Intensive Care Unit, North York General Hospital, 2010-Present.

Jefferies A: Excellence in Teaching Award, Neonatal-Perinatal Division, University of Toronto, June 2010.

Lee K-S: Interim Clinical Director, NICU, Hospital for Sick Children, June-September 2009.

Lee S: Chief, Department of Newborn and Developmental Paediatrics, Sunnybrook Health Sciences Centre, 2010.


Ng N: Deputy Chief, Department of Newborn and Developmental Paediatrics, Sunnybrook Health Sciences Centre, 2010.


Unger S: Women of Distinction Koeffler Foundation (Honoree), Mount Sinai Hospital, 2009.

Williams C: Canadian Institutes of Health Research Doctoral Award – Frederick Banting and Charles Best Canada Graduate Scholarship, April 2010.

Williams C: JKR Wightman Scholarship in Ethics from the Royal College of Physicians and Surgeons, for paper entitled: “Shared Decision Making in the NICU: the Virtuous Triad”.

Banihani R: Award for Poster Presentation, CPS Annual Meeting, Vancouver, BC, June 2010.


Lewis J: Trainee of the Year Award, Neonatal-Perinatal Medicine Fellowship Training Program, University of Toronto, 2010.

PUBLICATIONS


El-Khuffash A, McNamara PJ: Doppler ultrasound in neonatal haemodynamics. Seminars in Fetal and Neonatal Medicine 2010: June 18 [Epub ahead of print].


Ng E, Taddio A, Ohlsson A: Intravenous midazolam infusion for sedation of infants in the neonatal intensive care unit (Review update). Cochrane Database of Systematic Reviews 2010: CD002052


Stade B, Sgro M, Bailey C, Dzendoletas D, Bennett D, and Dowswell T: Psychological and/or educational interventions for reducing prenatal alcohol consumption in pregnant women and women planning pregnancy. Cochrane database of systematic reviews 2009: 15(2): CD004228.


Turner D, Zlotkin SH, Shah PS, Griffiths AM: Omega-3 fatty acids (fish oil) for maintenance of remission in inflammatory bowel disease: a systematic review and meta-analyses. Inflammatory Bowel Diseases 2010: June 17 [Epub ahead of print].


**BOOKS AND BOOK CHAPTERS**


**FUNDING**


A comparison of debriefing methods following simulated neonatal resuscitation. Williams C. *NRP Research Grant* ($16,180 2010)

A critical appraisal of resuscitation practices in the NICU. Gibbins S, Dunn M, Asztalos E, Schurr P, Chow J, Kiss A. *PBR Award Sunnybrook Health Sciences Centre* ($12,358 2010-2011)

A multi-faceted approach to the implementation of recommendations for management of infants at increased risk for sepsis for the interprofessional health care team. Shah V, Jefferies A. *Academic Health Sciences Alternate Funding Plan Phase III Innovation Fund* ($39,613 2009-2010)

A national role-based survey investigating the use of information technology in canadian neonatal intensive care units. Percival JC, McGregor C, Catley C, James A. *Canadian Patient Safety Institute* ($20,000 2009-2010)

Airway modulation of pulmonary vascular tone during development and following pulmonary hypertension. Belik J. *Canadian Institutes of Health Research* ($110,108/year 2004-2009)

An innovative multi-faceted approach to implementation of recommendations for management of infants at increased risk for sepsis for inter-professional health care team. Shah V. *Ministry of Health and Long-Term Care Innovation Fund* ($41,850 2009)


Assessment and evaluation of a pilot interprofessional OSCE (iOSCE). Simmons B, Reeves S, Wagner S. *Undergraduate Medical Education Curriculum Renewal Fund – University of Toronto/The University of Toronto Office of Interprofessional Education* ($19,141 2009)

Assessment and evaluation of a pilot interprofessional OSCE (iOSCE). Simmons B, Reeves S, Wagner S. *Matching Funds Medical Council of Canada/The University of Toronto Office of Interprofessional Education* ($10,000 2009)


Calgary Impact of (ACoRN) acute care of at risk newborn education program in rural China. Singhal N, Lee S. *Canadian Institutes of Health Research* ($90,000 2008-2010)


Canadian Pediatric Surgery Network Extension (CAPSNet-X). Puligandla P, Lee S. *Canadian Institutes of Health Research* ($10,000 2009-2010)

CIHR team in children’s pain. Stevens B, Lee S. Canadian Institutes of Health Research ($4,054,611 2006-2011)


CIHR Team in Maternal-Infant Care. Lee S. Canadian Institutes of Health Research ($5,640,990 2008-2013)


Creating bone and joint health from the bedside to the bench and back. Frank C, Lee S. Alberta Heritage Foundation for Medical Research ($5,000,000 2008-2013)


DOMINO donor milk for improved neurodevelopmental outcomes. Unger S. Canadian Institutes of Health Research ($920,270 2010-2015)

Donor human milk versus preterm formula as a substitute for mother’s own milk for feeding very low birth weight infants. O’Connor D, Asztalos E. Canadian Institutes of Health Research ($920,271 2010-2015)

Donor human milk versus preterm formula as a substitute for mothers’ own milk for feeding very low birth weight infants. Campbell D. Canadian Institutes of Health Research ($184,000 2009)


Effect of folic acid supplementation in pregnancy on preeclampsia. Wen S, Lee S. Canadian Institutes of Health Research ($6,525,375 2009-2014)

Efficacy and safety of methyxanthines in very low birth weight infants. Schmidt B, Asztalos E, Ohlsson A. Canadian Institutes of Health Research ($2,038,135 2010-2015)


Endothelial eNOS uncoupling and role of BMP-9 in the regulation of pulmonary vascular tone during development and following pulmonary hypertension. Belik J, Letarte M, Toporsian M, Jerkic M. Heart and Stroke Foundation ($86,906/year 2007-2009)

EPIQ-II project. James A. Canadian Institutes of Health Research ($42,215 2009-2011)
Establishment of a Canadian-based international research network to improve quality of life, communication, and economic outcomes in head and neck cancer survivors. Rieger J, Lee S. Canadian Institutes of Health Research ($100,000 2010-2011)

Evaluation of case-based Interprofessional Education (IPE) sessions: Development and implementation. Wagner S, Reeves S, Simmons B. Undergraduate Medical Education Curriculum Renewal Fund – University of Toronto/The University of Toronto Office of Interprofessional Education ($13,951 2009)


Harmonizing evidence with consumer expectations, interdisciplinary knowledge and organizational matrixes to attain optimal mode of birth patterns. Andruschak J, Lee S. Canadian Institute of Health Research ($195,346 2008-2010)


Hypercapnia as therapy for neonatal pulmonary hypertension. Jankov RP. Canadian Institutes of Health Research ($579,880 2009-2014)

Hypoglycemia and neuroplasticity in the neonatal period. Shroff MM, Moore AM, Whyte HEA, Taylor MJ. Translational Research Grant, Department of Medical Imaging, University of Toronto ($35,000/year 2008-2010)

Impact of ACORN newborn education program in rural China. Du L, Singhal N, McMillian DD, Aziz K, Lee SK. Canadian Institutes of Health Research ($180,000 2008-2011)

Implementation of a wireless positive patient identification system for the prevention of breast milk errors in the NICU. O’Brien K, Unger S. Ministry of Health and Long-Term Care Innovation Funds ($56,807 2009-2010)

Improving safety in the insertion and care of percutaneously inserted central catheters (PICCs) and umbilical catheters (UCs) in 3 neonatal intensive care units (NICUs). Lee KS, Dunn M, Jefferies A, Gibbins S, Doctor S. Canadian Medical Protective Association Collaborative Research Grant ($49,750 2009-2011)

Inhibition of physiological apoptosis as a major component of chronic neonatal lung injury. Tanswell AK, Jankov RP. Canadian Institutes of Health Research ($430,045 2007-2012)

Initiative for translational hypertension research. Branko B, Lee SK. University of Alberta ($300,000 2008-2011)

Innovation Fund. Sgro M. Innovation Fund, Physicians Services Association, St. Michael’s Hospital ($13,000 2009)


Knowledge Translation Supplement. Shah V. Canadian Institutes of Health Research Meetings, Planning and Dissemination Grant ($38,788 2009)


Maternal-Infant Care (MICare) Research Centre. Lee S. Ministry of Health and Long-Term Care ($15,000,000 2009-2013)

MiTy Trial (Metform in Women with Type 2 Diabetes in Pregnancy Trial). Feig D, Lee S. Canadian Institutes of Health Research ($1,735,119 2010-2011)


Multiple courses of antenatal corticosteroids for preterm birth (MACS). Murphy K, Asztalos E. Canadian Institute of Health Research ($2,943,583; 2006-2010)


Multiple courses of antenatal corticosteroids for preterm birth. Murphy K, Lee S. Canadian Institutes of Health Research ($7,980,470 2000-2010)


Observational study on the effects of enteral feeding and feeding methods on respiratory pattern as assessed by diaphragm electrical activity (EAdi) in very low birth weight (VLBW) preterm infants. Ng E, Schurr P, Reilly M, Dunn M, Beck J. Physician Services Incorporated Foundation ($26,000 2008-2009)

Oxidative stress and neonatal pulmonary vascular resistance control. Belik J. Canadian Institutes of Health Research ($597,193 2009-2014)

Pediatric Academic Societies (PAS) Annual Meeting. Sgro M. *Mead Johnson Nutritionals Canada* ($2,600 2010)


Preterm birth and healthy outcomes. Olson D, Lee S. *Alberta Heritage Foundation for Medical Research* ($5,000,000 2008-2013)


Resuscitation competencies in inter-professional education (ReCIPE). Simmons B, Reeves S, Deland M. *Neonatal Resuscitation Program Research Grant – Canadian Paediatric Society* ($17,590 2009-2010)

Rho-kinase inhibitor as therapy for chronic neonatal pulmonary hypertension. Jankov RP, McNamara PJ. *Canadian Institutes of Health Research* ($323,592 2007-2010)

Role of reactive oxygen/nitrogen species in normal and aberrant postnatal lung growth. Tanswell AK. *Canadian Institutes of Health Research* ($557,560; 2010-2015)

Role of reactive oxygen/nitrogen species in normal and aberrant postnatal lung growth. Tanswell AK. *Canadian Institutes of Health Research* ($708,400; 2004-2009)

Role of Rho-kinase in hypoxia-mediated pulmonary hypertension. Jankov RP. *Dean's Fund New Staff Grants Program, Faculty of Medicine, University of Toronto* ($10,000; 2005-2009)

Safety and efficacy of methylxanthines in the very low birth weight infant: Effect on sleep on the school age child. Marcus C, Asztalos E. *National Heart, Lung and Blood Institute* ($267,567/year 1 2009-2013)

Simulation in neonatal resuscitation. Campbell D. *Innovation Fund, Physicians Services Association, St. Michael's Hospital* ($12,000 2009)


Sustainability grant for IPE development at the University of Toronto Office of Interprofessional Education. Oandasan I, Wagner S, Lowe M, Sinclair L, Tassone M, Simmons B, Parker K. *Ontario Ministry of Training for Colleges and Universities* ($150,000 2009)

The Canadian Pediatric Surgery Network (CAPSNET): Establishing best practices for gastroschisis and congenital diaphragmatic hernia. Bouchard S, Lee S. *Canadian Institutes of Health Research* ($100,000 2010-2011)


The developing lung: Cellular and molecular physiology. Tanswell AK. *Canadian Institutes of Health Research* ($252,476/year 2004-2009)


The MIY Trial (Metformin in women with type 2 diabetes in pregnancy). Feig D, Asztalos E. *Canadian Institutes of Health Research* ($1,735,119 2010-2015)


The Women’s Auxiliary Chair in Neonatology. Lee S. *The Hospital for Sick Children* ($350,000 2009-2013)


DIVISION HEAD
Dr. Denis F. Geary

FULL-TIME
Dr. Elizabeth A. Harvey
Dr. Diane Hébert
Dr. Valerie Langlois
Dr. Christoph Licht
Dr. Rulan Parekh
Dr. Tino D. Piscione
Dr. Lisa A. Robinson
Dr. Norman D. Rosenblum

PART-TIME
Dr. Rachel Pearl
Dr. Seetha Radhakrishnan
Dr. Lindsay Teskey

ADJUNCT
Dr. Leo Levin

HONORARY
Dr. Gerald S. Arbus

CLINICAL FELLOWS
Dr. Badria Al-Ghaithi
Dr. Entesar Alhammadi
Dr. Naifain Al Kalbani
Dr. Reham Al-Mardini
Dr. Jamila Al-Mataifi
Dr. Turki Al Shareef
Division of Nephrology

DIVISIONAL OVERVIEW

2009-2010 was another successful year for the Division of Nephrology. The complexity of care provided and the number of patients treated continue to increase. The Nephrology Fellowship Training program, which provides a unique combination of comprehensive clinical training and scientific exposure, continues to attract trainees from across the world.

The research profile of the Division continues to grow, as demonstrated by the number of successful grant applications and the high quality of the journals in which their work is published. With the recent addition of Dr. Rulan Parekh, the Division is now poised to lead in both clinical and epidemiological research and in basic scientific discovery.

In 2009-2010, the expertise in clinical care, education and research of members of the Nephrology Division was recognized by major awards at the local, national and international level. The coming year will see exciting new changes as Dr. Lisa Robinson assumes the role of Division Head.

HONOURS AND AWARDS

Geary DF: Claus Wirsig Humanitarian Award, The Hospital for Sick Children, June 2010.

Licht C: Appointed Member of the European DEAP-HUS Study Group, 2009.

Licht C: Appointed Member of the Safety Board of the European Treatment Trial for Alport Syndrome, 2010.

Licht C: Norman Siegel Research Scholar Award, American Society of Nephrology, 2009.


Robinson LA: Canada Research Chair Tier 2, 2010.


Robinson LA: CFI Leader’s Opportunity Fund, University of Toronto, 2010.

Rosenblum ND: Maureen Andrew Mentor Award, Society for Pediatric Research, 2010.

Rosenblum ND: Paediatric Academic Leadership-Clinical Investigator Award, Paediatric Chairs of Canada, 2009.

