

RAPPORT

SCHULICH SCHOOL OF MEDICINE & DENTISTRY
WESTERN UNIVERSITY / ALUMNI MAGAZINE / 2013

THE TIE THAT BINDS

Recent grad Dr. Michael Verbora, MD '13
and his fellow students are bound by
a desire to bring positive change to
their communities

SETTING THE STAGE FOR THE FUTURE

EMPOWERING RESEARCH

UNLOCKING THE MYSTERIES OF ALS



Schulich
MEDICINE & DENTISTRY



Western



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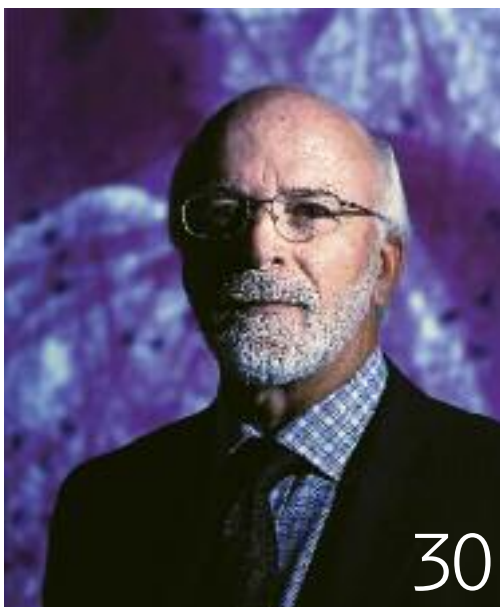
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SCHULICH MEDICINE & DENTISTRY

The Schulich School of Medicine & Dentistry is focused on research and education programs to shape the future of health care in Canada and around the world. With its flagship programs in dentistry and medicine and its world class research investigators and teams, including those at Roberts Research Institute, the School brings innovation every day to patient care, medical knowledge, health education and health policy.

RAPPORT

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DEAN'S MESSAGE



In any given year, the first six months stand out as a time of celebration for faculty, students and alumni. It's when we receive word of many external honours and University-wide recognitions, when we celebrate convocation, and when we announce the recipients of our Alumni of Distinction awards.

These pride-filled moments serve as headlines of much deeper and richer stories, often decades in the making. They are stories about the tireless commitment of individuals who are dedicated to enriching the education of our students, who are committed to new discovery and research, and who are intimately involved in community development.

They are also the stories of alumni such as Douglas Bocking, MD '43 and James Jean, DDS '73 who have carried with them the deep rooted values of our School and continue to live them while contributing back to the University and their communities.

This past year our school was once again honoured as recipient of a 3M Teaching Fellowship. Dr. Mark Goldszmidt received this award, the country's highest teaching honour. Dr. Goldszmidt is committed to providing the finest learning experience for his students while conducting research to understand how health care professionals can work better together. Meanwhile, Dr. Anita Woods received two teaching awards recognizing her unique abilities to use the latest social media techniques in her lectures.

We are inspired by their efforts. Their commitment enriches their individual programs and helps to advance our School's priority to become a destination of choice for exceptional education and learning.

On the heels of these announcements we learned Dr. Jane Rylett had been honoured as a Distinguished University Professor and Drs. Graeme Hunter and Marco Prado were recognized as faculty scholars. Dr. Rylett's leadership as a teacher, researcher and administrator throughout the past three decades has helped shape our School. Her efforts are buoyed by those of Drs. Hunter and Prado, both of whom have made outstanding contributions to their own areas of research.

The education programs at our School go beyond the classroom, lab and clinic. They often take place in the community, focusing on less fortunate and marginalized populations.

There is no shortage of examples of these acts of social responsibility and Dr. David Cechetto, who has spent nearly a decade working with health care leaders in Rwanda, stands as one of the finest. This year, he was honoured with Western's Humanitarian Award. Our School's commitment to global social responsibility is very important to me and I am pleased to see how our students are inspired by this work and share this value, living it throughout their journey with us and beyond.

Fittingly, convocation marks the conclusion of these celebrations. The events provide us with moments to reflect on our students' achievements; and as they conclude, our minds turn back to our role as educators and mentors.

Expanding and strengthening our education programs is never-ending. From our renowned distributed medical education network supported through the efforts of preceptors such as Dr. Patricia Nasco, to innovative courses such as *Key Topics in Family Medicine* and the development of new graduate programs; we are committed to arming our students with all they need to be successful leaders.

This edition of *Rapport* shares stories of our outstanding faculty, students and alumni, and the tremendous work they do in concert with the School as we strive to achieve our vision to become a global leader in optimizing life-long health.

A stylized, handwritten signature in black ink, appearing to read 'Michael J. Strong'.

Dr. Michael J. Strong
Dean, Schulich School of Medicine & Dentistry
Interim Director, Robarts Research Institute

CHECK-UP



Dr. Lisa Fischer speaking at See The Line

See the Line—international and local experts focused on sport concussion headline Symposium

■ Schulich Medicine & Dentistry hosted the See the Line Concussion Research and Awareness Education and Community Information Symposium in August at Western University. With 500 attendees, this public event featured keynote speaker Dr. Ann McKee, professor, Neurology, and Pathology, Boston University School of Medicine, one of the world's leading experts in concussion research. She was joined by local scientists and clinical experts including Arthur Brown, PhD, Dr. Lisa Fischer, Dr. Doug Fraser and Dr. Arjang Yazdani.

The Symposium was part of an initiative called See the Line. This two-day event brought together concussion research and clinical experts from the Schulich School of Medicine & Dentistry, Western University, the Fowler Kennedy Sport Medicine Clinic, and London's hospitals and research institutes. The goal is to find new ways to provide a patient-focused approach to sport concussion including health screening, risk analysis and concussion predication and prevention.

To learn more about See the Line, please visit www.seetheline.ca

Fellowship to aid commercialization of new tremor treatment

■ Jack Lee, MSc, Physiology and Pharmacology, was awarded an Entrepreneurship Fellowship from the Ontario Centres of Excellence and the Ontario Brain Institute for his recent work on fueling the commercialization of new tremor-reducing technology. The technology, developed by Dr. Mandar Jog and Fariborz Rahimi, PhD, of the Movement Disorder Clinic at London Health Sciences Centre, helps analyze motion and tremor characteristics in individual patients to assist neurologists in tremor reduction and treatment.

The one-year \$50,000 award is one of eight handed out to postgraduate students to support commercialization of discoveries that help diagnose, treat or cure brain disorders.



Dr. Reza Moridi, Minister of Research & Innovation; Jack Lee, Fellowship recipient; Dr. Tom Corr, CEO, Ontario Centres of Excellence; and Dr. Donald T. Stuss, President, Ontario Brain Institute

Seeing a brighter future—new funding for imaging tools

■ The Canada Foundation for Innovation's Leading Edge Fund and New Initiatives Fund awarded \$7,641,772 to four imaging initiatives, highlighting seven projects at Western University and Lawson Health Research Institute.

One of the projects addresses bone and joint disorders, which are the leading cause of disability in Canada. The multi-disciplinary team led by David Holdsworth, PhD, Schulich Medicine & Dentistry and Robarts Research Institute; Trevor Birmingham, PhD, Health Sciences, Western University; and Tom Jenkyn, PhD, Schulich Medicine & Dentistry, received \$1,342,675 to better understand how joints move under normal conditions and after therapy.

Schulich Medicine & Dentistry professor and Robarts and Lawson scientist, Ting-Yim Lee, PhD, received \$961,524 to develop low x-ray dose CT scanning methods for studying the vascular system. This technology could lead to better treatments for cardiovascular disease and cancer.

