CONSTANTLY EVOLVING
TO MEET CHANGING TIMES
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OUR MISSION

Dedicated to improving children’s lives through advances in clinical care, research and innovation and the education of future caregivers.
This year’s Annual Report represents the tenth and final one of my term as Chair of Paediatrics at the University of Toronto and Paediatrician-in-Chief at The Hospital for Sick Children. It has been a distinct honor and privilege to serve in these capacities, not only because of the prestigious nature of these two illustrious institutions, but even more so because of the opportunity it has afforded me to work alongside an incredibly talented faculty that has gone from strength to strength during these ten years. This is not to say we haven’t had significant challenges along the way, but progress has been made in all areas of the academic and clinical enterprise.

- **Faculty size:** we have recruited close to 100 new faculty members in all job profiles, Clinician Scientist, Clinician Investigators, Clinician Educators and Academic Clinicians. Most divisions have grown larger and more productive. This is evidenced by promotion of 137 members of the faculty to Associate or Full Professor during this time.
• **Clinical care**: examples of improvement in clinical care abound: an Emergency Department that functions amongst Ontario’s best; shortened average lengths of stay; new programs in childhood obesity, brain inflammation, palliative care and many more; a focused departmental scorecard; a menu of items for the Choosing Wisely campaign to reduce unnecessary healthcare spending. Jeremy Friedman and the Clinical Excellence Committee warrant our heartiest congratulations on these efforts.

• **Research**: we have reinforced our fundamental research with key recruits in, for example, very early onset inflammatory bowel disease; muscular dystrophies and hypotonia; kidney disease; bolstered clinical and translational investigation across the full spectrum of paediatric disorders, including common paediatric conditions (TargetKids!), asthma (C.H.I.L.D.), obesity (STOMP), and diabetes (TrialNet, TRIGR, AdDIT). We continue to explore new areas of interest in health services research, health policy and economics. Research funding has almost tripled in the last 10 years and we rank second among all North American Departments of Paediatrics in numbers of publications. Meredith Irwin leads these efforts together with the Research Advisory Committee.

• **Education**: Our educational activities have become increasingly diversified with many more sites around the Greater Toronto Area. All of our Postgraduate Training Programs are fully accredited with the Royal College and highly sought after by trainees around the world. Rayfel Schneider leads the education enterprise with a hugely effective group of educators.

Our vision these past 10 years has been “to continuously evolve as one of the world’s leading paediatric departments.” There can be no doubting that we have succeeded in this. Nonetheless, dwindling health care budgets, at the university, hospital and individual department level have already put pressure on us to perform more efficiently and in a less costly manner. Some cuts help us prioritize, when they get too deep they threaten our raison d’etre.

During the course of my almost 40 year career in Paediatrics, we have practiced what I would term “sweat of our brow medicine,” and it has paid off in buckets. Impressive gains have been made in virtually every field in Paediatrics, but there is more to come, much more. I am envious of the next generation of paediatricians who will, no doubt, have new and better therapies, precision therapeutics, to offer their patients. We will continue to sweat about two issues, first, those who do not respond to these treatments, and, second, those children who live at a disadvantage due to poverty, exclusion, discrimination. Our Social Paediatrics program has put the spotlight on the second, and the light should focus intensely until these problems have been licked.

SickKids and UoT are great institutions because of the people who work here. This is certainly true in Paediatrics. I cannot stress enough the joy it has been to have had the privilege of leadership from 2006-2016. Don’t let up.

Thank you and all the best.

Denis Daneman, MBBCh, FRCPC, DSc(Med)
FACULTY PROMOTED IN 2015

Full Professor

Jill Hamilton
Hartmut Grasemann
Patrick McNamara
Vicky Ng
Mark Palmert
Chris Parshuram
Elena Pope
Lillian Sung
Shelly Weiss

Associate Professor

Sarah Alexander
Yaron Avitzur
Sarah Bowdin
Migel Cortez
Doug Campbell
James Dowling
Mahendranath Moharir
Farid Mahmud
Tal Schecter-Finkelstein
Rachel Wald

RECOGNIZING OUR STAFF

I would like to take this opportunity to recognize our Department of Paediatrics office staff members for their ongoing commitment and operational excellence over the past calendar year.

Paediatrics Office Staff

Anna Capizzano, Executive Assistant
Amoye Henry, Project Coordinator
Maureen Lum, Financial Analyst
Angela McGerrigle, Executive Assistant
Diva Mendes, Administrative Assistant, Office Secretary
John Vetta, Manager of Finance, Controller

Medical Education Staff

Mary Antonopoulos, Clerkship Program Administrator
Joanna Barnes, Program Coordinator, Pre-clerkship, Electives, TTR

Paediatric Consultants Billing Office

Shelley Todd, Supervisor
Shannon Baksh
Elia Frias
Kyle Martin
Shara Ramsaywack
Indra Samaroo
Jenette Singh
Meena Singh

Josefina Bento, Administrative Assistant
Susan Jenkins, Business Supervisor, Postgraduate
Sandra Layno, Program Coordinator, Postgraduate
Clare Schlesinger, Education Coordinator
Michelle Wan, Conference Administrator
CHANGING TIMES

As we continue to evolve as one of the world’s leading academic institutions in Paediatrics, our commitment to quality through our clinical, research and education programs remains a constant. Through distinct clinical excellence and cutting edge research innovation, our future generation of medical professionals are destined to affect global change. Although the times are surely changing, one thing prevails: the dedication to Paediatric care in our department. We profile our six new faculty who share some of their thoughts on care for the generation to come.
Emergency Care, Always Changing

Dr. Krishnapriya Anchala is an associate professor in the division of emergency medicine. She joins SickKids from McMaster Children’s Hospital where she was an associate professor in the Department of Pediatrics. During her eleven years at McMaster, she was instrumental in establishing a new pediatric emergency program to service the southeastern region of Ontario.

Her interests include novel curriculum development and emergency department team training. Dr. Anchala has led hospital wide patient safety initiatives, assisted with provincial trauma planning for pediatrics and managed the pediatric emergency medicine clinical teaching unit at McMaster.

“Prior to joining SickKids, I was fortunate to have been involved with the transformation of pediatric emergency medicine care for the Hamilton region. As our healthcare system evolves, we will be challenged to find new and innovate ways to deliver emergency care to the GTA and surrounding region. I look forward to working with SickKids as we navigate these exciting and changing times”

Developing and facilitating new concepts in the treatment of food allergy

Thomas Eiwegger earned his doctoral degree at the Medical University of Vienna, Austria, where he also completed his paediatric training. He did his post Doc in the Swiss Institute of Asthma and Allergy in the group of Cezmi Akdis from 2008-2010. Before moving to Sickkids Dr. Eiwegger was principal investigator and associate Professor at the Department of Paediatrics and Adolescent medicine, Medical University of Vienna, Austria.

As a clinician and scientist Dr. Eiwegger will focus on food allergy.

Being allergic to food is special since hidden food components may result in life-threatening reactions. This generates fear that severely impacts daily life of the affected child, the family and the environment. Until now allergen avoidance is the only available treatment.

Dr. Eiwegger will focus on better understanding of the mechanisms of tolerance development to allergens. Dr. Eiwegger will define new treatment approaches by delineating the sequence of events that take place in children that lose their food allergy.

“Learning from these children will provide us with new, innovative therapeutic approaches to cure food allergy.”
Shifting the perception of neonatal hemodynamics and echocardiography

Dr. Regan Giesinger graduated from Queen’s University in Kingston, Canada in 2008. She went on to receive her Specialist designation in Pediatrics in 2012. She completed Neonatology training at the University of Toronto and obtained her Specialist designation in Neonatal-Perinatal Medicine from the Royal College of Physicians and Surgeons of Canada in 2014. She has completed an additional year of Subspecialty training as a fellow in Targeted Neonatal Echocardiography at the University of Toronto.

Dr. Giesinger’s area of focus is ‘neonatal hemodynamics and echocardiography’ and her research interests include the physiology and management of hypotension and the hemodynamics of perinatal asphyxia.

“At no other time in life does the human undergo more change than in the evolution from a preterm born at the limits of viability to a term baby on the way home. The more we understand these changes, the more smoothly we can usher them through. I’m a proud to begin my career as a member of the world leading Targeted Neonatal Echocardiography program which is already advancing the field by mapping out the impact of transitioning physiology, pharmacology and disease on our fragile patients.”

Expanding our understanding of bone health in children

Dr. Jenny Harrington earned her medical school degree at the University of Adelaide, Australia. She undertook her residency training and a pediatric endocrine fellowship through the Women’s and Children’s Hospital in Adelaide. During her fellowship she completed a PhD which focused on monitoring vascular health in children at risk for accelerated atherosclerosis. In 2010 she came to SickKids, and it was during her fellowship at SickKids that she developed a clinical and research interest into the management of children with disorders of calcium homeostasis and bone health. Her research looks at the long term outcome of children with hypoparathyroidism and bone microarchitecture in children with glucocorticoid induced osteoporosis. Ongoing research interests include the assessment of bone health in children with genetic disorders of bone fragility, such as Osteogenesis Imperfecta, as well as those with osteoporosis secondary to chronic diseases, such as in boys with Duchenne Muscular Dystrophy.

“Our understanding of the genetic underlying conditions leading to bone fragility in children is rapidly expanding. Just in the last five years, over 15 new genes leading to osteogenesis imperfecta have been identified. Through studying the relationship between genotype, clinical presentation and response to treatment, we can aim to tailor our management to optimize outcomes.”
Understanding the genetic origins of complex rheumatic diseases

Dr. Linda Hiraki is a Clinician-Scientist in the Division of Rheumatology and Scientist Track investigator in Child Health Evaluative Sciences, Research Institute at SickKids. She earned her MD at Queen’s University, and completed her clinical training in paediatrics and rheumatology at SickKids. Following her clinical training, Dr. Hiraki went on to pursue research training at the Harvard School of Public Health, funded by the Harvard, Frank Knox Scholarship and subsequently the Canadian Institutes of Health Research (CIHR) to complete a Masters and Doctor of Science in epidemiology, with a focus on genetic epidemiology. She then completed postdoctoral training in the Andrew Paterson’s laboratory, Genetics & Genome Biology at SickKids. Dr. Hiraki’s current research interests include examining the genetic contribution to complex, rheumatic diseases and their associated longterm outcomes. Dr. Hiraki is coordinating a large, international cohort of systemic lupus erythematosus patients followed prospectively over years of disease to understand the genetics of lupus, its manifestations and related outcomes.

“I’ve come to recognize research as a critical component of my clinical practice, adding dimension and depth to my clinical care and patient interactions. Reciprocally, my care for patients and families guides my research.”

Transitioning the focus from Diagnosis to Treatment; the Evolution of Mitochondrial Care Possibilities

Dr. Neal Sondheimer completed his M.D. and Ph.D. at The University of Chicago where he did graduate work on the formation of prions with Susan Lindquist. He did residency in clinical genetics and pediatrics at The Children’s Hospital of Philadelphia, and also completed fellowship in Clinical Biochemical Genetics where he later served as program director for medical genetics. He became an Assistant Professor at The University of Pennsylvania in 2009. His research program has focused on the transcription of the mitochondrial genome and the effect of mitochondrial genetic variation on common and rare disease. In the Division of Clinical and Metabolic Genetics, he is an Associate Scientist in Genetics and Genome Biology. His work will focus on novel aspects of treatment approaches to mitochondrial disorders by exploring opportunities to lower the overall heteroplasmy burden. He is also part of a long-term study of the role of mitochondrial bioenergetics in prematurity funded by the March of Dimes.

“The history of genetics is that it was a field that diagnosed children and provided guidance to their families. In these changing times genetics will take a more active role in providing treatment options. I am interested in leading this effort in the field of mitochondrial medicine.”
DIVISION OF ADOLESCENT MEDICINE

The Division of Adolescent Medicine at The Hospital for Sick Children is an interprofessional group committed to promoting and providing excellence in adolescent health care, and collaborating with local, national and international communities in the areas of patient care, training, education and research. Some of the exciting events of the year included: a successful external review; seeing our 100th patient in the Transgender Youth Clinic; and an unprecedented number of SickKids research presentations and workshops at the Society for Adolescent Health and Medicine conference in Los Angeles. Members of the Division published 15 papers in 12 journals.
Exciting Adolescent Medicine events included: a successful external review; publications in 15 papers in 12 journals; seeing our 100th patient in the Transgender Youth Clinic; and an unprecedented number of presentations at the Society for Adolescent Health and Medicine conference.

The Young Families’ Program continues to offer interprofessional education and experience to trainees from a variety of disciplines including medicine, nursing, social work and psychiatry with a particular focus on social paediatrics to its clinical, research and educational programs. Research and Quality Improvement projects include work in the areas of maternal and child outcomes, infant mental health, developmental screening and evidence-based health services for adolescent parents. The program continues its progress towards the development of evidence based adolescent parenting intervention with a particular emphasis on maternal and infant mental health. Outreach to Community networks and affiliations remains an active focus.

The Substance Abuse Program provides continuum of care from outpatient to day treatment, incorporating best practices in clinical care, while providing learning for a variety of health professional trainees. The program also provides outreach to schools, group homes and youth-serving agencies across the GTA. The program has introduced enhanced services for parents and is also one of the lead agencies involved in a pilot project aimed at enhancing program evaluation of youth addiction programs in Ontario. The program is also launching a new education resource for teens about the health risks of cannabis use entitled ‘Just Weed’.

The Good 2 Go Transition Program continues to support SickKids staff and members of the paediatric and adult healthcare community in servicing the needs of youth in healthcare transitions. Highlights from the past year include supporting novel initiatives via a transition navigator in sickle cell program, transfer clinics in aftercare oncology and transition education events in neurosurgery outreach program. We continue to serve as consultants/experts at the local hospital community level and nationally, with our work with the Epilepsy Transition Working group and efforts to develop clinical practice guidelines for transitions with the Canadian Association of Paediatric Health Centres, respectively. We published research in the area of youth-focused interventions for transition to adult healthcare and continue our research in palliative care, inflammatory bowel disease, and transition-specific initiatives such as Transfer Clinics.

The Eating Disorders Program provides integrated clinical services (Inpatient, Day Hospital, Outpatient and Consultation) to adolescents and their families. All aspects of the program are interdisciplinary and family-based, as fits with best evidence based practice. Our newest program, the Children’s Outpatient Program for Eating Disorders (COPE), provides care specially designed for those under 12 years old who struggle with eating issues and co-morbid illnesses. Educating current and new providers on best practices in eating disorders care remains a core mission of the program.
Current research is in the areas of transition to adult care, trauma and eating disorders, and the treatment of children with eating disorders. We continue to participate in the Ontario Community Outreach Program for Eating Disorders which strengthens care for sufferers of eating disorders throughout the province.

SITY continues to provide adolescent health care for young people with chronic illness or disability, with regular clinics in solid organ transplant, rheumatology, haematology, STOMP, sleep and spina bifida clinics. The Transgender Youth Clinic (TYC), operated jointly by Adolescent Medicine and Endocrinology has seen over 100 patients since its creation and is experiencing increasing numbers of referrals from across the province with 23 in June alone. An additional monthly follow up clinic has been added to meet this demand. TYC is also participating in the Ontario Centres of Excellence initiative to optimize clinic flow and patient outcomes. SITY is an important educational resource, providing continuity clinics for fellows and subspecialty residents and teaching about a broad range of adolescent issues. SITY continues to optimize the involvement of practitioners and trainees in a number of disciplines to role-model and deliver care in an integrated and interprofessional manner. Current research is in the areas of HPV immunization in solid organ transplantation, adherence to treatment, mHealth and eHealth.

Publications


Book Chapters


Grants and Funding


Assessment and Treatment of Oppositional Behaviour, Conduct Problems and Aggression in Children with Attention Deficit Hyperactivity Disorder, Oppositional Defiant Disorder and Conduct Disorder: Bringing Knowledge to Action Among Family Physicians and Pediatricians. Pringsheim T (PI), Johnson D (PI). Gorman D (Co-I), Cooke L (Co-I), Doja A (Co-I), Andrade B (Co-I), Millette J (Co-I), Ng V (Co-I), Thomas R (C), Mousmanis P (C), Handanos D (C), Goldade R (C), Belanger S (C), Wong S (C), Carrey N (C), Leverette J (C), Katzman DK (C), Murphy A (C), Brehaut J (C). Shire, Canada. $100,000 CAD. Jan 2015

Connecting Adolescents and Young Adults to Preventive Health Care Services. CoPIs: Klein JD and Santelli JS, The Society for Adolescent Health and Medicine (Katzman DK (Co-I), Ford (Co-I), American Academy of Pediatrics (AAP), American Academy of Family Physicians (AAFP), and the American College of Obstetricians and Gynecologists (ACOG). Merck Adolescent Health Consortium Grant $3,100,000 USD. August 2014 – August 2018.


Team to Address Bariatric Care in Canadian Children (Team ABC3), PI: Ball, Co-PIs: Birken, Hamilton, Holt, Masse, Morrison, Co-is: Anderson, Buchholz, Carsley, Chanoine, Cordeiro, Dettmer, Forhan, Hadjiyannakis, Haines, Ho, Legault, Luca, Maguire, Maximova, McPherson, Parkin, Perez, Sprague, Toulany, Tremblay, Tu. Canadian Institute of Health Research: Team Grant in Bariatric Care. $1,480,881 CAD. October 2014 - October 2019
DIVISION OF CARDIOLOGY

The Division of Cardiology at The Hospital for Sick Children was established in 1938, as one of the first dedicated units treating children with congenital heart disease. Almost 80 years later, the Division remains one of the most prestigious and productive in the world.

Dr. Andreea Dragulescu
The most recent achievement of the division is the establishment of a long-awaited neurodevelopmental outcome program.

As an integral partner in the Labatt Family Heart Centre, it forms an important part of a multi-disciplinary and “expert model of care” team, with dedicated cardiac intensive care facilities, world-leading imaging teams, internationally renowned interventional cardiology and electrophysiology services, and one of the largest heart function and transplant groups.

The fellowship program attracts high caliber candidates from North America and around the world.

Research and development has always been at the forefront of the activities of the Division, and the current Faculty continues to perform at the highest level. It is a long-standing member of the Paediatric Heart Network, an NIH funded network of centres of excellence, houses the Congenital Heart Surgeons Society, and leads the world in the clinical epidemiology and outcomes analysis of congenital heart disease.

At a mechanistic level, our world leading imaging research spans all disciplines from CT, MRI, to echocardiography and fetal medicine, alongside this, the heart function and transplant research activities have made a world impact. Working closely with our surgical colleagues, the interventional cardiology program has been at the leading edge of the field for well over 20 years, and continues to develop novel interventions, hybrid procedures, and our multi-disciplinary imaging faculty is unsurpassed in cardiovascular functional research.

The most recent achievement of the division is the establishment of a long-awaited neurodevelopmental outcome program. This will help us to better define and treat the challenges our patients face in this sphere related to their cardiac anomalies coupled with the additive deleterious effects of open heart surgery and chronic illness and hospitalization.

In summary, the Division, working in close collaboration with colleagues from surgery, anesthesia, intensive care, and all the specialties involved in the care of children with heart disease, goes from strength to strength in each of the clinical, educational, and research domains.

Honors and Awards


**Koopmann, T; Hamilton, R**: Winner of Paul C. Gillette Award, Pediatric and Congenital EP Society (PACES), Aurora, Colorado, United States. April, 2014

**Liu, J; Hamilton, R**: Finalist for Best Manipulation Paper Award (Paper entitled: Automated microrobotic characterization of cell-cell communication), IEEE International Conference on Robotics and Automation (ICRA), Hong Kong, China. June, 2014
Liu, J; Hamilton, R: Winner of Best Student Paper Award (Paper entitled: Automated microrobotic characterization of cell-cell communication), IEEE International Conference on Robotics and Automation (ICRA), Hong Kong, China. June, 2014

Mroczek, D; Lee, K-J; Sandoval-Jones, JP; Houle, H; Benson, L; Dragulescu, A; Chaturvedi, RR: Winner of Best Paper Award (Oral presentation: 3D echo and invasive pressure synchronization - Generating real time, multi cycle pressure volume loops), CARDIOTECHNIX: International Congress on Cardiovascular Technologies, Rome, Italy. October, 2014

Sandoval, J; Asoh, K; Kato, A; Lee, KJ; Benson, L; Chaturvedi, RR: Winner of Best Abstract in the PICS ~ AICS 2014 Symposium (Oral presentation: Balloon angioplasty of native aortic coarctation in infants), Pediatric and Adult Interventional Cardiac Symposium (PICS ~ AICS), Rush University Medical Center, Chicago, Illinois, United States. June, 2014

Sun, L; MacGowan, CK; Seed, M: Winner of 2014 Young Researcher Award (Abstract entitled: Feasibility of comprehensive hemodynamic assessment in the normal late gestation human fetus by phase contrast MR and T2 mapping), International Society for Magnetic Resonance in Medicine (ISMRM), Milan, Italy. May, 2014

Publications


Borik S, MacGowan CK, Seed M. Maternal hyperoxegenation and foetal cardiac MRI in the assessment of the borderline left ventricle. Cardiology in the Young 2014: Epub Oct 2014


**Book Chapters**


Friedberg MK. Right-left ventricular interactions in RV afterload and preload. In: Right Ventricular Physiology, Adaptation and Failure in Congenital And Acquired Heart Disease (Friedberg MK, Redington AN, eds). Springer, 2014


Grants and Funding

A pharmacogenetic trial of tacrolimus after pediatric transplantation. Mital S. SickKids Transplant Centre Catalyst Grant. $150,000 CAD. February 1-2012-May 1-2015

A randomised, 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 for 3 or 6 months) to placebo (double blind). Pope E, Bradley TJ, Chakkittakandiyil A, Lara-Corrales I. Pierre Fabre Dermatology. $373,044 CAD. February 1-2010-May 1-2014


Adolescent type I diabetes cardio renal intervention trial (AdDIT) - Canada Site: (1) Randomized controlled trial; (2) Follow-up of non-randomized low risk subjects; (3) Ancillary study - urinary proteomics in adolescents with type 1 diabetes. Daneman D, Mahmud FH, Sochett EB, Curtis JR, Moineddin R, Bradley TJ, Cherney DZI, Reich HN, Scholey JW. Juvenile Diabetes Research Foundation. $3,657,088 CAD. March 1-2011-February 29-2016


Biologic determinants of right ventricular remodeling in tetralogy of Fallot. Mital S, Redington AN, McCrindle, B, Mertens L. **Heart & Stroke Foundation of Canada.** $150,634 CAD. March 1-2011-February 20-2016

Can sustained post-operative biventricular pacing improve hemodynamics in children with electro-mechanical dyssynchrony after repair of congenital heart disease? Friedberg MK, Stephenson E, Van Arsdell G, Schwartz S. **Heart and Stroke Foundation of Ontario Grant In Aid.** $172,481 CAD. July 1-2012-June 30-2015

Canadian National Transplant Research Program: Increasing donation and improving transplantation outcomes. Hebert M-J, Mital S, West LJ. **CIHR Program Grant in Transplantation Research.** $1,500,000 CAD. April 1-2013-April 1-2018


Clinical Assessment of Thrombosis in Children and Heart surgery: The CATCH study. McCrindle B, Mital S. **CIHR Operating Grant.** $1,514,330 CAD. October 1-2010-September 30-2015


CTOT-C (Clinical Trials in Organ Transplantation in Children) U01AI104336-01: Chronic graft dysfunction: interplay of allo- and autoantibodies and nonadherence. Webber S, Dipchand Al, Blume E, Canter C, Naftel D, Hsu D. **National Institutes of Health.** $5,205,958 CAD. July 1-2013-July 1-2018

Determinants of disease progression and recovery in pediatric heart failure. Kantor P, Mertens L. **Heart and Stroke Foundation of Ontario.** $400,000 CAD. July 1-2012-June 30-2015

Development of myocardial T1 mapping in children. Grosse-Wortmann L. **Siemens Medical Solutions.** $25,000 CAD. November 1-2013-December 1-2014

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Early identification of cardiac dysfunction in obese adolescents: mechanisms and modulation. Banks L, McCrindle B, Wells G, Mertens L, Seed M. **CIHR - Bridge funding - Institute of Respiratory and Circulatory Health.** $100,000 CAD. March 1-2013-March 1-2015


Echocardiography teaching module development and research. Golding F, Bennett S, McCrindle BW, Manlhiot C. **Labatt Family Heart Centre Innovation Funds.** $20,310 CAD. July 1-2015-June 30-2017

EMPOWER: Enhancing Breast Milk Production with Domperidone in Mothers of Preterm Neonates. Assessment of infant electocardiograms to determine the presence of Q-Tc interval prolongation and cardiac arrhythmias for the EMPOWER Trial. Asztalos E, Campbell-Yeo M, Da O, Nield, LE. **Sunnybrook Research Institute Funding, Canadian Institute for Health Research.** $999,454 CAD. January 1-2013-December 31-2016


Exome sequencing a family with gene-negative epidermolysis bullosa superficialis/icthyosis of bulbosa of Siemens. Hamilton R. **Rare Diseases Foundation and the BC Children's Hospital Foundation (BCCNF).** $3500 CAN. January 1-2014-December 31-2014

Exome sequencing for RV remodeling after tetralogy of Fallot repair. Manickaraj AK, Mital S. **Heart and Stroke Foundation of Canada Research Fellowship Award.** $83,000 CAD. July 1-2013-June 30-2015


Identification of genes predisposing to familial arrhythmia syndromes. Hamilton R. Rare Diseases Foundation and the BC Children’s Hospital Foundation (BCCNF). $3,500 CAD. January 1-2014-December 31-2014


iPS cells to model vascular disease in patients with Williams-Beuren syndrome. Ellis J, Mital S. CIHR Operating Grant. $640,182 CAD. January 1-2013-March 31-2018

Kawasaki Disease: On our way to unraveling the pathogenesis. Yeung R, Siminovich K, McCrindle BW. Canadian Institutes of Health Research. $192,548 CAD. June 1-2011-March 31-2016


Non-invasive monitoring of pediatric kidney allograft injury to improve diagnosis and patient outcome. Hansen T-B, Mital S. CIHR Operating Grant. $984,717 CAD. October 1-2012-September 30-2017

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Novel approaches to the prediction, diagnosis and treatment of cardiac late effects in survivors of childhood cancer. Mital S, Nathan P. **Canadian Institutes for Health Research Team Grant.** $2,797,749 CAD (Mital: $702,107 CAD). June 1-2011-June 1-2016


Prenatal versus postnatal diagnosis of congenital heart defects requiring neonatal intervention: a population-based study. **Pediatric Research and Clinical Summer (PeRCS) Program.** Student: Lauren Glick, University of Toronto. $3,300 CAD. July 1-2014-June 30-2015

Prevalence and evolution of late gadolinium enhancement and myocardial hypertrophy in childhood hypertrophic cardiomyopathy. Grosse-Wortmann L, Maron M, Benson L, Chan R. **Children’s Cardiomyopathy Foundation.** $46,917.61 USD. February 1-2015-February 1-2016


Prospective registry on the treatment of fetal atrial flutter & supraventricular tachycardia: FAST Therapy Registry. Jaeggi E. **SickKids Foundation.** $20,000 CAD. October 1-2014-September 30-2019

Quantification of diffuse myocardial fibrosis in congenital and acquired heart disease. Grosse-Wortmann L. **Labatt Family Heart Centre Innovation Funds.** $23,000 CAD. March 21-2013-March 20-2015


Ted Rogers Personalized Genomic Medicine Program. SickKids Scientific Co-Lead, Mital S, Cohn, R. Ted Rogers Centre for Heart Research. $40,000,000 CAD. (Mital, $16,000,000). December 1-2014-Dec 1-2021


The role of miR-144 in the cardioprotection associated with remote pre-conditioning. Redington AN. Canadian Institute of Health Research. $427,674 CAD. March 1-2014-February 28-2017

TLR4 signaling in acute and chronic responses to remote ischemic conditioning. Redington AN, Rohailla S. Canadian Institute of Health Research. $360,099 CAD. March 1-2013-February 28-2016


Trial of beta blocker therapy (Atenolol) vs. angiotensin II receptor blocker therapy (Losartan) in individuals with Marfan syndrome. Lacro RV, Dietz HC, McCrindle BW, Bradley TJ. National Institutes of Health/National Heart, Lung and Blood Institute. $1,619,555 CAD. September 1-2011-June 30-2016


Clinical Fellows
- Dr. Emilio Alvarellos
- Dr. Hiroko Asakai
- Dr. Tanmay Bhamare
- Dr. Yoav Bolkier
- Dr. Sharon Borik
- Dr. Paweena Chungsomprasong
- Dr. Santokh Dhillon
- Dr. Michael Grattan
- Dr. Heynric Grotenhuis
- Dr. Antony Hermuzi
- Dr. Haruki Ide
- Dr. Nobuhiko Kan
- Dr. Atsuko Kato
- Dr. Michael Khoury
- Dr. Hanna Krymko
- Dr. Carmen Lopez
- Dr. Jacob Mathew
- Dr. Conall Morgan
- Dr. Annika Ohman
- Dr. Guido Pieles
- Dr. Prashob Porayette
- Dr. Ronand Ramroop
- Dr. Eugenie Riesenkampff
- Dr. Juan Pablo Sandoval Jones
- Dr. Martijn Slieker
- Dr. Sharmila Udupa
- Dr. Deane Yim

Research Fellows
- Dr. Barbara Cifra
- Dr. Lisa D’Alessandro
- Dr. Mieke Driessen
- Dr. Olga Gomez
- Dr. Ryo Ishii
- Dr. Wen-Hsien Lu
- Dr. Kenichi Okumura
- Dr. Sara Roldan
- Dr. Selvi Senthilnathan
- Dr. Liqun Sun
- Dr. Catalina Tamayo
- Dr. Jeong Jin Yu

Adjunct
- Dr. Jennifer Conway
- Dr. Paul Kantor
- Dr. Andrew Redington (Nov 2014 – Mar 2015)

Administrative Staff
- Theresa Braggs
- Christa Chartrand
- Clara Cheng
- Judy Grundy
- Pamela Hardy
- Divya Hari Kannan
- Shelley Kahn
- Diana Kuzmanovski
- Michelle Leusenko
- Jacqueline Moonsammy
- Sue Morton
- Judith Speck

Subspecialty Residents
- Dr. Kandice Mah

Dr. Barbara Cifra
Dr. Lisa D’Alessandro
Dr. Mieke Driessen
Dr. Olga Gomez
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Michelle Leusenko
Jacqueline Moonsammy
Sue Morton
Judith Speck

Subspecialty Residents
Dr. Kandice Mah
DIVISION OF CLINICAL AND METABOLIC GENETICS

From left to right: Cheryl Shuman Dr. Roberto Mendoza Dr. Sarah Bowdin

The Division of Clinical and Metabolic Genetics in collaboration with the Centre for Genetic Medicine continued to play a pivotal role in elevating the ‘genetics dialogue’ both within SickKids and with key stakeholders to lead and inform change in research, clinical care & discovery, and education. To address the changing environment of clinical genetics, SickKids partnered with the Children’s Hospital of Philadelphia this year to lead an international Think-Tank with leaders from across Canada and the US to lead and inform change on best practices for next generation genomic testing through a publication in a peer reviewed journal. To address the ongoing genomic education needs within SickKids and our health provider community, the Centre for Genetic Medicine launched a 7-part lecture series and webinar “Conversations with Genetics: You and Your Practice”, which launched in January 2015.
Four Divisional staff contributed as key note speakers with over 140 delegates participating for each lecture. Additionally, the Centre for Genetic Medicine hosted a 2014 spring symposium, “Genetic Medicine: Advancing Family Health Care”, with over 240 delegates in attendance offering the Division an opportunity to share clinical outcomes and best practices in genomic discoveries.