PUBLICATIONS


POST-DOCTORAL FELLOWS

Dr. Jason Cam
Dr. Lijun Chi

CLINICAL RESEARCH ASSOCIATES

Michelle Frielting
Jun Chuan Teh

ADMINISTRATIVE STAFF

Dana Debernyj
Juliet Rodrigo
Bernard Singh
Marisa Tuy
Andrea Verdugo
Tania Viseu


Waters AM, Licht C: aHUS caused by complement dysregulation: new therapies on the horizon. Pediatric Nephrology 2010: June 18 [Epub ahead of print].


**BOOKS AND BOOK CHAPTERS**


**FUNDING**

Alport Syndrome Treatments and Outcomes Registry (ASTOR). A prospective study of microalbuminuria in untreated boys with Alport Syndrome. Licht C, Kashon C. **ASTOR Study – University of Minnesota** ($36,000 US 2009-2012)

A multicenter, randomized, double-blind placebo-controlled study to test the safety and effectiveness of Lipitor (atorvastatin) in reducing the progression of carotid IMT in early childhood SLE: The Atherosclerosis Prevention in Pediatric Lupus Erythematosus (APPLE) Study. Silverman E, Harvey EA: **National Institutes of Health – National Institute of Arthritis and Muscoskeletal and Skin Disease** ($12,003 2003-2009)

An open-label, multi-center controlled clinical trial of Eculizumab in adolescent patients with plasma therapy sensitive atypical hemolytic-uremic syndrome (aHUS). Licht C. **Alexion Pharmaceuticals, Inc.** ($20,872 US for 26 week treatment protocol + $10,426 US for 26 week extension phase per enrolled patient 2009-2010)


Canada Research Chair in Developmental Nephrology (Tier I). Rosenblum ND. **Canada Research Chairs Program** ($200,000/year 2005-2012)

Canadian Child Health Clinician-Scientist Program.

Rosenblum ND. **Canadian Institutes of Health Research** ($325,000/year 2009-2015)

Canadian Paediatric Clinician Scientist Program.

Rosenblum ND. B.C. **Research Institute for Children's and Women's Health** ($150,000/year 2002-2015)

Canadian Paediatric Clinician Scientist Program. Rosenblum ND. **SickKids Foundation** ($300,000/year 2002-2014)

CIHR MD/PhD Grant. Rosenblum ND. **Canadian Institutes of Health Research** ($110,000/year 2009-2011)

CIHR MD/PhD Grant. Rosenblum ND. **Canadian Institutes of Health Research** ($110,000/year 2009-2012)
CIHR MD/PhD Grant. Rosenblum ND. Canadian Institutes of Health Research ($110,000/year 2009-2013)

CIHR MD/PhD Grant. Rosenblum ND. Canadian Institutes of Health Research ($110,000/year 2009-2014)

CIHR MD/PhD Grant. Rosenblum ND. Canadian Institutes of Health Research ($110,000/year 2010-2015)


Control of kidney cell determination and morphogenesis by BMPs and beta-catenin in the normal and dysplastic kidney. Rosenblum ND. Canadian Institutes of Health Research ($155,828/year 2008-2013)


KidCOM-Study. Licht C. The Foundation for Children with Atypical HUS ($5,000 2009)


Mineralization factors and atherosclerotic risk in dialysis. Parekh RS. Abbott ($222,381/year 2009-2010)


Notch signaling and control of podocyte cell proliferation in development and disease. Piscione T. Kidney Foundation of Canada ($100,000 2009-2011)


Regulation of the Membrane-anchored Chemokine, Fractalkine, by Thromboxane A2. Robinson L. Heart and Stroke Foundation of Ontario ($268,452 2007-2010)

Renal Disease Epidemiology Training Program. Parekh RS, Klag MJ. National Institutes of Health ($287,119/year 2005-2010)

Role of the primary cilium in nephrogenesis. Rosenblum ND. Kidney Foundation of Canada ($50,000/year 2008-2010)

Slit and roundabout: New players in vascular injury. Robinson L. Canadian Institutes of Health Research ($100,000 2009-2010)


The role of MYH9 in renal transplantation. Parekh RS (co-investigator). Johns Hopkins University-Institute for Clinical and Translational Research (ICTR) Accelerated Translational Incubator Pilot (ATIP) Program ($100,000/year 2010-2011)

The role of notch signaling in focal segmental glomerulosclerosis. Piscione T. The American Society of Nephrology ($200,000 2007-2009)
Division of Neurology

DIVISIONAL OVERVIEW
The major foci of the clinical activities of the Division of Neurology are epilepsy, stroke, headache, neurometabolic disease, neuromuscular disease, neurogenetics, sleep disorders, movement disorders, demyelinating diseases, functional neuroimaging, and neurointensive care.

The Division of Neurology has a Royal College-accredited training program in Child Neurology as well as postdoctoral training programs in epilepsy, stroke, neurometabolic disease and demyelinating diseases. In addition, there are a number of graduate students and postdoctoral fellows in clinical neurophysiology, neurogenetics, molecular and cellular neurobiology.

The research foci of the Division of Neurology is epilepsy (both clinical and basic research), magnetoencephalography, stroke, dyslexia, burden of disease and quality of life, muscular dystrophy, multiple sclerosis, fatty acid oxidation disorders and molecular and cellular neurobiology.

HONOURS AND AWARDS
Al-Zaidy S: CanMeds Trainee Award, Division of Neurology, Hospital for Sick Children, 2010.

deVeber G: American Academy of Neurology “Sidney Carter Award” (awarded every 2 years to an outstanding Pediatric Neurologist), 2010.

Donner E: Epilepsy Toronto H.O.P.E. Award, in recognition of outstanding contributions to the epilepsy community, 2010.

Donner E: Junior Faculty Award for Clinical Excellence in Paediatric Medical Care, Department of Paediatrics, Hospital for Sick Children, University of Toronto, 2010.

Donner E: CanMeds Faculty Award, Division of Neurology, Hospital for Sick Children, 2010.


Kobayashi J: 25 Year Service Award, University of Toronto, March 2010.


MacGregor D: Paediatric Academic Leadership Award, Paediatric Chairs of Canada, 2010.

Minassian B: Physician Researcher Award for Scientific Accomplishment, University of Toronto, Department of Pediatrics, 2009.


PUBLICATIONS


**FUNDING**

Centre for the Study of Complex Childhood Diseases. Tein I - Member, CFI Team. **Canada Foundation for Innovation** ($21,000,000 2007-2012)


Characterization of genetic and molecular mechanisms underlying infantile spasms. Osborne L, Minassian BA. **Canadian Institutes of Health Research** ($549,785 2008-2013)


Comparative functional studies of the two MeCP2 isoforms, MeCP2e1 and MeCP2e2. Vincent J, Frankland P, Minassian BA. *International Rett Syndrome Foundation* ($100,000 2009-2011)

Compression of sagittal sinus in neonates underlying sinovenous thrombosis. deVeber G. *Heart and Stroke Foundation of Canada - Junior Personnel Award* (for Dr. Nomazulu Dlamini). ($100,000 2009-2011)

Conscious will and voluntary actions: Is there a last ventriloquist in the brain? Perez Velazquez JL. *Bial Foundation* ($47,500 2009-2012)


Developmental investigation of memory capacity using functional neuroimaging. Taylor, MJ. *Natural Sciences and Engineering Research Council of Canada Discovery Grant* ($150,000 2009-2014)


Genetics and reading disabilities. Barr CL, Lovett MW, Kerr EN. *Canadian Institutes of Health Research* ($1,053,327 2008-2013)

Genetics of reading disabilities. Barr CL, Kerr E, Lovett MW. *Canadian Institutes of Health Research* ($1,026,192 2008-2013)

Hypoglycemia and neuroplasticity in the neonatal period. Shroff MM, Moore AM, Whyte HEA, Taylor MJ. *Translational Research Grant, Dept. of Medical Imaging, University of Toronto* ($70,000 2008-2010)

Identification of genetic causes of pediatric neurological conditions and using these to uncover the cellular pathways involved and to determine the ways in which they are disturbed. Minassian BA. *Canada Research Chairs Program* ($478,585 2006-2011)


Mapping and modulation of brain plasticity in perinatal stroke. Kirton A, Chen R, Demchuk A, Hill MD, Barlow K, Howard J, deVeber G. *Heart and Stroke Foundation (New Investigator Award)* ($300,000 2009-2014)

MEB Diseases. Vajsar J. *SickKids Foundation* ($37,000 2006-2010)


Molecular basis of Lafora bodies (starch formation in the brain) and Lofora’s progressive myoclonus epilepsy. Minassian BA, Ackerley CA, Scherer SW, Lohi H. *Canadian Institutes of Health Research* ($1,146,830 2006-2011)

Multimodal neuroimaging of frontal lobe cognitive function in children. Taylor M, Donner EJ, Pang E. *Canadian Institutes of Health Research* ($466,335 2006-2010)

Multimodal neuroimaging and neurobehavioural outcomes in preterm neonates. Taylor M, Whyte H, Shroff M, Donner EJ, Moore A. *Canadian Institutes of Health Research* ($925,000 2007-2012)


Murine knockout model of 4-hydroxybutyric aciduria. Snead C, Gibson D. *National Institutes of Health* ($470,000 US 2006-2010)


Neuromuscular/EMG Fellow Funding Dr. H. Muradyan. Vajsar J. *International Federation of Clinical Neurophysiology* ($25,000 2009-2010)

Neuroprotection by inhibitors of apoptosis proteins following neonatal stroke. Askaian R. *Heart and Stroke Foundation of Ontario (Clinician-Scientist Award - Phase I)* ($150,000 2007-2010)


Ontario-Manitoba Regional Research Training Center. Banwell B, O’Connor P, Marie R-A. Multiple Sclerosis of Society of Canada ($300,000 2009-2011)

Open Fellowship for Hua (Alex) Han. Snead OC. University of Toronto ($5,000 2009)

Paediatric myasthenia. Kolski H, Vajsar J. Canadian Paediatric Surveillance Program ($42,000 2010-2011)

Preconditioning against periventricular leukomalacia associated with neonatal cardiac surgery. Askalan R, Hickey E, Van Arsdel G. The Children’s Heart Foundation ($90,000 2008-2010)


Quantitative non-invasive MRI measures of cerebral reactivity in children with sickle cell disease: A valuable tool for the assessment of vessel function and patient management. Kassner A, deVeber G. Canadian Institutes of Health Research ($175,000 2009-2010)


Restracomp Award for Hua (Alex) Han. Snead OC. SickKids Restracomp Award ($19,000 2009-2010)

Role of carnitine/organic cation transporters in the mammary gland and implications for the suckling infant. Tein I. Mead-Johnson Grant ($25,000, 2009-2010)

Role of carnitine/organic cation transporters in the mammary gland and implications for the suckling infant. Tein I. Mead-Johnson Grant ($13,790 2010-2011)


The Children’s Stroke Project. deVeber G. Anonymous Children’s Foundation ($1,800,000 2009-2014)

Towards the correction of Rett-like behavior in MeCP2-deficient mice by exogenous gene delivery. Snead OC. Canadian Institutes of Health Research ($585,685 2004-2009)


Use of multidrug resistance inhibitor verapamil in pharmacoresistant epilepsy. Andrade D. Krembil Neurosciences Program ($39,000 2008-2010)

Vascular effects of infection in pediatric stroke. deVeber G, Fullerton H. National Institutes of Health ($6,815,231 2009-2014)
DIVISIONAL OVERVIEW
The Emergency Department (ED) at SickKids provides acute care to children who are ill or who have been injured. We are a primary care centre for children in Toronto, as well as the tertiary referral centre for the Greater Toronto Area (GTA) and are the designated Paediatric Trauma Centre for the GTA. The division currently has 19 full-time staff, the majority of whom are certified in both paediatrics and paediatric emergency medicine (PEM). The Division also has a cadre of part-time paediatricians. The majority of the redevelopment of the ED’s physical plant was completed in May 2010. The redevelopment resulted in 28 new rooms and two new nursing/work stations. The rooms included four acute resuscitation rooms and two isolation rooms with anterooms. Two additional isolation rooms without anterooms were also created. Still to be done will be the building of a new Urgent Care area within the ED and space for offices and a staff lounge in close proximity to the ED. The target date for completion of this final phase of the redevelopment will be 2011.

The Division has an active three-year academic fellowship program. The Royal College of Physicians and Surgeons has fully accredited our fellowship program. In addition, we have a number of clinical departmental fellows from around the world spending a year or more with us, further developing their paediatric emergency medicine knowledge and skills. We have also worked with the Canadian Armed Forces to provide paediatric training to their physician assistants. The division continues to run Paediatric Life Support Courses (PALS and APLS). In addition, we provide sedation courses and paediatric trauma courses to both internal and external audiences. Staff travelled to Halifax to teach sedation to the PEM staff at IWK Children’s Hospital. We also have a well developed weekly half-day of educational activities for trainees and all healthcare providers in the ED. In the fall, the Division will present the seventh annual Paediatric Emergency Medicine Update, which in the past six years has been an overwhelming success.

Research in the Division remains clinically focused, covering a wide range of topics from respiratory disease acute care management to orthopaedic injuries, and pain and sedation, to vomiting, diarrhea and dehydration. Educational research in the ED has begun. Research done within the Division continues to be presented nationally and internationally with publications in peer-reviewed journals. Overall, the result has been a substantial increase in clinical research activities which has set us on par with the other North American leaders in paediatric emergency medicine.

HONOURS AND AWARDS
Boutis K: First Prize (Supervisor), Summer Student Research Project, 2009.

Finkelstein Y: Visiting Associate Professor of Pediatrics, Harvard Medical School, Boston, Massachusetts, 2009-2010.


Freedman SB: Runner-up, Pediatric Emergency Research Canada - Annual Terry Klassen Young Investigator Award, 2010.

Freedman SB: Research Recognition Award, Division of Paediatric Emergency Medicine, The Hospital for Sick Children, in recognition of excellence in outstanding effort and contribution to research, 2009-2010.

Jarvis A: Clinical Inter-professional Collaboration and Education Award, Michener Institute of Applied Health Sciences, PALS Advisory Team (Chairperson), 2009.

Jarvis A: Continuing Education Award for Sustained Excellence and Contribution, Department of Paediatrics, University of Toronto, 2010.
Jarvis A: Co-recipient, Faculty of Medicine 8T9 Medical Alumni Association Award, University of Toronto, 2010.