In Memoriam—Dr. Francis Chan

■ Dr. Francis Chan, a much loved and highly regarded Professor at the Schulich School of Medicine & Dentistry, passed away after a long and valiant struggle with cancer. He will be remembered for his tremendous gifts as a

teacher, his genuine concern for the well-being of his students and colleagues, and his compassionate and nurturing nature.

In recognition of the esteem in which Dr. Chan is held by students, the medicine Class of 2012 initiated The Francis Chan Distinction, to be awarded at future convocations to a member

of the graduating class who demonstrates "enthusiasm and dedication to advocating for the rights of others within the School and/or external community; balance in life with a passion for extracurricular activities; and involvement in the school and/or external community", characteristics of Dr. Chan himself.



Dr. Francis Chan and his beloved lab, Jet

Funding fuels primary care project

■ Western's Primary Health Care Program, the newest project of Department of Family Medicine Professor Moira Stewart, PhD, was among 11 recipients of the Health System Research Fund (HSRF) Program Awards, announced by the Ministry of Health and Long-Term Care.

The Program, receiving \$3.73 million for a period of three years, brings together four universities and two medical institutes—Western, Queen's, McMaster and Ottawa, as well as the Institute for Clinical Evaluative Sciences and St. Michael's Hospital in Toronto. At Western University, the program involves the Schulich School of Medicine & Dentistry and the Faculty of Health Sciences.

Two priorities will drive Western's Primary Health Care Program: primary care reform and community-based care. The Program, the only funded effort focused on primary care in the province, looks to provide answers to some of the biggest issues facing Ontario, and through those answers, inform policy changes.



Moira Stewart, PhD, professor, Department of Family Medicine



Sydney Todorovich, Department of Pathology presented her research as one of more than 350 research posters at two sessions



Guest speaker Terry Kenakin, PhD, made a compelling presentation to nearly 600 guests during lunch

Innovation and collaboration: London Health Research Day 2013

■ Schulich Medicine & Dentistry teamed up with Lawson Health Research Institute to host the largest research day of its kind in Ontario. Showcasing the research efforts of Schulich Medicine & Dentistry's trainees, London Health Research Day is a celebration of the world-class medical and health related research conducted by trainees at London's premier medical research institutions.

With more than 350 platform and poster presentations, London Health Research Day was highlighted by the inaugural Lucille and Norton Wolf Health Research Lecture Series featuring Terry Kenakin, PhD, professor, Department of Pharmacology, University of North Carolina (UNC) Medical School, Chapel Hill, North Carolina.

The collaborative event was concluded by an awards dinner, recognizing the winners of the poster and platform competitions.

Building on the success of the event, the date for the 2014 London Health Research Day has been set for Tuesday, March 18, 2014.

Graeme Hunter receives Faculty Scholar Award

■ Graeme Hunter, PhD, professor, Schulich Dentistry, was honoured with the Faculty Scholar's Award for significant contributions to the research field of biomineralization, the training of research trainees and major contributions in the field of history of science. Marco Prado, PhD, also received a Faculty Scholar's award (see page 32).

The Faculty Scholar's Award honours and celebrates outstanding scholarly achievements of leaders in their field, recognizing those who achieve prominence in a select domain. This award includes a research grant of \$14,000 over two years that can be used in support of scholarly activities.



Melvyn A. Goodale, PhD

Researcher elected to the Royal Society

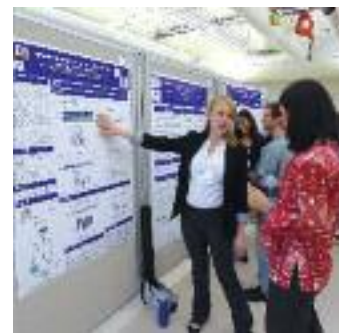
■ Joining the likes of Sir Isaac Newton, Charles Darwin and Albert Einstein, Roberts Research Institute neuroscience researcher Melvyn A. Goodale, PhD, was elected to the prestigious Royal Society. He holds a Canada Research Chair in Visual Neuroscience and a cross-appointment with the Faculty of Social Sciences and the Schulich School of Medicine & Dentistry. His honour positions Schulich Medicine & Dentistry at an international level.

Inaugural Dental Research Student Workshop a success

■ Schulich Dentistry and the Network for Canadian Oral Health Research hosted the inaugural Canadian Dental Research Student Workshop: Careers in Academic Dentistry. The two-day conference drew 90 participants from dental schools across Canada.

The workshop featured poster and keynote presentations on topics ranging from effective writing for graduate school, leadership in academic institutions, the role of the dental clinician scientist, and student research groups. Presenters included Schulich Dentistry's Dr. Harinder Sandhu, vice-dean, Graeme Hunter, PhD, chair, Division of Oral Biology, and Dr. Jeff Dixon, professor, Department of Physiology and Pharmacology.

The workshop was an important step toward supporting research capacity within the Canadian oral health community.



Alina Reid, Dentistry and Biochemistry, shares her research during the poster presentation at the Canadian Dental Research Student Workshop: Careers in Academic Dentistry

Science met Hollywood at star-studded affair

■ With special guest Alec Baldwin, the annual Leaders in Innovation Dinner was a star-studded event in more ways than one. Assuming the honours were spinal cord researcher Dr. V. Reggie Edgerton, the 2012 J. Allyn Taylor International Prize recipient, and noted “research rock star.”

The day included a symposium and public forum featuring spinal cord injury scientists from across Canada and the United States. Followed by the Leaders in Innovation Dinner, the day was a true celebration of research excellence and innovation.

The 2013 Leaders in Innovation Dinner will feature actor Martin Sheen and the Taylor Prize recipient, Dr. Salim Yusuf.



Alec Baldwin captivated the audience at the 2012 Leaders in Innovation Dinner



Dr. Joseph Rotman, chancellor, Western University, Dr. Joseph Martin, DSc '13 and Dr. Michael J. Strong, dean, Schulich School of Medicine & Dentistry

Dr. Joseph Martin, Harvard Medical School, receives honorary degree

■ Dr. Joseph Martin, the Edward R. and Anne G. Lefler Professor of Neurobiology at the Harvard Faculty of Medicine and former dean received a Doctor of Science, honoris causa (DSc) at Schulich Medicine & Dentistry's 2013 Doctor of Medicine (MD) convocation.

Focused on achieving a better understanding of the causes of neurological and neurodegenerative disease, the former editor of *Harrisons Principles of Internal Medicine* established the National

Institute of Health-sponsored Huntington Disease Center in 1980. Early work at the Center led to a breakthrough in identifying a genetic marker near the gene for Huntington's disease, which culminated in the identification of the gene for the disorder.

Dr. Martin became the third person to receive an honorary degree during the MD convocation, with the first being awarded to Seymour Schulich (2008) and the second to Dr. John Noseworthy (2012).

Excellence in teaching, research and service earns Jane Rylett distinguished university professorship

■ Jane Rylett, PhD, chair, Department of Physiology and Pharmacology, and associate director of Robarts Research Institute, was honoured as a Distinguished University Professor.

The award was created to recognize faculty who have established a record of excellence in all three areas of teaching, research and service throughout a substantial career at Western.

Rylett's research has focused on the role of cholinergic neurons in the brain and their dysfunction when it comes to Alzheimer's disease. She has published 90 peer-reviewed articles in respected journals, given more than 80 invited presentations to fellow researchers and obtained more than \$7.5 million in peer-reviewed operating funds for her research.

In addition to her extensive research, Rylett carries a heavy teaching load.

Aside from her contributions at Schulich Medicine & Dentistry, she has been a leading force at the Alzheimer Society nationwide, and has chaired grant review panels for five different granting agencies.