Members from the Division contributed to a number of provincial planning initiatives with a lens to influence provincial policy development targeting ‘key’ components required for a provincial genetic services model and associated funding. Specifically, SickKids led the development of a Provincial Clinical Genetics Wait Time Project resulting in the completion of Ontario’s first provincial standardized wait times report released in January 2015 as well as leading a provincial genetics Think Tank & Consultation with the MOHLTC on provincial genetic services planning strategy. From a national perspective, the Centre provided planning to support the McLaughlin sponsored ‘Canadian Prenatal Genomic Microarray and Sequeencing Symposium’ , held at SickKids in the fall of 2014. This national forum brought global leaders together to discuss and build consensus related to policy, clinical utility & validity, test interpretation and related reporting and patient counselling issues in the application of new genomic testing for prenatal care and screening.

As one of the only G8 countries without legislation to protect individuals against genetic discrimination, the Centre through leadership within the Division of Clinical and Metabolic Genetics has publicly advocated with federal and provincial government leaders to influence content and adoption of legislation. Learning’s and data as a result of the Centre’s Genome Clinic has armed the hospital with quantitative data profiling the profound impact on families and patients when making decisions related to genomic testing.

Division Chief, Dr. Ronald Cohn received the Muscular Dystrophy Campaign UK Award for Innovative Neuromuscular Treatments. Dr. Sarah Bowdin received a promotion to the rank of Associate Professor. The year also brought many successes for many trainees, including our former Chief Resident Dr. Rebekah Jobling, who was invited to present at the European Human Genetics Conference in Glasgow, UK and to present at a platform presentation at the Department of Paediatrics Research Day she also recently published a paper in Brain, A journal of Neurology entitled PMPCA mutations cause abnormal mitochondrial protein processing in patients with non-progressive cerebellar ataxia.

The Division of Clinical and Metabolic Genetics has led very important teaching initiatives and is a host to a variety of training programs.
in medical genetics. The Royal College of Physicians and Surgeons-certified residency program in Medical Genetics and the Canadian College of Medical Geneticists-certified clinical fellowship programs in Medical and Biochemical genetics are the largest in Canada. This year, Dr. Melissa Carter became the new Program Director for our Medical Genetics training program. The Division is also home to the MSc Program in Genetic Counselling. Through its links to the Research Institute, the genetics centre and the Department of Paediatric Laboratory Medicine, the Division is actively involved in the training of scientists and physicians that work together translating new discoveries into clinical practice and realizing the ideal of individualized genomic medicine.

Cheryl Shuman, the Program Director for the MSc program in Genetic Counselling at the University of Toronto received a promotion to the rank of Professor and the program celebrated the graduation of its 16th class.

Genetic Counsellors Stacy Hewson, Nada Quercia and Eriskay Liston organized the second annual evening event for families and health care professionals in recognition of International Rare Disease Day 2015. This was a very successful function and included great talks from Dr. Janet Rossant, Mr. Ryan Walton, founding member of the Rare Disease Foundation and Mr. Chris Gilmor, an active participant in the Toronto Parent2Parent Resource Network. The Toronto Parent-2-Parent Resource Network is one of 6 such groups in Canada supported by the Rare Disease Foundation.

The first North American Nicolaides-Baraitser syndrome (NCBRS) parent meeting was held at SickKids Peter Gilgan Centre for Research and Learning Tower on Saturday, July 11th, 2015. Bringing together families from Yukon to Florida, the meeting served as a unique venue for individuals and families affected by Nicolaides-Baraitser syndrome to share their stories and gain further knowledge about the rare disorder. The full day meeting was arranged by the Division of Clinical and Metabolic Genetics and was spearheaded by Drs. David Chitayat and Resham Ejaz in the Division of Clinical and Metabolic Genetics and parent organizer, Mrs. Helen Robinson. The meeting was met with an overwhelming positive response by attending families and plans are underway to make this meeting an annual event.

In June, the 22q11 Deletion Syndrome Clinic held their fifth annual International 22q at the Zoo Awareness Day at the Toronto Zoo for patients, families and health professionals. The clinic has begun offering twice yearly Transition To Adult Care Clinics, in collaboration with Dalghish Family Hearts and Minds Clinic for Adults with 22q11 DS and the SickKids Good-2-Go program. They have graduated 13 teens to date through this program. In collaboration with a dedicated parent group and with assistance from the SickKids Foundation Conference Grant, the clinic will be hosting the 2nd 22q11.2 Family Education Conference on November 7, 2015.
Honors and Awards


Publications


Bowdin S, Hayeems RZ, Monfared N, Cohn RD, Meyn MS. The SickKids Genome Clinic: Developing and evaluating a pediatric model for individualized genomic medicine. Clinical Genetics. 2015 Feb 25 [Epub ahead of print]


Lowe GC, Corben LA, Duncan RE, Yoon G, Delatycki MB. “Both sides of the wheelchair”: The views of individuals with, and parents of individuals with Friedreich ataxia regarding pre-symptomatic testing of minors. Journal of Genetic Counseling. 2015 January 17 Epub


**Book Chapters**


**Grants & Funding**

Accelerator Grant: Identifying the genes and underlying causes for intractable epilepsies by next generation sequencing. Mahmutoglu, S., Minassian, B. **McLaughlin Centre, University of Toronto.** $75,000 CAD. April 30, 2013 – September 29, 2015


Ascertaining the genetic etiologies of stillbirth via whole exome sequencing. Meyn MS, Stavropoulos J, Chitayat D, Chong K, Shannon P, Keating S, Kolomietz E, Maire G. **Accelerator Grant, McLaughlin Centre at the University of Toronto.** $40,000 CAD. May 2014 – April 2015.

Canadian “rare diseases: models and mechanisms network”. **Canadian Institutes of Health Research (CIHR).** Cohn RD. $230,000 CAD. October 1, 2014 – April 20, 2018

Cellular and molecular mechanisms of skeletal muscle homeostasis during hibernation. Cohn, R. **University of Toronto.** $265,000 CAD. March 31, 2014 – March 30, 2019


Computerized patient phenotyping to connect Canadian clinical genetics clinics. **Canadian Institutes of Health Research (CIHR).** Brudno M, Bowdin S, Boycott K, Chitayat D. $423,000 CAD.

Determination of molecular signatures that allow differentiation between unilateral and bilateral Wilms’ tumors using genome-wide arrays and whole-exome sequencing. Lorenzo, A, Bagli, D, Gerstle, T., Shuman, Grant, R., Weksberg, R., Choufani, S., **C17 Research Network.** $150,000 CAD. July 31, 2013 – July 30 – 2015
Determining the genetic etiologies of stillbirth via WES-based analysis. **McLaughlin Centre, University of Toronto.** Meyn S. $40,000 CAD. May 1, 2014 – April 30, 2016.


Emerging team to identify and characterize novel and existing Hereditary Spastic Paraplegia (HSP). Yoon, G. **McGill University.** $35,000 CAD. September 30, 2013 – March 30, 2018

First steps to the improvement of long-term outcome of GAMT deficiency by using an international database. Mahmutoglu, S., Salomons, G. **Rare Disease Foundation, Microgrant Program.** $3,500 CAD. 2012 - 2014

Genetic and Epigenetic Determinants of Syndromic Intellectual Disability. Ray, P., Chitayat, D., Weksberg, R. **Canadian Institutes of Health Research (CIHR).** $750,400 CAD. December 31, 2012 – March 30, 2018

Genetic signatures of paediatric cancer predisposition syndromes. **McLaughlin Centre, University of Toronto.** Tabori U, Meyn S, Malkin D, Shlien A. $80,000 CAD. May 1, 2014 – April 30, 2015

HPN-009. An Open Label Study of the Safety, Efficacy and Pharmacokinetics of Glycerol Phenylbutyrate (GPG; RAVICTI) in Pediatric Subjects under Two Years of Age with Urea Cycle Disorders (USCDs). **Hyperion Therapeutics.** $24,892 + 42,000 USD per patient. December 2014 - November 2016

Identification of genes involved in epilepsy and epilepsy pharmacoresistance. Minassian, B., Mahmutoglu, S., Andrade, D. **McLaughlin Centre, Accelerator Grants in Genomic Medicine.** $75,000 CAD. 2014 – 2015


Implementation and Commercialization of a Novel DNA Methylation-Based Diagnostic Tool. Weksberg R, Basran R, Cytrynbaum C, Choufani S, Brudno M. **Canadian Institute of Health Research (CIHR).** $160,000 CAD. October 2015- September 2016


Is low creatine kinase a nonspecific-screening marker for creatine deficiency syndromes? Mahmutoglu, S., Kyriakopoulou, L. Rare Disease Foundation, Microgrant Program. $7,000 CAD. 2012 – 2014

Long term use of HPN-100 in Urea Cycle Disorders (HPN 100 - 011). Hyperion Therapeutics. $77,000 USD. December 2010 - December 2014

Longitudinal Study of Urea Cycle Disorders. Children’s Research Institute. $100,000 USD. August 2014 – July 2018


Rare Diseases Clinical Research Consortia (RDCRC) for the RDCR Network. Urea Cycle Disorder Consortium, Batshaw, ML. National Institute of Child Health and Human Development and National Centre for Advancing Translational Sciences. $8M USD. August 2014 - July 2019


Urea Cycle Disorder Research. Private Restricted Donation Account. $200,000 CAD. 2013-2017


Whole genome sequencing for paediatric patients. Complete Genomics. Cohn RD and Scherer S. $600,000 CAD. September 1, 2013 – August 31, 2016
DIVISION OF CLINICAL PHARMACOLOGY

Our division provides medical and educational oversight to two call centers (Motherisk and Ontario/Manitoba Poison Information Centre), clinical pharmacology consultation services and outpatient clinics. The outpatient clinics consist of Motherisk clinic, DART clinic (Drug Allergy/Reaction and Toxicology), and Fetal Alcohol Spectrum Disorder clinic. In 2014, the Ontario/Manitoba Poison Information Centre and the Motherisk received together nearly 100 thousand inquiries about emergency cases of overdose/poison exposure, and fetal/neonatal toxicity of drugs/chemicals.
These programs provided excellent educational platforms for trainees in various disciplines including emergency medicine, medical genetics, genetic counseling and midwifery. The clinical pharmacology consultation service also experienced a productive year. Particularly, we have accelerated preparation of gene-based personalized medicine approach to prevent adverse drug reactions and therapeutic failure. In collaboration with the Genetics center, this approach based on pharmacogenetics (PGX) is now at its final stage of implementation as a regular consultation service, and the clinical PGX consultation service will be launched through our adverse drug reaction clinic (DART clinic: Drug Allergy/Reaction and Toxicology) by the end of 2015. The Fetal Alcohol Spectrum Disorder (FASD) clinic is the only interdisciplinary, hospital based, clinic in Ontario that serves this challenging and complex population. In 2014, the FASD team performed a comprehensive diagnostic assessment for 81 children. More than half of them were diagnosed as the Fetal Alcohol Spectrum disorder and provided with treatment planning and case navigation. All of these clinical programs are also effective educational platforms, and in 2014, we had 12 trainees in our program, including subspeciality residents, elective residents and fellows and medical students.

**Honors and Awards**

**Ito, S:** Winner of Distinguished Service and Education award, Canadian Society of Pharmacology and Therapeutics, Winnipeg, Manitoba, Canada. June, 2014

**Koren, G:** Mentor award, Department of Pediatrics, Hospital for Sick Children, Toronto, Ontario, Canada. November, 2014

**Nulman, I:** Winner of Centre of Excellence for Early Childhood Development (CEECD) and the Strategic Knowledge Cluster on Early Child Development, Montreal, Quebec, Canada. November, 2014

**Publications**


Ragnhild Eek Brandlistuen, PhD, Eivind Ystrom, PhD , Irena Nulman, MD , Gideon Koren, MD, Hedvig Nordeng, PhD In reply to methodological considerations on the study of in utero exposure to paracetamol and neurodevelopmental outcomes. Basic and Clinical Pharmacology and Toxicolog. October 2014.


**Book Chapters**


**Grants and Funding**


Team Grant:Neurocognitive-Phenome, Genome, Epigenome and Nutriome in Childhood leukemia survivors: N-PhenoGENICS. Ito, Shinya. **Canadian Institutes of Health Research (CIHR).** $1,783,381.00 CAD. September 30, 2011 – September 29, 2016.


A prospective Open Label Study on Prevegyne Effectiveness. Koren, Gideon. Duchesnay Inc. $84,000.00 CAD. April 7, 2013 – April 20, 2015.

5-HT3 Antagonists (antiemetics) and cardiac safety, using an active surveillance approach. Koren, Gideon. University of British Columbia. $32,000.00 CAD. February 28, 2014 – February 28, 2016.
DIVISION OF DEVELOPMENTAL PAEDIATRICS

The Division of Developmental Paediatrics is situated at the Holland Bloorview Kids Rehabilitation Hospital. The division consists of full time academic clinicians as well as a community section of developmental paediatricians. The main clinical focus of the division is on childhood neuro-developmental and neuro-rehabilitation disorders.

From left to right: Dr. Darcy Fehlings Dr. Laura McAdam Dr. Evdokia Anagnostou Dr. Sharon Smile Dr. Golda Milo-Manson Dr. Andrea Hoffman Dr. Joelle Huber Dr. Jackie Chiang Dr. Angela Orsino
Comprehensive assessment and treatment programs are run for children and youth with conditions such as cerebral palsy, acquired brain injury, neuromuscular disorders and spina bifida.

Comprehensive assessment and treatment programs are run for children and youth with conditions such as cerebral palsy, acquired brain injury, neuromuscular disorders and spina bifida. Inpatient services are provided for children with medical conditions requiring complex continuing care. Specialized assessment clinics provide diagnostic assessments for children and youth with autism spectrum disorder with clinics located at Holland Bloorview as well as regional developmental clinics situated throughout the metropolitan Toronto area. The division runs a large psychopharmacology clinic providing consultation for children and youth with complex neuro-behavioural needs.

The division members lead research teams in applied childhood disability studies, in association with the Bloorview Research Institute led by Professor Tom Chau. Highlights include leadership of two Ontario-based translational neuroscience research networks funded by the Ontario Brain Institute – one focused on autism spectrum disorder led by Dr. Evdokia Anagnostou and one focused on cerebral palsy led by Dr. Darcy Fehlings.

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. Paediatric, physiatry, and neurology residents and medical students are trained in applied childhood disability. A highlight of the divisions’ educational activities is the Child Development Update – a national conference held once every 3 years – chaired by Dr. Golda Milo-Manson and supported by the continuing educational office of the Hospital for Sick Children and the Department of Paediatrics. This conference attracts attendees from across Canada.

Division members hold National/International leadership positions with Dr. Darcy Fehlings being the 2015 President of the American Academy for Cerebral Palsy and Developmental Medicine (AACPDM) and Dr. Golda Milo-Manson being the chair of the Royal College of Physicians and Surgeons subspecialty committee in Developmental Paediatrics. Dr. Peter Rumney was the 2014 recipient of the Dr. Jane Gillett Award from the Brain Injury Association of Canada.

Honours and Awards

Anagnostou, E: Received, Canada Research Chair - Tier 2, Translational Therapeutics in ASD, Canada Research Chai, April, 2014

Church, P: Nominated, Emerging Leader in Neonatology, Canadian Paediatric Society, June, 2014

Church, P: Received, Neonatal-Perinatal Medicine Faculty Teaching Award, University of Toronto, Toronto, ON, Canada, 2015

Fehlings, D: Received, AACPDM Student Scholarship, Awardee Name: Rhandi Christensen. American Academy for Cerebral Palsy and Developmental Medicine, United States, June, 2014
Fehlings, D: Received, The Holland Bloorview Foundation Graduate Student Scholarships Award for 2015, Awardee Name: Samantha D’Souza. Holland Bloorview Kids Rehabilitation Hospital, Toronto, December, 2014

Fehlings, D: Received, The 8th Annual Anne & David Ward Student Research Day “Best Research Presentation” - Tied 1st Place, Awardee Name: Seema Emami. Holland Bloorview Kids Rehabilitation Hospital, Toronto, July, 2014

Fehlings, D: Received, The 8th Annual Anne & David Ward Student Research Day “Best Research Presentation” - Tied 1st Place, Awardee Name: Briar Findlay. Holland Bloorview Kids Rehabilitation Hospital, Toronto, July, 2014


Penner, M: Awarded, Best Platform Presentation in Developmental Paediatrics, Canadian Paediatric Society Annual Meeting, Montreal, Quebec, Canada, 2014

Publications


**Book Chapters**


**Grants and Funding**


Autism Spectrum and Associated Neurodevelopmental Disorders: Genomes to Outcome. Scherer S, Anagnostou E.  **Ontario Research Fund.** $8,920,652 CAD. Oct 2010-Sep 2015

Autism spectrum disorders: Genomes to outcomes. Scherer S, Szatmari P, Anagnostou E.  **Genome Canada/Canadian Institute of Health Research/Ontario Ministry of Economic Development and Innovation.** $10,000,000 CAD. Apr 2013- Mar 2017


Bridging worlds by integrating perspectives and competencies - exploring the development of adaptive expertise. Kawamura A, Mylopoulos M.  **Bloorview Research Institute Catalyst Grant.** $12,000 CAD. Apr 2014-Mar 2015


**Canadian Institutes of Health Research.**
$19,910 CAD. Nov 2013-Oct 2014

$330,576 CAD. Apr 2014-Mar 2018

Province of Ontario Neurodevelopmental Disorders Network (POND). **Ontario Brain Institute.** Anagnostou E (Pl). Collaborator(s): Arnold P (Co-investigator), Szatmari P (Co-investigator), Schachar R (Co-investigator), Scherer S (Co-investigator), Lerch J (Co-investigator), Nicolas R (Co-investigator). 18,750,000 CAD. Jul 2013-Jun 2018

**QI initiative:** Prevention of osteoporosis - Clinical practice guideline use within the inpatient program at Holland Bloorview Kids Rehabilitation Hospital. Hoffman A. **Innovation Fund AHSC AFP.** $66,800 CAD. Feb 2015-Jan 2017

Randomized controlled trial in robotic therapy for children with cerebral palsy.. Wright V, Fehlings D. **CIBC & Three to Be Foundation.** $950,000 CAD. Apr 2012-Mar 2014

Screening practices and factors influencing Autism Spectrum Disorder (ASD) screening by community paediatricians. Smile S. **The Hospital for Sick Children Paediatric Consultants Education Research Committee.** $5,000 CAD. Nov 2014-Mar 2015


The Canadian Neuromuscular Disease Registry. Korngut L, McAdam L. **ALS Canada, Jesse’s Journey, Families of SMA Canada.** $10,000 CAD. Jan 2011-present

The Cerebral Palsy Discovery Project. Goldowitz D (Scientific Director of NeuroDevNet). **NeuroDevNet, Networks of Centres of Excellence of Canada (NCE).** Collaborator(s): Yager J (2nd lead), Shevell M, Fehlings M, Majnemer A, Miller S, Kirton A. $1,060,000 CAD. Apr 2013-Mar 2015


Treatment of overweight induced by antipsychotic medication in young people with ASD. Health Resources and Services Administration (HRSA) (USA). Anagnostou E (PI). Collaborator(s): Veenstra-VanderWeele J (Co-investigator), Handen B (Co-investigator), Butter E (Co-investigator), Aman M (Co-investigator). 1,418,395 USD. Apr 2012-Aug 2015

Typical and atypical development of frontal lobe systems and the maturation of social cognitive function. Taylor MJ, Anagnostou E. Canadian Institutes of Health Research. $766,896 CAD. Jan 2012-Jan 2017

Training Grant in Autism Research (ART). Zwaigenbaum L, Anagnostou E. Canadian Institutes of Health Research. $1,440,000 CAD. Apr 2009-Mar 2015

Validation of a Smartphone Application to Teach Emergency Safety Skills to Children. Huber J, Pediatric Summer Research Program (PeRCS) – The Hospital for Sick Children. $2,000 CAD. May 2015-Apr 2016
The 2014-2015 academic year continued the story of success for pediatric emergency medicine (PEM). Clinically, we managed a fall season marked by very high volume and high acuity for respiratory cases (the EVD68 wave!), and confronted the complex challenge of preparing for an Ebola response that brought the theme of communicable diseases and disaster preparedness to the forefront of everyone’s minds. Although our volumes continued their upward trajectory, a data-driven staffing plan successfully addressed a core efficiency goal of improving our times from arrival to first physician assessment. Through the first 6 months of 2015, SickKids moved into top 5 of pay for results ranked hospitals in the province!
Success and change go hand in hand. Our team through the last year experienced several departures and additions to key individuals, but emerged at the conclusion of the year with a strong cohesive group of leaders.

Academically, our faculty posted an outstanding year with recognition through high-impact publications and educational awards and organizational leadership. Dr. Suzanne Schuh and Dr. Yaron Finkelstein had manuscripts appear in JAMA, and the overall number of published peer-reviewed articles exceeded 40. Dr. Finkelstein’s work on suicide mortality risk was honored with a “best of” research award at the Pediatric Academic Societies meeting in May. Dr. Jason Fischer as leader of the P2 network, an international collaborative for point of care ultrasound in academic PEM, has set this new organization on a road towards success in collaborative research and innovation. Faculty were also recognized with end-of-year teaching awards from the Department of Pediatrics (Drs. Kempinska for subspecialty teaching and Fischer for continuing education).

Success and change go hand in hand. Our team through the last year experienced several departures and additions to key individuals, but emerged at the conclusion of the year with a strong cohesive group of leaders. We begin the 2015-2016 year excited by the leadership of Linette Margallo as Clinical Director and Krista MacMurdo as the Clinical Manager for PEM. For physicians, Dr. Jason Fischer will assume leadership as interim Division Chief and Dr. Trent Mizzi will begin a newly created role as Medical Director.

Honors and Awards

**Beno, S:** Winner of Faculty of the Year, Paediatric Emergency Medicine Point of Care Ultrasound, The Hospital for Sick Children, Division of Paediatric Emergency Medicine, Toronto, ON, Canada. June, 2014

**Beno, S:** Recognition for Excellence in Advocacy/Leadership, Division of Paediatric Emergency Medicine, The Hospital for Sick Children, Toronto, ON, Canada. June, 2014

**Boutis, K:** Winner of Physician Researcher Award for Scientific Accomplishments, Department of Pediatrics, The Hospital for Sick Children, Toronto, ON, Canada. June, 2014

**Boutis, K:** Recognition for Excellence in Evidence-based Practice, Division of Paediatric Emergency Medicine, The Hospital for Sick Children, Toronto, ON, Canada. June, 2014.

**Etoom, Y:** Winner of the Community Paediatrics Postgraduate Award for Excellence in Teaching, Department of Paediatrics, University of Toronto, The Hospital for Sick Children, Toronto, ON, Canada. June, 2014

**Fischer, JW:** Clinical Teaching Recognition Award, Division of Paediatric Emergency Medicine, The Hospital for Sick Children, Toronto, ON, Canada. June, 2014
Kempinska, A: Recognition for Excellence in Clinical Teaching, Division of Paediatric Emergency Medicine, The Hospital for Sick Children, Toronto, ON, Canada. June, 2014

Kempinska, A: Recognition for Excellence in Evidence–Based Practice, Division of Paediatric Emergency Medicine, The Hospital for Sick Children, Toronto, ON, Canada. June, 2014


Mehta, S: Winner of Teaching Award For Best Paediatric Emergency Medicine Staff Physician Presentation (“Shock”), Division of Paediatric Emergency Medicine, The Hospital for Sick Children, Toronto, ON, Canada. June, 2014

Mehta, S: Winner of Teaching Award For Best Paediatric Emergency Medicine Staff Physician Presentation ("Giving Effective Presentations"), Division of Paediatric Emergency Medicine, Toronto, ON, Canada. June, 2014

Mizzi, T: Recognition for Communication & Collaboration Excellence Award, Division of Paediatric Emergency Medicine Educational Rounds, The Hospital for Sick Children, Toronto, ON, Canada. June, 2014

Ostrow, O: Recognition for Excellence in Communication, Division of Paediatric Emergency Medicine, The Hospital for Sick Children, Toronto, ON, Canada. June, 2014

Pirie, J: Runner-up of the Subspecialty Teaching Award, Department of Paediatrics, The Hospital for Sick Children, Toronto, ON, Canada. June, 2014

Schneeweiss, S: Recognition for Excellence in Collaboration/Leadership, Division of Paediatric Emergency Medicine, The Hospital for Sick Children, Toronto, ON, Canada. June, 2014

Schneeweiss, S: Recognition for Excelling at Excellence, ER–Pain Management Working Group, Division of Paediatric Emergency Medicine, The Hospital for Sick Children, Toronto, ON, Canada. June, 2014

Publications


Berant R and Scolnik D: Topical lidocaine-epinephrine-tetracaine is effective in reducing pain during laceration repair with tissue adhesive in children. Evidence-Based Nursing 2014;17:118


Glatstein M, Ayelet R, Danino D, Weiss K, Scolnik D: Severe allergic contact dermatitis from temporary ‘black henna’ coloring of the hair during religious cultural celebrations: three different cases, same history. Am J Ther 2014 Mar 26


Khoury, M, Principi T, Beenish I, Friedman J, Bismilla Z. “‘What is a resident?’ Assessing parental knowledge and preferences regarding residents in the pediatric emergency department.” Pediatric Academic Societies. E- PAS2014:3836.422 (Trainee Publication, [Michael Khoury, PGY3])
Khoury, M, Principi T, Beenish I, Friedman J, Bismilla Z. “What is a resident?” Assessing parental knowledge and preferences regarding residents in the pediatric emergency department.” Pediatrics and Child Health, 2014. 19 (6) e73. (Trainee Publication, [Michael Khoury, PGY3])


Pusic M, Boutis K, Hatala R, Cook D. Learning curves: A Primer for Health Professions Education. Acad Med. 2014. September 27 - Epub ahead of print

Ramakrishna J, Valani R, Sriharan A, Scolnik D: Design and pilot implementation of an evaluation tool assessing professionalism, communication, and collaboration during a unique global health elective. Medicine, Conflict and Survival Journal Jan 13 2014

Ratnapalan S, Uleryk E. Organizational Learning in Health Care Organizations. Systems 2014, 2(1), 24-33


**Book Chapters**


Schuh S: Bronchiolitis. In: Rosen and Barkin’s 5-Minute Emergency Medicine Consult. Lippincott Williams & Wilkins, 2014. PA, C Invited expert state of the art review of therapy of this common disease


**Grants and Funding**


Assessment for learning: Examining the use of learning curves for ECG interpretation. Htala R, Boutis K, Pusic M. Royal College of Physicians and Surgeons of Canada, Medical Education Grant. $17,000 CAD. July 2014 – June 2017


Climbing the Learning Curve-Teaching the Medical Learner How to Interpret Pediatric Electrocardiograms (PC Education Innovation and Development Grant). Boutis, K. Pediatric Consultants. $5000 CAD. March 3, 2014 – March 2, 2015


Development of novel clinical tests to diagnose and monitor asthma in preschool children. Boutis K, Stanoevic S. Ontario Thoracic Society. $92,335 CAD. Nov 2013 to Dec 2015

Evaluation of Educational and Infrastructural Interventions Targeted at Barriers to Prompt Antibiotic Delivery in Febrile Neutropenia: A Follow Up Initiative. Principi T (PI), Burry E, Glanfield C, Gupta S. Paediatric Emergency Department Divisional Grants, Department of Pediatrics, The Hospital for Sick Children. $5,015 CAD 2014-2015


Impact of Emergency Department Probiotic Treatment of Pediatric Gastroenteritis: Randomized Controlled Trial. Freedman, S. University of Calgary. $85,000 CAD. March 31, 2013 – March 30, 2017


“MAGIC (Methods and Application Group for Indirect Comparisons) Collaborating Centre”


Pharmacogenomic Determinants of Ketamine Neurotoxicity in Young Children. Finkelstein Y, Boutis K, Hutchison J, Post M, Soriano S, Kim R. McLaughlin Centre for Genomic Medicine 2012 Accelerator Grant, University of Toronto. $50,000 CAD. Jan 2012 to Dec 2015


Radiation Exposure From Diagnostic Imaging: What the Clinician Needs to Know to Have Informed Risk/Benefit Discussions with Parents. Boutis K, Thomas K. Division of Paediatric Emergency Medicine, The Hospital for Sick Children. $7,000 CAD. Jan 2014 to Jan 2015

Radiation Exposure from Diagnostic Imaging: What the Clinician Needs to Know to Have Informed Risk/Benefit Discussions with Parents. Boutis K, Thomas K. Hospital for Sick Children Innovation Fund. $10,000 CAD. 2014


The Burden of Severe Drug-Induced Adverse Reactions. Finkelstein Y, To T, Hutson J, Mamdani M, Juurlink D. **Canadian Drug Safety and Effectiveness Research Network (CDSERN-funded by CIHR DSEN Emerging Teams).** $15,000 CAD. Apr 2013 to Dec 2014

The Pharmacokinetics of Antibiotics Delivered in the Emergency Department Setting. Scolnik D, Finkelstein Y, Tessaro M. **Apotex Fund.** $15,000 CAD. Jan 2011 to Dec 2015


The Deliberate Practice of Pediatric ECGs. Boutis K, Etoom Y, Pecaric M, Pusic M. **Department of Paediatrics, Division of Paediatric Emergency Medicine.** $6,000 CAD 2014-2015

Understanding Discharge Instructions for Children and Caregivers in the Transition from Pediatric Emergency Care. Curran J (PI), Porter SC. **Canadian Institute of Health Research (CIHR).** $436,287 CAD 2013-2016

Validating an on-line learning intervention that teaches the interpretation of pediatric electrocardiograms. Boutis K, Pusic M, Pecaric M, Etoom Y. **Department of Paediatrics, Paediatric Consultants, Innovation Fund.** $5,000 CAD. 2014-2015

**Ultrasound Fellows**

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<td>Dr. Ron Berant</td>
<td>Dr. Mara Hosang</td>
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<td>Dr. Marcela Preto</td>
<td>Dr. Sara Jones</td>
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<td>Dr. Kirstin Weerdenburg</td>
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**SIM Fellow 2013-2014**

| Dr. Wail Seleem |

**SIM Fellow 2014-2015**

| Dr. Sandra Cardenas |

**Trauma Fellow 2014-2015**

| Dr. Ahmad Al Thekair |

**Research Fellow 2014-2015**

| Dr. Adrienne Davis |

**Administrative Staff**

| Syed Azmat |
| Caseita Dewar |
| Angie Frisk |
| Ritsa Iriotakis |
| Dragan Kljujic |
| Laurie McQuarrie |
| Henna Mian |
| Sandra Miller |
| David Nissan |
| Nicole Rivera |
| Majda Savaglio |
| Pauline Smith |
| Kelly Sobie |
| Annabel Sousa |
| Maggie Stevanovic |
| Deborah Taylor |
| Catherine Wong |
2014-2015 was another productive year for the Division of Endocrinology.