Jarvis A: Michel Weber Education Award for Sustained Contribution to Paediatric Education in Canada, Canadian Paediatric Society, 2010.

Jarvis A: First Recipient, Paediatric Emergency Section Education Award, Canadian Paediatric Society, Award was created and named in Dr. Jarvis’ honour for sustained contribution to education in the subspecialty, 2010.

Jarvis A: University of Toronto Medical Society created an annual prize in Dr. Jarvis’ name in honour of her contribution as Associate Dean, Health Professions Student Affairs, Faculty of Medicine, for students who demonstrate outstanding qualities of caring and support offered to their peers, 2009.


Mehta S: Runner-up, James C. Fallis Teaching Award for Pediatric Emergency Medicine Staff Physician Presentation 2010.


Thull-Freedman J: Runner-up, SickKids Emergency Department Citizenship and Advocacy Award, 2010.

Ratnapalan S: Runner up, Clinical Recognition Award, Division of Emergency Medicine, The Hospital for Sick Children, 2009.

Schneeweiss S: Winner, Clinical Recognition Award, Division of Paediatric Emergency Medicine, The Hospital for Sick Children, 2009.

Schuh S: Division of Paediatric Emergency Medicine, The Hospital for Sick Children, Research Recognition Award – MD, Runner-up, in recognition of excellence in outstanding effort and contribution to research 2009-2010.

PUBLICATIONS


Schechter T, McCarthy C, Finkelstein Y, Doyle J, Dupuis Lee L: Dismal response to high-dose methylprednisolone after failure to respond to standard dose in patients with acute GVHD. Bone Marrow Transplantation 2010: March 8 [Epub ahead of print].


**BOOKS AND BOOK CHAPTERS**


Boutis K: Pediatric foot fractures – Part II. In: UpToDate (Basow DS, ed.). UpToDate, Waltham, MA, 2010.


**FUNDING**

A feasibility study examining referral to community-based youth violence interventions for youth injured by violence. Snider C, Nathens A, McElroy R, Lee J, Komar L, Chan T, Rubenfeld G, Momdani M, Banfield J, Thorpe K. **Canadian Institutes of Health Primary and Community-Based Healthcare Catalyst Grant** ($100,000 2010)

CLARINET Study: International randomized double blind clinical study evaluating the efficacy and safety of Clopidogrel 0.2mg/Kg once daily versus placebo in neonates and infants with cyanotic congenital heart disease palliated with a systemic-to-pulmonary artery shunt. Finkelstein Y. **Sanofi-Aventis Inc./Bristol-Myers-Squibb Pharmaceuticals** ($4,000 2009-2010)


IVIG for Stevens-Johnson Syndrome in Children. Finkelstein Y.

New Trials Support (TALENTS) Award Talecris Biopharmaceuticals ($10,000 2009-2010)

Learning ECG Interpretation Using Deliberate Practice. Pusic M, Howard N, Boutis K, Pecaric M. Glenda Garvey Teaching Academy Education Project Grant ($15,000, 2010-2012)


The choice of a nebulizer for delivering MgSO4 to pediatric asthmatic patients in the emergency department. Coates AL, Leung K, Vecellio L, Schuh S. Paediatric Consultants Grant ($4,500 2009-2010)

Understanding the pediatric literature: What statistical and epidemiological concepts do pediatricians need to know? Thull-Freedman JD, Al-Ghamdi F, Gautam S, Alamri, W. Paediatric Consultants Grant ($4,500 2009-2010)
Division of Paediatric Medicine

DIVISIONAL OVERVIEW

The Division (comprising General Paediatrics, SCAN and Dermatology) continues to play an integral role in the core activities of the Department of Paediatrics. Our faculty, comprising 18 full-time and eight major part-time physicians, had a successful and productive academic year in 2009-10.

We welcomed one of our dermatology fellows, Dr Irene Lara-Corrales, as a major part-time faculty member in the dermatology section. Dr Lara-Corrales, who hails from Costa Rica, had a valuable and fruitful fellowship and won a resident/fellow award as well as the 2010 Weston Research Award at the Annual Society for Pediatric Dermatology meeting in the USA.

The Paediatric Medicine clinical program remains extremely busy and is the largest in-patient service in the hospital. Dr. Carolyn Beck has been appointed Director for In-patient Services and together with Dr. Trey Coffey, who leads the Quality Group in our Division, has made a number of changes to improve efficiency and the overall quality of care. Our hospitalist group continues to be involved in the development of the paediatric hospitalist movement in Canada and the USA with Dr. Sanjay Mahant as President of the CPS Hospitalist Section and one of eight North American members of the executive committee of PRIS (Pediatric Research in In-patient Settings).

The divisional Complex Care Program continues to develop under the leadership of Dr. Eyal Cohen. On the clinical side, a dedicated in-patient complex care team operates six beds and is staffed by a hospitalist with complex care expertise and a nurse practitioner. The ambulatory arm of the complex care team currently coordinates care for more than 100 of the most complex, high-needs patients. The Norman Saunders Complex Care Initiative funded three research grants in 2009/10 and a third competition will run in the fall of 2010. As part of accreditation for 2010, the initiative was nominated by the Hospital as a “leading practice” – a noteworthy practice carried out by a health services organization, which demonstrates innovation and creativity and has a positive impact on services or outcomes for clients and families.

The Obesity Program received funding through the Ministry of Health and a tertiary care obesity clinic (STOMP) started in the fall of 2009 with Dr. Catherine Birken in the Paediatric Medicine Consultation Clinic. The STOMP team was nominated for a family-centred care advisory council humanitarian award in 2009.

Faculty members continued to excel, advocate and gain recognition as leaders in their field. Dr. Robert Hilliard, as President of the Canadian Paediatric Society; Dr. Sanjay Mahant, as President of the Hospital Medicine Section, and Dr. Michelle Shouldice, as President-elect of the CPS Section of Child and Youth Maltreatment. Dr. Moshe Ipp was awarded the CPS Distinguished Community Paediatrician Award in 2009. Dr. Jeremy Friedman continues as an Associate Editor of the Paediatrics & Child Health journal and was appointed chair of the CPS Annual Conference Planning Committee. Dr. Patricia Parkin was invited to join the Child Health Grant Panel for Canadian Institute of Health Research (CIHR) and the Canadian Task Force on Preventive Health Care. Dr. Astrid Guttmann won the Child Health Services Research Interest Group Nemours Award.

Career development is active with four faculty involved in post-graduate master’s level training (two in research methods and two in education). Members of the Division attended leadership courses through the APA as well as through the Department of Paediatrics at the Rotman School of Business. This has been a successful year for research productivity. There were more than 20 abstracts from the Division at the annual PAS and CPS meetings, including many platform presentations. Funding from both internal and external agencies, including a number of CIHR grants was secured. TARGeT Kids!, which is a collaboration between our PORT group, community paediatricians and members of the Department of Family and Community Medicine group under the leadership of Drs Patricia Parkin, Catherine Birken and Jonathon Maguire, has already shown much promise in starting to address gaps in knowledge about the prevalence, predictors, outcomes and effective strategies for prevention and early identification of common problems. In the Dermatology Section, Dr. Elena Pope continues to excel with many grants and publications, while Dr. Miriam Weinstein is recognized nationally and internationally for her popular dermatology lectures.
Education is an important priority in our Division, with Dr. Susan Tallett leading the SickKids Learning Institute and Dr. Stacey Bernstein as Director of the Undergraduate Education Program. Under the leadership of Drs. Parkin and Shouldice the Fellowship Program continues to grow in leaps and bounds with a total of 21 full and part-time fellows this year. Many faculty members were recognized with teaching awards including Dr. Stacey Bernstein (Wightman-Berris Academy Undergraduate Individual Teaching Award from the University of Toronto), Dr. Mark Feldman (Marvin Gerstein Award for Part-Timers), and Dr. Jeremy Friedman (Harry Bain Award for Excellence in Clinical Teaching).

Congratulations to Drs. Astrid Guttman, Michael Weinstein and Stacey Bernstein on their promotion to Associate Professor.

**HONOURS AND AWARDS**

Bernstein S: Wightman-Berris Academy Undergraduate Individual Teaching Award, University of Toronto, 2010.

Birken C: STOMP Team Nominated for Family Centered Care Advisory Council Humanitarian Award, 2009.


Feldman M: Marvin Gerstein Teaching Award, 2009-2010.


Friedman J: Harry Bain Award for Excellence in Clinical Teaching, Department of Pediatrics, University of Toronto, The Hospital for Sick Children, 2010.

Guttman A: Nemours Award: Child Health Services Research Interest Group Nemours Award Committee, 2010.


Rapoport A: Scholarship: The Program in Palliative Care Education and Practice - Pediatric Track. The Harvard Medical School, Boston, MA USA, scholarship to attend program, 2010.


Weinstein, Miriam: Dr. Arthur A. Birt Memorial Lecturer, Invited Speaker, Children’s Hospital of Manitoba, Department of Pediatrics & Child Health, 2009.

**PUBLICATIONS**


**BOOKS AND BOOK CHAPTERS**


**FUNDING**

A randomized, controlled, multidose, multicentre, adaptive phase II/III study in infants with proliferating infantile hemangiomas requiring systemic therapy to compare four regimens of Propranolol (1 or 3 mg/kg/day for 3 or 6 months) to placebo (double blind). Pope E, Chakkittakandiyil A, Lara-Corrales I. *Pierre Fabre Dermatologie* ($373,044 2010-2012)

An office based intervention to improve media use in preschool children: a randomized controlled trial. Birken CS, Beck CE, McCrindle B, Parkin PC. Pediatric Consultants Grant ($9,975 2006-2009)


Canadian Institutes of Health Research Charting the territory: Determining and documenting trajectories for families where a child has a life-threatening condition. Rapoport A, Raiman J, Weiss S, Cohen E, Siden H, Steele R: Canadian Institutes of Health Research ($1,304,676 2008-2013)


Career decision-making in paediatric residency. Shouldice M, Atkinson A. Pediatric Consultants Grant ($4,995 2010)


Development and evaluation of outcome measures in patients with epidermolysis bullosa. Pope E, Schwieger-Briel A. Canadian Dermatology Foundation ($25,000 2009-2010)

Development and validation of toddler NutriSTEP. Randalsimpson JA, Keller HH, Beyers JE, Birken CS. Canadian Institutes of Health Research ($200,809 2010-2012)

Effectiveness of a new neuromuscular electrical stimulation (NMES) treatment technique (VitalStim® therapy) in the management of young infants with severe dysphagia. A Prospective Pilot Study. Mahant S, Marcus S, Friedman JN: Pediatric Consultants CPA Grant ($9,080 2010 - 2011)


Health outcomes from low vitamin D in toddlers. Maguire JL. Canadian Institutes of Health Research ($680,191 2010-2014)


Is prolonged bottle feeding an independent risk factor for overweight in young children? Birken CS, Parkin PC, O’Connor D, Jacobson S, Peer M, Mekky M. **Dean’s Fund New Staff Competition, Faculty of Medicine, University of Toronto** ($9,972 2008-2010)

Maintenance intravenous saline study: a randomized, double-blind controlled trial of 0.9% NaCl/Dextrose 5% vs. 0.45% NaCl/Dextrose 5% as maintenance intravenous fluids in hospitalized children. Friedman JN, Freedman S, Beck C, Geary D. **Paediatric Consultants Grant** ($9,956 2007-2009)


Palindromy at the NF1 locus as a risk factor for NF1-associated malignancy. Lewis S, Parkin P. **The Hospital for Sick Children Research Institute New Ideas Grant Competition** ($45,023 2006-2009)

Parental perception of forgoing artificial delivery of nutrition and hydration during end-of-life care for their children. Rapoport A, Newman C, Rugg M, Steele R. **Norman Saunders Complex Care Initiative Grant Competition** ($11,304 2009-2010)

Parents’ needs around disclosure of adverse events: A qualitative study. Coffey M, Matlow A, Friedman J, Espin S. **Canadian Patient Safety Institute** ($6,700 2010-2011)


Patterns and predictors of health care utilization by adult survivors of childhood cancer: A Pediatric Oncology Group of Ontario and ICES population database linkage study. Nathan P, Guttmann A. **Canadian Institutes of Health Research** ($426,000 2009-2011)

Pediatric Outcomes Research. Parkin PC, Macarthur C. **SickKids Foundation** ($750,000 2008-2013)


Regional migration patterns of children with complex chronic conditions. Cohen E, Guttmann A, Yantzi N. *Norman Saunders Complex Care Initiative Grant Competition* ($25,603 2009-2010)

**Vitamin D deficiency in urban Canadian toddlers: A study of prevalence and risk factors. Parkin PC, Maguire J, Mekky M. *Dairy Farmers of Ontario* ($90,000 2008-2010)**

Safer medications for children: Quantifying nephrotoxicity through secondary analysis of electronic data. Parshuram C, Guttmann A. *Canadian Institutes of Health Research* ($100,000 2009-2011)

**Vitamin D deficiency in pediatric patients with atopic dermatitis and psoriasis: Prevalence and risk factors. Pope E, Lara-Corrales I. *Canadian Dermatology Foundation* ($10,000 2010-2012)**

Short and long term outcomes of complicated pediatric pneumonia. Cohen E, Weinstein M, Dell M, Mahant S, Traubici J, Mekky M. *Faculty of Medicine, University of Toronto* ($10,000 2008-2010)

**Vitamin D deficiency in pediatric patients with atopic dermatitis and psoriasis: Prevalence and risk factors. Lara-Corrales I, Pope E, Maguire, Parkin P. *Weston Research Award, Society for Pediatric Dermatology* ($20,000 2010-2012)**

TARGet Kids! Operating Grant. Maguire J. *St. Michael’s Hospital Foundation* ($30,000 2010-2011)

**Vitamin D supplementation for preschoolers. Maguire J. *University of Toronto Dean’s Fund* ($10,000 2010-2012)**


**Vitamin D supplementation for preschoolers: A TARGet Kids! randomized controlled trial. Maguire JL, Mamdani M, Birken CS, Parkin P. *Dean’s Fund New Staff Competition, University of Toronto, Faculty of Medicine* ($9,976 2010-2015)**

The CanMeds role of collaborator: How well is it taught and evaluation from the perspectives of faculty and residents. Berger E, Tallett S, Chan M, Jenkins D. *Department of Paediatrics* ($5,000 2009-2011)
DIVISIONAL OVERVIEW
The Division of Respiratory Medicine continues to provide comprehensive care for patients affected by such paediatric pulmonary diseases as asthma, cystic fibrosis (CF), interstitial lung diseases, primary ciliary dyskinesia (PCD), hereditary hemorrhagic telangiectasia (HHT), sleep-related breathing disorders, complex respiratory care requiring ventilatory support, as well as children with congenital malformations involving the respiratory tract. We provide consultation support for the Hospital in all areas of paediatric respiratory disease. The division also provides various diagnostic services including flexible bronchoscopy. Over the last year, we have broadened our diagnostic spectrum of tests to assess diseases with airway inflammation, including test of nitric oxide in exhaled air, as well as gas-mixing techniques as more sensitive tests for obstructive airway diseases. The infant pulmonary function laboratory offers a unique spectrum of tests that are still not available at any other centre in Canada. This has led to the potential for diagnostic tools to objectively assess lung disease in infants and young children. The service is available for the assessment of both patients in the Hospital and outpatients. We are currently in the process of developing pulmonary function tests for pre-school children.