Jane Rylett, PhD, chair, Department of Physiology and Pharmacology, and associate director of Robarts Research Institute

Committed to excellence—Dr. Cindy Hutnik receives YMCA Women of Excellence Award

■ Dr. Cindy Hutnik, professor, Departments of Ophthalmology, and Pathology, was awarded the YMCA Women of Excellence Award for Health, Science &

Technology. Recognized for her dedication and contribution to the community, Dr. Hutnik was one of eight recipients of the bi-annual YMCA Women of Excellence awards.

Dr. Hutnik is a clinician specializing in patients with glaucoma and macular degeneration, and has been a recipient of more than 15 research awards and millions of dollars in research grants.



Dr. Cindy Hutnik, professor, Departments of Ophthalmology, and Pathology



EDUCATION

SETTING THE STAGE FOR THE FUTURE

SIMULATION EDUCATION, TRAINING AND RESEARCH

BY JENNIFER PARRAGA

An actor, an anesthetist and an engineer along with a cast of renowned physicians, and educators are setting the stage for expansion in simulation education and research at the Schulich School of Medicine & Dentistry. Together they are writing a new script for more diversified and integrated simulation training in the School's education portfolios. As leaders in their fields, they are also supporting the establishment of an international, leading centre in simulation.

Their efforts are being directed by Dr. John Denstedt, MD '82, special advisor to the dean on globalization, internationalization and simulation.

Dr. Denstedt sees the expansion, diversification and integration of simulation education as a need critical to the future of the School. "Numerous departments across the School, including anesthesia, psychiatry, surgery and emergency medicine—just to name a few, are actively utilizing simulation as a learning technique. More and more, simulation is integrating itself into all aspects of training in medicine and dentistry. There's no time like the present to harness all this knowledge and expertise and create a stronger and more cohesive program," said Dr. Denstedt.

At the heart of simulation training is the patient experience and continuous improvement in patient safety. That is the catalyst for the planned expansion as well.

Also driving this expansion is the incredible rate of development of new technology and new surgical procedures. "As a medical school, it is our responsibility to provide education programs, courses, teaching techniques and learning environments to keep our students at the forefront of medical care delivery," said Dr. Denstedt. Accrediting bodies for medical schools are also now demanding that simulation training is in place.

"The value of simulation training is unmatched as it allows students to experience scenarios that mirror real-life situations they will encounter in the clinic, operating room, or waiting area," said Dr. Bertha Garcia, vice-dean, Education. With simulation, students practise the same skill over and over again, increasing their proficiency, competence and confidence. Students also refine their communication skills and enhance their approach to teamwork. Meanwhile, simulation provides faculty the →



TOP: Justin Quesnelle, manager, Clinical Skills Program
 BOTTOM: Dr. Rich Cherry, MD '93, associate professor;
 director, Anesthesia and Critical Care Teaching Through Simulation
 LEFT: Residents prepare to perform a mock caesarean birth

EDUCATION

“The patient isn’t the only human in the operating room, we often don’t think about how many external factors play a role in the operating room.”

—Sayra Cristancho, PhD

opportunity to effectively assess students while creating scenarios and unanticipated events to challenge students.

With a background in the theatre and advanced training as a simulated patient trainer, Justin Quesnelle is now the Manager of the Clinical Skills Program (CSP). He is responsible for overseeing a wide range of nearly 100 annual projects ranging from *Enhancing Communication Skills for Dentistry Students* to *Teaching Physical Exam Skills Specific to Respiratory Examinations*. Programs are offered to medical, dental, and nursing students, as well as resident trainees at Western University. Practising physicians and a host of other health care students and professionals access workshops, courses and structured assessments through CSP. This is all supported by a small administrative staff and nearly 400 simulated and volunteer patients who undergo hours of training.

Schulich Medicine & Dentistry is a leader in the field of clinical skills training. “We have one of the most mature and diverse programs in the country,” said Quesnelle. “Each year the program is growing. Last year alone, more than 100 standardized patients were hired just to meet this demand.” That growth, undoubtedly stems from the incredible value simulation training brings to the students.

Quesnelle believes this is an exciting time for simulation learning. “During the past couple of decades a strong foundation for simulation training has been laid,” said Quesnelle. “Now, it’s time to build upon that foundation by bringing together the different types of simulation environments.” Quesnelle is looking forward to developing new aspects for existing programs where they can integrate standardized patients into operating room scenarios, and challenge students to practise their surgical techniques along with their communication skills when working with patients’ families.

Dr. Rich Cherry echoes Quesnelle’s sentiments. Dr. Cherry is an Associate Professor in the Department of Anesthesia & Perioperative Medicine, and Director of Anesthesia and Critical

Care Teaching Through Simulation (ACCTTS). He is passionate about the power and possibilities of simulation training, and believes the current programs can be taken to the next level, further developing their teaching effectiveness and increasing the capabilities of students.

Dr. Cherry works with learners at all levels from undergraduate medical students to physicians pursuing continued medical education. His classroom is a simulated operating room located at London Health Sciences Centre in the world-renowned and fully accredited Canadian Surgical Technologies & Advanced Robotics (CSTAR). His patients are highly realistic mannequins who can be programmed to present any number of reactions or conditions. These high fidelity scenarios provide trainees an exceptional learning experience. As with clinical skills practise, trainees debrief with their professors following each procedure. They review their technical skills, their communication skills, their teamwork, and coping mechanisms.

Understanding how physicians adapt when they face complex situations in the operating room has become the focus of a critical research program being led by Sayra Cristancho, PhD. Cristancho is an Assistant Professor with the Department of Surgery, and a scientist with the Centre for Education Research & Innovation (CERI).

An electrical engineer with a life-long interest in medicine, Cristancho completed her doctoral work at UBC and her postdoctoral work at SickKids Hospital.

Cristancho’s research, which is funded by grants from the Canadian Institutes of Health Research and the Royal College of Physicians and Surgeons, will seek to answer questions such as: What allows surgeons to be effective in making good decisions in the operating room? How does surgical judgment manifest during challenging surgical situations? And how can simulation be better designed to enhance decision making during complex situations?

“The patient isn’t the only human in the operating room,” said Cristancho, as she



Simulation education and training takes place in several medical disciplines across Schulich Medicine, supported by an outstanding team of physicians.

**Dr. Robert Arntfeld
Dr. Lois Champion
Dr. Rich Cherry
Dr. John Denstedt
Dr. Ken Faber
Dr. Kevin Fung
Dr. Jeffrey Fuss
Dr. Jeff Granton
Dr. Marie-Eve Lebel
Dr. Deric Morrison
Dr. William Moote
Dr. Michael Ott
Dr. Robert Stein
Dr. Mithu Sen
Dr. Alice Tsui**



explained the details of her research. “We often don’t think about how many external factors play a role in the operating room. We also don’t consider how the social negotiations play out or the importance of non-verbal actions.” These all can add to the complexity of the situation. The student or trainee needs to begin to learn the elements of each situation and how it may impact them, their decisions, and their own actions as they provide care.

Cristancho’s findings will help to build more sophisticated and specialized training programs that push students and expose them to scenarios to further develop their skills. Her research will develop a theoretical framework of the process through which experienced surgeons use their interactions with the surgical environment and adjust their decision-making process during challenging situations.

Further to Cristancho’s work, CERI will play a larger role in determining the overall effectiveness of simulation training in a variety of different medical specialties. It is essential to develop an understanding of the most effective forms of simulation training and determine if the investment in this area of training is making a difference.

As the School looks to expand and integrate its training programs, it is also working to create a world-class Simulation Education Centre. Although early in the planning stages, Dr. Denstedt has a clear vision of this new Centre, incorporating operating suites, clinic-style treatment rooms, and a teaching auditorium. It is here where interdisciplinary and team training for medical and dental students, residents and health care professionals from across the region and around the world will take place.

Taking leadership of the Centre and the new integrated simulation program will be a new Chair in Simulation and Technology Development. The Chair and Simulation Education Centre are key projects within Western University’s *Be Extraordinary* fundraising campaign. To date, more than \$700,000 in private support has been received in support of the Chair.