We continued to provide high quality, comprehensive care for children and youth with a wide variety of endocrine disorders. These efforts include care for patients with (i) type 1 and type 2 diabetes, diabetes that results from medications such as glucorticoids, and diabetes secondary to cystic fibrosis; (ii) general endocrine disorders, including growth, thyroid disease, disorders of sex development, pubertal disorders and reproductive endocrine disorders; (iii) abnormalities of calcium metabolism and bone health; and (iv) endocrine cancers, including thyroid cancer, adrenal cortical carcinoma, and pheochromocytoma.
The Division of Endocrinology is highly collaborative and is engaged in joint clinical programs with care providers from many different disciplines. Ongoing collaborations exist with social work, general pediatrics, general surgery, urology, genetics, oncology, orthopedic surgery, psychology, nuclear medicine, and respirology. The interdisciplinary medical-surgical SickKids Team Obesity Management Program (STOMP) continues to flourish, and, within Endocrinology, the Section of Paediatric and Adolescent Gynecology provides care to pre-teen and adolescent girls with gynecology disorders and to pregnant adolescents. The Trans Youth Clinic (TYC) has been developed in collaboration with colleagues in the Division of Adolescent Medicine. In its first full year in operation, the TYC performed primary evaluations and treatment for over 100 youth.

In addition to clinical care, the Division of Endocrinology continued efforts to train future Endocrinologists from Canada and around the world. This year, we had seven trainees in our subspecialty training program: four from Canada, one from Netherlands, one from Israel and one from Australia.

The Division also maintained a substantial focus on research, with faculty having now secured several million dollars of funding. Diabetes remained the area of greatest focus with involvement in (i) prediction and prevention of type 1 diabetes through involvement in the multinational TrialNet and TRIGR study groups; (ii) implications and treatment of insulin resistance and obesity among children and adolescents; (iii) the evolution of obesity and insulin resistance in young children; (iv) prevention and treatment of the medical complications of diabetes and (v) use of iPhone-based technology to assist youth with diabetes self-management. Our Juvenile Diabetes Research Foundation (JDRF)-sponsored Canadian Clinical Trial Network (CCTN) site is also very active, with three ongoing studies. Other research areas include investigation of the factors that regulate the timing of puberty, effects of sex steroid on brain development, and etiology and management of thyroid disorders.

**Honors and Awards**

**Allen, L:** Winner of James C Fallis Award, Hospital for Sick Children (Postgraduate MD) Best Grand Rounds Presentation, Division of Pediatric Emergency Medicine Rounds, Department of Pediatrics, The Hospital for Sick Children, Toronto, Ontario, Canada. April, 2014

**Daneman, D:** Winner of Alton Goldbloom Visiting Lecturer Award, McGill University, Montreal Children’s Hospital, Montreal, Quebec, Canada. June, 2014

**Mahmud, FH:** Winner of Best Clinical Research Paper, SickKids Research Institute Second Annual Discovery Forum, Toronto, Ontario, Canada. April, 2014

We continued to provide high quality, comprehensive care for children and youth with a wide variety of endocrine disorders.
Hamilton, J: Winner of Chair (Inaugural Holder) Award: Mead Johnson Chair in Nutritional Science, The Hospital for Sick Children and University of Toronto, Toronto, Ontario, Canada. November, 2014

Hamilton, J: Winner of Lilac Award: Turner Syndrome Society of Canada President’s Volunteer Award (Award for longstanding volunteer contributions and promoting public awareness about Turner Syndrome), Turner Syndrome Society, Ottawa, Ontario, Canada. May, 2014

Palmert, MR: Winner of 8th Annual Dr. Noni MacDonald Award (Given to one article published each year by Paediatrics & Child Health that made an important contribution to pediatric practice. Awarded to collaborative group for work re: new growth charts for Canada), Canadian Pediatric Society, Ottawa, Ontario, Canada. May, 2014

Palmert, MR: Winner of Choice Awards: Service Provider of the Year from Planned Parenthood Toronto awarded to the Transgender Youth Clinic, The Hospital for Sick Children, Toronto, Ontario, Canada. September, 2014

Publications


**Book Chapters**


Grants and Funding

A Phase 1 study of safety and pharmacological activity of Substance P (sP) in the reversal of recent-onset Type 1 Diabetes (T1D). Sochett EB, Connolly B, Hayes J, Salter M. Vanilloid Genetics Inc. $1,136,990 CAD. October 17-2014-April 16-2016


Department of Paediatrics Annual Report 2014-2015 87


Adolescent type 1 diabetes cardio-renal intervention trial, AdDIT. Daneman D, Mahmud FH, Sochett E, Curtis J. *British Heart Foundation*. £60,800 GBP. March 27-2008-March 26-2013, Extension to no defined dollar amount until March 26-2017


Carbohydrate Counting and Type 1 Diabetes: assessment of accuracy in adolescents who currently count, and a randomized controlled trial of internet-based teaching for those learning to count. Hamilton J, Pais V. *The Lawson Foundation*. $92,000 CAD. August 1-2014-July 31-2016


Clinical features and immune mechanisms of ROHHAD (Rapid Onset Obesity, Hypothalamic Dysfunction, Hypoventilation, Autonomic Dysfunction). Yeh A, Hamilton J, Narang I, Dalmau J. *Rare Disease Foundation BC Children’s Hospital Foundation (BCCNF)*. $3,500 CAD. January 1-2014-December 31-2014


Early identification of cardiac dysfunction in obese adolescents: mechanisms and modulation. Wells G, Banks L, McCrindle B, Hamilton J, Sneed M, Noseworthy L, Mertens L. Canadian Institutes of Health Research. $100,000 CAD. October 1-2013-September 30-2014

Epigenetic changes in DNA infants exposed to gestational diabetes in utero. Hamilton J, Palmert MR. Canadian Diabetes Association. $272,967 CAD. July 1-2012-June 3-2015


Health care utilization following thyroid cancer diagnosis in childhood. Wasserman J. POGO Research Unit Seed Funding Grant. $15,000 CAD. April 15-2013-April 15-2014

Idiopathic juvenile osteoporosis – the next generation of sequencing data. Kannu P, Levi I, Sochett EB. McLaughlin Centre (Accelerator Grant in Genomic Medicine, University of Toronto) with matching funds from The Department of Paediatrics, The Hospital for Sick Children. $40,000 CAD. July 1-2014-June 30-2015


Pediatric Thyroid Nodule Score (PTNS) Derivation and Validation of a Predictive Score for Thyroid Nodules. Wasserman J. **Rare Disease Foundation.** $3,500 CAD. April 1-2015- March 31-2016


The genetics and neuroendocrinology of short stature (GeNeSIS). Hamilton J. **Lilly International Growth Study.** $358,542 CAD. March 1-2002-April 30-2015

The hyperglycemia and adverse pregnancy outcome (HAPO) follow-up study. Metzger B, Hamilton J. **National Institutes of Health.** $794,918 CAD. January 1-2012-December 31-2017

TRIGR (Trial to reduce insulin-dependent diabetes in the genetically at risk). Daneman D. **National Institute of Health.** $450,000 CAD. July-1-2012-June-30-2017
Type 1 Diabetes TrialNet: Toronto Clinical Centre. Wherrett DK. **National Institute of Health/University of South Florida.** $307,036 USD. May 1-2014-April 30-2015

Type 1 diabetes TrialNet: Toronto Clinical Centre. Wherrett DK. **National Institute of Health.** $535,000 CAD. May 1-2013-April 30-2014


Use of ACASI to gather information on risk behaviours in a referral population of pregnant Canadian adolescents. Spitzer RF, Allen L. **Physicians Services Incorporated Foundation (PSI).** $37,800 CAD. March 1-2011-February 28-2015

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<tr>
<th>DIVISION OF ENDOCRINOLOGY</th>
<th>Clinical Fellows - Endocrinology</th>
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<tr>
<td>Division Head</td>
<td>Dr. Sanjukta Basak</td>
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<td>Dr. Mark Palmert</td>
<td>Dr. Andrea Ens</td>
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<td>Dr. Denis Daneman</td>
<td>Dr. Jennifer Harrington</td>
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<td>Dr. Farid Mahmud</td>
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<th>Full-Time</th>
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<td>Dr. Jacqueline Curtis</td>
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<td>Suzanne Dionisio</td>
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<td>Dr. Lisa Allen (Section Head)</td>
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<td>Dr. Anjali Aggarwal</td>
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<td>Dr. Alexandra Nevin Lam</td>
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<td>Dr. Rachel Spitzer</td>
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DIVISION OF GASTROENTEROLOGY/HEPATOLOGY/NUTRITION

The members of the Division of Gastroenterology, Hepatology and Nutrition (GHN) aims to brighten the future for children with GHN disorders through provision of excellent and safe clinical care, cutting edge research to discover disease mechanisms and new cures, and world-class education for the next generation of GHN subspecialists.

From left to right:
Dr. Vicky Ng
Dr. Margaret Marcon
Dr. Anne Griffiths
Our clinical activities continue to increase in volume and complexity, driven particularly by the children with inflammatory bowel disease (IBD) and children requiring liver transplantation. The Division’s clinics saw over 6500 ambulatory visits, 1500 endoscopic procedures were performed, and 2014 was the busiest year yet for liver transplantation (38 liver transplants performed). We implemented quality improvement initiatives in both ambulatory and in-patient settings; GHN clinic led the ambulatory roll-out of the daily Continuous Improvement Program at SickKids, and our in-patient services introduced coordinated care initiatives and family-centered rounding. Important contributions were made to clinical guidelines and review articles, including those related to very early onset IBD (VEOIBD, Dr. Muise), paediatric liver transplantation (Dr. Ng), hepatic complications of autosomal recessive polycystic kidney disease (Dr. Kamath) and nutrition in end-stage liver disease (Dr. Mouzaki). Dr. Mouzaki undertook important work with her multidisciplinary collaborators to improve the provision and cost-effectiveness of parenteral nutrition in the hospital.

Members of the division published more than 60 papers in 2014. Among the highlights this year were many high-impact publications from Dr. Muise’s laboratory and collaborators, including the description of NADP oxidase variants contributing to VEOIBD and the report by Drs. Avitzur and Muise of a new form of VEOIBD caused by mutations in the TTC7A gene. Dr. Ng published results of her international study to derive and validate a quality of life score for children after liver transplantation. Collaborations with investigators in the Department of Diagnostic Imaging reported the role of MRI for evaluation of IBD and of liver masses in children. Active laboratory- and patient-based research continued in many other areas, including cystic fibrosis, malnutrition, liver disease, intestinal failure, Helicobacter pylori, the intestinal microbiome and intestinal inflammation.

The Division plays an important leadership role in several international research consortia. We achieved successful applications to the NIH for renewal of our involvement in their Childhood Liver Disease Research and Education Network (PI Dr. Kamath) and Cystic Fibrosis Liver Disease Network. Dr. Anne Griffiths and IBD team members led the Canadian Children Inflammatory Bowel Disease Network (CIDsCaNN) to achieve active enrollment across Canada in 2014. The international VEOIBD network (NEOPICS) continues strongly under Dr. Muise’s leadership.

The Division’s fellowship training program is now under the directorship of Dr. Yaron Avitzur and continues to attract excellent fellows from North America, Europe, Asia and Australia to train in SickKids. Members of the Division’s faculty were invited to speak about their areas of research and clinical expertise at numerous international meetings. Dr. Catharine Walsh joined the Division and will pursue educational research, building on her previous work designing and validating a tool to evaluate competency in colonoscopy.
Important achievements during the year included prominent national and international awards for Drs. Griffiths and Muise, renewal of Dr. Sherman’s tier 1 Canada Research Chair, and academic promotions for Drs. Ng and Avitzur.

Dr. Griffiths stepped down as Division Head effective March 31, 2015 to continue her important work at SickKids in paediatric IBD. During 6 years of excellent leadership, Dr. Griffiths steered the Division through numerous transitions in staffing and transformed the accessibility of clinical activities of the Division whilst maintaining clinical quality, educational excellence and the high level of research achievement for which the Division has been known over many years. Thanks to Dr. Griffiths’ outstanding work, our Division is strongly placed to face its current and future challenges.

Honors and Awards

**Avitzur, Y**: Winner of the Fellows Award for Teaching and Mentorship, Division of Gastroenterology, Hepatology and Nutrition, Department of Paediatrics, University of Toronto, The Hospital for Sick Children, Toronto, Ontario, Canada. June, 2014.


**Griffiths, AM**: Elected as Member International Organization of Inflammatory Bowel Disease (IOIBD). November 2014.


**Muise A**: Winner of the Canadian Institute of Health Research. Institute of Nutrition, Metabolism and Diabetes (INMD) New Investigator Partnership Prize, Ottawa, Ontario, Canada. February, 2014.

**Muise, A**: Winner of the Canadian Association of Gastroenterology Young Investigator Award, Toronto, Ontario, Canada. February, 2014.

**Sherman, P**: Winner of the Physician Research Award for Career Excellence, Department of Paediatrics, University of Toronto, Toronto, Ontario, Canada. May, 2014.

**Sherman, P**: Winner of the Canada Research Chair, Tier 1 (second renewal), Toronto, Ontario, Canada. October, 2014.

**Walters, TD**: Winner of Best Clinical Research Paper, Second Annual Discovery Forum, The Hospital for Sick Children, Toronto, Ontario, Canada. April, 2014

**Walters, TD**: Runner-up for Dr. R.H.A. Haslam Preclerkship Teaching Award for Excellence in Preclerkship Teaching, Department of Paediatrics, University of Toronto, The Hospital for Sick Children, Toronto, Ontario, Canada. June, 2014
Publications


Benchimol EI, Mack DR, Nguyen GC, Snapper SB, Li W, Mojaverian N, Quach P, Muise AM. Incidence, Outcomes, and Health Services Burden of Very Early Onset Inflammatory Bowel Disease. Gastroenterology 2014:147(4): 803-13. PMID: 24951840. **This manuscript was featured in “American Gastroenterology Association Editors Top Choice” and “CME Exam” in Gastroenterology

Benidir AN, Laughlin S, Ng VL. Visual disturbances in a total parenteral nutrition dependent liver transplant pediatric patient. TPN-Dependent Liver Transplant Pediatric Patient. Gastroenterology 2014 May;146(5):e10-11


L. Vong, R. Lorentz, A. Assa, M. Glogauer, P. Sherman. Probiotic Lactobacillus rhamnosus inhibits the formation of neutrophil extracellular traps. Journal of Immunology, 192:1870-1877, 2014


Ling SC, Avitzur Y. Predicting outcomes for children awaiting liver transplantation – is serum sodium the answer? Hepatology 2014;59(5):1678-80


Moran CJ, Muise AM, Klein C, Snapper SB. Very Early Onset Inflammatory Bowel Disease – Gaining Insight through Focused Discovery. Inflammatory Bowel Disease Journal 2015: 21(5): 1166-75. PMID: 25895007


Mouzaki M, Ng V, Kamath BM, Selzner N, Pencharz P, Ling SC. Enteral energy and macronutrients in end-stage liver disease. J Parenter Enteral Nutr 2014;38(6):673-68


**Book Chapters**


**Grants and Funding**


A Multi-center Randomized Controlled Trial Evaluating the Impact of Regular Telephone Contact with an Inflammatory Bowel Disease (IBD) Registered Nurse (RN) during Transition from Pediatric to Adult Care. Nguyen G, Griffiths AM. Crohn’s and Colitis Foundation of Canada. $221,272 CAD. May 2013 - June 2015

A multi-disciplinary human study on the genetic, environmental and microbial interactions that cause IBD. K Croitoru K, Griffiths AM. Helmsley Foundation and Crohn’s and Colitis Foundation of Canada. $9,000,000 CAD. May 2013- June 2018
**BioK, Sweden.** $33,287 CAD. January 2013 - December 2014

A Randomized Controlled Trial to Evaluate the Efficacy and Safety of a Gluten-Free Diet in Patients with Asymptomatic Celiac Disease and Type 1 Diabetes, Celiac Disease and Diabetes - Dietary Intervention and Evaluation Trial (CD-DIET). Mahmud F, Assor E, Cutz E, Marcon MA. 
**Juvenile Diabetes Research Foundation.** $3,200,000 CAD. May 2012 - December 2016

Assessment of the cardiovascular health for pediatric liver transplant recipients. Mouzaki M, AlNaseer Y, Mertens L, Kamath B, McCrindle B, Ng VL. 
**Sickkids Labatt Family Heart Centre Innovation Fund.** $24,900 CAD. July 2014 - June 2016

**Autism Speaks.** $420,000 CAD. January 2011 - December 2016

Burden and variation of pediatric inflammatory bowel disease in Canada: A population-based study. Benchimol E, Griffiths AM. 
**Crohn's and Colitis Canada.** $369,560 CAD. July 2014 - June 2017

Canadian Children Inflammatory Bowel Disease Network: a joint partnership of CIHR and C.H.I.L.D. Foundation. Griffiths AM, Muise AM, Walters TD. 
**Canadian Institutes for Health Research.** $5,000,000 CAD. April 2013 - March 2018

Canadian Pediatric Clinician Scientist Program. Jones NL. 
**The Hospital for Sick Children Foundation.** $900,000 CAD. April 2012 - March 2015

Canadian Pediatric Clinician Scientist Program. Jones NL. 
**B.C Research Institute for Children and Women's Health.** $450,000 CAD. April 2012 - March 2015

Canadian Pediatric Clinician Scientist Program. Jones NL. 
**Women's and Children's Health Research Institute.** $105,000 CAD. April 2012 - March 2015

Canadian Pediatric Clinician Scientist Program. Jones NL. 
**Manitoba Institute of Child Health.** $150,000 CAD. April 2012 - March 2015

**CCFA PROKIIDS: NEOPICS – Defining Very Early Onset IBD. Muise AM. Cronhs and Colitis Foundation of America.** $100,000 USD. January 2014 – December 2015

Celiac Disease and Gluten-free Diet Teaching: Is Online Education Effective? Walsh C, Vresk L, Marcon MA. 
**Paediatric Consultant's Educational Development & Innovation.** $5,000 CAD. December 2014 - December 2015

Cell Signalling in Mucosal Inflammation and Pain. McCullough C, Sherman PM. 
**Canadian Institutes for Health Research.** $1,625,000 CAD. June 2009 - July 2015
Characterizing the translocation and distribution of Lactobacillus species in fetuses of CD-1 and C56BL/6 mouse dams. Sherman PM. *Lallem and Human Nutrition*. $29,000 CAD. January 2015 - December 2016


CIHR Canadian Child Health Clinician Scientist Training Program. Jones NL. **Strategic Training Initiative in Health Research, Canadian Institutes of Health Research**. $975,000 CAD. April 2012 - March 2015

Cystic Fibrosis Liver Disease Research Network: Prediction by ultrasound of the risk of hepatic cirrhosis in cystic fibrosis (‘PUSH’). Ling SC et al. **Cystic Fibrosis Foundation and National Institutes of Health**. $620,000 USD. January 2009- December 2020

Defining and Developing the Therapeutic Pipeline for VEO IBD: Toronto Studies. Muise AM. **The Leona M. and Harry B. Helmsley Charitable Trust**. $1,587,892 US. October 2014 - September 2017

De-novo autoimmune hepatitis in pediatric liver transplantation. Ekong U, Avitzur, Y. **Liver Centre Grant, Yale Liver Centre, Yale University**. $25,000 USD. October 2013 - October 2016


Does child and parent perceptions of the quality of life in families of different ethnicities influence dietary adherence to the gluten free diet and nutritional intake of children with Celiac Disease. Marcon MA, Mager D. **Canadian Foundation for Dietetic Research**. $12,000 CAD September 2014 - August 2015

Engaging patients and caregivers in research for pediatric IBD. Otley A, Griffith AM. **Canadian Institute for Health Research**. $15,000 CAD. March 2014 - April 2015

Epithelial cell signaling responses to attaching-effacing intestinal pathogens. Sherman PM. **Canadian Institutes of Health Research**. $751,916 CAD. April 2014 - March 2018

Establishing The Global Registry for Outcomes of Varices in Children. Gana C, Ling SC. **The Hospital for Sick Children Paediatric Consultants Creative Professional Activity Grant**. $9,817 CAD. October 2013 - October 2014


Exploratory observational study of therapeutic feeds to treat intestinal inflammation in Malawian children. Allen S, Bandsma R. **Medical Research Council**. $272,000 CAD. January 2015 - January 2017

Extension and Expansion of the Sweat Rate Sub-study as part of the G551D Observational Study (GOAL-e2) Gonska T. Cystic Fibrosis Foundation Therapeutics, Inc. $10,162 USD. January 2014 - March 2015

Frailty in Children with End-Stage Liver and Renal Disease. Kamath B, Ng VL. Transplant and Regenerative Medicine Center, SickKids Catalyst Grant. $14,000 CAD. July 2014 - July 2015

Genetic and Functional Studies in Very Early Onset IBD (NEOPICS). Muise AM. Canadian Institutes for Health Research. $866,005 CAD. January 2012 - March 2017

HEAL (Healing of intestine on MR enterography with adalimumab long-term therapy) study. Griffiths A. Abbvie Canada. $244,545 CAD. January 2015 - December 2016

Immunosuppression Withdrawal for Stable Pediatric Liver Transplant recipients (iWITH). Feng S, Ng V, Avitzur Y. National Institutes of Health. $210,586 USD. July 2012 - June 2017

Impact of feeding type and nutrient fortification on the gut microbiome of very low birth weight infants. O’Connor D, Unger S, Sherman PM et al. Canadian Institutes of Health Research. $496,254 CAD. April 2013 - March 2016


Innate disregulation and growth failure in pediatric Crohn’s disease. Denson, LA, Griffiths AM, Walters TD. Crohn’s and Colitis Foundation of America. $360,000 CAD. July 2011 - June 2014


Interrogation of SLC6A14 as a modifier for drug treatment in CF disease. Gonska T. SickKids Foundation- CIHR IHDCYH New Investigator Award. $300,000 CAD. July 2012 - June 2015

Investigating the role of vitamin D deficiency in the development of cystic fibrosis liver disease. Gonska T, Ling SC, Loverdos I. **CF Centre Catalyst Research Grant-SickKids.** $50,000 CAD. May 2014 - April 2015

Long-Term Survival in Childhood Solid Organ Transplants. Parekh RS, Dipchand AL, Hebert D, Kim S, Nathan P, Ng VL, Patterson M, Solomon M, Thomas K. **Canadian Institutes of Health Research (CIHR) Operating Grant.** $514,679 CAD. July 2014 – June 2018


National Early Onset Inflammatory Bowel Disease Cohort Study (NEOPICS). Muise AM, Griffiths AM. **Canadian Institutes for Health Research.** $450,000 CAD January 2012 - December 2015

PALF-II: A Multi-Center Group to Study Acute Liver Failure in Children. Ng VL, Kamath B. **National Institutes of Health.** $270,852 USD. September 2010– August 2015

POSITIVE study (ancillary study – autoimmunity and allergy in pediatric solid organ transplantation). Mital S, Upton A, Foster B, Avitzur Y. **Canadian National Transplant Research Program (CNTRP).** $1,500,000 CAD. April 2013 - March 2018

Predicting Response to Standard Paediatric Colitis Therapy: the PROTECT Study. Hyams J, Denson LA, Kugathasan S, Sylvester F, Gupta N, Walters TD. **National Institutes of Health/NIDDK U01 Multi-centre Clinical Study.** $5,752,300 CAD. July 2012 - June 2017

Predicting Response to Standardized Pediatric Colitis Therapy: The PROTECT Study. Hyams J, Griffiths AM. **National Institutes of Health.** $30,000 USD/yr March 2012- April 2014


Risk Stratification & Identification of Immunogenetic and Microbial Markers of Complicated Disease Course in Pediatric Crohn’s Disease. Kugathasan S, PRO-KIIDS Consortium, Walters TD, Griffiths AM. **Crohn’s and Colitis Foundation of America, Special Purpose Grant.** $3,000,000 USD. July 2013 - June 2016
Role of ATG16L1 in Crohn disease. Jones NL. Grant in Aid, Crohn’s and Colitis Foundation of Canada. $375,000 CAD. January 2012 - December 2014

Role of a Novel Stem Cell in Intestinal Injury and Repair in Small Bowel Transplantation. Jones NL, Avitzur Y & Grant D. Transplant and Regenerative Medicine Centre Catalyst Grant, The Hospital for Sick Children. $50,000 CAD. November 2014 – November 2015

Role of PTPsigma and adherens junction proteins in IBD. Muise AM, Rotin D. Crohn and Colitis Canada. $375,000 CAD. July 2014 - June 2017


The role of regulatory T cells and Th2 response in the pathogenesis of allergy and autoimmunity after liver transplantation. Avitzur Y, Grunebaum E. Donald and Audrey Campbell Chair in Immunology. $153,750 CAD. September 2014 - October 2018

The Division of Hematology/Oncology provides diagnostic services and specialist care for children up to 18 years of age with cancer and non-malignant blood disorders. The Division is the largest of its kind in Canada and among the largest such programs worldwide, with approximately 350 new cancer cases registered in the pediatric oncology program this past year. The Division is the designated centre for haematopoietic stem cell transplantation for patients up to 18 years of age in Ontario and the Atlantic provinces; the majority of the approximate 90 transplants performed this year were for children with cancer, with others performed for children with benign hematologic disorders, severe immunodeficiency disorders or genetic diseases.
The number of in-patient days for pediatric hematology/oncology/BMT cases this past academic year was approximately 14,500, a decrease from the prior year attributable in large part to efforts focused on reduction in length of stay. The number of ambulatory care visits was slightly up from the prior year at approximately 22,000, with day hospital visits stable at 11,800.

Reflecting the size and diversity of its clinical services, the Division is organized into five sections and three programs: the Leukemia/Lymphoma section (Section Head, Dr Johann Hitzler); the Solid Tumor section (Section Head, Dr Meredith Irwin); the Neuro-oncology (brain tumor) section (Section Head, Dr Eric Bouffet); the Blood and Marrow Transplantation section (Section Head, Dr Maarten Egeler); the Hematology section (Section Head, Dr Yigal Dror); the long-term follow-up (Aftercare) program (Program Head, Dr Paul Nathan); the New Agents and Innovative Therapies program (Program Head, Dr Sylvain Baruchel); and the Cancer Genetics program (Program Head, Dr David Malkin). Dr. Sarah Alexander serves as the program’s Clinical Director. The Hematology section has large clinical and research programs in pediatric thrombosis and hemostasis, the pediatric hemoglobinopathies and the inherited and acquired pediatric marrow failure syndromes and myelodysplasias. The Division is an active member of the Children’s Oncology Group (COG), the largest pediatric cancer clinical trials group in North America (SickKids Principal Investigator, Dr Sarah Alexander), and is committed to the improvement in outcomes and quality of life in children with cancer through participation in prospective clinical trials. The Division is a member of the COG Phase I Consortium (Principal Investigator, Dr Sylvain Baruchel), and is an active participant in activities of the Histiocyte Society, New Approaches to Neuroblastoma Therapy (NANT), and the Therapeutic Advances in Childhood Leukemia (TACL) clinical trials consortia. Over 260 clinical trials enrollments occurred this year, an increase of almost 5%, despite somewhat fewer new diagnoses; this discrepancy is likely accounted for by an increasing number of referrals from other centres in Ontario and across Canada for studies available only at SickKids. The Division, in collaboration with the Pediatric Oncology Group of Ontario (POGO), supports a network of pediatric oncology satellite centres in the Greater Toronto and surrounding areas, with over 5800 visits to satellite centres this year. Satellite centres in sickle cell disease are established in Rouge Valley hospital and the William Osler Health Centre. Major achievements in the past year included (1) the successful launch of our MIBG program, with 9 patients treated to date, including referrals from Newfoundland to British Columbia, and (2) a successful transition to full section-based care led by Clinical Director Dr. Sarah Alexander., with inpatient services now arranged in alignment with the each of the five aforementioned sections as a means of further improving the quality and safety of our patient care.
The Division’s training program for pediatric hematology/oncology, the largest such program in Canada, underwent successful re-accreditation by the Royal College of Physicians and Surgeons of Canada in 2013. The Division’s interim Training Program Director is Dr. Angela Punnett while Dr. Michaela Cada is on maternity leave. The Education Program in the Division includes a large international training program in pediatric hematology/oncology and offers subspecialty training opportunities in areas such as the pediatric leukemias/lymphomas, neuro-oncology, neuroblastoma, blood and marrow transplantation, bone marrow failure and pediatric thrombosis and hemostasis.