As part of the Toronto Lung Transplantation Program, the division provides pre- and post-transplantation care for children with end-stage lung disease. The lung transplant program continues to be the largest in the country. The program is now open for performing infant lung transplantation in select patients.

The training program is led by Dr. Melinda Solomon and has independent Royal College of Physicians and Surgeons of Canada accreditation. It is the largest training program for paediatric respiratory medicine in the country and provides the full range of training that is required for Royal College of Physicians and Surgeons of Canada certification. It also provides what is required for board certification in paediatric pulmonology in the United States and trains physicians from abroad. Dr. Solomon recently completed the Education Scholars Program and is currently pursuing a master’s degree of Community Health (Health Professional Teacher Education).

Dr. Sharon Dell is now Associate Program Director for the Clinical Epidemiology & Health Care Research program within the Faculty of Medicine at the University of Toronto. The program offers both a master’s degree and a doctoral-level degree and has an international reputation for excellence in training clinicians in clinical, health services and decision sciences research.

Dr. Neil Sweezey leads the Hospital’s Clinician-Scientist Training Program and is the Toronto centre leader and a national executive member of the CIHR-funded Canadian Child Health Clinician Scientist Program. These programs provide advanced scientific training and mentoring for child health clinicians preparing for careers as independent researchers in child health. There is a broad spectrum of both basic science and clinical research that bridges the laboratory to the clinic in many disease areas. The major research foci include clinical and epidemiological studies in patients with asthma and CF, translational studies on airway inflammation and infection in cystic fibrosis, effect of sex hormones in airway inflammation, defining the role of novel genes in lung development, studies in aerosol therapy and exercise physiology.

Dr. Padmaja Subbarao is Deputy Director of the Canadian Healthy Infant Longitudinal Development (CHILD) Study, the largest birth cohort in Canadian history. The role of the study is to elucidate the factors involved in the development of asthma and allergies in early childhood; it is supported by CIHR and AllerGen. Dr. Subbarao is leading this project as a co-Principal Investigator with Dr. Malcolm Sears from McMaster University. She has also been successful in attracting additional private funding for the infant pulmonary function cohort in this study that will provide the largest study using lung function measurements in this age group to date. In addition, Dr. Subbarao has continued to work on pioneering new methods of lung function assessment and inflammatory assessment such as single breath exhaled nitric oxide and multiple breath washout technology, establishing SickKids as a world leader in infant pulmonary function testing. Dr. Subbarao has also successfully received funding for multiple research studies, as well as salary support from the CIHR, the Young Investigator Award.
The division continues to be involved in the NIH-funded Childhood Asthma Management Program Continuation Study (Dr. Grasemann, Dr. Solomon, Dr. Subbarao). There has also been a growing interest in assessing the pulmonary sequelae of sickle cell disease that are currently being addressed in a number of research studies (Dr. Grasemann, Dr. Narang, Dr. Subbarao). Dr. Allan Coates recently retired from the Division of Respiratory Medicine but remains active on both the provincial and national level with the Ontario Lung Association and the Canadian Thoracic Society, promoting training of spirometry in children as well acting in advisory roles for research studies using lung function testing with Statistics Canada.

Dr. Dell is involved in an international program to develop a new classification for interstitial lung diseases and a NIH sponsored study on primary ciliary dyskinesia. Dr. Dell, in collaboration with scientists from Health Canada, Environment Canada and Berkeley University, leads a research program examining effects of environmental exposures on asthma outcomes in Toronto school children. She also conducts multi-centre research in primary ciliary dyskinesia in the NIH sponsored Genetic Diseases of Mucociliary Clearance Consortium and in interstitial lung disease with the Children’s Interstitial Lung Disease Consortium.

In addition, members of the division are key partners of the team that forms the Cystic Fibrosis Centre, highlighting the longstanding and ongoing excellence in both clinical care and research at SickKids in this area. The CF Centre in co-led by Christine Bear, Senior Scientist, Molecular Structure & Function, and Dr. Felix Ratjen. Newborn screening for CF was started last year and the team at SickKids was a major driving force in getting it off the ground. Dr. Ratjen acts as medical advisor to the screening group in Ottawa, and a collaborative study funded by the Canadian CF Foundation has been initiated to evaluate the clinical course of patients with an unclear diagnosis within the Newborn Screening Program. Dr. Ratjen and the CF group are involved in multiple studies in a leading (PI) role. These include multi-centre studies on azithromycin in Pseudomonas negative CF patient, this is the first collaborative study funded by the US CF Foundation conducted in Canada and in the US. Along with the study on the role of aspergillus infection in CF patients which is funded by both the Canadian CF Foundation and Physician Service Incorporated and the study on the use of hypertonic saline as an early intervention strategy funded by the US CF Foundation and National Institute of Health.

Dr. Ratjen is also involved in developing new outcomes measures in the BREATHE program to assess improvement in CF lung disease, and a study to develop CFTR corrector therapy funded by CIHR and the Canadian CF Foundation. A team grant with Dr. Ratjen as PI has been funded by CIHR bringing together basic scientists, including stem cell researchers with clinical scientists. Dr. Grasemann is leading a series of studies to elucidate the role of arginase and NO deficiency in CF lung disease; the studies are sponsored by CIHR and the Canadian CF Foundation. Dr. Sweezey as PI is funded by the Canadian CF Foundation to study the effects of sex hormones on airway inflammation in CF. Other studies supported by research grants, as well as generous support by individuals such as the Irwin family, are ongoing in addition to industry-sponsored studies including an 80-site study in Australia, Canada and the US on denufosol, a P2Y receptor agonist that activates chloride conductance through alternative chloride channels (PI Dr. Ratjen). The CF group is also involved in other clinical studies of drugs targeting the basic defect in CF. A close collaboration exists with the adult CF program at St. Michael’s Hospital led by Dr. Keshayjee.
For a more complete description of our clinical activities, educational events and research interests, please visit our website at http://www.sickkids.ca/respiratorymedicine/index.html as well as the website of the CF Centre http://www.sickkids.ca/Centres/Cystic-Fibrosis-Centre/index.html.

**HONOURS AND AWARDS**

Grasemann H: Zellers Senior Scientist Award, Canadian Cystic Fibrosis Foundation, 2009.


Ratjen F: SickKids Foundation H.E. Sellers Chair in Cystic Fibrosis, 2009-2010.

Subbarao P: New Investigator Award in Area of Clinical Research, Canadian Institutes of Health Research, 2009.

**PUBLICATIONS**


**BOOKS AND BOOK CHAPTERS**


**FUNDING**

A multi-stage population based study to determine the association between air pollution and asthma. Dell SD. **Health Canada** ($76,442 2009-2011)

A phase 3, international, multi-centre, randomized, double-blind, placebo-controlled, parallel group, efficacy and safety study of denufosol tetrasodium inhalation solution in patients with cystic fibrosis lung disease and FEV1= 75% predicted. Solomon M, Ratjen F. **Inspire Pharmaceutical Inc.** ($42,046 2008-2010)

A study to investigate the use of the AeroEclipse* II breath actuated nebulizer for the delivery of methacholine chloride bronchoprovocation agent. Dell SD. **Ontario Ministry of Health and Long-Term Care Health Technology Assessment and Implementation Program** ($174,455 2010-2011)

AllerGen-Karolinska Institute International Partnership Initiative (IPI). Subbarao PJ. **AllerGen NCE Inc.** ($20,000 2009-2010)

Canadian Birth Cohort: Indoor air and the development of asthma and allergy. Bleakley C, Kane K, McElhaney J, Watts TH, Moraes TJ. **Canadian Institutes of Health Research** ($4,201,000 2007-2013)

Canadian Birth Cohort: Indoor air and the development of asthma and allergy (CHILD Study). **Canadian Institutes of Health Research** ($12,000,000 2007-2013)


Canadian healthy infant longitudinal development study, Toronto Site. Subbarao PJ. **Private donations from Bothwell Accurate and Golden Thread Charitable Foundation for the CHILD Study/ SickKids Foundation** ($1,100,000 2008-2013)

Cystic Fibrosis Foundation Therapeutics Inc. Inhaled Saline for Infants Study (ISIS-002), National Institutes of Health ($1,794,674 US 2008-2012)

Defining a disease-specific HRQOL tool for primary ciliary dyskinesia. Dell SD, Leigh M. NC Tracs Institute Pilot Grant Program ($10,000 2009-2010)

Defining the role of stenotrophomonas maltophilia in CF patients. Waters V, Ratjen F. Canadian Cystic Fibrosis Foundation ($240,000 2009-2011)

Does complicated pneumonia lead to chronic lung disease? Dell SD, Cohen E, Weinstein M. Paediatric Consultants Grant ($9,900 2010-2011)

Emerging Team Grant: From genes to proteins, cells, tissues and patients. Ratjen F. Canadian Institutes of Health Research ($2,401,449 2009-2014)

Enhancing CD8 T cell immune responses to RSV. Moraes TJ. Dean’s Fund New Staff Competition, University of Toronto ($10,000 2009-2014)

Enhancing CD8 T cell immune responses to RSV. Moraes TJ. The Hospital for Sick Children, Start-up Operating/Equipment Fund ($456,000 2008-2012)


Expanded access program for aztreonam lysine for inhalation in Canadian patients with cystic fibrosis and pseudomonas aeruginosa airway infection who have limited treatment options and are at risk for disease progression. Solomon M, Ratjen F. Gilead Sciences (Funding based on patient enrollment 2009-2010)

Functional analyses of two novel, developmentally-regulated glucocorticoid-responsive genes in fetal lung. Kaplan F, Sweezy N. Canadian Institutes of Health Research ($170,000 2009-2011)

Functional relevance of altered l-arginine metabolism in cystic fibrosis lung disease. Grasemann H, Ratjen F. Canadian Cystic Fibrosis Foundation ($170,000 2009-2011)

Genetic Diseases of Mucociliary Clearance Consortium. Dell SD, Knowles M. National Institutes of Health ($6,709,385 2009-2014)

High Impact Strategies Towards Overweight Reduction in Youth (HISTORY) Team Grant. Narang I. Canadian Institutes of Health Research ($2,322,370 2008-2013)

Influenza infection of human endothelium leads to microvascular leak: Cellular and molecular mechanisms. Lee W, Moraes TJ. Ontario Thoracic Society ($49,945 2010-2011)

Lab technician, salary support. Grasemann H. The Lynne and Arnold Irwin Foundation ($44,171 2009-2010)

Making the link between objective measures of airway disease and epidemiological survey data. Dell SD. Ontario Lung Association ($50,000 2009-2010)
Masters project funding to Wallace Wee: The accurate prediction of drug lung deposition based on the combination of nebulizer performance and the patient’s age and pattern of breathing.  
**Natural Sciences and Engineering Research Council of Canada** ($17,500 2009-2010)

Modulation by sex hormones of inflammation and susceptibility to *Pseudomonas aeruginosa* in cystic fibrosis airways. Sweezey N.  
**Canadian Cystic Fibrosis Foundation** ($170,000 2009-2011)

Non-Adherence in Paediatric Multi-Organ Transplant Recipients. Solomon M, Pollock-BarZiv S.  
**Astellas Pharma Research Grant** ($25,500 2008-2009)

Open-label extension of study 08-110 – A multi-center study of denufosol tetrasodium inhalation solution in patients with cystic fibrosis lung disease. Solomon M, Ratjen F.  
**Inspire Pharmaceutical Inc.** (Funding based on patient enrollment 2009-2010)

Prediction by Ultrasound of the Risk of Hepatic Cirrhosis in Cystic Fibrosis (PUSH): Summary for CF care providers. Solomon M, Ratjen F.  
**Cystic Fibrosis Foundation/National Institutes of Health** (Funding based on patient enrollment 2008-2013)

Platform for Outcomes Research and Translation in Asthma and Allergy (PORTAL). Dell SD, Lynds L.  
**AllerGen NCE Inc.** ($300,000 2009-2014)

Pilot Study to validate a system for measuring the lung clearance index in children. Ratjen, F.  
**Cystic Fibrosis Therapeutics** ($50,000 2010-2014)

Respiratory syncytial virus in the development of infant wheezing disorders: a bench to bedside approach to gene-virus interactions. Subbarao P.  
**AllerGen NCE Inc.** ($176,800 2009-2012)

Serum biomarkers as predictors of bronchiolitis obliterans in children receiving allogeneic hematopoietic stem cell transplantation: a pilot study. Dell SD, Gassas A.  
**Comprehensive Cancer Centre** ($50,121 2009-2010)

Start Up Operating Fund. Narang I.  
**SickKids Research Institute** ($110,000 2008-2010)

Surfactant protein D controls inflammatory response and modulates NO synthesis in the cystic fibrosis lung. Grasemann H.  
**Ontario Student Opportunity Trust Fund/Restracomp** ($60,000 2008-2011)

Team grant: Pandemic preparedness - Influenza biology - Correlates to protection against influenza illness: From mouse to older adults’. Becker A, Mandhane PJ, Sears MR, Subbarao P, Turvey S, Moraes TJ.  
**Canadian Institutes of Health Research** ($1,471,350 2008-2011)

The Canadian Health Infant Longitudinal Development (CHILD) Study. Grasemann H.  
**Canadian Institutes of Health Research** ($12,000,000 2007-2013)

The Canadian Infant Longitudinal Development (CHILD) Study. Dell SD, Sears M.  
**Canadian Institutes of Health Research** ($12,000,000 2008-2013)

Young infants with acute recurrent wheezing – To puff or not to puff? Grasemann H.  
**SickKids Foundation/Canadian Institutes of Health - Institute of Human Development, Child and Youth Health** ($130,000 2008-2010)
DIVISIONAL OVERVIEW

The Division of Rheumatology provides comprehensive care for children with rheumatic diseases. The ambulatory clinics have approximately 5,000 patient visits a year at The Hospital for Sick. In addition to the general rheumatology clinics, there are unique multidisciplinary subspecialty clinics for children with dermatomyositis, morphea, systemic JIA, systemic and neonatal lupus erythematosus, spondylitis and inflammatory brain disease. A new clinic has been started for children with fever syndromes. Many children have benefited from treatments in the medical day care unit, where children receive joint injections, therapeutic infusions or undergo investigations that would normally require in-patient admission.