Schulich Medicine & Dentistry’s simulation education and research program is on the verge of great change. It’s Dr. Denstedt’s goal that it will very soon become a “pinnacle of excellence” in the School. There’s no question in anyone’s mind, with the people, knowledge and innovative spirit at the School, this vision will become reality and worthy of a standing ovation. ■



TOP: Residents participate in a simulated caesarean section
MIDDLE AND BOTTOM LEFT: The team including residents and faculty debrief following the simulated caesarean section
BOTTOM RIGHT: A team member manages the controls of the mannequin used in the simulated procedure



GROWING THROUGH REFLECTION

SCHULICH MEDICINE IS THE ONLY MEDICAL SCHOOL IN THE COUNTRY OFFERING A COURSE WITH DEDICATED FAMILY MEDICINE CONTENT IN PRE-CLERKSHIP YEARS. IT UTILIZES A UNIQUE METHODOLOGY OF ASSESSMENT REQUIRING STUDENTS TO WRITE A SELF-REFLECTION PAPER

BY KRISTIN TATE

Oprah would call it an "Aha moment." In the second year course *Key Topics in Family Medicine*, students are asked to reflect upon and write about a past experience to identify the impact the experience has had on them and how it might shape their paths to becoming physicians.

The week-long, mandatory course utilizes a unique methodology of assessment requiring students to write a self-reflection paper. Through their writing, students gain awareness and clarity of their own learning process and begin to understand how their internal state influences decision-making. The process helps them become better doctors.

Schulich School of Medicine & Dentistry is the only medical school in the country to offer a course with dedicated family medicine content in pre-clerkship years. This unique learning experience speaks to the School's proud history of curriculum innovation.

Dr. George Kim, undergraduate academic director, Department of Family Medicine, emphasizes the value of writing skills and self-reflection for medical students today. "Encouraging students to 'think about thinking' will start them on a journey of life-long reflection and awareness."

Tomas Saun's "Aha moment" arose from the reflection and group discussion process within the course. It helped him deal with the suppression of his anger and frustration over losing his brother to cancer. In his reflection paper, Saun wrote:

"As I reflect on my experience since starting medical school, I've realized that one of the most unanticipated challenges has certainly been allowing myself to actually open up to my own feelings, experience them and deal with them, I had never in a million years expected to come to medical school to learn about introspection and reflection, yet without this process I can't imagine where I would be today."

Students can write about an encounter with a patient that changed their way of thinking, an observership that didn't go as expected, or

an unanticipated challenge of medical school. They are encouraged to analyze the experience, self-reflect and ask "why?" They are also expected to determine if they found new meaning in their experience and whether they will feel differently in a similar situation in the future?

In his reflection, Adrian Wu shared how medical school is teaching him to quiet his competitive drive, and adopt a collaborative outlook valuing teamwork.

"Our focus needs to change from ourselves to our patients; we need to change from striving for only individual excellence to examining how we can contribute to taking the best care of patients collectively as providers in a comprehensive health care system."

Sometimes it can be a single moment that, upon reflection, sparks awareness and empathy. Thomas Shi reflects about not knowing the location of his observership room assignment in the hospital and how it might mirror the anxiety and fear of patients in the sterile hospital environment:

"The phrase patient-centred care is often heard in the medical setting. Is patient-centred care restricted to the patient in the ward or the O.R.? No, it starts when the patient, the family steps into the medical setting. [...] What relieves the patient of frustration and anxiety? It's not just medications and surgeries, it's the small acts of kindness [...]. In an increasingly complex health care field, involving many different specialties of health care workers in complex settings, we must not forget that the needs of the patient goes beyond the time they spend in the ward. We must actively make an effort to comprehend how they are coping, not just with their condition, but with the health care system."

Dr. Kim can not emphasize enough the value of growth through reflection. He explains "the school that helps students see this, and learn how to navigate these thoughts and emotions, will be graduating the star physicians of tomorrow. The programs that have figured this out are on the cusp of the educational evolution." ■

GRADUATING STUDIES

NEW PROFESSIONAL AND SPECIALIZED DEGREES
HIGHLIGHT THE EXPANSION OF GRADUATE STUDIES
AT SCHULICH MEDICINE & DENTISTRY

BY JENNIFER PARRAGA

Ask Andy Watson, PhD, about Graduate Studies at the Schulich School of Medicine & Dentistry and the energy level of this characteristically enthusiastic professor shoots into overdrive. His passion for the programs is matched only by his support of its students. As the Associate Dean, Research (Graduate & Postdoctoral Studies), Watson is responsible for overseeing the Graduate Studies & Postdoctoral Affairs office at Schulich Medicine & Dentistry, championing its students and planning for the future. Lately, a great deal of his energy has been channeled into managing the tremendous growth and changes Graduate Studies has been experiencing.

Those changes have been driven by the School's strategic plan priority to become a destination of choice for exceptional education and learning. Already known for its outstanding education programs, Schulich Medicine & Dentistry is strategically investing in graduate program growth. The changes address an important societal need to support a complex and rapidly changing health care system and are a response to the growth in the range of careers that have emerged in the past decade.

Core programs that help develop fundamental understanding of the rewards and challenges of biomedical research will remain at the heart of Graduate Studies. However, the development of new professional programs that arm students with a set of skills and competencies unique to specific fields, is a dedicated area of growth. →



Andy Watson, PhD, associate dean Research
(Graduate & Postdoctoral Studies)





Kara McArthur and Bimadoshka Pucan

Kara McArthur is a member of the first graduating class of the new Pathologists' Assistant (PA) Program, one of the newest professional programs. Unique in Canada, it was launched in 2011 and became accredited in 2012. With an MSc in Pathology, McArthur was looking for a career that was "hands-on, involved constant thinking, was challenging and encouraged continuing education." She was also looking for a career that was clinically based and had great employment opportunities. She found it in the PA Program. The first year of the Program is entirely course work, focused on subjects such as anatomy, pathology, infectious diseases, physiology and histology. The second year is focused on clinical practice. McArthur received a job offer several months before she graduated and is excited to begin her career as a PA, and help to expand this profession in Canada.

Bimadoshka Pucan feels honoured to be

a member of the first cohort of the new Master of Public Health beginning in September 2013, which is being offered in partnership with Faculties of Education, Engineering, Information and Media Studies, Health Sciences, Law, Science, Social Science, the Ivey School of Business and Brescia University College. Along with a class of approximately 34 fellow students, she will experience Canada's only 12-month, case-based, public health program.

A psychology graduate from Western University who majored in First Nations Studies, Pucan is a gold medal recipient from the Faculty of Social Science. A mature student, she will bring a tremendous amount of life experience to the program including volunteer work with two programs called Street Patrol, based out of the Anishinaabe Health, and 2-Spirited People of the First Nations. This type of experience is exactly what program organizers were hoping for in their students. And students will need

to harness all their personal and educational experiences as they tackle some of the world's most critical health issues, from infectious diseases in developing nations, to challenges closer to home: First Nations health, clean water, chronic diseases, and maternal and child health.

Pucan applied to the program upon the advice of Candace Brunette at Indigenous Services, recognizing it would give her the opportunity to build on past experiences and give back to her own people. "My heart is with my people," said Pucan. "I felt the best way to help my community would be to provide support in terms of making policy work for Indigenous communities. I have always entertained thoughts of working for the World Health Organization and assisting Indigenous people on a global level. I am also interested in traditional methods of healing and medicinal plants, and combining those with western methods to provide a holistic approach to health prevention,



Brandon Disher

management, and intervention that respects how Indigenous people connect with those aspects.”