Research in the Division spans basic science to clinical care with a particular focus on translational research. Approximately one-half of the Division’s 32 full-time Faculty have appointments as clinician scientists or clinician investigators in the Department of Pediatrics with parallel appointments in the 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. Two such initiatives are currently underway in collaboration with SickKids International: the Global Sickle Cell Disease Network, under the leadership of Dr. Isaac Odame, and the Caribbean Collaboration in Pediatric Cancer and Blood Disorders, under the leadership of Dr. Victor Blanchette.

Notable research-related events in the past year have included (1) the awarding of Dr. Uri Tabori, a pediatric neuro-oncologist, and his research team an Impact Grant through a CCSRI and BrainCanada partnership; (2) a third year of collaboration between the Garron Family Cancer Centre and the Department of Pathology and Laboratory Medicine to implement clinical-grade molecular oncology diagnostic capabilities in support of an emerging precision medicine program in childhood cancer at SickKids. A growing number of precision medicine trials targeting specific genetic lesions are underway through the New Agents and Investigational Therapies (NAIT) program, led by Dr. Sylvain Baruchel. Some of these trials are leading to dramatic responses in children with refractory tumors. With support provided by Karen Fund, MSW, the Patient Navigator for our NAIT program, patients from across Canada are now coming to SickKids to participate in several first-in-children clinical studies not yet available elsewhere in Canada.

The Administrative team for the Division comprises Dr Jim Whitlock (Division Head), Amrita D. Naipaul (Director, Child Health Services) and Denise Ferreira (Manager, Business Operations).
Honors and Awards

Alexander, S: Winner of Angela Punnett Award, for dedication to the overall wellbeing and professional development of the Haematology Oncology fellows, Division of Haematology Oncology, The Hospital for Sick Children, Toronto, Ontario, Canada. June 2014.

Bouffet, E: Chair, Local Organizing Committee, SIOP 2014 Toronto, ON, Canada. October, 2014


Cada, M: Winner of ASH Abstract Achievement Award (Melanie Kalbfleisch – 4th year medical student), America Society of Hematology 56th Annual Meeting, San Francisco, California, USA. December, 2014

Dror, Y: Winner of Dr. Bernard Laski Award, Department of Paediatrics, Hospital for Sick Children, Toronto, Ontario, Canada. November, 2014.


Grant, R: Winner of Dr. Richard Rowe Award for Clinical Excellence in Pediatric Medical Care, Department of Paediatrics, Hospital for Sick Children, Toronto, Ontario, Canada. June, 2014


Gupta, A: Nominee for Michael Kamin Hart Award for Excellence in AYA Oncology Care, AYA Committee at Princess Margaret Hospital. Toronto, Ontario, Canada. March, 2015

Huang, A: Winner of Bernard and Francine Dorval Prize, Association for Nominee for Canadian Cancer Society 2104 Award for Excellence, Toronto, Ontario, Canada. June, 2014

Malkin, D: Frederick P. Li Visiting Professor, Dana-Farber Cancer Institute, Harvard University, Boston, MA, USA. June, 2014

Malkin, D: George Donnell Visiting Professor, Children's Hospital of Los Angeles, USC, Los Angeles, CA, USA. November, 2014

Malkin, D: Runner-Up of Faculty of Medicine Graduate Faculty Teaching Awards in the Sustained Excellence in Graduate Teaching & Mentorship from the University of Toronto. Toronto, Ontario, Canada. June, 2014

Punnett, A: Winner of Professional Development Program Award in the category of Field Practicum Preceptor in recognition of outstanding contributions to the Professional Development Program in the Department of Family and Community Medicine. Toronto, Ontario, Canada. April, 2014


Publications


Book Chapters


Bouskill V, Oliver KJ, Williams S. SickKids Handbook of Dental Management in Children with Bleeding Disorders. 2014


**Grants and Funding**


A Multi-Center, Phase III, non-controlled, open-label trial to evaluate the pharmacokinetics, safety, and efficacy of BAY 94 9027 for Prophylaxis and Treatment of Bleeding in Previously Treated Children (age < 12 years) with Severe Hemophilia A, (Study 15912). Brandao L, Blanchette V, Carcao M, Kahr W. **Bayer HealthCare Pharmaceuticals (Canada).** $33,728 CAD. Sep 25-2013–Mar 24-2016.


DNA copy number variation in Li-Fraumeni Syndrome. Malkin D. Canadian Institutes for Health Research. $1,075,723 CAD. Sep 30-2013–Sep 29-2018.


Elucidating the genomic complexities of choroid plexus tumor development to improve diagnosis, prognosis and treatment of young brain tumor patients. Merino D, Malkin D. Canadian Institutes for Health Research. $150,000 CAD. Apr 30-2012–Apr 29-2015.


White matter integrity and neurocognition in sickle cell patients. Odame I. Canadian Hematology Society. $10,000 CAD. May 7-2013-May 6-2015.
DIVISION OF IMMUNOLOGY & ALLERGY

The Division of Immunology and Allergy, under the leadership of Dr. Eyal Grunebaum, continues to advance the diagnosis, management and understanding of primary immunodeficiency (PID) and complex allergic diseases.
The PID program at Sickkids is the largest of its kind in Canada, providing medical services to increasing number of patients who are referred by national and international health care providers. To further improve management of patients with PID, the IDEA (Immune Deficient Early and Advanced Diagnosis) clinic was recently launched, which enables extensive and dedicated time and attention to patients and families. The IDEA clinic supplements other specialized PID clinics available at Sickkids, including a clinic for children and adults with PID who received hematopoietic stem cell transplantations and gene therapy, and a clinic focusing on intravenous immunoglobulin replacement. Over 200 PID patients who require immunoglobulin replacement are managed through this Hypo-gammaglobulinemia Program. Recently, an option for home subcutaneous immunoglobulin infusions was added, providing greater flexibility for patients and their families. In addition, several studies assessing the safety and efficacy of new brands of immunoglobulins have recently been launched through our internationally acclaimed Hypo-gammaglobulinemia Program. The IDEA clinic has also been instrumental in providing care for infants suspected and diagnosed with severe PID through the newly implemented Ontario Newborn screening program for severe immunodeficiency.

The Allergy Program at Sickkids focuses on the diagnosis and management of children with complex atopic diseases. These conditions include allergy to multiple or “difficult to treat” foods, drugs, biological agents and latex, as well as urticaria/angioedema, asthma and anaphylaxis. Patients with complex allergic diseases are seen at clinics in the hospital as well as in community clinics of affiliated members of the Division including Drs. Asper, Feanny, Hummel, Kim and Lavi. The close interaction with the community continues to be one of the strengths of the Allergy program. The Division also offers inpatient consultation for many allergic conditions, such as adverse reactions to drugs, biological agents, anesthetics and chemotherapy. This service is particularly important for children suffering from cancer or receiving blood and organ transplantations. Other patients experiencing adverse drug reactions are managed through the DART (Drug, Adverse Reaction and Toxicology) out-patient consultation clinic. Uniquely, the DART clinic provides targeted diagnostic and management strategies for adverse reactions to medications while collecting important data about patients and medications population.

Food allergy, an epidemic that is affecting an increasing number of children in Canada and worldwide, is a major focus of the Division. Dr. Grunebaum, with the aid of the dedicated team of allergists in the division, established the Sickkids Food Allergy and Anaphylaxis Program (FAAP). The FAAP was recognized as an important priority by Sickkids CEO and Board of Trustees, SickKids Foundation, the Department of Pediatrics and the Research Institute and is supported by generous gifts by Amy Kaiser, Ken Rotman and other donors. This year, the program also received endorsement and financial support from the “Breakfast of
The Hospital for Sick Children Champions” event organized by the Young Professional for Sickkids. The FAAP has set an ambitious goal of finding a cure for food allergy and anaphylaxis within 10 years. To accomplish this task, Dr. Peter Vadas, a distinguished clinician and scientist in allergy and anaphylaxis from St. Michael’s Hospital in Toronto, was also recruited to the Program. The Program also emphasizes community education and outreach, resulting in many lectures and talks given at various schools and forums by Drs. Atkinson and Asper-Triassi, and interviews at various local and national media platforms by Dr. Atkinson and Grunebaum. Additionally, Dr. Kim, with the help of Mrs. Anna Kasprzak, RN, also enhanced and expanded the educational resources available for families through Sickkids website “About Kids Health”.

The Pediatric Clinical Immunology and Allergy Training program, under the leadership of Dr. Grunebaum received full approval during the recent Royal College of Physicians and Surgeon of Canada review, thereby continuing the tradition set previously by Dr. Chaim M. Roifman of a flawless record. The training program also benefited tremendously from the contributions of Dr. Vy Kim who is completing her “Stepping Stones” educational program. Dr. Roifman continues to direct the Clinical Fellowship Program, attracting outstanding candidates every year from Canada and across the world. International trainees have the opportunity to participate in a flexible program which can be predominantly research oriented.

Dr. Roifman continues to contribute his extensive experience and knowledge to the development of the clinical, educational and research of the Division, while serving as the Chair and Scientific Director of Immunodeficiency Canada as well as the editor of the LymphoSign Journal. This year Dr. Roifman described a novel type of combined immunodeficiency caused by mutations in the Rel-B gene and defined the function of this gene in humans. Dr. Roifman also expanded collaborations with Dr. Ehl in Freiburg, Dr. Walters in Harvard and Dr. Casanova in Paris/New York.

In addition to heading the Division of Immunology and Allergy, directing the University of Toronto Pediatric Immunology and Allergy training program and leading the Food Allergy and Anaphylaxis Program, Dr. Grunebaum continues to expand his research into primary immune deficiency and allergy. Using induced pleuri-potent stem cells from patients as well as relevant animal models, Dr. Grunebaum’s team has made significant advances in the understanding and management of inherited purine defects. With the support of the recently awarded Campbell Chair for Immunological Research, Dr. Grunebaum’s lab members developed a rapid assay to determine the function of Treg, which are cells critical for immune homeostasis. Additionally, members of his lab identified the presence of food antigens hidden in other common foods and are assessing the role of platelet activating factor (PAF) as well as the enzymes that break down or are affected by PAF in various allergic conditions.

Dr. Adelle Atkinson is in her 10th year as the Director of Post Graduate Medical Education in the Department of Paediatrics. She continues to excel as an outstanding educator, and the training program continues to attract the brightest stars. In recognition of her achievements, Dr. Atkinson was nominated for the PAIRO Residency Program Excellence Award once again. The PAIRO Award recognizes Residency Program Directors who consistently
provide an exceptionally positive and rewarding experience for the residents, while producing physicians who are expertly trained to deal with the challenges of their upcoming career. Dr. Atkinson was also the recipient of the Harry Bain award for excellence in Clinical teaching at the Hospital for Sick Children. Dr. Atkinson continues to give invited presentations at international conferences in the area of postgraduate medical education and faculty development including topics such as residency selection, professionalism, clinical teaching and feedback. In the last two years, Dr. Atkinson has also led a Department of Pediatrics initiative to attract and retain pediatric trainees who will be our future clinician scientists. Dr. Atkinson completed an interim role as Associate Dean of Admissions and Financial Aid at the end of 2014. Dr. Atkinson also has several national and international leadership roles at the Royal College of Physicians and Surgeons of Canada. She is currently a Co-Chair of the International Conference on Residency Education, Co-Chair of the International Resident Leadership Summit and Vice-Chair of the Specialty Committee for Paediatrics. In 2014 she was asked to serve on the Education Committee for the Royal College, a role given to her based on her educational experience. Dr. Atkinson also sits on the Paediatrics Examination Board and the OSCE examination committee. At the University of Toronto, Dr. Atkinson chairs a number of educational committees including the POWER Steering Committee. In terms of education and outreach/public health in the clinical realm, Dr. Atkinson is regularly invited to provide continuing education in Paediatric Allergic Diseases, and has a special interest in the Prevention of Atopy, a topic about which she has spoken at national conferences. She provides education to patients and their families, and has done media outreach locally and nationally to raise awareness about allergic diseases in children.

Dr. Julia Upton was appointed this year to a permanent position of an Academic Clinician in the Division. Dr. Upton is actively involved in research in food allergies and immunodeficiencies. Her study on the evaluation of testing with baked milk to predict the safe ingestion of baked milk in unbaked milk allergic children is nearing completion. Dr. Upton continues to underline the wide range of presentation of immune deficiencies by reviewing those which can present with high IgG and contributed to the clinical research of the division. Her role as Royal college examiner and teacher to the medical students, residents and fellows is ongoing.

Brenda Reid, Clinical Nurse Specialist, has been instrumental in providing leadership to nurses across the country in the management of PID. Brenda leads a national network of nurses developing PID nursing protocols in conjunction with Immunodeficiency Canada. She continues to provide leadership to Newborn Screening Ontario on developing education materials and protocols for babies suspected or identified with severe immune deficiency by newborn screening.

Mrs. Barbara Zimnowodzki was appointed as Manager, Business Operation for the Division of Immunology and Allergy, while Mrs. Sandra Mendonca was appointed as Administrative Lead for the Division.
Honors and Awards

Atkinson, A: Winner of The Harry Bain award in 2014 for excellence in Clinical teaching at the Hospital for Sick Children, Toronto.

Publications


**Book Chapters**


**Grants & Funding**


**Division of Immunology & Allergy**

**Division Head**
Dr. Eyal Grunebaum

**Full-Time**
Dr. Adelle Atkinson
Dr. Chaim M. Roifman
Dr. Julia Upton

**Clinical Assistant**
Dr. Vy Kim

**Part-Time**
Dr. Maria Asper-Triassi
Dr. Stephen Feanny
Dr. David Hummel
Dr. Sasson Lavi

**Research Technologists**
Lorand Cimpeon
Ariana Karanxha
Weixian Min
Boris Perelman

**Research Associate**
Nigel Sharfe, PhD

**Medical Lab Technologist**
Harjit Dadi, PhD
Vikita Rana

**Clinical Fellows**
Dr. Yoram Faitelson
Dr. Adi Ovadia

**Subspecialty Residents**
Dr. Mohmammad Al Salamah
Dr. Allison Kwan
Dr. Luis Murguia

**Administrative Staff**
Joanne Bresciani
Jessy DeBraganza*
Sandra Mendonca

**Canadian Centre of PID and JMF**
Centres Manager
Linda Pires
DIVISION OF INFECTIOUS DISEASES

2014/2015. The Division of Infectious Diseases continues to be a leader in the academic practice of Infectious Diseases nationally and internationally. The Division has active inpatient as well as ambulatory consultant services that include teams that focus on general infectious diseases and infectious diseases in immunocompromised infants, children and youth. We are one of a handful of centres internationally with a consult service that specifically focusses on the immunocompromised host. We are a resource for issues that relate to infectious disease outbreaks, including new and emerging infections.

Left to right, back row:
Dr. Arnaud L’Huillier
Dr. Shaun Morris

Front row:
Dr. Nancy Nashid
Debra Louch
Wayne Moore
To this end, the Division of Infectious Diseases was actively involved in a leadership capacity in EBOLA preparedness at the institutional and provincial levels. The occurrence of the enterovirus D68 outbreak was also unexpected and the Division was very active in patient management as well as knowledge translation to the public at large.

The Division has led the way in the establishment of an antimicrobial stewardship programme (ASP) at SickKids. Working closely with the Department of Pharmacy and champions in the Critical Care Units, SickKids now has one of the leading pediatric stewardship programmes in Canada and one of the leading programmes in North America. The Program is now working with collaborators from other Canadian centres to develop a National Paediatric ASP Network.

Division members have leading roles in national and international epidemiological, clinical, research advisory and related committees or groups (e.g., the Infectious Diseases Society of America, the Canadian Paediatric Society, and the American Society for Transplantation, the International Pediatric Transplant Association, the Canadian Pediatric AIDS Research Group and the SickKids Caribbean Cancer Initiative).

Our research initiatives include HIV-related studies that focus on the goal to achieve a functional cure for pediatric HIV. We conduct research on new antiretrovirals, vaccinology and research into the mechanisms of host susceptibility to viral infections and related conditions. These conditions include EBV-related post-transplant lymphoproliferative disorder (PTLD), influenza illness, infections in patients with cystic fibrosis, and encephalitis. Multicentered trials relating to the diagnosis and prevention of infections in transplant patients are ongoing.

The Division was actively involved in the organization and staffing of a travel medicine clinic at SickKids. The SickKids Family Travel Clinic provides one-on-one travel health advice, consultation and immunizations for adults and children, including young children with existing medical conditions that require a highly specialized approach to the prevention and management of travel-related infections.

Our training programme continues to attract top-quality trainees from Canada and internationally. 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.

**Honors and Awards**

**Morris, S:** Winner of Canadian Child Health Clinician Scientist Program Career Development Award, Canadian Child Health Clinician Scientist Program, Toronto, Ontario, Canada. June 2014
Wadhwa, A: Winner of Department of Paediatrics Subspecialty Teaching Award, The Hospital for Sick Children, University of Toronto, Toronto, Ontario, Canada. June 2014

Publications


Kitai I, Morris SK. Encounters with an old foe: Childhood tuberculosis in Canada. Paediatric Child Health 2014;19(2); 89-90


Waters V, Ratjen F. Antibiotic treatment for nontuberculous mycobacteria lung infection in people with cystic fibrosis. Cochrane Database Syst Rev. 2014 Dec 3;12:CD010004


Waters V, Ratjen F. Is there a role for antimicrobial stewardship in cystic fibrosis? Ann Am Thorac Soc. 2014;11(7):1116-9


Waters V. How can understanding the phenotype of P. aeruginosa lead to more successful eradication strategies in cystic fibrosis? Clin Infect Dis. 2014;59(5):632-4. PA


Book Chapters


Top KA, Zafack J, De Serres G, Halperin SA, and the Special Immunization Clinic Investigators: Canadian paediatricians’ approaches to managing patients with adverse events following immunization: The role for the Special Immunization Clinic network. Paediatrics & Child Health 2014: 165(4):779-85


Grants and Funding

An Integrated Toolkit to Save Newborn Lives and Brains in rural Pakistan. Morris S, Bhutta Z. UBS Optimus Foundation. $150,000 CHF. August 31, 2013 – February 27, 2015

An integrated toolkit to save newborn lives and brains. March of Dimes Foundation (Formerly March of Dimes Birth Defects Foundation) USA. Morris S. $150,000.00 US. February 1, 2014 – January 1, 2016


Association of vitamin D status and respiratory tract infections: a systemic review and meta-analysis of observational evidence. Furlong K, Tran D. The Hospital for Sick Children, Research Institute, Trainee Start Up Fund Program. $3,000 CAD. July 1, 2014 – June 30, 2016


Canadian Immunization Research Network (CIRN). Halperin S, Tran D. Canadian Institutes of Health Research. $6,600,000. July 1, 2014 – June 30, 2017


Pilot study of the in vitro and in vivo efficacy of Tobramycin Inhalation Powder (TIP) in cystic fibrosis patients infected with Burkholderia cepacia complex. Novartis Pharmaceuticals Canada Inc. $65,000 CAD. February 1, 2014 – January 31, 2015


Prevelance and determinants of early childhood under vaccination in Toronto primary care practices. Tran D. The Hospital for Sick Children, Paediatric Consultants Creative Partnership Grant. $9,913CAD. April 1, 2014 – March 30, 2015

Severe influenza in infants, children and youths: Role of clinical and epidemiologic risk factors. O’Connor D, Moshe I, Tran D, Richardson S, Schuh S. *Canadian Institutes of Health Research.* $776,835 CAD. December 1, 2011 – March 1, 2016

Short-Chain Fatty acids in Cystic Fibrosis Lung. Grasemann H, Waters V. *Novartis Pharmaceuticals Canada Inc.* $65,000 CAD. April 1, 2014 - March 30, 2015


Special Immunization clinic network to investigate vaccine safety issues: Optimizing the clinical management of patients with contraindication to vaccination and those with adverse events following immunization (AEFI) as a platform for observational research. De Serres G, Top K, Halperin S, Tran D. *Canadian Institutes of Health Research, PHAC/CIHR Influenza Research Network.* $24,656. March 31, 2012 – March 30, 2015


The CF lung microbiome and persistent vs eradicated Pseudomonas aeruginosa. Waters V, Gutman D. *Cystic Fibrosis Foundation (US).* $86,400 US. April 1, 2014 – March 30, 2016.
DIVISION OF NEONATOLOGY

The Division of Neonatology is currently made up of 30 Faculty across three sites: SickKids, Mount Sinai Hospital and Sunnybrook Health Sciences Centre. The three NICUs that comprise the Division are together the largest and busiest in Canada, with approximately 2,500 admissions annually to a total of 133 beds. Close links also exist with the NICU at St. Michael’s Hospital. With 20 trainees from almost every continent, the Division’s Fellowship Program remains one of the most sizable and diverse in North America.
The Division welcomes Dr. Amish Jain who joined as full-time Faculty (Mount Sinai site) in July 2014. We applaud Dr. Patrick McNamara and Dr. Douglas Campbell for their promotions to Full Professor and Associate Professor, respectively. Congratulations also goes to Dr. Martin Skidmore, who received the 2015 CPS Distinguished Neonatologist Award and to Dr. Dany Weisz, who was named Teacher of the Year by our trainees. Among our fellows, Drs. Mariam Ayed and Marlon Timothy were the Trainees of the Year and Dr. Michael Castaldo received the programme’s Humanitarian Award.

In February 2015, the Mount Sinai NICU relocated to a new single-room facility that incorporates state-of-the-art technology for communications and electronic charting. Clinical activities within the SickKids NICU have expanded in the past year to include a Transport Staff Neonatologist (TSN) role. The TSN or Admitting Staff Neonatologist now participates in all admission and advice calls. This has enhanced decision-making around the care of critically ill neonates and has been well received by community physicians seeking support in the care of neonates within their own hospitals. The scope of practice of the Acute Care Transport Service (ACTS) will expand from its current mandate of transporting neonates, infants and children up to age 2 years, to include the transport of critically ill children up to age 12 years. A CIHR-funded national registry and database has also been established for neonatal transport, under the leadership of Dr. Kyong Soon-Lee.

Academic activity within the Division continues to thrive, encompassing a diverse range of disciplines, including Cardiovascular Physiology, Lung Biology, Nutrition, Epidemiology and Quality Improvement. Activities are increasingly focused on improvements in clinical practice. A comprehensive quality improvement initiative has evolved from a series of three research projects under the auspices of the Canadian Neonatal Network into a robust, interdisciplinary programme that is fully integrated within the Division’s clinical service. At SickKids, the initiative has focused on reducing catheter-related bloodstream infections, ventilator associated pneumonia and unplanned extubations, and on the earlier introduction of maternal colostrum and expressed maternal or donor breast milk to critically ill preterm infants. A Nitric Oxide Stewardship Program has encouraged the appropriate, evidence-informed use of inhaled nitric oxide. The Family Integrated Care Program at Mount Sinai Hospital continues to flourish and is receiving international attention and recognition. Dr. Jennifer Young now leads a project supporting families after discharge from the NICU under the auspices of the “Life with a Baby” organization. The Women’s and Babies program at the Sunnybrook Health Sciences Centre is currently developing a Breastfeeding Centre of Excellence to promote best practices through interdisciplinary collaboration, patient-oriented research and education on breastfeeding.
Honors and Awards


Publications


James AT, Corcoran JD, McNamara PJ, Franklin O, EL-Khuffash AF. The effect of milrinone on right and left ventricular function when used as a rescue therapy for term infants with pulmonary hypertension. Cardiology in the Young 2015: Epub 2015 Jan 20: pp 1-10.


Book Chapters


Grants and Funding

A multi-center, randomized, placebo-controlled, double-blind, two-armed, parallel group study to evaluate efficacy and safety of IV sildenafil in the treatment of neonates with persistent pulmonary hypertension of the newborn (PPHN) or hypoxic respiratory failure and at risk for PPHN, with a long term follow-up investigation of developmental progress 12 and 24 months after completion of study treatment. McNamara PJ, Jankov RP, Giesinger R. Parexal Funded Multi-Centre Trial. $13,056 CAD per patient. August 13-2014-August 12-2019


Developmental programming of hypertension. Belik J. Canadian Institutes of Health Research Open Grants Program. $558,396 CAD. July 1-2014-June 30-2018


Neonatal protein and energy metabolism. Pencharz P, Tomlinson C, Ball RO. Canadian Institutes of Health Research. $739,355 CAD. July 1-2012-June 30-2017


The Artemis Project: Real-time streaming of high volume, high fidelity physiological data for clinical decision support. James AG, McGregor C. TD Bank Information Technology Group. $135,000 CAD. November 1-2014-October 31-2015

Whole exome sequencing in the NICU – Developing a rapid, specific and sensitive pipeline for the diagnosis of genetic disease in the newborn. Cohn R, Bowdin S, Moore AM, Bedford M, Doctor S. McLaughlin Centre. $50,000 CAD. May 1-2014-April 30-2016
In 2014-2015, the number of children treated by the Nephrology team, and the complexity of care delivered rose steadily. This was true of both care delivered in the ambulatory setting, and acute care delivered in the in-patient and intensive care settings. The Nephrology educational training programs continued to attract trainees from around the world, offering them unique opportunities to integrate advanced clinical and research training. The period encompassing 2014-2015 helped to solidify the Nephrology division’s reputation as one of the leading Nephrology research divisions in the world, due to the high number of successful grant applications from national and international granting agencies, the number of high-impact publications in top scientific journals, and the number of invitations to speak at important conferences.
The period encompassing 2014-2015 helped to solidify the Nephrology division’s reputation as one of the leading Nephrology research divisions in the world.

In 2014, two new faculty members joined the Division of Nephrology, bringing with them unique expertise and experience. Dr. Damien Noone, an Academic Clinician, participates in all aspects of care of children with kidney disease, with a special focus on the renal manifestations of systemic vasculitis and immune-mediated disease. Dr. Mathieu Lemaire, a Clinician-Scientist, participates in the care of children with genetic forms of kidney disease, and his research program uses his expertise in cutting-edge genomic research methodologies to elucidate the underlying mechanisms of genetic kidney disease. The recruitment of these two rising stars will allow the Division of Nephrology to develop unique innovations in clinical care and scientific discovery.

Publications


Blake J, Rosenblum ND. Renal Branching Morphogenesis: Morphogenetic and Molecular Mechanisms. Seminars in Cell and Developmental Biology, 36C:2-12, 2014. Senior Responsible Author


Keijzer-Veen MG, Hebert D and Parekh RS and the INSIGHT group. Propensity towards the null- use of rituximab in nephrotic syndrome. Lancet, Col 385, January 17, 2015


Grants and Funding

Antibiotic Prophylaxis versus Placebo in Infants Diagnosed with Hydronephrosis Antenatally: A Prospective, randomized Controlled Trial. Rosenblum ND. Hamilton Health Sciences Corporation. $10,726.88 CAD. December 31-2012-December 30-2014

Canadian National Transplant Research Program: Increasing donation and improving transplantation outcomes. West LJ, Mital S, Parekh RS. Canadian Institutes of Health Research (CIHR). $1,370,000 CAD. January 1-2013–January 1-2018


CIHR MD/PhD Grant. Rosenblum ND. Canadian Institutes of Health Research (CIHR). $660,000 CAD. January 1-2008-January 1-2014

CIHR MD/PhD Grant. Rosenblum ND. Canadian Institutes of Health Research (CIHR). $660,000 CAD. January 1-2009-January 1-2015

CIHR MD/PhD Grant. Rosenblum ND. Canadian Institutes of Health Research (CIHR). $660,000 CAD. January 1-2010-January 1-2016

CIHR MD/PhD Grant. Rosenblum ND. Canadian Institutes of Health Research (CIHR). $660,000 CAD. January 1-2011-January 1-2017

CIHR MD/PhD Grant. Rosenblum ND. Canadian Institutes of Health Research (CIHR). $660,000 CAD. January 1-2012-January 1-2018

CIHR MD/PhD Grant. Rosenblum ND. Canadian Institutes of Health Research (CIHR). $660,000 CAD. January 1-2013-January 1-2019

CIHR MD/PhD Grant. Rosenblum ND. Canadian Institutes of Health Research (CIHR). $660,000 CAD. January 1-2014-January 1-2020

Control of cerebellum cell specification, migration and organization by SUFU. Rosenblum ND. Canadian Institutes of Health Research (CIHR). $734,120 CAD. December 31-2010-March 30-2016

Developmental nephrology (Tier I). Rosenblum ND. Canada Research Chairs(CRC) Tier 2 Renewal. $1,340,038 CAD. May 31-2012-May 30-2019
Discovery of Novel Targets and Development of Treatments for Complement-Mediated Disease. Licht C. 2014 Accelerator Grant in Genomic Medicine, McLaughlin Centre, University of Toronto. $30,000 CAD. January 1-2014-January 1-2015

Functions of Hedgehog-GLI-dependent signaling in stromal cells during normal and malformed mammalian kidney development. Rosenblum ND. Canadian Institutes of Health Research (CIHR). $890,576 CAD. September 30-2013-September 29-2018


Long-Term Survival in Childhood Solid Organ Transplants. Parekh RS. Canadian Institutes of Health Research (CIHR). $514,679 CAD. September 30-2014-September 29-2018


Primary EBV infection in the immunosuppressed setting of organ transplantation: Determinants of the outcomes of virus-host interaction. Allen UD, Beyene J, Dipchand AI, Grunebaum E, Hébert D, Husain S, Mazzulli T, Ng VL, Read SE, Robinson JL, Tellier R, Weitzman SS. Canadian Institutes of Health Research (CIHR). $509,125 CAD. April 1-2010-October 1-2014
Regulation of Leukocyte-Endothelial Interactions.
Robinson LA. Natural Sciences and Engineering Research Council of Canada (NSERC).
$170,000 CAD. March 31-2012-March 30-2017


The Role of Slit/Robo Signaling in Renal Inflammation. Robinson LA. Canada Research Chairs (CRC) Tier 2 Renewal. $500,000 CAD. July 1-2009-June 30-2014
The major foci of the clinical and academic activities of the Division of Neurology are epilepsy, stroke, headache, neurometabolic disease, neuromuscular disease, neurogenetics, sleep disorders, movement disorders, neuroinflammatory diseases, functional neuroimaging, neonatal neurology and neurointensive care.
This past year SickKids patients and staff celebrated Purple Day for Epilepsy awareness with the grand opening of the expanded Epilepsy Monitoring Unit (EMU).