Our program offers a comprehensive range of services for the evaluation and treatment of children with the vast range of paediatric rheumatic and inflammatory diseases. Rheumatology provides clinical care and undertakes research studies in systemic inflammatory disorders and inflammatory diseases of the bones and joints.

The Division of Rheumatology has the largest paediatric rheumatology fellowship training program in North America and is fully accredited by the Royal College of Physicians and Surgeons of Canada. This academic year, our fellows originated from Netherlands, Thailand, Germany and Singapore. Our graduates have been successful in obtaining academic placements around the world and trainees have been productive in the research arena.

Research foci include the development of a trial design for the study of rare diseases, outcome, prognosis and treatment studies in juvenile idiopathic arthritis, systemic lupus erythematosus, neonatal lupus, scleroderma, dermatomyositis, vasculitis and CNS vasculitis.

Basic research focuses on the immunopathogenesis of Kawasaki disease using an animal model.

HONOURS AND AWARDS

Benseler S: James C. Fallis Teaching Award, Division of Paediatric Emergency Medicine, The Hospital for Sick Children, 2009-2010.

Benseler S: Clinical Recognition Award – Staff Physician Part-time, Division of Paediatric Emergency Medicine, The Hospital for Sick Children, 2009-2010.

Laxer R: The Distinguished Clinician Scholar Award from the American College of Rheumatology, Philadelphia, 2009

Levy D: Future Leaders in Rheumatology (FLIRT).


Silverman ED: The Inaugural Chair Holder, the Ho Family Chair in Autoimmune Diseases, 2009.

Silverman ED: Distinguished Investigator Award, the Canadian Rheumatology Association, 2010.

Tse SML: Department of Paediatrics Award for Teaching Excellence for the Paediatric Resident Lecture Series, 2010.

Tse SML: Department of Paediatrics Scholarship for Education Scholar Program, Centre for Faculty Development, University of Toronto, 2010.

Yeung RSM: Henry Kunkel Young Investigator Award, American College of Rheumatology, September 2009.

Yeung RSM: Royal College Professional Development Grant, Royal College of Physicians and Surgeons, September 2009.

Yeung RSM: Dafna Gladman Award, Rheumatic Diseases Unit, University of Toronto, Toronto, Ontario, June 2009.

RESEARCH ASSOCIATES
Matthew Gronski
Marjorie McLimont
Lawrence Ng
Reena Riarh
Shahla Sheikh
Aram Zakerzaeh

ADMINISTRATIVE STAFF
Sandra Bergeron
Lynn Brown
Jackie Colquhoun
Shona Magee
Roseanne Richard
Tania Viseu
**PUBLICATIONS**


Dugan EM, Huber AM, Miller FW, Rider LG, Feldman BM: 
Review of the classification and assessment of the cutaneous 
manifestations of the idiopathic inflammatory Myopathies. 

Filler G, Sharma AP, Levy DM, Yasin A. Random 
pharmacokinetic profiles of EC-MPS in children with 
autoimmune disease. Pediatric Rheumatology Online 
Journal 2010: 8(1): p 1

Globe D, Young NL, Von Mackensen S, Bullinger M, Wasserman 
J, Feldman BM, Healthrelated Quality of Life Expert Working 
Group of The International Prophylaxis Study Group: Measuring 
patient-reported outcomes in haemophilia clinical research. 

Hiraki LT, Benseler SM, Tyrrell PN, Harvey E, Hebert D, 
Silverman ED: Ethnic Differences in pediatric systemic lupus 
pp 2539-2546.

Hugle B, Laxer RM: Lipoatrophy resulting from steroid injection 
into the temporomandibular joint. Arthritis & Rheumatism 

Hugle B, Solomon M, Harvey E, James A, Wadhw a A, Amin R, 
Bell-Peter A, Benseler SM: Pneumocystis jirovecii pneumonia 
following Rituximab treatment in Wegener’s Granulomatosis. 
Arthritis Care & Research (Hoboken) 2010: June 25 [Epub 
ahead of print].

Hurdowar A, Urmson L, Bohn D, Geary D, Laxer R, Stevens P: 
Compliance with a pediatric clinical practice guideline for 
intravenous fluid and electrolyte administration. Healthcare 

Hutchinson C, Tse SM: Biologic therapies in children with Juvenile 

Hutzal CE, Wright FV, Stephens S, Schneiderman-Walker J, 
Feldman BM: A qualitative study of fitness instructors’ 
experiences leading an exercise program for children with 
juvenile idiopathic arthritis. Physical & Occupational Therapy 

Jackson C, MacDonald M, Anderson M, Stevens P, Gondon P, 
Laxer R: Improving communication of critical test results in a 
paediatrics academic setting - Key lessons in achieving and 
sustaining positive outcomes. Healthcare Quarterly - Patient 

Jaeggi ET, Golding F, Silverman ED: Perinatal outcome of fetal 
atroventricular block: One-hundred sixteen cases from a single 

Johnson SR, Tomlinson GA, Hawker GA, Granton JT, Grosbein 
HA, Feldman BM: A valid and reliable belief elicitation method 
for bayesian priors. Journal of Clinical Epidemiology 2010: 

Johnson SR, Feldman BM, Pope J, Tomlinson G: Shifting our 
thinking of uncommon disease trials: The case of 
methotrexate in scleroderma. Journal of Rheumatology 2009: 

Kashiwada M, Levy DM, McKeag L, Murray K, Schröder A, 
Canfield SM, Traver G, Rothman PB: Interleukin-4-induced 
transcription factor NFIL3/E4BP4 controls IgE class switching. 
Proceedings of the National Academy of Sciences USA 2010: 
107(2): pp 821-826


BOOKS AND BOOK CHAPTERS


FUNDING


A 12-week randomized, double blind placebo-controlled, parallel group, 2-arm study to evaluate the efficacy and safety of Tocilizumab in patients with sJIA – With a 92-week...use of Tocilizumab. Schneider R, Benseler SM. Hoffmann-La Roche Inc., USA ($553,000 2008-2012)


Canadian arthritis network international partnership initiative. Benseler SM. Networks of Centres of Excellence ($590,000 2007-2009)


Development of an internet-based psychoeducational program for parents and children newly diagnosed with arthritis: Phase I. Benseler SM. Networks of Centres of Excellence ($162,000 2009-2011)


International juvenile idiopathic arthritis initiative. Yeung RSM, Feldman B, Wedderburn L, Prakken B. Canadian Arthritis Network ($70,000 2009-2010)

Kawasaki disease: On our way to unraveling the pathogenesis. Yeung RSM. Canadian Institutes of Health Research ($425,214 2008-2011)

Molecular expression & physiology in developing atrioventricular nodal cells. Hamilton R, Silverman ED: Canadian Institutes of Health Research ($123,500 2006-2009)


Pharmacogenetics of juvenile idiopathic arthritis and juvenile dermatomyositis—the influence of polymorphisms in genes of enzymes involved in metabolism on the efficacy and toxicity of methotrexate. Schmeling H, Yeung RSM, Feldman B, Siminovitch K. The Alberta Children’s Hospital Foundation ($45,217 2009-2010)


Research in Childhood Arthritis and Rheumatic Disease (CARD): A collaborative cross Canada research training program to enhance quality of life. Yeung R, Schneider R, Cameron B, Laxer R, Spiegel L, Tse S. Canadian Institutes of Health Research ($1,800,000 2005-2011)


Superantigens in autoimmunity. Yeung RSM. Canadian Institutes of Health Research ($461,325 2009-2012).

System level evaluation of the ACPAC program graduates: Determining collaborative practice behavior following the introduction of an APP in arthritis care across diverse clinical settings in Ontario: Lundon K, Shupak R, Lineker S, Schneider R, Passalent L, Sinclair L, Kennedy C. Canadian Initiative for Outcomes in Rheumatology Care (49,898 2010-2011)

The role of chronic inflammation and systemic lupus erythematosus-related factors in the development of premature atherosclerosis in pediatric SLE. Silverman ED, Bargman J, Bradley T, Beyene J. The Heart and Stroke Foundation of Canada ($275,000 2006-2009)

Towards a better understanding of Kawasaki disease. Yeung RSM. Heart and Stroke Foundation of Canada ($239,158 2008-2011)

Towards a harmonized approach to the conduct of research in childhood arthritis worldwide. Yeung RSM, Feldman B, Wedderburn L, Prakken B. Ministry of Research and Innovation of Ontario, International Opportunities Program ($450,000 2010-2013)

Towards understanding the mechanism of congenital heart block. Hamilton RH, Gross G, Silverman ED. Canadian Institutes of Health Research ($197,000 2006-2009)


Widening the therapeutic window in acute ischemic stroke with blood-brain-barrier permeability and its relationship with corresponding blood markers: Implications for short and long-term outcomes. Kassner A, Yeung RSM. Heart and Stroke Foundation of Canada ($136,490 2010-2012)
FACULTY
Dr. Golda Milo-Manson, Vice President, Medicine & Academic Affairs

PHYSICIAN DIRECTORS
Dr. Peter Rumney, Rehabilitation & Complex Continuing Care
Dr. Darcy Fehlings, Child Development Program
Dr. Rob Carmichael, Chief of Dental Services

STAFF PHYSICIANS
Dr. Evdokia Anagnostou
Dr. Doug Biggar
Dr. Ryan Hung
Dr. Elizabeth Jimenez
Dr. Anne Kawamura

Dr. Jeff Kobayashi
Dr. Laura McAdam
Dr. Gilbert Miller
Dr. Angela Orsino
Dr. Jonathan Tolkin
Dr. Wendy Roberts
Holland Bloorview Kids Rehabilitation Hospital

Holland Bloorview Kids Rehabilitation Hospital AFP (9.5 FTEs)

Active consulting staff = 17 subspecialists

As a provincial facility, we see almost 7,000 children and youth on an outpatient basis, and we admit more than 650 patients a year.

Holland Bloorview offers both in-patient and outpatient developmental and rehabilitation services to the children and families of greater Toronto and provides tertiary services in paediatric rehabilitation to the Province of Ontario.

Highlights

• Fifth Annual Roszel Developmental Paediatric Resident Research Day, February 19, 2010
• Child Development Update Conference, November 13, 2009

Medical Education Chair:
Dr. Golda Milo-Manson

Developmental Paediatric Residency Program Director:
Dr. Anne Kawamura

Resident Coordinators:
Dr. Laura McAdam and Dr. Elizabeth Jimenez

Year 2009-10
Paediatric RII........................................................... 397 days
Neurology................................................................. 112 days
Psychiatry ............................................................. 33 days
PM&R................................................................. 149 days
Medical students................................................... 291 days
Developmental paediatric
Subspecialty residents ........................................... 1013 days

TOTAL................................................................. 1995 days

Fellows/Residents Developmental Paediatric 2009/10
Dr. Michal Begin
Dr. Joelene Huber
Dr. Nirit Brosh
Dr. Elizabeth Young
Dr. Melissa Carter
Dr. Andrea Garbutt

For the academic accomplishments, please see the Division of Developmental Paediatrics report.
Transplant Centre

CENTRE OVERVIEW

Clinical Care. SickKids’ Transplant Centre’s portfolio includes the heart, intestine, kidney, liver, and lung solid organ transplant programs; and the Group for Improvement of Intestinal Failure and Treatment (GIFT) program. We have one of the largest clinical paediatric solid organ transplant programs in North America, with more than 1,000 children who have received a solid organ graft, and a world-class academic intestinal failure program. Our case volumes and clinical outcomes rank within the top five to 10 per cent of centres in North America. Within a family-centred model, we deliver cutting-edge treatment of end-stage organ failure from the fetal stage through to the teenage years. Patient care is enhanced by dedicated health care workers who specialize in the treatment of organ failure and transplantation; interdisciplinary educational programs; medical fellowships; and active basic, translational, and clinical research programs.

Education and Advocacy. The publication of the April 2010 issue of the Pediatric Clinics of North America, co-edited by Vicky Ng, prominently featured many of our solid organ transplant programs, raising awareness about our excellent long-term outcomes of transplantation and strengthening our already strong international profile. Our team continues to advocate for paediatric solid organ transplant recipients through strong representation on provincial, national and international committees.