Fascinated by how the application of physics can alter the course of disease and positively impact people’s lives, Brandon Disher came to Schulich Medicine & Dentistry six years ago to pursue a PhD in Medical Biophysics. Upon learning the School was planning to launch a PhD option sanctioned by the Commission on Accreditation of Medical Physics Educational Programs (CAMPEP), sealed the deal.

This rigorous program, which was officially launched in 2012, requires intense focus on research and a heavy course load—all with a goal of preparing students to take on the role of a clinical physicist. It is followed by two years of hands-on training in order to qualify to write a certification exam. Disher’s experience is slightly different from other students, as he transferred into the Program after completing five years of his PhD which

included all the required course work. He will be the first CAMPEP PhD student to graduate from Schulich Medicine & Dentistry’s program. The School will also offer a Master of Science CAMPEP program very soon.

Several other programs have also been approved to begin in the fall of 2013 as part of this Graduate Studies growth. The Master of Science in Surgery is unique in Canada and has a particular focus on surgical residents. The full-time, 12-month program offers trainees the flexibility to train in different aspects of clinical and basic science surgical research. This program has been developed to meet the needs of an academic surgeon, in preparation for a successful career as a surgeon and researcher at an academic health sciences centre.

Meanwhile, two accelerated Master of Science programs will also begin—one in Microbiology and Immunology, and one in Biochemistry. As a partner to faculties across

Western University, this past year, the School welcomed the first class for a new program in musculoskeletal health—Canada’s only multidisciplinary musculoskeletal program.

Watson believes universities are charged with the mission of educating the next generation of leaders—people who have perspective, are open-minded, have vision, are continual learners, and can steer society toward growth. With this mission comes the responsibility to provide a rich and supportive learning environment that is in step with societal needs. Through the development of these new programs, Schulich Medicine & Dentistry is achieving this.

And without a moment’s hesitation Watson is already talking about what’s next for Graduate Studies. It includes new research-intensive programs, continued diversification of professional program offerings, and new MSc programs. ■

Egg yolks compared to cigarettes—both accelerate atherosclerosis

■ Research led by Dr. J. David Spence, professor of Neurology and director of the Stroke Prevention and Atherosclerosis Research Centre at Robarts Research Institute shows that eating egg yolks accelerates atherosclerosis in a manner similar to smoking cigarettes. Surveying more than 1,200 patients, Dr. Spence found regular consumption of egg yolks is about two-thirds as bad as smoking when it comes to increased build-up of carotid plaque, a risk factor for stroke and heart attack. The research was published in the journal *Atherosclerosis*.

The researchers found the carotid plaque area increased linearly with age, after age 40, but increased exponentially with pack-years of smoking and egg yolk-years. In other words, compared to age, both tobacco smoking and egg yolk consumption accelerate atherosclerosis. The study also found those eating three or more yolks a week had significantly more plaque area than those who ate two or fewer yolks per week. Dr. Spence says, “In the long haul, egg yolks are not okay for most Canadians.”

Atherosclerosis, also called coronary artery disease, is a disorder of the arteries where plaques, aggravated by cholesterol, form on the inner arterial wall. Plaque rupture is the usual cause of most heart attacks and many strokes.



Robarts trainee receives inaugural Bell Mental Health Research Award

■ Cornelia Walther, PhD, post-doctoral fellow, is a recipient of the inaugural Bell Mental Health Research Training Award in partner-

ship with Brain Canada. The award is a \$50,000 annual fellowship for three years. Working with Robarts Research Institute scientist Stephen Ferguson, PhD, Walther’s research investigates the cellular basis for how stress promotes anxiety and depression, which ultimately, may allow for the development of more effective therapies.



Coloured X-ray of the knees of a 66 year old male with osteoarthritis

Translational knee research makes a big impact

■ In a brief to the Canadian Institutes of Health Research (CIHR), David Holdsworth, PhD, the Dr. Sandy Kirkley Chair in Musculoskeletal Research, and Robarts Research Institute scientist, looked at the impact of a clinical trial published in 2008, comparing arthroscopic debridement surgery to medical and physical therapy for osteoarthritis of the knee.

Led by Dr. Kirkley until her tragic death in 2002, the study was carried on by Dr. Brian Feagan, director of Robarts Clinical Trials, and Dr. Bob Litchfield, an orthopaedic surgeon and medical director of the Fowler Kennedy Sport Medicine Clinic. They found after three months there was no advantage to the more expensive and invasive surgery. The results were published in the *New England Journal of Medicine* and immediately generated considerable

interest and discussion.

In his review, Holdsworth wrote “This CIHR-funded study has had a significant impact, with 90 citations in the past four years. This study, combined with the results of the previous study by Moseley et al., is changing clinical practice around the world.”

He gave as an example a recent study which showed arthroscopic knee surgery declined in Florida by 47 per cent between 2001 and 2010, and specifically found that “rates also declined following publication of the results of Kirkley and colleagues trial in 2008.” The study estimated the total reduction in this surgery translates into national savings in the US of between \$82 million and \$138 million annually, indicating clearly that “clinical trials of widely used therapies can lead to cost-saving changes in practise patterns.”

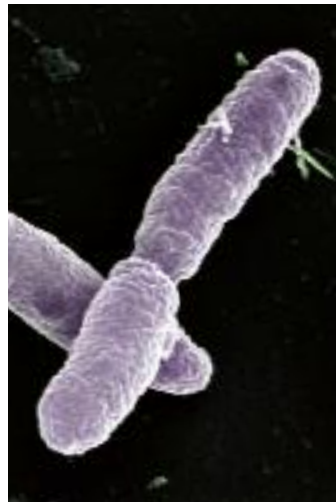
Robarts researchers win a Movember Discovery Grant

■ A Robarts Research Institute scientist recognized for his mustache is benefitting from an annual event that sees thousands of men grow one. Gregory Dekaban, PhD, has been awarded a Movember Discovery Grant, a program that allows investigators to pursue new important directions in prostate cancer research. Each recipient of the Movember Discovery Grant will receive \$200,000 in funding over a two-year term from Prostate Cancer Canada. Dekaban will collaborate on the project “*Dendritic cell-based prostate cancer vaccine: Development of in vivo dendritic cell migration by cellular MRI in humans*” with fellow Robarts Scientist Paula Foster, PhD, and Drs. Pierre Major and Ronan Foley at McMaster University. This project involves the use of MRI to detect and monitor cells used for cancer immunotherapy. Cancer immunotherapy is an emerging area of research that involves the use of one’s own immune system to fight cancer.



Greg Dekaban, PhD

Bacteria communicate to help each other resist antibiotics



Burkholderia cenocepacia bacteria

■ New research from Dr. Miguel Valvano, adjunct professor, Department of Microbiology and Immunology, and Omar El-Halfawy, PhD candidate, unravels a novel means of communication that allows bacteria such as Burkholderia cenocepacia (B. cenocepacia) to resist antibiotic treatment. B. cenocepacia is an

environmental bacterium that causes devastating infections in patients with cystic fibrosis (CF) or with compromised immune systems.

The researchers found the more antibiotic-resistant cells within a bacterial population produce and share small molecules with less resistant cells, protecting them from antibiotic killing. These small molecules, which are derived from modified amino acids (the building blocks used to make proteins), protect not only the more sensitive cells of B. cenocepacia but also other bacteria including a highly prevalent CF pathogen, Pseudomonas aeruginosa, and E. coli.

“These small molecules can be utilized and produced by almost all bacteria with limited exceptions, so we can regard these small molecules as a universal language that can be understood by most bacteria,” says El-Halfawy. The research was published in *PLOS ONE*.

When a KISS(1) goes bad: Spread of breast cancer linked to kisspeptins which normally inhibit metastasis

■ KISS1 is a metastasis-suppressor gene which helps to prevent the spread of cancers, including melanoma, pancreatic and ovarian cancers to name a few. But new research by Moshmi Bhattacharya, PhD, shows that kisspeptins—peptide products of KISS1, actually make some breast

cancers worse, with a higher tumour grade and metastatic potential.