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

This past year SickKids patients and staff celebrated Purple Day for Epilepsy awareness with the grand opening of the expanded Epilepsy Monitoring Unit (EMU). The SickKids EMU expansion from four to seven beds was made possible through funding provided by the provincial government, under a task force co-chaired by the previous Head of the Division of Neurology and Centre for Brain & Mental Health, Dr. O. Carter Snead.

The Division welcomed two new faculty to the Division – Drs. Nomazulu Dlamini and Dr. Blathnaid McCoy, both welcome additions to our stroke and epilepsy services respectively. Both Drs. Dlamini and McCoy are former fellows in the Division and bring innovative clinical and research programs to SickKids.

The highlight of our academic year is the division’s annual Prichard Day. In memory of Dr. John Stobo Prichard, former division head, the day highlights our trainees’ research endeavours. Dr. Prichard was very involved in education and in his honour, our trainees present their research work on this day, ending with a keynote lecture by a world-renowned expert. This year we were honoured to host Dr. Fenella Kirkham, Professor of Paediatric Neurology, University College London, Institute of Child Health. We thank the Prichard Family for their continued support of our trainees and this very special day.

The clinical, translational and basic research foci of the Division of Neurology are epilepsy and neurophysiology, stroke, cognitive neuroscience, brain health outcomes and quality of life, myopathies, neuroinflammatory diseases, fatty acid oxidation disorders, molecular and cellular neurobiology, and neonatal neurology.

Honours and Awards

**Cortez M**: Appointed Senior Member of the Task Force created by the International League Against Epilepsy (ILAE), Standardization of EEG methodology in developing rodents for the study of refractory epilepsies of childhood. Inaugural meeting, Stockholm, Sweden, May 29, 2014.

**Lovett M**: Received the OPA Award of Merit, Psychology in Education, Ontario Psychological Association, June, 2014.

**Lovett M**: Awarded the IRA Albert J. Harris Research Award for “Evaluating the efficacy of remediation for struggling readers in high school”, International Reading Association, 2014.
**Miller S**: Received the John Stobo Prichard Award from the The International Child Neurology Association. May, 2014.

**Tein I**: Appointed President, The International Child Neurology Association, May 2014-May 2018

**Weiss S**: Received the SickKids, Department of Pediatrics Continuing Education Award. Department of Pediatrics, University of Toronto, Toronto, ON, June, 2014.

**Widjaja, E**: Received the Excellence in Teaching Award, Department of Medical Imaging Neuroradiology Fellowship Program, University of Toronto, December 2014.

**Publications**


Book Chapters


Grants and Funding


A study to assess the safety, tolerability and pharmacokinetics of multiple doses of ISIS 396443 delivered intrathecally to patients with infantile onset spinal muscular atrophy (SMA). Vajsar J. ISIS Pharmaceuticals. $49,826 USD. Jul 2013-Jul 2015

Analyzing the transition of pediatric epilepsy patients to adult epilepsy patients. Epilepsy Transitional Program: Results of a 6-year experience and needs assessment. Andrade D. University of Toronto, Faculty of Medicine. New Initiative Program. $30,000 CAD. Jul 2013-Jul 2014

Autism spectrum disorders: Genomes to outcomes. Anagnostou E, Scherer S, Szatmari P. Genome Canada/Canadian Institute of Health Research/Ontario Ministry of Economic Developmental and Innovation. $10,000,000 CAD. Apr 2013-Mar 2017


Canadian MS Monitoring System: Pilot. Yeh A. Public Health Agency of Canada/Canadian Institute for Health Information. $40,000 CAD. 2014-2015


CCDC78 and the pathogenesis of centronuclear myopathy. Dowling JJ. National Institutes of Arthritis and Musculoskeletal Diseases (NIAMS), NIH. $150,000 USD. 2012-2015

Cellular aging and HIV comorbidities in women and children. Smith ML, Cote H. Canadian Institutes for Health Research. $2,500,000 CAD. 2013-2017

Center for the Study of Adult Literacy: Developing instructional approaches suited to the cognitive and motivational needs of struggling adult readers. Greenberg D, Lovett MW, Graesser A, Frijters JC, Branum-Martin L. Funded as the first National Research and Development Center on Cognition and Adult Literacy, Institute of Education Sciences (US Department of Education). $10,000,000 USD. Jan 2012–Aug 2017


Cholesterol and omega-3 fatty acid levels on brain development and neurodevelopmental outcome after prematurity. Tam EWY, Ferriero DM, Grunau RE, Innis SM. The Gerber Foundation. $131,009 CAD. Jul 1012-Jun 2015

Clinical genetic testing for autosomal recessive hereditary spastic paraplegia. Ray PN, Yoon G, Baskin B. NIH Office of Rare Diseases Research Collaboration Education and Test Translation Program. $197,000 USD. 2010–2015


Cognition and pediatric epilepsy. Smith ML. Ontario Brain Institute Sub project in EPLINK/Integrated Discovery System for Epilepsy (New Approaches to Intractable Seizures). $250,000 CAD. 2013-2018


Developing instructional approaches suited to the cognitive and motivational needs of struggling adult readers. Greenberg D, Lovett MW, Graesser A, Frijters JC, Branum-Martin L. **Center for the Study of Adult Literacy: Funded as the first National Research and Development Center on Cognition and Adult Literacy, Institute of Education Sciences (US Department of Education).** $10,000,000 USD. 2012-2017

Development, implementation and dissemination of a standardized approach to the care of paediatric multiple sclerosis: A national consensus guideline of management strategies including treatment of acute relapses, immunomodulation, and escalation therapy to increase patient safety and prevent early-onset neurological disability. Pohl D, Venkateswaran S, Banwell B, Yeh EA. **Canadian Institutes for Health Research.** $300,000 CAD. Apr 2012–Mar 2015

Do recurrent seizures injure the developing brain? Widjaja E. **EpLink/Ontario Brain Institute.** $250,000 CAD. Mar 2014-Feb 2019


Early childhood behavior: Relations to early brain structure/function and maternal mood. Oberlander T, Brant RF, Chau V, Grunau RE, Lim K, Miller SP, Misri S, Rurak DW, Wiebe SA. **Canadian Institutes of Health Research.** $1,139,616 CAD. Sep 2012–Aug 2017


End MS RRTC, Ontario-Manitoba. Yeh EA, Harauz, G, Gaffhir, O. **MS Society of Canada.** $300,000 CAD. Apr 2012-Apr 2015

Environmental enrichment and infantile spasms: Morphological studies. Snead OC. **Ontario Brain Institute.** $90,000 CAD. Jan 2013–Dec 2018
EpLink: Phase II of The Epilepsy Discovery Project Genetic Database. Minassian BA. **The Ontario Brain Institute.** $500,000 CAD. 2014-2019

Ergometric training in mitochondrial myopathies. Tein I. **Knights of Columbus Fund for Mitochondrial Disorders.** $100,000 CAD. 2012–2014

Exploring stochasticity in the spatio-temporal patterns of coordinated brain activity. Perez-Velazquez JL. **NSERC Discovery Grant.** $155,000 CAD. 2012-2017


Gene discovery for malignant hyperthermia susceptibility. Dowling JJ. **McLaughlin Centre Accelerator Grant, University of Toronto.** $75,000 CAD. May 2014-Apr 2015


Genetics of reading disabilities. Barr CL, Kerr EN, Knight J, Lovett MW. **Canadian Institutes for Health Research.** $1,293,293 CAD. Apr 2014–Mar 2019

GLU-T1 deficiency and response to Ketogenic diet. Matmutoglu S, Kobayashi J, Donner EJ. **Canadian Institutes of Health Research.** $45,000 CAD. 2012–2014


Identifying the genes and underlying causes for intractable epilepsies by next generation sequencing. Minassian BA, Mahmutoglu S. **McLaughlin Centre Accelerator Grants in Genomic Medicine.** $75,000 CAD. 2013-2014

Identification of genes involved in epilepsy and epilepsy pharmacoresistance. Minassian B, Mahmutoglu S. **McLaughlin Centre - Accelerator Grants in Genomic Medicine.** $75,000 CAD. 2014

Impact of pediatric epilepsy surgery on health-related quality of life. Widjaja E. **Canadian Institutes for Health Research.** $697,292 CAD. Apr 2014–Mar 2019

Improving working memory intervention in children with epilepsy: Treatment, transfer, and brain effects. Kerr E, Widjaja E. **EpLink/Ontario Brain Institute.** $250,000 CAD. Mar 2014-Feb 2019


Microbiome in inflammatory disorders. Gommeran J, Yeh EA. Connaught Grant - University of Toronto. $100,000 CAD. 2012–2013


Music therapy to enhance sleep in sick infants in NICU. Ochi A, Tam E. Centre for Brain & Mental Health, SickKids. $50,000 CAD. 2013–2015


Neuroimmunological etiologies of ROHHAD. Yeh A, Hamilton J, Narang I, Dalmau J. Rare Diseases Foundation. $3500 CAD. 2014–2014


Obtaining the genome sequence of 320 enrolled in EpLink studies. Andrade D, Poulter M. OBI-EpLink. $100,000 CAD. Jul 2013-Jun 2017


Neurological outcome of hypoglycemia in neonatal encephalopathy. Tam EY, Hahn CD, Chau V, Miller SP. Canadian Institutes of Health Research. $703,747 CAD. Apr 2014-Mar 2019


Personalized medicine for the treatment of epilepsy. Minassian BA, Cossette P, Michaud J. Genome Canada. $11,000,000 CAD. 2013–2017


Prevalence of mucopolysaccharidosis in individuals undergoing nerve conduction study for carpal tunnel syndrome. Mahmutoglu S, Vajsar J. Genzyme. $25,000 CAD. 2014-2015


Randomized trial of Ophtho-Sim. Yeh A. SickKids Innovation Funds. $8500 CAD. 2014-2015


Stroke Imaging Laboratory for Children (SILC). deVeber G. Heart and Stroke Foundation and SickKids Foundation. $2.2 million. Sep 2013-Apr 2019

Think fast! The role of automaticity in the cognitive control of action. Cheyne D. NSERC Operating Grant. $145,000 CAD. 2014–2020


Treatment of overweight induced by antipsychotic medication in young people with ASD. Anagnostou E, Veenstra-VanderWeele J, Handen J, Butler E, Aman M. **Health Resources and Services Administration (USA).** $1,418,395 USD. 2013-2016

Typical and atypical development of frontal lobe systems and the maturation of social cognitive function. Taylor MJ, Pang EW, Doesburg S, Anagnostou E. **Canadian Institutes of Health Research.** $766,896 CAD. Jan 2012-Dec 2017


Validation of monitoring changes in brain synchrony to anticipate seizures and implement feedback stimulation to stop seizure occurrence. Perez-Velazquez JL. **Ontario Brain Institute.** $250,000 CAD. 2013-2018

Vitamin D clinical trial. Yeh, EA, Banwell B, Makhani N, Veith R, Marrie, RA. **Dairy Farmers of Canada.** $80,000 CAD. Jan 2012 to Apr 2015

White matter integrity and neurocognition in sickle cell patients. Odame I, Widjaja E. **RK Smiley Grant, Canadian Hematology Society.** $10,000 CAD. Jul 2013-Jun 2014
The Division of Paediatric Medicine continues to play an integral role in the Department of Paediatrics, with respect to clinical care, quality improvement, education and research. The Division’s diverse and active Sections include: General Paediatric Hospital Medicine (Inpatient Ambulatory, Complex Care), Paediatric Advanced Care Team (palliative care), Child Maltreatment Paediatrics (SCAN), Paediatric Dermatology and Community Paediatrics. Representatives from each of these sections play active roles within the hospital, and also hold key leadership roles in national and international professional organizations.
Dr. Carolyn Beck continues to provide exceptional leadership for the busy inpatient hospital medicine section. The inpatient physician staffing model has been consolidated to form a stable, dedicated group of hospitalists who are either full time division members, or attend here at least half-time (with the remainder of their clinical work as pediatric hospitalists in one of the GTA hospitals). The inpatient general pediatric units have continued to experience sustained high patient volumes and high acuity and complexity, requiring increased attention to optimizing systems and processes, while maintaining a focus on quality and safety. Carolyn Beck, Sarah Schwartz and Trey Coffey have been at the helm of new initiatives in this area, in partnership with Kate Langrish, Nadia Tavernes and their outstanding management team. Efforts are underway to more clearly define and plan for the highest acuity “intermediate care” group of general pediatric inpatients. The Streamlined Care Unit (SCU) continues to offer efficiencies through cohorting of patients with predictable clinical trajectories. This year has seen expansion of the Alternative Care Environment (ACE) model, focused on optimizing inpatient bed utilization and length of stay. The expansion consists of an ACE clinic model, which offers the ability to provide semi-urgent, coordinated, multidisciplinary patient assessments in the outpatient setting for patients who do not require overnight nursing care. Continuity has emerged as a key theme in quality of care and a nursing case manager model for long stay patients is being developed and piloted. The Division’s work on I-PASS, led by Trey Coffey and Zia Bismilla, and part of a national research collaborative, has continued to support enhanced patient care through attention to handoff/transfers of clinical care not only within the Division, but also more widely throughout the Department.

In other areas of the Division, Dr. Catherine Birken was recognized this year with a Departmental award for outstanding clinical contribution, for her innovative work in the STOMP early years program, addressing the growing problem of obesity in young children. Dr. Eyal Cohen was recognized for his outstanding contributions to the care of children with complex medical conditions with a Junior Faculty Clinical Excellence Award. The complex care program and its satellites continue to grow. The Paediatric Advanced Care Team, led by Adam Rapoport, has experienced tremendous growth, with a notable increase in clinical activity, a sought-after elective experience, provincial committee development and an emerging fellowship training program. Academic productivity in PACT has dramatically increased. Dr. Lee Ford-Jones was honoured by the Canadian Paediatric Society in recognition of her outstanding advocacy for the health and welfare of children, with the prestigious Victor Marchessault Advocacy Award.

Education remains a key area of activity in Paediatric Medicine, with a significant proportion of core training for University of Toronto undergraduate students and pediatric residents provided by Divisional faculty, including the...
active Community Section. Under the newly-appointed Michael Weinstein, Divisional Director of Education as of February 2014, active efforts are underway to optimize continuity of care and bedside teaching for medical students and residents on the inpatient units, adjusting to changes in trainee work hours, family-centered rounds and efficiency mandates. Division faculty members have participated in two faculty development sessions particularly targeted in this area and are implementing a new approach to focused clinical skills teaching on the inpatient units. Division members continue to be recognized for their outstanding contributions to education through teaching awards (see below) Innovative curriculum development is actively underway in Paediatric Dermatology, PACT and Child Maltreatment. Physicians in Paediatric Medicine continue to play key leadership roles in undergraduate and postgraduate education within the Department, University and Learning Institute, and participate actively in Royal College committees and examination boards. A Divisional focus on education scholarship continues with Zia Bismilla as the lead.

The Division continues to offer a large, diverse and active fellowship program, with a total of 34 fellows in the 2014/15 academic year, hailing from Canada, the US, Europe, the Middle East, UK and Mexico. Sarah Schwartz continues as the Fellowship Director for the Division, and track directors are in place for each of the specific fellowship programs within the Division. Clinical fellows in general paediatric hospital medicine play an active role on the 7B inpatient unit, and admitting services, and provide high quality trainee on call coverage for general pediatrics. The academic general paediatric fellowship continues to thrive, with fellows developing skills in clinical epidemiology, health services research, medical education, global health and public health. Active fellowship programs which are unique in Canada continue in Paediatric Dermatology, Child Maltreatment Paediatrics and Community Paediatrics, with a new fellowship launched in Paediatric Palliative Care in 2014.

The Paediatric Medicine Research Program has continued its exponential growth and success. With areas of focus in patient-based outcomes research, health services research, global health research and a well-established innovative primary care research network (TARGet Kids), Division members have been exceptionally productive this year. Sustained success in grant support for research endeavours is evident, with Divisional faculty holding a total of more than 40 million dollars of grant funding, and numerous peer-reviewed publications. Dr. Astrid Guttmann continues to play a leadership role in child health services research and health policy, with a tremendously productive research program and has been appointed to the position of Chief Science Officer at the Institute for Clinical Evaluative Sciences (ICES). In recognition of his successful program of research, Jonathon Maguire was selected for Young Investigator Awards by the Canadian Paediatric Society and CIHR.

Paediatric Dermatology remains the busiest ambulatory clinical service in the Department. The Dermatology Section continues to provide outstanding clinical care for children with rare dermatologic conditions and those requiring interdisciplinary approaches. Headed by Elena Pope, the section provides leadership nationally and internationally in the field, is tremendously active in education at all levels, and offers a unique and popular fellowship training program which is building clinical and academic
capacity. This year, Dr. Pope cochaired the World Congress of Paediatric Dermatology in Madrid, Spain. Academic activity within the Section has led to success in grant funding and numerous publications which are improving the course of clinical care for children with rare skin conditions.

The SCAN Program continues to grow under the co-leadership of Tanya Smith, nurse practitioner and Emma Cory. Clinical activity continues both on site at the hospital, and at the downtown Child and Youth Advocacy Centre, a model partnership between medical, mental health, child protection and police services. An active fellowship program is in place, training paediatricians who will build capacity in Canada and internationally. Certification in Child Maltreatment Paediatrics by the Royal College is now finalized and the Toronto fellowship program will apply for accreditation this upcoming year. A successful annual National Symposium on Advanced Practices in Child Maltreatment Paediatrics was held in Montreal this year, cochaired by Michelle Shouldice and will return to Toronto in the fall of 2015. An interprofessional clinical research program in child maltreatment continues to develop, with increasing poster presentations and publications arising from the team.

This outstanding group of clinicians, educators and researchers has had a tremendously successful year and remains dedicated to working together to improve the health and welfare of children through general pediatric clinical care, a commitment to education, and scholarship. Important collaborations with the Division’s downtown partner St. Michael’s hospital, Toronto area regional hospitals, community pediatricians, primary health care providers, and research networks are essential to the Division and continue to grow. Congratulations on an excellent year!

Honors and Awards

Bernhard, N: Winner of the RHA Haslam Preclerkship Teaching Award, Department of Paediatrics, University of Toronto, Toronto, Ontario, June 2014

Bernstein, S: Canadian Association for Medical Education Certificate of Merit Award 2015

Bernstein, S: Winner of the POWER Award for excellence in post-graduate teaching, Department of Paediatrics, University of Toronto, Toronto, Ontario, June 2014

Birken, C: Winner of the POWER Award for excellence in post-graduate teaching, Department of Paediatrics, University of Toronto, Toronto, Ontario, June 2014

Birken, C: Winner of the award for Outstanding Clinical Contribution (with Jill Hamilton/STOMP), Department of Paediatrics, University of Toronto, Toronto, Ontario, June 2014

Cohen, E: Winner of the Junior Faculty Award for Clinical Excellence in Paediatric Medical Care, Department of Paediatrics, The Hospital for Sick Children, Toronto, Ontario, June 2014

Ford-Jones, L: Canadian Pediatric Society Victor Marchessault Advocacy Award, Canadian Pediatric Society, Canadian Pediatric Society Conference, Montreal, Quebec, June 2014
Goldbach, M: Continuing Medical Education Award runner up

Guttmann, A: Appointed as Chief Science Officer at ICES

Han, R: Postgraduate Community Paediatric Teaching Award runner up

Kanani, R: Winner of the Lionel Weinstein Clerkship Teaching Award, Department of Paediatrics, University of Toronto, Toronto, Ontario, June 2014

Lau, E: Winner of the POWER Award for excellence in post-graduate teaching, Department of Paediatrics, University of Toronto, Toronto, Ontario, June 2014

Maguire, J: Prestigious Early Research Award, from the Ontario Ministry of Research and Innovation

Mozes, Y: Winner of the Marvin Gerstein Award, Department of Paediatrics, University of Toronto, Toronto, Ontario, June 2014

Mozes, Y: Faculty of Medicine, Integrated Medical Education Teaching Award nominee

Nelson, K: Winner of Clinician Scientist Training Program ($40,000 per year for 2 years), Research Training Centre, Hospital for Sick Children, Toronto, Ontario, Canada, July, 2014.

Nelson, K: Winner of Travel Award ($1000), Institute of Human Development, Child and Youth Health, CIHR (Canadian Institutes of Health Research), Ottawa, Ontario, Canada, November, 2014.

Nelson, K: Winner of SGS Conference Grant ($750), School of Graduate Studies, University of Toronto, Toronto, Ontario, Canada.

PACT team: Promising project for pediatric healthcare professionals, the people’s choice award (voted best app by all conference attendees), and the Mobile Med award, HackingHealth Kids, The Hospital for Sick Children, Toronto, Ontario, May 2014

Parkin, P: Winner of the POWER Award for excellence in post-graduate teaching, Department of Paediatrics, University of Toronto, Toronto, Ontario, June 2014

Porepa, J: Faculty of Medicine, Integrated Medical Education Teaching Award nominee

Saunders, N: Thomas and Edna Naylor Award 2015 For a graduate student (MSc or PhD) in the Institute of Health, Policy, Management and Evaluation, University of Toronto who completes the best paper based on their thesis in the field of health services research.

Saunders, N: Claire Bombardier Award 2015 For the most promising student in the Clinical Epidemiology and Health Care Research at the Institute of Health Policy, Management and Evaluation

Talarico, S: Winner of the POWER Award for excellence in post-graduate teaching, Department of Paediatrics, University of Toronto, Toronto, Ontario, June 2014

Talarico, S: Winner of the Helen Baty Award for Excellence and Achievement in Faculty Development for INTAPT
van den Heuvel, M: Restracomp Funding Award Recipient; December 2014

Weinstein, M: Marvin Gerstein award for teaching; June 2015

Publications


Corbo M, Weinstein MG. Camptodactyly and knuckle pads co-existing in an adolescent male: Connection or coincidence?” Pediatric Dermatology. Dec 2014


Daniel A Gorman, MD1; David M Gardner, PharmD, MSc2; Andrea L Murphy, PharmD3; Mark Feldman, MD4; Stacey A B’elanger, MD, PhD5; Margaret M Steele, MD6; Khrista Boylan, MD, PhD7; Kate Cochrane-Brink, MD, DPhil8; Roxanne Goldade, MD9; Paul R Soper, MD10; Judy Ustina, MD11; Tamara Pringsheim, MD, MSc12: Canadian Guidelines on Pharmacotherapy for Disruptive and Aggressive Behaviour in Children and Adolescents With Attention-Deficit Hyperactivity Disorder, Oppositional Defiant Disorder, or Conduct Disorder. Canadian Journal of Psychiatry 2015: 60(2): pp 62-76.


Grace J. Lee BASc, Catherine S. Birken MD MSc, Patricia C. Parkin MD, Gerald Lebovic PhD, Yang Chen MA MSc, Mary R. LAbbe’9 PhD, Jonathon L. Maguire MD MSc; for the TARGet Kids! Collaboration*: Consumption of noncows milk beverages and serum vitamin D levels in early childhood. Canadian Medical Association Journal 2014: 186(17): pp 1287-93.


Kim Zhou1,2, MD, Laura Sauve3,4 MD, MPH, Susan E. Richardson2,5 MD, E. Lee Ford-Jones2,6 MD, Shaun K. Morris2,7, MD, MPH. Enteric Fever in a multicultural Canadian tertiary care pediatric setting: A 29 year review. Submitted PIDJ or J PID Society. August 2014


Peter D Wong MBBS PhD FRCP(C)1,2, Malini G Dave MD FAAP FRCP(C)3,4, Trisha Tulloch MD FAAP FRCP(C)5,6, Mark L Feldman MD FRCP(C)7,8,9, Elizabeth L Ford-Jones MD FRCP(C)10, Patricia C Parkin MD FRCP(C)11,12, Adrianna Tetley13, Rosemary G Moodie MBBS MBA MPA FRCP(C): Community health centres: Potential opportunities for community paediatrics. From interprofessional clinical care to board governance. Paediatrics and Child Health 2015: 20(1): pp 12-14.


S Talarico, S Lee, H Batty: Portfolio Assessment: Using Rubrics to Increase Reliability and Decrease Anxiety for Trainees and Faculty. (Workshop presentation at the Ottawa Conference, Ottawa, ON, April 2014)


**Book Chapters**

Apkon M, Friedman JN: Planning for effective hospital discharge. JAMA Pediatrics 2014 (invited editorial)


Grants and Funding


Applied Chairs in Reproductive, Child and Youth Services and Policy Research: Evidence-Informed Health Services Delivery for Canadian Children and Youth. Guttmann A. **Canadian Institutes of Health Research (CIHR).** $925,000 CAD. November 30-2012 – November 29-2017

BMN004: A Phase 3, Randomized, Double-Blind, Placebo-Controlled, Multinational Clinical Study to evaluate the Efficiency and Safety of 2.0mg/kg/week and 2.0 mg/kg/every other week BMN 110 in Patients with Mucopolysaccharidosis IVA (Morquio A Syndrome. Chris Hendriczs C, Raiman J, Weinstein M, Faghfoury H, Al-Hertani W. **Biomarin Pharmaceutical.** $56,690 CAD per patient. June 1-2012 - June 30-2015
Bringing I-PASS to the Bedside: A Communication Bundle to Improve Patient Safety and Experience. Landrigan C, Bismilla Z (Co-Investigator), Coffey T (Site Lead), and co-investigators from each site. Patient Centered Outcomes Research Institute (PCORI). $1,500,000 USD. December 1-2013 - January 1-2017

Cardiac Antibodies as a Mechanism for Right Ventricular Hypertrophy in EB. Sajic D, Pope E, Lara-Corrales I, Hamilton R. Canadian Dermatology Foundation. $5,000 CAD. September 1-2013 - August 31-2014


Do vitamin D fortified cheese and yogurt products support vitamin D status and functional outcomes in young children. Weiler H, Rauch F, Maguire J. Dairy Farmers of Canada. $33,287 CAD. September 1-2013 - June 30-2014

Wilson BJ. Canadian Institutes of Health Research, Team Grant. $298,098/year CAD. April 1-2012 – March 31-2017

Enhancing the Quality of Palliative and End-of-Life Care for Children with Cancer. Widger K, Rapoport A. University of Toronto. $45,200 CAD. March 31-2014 – March 30-2015

Ensuring effective newborn screening: The case of cystic fibrosis. Miller F, Guttmann A. Canadian Institutes of Health Research, Operating Grant. $771,524 CAD. July 1-2010 – June 30-2014

Epidermolysis Bullosa Clinical Characterization and Outcome Database. Pope E. Epidermolysis Bullosa Medical Research Foundation. $5,831 CAD. February 21-2012 – February 20-2017


Exome sequencing a family With Gene-negative Epidermolysis Bullosa Superficialis/Icthyosis Bullosa of Siemens. Pope E, Lara-Corrales I, Hamilton R. Rare Disease Foundation. $3,500 CAD. September 4-2013 - September 2-2014


Gastric flora in gastrostomy fed children with neurologic impairment on acid suppression medication. Rapoport A, Mahant S, Avitzur Y, Cohen E, Richardson S. Paediatric Consultants. $10,000 CAD. October 31-2011 – November 29-2015
Health system performance research network. Guttmann A. **University of Toronto** $207,177.56 CAD. March 31-2013 – March 30-2015


Inflammatory Bowel Disease in Immigrants to Canada and their Children: Epidemiology and Access to Specialist Care Children’s Hospital Academic Medical Organization and Ontario Ministry of Health and Long-Term Care Academic Health Sciences Centres. Benchimol E, Guttmann A. **AFP Innovation Fund.** $57,485 CAD. January 1-2012 – December 31-2014


Intrapleural DNase and Tissue Plasminogen Activator in Pediatric Empyema (DTPA Trial). Cohen, E., Ratjen, F., Connolly, B. **Physicians’ Services Incorporated Foundation (PSI).** $91,000 CAD. December 20-2012 – December 19-2014

Molecular diagnostics to improve the care of children with complicated pneumonia. Wadhwa A, Weinstein M. Pediatric Consultants Partnership. The Hospital for Sick Children. $10,000 CAD. January 1-2013 – December 31-2014


Norman Saunders Complex care Initiative - The natural history of swallowing dysfunction in infants with dysphagia. Mahant S, Sherna M. SickKids Division of Paediatric Medicine. $10,634.72 CAD. April 30-2011-June 29-2016

Norman Saunders Complex care Initiative - The MASC (Medical and Social Complexity) Screening tool, Derivation Study Phase 1 - Tool Construction and testing. Maguire J. SickKids Division of Paediatric Medicine. $42,982.50 CAD. October 31, 2010 – December 30, 2014


Community Paediatrics
cont’d

Dr. Suhid (Tony) D’Souza
Dr. Anthony Duke
Dr. Carol Durno
Dr. Prabo Dwight
Dr. Gian Egger
Dr. Robert Farber
Dr. Michelle Farine
Dr. Hyder Fazal
Dr. Stephen Richard Feanny
Dr. William Feldman
Dr. Diane Flanders
Dr. Adelaide Fleming
Dr. Raphael Folman
Dr. John Freedman
Dr. Claudio Fregonas
Dr. Gerald Friedman
Dr. Marvin H. Gans
Dr. Hartley A. Garfield
Dr. Morton Goldbach
Dr. Donna Goldenberg
Dr. Leslie Goodis
Dr. Stuart Gordner
Dr. Michelle Gordon
Dr. Denis Gurwitz
Dr. Katarzyna Gwiazda
Dr. Shujauddin Hafiz
Dr. Ra Han
Dr. Mark E. Handley-Derry
Dr. Miriam Hansen
Dr. Leah Harrington
Dr. Jane Healey
Dr. Alan P. Hudak
Dr. Clare Hutchinson
Dr. Dayanand Jagdeo
Dr. Rhoda Kagan
Dr. Peggy Kirkpatrick
Dr. Dror Koltin
Dr. Martin Kosoy
Dr. Susan Kovacs
Dr. Beverley Kupfert
Dr. Howard Langer
Dr. Eddy Lau
Dr. Cinda B. Lee
Dr. Zina Levichek
Dr. Maurice Levy
Dr. Patricia Linders
Dr. Sanjeev Luthra
Dr. David Maresky
Dr. Laura McAdam
Dr. Anilkumar Menon
Dr. Saba Merchant
Dr. Marcellina Mian
Dr. Diana Mills-Tetley
Dr. Janette Milne
Dr. Antonella Morra
Dr. Steven Moss
Dr. Paul Munk
Dr. Jack Newman
Dr. Marjan Nezarati
Dr. Raymond Ng
Dr. Ivan Osswald
Dr. Larry Pancer
Dr. Evangelia Papadouris
Dr. Marty Perlmutar
Dr. Constantine Petrou
Dr. John Philpott
Dr. Joseph Porepa
Dr. Vladimir Pucholt