The table below highlights some of the leadership roles from our Transplant Centre constituency:

<table>
<thead>
<tr>
<th>Committee/Association</th>
<th>Role/Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Pediatric Lung Transplant Committee</td>
<td>Mindy Solomon, Board member</td>
</tr>
<tr>
<td>International Pediatric Transplant Association</td>
<td>Anne Dipchand and Upton Allen, Councilors</td>
</tr>
<tr>
<td>Trillium Gift of Life</td>
<td>Diane Hebert, Board member</td>
</tr>
<tr>
<td>Trillium Gift of Life</td>
<td>Anne Dipchand, Medical Co-Director</td>
</tr>
<tr>
<td>Canadian Liver Transplant Study Group</td>
<td>David Grant, President</td>
</tr>
<tr>
<td>International Intestine Transplant Society</td>
<td>David Grant, Past President</td>
</tr>
<tr>
<td>Canadian Blood Services Transplant Expert Working Group</td>
<td>David Grant, Member</td>
</tr>
<tr>
<td>Canadian Society of Transplantation</td>
<td>David Grant, Board member</td>
</tr>
<tr>
<td>Canadian Blood Services Transplant Expert Working Group</td>
<td>Alison Drabble, Board member and Chair, Associate Members Committee</td>
</tr>
<tr>
<td>Studies of Pediatric Liver Transplantation</td>
<td>SPLIT- Vicky Ng Co-Chair Research Committee</td>
</tr>
<tr>
<td>David Foster Foundation</td>
<td>Anne Dipchand, Medical Director</td>
</tr>
</tbody>
</table>
| Research. In the 2009-2010 academic year, an inventory of the research awards by our interdisciplinary, medical and surgical team identified more than $6,186,418 in total funding and 37 related publications associated with Transplant Centre-related academic activities. Our innovative research programs are collectively aimed at advancing what Leroy Hood (http://www.systemsbio.org) describes as the P-4 future of medicine: predictive, preventative, personalized and participatory medical care. Important clinical, translational, and basic research foci within the Transplant Centre that are supported by extramural funding include: a) vaccination strategies; prevention of Epstein-Barr virus and Respiratory Syncytial virus complications post-transplantation (Upton Allen, Infectious Diseases); b) health-related quality of life following solid organ transplantation (Stacey Pollock, Research Associate); c) xenotransplantation (David Grant, Executive Director and Thomas Waddell, Orthopaedics); d) adolescent issues related to the transition to adult care (Miriam Kaufman, Adolescent Medicine); e) techniques to enhance lung recovery for transplantation (Shaf Keshavjee, Respiratory Medicine, UHN); f) industry supported trials of immune suppression and medical adherence (Diane Hebert, Nephrology and Stacey Pollock); immune suppressive drug metabolism (Gideon Koren, Clinical Pharmacology); g) leukocyte trafficking in autoimmune kidney disease and kidney allograft rejection (Lisa Robinson, Nephrology); h) trials of modified lipid solutions to treat liver transplantation.
failure associated with parenteral nutrition (Paul Wales, General Surgery); and i) bladder regeneration research (Walid Farhat). We are also contributing patients and leadership to highly competitive, extramurally-funded clinical trials supported by the leading granting agencies that include studies of: a) liver failure and transplantation (National Institutes of Health - Vicky Ng, Binita Kamath); b) heart transplantation (National Institutes of Health - Anne Dipchand); c) intestinal failure (National Institutes of Health - Paul Wales); and d) the role of Epstein-Barr virus infections in post-transplant lymphoproliferative disease (Canadian Institutes of Health Research - Upton Allen).

During the 2009-2010 academic term, funds raised by the Transplant Centre were used to support a number of new initiatives. First, the Transplant Centre provided seed funding for five transplant-related medical and interdisciplinary research projects that will enhance patient care and generate pilot data for extramural grant applications. Second, the TC supported an initiative led by Seema Mital and colleagues, in close collaboration with The Labatt Family Heart Centre, to establish a Transplant BioBank which substantially improves our competitiveness for translational and clinical research funding.

One of the Transplant Centre’s long-term goals is to build internal capacity to successfully undertake innovative clinical trials using stem cell and/or regenerative medicine-based therapies. To this end, the Transplant Centre supported two separate projects demonstrating our commitment to innovation in stem cell and regenerative research. Sevan Hopyan is leading a limb regeneration study; while Martin Post, Tom Waddell, and Janet Rossant are collaborators on a project on lung regeneration. The Transplant Centre also supported the initiation of a successful Stem Cell and Regenerative Medicine seminar series, led by Freda Miller and colleagues. It will be expanded in 2010-2011.
“The most important single ingredient in the formula of success is knowing how to get along with people.”

Theodore Roosevelt
### Paediatric Housestaff

**CHIEF RESIDENTS – PGY4S**
- Dr. Alene Toulany
- Dr. Gordon Soon

**ASSOCIATE CHIEF RESIDENTS – PGY4S**
- Dr. Fahed Aljaser
- Dr. Kesete Bezu
- Dr. Avram Denburg
- Dr. Caroline McLaughlin
- Dr. Edward Pugh
- Dr. Gagan Saund
- Dr. Sarah Schwartz

**THIRD YEAR RESIDENTS – PGY3S**
- Dr. Joyce Ching
- Dr. Leila Fazeli
- Dr. Silvio Gonzalez
- Dr. Andrea Hoffman
- Dr. Emilie Jean-St-Michel
- Dr. Julie Johnston
- Dr. Rae Koffman
- Dr. Dina Kulik
- Dr. Paola Luca
- Dr. Dianne Lim
- Dr. Katie Menzie
- Dr. Niroj Mistry
- Dr. Reem Mohammed
- Dr. Nikhil Pai
- Dr. Taso Papadopoulos
- Dr. Cynthia Papalis
- Dr. Alisa Rachlis
- Dr. Deena Savlov
- Dr. Audrey Segal
- Dr. Maher Shalabi
- Dr. Shawna Silver
- Dr. Jennifer Smith
- Dr. Anita Villani

**SECOND YEAR RESIDENTS – PGY2S**
- Dr. Raghad Al-Abdwani
- Dr. Salman Al-Khalifa
- Dr. Sundee El-Bola
- Dr. Melissa Chan
- Dr. Sylvia Cheng
- Dr. Jackie Chiang
- Dr. Lindsey Crawford
- Dr. Amy French
- Dr. Kate Houston
- Dr. Luke Jagielo
- Dr. Mikhail Katz-Lavigne
- Dr. Shannon Knights
- Dr. Eric Koolik
- Dr. Charles Larson
- Dr. Ripudaman Minhas
- Dr. Amit Mukerji
- Dr. Zoe Nugent
- Dr. Melanie Penner
- Dr. Maia Roffman
- Dr. Natasha Saunders
- Dr. Navneet Sharma
- Dr. Catalina Tamayo

**FIRST YEAR RESIDENTS – PGY1S**
- Dr. Khaled Ali
- Dr. Aly Azz (Neuro)
- Dr. Allison Bahm
- Dr. Sanjukta Basak
- Dr. Jack Brzezinski
- Dr. Justine Cohen-Silver
- Dr. Shirmee Doshi
- Dr. Kamal Ellobey
- Dr. Mariel Heller
- Dr. Jaidip Kanungo
- Dr. Celine Kim
- Dr. Chana Korenblum
- Dr. Sarah Kwon
- Dr. James Leung
- Dr. Kandice Mah
- Dr. Ashley Morris
- Dr. Sonia Menard
- Dr. Laila Nurmohamed
- Dr. Evelyn Rozenblum
- Dr. Neha Sharma
- Dr. Shayan Soman
- Dr. Chengning Wang
Paediatric Grand Rounds

The Department of Paediatrics Grand Rounds series in the 2009-2010 academic year once again involved a stimulating, vibrant series of presentations of interest to the broad audience of SickKids faculty, post-graduate trainees, students and community paediatricians. The general aim is to bring eminent child-health clinicians, scientists, and medical educators to Sick Kids to present state-of-the-art reviews of the latest research of relevance to child health. All presentations highlight the link between “bench and bedside,” demonstrating how new scientific advances translate into the best health care for children.

The 2009 Robert H.A. Haslam Lecture was delivered by Dr. Gabrielle DeVeber on “Stroke: Recent Insights from an Emerging Field.” Dr. Lorelei Lingard of our Learning Institute presented a provocative talk on “Collective competence?: Rethinking the discourse of competence in the context of teamwork.” Dr. Noralou Roos of the University of Manitoba delivered her thoughtful 2009 Harry Bain Lecture, “Social Risk Assessment.” Dr. Jeffrey Maisels, Chair of Pediatrics, William Beaumont School of Medicine, Royal Oak, MI, was invited to give the 2009 Barry Smith Lecture. He delivered an authoritative presentation entitled “Hyperbilirubinemia and Kernicterus: Not gone and not forgotten.” Dr. Malcolm Sears of McMaster University in Hamilton delivered a cutting-edge lecture on “Pediatric Antecedents of Adult Asthma.” A highlight was the presentation by Dr. Zulfiqar Bhutta, Chair, Department of Paediatrics and Child Health, Aga Khan University, Karachi, Pakistan on the occasion of Global Child Health Day, reviewing: “Childhood pneumonia in developing countries: challenges and opportunities.”

Dr. Kaveh Shojania, Director, University of Toronto Centre for Patient Safety, reminded us that we should be “Keeping the possibility of error on your differential diagnosis: Patient safety in everyday practice”. Dr. Robin Steinhorn of Children’s Memorial Hospital, Chicago, spoke eloquently about “Persistent Pulmonary Hypertension of the Newborn: Radical Thoughts about Oxygen.” Dr. Baruch Wollach of the Meir Hospital, Israel gave the 2009 Bernard Laski Lecture on “Neutrophils: Giants in our Fight against Infection”. Discussions were provided by Dr. D. Brent Polk, Vanderbilt Children’s Hospital, on “Probiotics for health and diseases prevention - will our past be our future?” and by Dr. Jane L. Burns, Seattle Children’s, on “Management of CF Airway Infections.” Russell Schachar of SickKids Department of Psychiatry gave his insights into “ADHD: A cognitive neurosciences approach to a clinical problem.” Dr. Ben Alman of SickKids Orthopedic Surgery, gave a fascinating discussion on “Cutting the roots: Can we cure sarcomas by understanding stem cells?”, and Dr. Vito Forte, SickKids Chief of Otolaryngology, gave an entertaining outline of the management of paediatric stridor.


Dr. Sheila Weitzman in her Burton Lecture addressed Acute Lymphoblastic Leukemia for the paediatrician: What do your patients want you to know? Dr. Norman Rosenblum gave a superb annual Paediatric Update lecture on “The malformed kidney: What is wrong and what are we to do?” Dr. Gideon Koren celebrated the 25th anniversary of the Motherisk program by reviewing several of its most important findings. A variety of other high-quality talks enriched the year’s schedule.

Grand Rounds will continue to be held on Wednesdays from 9:00 a.m. to 10:00 a.m. in the Daniels Hollywood Theatre at SickKids. The Department of Paediatrics Grand Rounds Committee would like to acknowledge the help and support of the following: The Paediatric Executive Committee, Valerie Daniels, Department of Paediatrics, and Frank Ferrari and Sam Mendolia from the Audio-Visual Department at SickKids.
2009

July 1 – Holiday

July 8 – Dr. Keith Ooi, Dr. Juan Ossa, Division of Gastroenterology, Hepatology, and Nutrition: Paediatric liver transplantation: Looking back to guide the future

July 15 – Dr. Abigail Harrison-Kong, Adolescent Medicine: Sex, Drugs and OMG!

July 22 – Dr. Joelene Huber, Dr. Michael Begin, Developmental Paediatrics: The effects of TV/DVDs on early development: Mickey Mouse science or valid concern?

July 29 – Drs. Glenda Bendiak, Fiona Kritzinger, Connie Yang, Respiratory Medicine: When it’s not asthma

August 5 – Dr. Nicholas Blanchette, Dr. Tania Cellucci, Dr. Boris Hugle, Division of Rheumatology: Playing with fire: An approach to periodic fever syndromes

August 12 – Dr. Alejandro Floh, Dr. Briseida Mema, Division of Critical Care Medicine: Surviving sepsis: The good, the bad, and the ugly...

August 19 – Dr. Patricia Li, Dr. Gita Wahi, Division of Paediatric Medicine: A new home: Caring for refugee children in Toronto

August 26 – Dr. Nadya Ben Fadel, Dr. Mohit Sahni, Dr. Jennifer Young, Division of Neonatology: What is ‘Hot’ (actually ‘Cool’) in the management of hypoxic ischaemic encephalopathy of the newborn

September 2 – Cancelled

September 9 – Dr. Miriam Kauman, Adolescent Medicine, SickKids: Tools for transition

September 16 – Dr. Brent Polk, Pediatric GI/Hepatology/Nutrition, Vanderbilt Children’s Hospital, Nashville, TN: Probiotics for health and diseases prevention – will our past be our future?

September 23 – Dr. Jane L. Burns, Clinical Director, Infectious Disease, Seattle Children’s Research Institute, WA: Management of CF airway infections

September 30 – Dr. Gabrielle DeVeber, Division of Neurology, SickKids: Haslam Lecture: Stroke: Recent insights from an emerging field

October 7 – Dr. Lorelei Lingard, SickKids Learning Institute: Collective competence?: Rethinking the discourse of competence in the context of teamwork

October 14 – Dr. Chris Parshuram, Critical Care Medicine, SickKids: Identifying hospitalized children at risk: A program of research

October 21 – Dr. Noralou Roos, Professor, Community Health Sciences, University of Manitoba, Founding Director, Manitoba Centre for Health Policy: Bain Lecture: Social risk assessment

October 28 – Dr. Baruch Wollach, Head of Pediatrics and Pediatric Hematology/Oncology, Meir Hospital, Israel: Bernard Laski Lecture: Neutrophils: Giants in our fight against infection

November 4 – Dr. Eyal Grunebaum, Immunology and Allergy, SickKids: Advances in the treatment of severe combined immune deficiency

November 11 – Dr. James Dwyer, Bioethics, SUNY, Syracuse, NY: Bioethics Lecture: Obesity and responsibility

November 18 – Dr. Debra Katzman, Division Head, Adolescent Medicine, SickKids: Eating disorders in children and younger adolescents: Current issues and unanswered questions
November 25 – Dr. Ciaran Duffy, Rheumatology, McGill University: Outcomes in JIA

December 2 – Dr. Robin Steinhorn, Raymond and Hazel Speck Berry, Professor of Pediatrics, Vice Chair of Pediatrics, Division Head, Neonatology, Children’s Memorial Hospital, Chicago, IL: Persistent pulmonary hypertension of the newborn: Radical thoughts about oxygen

December 9 – Dr. Moshe Ipp, Paediatric Medicine, SickKids: When town meets gown

December 16 – Holiday skits

December 23 – No Rounds

December 30 – No Rounds

2010

January 6 – Dr. Jeffrey Maisels, Physician-in-Chief, Beaumont Children’s Hospital, Professor and Chair, Department of Paediatrics, Oakland University, William Beaumont School of Medicine, Royal Oak, MI: Hyperbilirubinemia and kernicterus: Not gone and not forgotten

January 13 – Dr. Malcolm Sears, Professor of Medicine, McMaster University, Firestone Institute for Respiratory Health, AstraZeneca Chair In Respiratory Epidemiology, St. Joseph’s Healthcare, Hamilton, Ontario: Pediatric antecedents of adult asthma

January 20 – Dr. Charles Thornton, Professor of Neurology, University of Rochester Medical Center, Rochester, NY: Jacob’s Ladder: Developing treatment for myotonic dystrophy

January 27 – Dr. Uri Tabori, Staff Physician, Haematology/Oncology, SickKids: Telomere maintenance in pediatric cancers: Personalized medicine for individuals, tumours and cells...