Bhattacharya, associate professor, Departments of Physiology and Pharmacology, and Oncology, was surprised to find high levels of kisspeptins in aggressive breast cancers. “We found kisspeptins could turn non-invasive cancer cells into invasive cells, and therefore could be playing a role in the metastasis of breast cancer.” This was only found in estrogen receptor-negative breast cancers, so estrogen seems to have a major impact on how kisspeptin behaves.



Shedding light on a gene mutation that causes signs of premature aging

■ Research by Nathalie Bérubé, PhD, associate professor, Departments of Biochemistry, and Paediatrics, sheds new light on a gene called ATRX and its function in the brain and pituitary. Children born with ATRX syndrome have cognitive defects and developmental abnormalities. Bérubé and colleagues found mice developed without the ATRX gene had problems in the forebrain, the part of the brain associated with learning and memory, and in the anterior pituitary which has a direct effect on body growth and metabolism. The mice, unexpectedly, also displayed shortened lifespan, cataracts, heart enlargement, reduced bone density, hypoglycemia; in short, many of the symptoms associated with aging. The research was published in the *Journal of Clinical Investigation*.

The researchers say the lack of ATRX resulted in low levels of a hormone called insulin-like growth factor-one (IGF-1) in the blood. There are theories that low IGF-1 can deplete stores of stem cells in the body, and Bérubé says that’s one of the explanations for the premature aging.



CERI's Sayra Cristancho, PhD, researching decision-making in the operating room

EMPOWERING RESEARCH

BY JENNIFER PARRAGA

Canada is a powerhouse in medical education research. And the Centre for Education Research & Innovation (CERI) at the Schulich School of Medicine & Dentistry is becoming one of the leaders, building this reputation and advancing the science of education through research.

In just four years, CERI has become a powerhouse in its own right. "We're a young Centre," said Lorelei Lingard, PhD, the Centre's director, "but we are quickly positioning ourselves as a national leader in our domain. We aim to put Schulich Medicine & Dentistry on the medical education research map."

Their peers agree. In the past year, CERI has received numerous grants totalling more than \$600,000, including three from the Canadian Institutes of Health Research—an outstanding achievement in a research landscape where most medical education grants are in the \$25,000 to \$50,000 range.

And the science coming out of this new Centre is creating waves.

In the past year, they have received numerous awards including Best Oral Presentation at the Canadian Conference in Medical Education for Dr. Christopher Watling, associate dean, Postgraduate Medical Education, and New Investigator Award from the Association of American Medical Colleges conference for Dr. Mark Goldszmidt, associate director, CERI. Stella Ng, PhD, a postdoctoral fellow with CERI received a top ten research poster at the Association for Medical Education in Europe.

CERI's distinctive role focuses on answering critical medical education research questions. And with more than 50 research projects underway, there is no shortage of activity. Often interdisciplinary in nature, the projects are diverse, and range from what goes through the mind of an expert surgeon when an unexpected challenge arises, to improving

the emergency medicine clinical clerkship.

CERI also provides mentorship to learners, fellows and faculty members interested in pursuing an education research project. "We have become a community that is rigorous in its research, yet welcoming and inclusive," said Lingard. CERI's core faculty, comprised of Lingard, Dr. Goldszmidt, Sayra Cristancho, PhD, Dr. Watling and Kathy Hibbert, PhD, perform research and provide mentorship to anyone who has a research query or need.



Dr. Wael Haddara, left, and Allan McDougall, PhD candidate, second from right, perform research at CERI with Lorelei Lingard, PhD and Dr. Goldszmidt

Dr. Taryn Taylor, a resident with the Department of Obstetrics and Gynaecology is one of many trainees who benefited from working with the Centre. "CERI is home to established researchers who are experts in their own right and who teach and translate their knowledge and experience. The kind of mentorship that evolves from that has been quite meaningful. I've never experienced anything like it," Ng agrees, "I've never witnessed such a supportive environment."

Fully entrenched in the life and future of Schulich Medicine & Dentistry, CERI is contributing to the achievement of the School's mission and the advancement of its strategic plan goals.

"CERI lies at the very core of our education community as it strives for excellence in educa-

tional research and to become an international leader in this arena," said Dr. Michael J. Strong, dean, Schulich Medicine & Dentistry. "It has ensured our School has, at the essence of its being, the development, evaluation and delivery of curriculum within a milieu of tremendous academic rigour. As we strive to bring the School to greater national and international recognition through the implementation of our strategic plan, is there really anything more one could ask?"

Recently, the Centre developed a partnership with the Centre for Health Education Scholarship (CHES) for the development of Master of Health Professions Education-Canada (MPHE) Program. The degree is an International MPHE from the School of Health Professions Education conferred by the Maastricht University in the Netherlands, while the curriculum and research thesis supervision are delivered in part from CERI and CHES. This partnership puts CERI on the international education scene while furthering the School's graduate student education goals.

CERI's tremendous success has generated an increase in inquiries from people across the School. "We are bursting with ideas now," said Lingard. To meet that growing demand, CERI plans to hire a new PhD scientist. They also hope to create a research niche for themselves focused on research in the clinical setting.

While the impact of CERI on patient care is not always immediately felt, the long term benefits may be extremely powerful and far-reaching. By focusing on studying education in the real world, CERI has the potential to help reshape the health care system. Many of our studies are about clinical teams and how they communicate, said Dr. Goldszmidt. "Insights gained from this work are already changing how we conceptualize teams and the roles that learners can play in supporting better patient care." ■

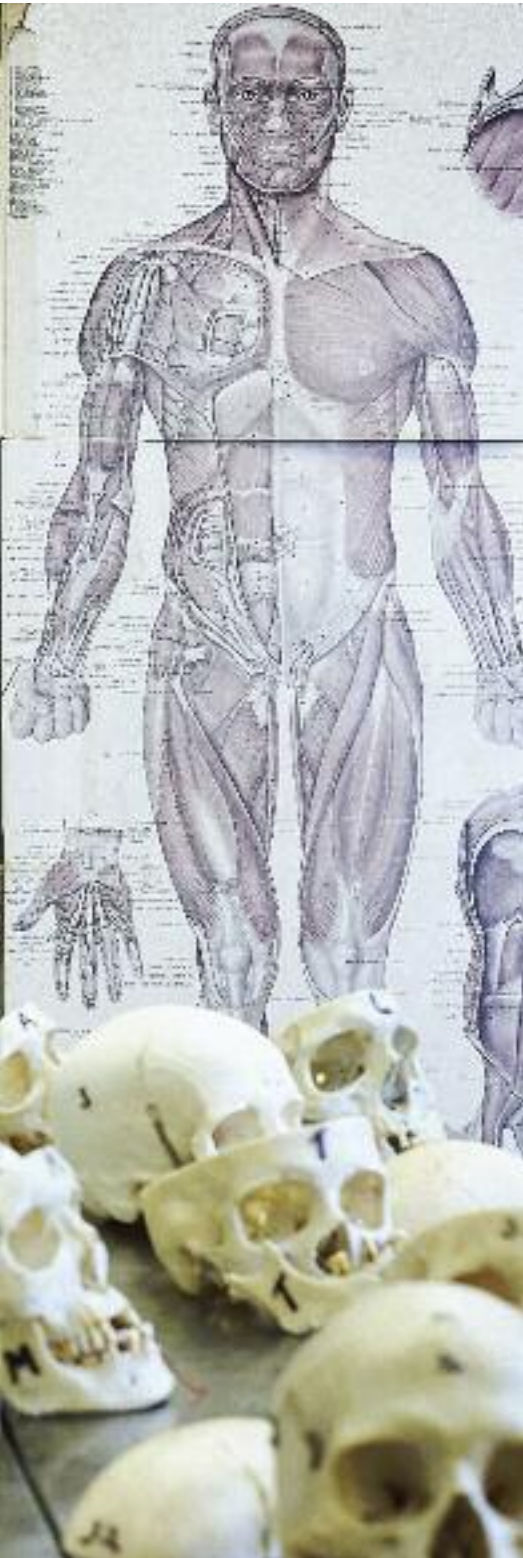


TOP AND LEFT: Dr. Khadry Abdel Galil, a consummate teacher and passionate story-teller, uses skulls to teach his students

ABOVE: Dr. Galil uses a jaw bone to demonstrate the common dental conditions suffered by people in ancient times, such as Ramses II, who died of periodontal disease

Ramses II died of periodontal disease, and Dr. Galil who is a periodontist, said, "I would have loved to treat his periodontal disease. It would have been great to treat a king."