Reporting of studies Conducted using Observational Routinely-collected Data (RECORD). Benchimol E, Guttmann A. **Canadian Institutes of Health Research, Operating Grant.** $120,000 CAD. July 1-2013 – June 30-2015

Start-up Operating. Birken C. SK Research Institute. $114,780 CAD. September 1-2012 - August 31-2014

Surgical interventions and outcomes of children with trisomy 13 and 18 in Ontario. Nelson K, Guttmann A. Norman Saunders Complex Care Initiative. $20,000 CAD. November 1-2012 – October 31-2014


The implementation of a Night Float system at a large Canadian Paediatric Training Program: Perceived impact on patient care, education and quality of life. Bismilla Z. Paediatric Consultants. $5,000 CAD. December 31-2013 – December 30-2014

Community Paediatrics cont’d

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<tr>
<th>Name</th>
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<tr>
<td>Dr. Seetha Radhakrishnan</td>
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The Rural/Urban Divide in Inflammatory Bowel Disease: Access, incidence, outcomes and access to care in Canada. Benchimol E, Guttmann A. Janssen Future Leaders in IBD Grant. $75,000 CAD. November 1-2012 – October 31-2014


The Validation of iscorEB for Patients with Epidermolysis Bullosa. Pope E, Bruckner A. EB Medical Research Foundation and Jackson Gabriel Silver Foundation. $17,136 CAD. January 8-2014 - December 31-2014

Trace Metal Collaborative Study. Parkin, P. Ontario Agency for Health Protection and Promotion. $134,790.02 CAD. March 26-2013 – March 25-2015

Cross-Appointees
Dr. Glenn Berall
Dr. Bonnie Cameron
Dr. Douglas Campbell
Dr. Gordon Donsky
Dr. Katy Driver
Dr. Leona Fishman
Dr. Janine Flanagan
Dr. Lee Ann Gallant
Dr. Rose Geist
Dr. Sabine George
Dr. William Hanley
Dr. Nicole G. Inch
Dr. Jaya Islur
Dr. Anna Jarvis
Dr. Ian Kitai
Dr. Leo Levin
Dr. Gilbert Miller
Dr. Golda Milo-Manson
Dr. Hadi Mohsenibod
Dr. John D. Murray
Dr. Jay Rosenfield
Dr. Suzanne Schuh
Dr. Jeffrey Weisbrot
Dr. Sheldon Wise

Fellows
Academic General
Paediatrics
Dr. Leigh Anne Baker
Dr. Justine
Cohen-Silver
Dr. Julie Johnstone
Dr. Katz-Lavigne
Dr. Arnaud Merglen
Dr. Natasha Saunders
Dr. Mathilda
van den Heuvel
Dr. Joseph Wiley
Child Maltreatment
Paediatrics
Dr. Fadiah Al-Khattabi
Dr. Laila Nurmohamed
Dr. Karine Pépin
Dr. Marlène Thibault
Community Paediatrics
Dr. Miriam Burns
Dr. Joanna Humphreys
Dr. Rachel Markin
Dr. Melanie Ostreicher
Dr. Leanne Morris
Dr. Julia Sharp

Understanding the effects of social, behavioural and metabolic factors on early childhood growth trajectories among Aboriginal Canadians. Hanley AJ, Birken CS, Hamilton JK, Harris SB, Maguire JL, Parkin PC, Rae J, Zinman B. **CIHR Operating Grant.** $208,768 CAD. April 1-2013 – March 31-2018


Youth with Chronic Conditions Transitioning to Adult Care. Wodchis W, Guttmann A, Cohen E, Moore C: **Health Systems Performance Research Network, Ministry of Health and Long-Term Care.** $4,645,190 CAD. May 1-2013 - May 31-2016

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**Inpatient Hospital**

**Research Fellows**

Dr. Kawsari Abdullah

Ms. Krista Keilty

Ms. Karen LeGrow

Dr. Carmen Liy Wong

**Paediatrics Clinical Fellows**

Dr. Javier Adrian Gutierrez

Dr. Sonya Hiremath

Dr. Pritha Rughani

Dr. Mahmoud Sakran

Dr. Maher Shalabi

**Administrative Staff**

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Denise Ferreira

Cindy Groff

Heather Haywood

Jasmine Hylton

Shanaz Karim

Jennifer Kingston

Victoria Latimer

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Ramandeep Sran

Donna Whitely

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Dr. Michael Bishara

Dr. Blanca del Pozzo Magana

Dr. Vallari Majmundar

Dr. Alexandra Pennal

Dr. Shanna Spring

**Paediatric Palliative Care**

Dr. Wesam Al Thaqafi

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Dr. Alexandra Pennal

Dr. Shanna Spring

**Paediatric Palliative Care**

Dr. Wesam Al Thaqafi
The Division of Respiratory Medicine is committed to providing excellence in patient care, education and research and members of the Division are active on all these fronts. Over the past year our division has significantly expanded its Program for Sleep related Respiratory Disorders. Dr. Al-Saleh has started a collaborative program with the craniofacial program which has resulted in a specialized craniofacial sleep clinic in 2014 that follows children with syndromic craniosynostosis longitudinally. Dr. Indra Narang has organized and led a Sleep Symposium at SickKids and has become the Pediatric Lead for a Sleep related Research Network.
Another successful year in Respiratory Medicine in which our patients received comprehensive care from our multi-disciplinary team of physicians, nurse practitioners, nurses, respiratory therapists, nutritionists and social workers. We are committed to providing outstanding patient care, educating young physicians and nurses and conducting meaningful research related to pulmonary diseases to develop new treatments that will further improve the outcomes of our patients.

The home ventilation program continues to expand under the leadership of Dr. Amin and is implementing novel monitoring tool into the clinical care program. Dr. Grasemann, who recently was promoted to Full Professor, has completed a Sabbatical focusing on monitoring tools for childhood asthma and other inflammatory airway diseases. Dr. Neil Sweezey has become the lead of the CREMS student program building on his previous leadership roles in research related educational activities. Dr. Solomon led the fellowship through another successful year.

Dr. Moraes continues research into viral infections such as RSV (his student being awarded the prize for the best oral presentation at the Pediatric Research Day), but also started using airway culture systems to assess response to CFTR modulation in collaboration with Drs. Bear, Gonska as well as Rossant. Dr. Felix Ratjen and his team validated multiple breath washout technology as an early disease marker in CF leading to the development of a core site for multiple breath washout testing in North America which has been developed in close collaboration with Dr. Jane Davies at the Royal Brompton in London, who is leading the core facility for the European Clinical Trial network. Dr. Dell has expanded the clinic for primary ciliary dyskinesia and contributed to a better understanding of the link between genetic mutations and clinic phenotype. Dr. Subbarao is expanding the diagnostic capabilities of our pulmonary function laboratory to integrate novel research technologies into clinical care in the near future.

Honours and Awards

Ratjen F: Fellowship of the European Respiratory Society. Munich, Germany. September, 2014

Dell S: Runner up, Excellence in Graduate Teaching and Mentorship, Faculty of Medicine Graduate Faculty Teaching Award, University of Toronto, Ontario, Canada. 2014

Publications


Alpern AN, Brumback LC, Ratjen F, Rosenfeld M, Davis SD, Quittner AL. Initial evaluation of the Parent Cystic Fibrosis Questionnaire-Revised (CFQ-R) in infants and young children. J Cyst Fibros. 2015 May;14(3):403-11.


The Hospital for Sick Children


Dell SD, Bola SS, Foty RG, Marshall LC, Nelligan KA, Coates AL. Provocative dose of methacholine causing a 20% drop in FEV1 should be used to interpret methacholine challenge tests with modern nebulizers. Ann Am Thorac Soc. 2015 Mar; 12(3):357-63.


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Moraes TJ. Are we too passive in our attempts to prevent RSV in Northern Canada? Editorial to the Canadian Respiratory Journal. 2014 May-Jun;21(3):163-164


Book Chapters

De Boeck K, Fajac I, Ratjen F. End-points and biomarkers for clinical trials in cystic fibrosis. ERS Monogr 2014; 64: 104-115. (SRA)


Grants and Funding


A Phase 3, Double Blind, Placebo Controlled, Parallel Group Study to Evaluate the Efficacy and Safety of Lumacaftor in Combination With Ivacaftor in Subjects Aged 6 Through 11 Years With Cystic Fibrosis, Homozygous for the F508del CFTR Mutation. Principal Investigator: Ratjen F. Collaborator(s): Solomon M. Vertex Pharmaceuticals. $16,187.00 USD. 2015 – 2017


A Phase 3, Open-Label Study to Evaluate the Pharmacokinetics, Safety, and Tolerability of Lumacaftor in Combination with Ivacaftor in Subjects 6 Through 11 Years of Age With Cystic Fibrosis, Homozygous for the F508del-CFTR Mutation. Principal Investigator: M Solomon. Collaborators(s): F Ratjen. Vertex Pharmaceuticals. $14,600.00 USD. 2015 - 2016

A Phase 3, Rollover Study to Evaluate the Safety and Efficacy of Long-term Treatment With Lumacaftor in Combination With Ivacaftor in Subjects Aged 12 Years and Older With Cystic Fibrosis, Homozygous or Heterozygous for the F508del CFTR Mutation. Principal Investigator: Ratjen. Collaborator(s): M Solomon. Vertex Pharmaceuticals. $88,116 USD. 2015 - 2016

A Phase 3, Randomized, Double blind, Placebo Controlled, Parallel Group Study to Evaluate the Efficacy and Safety of Lumacaftor Monotherapy and in Combination With Ivacaftor in Subjects Aged 12 Years and Older With Cystic Fibrosis, Homozygous for the F508del CFTR Mutation. Ratjen, F, Solomon, M. Vertex Pharmaceuticals. $104,910 USD. 2013-2014

A Phase 3, Randomized, Double-blind, Placebo-Controlled, Parallel-Group Study to Evaluate the Efficacy and Safety of Lumacaftor Monotherapy and in combination with Ivacaftor in subjects aged 12 years and older with cystic fibrosis, homozygous for the F508del-CFTR mutation. Ratjen, F. Vertex Pharmaceuticals Inc. Per patient $14,426 (Currency?). 2013 – 2014

A Phase 3, Randomized, Double-blind, Placebo-Controlled, Parallel-Group Study to Evaluate the Efficacy and Safety of Lumacaftor Monotherapy and in combination with Ivacaftor in subjects aged 12 years and older with cystic fibrosis, homozygous for the F508del-CFTR mutation. Ratjen, F. Vertex Pharmaceuticals Inc. Per patient $14,426 (Currency?). 2013 – 2014

A Phase 3 Efficacy and Safety Study of Ataluren (PTC124) in Patients with Nonsense Mutation Cystic Fibrosis. Site Principal Investigator: Ratjen F. PTC Therapeutics, Inc. $20,583.00 fixed cost (Currency?), $10,965.00 per patient. 2014 – 2016
A pilot study testing the effect of ivacaftor on lung function in subjects with cystic fibrosis, residual CFTR function and FEV1 >=40% predicted, VX12-770-113. Principal Investigator: Ratjen F. **Vertex Pharmaceuticals.** $23,886.00 USD. 2014 – 2015

A Randomized Controlled Trial of Inhaled Hypertonic Saline (7%) to evaluate the lung clearance index as a short-term pharmacodynamic biomarker in patients with cystic fibrosis. Ratjen F. **Novartis Pharmaceuticals Inc.** $158,700 CAD. 2011 – 2015

A Randomized, double-blind, placebo-controlled parallel-group trial to confirm the efficacy after 12 weeks and the safety of tiotropim 5 μg administered once daily via the Respimat® device in patients with cystic fibrosis. Principal Investigator: F. Ratjen. Collaborator(s): M. Solomon. **Boehringer - Ingelheim.** $45,023.01 CAD. 2011-2015


A Randomized, Multicenter, double-blind, placebo-controlled, crossover trial determining the efficacy of dry powder Mannitol in improving lung function in subjects with Cystic Fibrosis aged six to seventeen years. Grasemann, H. **Pharmaxis.** $52,640 CAD. 2014-2015

Arginase inhibition to augment nitric oxide production in cystic fibrosis. Grasemann, H. **Cystic Fibrosis Canada.** $235,468 CAD. 2013-2016


Canadian Birth Cohort: Indoor Air and the Development of Asthma and Allergy (CHILD Study). Sears, M, Subbarao, P, Becker, A, Mandhane, P, Turvey, S. **AllerGen Networks of Centres of Excellence (NCE) Inc.** 3239416011. $4,000,000 CAD. 2012-2019

Cesarean section: impact on infant gut microbiota, childhood obesity and allergic disease. Principal Investigator: Anita Kozyrskyj, Co-Investigator: Subbarao P. **Canadian Institutes of Health Research.** $100,000 CAD. 2014-2015

Clinical and Economic Burden of Illness Study of Cystic Fibrosis Patients Homozygous for F508del Mutation Site Principal Investigator: Ratjen F. **Vertex Pharmaceuticals.** $40,000 USD. 2014 – 2015

Early signs of efficacy study with BAY63-2521 in adult homozygous DF508 Cystic Fibrosis patients. Site Principal Investigator: Ratjen F. **Bayer Pharma.** $33,766.40 (Currency?). 2014 – 2015

Emerging Team Grant in Cystic Fibrosis Therapy. Ratjen F, Grasemann H, Gonska T, Rotin D, Ellis J, Bear C. **Canadian Institutes of Health Research.** $2,401,449 CAD. 2009 – 2014

Emerging Team Grant in Cystic Fibrosis. Ratjen F. **Canadian Cystic Fibrosis Foundation (CCFF).** $50,0000 Currency?. 2009 – 2014

Enhancing CD8 T Cell Responses to RSV (Respiratory Syncytial Virus). Moraes,T. CIHR/ **The Hospital for Sick Children Research Institute.** $300,000 CAD. 2011 –2015


Exome Sequencing in Primary Ciliary Dyskinesia. Principal Investigator: Dell S, Hall D, Kim R. **McLaughlin Centre, University of Toronto, Accelerator Grant in Genomic Medicine.** $30,000 CAD. 2012 - 2014


Interpleural DNase and tissue plasminogen activator in pediatric empyema (DPTA trial). Cohen, E, Thorpe, K, Ratjen, F, Mahani, M, Mahant, S, MacLusky, I, Hoch, J, Connolly, B. **Canadian Institutes of Health Research.** $315,121 Currency?. 2012 - 2015


Long-Term Survival in Childhood Solid Organ Transplants. Principal Investigator: R. Parekh. Collaborator(s): M. Solomon. **Canadian Institutes of Health Research.** $514,979 CAD. 2014-2018


Multi-center, randomized, double-blind, placebo-controlled phase 2 study to assess the safety, tolerability and early signs of efficacy of tid orally administered BAY63-2521 in adult ΔF508 homozygous Cystic Fibrosis patients (Study 17020) Principal Investigator: Ratjen F. **Bayer Pharma** $43,287.00 CAD. 2015 – 2016


Primary human nasal epithelial cell culture in CF to test for responses to CFTR modulators. Moraes,T. **Cystic Fibrosis Canada.** $15,000 CAD. 2014 – 2015

SHIP (Saline Hypertonic in Preschoolers) Study. **Cystic Fibrosis Foundation Therapeutics Inc.** Principal Investigator: Rosenfeld M, Co-Investigators: Ratjen F, Davis S. $4,455,655 USD. 2014 – 2019

Short-chain fatty acids in the cystic fibrosis lung. Grasemann, H. **SickKids CF Centre Catalyst Research Grant.** $50,000 CAD. 2014-2015

The effects of mild pulmonary exacerbations on clinical outcomes in cystic fibrosis. Principal Investigator: Ratjen F, Co-Investigator: Waters V. **Vertex Pharmaceuticals.** $83,300.00 USD. 2015 – 2016


The role of agmatine in cystic fibrosis lung disease. Grasemann, H. **The Lynne and Arnold Irwin Foundation.** $50,000 CAD. 2013-2014
Understanding the impact of maternal and infant nutrition on infant/child health. Principal Investigator: Sonia Anand, Co-Investigator: Subbarao P. Canadian Institutes of Health Research. $399,323 CAD. 2013-2018


Community Development Program: Mobilizing the healthcare community towards an integrated approach to improve patient outcomes with sleep disorders – Canadian Sleep and Circadian Network (CSCN). Canadian Institute of Health Research – ICHR Community Development Grant. $1,992,500 CAD. Award to Narang/ SickKids: $250,000 CAD. 2015 – 2020
Assessment of Cerebrovascular Abnormalities and their relationship to Neurocognitive Deficits in Obese Children with Obstructive Sleep Apnea. **Heart & Stroke Foundation of Canada Grand-Aid.** $256,118 CAD. 2015 – 2018

Assessment of Cerebrovascular abnormalities and their relationship to neurocognitive deficits in obese children with Obstructive Sleep Apnea. **SickKids Centre for Healthy Active Kids – Eat, Play Think Catalyst Grant.** $24,833 CAD. 2015 – 2016

A qualitative study to explore the barriers to positive airway pressure (PAP) therapy in children with obstructive sleep apnea. **Paediatric Consultants Partnership’s Grants for Creative Professional Activity, The Hospital for Sick Children, Toronto.** $9,926 CAD. 2015 – 2016

Incidence of Altered Craniofacial Morphology and Malocclusion in Children and Youth with Obstructive Sleep Apnea. **SickKids Foundation New Investigator Grant Award.** Huynh N, Almeida F, Reshma A. $280,000 CAD. 2013 – 2016


The Hospital for Sick Children (SickKids) and the University of Toronto Paediatric Rheumatology program has witnessed an impressive growth since its inception in 1983. It is one of the largest Paediatric Rheumatic Disease Units in North America and one of the world’s leading centres for research, patient care and training in paediatric rheumatic diseases.
The Division of Rheumatology provides comprehensive care for children with rheumatic diseases. The ambulatory clinics have approximately 5,500 patient visits per year at The Hospital for Sick. In addition to the general rheumatology clinics, there are unique multidisciplinary subspecialty clinics for children with autoinflammatory diseases, dermatomyositis, morphea, systemic juvenile idiopathic arthritis, systemic and neonatal lupus erythematosus, spondylitis, and vasculitis. 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 a 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 one of the largest paediatric rheumatology fellowship training programs in North America and is fully accredited by the Royal College of Physicians and Surgeons of Canada. This academic year, our fellows originated from Canada, India, Qatar and Israel. 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 trial designs for the study of rare diseases, outcome, prognosis and treatment studies in juvenile idiopathic arthritis, systemic lupus erythematosus, neonatal lupus, scleroderma, dermatomyositis, vasculitis and central nervous system vasculitis. Basic and translational research focuses on the immunopathogenesis of Kawasaki disease using an animal model, and the use of high throughput methods to characterize the cause and prognosis of childhood arthritis.

Our mandate is to provide excellent clinical care, undertake research studies about systemic inflammatory disorders and inflammatory diseases of the bones and joints in childhood, and train physicians to become prominent leaders in the field of Paediatric Rheumatology.

**Honors and Awards**

**Schneider, R:** Winner of the Charles Mickle Fellowship Award, Faculty of Medicine, University of Toronto, Toronto, Ontario, Canada. May 2014.

**Schneider, R:** Runner-up for the Department of Paediatrics Faculty Mentorship Award, Hospital for Sick Children, Toronto, Ontario, Canada. July 2014.

**Silverman, E:** Winner of the Excellence in Investigative Mentoring Award, American College of Rheumatology, Boston, Massachusetts, United States of America. November, 2014.
Publications


Eng SW, Duong TT, Rosenberg AM, Morris Q, Yeung RSM, REACCH OUT and BBOP Research Consortia. The Biologic Basis for Clinical Heterogeneity in Childhood Arthritis. Arthritis and Rheumatology 2014 Dec: 66(12):3463-75

Feldman BM, Pullaneyagum E. Response to ‘limits of agreement between raters are required for use of HJHS 2. 1 in clinical studies’. Haemophilia. 2015 Jan: 21(1):e71


Vitamin D deficiency is common and associated with increased C-reactive protein in children and young adults with lupus: an Atherosclerosis Prevention in Pediatric Lupus Erythematosus substudy. Lupus Science & Medicine. 2014 Apr 30: 1(1):e000011


Book Chapters


**Grants & 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 active systemic juvenile idiopathic arthritis (sJIA); with a 92-week single arm open-label extension to examine the long term use of tocilizumab, followed by a 3 year open label continuation of the study to examine the long term use of tocilizumab. Schneider, R., Silverman, E., Benseler, S., Laxer, R. **Hoffmann-La Roche Limited.** $552,992 CAD. July 8, 2008 – June 30, 2014.


An open dose escalating factor VIII prophylaxis study assessing the safety efficacy and cost-effectiveness in young patients with severe haemophilia A (Canadian haemophilia primary prophylaxis observational extension study and pharmacokinetic substudy). Blanchette, V., Feldman, B. **Bayer Canada.** $349,418 CAD. January 1, 2013 – December 31, 2015


Assessing Substance Use and Concurrent Disorders in Adolescents with Chronic Conditions. Leslie, K., Levy, D.M. **Hospital for Sick Children Paediatrics Consultants Partnerships Grant.** $5,660 CAD, November 1, 2013-November 1, 2014

Autoantibody conformational epitopes in Lupus and NLE. Hamilton, R., Deber, C., Jaeggi, E., Silverman, E.D., Gramolini, A. **Canadian Institutes of Health Research.** $926,103 CAD. April 1, 2014 – Ongoing

Better Understanding of Kawasaki Disease. Yeung, R., McRindle, B., Siminovitch, K. **Canadian Institutes of Health Research.** $792,717 CAD April 1-2011-March 31-2016

Biologic basis of heterogeneity in juvenile idiopathic arthritis. Yeung, R. **Novartis Pharmaceuticals Canada Inc.** $150,000 CAD. January 7, 2014 – January 6, 2017
Biomarker discovery and mechanisms of fetal pathology in congenital heart block. Hamilton, R., Jaeggi, E., Standberg, L., Silverman, E.D. **Canadian Institutes for Health Research.** $1,031,989 CAD. January 1, 2012 – ongoing

Biomarker discovery and targets of pathology in congenital heart block. Hamilton, R., Jaeggi, E., Silverman, E. **March of Dimes.** $482,163 CAD December 1, 2011 – November 1-2014


Chronic Childhood Vasculitis Characterizing the individual rare diseases to improve patient outcomes(Pediatric Vasculitis Initiative or PedVas). Benseler, S., Yeung, R. **University of British Columbia.** $336,040 CAD. January 31, 2012 – January 30, 2017

CIHR Doctoral Award - Improving design and analysis of longitudinal studies of prognosis in uncommon diseases. Lim, L., Feldman, B. **Canadian Institutes of Health Research.** $105,000 CAD. April 30, 2012 – April 29, 2015


Congenital Heart Block International Research Network. Hamilton, R., Jaeggi, E., Hornberger, L., Silverman, E.D. **Canadian Institutes of Health Research.** $311,172 CAD. June 1, 2012 – May 1, 2015

Creation of a Mobile Application to Support Self-Management for Adolescents with SLE. **Lupus Foundation of America.** Kaufman, M., Levy, D. $110,000 USD. June 1, 2012 – ongoing


Effects of Pubertal Hormone Changes on SLE. O’Neal, K., Levy, D.M. Indiana University. $35,000 CAD. October 1, 2012-September 1, 2015


From molecules to disease-Dissecting the mechanisms underlying tissue specific inflammation in Kawasaki Disease. Yeung, R. Arthritis Research Foundation. $83,472.20 CAD. August 31, 2013 – August 30, 2015


Kawasaki Disease National Surveillance Program. Yeung, R. Canadian Paediatric Surveillance Program. $25,000 CAD. October 1, 2013 – August 31, 2014


“Moving on”: Perspectives of young people with arthritis, their caregivers, and health care providers on transition. Luca, N., Stinson, J., Spiegel, L., Elliott, A., Johnson, N., Toupin-April, K., Johns, C., Rosettis, A., Mosher, D, Ahola Kohut, S. Canadian Institute for Outcomes in Rheumatology. $76,953 CAD. July 1, 2014 – June 30, 2016


NADPH oxidase function in the pathogenesis of pediatric IBD and JIA. Brumell, J., Muise, A., Vallance, B., Benchimol, E., Ellis, J., Parkinson, J., Yeung, R. Canadian Institutes of Health Research. $2,500,000 CAD. July 1, 2014 – June 30, 2019


Ro52 Antibody Targets with dual roles in Lupus and NLE. Hamilton, R., Silverman, E.D. Alliance for Lupus Research. $586,426 USD. June 1, 2014 – ongoing


The Department of Paediatrics Grand Rounds are held weekly and serve as the flagship academic activity for the Department of Paediatrics.


The summer Grand Rounds series, coordinated by the chief residents, allows senior trainees and subspecialty fellows to provide updates within specific specialties and sub-specialties. The sessions entitled “Daneman and Friends” continue to be a highlight of the program. For these Rounds, our Department Chair invites several staff to address a specific theme. As in past years, the Chief Resident’s Rounds, entitled “Cases from the Ward” remain extremely popular where two to three senior paediatric residents present unique cases that they have come across.

Professors’ Rounds are delivered by individuals who have been promoted to full professor in the Department of Paediatrics in the previous year. This past year Professors’ Rounds were given by Prakesh Shah, Lisa Robinson, Steve Schwartz, Meredith Irwin, Yigal Dror, Darcy Fehlings, Seema Mital, Rulan Parekh and Karen Leslie. Named lectureships continue to be an important component of the Grand Rounds program. This past year, Dr. Kenneth Jones from San Diego, “father” of the Fetal Alcohol Syndrome delivered the Harry Bain Lecture. The Robert H. A. Haslam Lecture was given by Dr. David Naylor, former Dean of the Faculty of Medicine and President of the University of Toronto, and Dr. Stephen Mittleman from the Children’s Hospital of Los Angeles gave the Daniel Burton Leukemia Lecture. Dr. Yigal Dror from the Division of Hematology and Oncology at SickKids, gave the Laski Lecture as his Professorial Grand Rounds. Dr. Susan Bennett from the University of Ottawa presented the Christine Harrison Lecture on Bioethics. Dr. Bruce Cohen from Akron gave the Adam Barsky Lecture and Dr. David Ingram from Indiana gave the Barry Smith Lecture. Dr. Glenn Regehr from the University of British Columbia gave Grand Rounds as part of this year’s Medical Education Day discussing self-assessment. We were also fortunate to be able to host many additional visitors to Grand Rounds (see Schedule).

This past year we began to live-stream the Grand Rounds to members of the Department of Paediatrics. The lectures are archived for two years thus allowing department members who might not be able to attend the “live” sessions to still benefit from the lectures.