February 3 – Dr. Denis Daneman, Paediatrician-in-Chief, SickKids: Publish and perish: The plague of plagiarism

February 10 – Dr. Kavesh Shojania, Director, University of Toronto Centre for Patient Safety, Canadian Research Chair in Patient Safety and Quality Improvement, Associate Professor of Medicine, University of Toronto, Sunnybrook Health Sciences Centre: Keeping the possibility of error on your differential diagnosis: Patient safety in everyday practice

February 17 – Dr. Russell Schachar, TD Bank Chair in Child & Adolescent Psychiatry, SickKids: ADHD: A cognitive neurosciences approach to a clinical problem

February 24 – Dr. Seema Mita, Staff Cardiologist, SickKids, Associate Professor of Paediatrics, Roma and Marvin Auerback Professor of Developmental Biology and Congenital Heart Research: Personalized medicine: Have we come full circle?

March 3 – Dr. Kevin Eva, Associate Professor, Department of Clinical Epidemiology and Biostatistics and Program for Educational Research and Development, McMaster University: Pediatric Update: On the value (and fallibility) of subjectivity in clinical and educational decision making

March 10 – Dr. Sheila Weitzman, Staff Physician, Haematology/Oncology, SickKids: Burton Lecture: Acute Lymphoblastic Leukemia for the pediatrician: What do your patients want you to know?

March 17 – No Rounds, March Break

March 24 – Dr. Zulfiqar Bhutta, Professor and Chair, Department of Paediatrics and Child Health, Aga Khan University, Karachi, Pakistan: Global Child Health Day: Childhood pneumonia in developing countries: Challenges and opportunities
March 31 – Dr. Clyde Hertzman, Professor, School of Population and Public Health, University of British Columbia: Achieving Health Equity for Kids: Monitoring protocols for early and middle childhood embedded within the new Neuroscience of experience-based brain development and life trajectory/ cumulative and latent risk

April 7 – Dr. Massimo Zeviani, Besta National Institute of Neurology, Milan, Italy: Barsky Lecture: Ethylmalonic encephalopathy

April 14 – Dr. Norman D. Rosenblum, Staff Nephrologist, SickKids: Paediatric Update: The malformed kidney: What is wrong and what are we to do?

April 21 – Dr. Ben Alman, Head, Orthopaedic Surgery, SickKids: Cutting the roots: Can we cure sarcomas by understanding stem cells?

April 28 – Dr. Maximo Vento, Neonatal Research Unit, University Hospital La Fe, Valencia, Spain: Barry Smith Lecture: Titrating oxygen needs in the very preterm baby immediately after birth

May 5 – Dr. Vito Forte, Otolaryngologist-in-Chief, SickKids: Pediatric stridor: Management

May 19 – Dr. Gideon Koren, Director, Motherisk Program, Professor of Paediatrics, Pharmacology And Genetics, Ivey Chair in Molecular Toxicology: Motherisk Lecture: Treating the mother – Protecting the unborn – 25 years of Motherisk

June 2 – Dr. Talar Hopyanm, Department of Otolaryngology And the Program in Neurosciences and Mental Health: Sass-Kortsak Memorial Lecture: The sounds of silence: How deaf children hear speech and music using cochlear implants

June 9 – AWARDS DAY

June 23 – Dr. John Bradley, Pediatric Infectious Disease, UCSD Hospital, San Diego, CA: The critical need to use antimicrobials wisely
Promotions/Recognition

PROMOTED TO PROFESSOR OF PAEDIATRICS
Dr. Edgar Jaeggi
Dr. Nicola Jones

PROMOTED TO ASSOCIATE PROFESSOR OF PAEDIATRICS
Dr. Oussama Abla
Dr. Ute Bartels
Dr. Susanne Benseler
Dr. Sharon Dell
Dr. Adam Dubrowski
Dr. Adam Gassas
Dr. Astrid Guttmann
Dr. Tilman Humpl
Dr. Simon Ling
Dr. Melinda Solomon
Dr. Michael Weinstein

THOSE WHO REACHED NORMAL RETIREMENT AGE
The following reached normal retirement age in June of 2010:

Dr. Allan Coates
Dr. Stephen Comay
Dr. Mark Greenberg
Dr. Jonathan Hellmann
Dr. James Hilton
Dr. Anna Jarvis

25 YEARS OF SERVICE AWARDS
The following were honoured for their 25 years of service to The Hospital for Sick Children in June of 2010:

Dr. John Freedman
Dr. Ann Jefferies
Dr. Ron Laxer
Dr. Aubrey Maze
Dr. Earl Silverman
Dr. Harold Sturm
Dr. Suzanne Schuh
Dr. Joseph Telch
Dr. Hilary Whyte
Awards

TEACHING/EDUCATION AWARDS

**Dr. Angela Punnett** – R.H.A. Haslam Preclerkship Teaching Award to the faculty member who has demonstrated excellence in preclerkshop teaching

**Dr. Janet Saunderson** – The Lionel Weinstein Clerkship Teaching Award to the faculty member who has demonstrated excellence in clerkship teaching.

**Dr. Yehuda Nofech-Mozes** – The Undergraduate Community Teaching Award in recognition of excellence in the teaching of medical students within community-based hospitals and offices.

**Dr. Jeremy Friedman** – Harry Bain Award to a full-time member of the Department of Paediatrics who has demonstrated excellence in teaching as nominated by core paediatric residents.

**Dr. Mark Feldman** – Marvin Gerstein Award to a part-time member of the Department of Paediatrics who has demonstrated excellence in teaching as nominated by core paediatric residents.

**Dr. Marvin Gans** – Postgraduate Community Teaching Award in recognition of excellence in the teaching of paediatric residents within community-based hospitals and offices.

**Dr. Shirley Tse** – PERLs Award (Paediatric Educational Resident Lecture Series Award) to the faculty member who has demonstrated commitment to excellence in teaching at the Paediatric academic sessions.

**Dr. Roberto Mendoza** – Subspecialty Teaching Award to the faculty member who has demonstrated commitment to excellence in teaching the subspecialty residents and clinical fellows.

**Dr. Anna Jarvis, Dr. David Chitayat** – Continuing Medical Education Award to the faculty member who has demonstrated excellence in course coordination or teaching in a Department of Paediatrics/University of Toronto Continuing Education sponsored event.

CLINICAL AWARDS

**Dr. Anne Griffiths** – Richard Rowe Award for Clinical Excellence in Paediatric Medical Care to the physician in the Department of Paediatrics who has demonstrated excellence in the delivery of clinical care in the broadest sense over a significant period of time.

**Dr. Elizabeth Donner** – Junior Faculty Award for Clinical Excellence in Paediatric Medical Care to a physician within the first 5-10 years of appointment to an Academic Health Sciences Centre, who has demonstrated excellence in the delivery of clinical care.

RESEARCH AWARDS

**Dr. Peter Durie** – Physician Research Award for Career Excellence to recognize sustained excellence by a physician who has generated a body of work with relevance beyond a specific field of study. The awardee will be more 15 or more years beyond the initial date of appointment as a faculty member in an Academic Health Sciences Centre. This award was first awarded in 2005.

**Dr. Astrid Guttman** – Junior Faculty Research Award to recognize outstanding achievements and progress in research by a physician during the first six years after his/her initial academic appointment and whose primary appointment is in the Department of Paediatrics, University of Toronto. This award was first awarded in 2005.

PAEDIATRIC ADMINISTRATIVE AWARD

**Ms. Deborah Taylor** – In recognition of an administrative support staff member in the Department of Paediatrics who has demonstrated outstanding performance and excellence in all aspects of their role. This individual possesses outstanding communication and interpersonal skills and is motivated to perform above and beyond their daily responsibilities. This award was first awarded in 2007.
The greatest discovery of our generation is that human beings can alter their lives by altering their attitudes of mind. As you think, so shall you be.

William James
Resident and Fellow Awards and Achievements

**TEACHING/EDUCATION AWARDS**
Dr. Julie Johnstone (PGY3), Dr. Gordon Soon (PGY4),
Dr. Alène Toulany (PGY4) – Christopher Ondaatje
Award to a senior resident for excellence in clinical teaching as nominated by core paediatric residents.

**CANMEDS AWARD – SUBSPECIALTY TRAINEE**
Dr. Elaine Goh

**CANMEDS AWARD – CORE PAEDIATRIC TRAINEE**
Dr. Paolo Luca

**PeRLS TEACHING AWARD**
Dr. Furqan Shaikh

**CLINICAL AWARDS**
Dr. Anastasios Papadopoulos – The Saunders Prize
for a senior resident who has demonstrated excellence in clinical paediatrics.

**RESEARCH AWARDS – CORE PAEDIATRICS**
Dr. John Brandsema – 1st Place, Core Paediatrics
Dr. Alene Toulany – 2nd Place, Core Paediatrics

**RESEARCH AWARDS – SENIOR TRAINEE**
Dr. Sumit Gupta – 1st Place, Clinical Science
Dr. Keith Chee Ooi – Tie 2nd Place, Clinical Science

**RESEARCH AWARDS – SENIOR TRAINEE**
Dr. Brian Chung – 1st Place, Basic Science
Dr. Paola Angelini – 2nd Place, Basic Science
Annual Resident and Fellow Research Day (June 3, 2009)

ORAL PRESENTATIONS

Chen, Ian, Adolescent Medicine
Health Value & Self-Reported Quality of Health in Adolescents With Renal Transplants. I Chen, M Kaufman, D Hebert

Chung, Brian, Clinical & Metabolic Genetics
Genome-wide Epigenetic Profiling Shows Evidence of Crosstalk Between Histone Modifications and DNA Methylation in Patients with the Intellectual Disability Syndrome Due to JARID1C Mutations. BHY Chung, D Grafodatskaya, DT Butcher, FE Abidi, A Feigenbaum, G Yoon, A Schulze, D Chitayat, J Vincent, CE Schwartz, SW Scherer, R Weksberg

Li, Patricia, Paediatric Medicine
A Population-Based Study on the Association of Standardized Protocols in the Emergency Department with Asthma Care Outcomes in Ontario Children. P Li, T To, P Parkin, G Anderson, K Lam, A Guttmann

Mahmut, Naila, Cardiology
Hypoxia Induces Senescence of Human Embryonic Stem Cells During Cardiac Differentiation. N Mahmut, M Niapour, C Kinnear, U Tabori, G Keller, S Mital

Mistry, Niraj, Core Paediatrics
Predictors of Prolonged Hospitalization in Pediatric Empyema Treated with Chest Tube Insertion. N Mistry, E Cohen, S Mahant, DJ Rea, BL Connolly, M Weinstein

Morris, Shaun, Infectious Diseases
Neonatal and Childhood Mortality From Acute Respiratory Infections in India: A Population Based Study. SK Morris, DG Bassani, M Kesler, AA Cohen, R Kumar, P Jha

Ooi, Keith Chee, Gastroenterology
Association Between Severity of CFTR Mutations and Risk of Pancreatitis. CY Ooi, K Keenan, R Dorfman, T Gonska, N Anderson, M Cipolli, C Castellani, R Durie

Villani, Anita, Core Paediatrics
Early Detection Strategies Reduce Cancer Mortality In Germline TP53 Mutation Carriers in Li-Fraumeni Syndrome. A Villani, U Tabori, J Schifff, A Shlien, H Druker, A Novokmet, J Finlay, D Malkin

POSTER PRESENTATIONS

Abed S, Paediatric Medicine
Proton pump inhibitors for treatment of gastroesophageal reflux in children: a systematic review. S Abed, S Mahant

Ahmed, Syed Amir, Emergency Medicine
The effect of a novel restructuring of the Pediatric Emergency Department. A Ahmed, K Chan, J Pirie

Ahorro, Jean Marie, Neurology
Viral seroprevalence among Canadian children presenting with acquired demyelination of the central nervous system. J Ahorro, B Banwell, R Tellier, M McGowan, S Magalhaes, D Arnold, AD Sadovnick, A Bar-Or, on behalf of the Canadian Pediatric Demyelinating Disease Network

Al-Abdulrazzaq, Fatoumah, Emergency Medicine
Infant distress during MDI vs nebulizer therapy for acute wheezing. F Al-Abdulrazzaq, S Schuh

Alghamdi, Faisal, Emergency Medicine
Which epidemiologic and statistical concepts should pediatricians understand to be able to appraise the literature? F Alghamdi, J Thull-Freedman

Al Kalbani, Naifain, Nephrology
Idiopathic hypercalcemia in infants with renal dysplasia. N Al Kalbani, E Harvey, D Geary

Alkhatari, Reem, Neurology
Towards the identification of pediatric movement disorder genes: a family with a new neurotransmitter disorder. RA Alkhatari, JJ Rilstone, BA Minassian
Alkon, Jaime, Cardiology
The right ventricular systolic to diastolic duration ratio predicts functional capacity and survival in children with pulmonary arterial hypertension. J Alkon, T Humpl, C Manlihot, BW McCrindle, JT Reyes, MK Friedberg

Al-Ruwaili, Nahar, Emergency Medicine
Neonatal Mastitis – Controversies in management. N Al-Ruwaili, D Scolnik

Al-Saleh, Ahmed, Emergency Medicine
Ascertainment of abuse related fractures at a children’s Emergency Department. A Al-Saleh, Z Somji, A Plint, K Boutis

Amin, Reshma, Respiratory Medicine
A pilot study of FDG-PET imaging to detect changes in airways inflammation in pediatric cystic fibrosis patients after treatment for a pulmonary exacerbation. R Amin, M Charron, L Grinblat, A Shammas, H Grasemann, F Ratjen

Appendino, Juan Pablo, Neurology
The impact of amplitude integrated electroencephalography on neonatal intensive care unit practice. JP Appendino, P McNamara, M Keyzers, D Stephens, CD Hahn

Ardelean, Daniela S, Rheumatology
Pediatric Takayasu arteritis: significance of central nervous system manifestations. DS Ardelean, R Schneider, ED Silverman, R Laxer, M Seed, SJ Yoo, SM Benseler