SURVIVING THE CURSE OF THE PHARAOHS

DR. GALIL USES ANCIENT SKULLS TO TEACH HIS STUDENTS, OFFERING NEW ORTHODONTIC INSIGHT

BY KATHY WALLIS

The headline in the "Sunday People", one of Britain's oldest Sunday newspapers, read "The vengeance of the Pharaohs," and the story claimed "An Egyptian dentist who helped x-ray Tutmosis's teeth suddenly staggered back and collapsed. Dead!"

They were referring to Dr. Khadry Abdel Galil, a long-time Professor of Anatomy, and Periodontics and Orthodontics at Schulich Medicine & Dentistry, and needless to say, he was very much alive. He laughs about it now, but at the time it caused a lot of pain for his brother who was studying in Scotland and happened to read the story, and his mother.

Dr. Galil, was Egyptian, a dentist and multi-lingual and was a perfect fit to join a team from the University of Michigan which was granted presidential permission in the 1960s to x-ray the collection of 3,000 year-old royal mummies at the Cairo Museum. The team wanted to see the facial changes throughout the years, hoping it would shed new light on modern orthodontics. About 30 mummies were x-rayed, all the known Royal Pharaohs and their Queens. He describes it as an interesting but also scary time. Each person was searched going in and

out of the museum by heavily armed guards.

"We really wanted to examine the face and dentition, but x-raying the whole body showed many defects that couldn't be seen on each mummy," said Dr. Galil, who joined Western's faculty in 1973 and is now the only living Canadian to have x-rayed the royal mummies.

"We found most of the Pharaohs died young and suffered from osteoarthritis, bone and genetic diseases." Sometimes the imaging raised more questions than it answered. For instance, they x-rayed the mummy of an infant princess buried alongside her mother, Queen Makare. What they discovered inside, was actually the skeleton of a baboon! They also saw large amounts of gold hidden within the wrappings of the mummies.

Dr. Galil says his favourite Pharaoh is Ramses II who ruled for 67 years starting in 1279 B.C. "He lived for 96 years. One of the things I like about him is that, without Viagra, he had about 111 sons and 67 daughters." Of course, he also had 52 wives. Ramses II died of periodontal disease. Dr. Galil who is a periodontist said, "I would have loved to treat his periodontal disease. It would have been great to treat a king." ■

BY PAT MORDEN

The Bloor Viaduct, built in 1918 provided a way for streetcars, trains and cars to cross the Don Valley, linking east and west Toronto. It was soon known as a magnet for people contemplating suicide, eventually becoming the second most deadly spot in the world after the Golden Gate Bridge in San Francisco. During the next 85 years, nearly 500 people jumped to their death from the bridge. In 2003, the \$5.5 million "Luminous Veil," a series of taut steel rods, created an effective barrier on both sides of the bridge. Since then, there have been no suicides from the Bloor Viaduct.

Dr. Paul Links was one of those who pushed for the creation of the barrier. At the time, he held the Arthur Sommer Rotenberg Endowed Chair in Suicide Studies at the University of Toronto. Today he serves as Chair /Chief of the Department of Psychiatry at the Schulich School of Medicine & Dentistry and its teaching hospitals.

Dr. Links first became interested in research related to high-risk suicide following his training. "I was working in an outpatient setting and we had a number of patients who were characterized by repeated suicidal behaviors," he said. "That meant they were at high risk of suicide. My research interests developed out of a desire to understand the problem and help individuals deal with it."

Dr. Links believes there is no single cause of suicide; it is a complex problem, usually

involving more than one risk factor. "There are biological, social, cultural and familial factors. Typically people have some factors that may increase their risk early in life, and then near the event there is something that triggers it."

The incidence of suicide in Canada has been relatively stable for the past two decades, but Dr. Links, who supports a national suicide prevention strategy, believes we can do better. "Suicide prevention must be multi-faceted too," he said. "We need to attack it through a variety of interventions, at the individual and the population level."

Limiting access to places like the Bloor Viaduct is just part of the story, he believes. A study published in 2010 suggested that while the barrier prevented suicide at that location, people "substituted" by jumping from other high places, and the total number of suicides by jumping remained constant. Dr. Links doesn't think the case is closed. He points out that one of the challenges of research in his field is that suicide is a very rare event. "You have to look at changes during an extended period of time," he said. "With such a small sample size, variations from year to year are not very meaningful."

The most powerful predictor of suicide is repeated suicidal behavior. For these people, psychotherapy has proved an effective intervention. Dr. Links and a student recently pulled together research around the essential elements of psychotherapy for this high-risk

group. They found, for example, that a key component of therapy is working with the patient to develop a "safety plan," helping them to anticipate when they might become suicidal again and to know what to do. "As time passes, the person gets better and better at predicting when they might be in trouble. As a result of that self-learning they are more able to keep themselves safe."

In another project, Dr. Links is preparing a planning meeting to focus on the issue of suicide in men. The meeting will bring together researchers in the areas of suicide, masculinity, personality psychology, health systems research and other related fields. "We believe the causal factors of suicide in men are somewhat different from those in women," he said. "If that's true, then some of our interventions should also be different."

Recently, Dr. Links has been playing the songs of Sam Cooke, an R&B singer and songwriter of the early 1960's. Coincidentally, Cooke struggled with depression and his life ended violently. In one of his most famous songs, *Change is Gonna Come*, he wrote what could perhaps be read as an anthem of suicide prevention:
*Oh there been times that I thought
 I couldn't last for long
 But now I think I'm able to carry on
 It's been a long, a long time coming
 But I know a change gonna come, oh yes it will.* ■

BUILDING BARRIERS TO SUICIDE

DR. PAUL LINKS, CHAIR/CHIEF, PSYCHIATRY, CONTINUES EXPANDING OUR KNOWLEDGE OF SUICIDE AND HOW TO PREVENT IT

A portrait of Dr. Paul Links, a middle-aged man with a mustache and glasses, wearing a light blue shirt and a dark tie. He is looking directly at the camera with a serious expression. The background is a solid blue color.

“My research interests developed out of a desire to understand the problem and help them deal with it.”

—Dr. Paul Links, chair/chief, Psychiatry

PARTNERING FOR BETTER HEALTH

BY JENNIFER PARRAGA

The benefits of great partnerships can't be overstated. And when those partnerships involve organizations working together to improve health for children, it simply goes without saying.

Piotr Wilk, PhD, assistant professor, Departments of Paediatrics, and Epidemiology & Biostatistics, Schulich School of Medicine & Dentistry, along with Martin Cooke, PhD, an associate professor at the University of Waterloo have coordinated the development of a project which partners community organizations in London with a focus on improving the health of Aboriginal children specifically related to healthy weights.

They pursued the project after realizing many like-minded organizations focusing on child health appeared to be working independently. They believed an untapped potential existed to have greater impact on the lives of children and specifically Aboriginal children, through collaboration and shared resources for the organizations.