Once again, the Department of Paediatrics Grand Rounds Committee acknowledges the tremendous help and support of a number of individuals who do the vast majority of the behind-the-scenes work. In particular we want to thank Amoye Henry for her excellent project coordination support, and Frank Ferrari and Sam Mendolia for their audio-visual expertise.
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<tr>
<th>Date</th>
<th>Speaker(s)</th>
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<tr>
<td>July 9</td>
<td>Drs. Ahmed Bamaga &amp; Maryam Nabavi Trainees, Neurology</td>
<td>Not Just A Headache: Acute Presentation of Demyelinating Syndromes in the ER</td>
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<tr>
<td>July 16</td>
<td>Drs. Liane Mclean, Hasan Merali &amp; Laura Weingarten Trainees, Emergency Medicine</td>
<td>Interesting cases from the ED</td>
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<tr>
<td>July 23</td>
<td>Drs. Sarah Kwon, Tara Mullowney &amp; Saadoun Bin-Hasan Trainees, Respiratory</td>
<td>Not so Sweet Dreams</td>
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<tr>
<td>July 30</td>
<td>Drs. Jack Brzezinski &amp; Dave Lysecki Trainees, Oncology</td>
<td>Taming the Wild Thing: How we got to Know and (often) Cure Leukemia</td>
</tr>
<tr>
<td>August 6</td>
<td>Drs. Leigh Anne Bakel &amp; Natasha Saunders Trainees, General Paediatrics</td>
<td>Pediatric Osteomyelitis: Classic Concepts and Current Conundrums</td>
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<tr>
<td>August 13</td>
<td>Drs. Zahra Atebraheem, Mariel Heller &amp; Ashley Vandermorris Trainees, Adolescent Medicine</td>
<td>Pills, Chills and Teen Thrills: Status Updates in Adolescent Health</td>
</tr>
<tr>
<td>August 20</td>
<td>Drs. Michael Bishara, Valaa Majmudar &amp; Bianca Del Pozzo-Magana Trainees, Dermatology</td>
<td>Skin: A Window into the Body</td>
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<tr>
<td>August 27</td>
<td>Drs. Andreanne Benifir &amp; Cynthia Popalis Trainees, GI</td>
<td>From Enterocyte to Hepatocyte: IBD and PSC</td>
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<tr>
<td>September 3</td>
<td>Anne-Marie Guerguerian, MD PhD Critical Care</td>
<td>Extracorporeal Membrane Oxygenation in Children</td>
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<tr>
<td>September 10</td>
<td>Daneman and Friends: Jim Dowling, MD, Neurology Theo Moraes, MD, Respiratory Medicine Aleixo Muise, MD, GI</td>
<td>How Model Systems Contribute to Knowledge/Care</td>
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<tr>
<td>September 17</td>
<td>Kenneth Lyons Jones, MD Chief of the Division of Dysmorphology/Teratology at the Department of Pediatrics University of California San Diego, California, USA</td>
<td>Harry Bain Lecture: ASD: 40 Years Later</td>
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<tr>
<td>September 24</td>
<td>Bruce H. Cohen, MD FAAN Interim Director – NeuroDevelopmental Science Center Director of Neurology Professor of Pediatrics - Northeast Ohio Medical University Akron Children's Hospital Akron, OH</td>
<td>Adam Barsky Lecture Mitochondrial Medicine: The New Frontier</td>
</tr>
<tr>
<td>October 1</td>
<td>Prakesh Shah, MSc, MBBS, MD, DCH, MRCP, FRCPC Professor, Departments of Paediatrics and Institute of HPME Mount Sinai Hospital and University of Toronto CIHR Applied Research Chair in Reproductive and Child Health Services and Policy Research Director, Canadian Neonatal Network</td>
<td>Net Worth of Networks: National and International Experience</td>
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<tr>
<td>October 8</td>
<td>Dan Hyman, MD, Chief Quality and Patient Safety Officer, Children's Hospital Colorado Associate Professor, Pediatrics, University of Colorado School of Medicine</td>
<td>We stand on Guard for hee: Targeting Zero Harm at Children’s Colorado</td>
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<tr>
<td>October 15</td>
<td>Christopher Klein, MD Directorate of Children’s Hospital and Polyclinic in children Dr. von Hauner Children’s Hospital Lindwurmstraße</td>
<td>Children with Rare Diseases of the Immune System: Therapeutic Orphans or Pioneers of Individualized Therapy?</td>
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<td>October 22</td>
<td>Wesley Burks, MD Chair, Department of Pediatrics Physician-in-Chief, North Carolina Children’s Hospital</td>
<td>Food Allergy: Why are all these Families Going Nuts?</td>
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| October 29  | Peter Rosenbaum, MD, FRCPC  
Professor of Paediatrics, McMaster University Canada  
Research Chair in Childhood Disability  
Co-Founder, CanChild Centre for Childhood Disability  
Research Editorial Board, Mac Keith Press | Childhood Disability and Chronic Impairment in the 21st Century: Can We Reframe Old Issues with New Concepts? A Call to Action! |
| November 5  | Yigal Dror MD, FRCPC  
Professor of Paediatrics Division of Hematology/Oncology  
Head, Hematology Section Director, Marrow Failure and  
Myelodysplasia Program Senior Scientist, Genetics and  
Genome Biology Program, Research Institute | **Bernard Laski Lecture:**  
Chronic Low Blood Counts in Various Pediatric Clinics Require Attention to Rarely Occurring Bone Marrow Failure Disorders |
| November 12 | Susan Bennett, MB ChB FRCP DTM&H DRCOG DCH  
Dip Pych Director Child & Youth Protection Program  
Children's Hospital of Eastern Ontario (CHEO)  
Professor Pediatrics, University of Ottawa Associate International Institute for Child Rights & Development (IICRD)  
Councillor International Society for Child Abuse & Neglect (ISPCAN) | **Christine Harrison Lecture:**  
| November 19 | Paul H. Wise, MD, MPH  
Richard E. Behrman Professor of Child Health and Society  
Professor of Pediatrics Senior Fellow, Freeman-Spogli Institute for International Studies Stanford University CHP/PCOR | EBOLA: Conflict and the Future of Child Health in Areas of Political Instability |
| November 26 | Andrew James, MD  
Neonatology, The Hospital for Sick Children and the  
Department of Paediatrics, University of Toronto  
Carolyn McGregor, PhD  
SMIEE Canada Research Chair in Health Informatics and  
Professor, Faculty of Business & Information Technology,  
University of Ontario Institute of Technology, Oshawa | **The Value Proposition for Big Data Analytics in Health Care** |
| December 3  | Drs. Anne Fuller, Sarah Lord and Claudia Garcia-Gelvez | Resident Grand Rounds: Cases from the Ward |
| December 10 | Lisa Robinson, MD, FRCPC  
Division Head, Nephrology The Hospital for Sick Children  
Senior Scientist, Cell Biology, RI Professor, Department of  
Paediatrics Faculty of Medicine, University of Toronto | Acute Kidney Injury: A New Look at an Old Problem? |
| December 17 | **Paediatric Residents**  
**Holiday Skits** |  |
| January 7   | Steve Schwartz, MD FRCP  
Professor of Paediatrics Head,  
Division of Cardiac Critical Care Medicine  
The Labatt Family Heart Centre  
Departments of Critical Care Medicine and Paediatrics,  
University of Toronto Divisions of Cardiac Critical Care  
Medicine and Cardiology | A Heart Centre Journey to Improve Outcomes in Hypoplastic Left Heart Syndrome |
| January 14  | Meredith Irwin, MD  
Associate Chair, Paediatrics (Research)  
Senior Scientist, The Research Institute  
Hospital for Sick Children  
Professor of Paediatrics, University of Toronto Canada  
Research Chair in Cancer Biology | Neuroblastoma: A Tale of Two Tumors |
| January 21  | Janet Rossant, PhD  
Senior Scientist and Chief of Research Hospital for Sick  
Children Northbridge Chair in Paediatric Research University  
Professor Department of Molecular Genetics, University of  
Toronto Peter Gilgan Centre for Research and Learning | How SickKids Research can Change the Course of Child Health Outcomes |
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<th>Date</th>
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<tr>
<td>January 28</td>
<td>Darcy Fehlings, MD MSc FRCPC Head, UofT Division of Developmental Paediatrics Bloorview Children's Hospital Foundation Chair in Developmental Paediatrics Senior Scientist, Bloorview Research Institute Physician Director, Child Development Program Holland Bloorview Kids Rehabilitation Hospital Professor of Paediatrics, University of Toronto</td>
<td>New Concepts in the Diagnosis and Treatment of Hemiplegic Cerebral Palsy</td>
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<tr>
<td>February 4</td>
<td>Seema Mital, MD, FACC, FAHA, FRCPC Professor of Paediatrics, Faculty of Medicine, University of Toronto Division of Cardiology, Hospital for Sick Children Genetics &amp; Genome Biology, Peter Gilgan Centre for Research and Learning Heart and Stroke Foundation of Ontario Chair in Cardiovascular Science</td>
<td>Pediatric Biobanking: Lessons in Research Versus Patient Autonomy</td>
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<td>February 11</td>
<td>Drs. Andrea Evans, Michael Hill and Rebecca Levy Resident Grand Rounds: Cases from the Wards</td>
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<td>February 18</td>
<td>Rulan S. Parekh MD, MS, FRCPC Professor of Pediatrics and Medicine Staff Nephrologist and Clinician Scientist, The Hospital for Sick Children and University Health Network Program Director of Nephrology and Pediatric Nephrology, University of Toronto</td>
<td>Ethnicity and Risk of Kidney Disease: Mosaic or Melting Pot?</td>
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<tr>
<td>February 25</td>
<td>H. Simon Schaaf, MBChB, MMed Paed. DCM, MD Paed Professor and Senior Specialist, Department of Paediatrics Stellenbosch University Ian Kitai, MB, BCH, FRCPC Associate Professor, Department of Pediatrics, University of Toronto Tuberculosis Specialist, Division of Infectious Diseases, Hospital for Sick Children, Toronto Pediatrician, Ajax and RVHS</td>
<td>New Threats from an Old Foe: The Challenges of Drug Resistant Tuberculosis in Children</td>
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<td>March 4</td>
<td>Glenn Regehr, PhD Professor, Department of Surgery Associate Director (Research), Centre for Health Education Scholarship, University of British Columbia</td>
<td>Medical Education Day: Self-Assessment, Self-Direction, Self-Regulation and other Myths</td>
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<tr>
<td>March 11</td>
<td>Drs. Jenny Smith and Kim Zhou Resident Grand Rounds: Cases from the Wards</td>
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<td>March 25</td>
<td>David A. Ingram, MD Hugh McK Landon Professor of Pediatrics and Biochemistry and Molecular Biology Chief Medical Executive of Pediatrics, Indiana University Health Physicians Vice Chair of Clinical Affairs, Department of Pediatrics, Indiana University, School of Medicine</td>
<td>Barry Smith Lecture: From Animal Models to Clinical Trials: Developing Novel Therapies for Patients with Neurofibromatosis Type 1</td>
</tr>
<tr>
<td>April 1</td>
<td>Ingrid Tein, BSc, MD, FRCPC Associate Professor of Pediatrics, Staff Neurologist, The Hospital for Sick Children, University of Toronto Greg Wilson, MD, FRCPC Pathologist, The Hospital for Sick Children Cynthia Hawkins, MD, PhD Pathologist, The Hospital for Sick Children</td>
<td>Annual Clinicopathological Conference: An Infant with Dysmorphism, Hypospadias, Failure to Thrive, Heart Disease and Suspected Metabolic Disease</td>
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<tr>
<td>April 8</td>
<td>David Naylor, MD Professor of Medicine and President Emeritus, University of Toronto</td>
<td>R. H. A. Haslam Lecture Epistemological Cross-Currents in Modern Medicine</td>
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<tr>
<td>April 15</td>
<td>Ron Keren, MD, MPH Vice President of Quality and Chief Quality Officer The Children’s Hospital of Philadelphia</td>
<td>Diagnostic Imaging and Antimicrobial Prophylaxis for Children Diagnosed with a UTI</td>
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<td>Date</td>
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<td>April 22</td>
<td>Felix Ratjen, MD PhD FRCPC FERS Head, Division of Respiratory Medicine</td>
<td>Healthier Children. Better outcomes: Cystic Fibrosis in the 21st century</td>
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<td>Sellers Chair of Cystic Fibrosis Professor, University of Toronto</td>
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<td>The Hospital for Sick Children</td>
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<td>April 29</td>
<td>John D. Lantos, MD Professor of Pediatrics, University of Missouri</td>
<td>Current Controversies in Paediatric Bioethics</td>
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<td>Kansas City School of Medicine Director, Children’s Mercy Bioethics Center</td>
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<tr>
<td>May 6</td>
<td>Karen Leslie MD, MEd FRCPC Professor of Paediatrics Division of Adolescent</td>
<td>Thriving in Academic Medicine: The role of Faculty Development</td>
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<td>Medicine Hospital for Sick Children Director, Centre for Faculty Development</td>
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<td>University of Toronto</td>
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<td>May 13</td>
<td>Matthew L. Warman, MD Investigator, Howard Hughes Medical Institute</td>
<td>Heritable Skeletal Fragility Disorders, New Genes, New Pathways, New</td>
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<td>Professor of Genetics and Orthopaedic Surgery, Harvard Medical</td>
<td>Therapies</td>
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<td>School Director, Orthopaedic Research Laboratories, Boston Children’s</td>
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<td>Hospital</td>
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<td>May 20</td>
<td>Sanjay Mahant, MD MSc FRCPC Division of Paediatric Medicine Hospital for</td>
<td>Excellent Clinicians: Humility over Hubris</td>
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<td>Sick Children Associate Professor, Department of Paediatrics University</td>
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<td>of Toronto</td>
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<td>May 27</td>
<td>Allison A. Eddy, MD, FRCPC Head, Department of Paediatrics, University of</td>
<td>Science and Chronic Kidney Disease: Adventures, Discoveries And Life</td>
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<td>British Columbia Chief of Paediatric Medicine, BC Children’s Hospital</td>
<td>Lessons.</td>
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<td>June 3</td>
<td>Tim Keiffer, PhD Professor, Cellular &amp; Physiological Sciences and Surgery</td>
<td>Cell-Based Insulin Replacement for Diabetes*</td>
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<td>University of British Columbia</td>
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<td>June 10</td>
<td><strong>Department of Paediatrics</strong></td>
<td><strong>Awards Day</strong></td>
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<td>June 17</td>
<td>Steven Mittelman, MD, PhD Children’s Hospital of Los Angeles Department</td>
<td>Daniel Burton Lecture: Obesity and Cancer: Lessons from Childhood</td>
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<td>of Endocrinology Assistant Professor of Pediatrics and Physiology &amp;</td>
<td>Leukemia</td>
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<td>Biophysics</td>
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The Department of Paediatrics is committed to providing the best possible training to future paediatricians. This report serves to recognize the excellence and dedication of our faculty teachers, educators and education leaders in realizing this goal. It celebrates their achievements and outlines promising new directions for research, innovation, teaching and development in medical education. Our educational story is one of constant renewal and growth. Ongoing work by educators address gaps and maximize on the opportunities for learning offered to students and trainees. Our educational leaders and their committees ensure that our training programs incorporate the most effective clinical practices and that our graduating physicians are competent and committed to clinical excellence.

This year we highlight the innovations in our Continuing Education (CE) portfolio led by Dr. Mark Feldman and coordinated by Ms. Michelle Wan. The importance of keeping current in health professions is undisputed. We have a robust offering of CE initiatives designed to meet the needs of our hospital and community paediatricians, the largest being the Paediatric Update Conference (see CE report for details). Traditional medical conferences with lecture-based learning are a dominant source of CE for physicians, despite evidence suggesting other modalities may be more effective. Currently best practices in educational theory suggest incorporating assessment and feedback to enhance learning. In 2014, test enhanced learning was also mandated as a CE requirement for RCPSC recertification. Testing after learning is often called test-enhanced learning (TEL) which can lead to overall increases in knowledge retention and transfer. Testing also changes how individuals learn – especially if it is provided prior to learning. Test-potentiated learning (TPL) refers to pre-testing that effectively enhances a subsequent learning opportunity perhaps by identifying knowledge gaps and promoting self-regulation behaviours such as reflection, strategic studying or learning and metacognition. There are very few applications of TEL or TPL in CE contexts.

Our CE program has begun introducing testing and feedback at the Paediatric Update Conference. Consistent with our scholarly approach to program development and educational innovation, Dr. Feldman assembled a research team to study when and how testing and feedback should be delivered in order to maximize the learning opportunities of Paediatric
Update participants. The team was recently awarded a grant from the University of Toronto, Faculty of Medicine Educational Development Fund to: a) compare the knowledge retention among conference participants randomized to complete the test-potentiated learning (TPL) and test-enhanced learning (TEL) package as compared to conference participants randomized to simply attend the conference; and b) assessing the efficiency of the TPL and TEL package by measuring cost, satisfaction, self-reported changes in learning behaviour, and completion rates. They hypothesize that the pre-workshop and post-workshop MCQ testing at the Paediatric Update will efficiently enhance knowledge retention as compared to workshop attendance without testing.

We look forward to the results of their study which promise to take our CE programming to the next level and which will undoubtedly contribute to the education field's understanding of how testing and feedback impacts learning.

Rayfel Schneider,
Professor of Paediatrics
Associate Chair, Medical Education
The Medical Education enterprise includes the Undergraduate, Postgraduate and Continuing Education portfolios and the offices of Faculty Development and Medical Education Scholarship. Educational activities in the Department of Paediatrics are led by Dr. Rayfel Schneider, the Associate Chair (Education) and the Medical Education Advisory Committee (MEAC). The MEAC works to enhance excellence in teaching and education and increase the recognition of the educational achievement of trainees and faculty. It also serves to foster collaborations and networks with other groups interested in education and to provide advice and guidance to the Chair with regard to educational priorities.

The Department supports faculty in a number of ways to enhance their career development as teachers and clinician educators. Details of all the activities of all the education portfolios and the educational accomplishments of faculty and trainees are provided in the body of the report.
Educational Administrative Staff:
Mary Antonopoulos, Undergraduate Education
Joanna Barnes, Undergraduate Education
Margarita Komarova, Undergraduate Education
Susan Jenkins, Administrative Supervisor
Sandra Layno, Postgraduate Education
Josefina Bento, Postgraduate Education
Michelle Wan, Continuing Medical Education
Clare Schlesinger, Faculty Development & Medical Education Scholarship

Education Scientists:
Tina Martimianakis, PhD,
Department of Paediatrics
Maria Mylopoulos, PhD, Learning Institute
Catharine Walsh, MD, FRCPC, PhD,
Learning Institute

Education Evaluator:
Kathryn Parker, PhD, Holland-Bloorview Hospital and Department of Paediatrics

Faculty pursuing formal training in education 2014-2015:
Michaela Cada (Education Scholars Program)
Emma Cory (Education Scholars Program)
Katherine Hick (Education Scholars Program)
Angela Orsino (Education Scholars Program)
Angela Punnett (Masters in Education)
Faisal Kordy (Stepping stones)
Gordon Soon (Stepping stones)
Melanie-Ann Kirby-Allen (Stepping stones)
Jennifer Young (Stepping stones)
Dror Koltin (Stepping stones)
Leanne Shamrakov (Stepping stones)
Sharon Naymark (Stepping stones)
Sherri Baine (Stepping stones)
Jordan Carr (Stepping stones)

Trainees pursuing formal training in education 2014-2015:
Mohammad Zubairi, (Masters in Education)

Faculty completed formal training in education 2014-2015:
Rudaina Banihani (Stepping Stones)
Dror Koltin (Stepping Stones)
Jennifer Young (Stepping Stones)

Trainees who completed formal training in education 2014-2015:
Yousef Etoom (Stepping Stones)
Julie Johnstone (Masters in Education)
Catherine Walsh (PhD in Education)
EDUCATIONAL TRAINING IN THE DEPARTMENT OF PAEDIATRICS

UNDERGRADUATE EDUCATION

Director
Dr. Angela Punnett

Educational Program Coordinators
Mary Antonopoulo
Margarita Komarova (maternity leave coverage March 2014 to March 2015)
Joanna Barnes (returned March 2015)

Members of the Pediatric Undergraduate Education Committee (PUGMEC):
Dr. Hosanna Au, Dr. Nirit Bernhard, Dr. Zia Bismilla, Dr. Mark Feldman, Dr. Emer Finan, Dr. Claudio Fregonas, Dr. Claire Hutchinson, Dr. Sheila Jacobson, Dr. Miriam Kaufman, Dr. Angela Punnett, Dr. Seetha Radhakrishnan, Dr. Shawa Silver, Dr. Susanna Talarico, Dr. Talya Wise, Dr. Jennifer Young, Dr. Angela Orsino (Holland-Bloorview), Dr. Dror Koltin (THP-CVH), Dr. Katarzyna Gwiazda (THP-MH), Dr. Gagandeep Sand (Brampton), Dr. Anna Selliah (WOHC), Dr. Clare Hutchinson (NYGH), Dr. Janet Sauderson (TEGH), Dr. Sohail Cheema (SMH), Dr. Sharon Naymark (SJHC), Dr. Raymond Shu (SGH- Birchmount), Dr. Peter Azzopardi (SGH-General), Dr. Jeff Weisbrot (YCH), Dr. Joseph Porepa (HRRH), Dr. Yehuda Mozes (RVCH), U of T medical students: Shara Nauth & Vanessa Zannella (1T4); Bradley Kaplansky & Leah Smith (1T5), Chief Pediatric Residents: Jennifer Smith & Kim Zhou

Highlights from 2014-2015

SickKids hosted the 4th annual Paediatric Undergraduate Program Directors of Canada (PUPDOC) in the Fall of 2014. The Directors have launched their website and national curriculum with supporting educational materials at www.pupdoco.ca. This is a great resource for educators and students. The Longitudinal Integrated Clerkship (LInC) pilot completed its first year and was a resounding success for all involved. The program is expanding to include students at 3 academies in the next academic year and we would like to extend our thank you to our local and community faculty for supervising students in this new model. Curriculum renewal planning is underway for preclerkship at the University of Toronto with a similarly more integrated learning model and earlier introduction to clinical medicine. Exciting times ahead!

We have a few personnel changes over in the past year. We thank Margarita for assuming the Pre-Clerkship Coordinator role and welcome back Joanna from maternity leave. Paediatricians continue to take on major leadership positions at the University with Hosanna Au as Unit Director for Paediatrics in the new Foundation Curriculum, Susanna Talarico as Associate Course Director of the Portfolio Course, Clare Hutchinson as LInC Director for NYGH, and Seetha Radhakrishnan as Course Co-Director of the Transition to Residency Program (TTR). The
Arts and Science of Clinical Medicine (ASCM2) second year course sadly says goodbye to our long-time Director, Sheila Jacobson. Her dedication to this program has been outstanding and this course continues to be one of the most highly rated clinical courses in preclerkship. We welcome Julie Johnstone as the new Course Director and look forward to working with her as the course evolves within the Foundations curriculum.

Congratulations to the teaching award winners this year with very special mention of Stacey Bernstein, winner of the national CAME award:

**Susanna Talarico**  
R.H.A. Haslam Preclerkship Teaching Award

**Shawna Silver**  
Lionel Weinstein Clerkship Teaching Award

**Nick Blanchette**  
Community Paediatrics Clerkship Teaching Award

**Sheila Jacobson**  
Special Acknowledgement - Excellence in Leadership Award (faculty coordinator for ASCM2 for 18 Years)

**Stacey Bernstein**  
2015 CAME/ACEM Certificate of Merit Award

**Julie Johnstone**  
2015 Robert Maudsley Fellowship for Studies in Medical Education

**Eddy Lau**  
Integrated Medical Education (IME) Excellence in Community-Based Clinical Teaching Award

**Yehuda Nofech-Mozes**  
Special Commendation for the Integrated Medical Education (IME) Excellence in Community-Based Clinical Teaching award

**Preclerkship**

First year students continue to enjoy the Paediatric Longitudinal Experience (PedLE) and PedLE-R programs wherein students shadow faculty or residents for four half days in the late winter. We had a record of 35 residents participate in the PedLE-R program this year and Danielle Weidman presented our initial evaluation of the program at COMSEP and Research day this past spring. Our office continues to host the summer research and clinical programs - PeRCS (7 students) and SPReSS (8 students). The student presentations at the end of the summer sessions were outstanding. Thank you to participating faculty for providing wonderful mentorship and role modelling. Thank you also to our staff leaders Binita Kamath & Seetha Radhakrishnan (PeRCS) and Susanna Talarico (SPRes) for coordinating these highly successful research programs.

Second year medical students learn general paediatrics primarily during 3 weeks of their MMMD course at UofT, managed by Hosanna Au. Many faculty and residents contribute to lectures, seminars and PBL during this course and the various subspecialty weeks that follow. The feedback from students has been very appreciative.
**Clerkship**

The 6-week core clerkship program involves at least 250 teachers across 12 sites and is overseen by a dedicated undergraduate committee. The Mississauga campus graduated its first class with convocation in May and continues to expand local capacity for teaching students. Paediatrics continues to offer a wide and ever increasing selection of highly sought after electives and selectives (TTR placements) with over 600 students participating. With ongoing involvement in IOSCE exam development and administration, the Portfolio course and the LMCC preparation course FUSION, Paediatrics faculty are critical not only to the Paediatrics clerkship program locally but the greater student experience at the University level.

Returning to Convocation Hall is always fun and we enjoy celebrating with the students as they move on to the next part of their careers. Congratulations to the following winners for their Awards in Paediatrics:

**Pamela Newman**  
(Dr. Roy Simpson Scholarship in Paediatrics)

**Julia DiLabio**  
(Dr. Yumin Li Access to Excellence in Paediatrics Award)

**Shama Sud**  
(Dr. Yumin Li Access to Excellence in Paediatrics Research Award)

**Esther Rosenthal**  
(Dr. Carl Witus Prize in Paediatrics)

The final word must go to our teachers - you are the heart of this education program and your commitment to and enthusiasm for education is an inspiration to our students and our community. Thank you for all that you do.

**Postgraduate Education**

**Director**  
Dr. Adelle Atkinson

**Educational Administrative Staff**  
Sandra Layno  
Jennifer Bowden/Melissa Stewart  
(Jennifer left in November)

**Members of the Postgraduate Education Committee:**  
Dr. Adelle Atkinson, Dr. Ann Jefferies, Dr. Eudice Goldberg, Dr. Eddy Lau, Dr. Lillian Sung, Dr. Michelle Shouldice, Dr. Melinda Solomon, Dr. Elizabeth Jimenez, Dr. Hilary Whyte, Dr. Jeff Kobayashi, Dr. Melanie Colpitts, Dr. Moshi Ipp, Dr. Clare Hutchinson, Dr. Silvio Gonzalez, Dr. Ra Han, Dr. Shawna Silver, Dr. Erica Burry, Dr. Soumitra Tole, Dr. Jennifer Smith, Dr. Kim Zhou, Dr. Michael Hill, Dr. Andrew Helmers, Dr. Mallory Downie, Dr. Brie Yama, Dr. Carol Lam, Dr. Elizaveta Limenis, Dr. Suparna Sharma, Dr. Katherine Hick, Dr. Susanna Talarico

**TOTAL NUMBER OF CORE PAEDIATRIC RESIDENTS 2014-2015**

<table>
<thead>
<tr>
<th>PGY1</th>
<th>PGY2</th>
<th>PGY3</th>
<th>PGY4</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>22</td>
<td>21</td>
<td>9</td>
<td>76</td>
</tr>
</tbody>
</table>
Highlights from 2014-2015

Postgraduate teaching in Paediatrics is decentralized with more than 10 sites involved in delivering our curriculum. The Core Residency Training Program trains individuals from around the world with a variety of backgrounds and training, making the program a rich environment to acquire the knowledge and skills essential to the practice of Paediatrics.

The core program continues to be the largest training program in Canada with unparalleled resources both in depth and breadth of patient problems as well as an outstanding teaching and research faculty. It has full approval as an accredited Royal College training program and attracts the most sought after candidates in the country. Applicant numbers continue to increase yearly (despite no change in medical school graduate numbers), including international medical graduates (Canadians who studied outside North America and new immigrants to Canada). The program is rich with diversity of educational and experiential backgrounds.

The success of the core training program is largely due to faculty engagement in the process and a robust program assessment strategy. A very active Residency Program Committee oversees the administration and running of the training program, and a variety of subcommittees exist to ensure that each part of the program (resident selection, international resident selection, academic curriculum, evaluation, research, mentoring, wellness, advocacy etc.) are delivered in an evidence-informed 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 priorities, best practices in teaching and assessment and the changing landscape of our community. This year we continue to enjoy a significant amount of Distributed Medical Education which the residents have embraced.

Resident scholarship continues to be of a high standard. All residents are engaged in scholarly activities on topics related to clinical research, education, patient safety, quality assurance and patient advocacy. Our Residency Scholarship Oversight Committee, continues to provide resources and guidance to the residents under the leadership of Dr. Hans Hitzler and Dr. Binita Kamath, and the engagement of multiple faculty across the organization who continue to mentor and supervise resident scholarly projects.

Some of our projects are initiated and led by our trainees and others by our teachers and educators. Some of the scholarly activities explore aspects of our programming and aim to improve our curriculum and teaching. Some exciting initiatives include: looking at how residents think about assessment, and perceptions of wellness and work-life balance.

A primary focus for the program continues to be enhancing the teaching and evaluation of the CanMEDS roles. There is a robust CanMEDS curriculum within the academic ½ day, which covers a wide variety of topics and a CanMEDS OSCE offered each spring with almost 100 trainees taking part. Over the last few years, real time feedback during the OSCE was introduced with tremendous success. The program is
starting to think forward to the new CanMEDS 2015 guidelines as well as Competency Based assessment and the development of milestones and entrusted professional activities. The timeline for the beginning of this transition to Competency By Design (CBD) is the fall of 2016. It is an exciting time in postgraduate medical education as we move towards a new model of ensuring competence, along the continuum through robust observational data and assessment.

Advocacy and social paediatrics continue to be a significant area of focus of the program. There are currently a number of major advocacy projects underway under the leadership of the resident advocacy group. In addition to the Gosford Park Public School, our residents are very involved with the Rosedale Heights Secondary School and Firgrove Primary school in the Jane and Finch neighbourhood. All of these schools have at risk children and youth, and have found this collaboration beneficial for both the children and their parents. Other advocacy projects include clothing drives, The POP Clinics (a paediatric consultation clinic for uninsured children) and newsletters for inpatients as examples. Residents have been involved at the ground level in implementing these projects in a scholarly way.

The postgraduate program will soon be gearing up for another round of CaRMS resident selection, again expecting an increase in applicants. The MD/PhD program stream through CaRMS strives to attract candidates who are interested in a research career and will involve intensive research support throughout the training program.
## SUBSPECIALTY EDUCATION

**Chair: Dr. Rayfel Schneider; Educational Administrative Staff: Sue Jenkins**

<table>
<thead>
<tr>
<th>Program</th>
<th>Program Director</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent Medicine*</td>
<td>Katherine Hick¹</td>
</tr>
<tr>
<td>Cardiology*</td>
<td>Jennifer Russell²</td>
</tr>
<tr>
<td>Clinical Genetics*</td>
<td>Roberto Mendoza¹, Melissa Carter¹</td>
</tr>
<tr>
<td>Clinical Pharmacology*</td>
<td>Irena Nulman¹</td>
</tr>
<tr>
<td>Developmental Paediatrics*</td>
<td>Anne Kawamura¹</td>
</tr>
<tr>
<td>Emergency Medicine*</td>
<td>Suzanne Beno¹, Tania Principi¹</td>
</tr>
<tr>
<td>Endocrinology*</td>
<td>Diane Wherrett¹</td>
</tr>
<tr>
<td>Gastroenterology/Hepatology/Nutrition*</td>
<td>Simon Ling¹, Yaron Avitzur¹</td>
</tr>
<tr>
<td>Haematology/Oncology*</td>
<td>Michaela Cada¹, Angela Punnett¹, Ahmed Naqvi</td>
</tr>
<tr>
<td>Immunology/Allergy*</td>
<td>Eyal Grunebaum¹</td>
</tr>
<tr>
<td>Infectious Diseases*</td>
<td>Anu Wadhwa¹</td>
</tr>
<tr>
<td>Neonatology*</td>
<td>Emer Finan¹, Martin Skidmore¹</td>
</tr>
<tr>
<td>Nephrology*</td>
<td>Rulan Parekh¹</td>
</tr>
<tr>
<td>Neurology*</td>
<td>Ann Yeh¹</td>
</tr>
<tr>
<td>Paediatric Medicine</td>
<td>Michelle Shouldice¹</td>
</tr>
<tr>
<td>1. Academic Paediatric Medicine</td>
<td>Michelle Shouldice¹, Sarah Schwartz</td>
</tr>
<tr>
<td>2. Paediatric Dermatology</td>
<td>Miriam Weinstein, Elena Pope</td>
</tr>
<tr>
<td>3. Academic Child Abuse Paediatrics</td>
<td>Michelle Shouldice¹</td>
</tr>
<tr>
<td>4. Community Paediatric</td>
<td>Mark Feldman</td>
</tr>
<tr>
<td>5. Paediatric Hospital/Inpatient Medicine</td>
<td>Michael Weinstein</td>
</tr>
<tr>
<td>6. Palliative Care</td>
<td>Adam Rapoport</td>
</tr>
<tr>
<td>Respiratory Medicine*</td>
<td>Melinda Solomon¹</td>
</tr>
<tr>
<td>Rheumatology*</td>
<td>Shirley Tse¹</td>
</tr>
</tbody>
</table>

¹ Member of Subspecialty Program Directors Committee
*R Royal College Program

## TOTAL NUMBER OF POSTGRADUATE TRAINEES

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Subspecialty Residents</td>
<td>88</td>
</tr>
<tr>
<td>Number of Clinical Fellows</td>
<td>217</td>
</tr>
<tr>
<td>Number of Research Fellows</td>
<td>23</td>
</tr>
<tr>
<td>Number of Core Paediatric Residents</td>
<td>76</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>396</strong></td>
</tr>
</tbody>
</table>
There are 16 Royal College accredited programs in the Department of Paediatrics and all have full approval status following the Royal College Accreditation Review at the University of Toronto in 2013. The Program Directors meet on a regular basis to discuss their programs and consider ways to better support fellowship training. There are also clinical fellowships in Academic Paediatric Medicine, Community Paediatrics, Suspected Child Abuse Network (SCAN) and Dermatology. Child Maltreatment has been approved by the Royal College as an Area of Focused Competence (AFC) Program.