Balma-Mena, Alexandra, Paediatric Medicine
The multifaceted subacute cutaneous lupus erythematosus. A Balma-Mena, N Ho

Bar-Yosef, Omer, Neurology
Relationship between MEG spike sources and fMRI language patterns in children with epilepsy. O Bar-Yosef, H Otsubo, C Sylvester, D Morris, WJ Logan, EJ Donner

Begin, Michal, Developmental Paediatrics

Brandsema, John F, Neurology
Cerebral arteriopathy in children with Neurofibromatosis type 1. D Rea, J Bandsema, D Armstrong, PC Parkin, Gabrielle deVeber, D MacGregor, WJ Logan, R Askalan

Breakey, Vicky, Haematology/Oncology
The quality of hemophilia information available on the internet. VR Breakey, D Ignas, V Blanchette

Chaturvedi, Swasti, Nephrology
Collapsing FSGS and obsessive compulsive disorder: A possible link between the two diseases. S Chaturvedi, C De Souza, C Hahn, A Feingenbaum, V Langlois

Ching, Joyce, Core Paediatrics
Renal dysfunction after liver transplantation in children: Should we be concerned? JCY Ching, S Pollack, I Diamond, A Wan, M De Angelis, N Jones, SC Ling, A Fecteau, VL Ng

Chong, Amy Lee, Haematology/Oncology
Optic pathway gliomas in adolescence. AL Chong, E Bouffet, U Tabori, A Huang, U Bartels

Chung, Brian, Medical Genetics
De-Novo interstitial deletion at chromosome 5q15-21.1 – A new insight into the pathogenesis of chondrodysplasia punctata? BHY Chung, P Shannon, D Chitayat

Courtney-Martin, Glenda, Gastroenterology
The addition of cysteine to the total sulphur amino acid requirement as methionine does not increase erythrocyte glutathione synthesis in the TPN fed human neonate: A pilot study. G Courtney-Martin, AM Moore, RO Ball, PB Pencharz
**Danayan, Karoon C, Rheumatology**
Recurrence of neonatal lupus erythematosus in siblings. 
KC Danayan, P Tyrrell, E Silverman

**Di Giovanni, Valeria, Nephrology**
The BMP receptor, ALK3, is required for urogenital development. 
V Di Giovanni, A Aiday, Y Mishina, ND Rosenblum

**Djokanovic, Nada, Clinical Pharmacology and Toxicology**
Does treatment with bisphosphonates endanger the human pregnancy? 
N Djokanovic, D Klieger-Grossman, G Koren

**Elango, Rajavel, Gastroenterology**
Evidence that protein requirements in healthy school-age children are significantly underestimated in current recommendations. 
R Elango, MA Humayan, RO Ball, PB Pencharz

**El Sayed, Manal, Neonatology**
Risks of recurrent low birth weight and preterm births: Systemic review and meta-analyses. 
M El Sayed, V Shah, PS Shah, Knowledge Synthesis Group

**Faghfoury, Hanna, Clinical and Metabolic Genetics**
Transient fulminant hepatitis in a patient with classical citrullinemia. 
H Faghfoury, A Schulze

**Finen, Emer, Neonatology**
High-fidelity simulation may not be superior to traditional Low-fidelity methods for neonatal Resuscitation training. 
E Finan, Z Bismilla, HE Whyte, V LeBlanc, PJ McNamara

**Garcia-Bournissen, Facundo, Clinical Pharmacology and Toxicology**
F Garcia-Bournissen, A Panchaud, C Csajka, JH Kristensen, A Taddio, KF Ilett, EJ Begg, S Ito

**Glatstein, Miguel, Emergency Medicine**
Sulfonylurea ingestion. M Glatstein, D Scolnik, Y Finkelstein

**Gibson, Paul, Haematology/Oncology**
Acinic cell carcinoma: A retrospective review of the 10 year HSC experience. 
P Gibson, V Forte, GR Somers, N Laperriere, R Grant

**Goh, Elaine, Clinical and Metabolic Genetics**
Autosomal dominant connective tissue disorder presenting with short stature, clubfeet, sparse hair, hyperextensible joints, hernias and distinctive facial features – a new syndrome? 
E Goh, C Barnett, B Lee, A Hinek, D Chitayat

**Gupta, Sumit, Haematology/Oncology**
S Gupta, M Bonilla, N Rossell, C Salaverria, R Barr, A Sala, ML Metzger, L Sung

**Hang, Marissa, Haematology/Oncology**
Predictors of age at onset of joint bleeding and musculoskeletal burden in boys with severe Hemophilia A. 
M Hang, EM Pullenayegum, F Pluthero, P Hilliard, W Kahr, VS Blanchette, BM Feldman

**Hashmi, Seema, Nephrology**
A novel mutation in the gene for alanine-glyoxylate transferase as a cause of primary hyperoxaluria Type 1. 
S Hashmi, M LeMaire, C Licht, D Geary, E Harvey

**Hawkes, Michael, Infectious Diseases**
Malaria potentiates experimental mycobacterial infection in vitro and in vivo. 
M Hawkes, L Xiaoming, M Crockett, A Diassiti, WC Liles, J Liu, KC Kain

**Hutchinson, Clare, Rheumatology**
Long-term neurological outcome of children with biopsy-confirmed small vessel primary CNS vasculitis. 
C Hutchinson, J Elbers, D Kwan, W Halliday, H Branson, S Laughin, D Armstrong, C Hawkins, SM Benseler
Jain, Shailly, Medical Genetics
A possible role for the PTPN11 gene in sex determination.
S Jain, M Thomas, J Jessen, S Keating, D Chitayat

Jean-St-Michel, Emilie, Core Paediatrics
Double blind randomized controlled crossover studies of the
effects of remote preconditioning on the exercise performance
of elit swimmers. E Jean-St-Michel, C Manlhiot, B McCrindle,
G Wells, A Redington

Kam April, Emergency Medicine
Telesimulation: A novel method of teaching EZ-IO insertion
from Toronto, Canada to Gabarone, Botswana, Africa.
A Mikrongianakis, A Kam, S Silver, A Okrainec, G Azzie

Kanbur, Nuray, Adolescent Medicine
Frequency and pathophysiology of nocturnal enuresis in
adolescents with anorexia nervosa. N Kanbur, L Pinhas,
A Lorenzo, W Farhat, C Licht, DK Katzman

Khurshid, Faiza, Neonatology
Therapeutic hypothermia (TH) for hypoxic ischemic
encephalopathy (HIE): Are we cooling eligible neonates?
F Khurshid, W Mak, PJ NcNamara, H Whyte, K-S Lee

Kim, Vy HD, Immunology/Allergy
Omenn syndrome: A phenotype of severe combined
immunodeficiency. VHD Kim, E Grunebaum CM Roffman

Klieger-Grossmann, Chagit, Clinical Pharmacology
and Toxicology
In-utero exposure to ionizing radiation in a woman
with Hodgkin’s lymphoma – A case report and a review
of the literature. C Klieger-Grossmann, N Djokanovic,
G Koren, D Chitayat

Kulik, Dina, Core Paediatrics
Quality of life in childhood epilepsy: What is the level of
agreement between youth and their parents? DM Kulik,
LH Verhey, GM Ronen, P Rosenblum, L Lach, DL Streiner,
Canadian Pediatric Epilepsy Network

Kumar, Sathish, Rheumatology
Clinical profile and predictive factors for symptomatic avascular
necrosis in pediatric systemic lupus erythematosus (pSLE).
S Kumar, PN Tyrrell, SM Benseler, EA Harvey, D Hebert,
ED Silverman

Leahy, Timothy, Infectious Diseases
Methicillin-resistant Staphylococcus aureus (MRSA) in a
paediatric cystic fibrosis (CF) clinic population: clinical and
molecular epidemiology, risk factors for colonization, and
impact on disease progression. TR Leahy, Y Yau, F Ratjen,
M Corey, V Waters

Lemaire, Mathieu, Gastroenterology
Dysnatremia in hospitalized pediatric patients prescribed
total parenteral nutrition: a retrospective study. M Lemaire,
P Pencharz, S Zlotkin, D Geary

Li, Kayi, Paediatric Medicine
Measuring nutrition risk in young preschool-aged children in
the primary care practice setting: A TARget Kids! Study. K Li,
C Birken, J Maguire, M Mekky, L Burr, D O’Connor, B Chisamore,
E Lau, P Parkin

Li, Patricia, Paediatric Medicine
A population-based study on the effect of clinical practice
guidelines in the Emergency Department on childhood asthma
admissions and bouncebacks in Ontario, Canada. P Li, T To,
P Parkin, G Anderson, A Guttmann

Lim, Siok Hoon, Rheumatology
Early recognition of juvenile systemic lupus erythematosus
(JSLE) patients at risk for poor long term bone outcome.
SH Lim, SM Benseler, P Tyrrell, M Charron, E Silverman,

Makhani, Naila, Neurology
Cyclophosphamide therapy in pediatric multiple sclerosis.
N Makhani, MP Gorman, HM Branson, L Stazzone, BL Banwell,
T Chitnis
Mohamed, Adel, Neonatology

Mokhtari, Reza Bayat, Haematology/Oncology
Epigenetic modulation of neuroblastoma: growth and metastasis. RB Mokhtari, S Barchel, G Koren, H Yeger

Nahum, Amit, Immunology and Allergy
Association of the lymphoid tyrosine phosphatase, LYP, R620W variant, with chronic mucocutaneous candidiasis. A Nahum, A Bates, N Sharfe, CM Roifman

Nasef, Nehad, Neonatology
Toxicity for light-exposed TPN solutions: Potential roles for ascorbate (Vit C) and selenium. N Nasef, R Belcastro, A Nach, C Kantores, AK Tanswell, RP Jankov

O’Gorman, Clodagh, Endocrinology
Sleep disordered breathing in patients with craniopharyngioma and hypothalamic obesity. C O’Gorman, J Simoneau-Roy, J MacFarlane, I MacLusky, D Daneman, J Hamilton

Parakh, Manish, Neurology
A study attempting to evaluate the usefulness of normal evoked potentials in predicting non progressive childhood neurologic disorders. M Parakh

Principi, Tania, Emergency Medicine
What happens to oxygen saturation after discharge in outpatients with acute bronchiolitis? T Principi, A Coates, P Parkin, D Stevens, Z Da Silva, S Schuh

Radhakrishnan, Dhenuka, Respiratory Medicine
A comparison of mortality trends in school-aged children with and without asthma. D Radhakrishnan, J Guan, C Wang, A Gershon, S Dell, T To

Radhakrishnan, Seetha, Nephrology
Use of DDAVP in renal failure. S Radhakrishnan, B Connolly, J Chuan, V Langlois

Sen, Saswati, Haematology/Oncology
The Mechanism of erythropoietic failure caused by loss of the inherited aplastic anemia-related gene, SBDS. S Sen, H Wang, S-L Adams, K Zhou, Y Dror

Shaikh, Furqan, Haematology/Oncology

Sharma, Navneet, Paediatric Medicine
Prevalence of microcytic anemia in children 12 - 38 months of age assessed by Suspected Child Abuse and Neglect team at The Hospital for Sick Children. N Sharma, M Shouldice, D Mekky, P Parkin

Shulman, Rayzel, Endocrinology
A systemic review and meta-analysis of the effects of telemedicine interventions for Type 1 Diabetes in children and adolescents. R Shulman, C O’Gorman, MR Palmert

Smile, Sharon, Developmental Paediatrics
The nosology of attention deficit hyperactive disorder in autism. S Smile, J Brian, W Roberts, A Dupuis

So, Joyce, Clinical and Metabolic Genetics
The Opitz syndrome-associated protein MID1 and the tumour suppressor CYLD interact and have antagonist effects at the microtubules. J So, A Wilde, S Schweiger

Sonnenberg, Lyn, Developmental Paediatrics (withdrawn)
Preschool traumatic brain injury and its affect on social development at eight years of age. LK Sonnenberg, A Dupuis, PG Rumney
Tanaka, Toshihiro, Clinical Pharmacology and Toxicology
Transmission of Hepatitis C virus infection during breastfeeding: A meta-analysis. T Tanaka, C Tam, I Goh, H Tan, C Lee, M Moretti, S Ito

Thampi, Nisha, Core Paediatrics
Children with tuberculosis who deteriorate on anti-tuberculous therapy: A case series. N Thampi, IC Kitai

Tsangaris, Elena, Haematology/Oncology

Vala, Snehal, Emergency Medicine
Clinical practice guideline for battery ingestion. S Vala, A Ahmad, J Thull-Freedman

Venkateswaran, Sunita, Neurology
Characterization of serum inflammatory markers in pediatric acquired demyelinating syndromes of the central nervous system. S Venkateswaran

Vezmar, Marko, Cardiology

Vyver, Ellie, Adolescent Medicine
Medical stability in children and adolescents with anorexia nervosa: a retrospective review. E Vyver, S Grewal, L Pinhas, DK Katzman

Wahi, Gita, Paediatric Medicine
Active transportation for school aged children: Rates of bicycling to school in an urban population. G Wahi, C Birken, P Parkin

Walsh, Catherine M, Gastroenterology
Concurrent versus terminal feedback: Does the timing of feedback matter? CM Walsh, SC Ling, CS Wang, H Carnahan

Xu, Emily, Neonatology
Rho-kinase (ROCK) inhibitor reverses vascular remodeling and cardiac dysfunction in neonatal rats with chronic pulmonary hypertension (PHT). EZ Xu, PJ McNamara, C Kantores, J Ivanovska, RP Jankov

Yazdani-Brojeni, Parvaneh, Clinical Pharmacology and Toxicology
Determination of quetiapine in human breast milk. P Yazdani-Brojeni, N Taguchi, M Moretti, G Koren, S Ito

Yi, Man, Neonatology

Yiu, Eppie, Neurology
Tumefactive demyelination: Radiographic and clinical features in a prospective cohort of children with an acquired demyelinating syndrome. E Yiu, L Verhey, S Laughlin, H Branson, B Banwell

Zolkipli, Zarazuela, Neurology

Werner, Klaus, Neurology
Electroretinogram and developmental outcome of infantile spasms. KG Werner, M Cortez, T Wright, E Widjaja, S Weiss, C Sneed, E Donner, C Westall
The golden rule is that there are no golden rules.

George Bernard Shaw