This year, our Royal College-accredited programs participated in the national subspecialty paediatrics match, attracting candidates from across the country. In addition, the subspecialty programs continued to attract excellent applicants from around the world. A total of 30 trainees matched to our subspecialty programs, attracting residents from 11 university programs across Canada and two trainees from United States Medical Schools. In addition, 6 positions were allocated to highly competitive international trainees to begin core training in Paediatric subspecialties.

**Members of Continuing Education Committee**
Mark Feldman (Chair), Andreea Dragulescu, Trey Coffey, Bonnie Fleming-Carroll, Eyal Grunebaum, Andrew James, Morton Goldbach, Saul Greenberg, Ian Kitai, Karen Leslie, Golda Milo Manson, Mark Palmert, Angela Punnett, Suzan Schneeweiss, Gordon Soon, Melinda Solomon, Margaret Thompson, Michael Weinstein, Shelly Weiss

**Highlights from 2014-2015**

The overall goals of the Department of Paediatric’s Continuing Education (CE) are to provide high quality continuing education courses and conferences locally, nationally and internationally, utilizing best practice educational strategies and tools. The CE program promotes and recognizes excellence in continuing education and strives to enhance CE programs with the utilization of new technologies. It has developed a collaborative network in CE to promote scholarship in CE and best practice in continuing education. The program researches the effectiveness of our CE strategies and disseminates findings through publication and presentation to enhance CE efforts locally, nationally and internationally. The program has a number of important collaborations in place. First it collaborates with the Royal College of Physicians and Surgeons of Canada to promote meaningful lifelong learning opportunities and strategies for the Maintenance of Certification. It also collaborates with quality improvement experts to identify and address needed changes in both knowledge and practice and to promote quality improvement in continuing education by providing ongoing feedback and evaluation of programs.
Our Continuing Education Committee (CEC), led by Mark Feldman, is comprised of both academic and community-based health care professionals. The CEC develops and supports a breadth of programming. The committee adjudicates the Department of Paediatrics Continuing Education Award, which was won this past year by an unprecedented FOUR of our outstanding nominees:

**Dr. Joey Bonifacio**  
Winner, Category ‘Teaching Excellence at a CE event’

**Dr. Jason Fischer**  
Winner, Category ‘CE Course Coordination’

**Dr. Melanie Kirby**  
Winner, Category ‘Long-term contribution to CE’

**Dr. Sabine George**  
Winner, ‘Long-term Course Planning’

Our flagship departmental CE event, Paediatric Update April 29-May 2, 2015, reached new heights as the already largest paediatric CE event led by a department of paediatrics in Canada with a record attendance of 309 attendees over the 4 days. This year, Sixty four (64) faculty and Sickkids staff participated in the delivery of the program along with 19 guest presenters. The Conference also featured a very successful Bioethics Subspecialty Day chaired by Dr. Jonathan Hellmann, which provided an opportunity to learn practical strategies for addressing ethical challenges in everyday interactions with patients and their families.

Recognizing the importance of assessment and feedback in continuing education, an innovative, electronic, pre & post conference test was first introduced at Paediatric Update 2014. The goal was to introduce self-assessment (pre-test), reflection (pre-conference) and peer assessment with feedback (post test). A minimum number (25) Category 3 credits was a very recent requirement of the RCPSC for our
maintenance of competence. For the first time at a large paediatric conference in Canada, this ‘knowledge assessment’ component qualified for RCPSC category 3 (assessment) MOC credits. This year, we expanded the MOC 3 program to double the number of course offerings from 5 in 2014 to 10 in 2015. Moreover, to the best of our knowledge, for the first time at any large national CE event, within any medical discipline, Test-Enhanced Learning will be critically evaluated in 2016 at Paediatric Update via a randomized controlled trial. This study is supported with a grant from the University of Toronto Education Fund.

Faculty members throughout the Department of Paediatrics have been very active in continuing education activities again this 2014-2015 academic year. City Wide Paediatric rounds, supervised by Dr. Mark Feldman and organized by Drs. Umberto Cellupica and Michael Peer from the Division of Paediatric Medicine, continued to be a very popular event attracting 120 community-based paediatrics per quarter.

This year, Subspecialty Leaders in CE were identified for each division (see table 1). The CE leads have helped develop and promote continuing education programming that is tailored to the needs of their respective divisions. A ‘true’ needs assessment for Paediatric Update 2015 was generated by these Divisional Leaders, allowing us to develop programming that better meets the needs of paediatricians.

Finally, many more of our divisions have been engaged in a variety of continuing education events (see table 2).

<table>
<thead>
<tr>
<th>Division</th>
<th>CE Champion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent Medicine</td>
<td>Dr. Karen Leslie</td>
</tr>
<tr>
<td>Allergy/Immunology</td>
<td>Dr. Eyal Grunebaum</td>
</tr>
<tr>
<td>Cardiology</td>
<td>Dr. Andreea Dragulescu</td>
</tr>
<tr>
<td>Clinical &amp; Metabolic Genetics</td>
<td>Dr. Roberto Mendoza</td>
</tr>
<tr>
<td>Clinical Pharmacology</td>
<td>Dr. Margaret Thompson</td>
</tr>
<tr>
<td>Developmental Paediatrics</td>
<td>Dr. Golda Milo-Manson</td>
</tr>
<tr>
<td>Emergency Medicine</td>
<td>Dr. Suzan Schneeweiss</td>
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<tr>
<td>Endocrinology</td>
<td>Dr. Mark Palmert</td>
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<tr>
<td>Gastroenterology</td>
<td>Dr. Anne Griffiths</td>
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<tr>
<td>Haematology/Oncology</td>
<td>Dr. Angela Punnett</td>
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<tr>
<td>Infectious Diseases</td>
<td>Dr. Ian Kitai</td>
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<tr>
<td>Neonatology</td>
<td>Dr. Andrew James</td>
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<tr>
<td>Nephrology</td>
<td>Dr. Damien Noone</td>
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<tr>
<td>Neurology</td>
<td>Dr. Shelly Weiss</td>
</tr>
<tr>
<td>Paediatric Medicine</td>
<td>Dr. Mark Feldman</td>
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<tr>
<td>Respirology</td>
<td>Dr. Melinda Solomon</td>
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<tr>
<td>Rheumatology</td>
<td>Dr. Gordon Soon</td>
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<tr>
<td>Division/Department</td>
<td>Course Directors</td>
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<tr>
<td><strong>Department of Paediatrics</strong></td>
<td></td>
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<tr>
<td>Dr. Rayfel Schneider</td>
<td>Annual SickKids Paediatric Research Day</td>
</tr>
<tr>
<td>Dr. Mark Feldman</td>
<td>2015 SickKids Annual Paediatric Update Conference</td>
</tr>
<tr>
<td>Dr. Shelly Weiss</td>
<td>Medical Education Day</td>
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<tr>
<td><strong>Respiratory Medicine</strong></td>
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<tr>
<td>Dr. Indra Narang</td>
<td>Paediatric Sleep Symposium</td>
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<tr>
<td><strong>Paediatric Medicine</strong></td>
<td></td>
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<tr>
<td>Drs. Umberto Cellupica, Michael Peer, March Feldman</td>
<td>City Wide Rounds</td>
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<tr>
<td>Dr. Charlotte Moore</td>
<td>Child Health and Social Policy Seminar Series</td>
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<tr>
<td>Dr. Irene Lara-Corrales</td>
<td>Autoimmune Polyendocrinopathy Syndrome Type 1</td>
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<tr>
<td><strong>Paediatric Emergency Medicine</strong></td>
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<tr>
<td>Dr. Suzan Schneeweiss</td>
<td>11th Annual Paediatric Emergency Medicine Conference</td>
</tr>
<tr>
<td>Dr. Jason Fischer</td>
<td>Paediatric Emergency Ultrasound Course</td>
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<tr>
<td>Dr. Suzan Schneeweiss</td>
<td>Paediatric Emergency Procedural Sedation Course</td>
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<tr>
<td>Dr. Olivia Ostrow</td>
<td>Advanced Paediatric Life Support Course</td>
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<tr>
<td>Division/Department</td>
<td>Course Directors</td>
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<tr>
<td></td>
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</tr>
<tr>
<td>Infectious Diseases</td>
<td>Dr. Valerie Waters</td>
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<tr>
<td></td>
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<tr>
<td>Centre for Brain and Mental Health</td>
<td>Dr. Frida Miller &amp; Dr. Tony Pignatiello</td>
</tr>
<tr>
<td></td>
<td>Dr. Elizabeth Donner</td>
</tr>
<tr>
<td>Clinical and Metabolic Genetics</td>
<td>Dr. Ronald Cohn/Adel Gilbert</td>
</tr>
<tr>
<td></td>
<td>Dr. Angela Punnett</td>
</tr>
<tr>
<td></td>
<td>Dr. Angela Punnett</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>Course Directors: Dr. Alex Muise, Dr. Anne Griffiths &amp; Dr. John Brumell</td>
</tr>
<tr>
<td>Rheumatology</td>
<td>Course Director: Dr. Brian Feldman</td>
</tr>
<tr>
<td></td>
<td>Course Director: Dr. Brian Feldman</td>
</tr>
</tbody>
</table>
The Department of Paediatrics’ mentorship program for junior faculty is ongoing. All faculty, upon their appointment to the Department, are invited to meet with Dr. Weiss, the Director of Faculty Development. In this meeting, many issues regarding orientation, academic career development and mentorship are discussed. At this meeting the junior faculty members are made aware of the resources and programs provided both by the Faculty Development Office as well as the Center for Faculty Development, U. of T. Each junior faculty is also given the opportunity to participate in the formal departmental mentorship program which involves an assigned mentor who is outside of his/her division with a similar job profile.

The Department of Paediatrics Faculty Mentorship Award was introduced in 2013 to recognize a faculty member for his or her outstanding approach to mentoring. Letters of nomination were submitted to the Faculty Development Committee and a subcommittee was appointed to review all candidates and adjudicate. Dr. Rayfel Schneider, Associate Chair of Education in the Department of Paediatrics was the recipient of the 2015 award, which was presented as part of the Department of Paediatrics’ annual awards day in June 2015. Dr. Michelle Shouldice was the first runner-up for the award.

The Faculty Development committee meets 5-6 times per year and coordinates innovative programs. An example is “Diversity Day” planned for September 2015 which will include a grand rounds presentation by Dr. Joan Reede, MD, MS, MPH, MBA, Dean for Diversity and Community Partnership at Harvard Medical School as well as workshops led by invited local speakers regarding topics related to diversity.
Another activity of the FDC is to organize medical education/career development presentations to the paediatric divisions upon request. Topics have included research methodology, mentorship, professionalism, and feedback evaluation. Five divisions have participated in the last year.

Finally, the FDC is participating in a University of Guelph research study regarding faculty wellness. To date, the qualitative study has been completed the data is being analyzed for publication and publishing.

Scholarship/Research

Director
Dr. Tina Martimianakis

Educational Administrative Staff
Clare Schlesinger

Members of the Educational Scholarship Enhancement Committee
Dr. Tina Martimianakis (Chair), Dr. Anu Wadhwa, Dr. Maria Mylopoulos, Dr. Nikki Woods, Dr. Angela Punnett, Dr. Shelly Weiss, Dr. Melinda Solomon. Dr. Catharine Walsh, Clare Schlesinger.

Highlights from 2014-2015

Administration and Coordination

The office of Medical Education Scholarship oversees activities associated with enhancing the capacity of faculty, residents and fellows to engage in educational scholarship broadly defined to include: research in education, program development, educational innovation and scholarly teaching. It also showcases the Department’s education achievement and works to identify opportunities for future growth. In addition, the office oversees the adjudication of educational granting opportunities supported through the Paediatric Consultants Fund.

Funding

Educational research and educational development are supported through two separate grant competitions offered twice a year. The grants provide up to $5000 to support 1 year projects led by members of the Department (faculty and trainees) that contribute meaningfully to the educational mission of our programs. This past year, 3 applications were successful in the Innovation and Development stream and 2 Research Grants were approved for funding with feedback on submissions following the announcement of the competition results. We also provide support and mentorship on grant development related to the Educational Development Fund, UoT competition. Proposals are submitted to an internal competition for matched funding. The ESEC committee adjudicates the proposals and provides formative feedback to the project team. Selected projects are then recommended for submission to the EDF fund competition with matched funding and a letter of support from the Associate Chair (Education).

Programming

The Office of Medical Education Scholarship continued to deliver its two-part educational series to provide opportunities for dissemination, networking and sharing of ideas on ongoing projects:
**Medical Education Scholarship Rounds**

“Moving our ideas forward”

The rounds provide a forum for faculty and trainees to share their educational research and scholarship and an opportunity to think about methodological issues. The rounds are intended to have practical application to educational work. Resources are also shared at each session to provide participants with the opportunity for future learning.

**Educational Journal Club**

“Integrating knowledge into practice”

At each session, participants are exposed to a selection of interesting articles published in the last couple of years on topics such as competency based teaching, assessment and evaluation, the hidden curriculum, professionalism, etc.

This past year, we had many invited speakers from other Departments and Universities, including two international speakers.

<table>
<thead>
<tr>
<th>Date</th>
<th>Title</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct 15</td>
<td>Globalization in medical education</td>
<td>Jannecke Frambach, Maastricht University (Joint with Wilson Centre)</td>
</tr>
<tr>
<td>Nov 19</td>
<td>Hidden Curriculum, Humanism, &amp; Professionalism</td>
<td>Justin Lam, University of Toronto</td>
</tr>
<tr>
<td>Dec 15</td>
<td>A New Frontier in the clerkship year: The longitudinal integrated clerkship at UofT</td>
<td>Stacey Bernstein, Department of Paediatrics</td>
</tr>
<tr>
<td>Jan 21</td>
<td>Simulation-based training: How can we ‘optimally’ challenge our learners</td>
<td>Catherine Walsh, Department of Paediatrics</td>
</tr>
<tr>
<td>Feb 18</td>
<td>Education can never be a bad thing...right? Reflections on the effects of policy and training interventions on Malawi’s pediatric health workforce</td>
<td>Rabia Khan &amp; Faizel Haji, Wilson Centre</td>
</tr>
<tr>
<td>April 15</td>
<td>Meanings of Fat: Obesity, Epidemics and America’s Children</td>
<td>Elise Paradis (Joint with the Centre for Healthy Active Kids), Wilson Centre</td>
</tr>
<tr>
<td>May 20</td>
<td>Global Health Medical Education: Capacity Building or Neocolonialism Revisited?</td>
<td>Julie Johnstone, Department of Paediatrics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Title</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct 2</td>
<td>Humour, the hidden curriculum, and patient care – at whos expense?</td>
<td>Justin Lam and Tina Martimianakis, Department of Paediatrics</td>
</tr>
<tr>
<td>Nov 6</td>
<td>What does it mean to become a good physician?</td>
<td>Solomon Benatar, University of Cape Town</td>
</tr>
<tr>
<td>Dec 4</td>
<td>Exploring the concept of preparing students for future learning in medical education</td>
<td>Maria Mylopoulos, Learning Institute</td>
</tr>
<tr>
<td>Feb 5</td>
<td>Applying Lessons From Cognition Across Medical Education</td>
<td>Mahan Kulasegaram, Wilson Centre</td>
</tr>
<tr>
<td>Mar 5</td>
<td>Lessons from critical race methodology</td>
<td>Malika Sharma, Wilson Centre</td>
</tr>
<tr>
<td>May 7</td>
<td>Fostering transformative learning in a social paediatric research summer studentship program (SPReSS)</td>
<td>Susanna Talarico, Department of Paediatrics</td>
</tr>
</tbody>
</table>
Publications

Our educational research and scholarship is disseminated regularly in leading clinical and educational journals. This past academic year our faculty and residents authored 32 peer reviewed publications and 2 book chapters.

Peer Reviewed Publications


Law, M; Eng, L; Fung,; Lindzon, G; McCaffrey, J; Shamji, Al; Tannenbaum, E; Yeung, E; Baker, L; Leslie, K Negotiating learner-teacher boundaries in medical education” Medical Teacher Aug 26 2014:1-2. [Epub ahead of print]


Book Chapters


Educational Funding

In the past academic year, the grant capture of our faculty, residents and fellows included 39 awards totaling $557,770.33 (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 (PC) Education Research Grants, HSC

In the 2014-2015 academic year 5 Paediatric Consultants Education 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.

PC: Education Research


PC: Education Innovation & Development


Celiac Disease and gluten-free diet teaching: Is online education effective? Walsh C, Marcon M, Vresk L. Paediatric Consultants Education Innovation and Development Grant. $5000. September 2014 – August 2015.

Education Development Fund, UofT

The EDF is a seed fund of the Faculty of Medicine designed to catalyze initiatives that immediately and directly impact University of Toronto Faculty of Medicine education and teaching programs through innovation and development. Proposals require matched funding that can come from a variety of sources such as grants, clinical departments and other. The EDF is a very competitive fund. This past academic year members of our department worked on 3 EDF funded projects:


- **Adapting theatre practice to enhance role-playing and communication skills of Occupational Therapy trainees.** Walsh C, Stier J, Nelles LJ, Carnahan H. Education Development Fund, University of Toronto. $7502.00. July 2014- June 2015.

The following two EDF proposals were awarded this past academic year, but they are not incorporated into the total number of grants received and funds applied to research in education in 2014-2015, as they will start in the next academic year:


PeRCS: The Pediatric Research and Clinical Summer (PeRCS) Program

- **Prenatal versus Postnatal Diagnosis of Congenital Heart Defects Requiring Neonatal Intervention: a Population-based Study.** Jaeggi E, Glick L. The Pediatric Research and Clinical Summer (PeRCS) Program. $3,300. June – August 2015.

- **Efficacy and Tolerability of the Ketogenic Diet for Drug Resistant Epilepsy in Children.** Donner E, Gupta J. The Pediatric Research and Clinical Summer (PeRCS) Program. $3,300. June – August 2015.

- **A Smartphone application designed for teaching emergency safety skills to neuro-typically developing children and children with autism spectrum disorders (ASD).** Huber J, Ho K. The Pediatric Research and Clinical Summer (PeRCS) Program. $3,300. June – August 2015.


Unravelling the pathomechanism of atypical hemolytic uremic syndrome. Licht C, Pang G. The Pediatric Research and Clinical Summer (PeRCS) Program. $3,300. June – August 2015.


SPReSS: The Social Pediatrics Research Summer Studentship (SPReSS) Program


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, CIHR, PSI, Royal College, among others.

Canadian Pediatric Clinician Scientist Program.
Jones NL. BC Research Institute for Children and Women's Health. $150,000 CAD. April 1 2012 - March 31 2015

Canadian Pediatric Clinician Scientist Program.
Jones NL. Manitoba Institute of Child Health. $50,000 CAD. April 1 2012 - Mar 31 2015

Canadian Pediatric Clinician Scientist Program.
Jones NL. The Hospital for Sick Children Foundation. $300,000 CAD. April 1 2012 - Mar 31 2015

CIHR Canadian Child Health Clinician Scientist Training Program. Jones NL, Stevens B, Han VKM, Lee SK, Chemtob S. Canadian Institutes of Health Research. $325,000 CAD. April 1 2012 - Mar 31 2015


Integration & Identity: Understanding the Mechanisms that Foster a Holistic Physician in Longitudinal Integrated Clerkships. Bernstein S (Co-PI), Kulasegaram K (Co-PI), Martimianakis T, Mylopoulos M, Hawa R, Hutchinson C, Weyman K, Nyhof-Young J, Graves L, Pittini R. 2015 AMS Phoenix Call to Caring Grants, Faculty of Medicine, University of Toronto. $29,500. 2015


The interaction of children’s education and health policies with the relations of children, parents, educators and health professionals: Implications for health policy, health professions education, and practice. Ng S, Phelan S., Miller F, Leslie K. **Dean’s Fund.** $20,000. 2014-2016

Uncovering and sharing evidence for compassionate care. Baker L (Co-PI), Ng St (Co-PI), Gold K, Martimianakis MA (S-INV).Associated Medical Services. $10,000. 2014-2015

**AWARDS**

**National**

Bernstein, S: Winner of 2015 National CAME/ACEM Certificate of Merit Award

**University**

Martimianakis, Maria Athina (Tina): **Wilson Centre Mentorship Award** 2013-2014, in recognition of outstanding individual mentorship in the Wilson Centre Fellowship Program.

Lau, E: Winner of the **Integrated Medical Education (IME) Award** for excellence in community-based clinical teaching, Faculty of Medicine, University of Toronto, 2015.

**Department of Paediatrics, University of Toronto**

Blanchette, N: Winner of the **Undergraduate Community Teaching Award** in recognition of excellence in the teaching of medical students within community-based hospitals and offices, June 2015.

Bonifacio, J: Winner of the **Continuing Medical Education Award** for excellence in teaching in a Department of Paediatrics/University of Toronto Continuing Education sponsored event, June 2015.

Fischer, J: Winner of the **Continuing Medical Education Award** for excellence in course coordination in a Department of Paediatrics/University of Toronto Continuing Education sponsored event, June 2015.

George, S: Winner of the **Continuing Medical Education Award** for Special Commendation for Program Planning in a Department of Paediatrics/University of Toronto Continuing Education sponsored event, June 2015.
Gordon, M: Winner of the **Postgraduate Community Teaching Award** in recognition of excellence in the teaching of paediatric residents within community-based hospitals and offices, June 2015.

Kempinska, A: Winner of the **Subspecialty Teaching Award** for commitment to excellence in teaching the subspecialty residents and clinical fellows, The Hospital for Sick Children, Toronto, June 2015.

Kirby-Allen, M: Winner of the **Continuing Medical Education Award** for excellence in long-term contribution in a Department of Paediatrics/University of Toronto Continuing Education sponsored event, June 2015.

Newman, C: Winner of the **PERLs Award (Paediatric Educational Resident Lecture Series Award)** for excellence in teaching at the Paediatric academic sessions, June 2015.

Schneider, R: Winner of the **Faculty Mentorship Award** for outstanding approach to mentoring, June 2015.

Silver, S: Winner of the **Lionel Weinstein Clerkship Teaching Award** for excellence in clerkship teaching, June 2015.


Weinstein, M: Winner of the **Marvin Gerstein Award** for excellence in teaching as nominated by core paediatric residents, June 2015.

**POWER TEACHING AWARDS**

For outstanding contributions for Postgraduate Teaching

Dr. Stacey Bernstein  
Dr. Joey Bonifacio  
Dr. Trey Coffey  
Dr. Adam Rapoport  
Dr. Lillian Sung

**Divisional/Hospital: Residents/Fellows**

**Christopher Ondaatje Award**  
To a senior resident for excellence in clinical teaching as nominated by core paediatric residents  
Dr. Soumitra Tole (PGY3)  
Dr. Jennifer Smith & Kim Zhou (PGY4)

**CanMEDS Award** – (Core Trainee)  
Dr. Shazeen Suleman

**Clinical Award – The Saunders Prize**  
Dr. Erica Burry

**Department of Paediatrics Research Day**

**Core Paediatrics**  
Winners (tie): Jennifer Tam, Peter Gill

**Basic Science – Junior Trainee**  
Winner: Michael Norris (Respiratory Medicine)

**Basic Science – Senior Trainee**  
Winner: Jack Brzezinski (Haematology/Oncology)
Clinical Science – Junior Trainee
Winner: Sarah Hampson (Endocrinology)

Clinical Science – Senior Trainee
Winner: Amy Shafey (Neonatology)

Leadership in Education Beyond
The Department of Paediatrics

Several of our faculty members currently hold key leadership positions in education beyond our department, demonstrating our growing capacity to inform educational practice more broadly.

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<tr>
<th>PAEDIATRICS FACULTY HOLDING LEADERSHIP POSITIONS OUTSIDE THE DEPARTMENT</th>
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<tr>
<td>Dr. Adelle Atkinson</td>
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<td>Dr. Hosanna Au</td>
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<td>Dr. Elly Berger</td>
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<td>Dr. Nicola Jones</td>
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<td>Dr. Jonathan Kronick</td>
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<td>Dr. Karen Leslie</td>
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<td>Dr. Tina Martimianakis</td>
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<td>Dr. Seetha Radhakrishnan</td>
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<td>Dr. Rayfel Schneider</td>
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<td>Dr. Brian Simmons</td>
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SPOTLIGHT ON PACT (PAEDIATRIC ADVANCED CARE TEAM)

The last 4 years have been marked by great change and accomplishment for the SickKids palliative care service, and its Medical Director, Adam Rapoport. Now known as the Paediatric Advanced Care Team (PACT), the team has been successfully spreading the message that palliative care seeks to do more than help patients ‘die well’; it also seeks to help them ‘live well’, every day, until the very last moment. As a result of this emphasis, and important new initiatives, PACT has experienced a 138% increase in its annual referral rate since 2010.

One of the more recent important clinical additions to the team is the Pathways Grief Support Program, consisting of our 2 Grief Support Coordinators, Lori Ives-Baine and Caroline Bennett. Pathways offers support to grieving parents and siblings, as well as our own SickKids staff, before and after a child dies. The Program has hosted multiple events, including therapeutic Family Days, coffee hours for bereaved parents to connect, mindfulness sessions for staff and families, and a hospital-wide memorial ceremony that saw nearly 200 families and staff commemorate the lives of
our recently deceased patients. Another recent clinical innovation is the PACT Community Outreach Nurse Practitioner (NP) – a pilot project between SickKids, Toronto Central CCAC and Emily’s House Children’s Hospice. Rebecca Williams, the NP filling the role, is working to build confidence and capacity among community healthcare providers caring for our patients at home at the end of life. Becca has been focusing on 3 main areas: (1) ensuring a smooth transition of care from the hospital to the community; (2) providing mentorship to community providers when challenges arise; and (3) helping families transition to Emily’s House.

Educational efforts aimed at integrating and improving palliative care services for children is an important PACT initiative. The past fiscal year saw record numbers of applicants for our 4-day course, offered biannually to clinicians and other staff working with seriously ill children. In addition, 3 PACT physicians received awards for their outstanding teaching during the 2014-2015 academic year – Dr. Kevin Weingarten was given the Academic Half-Day teaching award by the Division of Haematology/Oncology fellows; Dr. Christine Newman received the Award for Teaching Excellence for her sessions as part of the Pediatric Resident Lecture Series; and Dr. Adam Rapoport received a POWER Teacher award for his contributions to Postgraduate teaching.

PACT has also made great strides in the area of research. In the past 3 years, members of PACT have collaborated on more than $2 million worth of grants. Kim Widger, PACT Nursing Research Associate, and Dr. Adam Rapoport are co-leading a national effort to improve the quality of palliative care across Canada. Dr. Kate Nelson’s systematic review on family experiences with feeding tubes, published in Pediatrics earlier this year, has garnered a lot of attention for the new and important perspectives that will assist both clinicians and parents in their decision-making.

The 2014-2015 fiscal year has been a great one for PACT. We’ve worked with more patients and families than ever before to ensure that SickKids doesn’t just add time to a child’s life, but also life to a child’s time.
Number of new referrals during the fiscal year, April 1, 2014 to March 31, 2015:

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<th>Referrals to</th>
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<td>Referrals to PACT</td>
<td>180</td>
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<td>Referrals to Greif Support Program</td>
<td>71</td>
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<td><strong>TOTAL</strong></td>
<td><strong>251</strong></td>
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**Events held throughout the year:**

**Bereaved Family Day Event** May 10th 2014 – allows bereaved families at SickKids to connect with other families, share in your grief as a family, celebrate the memory of your child, and learn how to support your grieving children (if applicable).

**Bereaved Family Remembrance Picnic** – August 17, 2014. This will be an informal gathering for families to connect with one another. There will be a resource table and grief support coordinators who will be available to speak families. Free-flow activities for children will be facilitated by volunteers to allow parents to connect with one another.

**Hospital-Wide Family Candle Lighting Memorial Service** – November 22, 2014 - This formal event is an opportunity for bereaved families to honour the life of their child with other families. Their child’s name will be read aloud as part of the service and families will have an opportunity to participate in the rituals associated with the variety of holidays celebrated by families, and create a lasting legacy in memory of their child.

**Griever’s Tool for Mindfulness** (for families) – March 1st, 2015 -Andrew Blake, mindfulness leader, will guide bereaved families in awareness and help parents work with tools to help you in those difficult times. From the lessons in this workshop, parents are learning to be more patient and present with yourself and others, to accept what is with greater ease, and lastly to trust in the tenderness of your compassionate heart.

**Coffee Hour** – January 20, 2015 – Allows bereaved parents to connect in an informal setting. Occurs bi monthly at various coffee shop locations around the city. Grief Support Coordinators are available and bring along resources for parents

**Clinician’s Tool for Mindfulness** (for staff) – March 1st, 2015 – this session was held for caregivers also run by Andrew Blake (who did the parent one). By the end of this 3 hour session you will learn:

- the benefits & practices of mindfulness that support you in creating inner balance;
- to distinguish between healthy and unhealthy empathy;
- the role of mindfulness & compassion in sustaining your well-being; and how the power of “pausing” and “presence,” effects both you and your patients

**Pediatric Hospice Palliative Care Course** – This course is a four (4) day workshop designed for all professionals and volunteers who work with dying children and their families in hospitals or in the community. –May 12, 13, 26 & 27, 2014 and September 23, 30, October 7 and 14, 2014