Receiving a grant in 2011 of \$150,000 from the Public Health Agency of Canada (PHAC) as part of its Innovation Strategy was the first step to getting the project underway.

In order to create the partnerships, the team wanted to create dialogue between Aboriginal and non-Aboriginal organizations. Once the partners built trust with one another, the goals for the project could be achieved. Those goals included improving cultural awareness among community organizations, identifying opportunities to share resources, and strengthening links between community partners. They also wanted to support the organizations' initiatives and programming to promote healthy weights and overall health among Aboriginal children.

Initially individual and small group meetings were held to present the notion of strengthened partnerships. This was followed by an analysis and review of existing resources and literature.

Along the way, several trial projects were supported including the sharing of community gardens, hosting of health promotion events, and the production of health promotion material translated into Aboriginal languages.

They learned that in many cases, services and resources existed in the community, however, there wasn't extensive knowledge of the resources between organizations. By simply creating a connection between the partner organizations, they believed needs could be met without always requiring additional funding.

Upon successful completion of Phase I, the team received word that PHAC would provide an additional \$1.6 million to support Phase II, which will roll out during the next four years.

With learnings from the first phase in hand, the team is ready to mobilize their efforts and support partner organizations to promote Aboriginal child health. Their work will be extended to the Midland and Penetanguishene area, and to a third location to be announced at a later date.

At the end of the day, Wilk hopes that through their enthusiastic leadership, the partners will ensure sustainability of the program, continuing to improve the health and well-being of Aboriginal children. ■

Tasha Shields, who has been part of Phase I of the project, will serve as a site coordinator in London working at the N'Amerind Friendship Centre. For Shields this an incredible opportunity to give back to her community, and ensure a healthier future for children.



Piotr Wilk, PhD, assistant professor of Departments of Paediatrics, and Epidemiology and Biostatistics, and Tasha Shields, Master of Public Health

DISCOVERY



**ROBARTS RESEARCH
INVESTIGATES BLOOD
VESSEL HEALTH**

YOU'RE SO VEIN: UNRAVELING THE MYSTERIES OF BLOOD VESSEL HEALTH

THE VASCULAR BIOLOGY GROUP AT ROBARTS RESEARCH INSTITUTE IS FINDING ANSWERS TO SOLVE SOME OF CANADA'S LEADING CAUSES OF DEATH AND DISABILITY

BY WENDY HAAF

From heart attacks and strokes, to peripheral artery disease, heart failure, kidney disease and diabetes, Canada's leading causes of death and disability all share a common theme: unhealthy, dysfunctional blood vessels growing old before their time. This is also the thread connecting the scientists in the Vascular Biology Group at Robarts Research Institute. They are unravelling how the major risk factors for these conditions wreak their havoc on blood vessels, from the aorta to the tiniest capillary, and how to short-circuit or repair the resulting damage.

"There's high blood pressure, lipids, diabetes, and a network of genetic findings, and there's the fundamental process of getting old," noted cardiologist and co-director Dr. Geoff Pickering, who is one of the group's three clinician-scientists. "We dissect these at the molecular level, at the potential therapy level, and at the population level."

Dr. Pickering's clinical connection planted the seeds of one of his most significant discoveries. He realized tissue otherwise discarded by his cardiac surgery colleagues might hold valuable clues to blood

vessel health. After taking the tissue down to a single smooth muscle cell, Dr. Pickering generated such a pure preparation they were able to observe the cell behave in a healthy manner, contracting normally, and an unhealthy one, non-contracting.

When the scientists looked at the difference between the two behaviours, a growth factor dubbed FGF9 popped up as something that might play a role in healthy behaviour. The body is capable of growing new vessels as we age, but they're often leaky, imperfect, and cause more harm than good—for instance, feeding tumours, or causing buckling or separation of the retina in the eye.

Dr. Pickering demonstrated that FGF9 is a critical factor in forming cohesive, stable vessels with well-differentiated linings. Its job happens to be working on the supporting actors, that give blood vessels structure, Dr. Pickering explained, including precursors to pericytes, the smooth muscle cells that give blood vessels the ability to contract and relax. The hypothesis is that FGF9 recruits key stem cells, and coordinates the construction of new vessels.





Dr. Geoff Pickering in his lab

Dr. Pickering's clinical connection planted the seeds of one of his most significant discoveries. He realized tissue otherwise discarded by his cardiac surgery colleagues might hold valuable clues to blood vessel health.

Stem cell biologist David Hess, PhD, another of the vascular biology scientists, calls pericytes the 'conductors of the orchestra' in healthy blood vessel formation.

Hess is exploring angiogenesis from another angle, using stem cells from bone marrow and umbilical cord blood to study how haematopoietic precursor cells instruct epithelial progenitor cells to form a new vessel. "We're working on learning how to make more of these specialized stem cells and studying the communication between the haematopoietic cells, which are sending, and the endothelial cells, which are signal-receiving," he explained. Using genomic analysis, Hess has identified the mRNAs these haematopoietic cells produce to stimulate angiogenesis, and is now trying to pinpoint the proteins involved in this messaging.

In the meantime, the group has already successfully restored roughly 80 per cent of blood flow in a model of limb ischemia, by transplanting human stem cells into immunodeficient mice. Working closely with Hess and his colleagues, an American company has used this work as proof of concept for a clinical trial in humans, which is now underway. By decrypting the intercellular communication, Hess is hoping to identify proteins that might be used in place of stem cells. Currently, 100,000 North Americans per year lose a lower limb due to diabetes-related complications, and such an advance could have the potential to virtually eliminate the need for such amputations.

Another Vascular Biology Group researcher, co-director Murray Huff, PhD, has made a discovery that could one day preclude the need for people with diabetes to regenerate new vessels, and indeed might even prevent the disease from occurring in the first place. →

ROBARTS DISCOVERY

In Type 2 diabetes and pre-diabetes (insulin resistance), the liver pumps out an overabundance of very low density lipoprotein (VLDL) particles, which are thought to be one of the culprits behind the abnormally accelerated atherosclerosis that strikes such individuals. VLDL carry triglycerides and cholesterol. “We’re fairly sure these particles are toxic to the blood vessel wall,” noted Huff.

Several years ago, while examining the anti-cancer properties of molecules derived from citrus fruits, one of Huff’s colleagues discovered that, when incubated with a grapefruit flavonoid, human liver cells secreted less fat than usual. Huff’s lab built on this work, eventually revealing that the original flavonoid, and another (nobiletin), purified from tangerine pith, inhibited the synthesis and secretion of VLDL from liver cells. The group also elucidated the molecular mechanisms behind the effect.

Could nobiletin prevent atherosclerosis in mice bred to become obese and pre-diabetic on a high-fat diet, mirroring that of the average North American? The results of Huff’s next experiments were even more spectacular than he could have imagined. Compared to their cousins who ate the same diet with no therapy, nobiletin-fed mice not only developed 60 to 70 per cent less atherosclerotic plaque; they were much slimmer, and their blood levels of glucose, insulin, triglyceride, and cholesterol were much lower. The results were also impressive in mice that were already obese and insulin-resistant. “Within three weeks of the addition of nobiletin, the obesity is rectified by 25 per cent and by 12 weeks, it’s reduced by 50 per cent,” Huff said. “The blood fats have dropped by half, and levels of glucose and insulin are completely normal.” Preliminary results from further studies suggest the compound actually blocks the inflammatory response directly within the blood vessel wall.

Diabetes and metabolic syndrome doesn’t just damage blood vessels by promoting atherosclerosis; these conditions also impair normal, insulin-mediated relaxation of the vessels, an effect that’s partially allayed by some antihypertensive medications—discoveries that were made by another Vascular Biology clinician-researcher, pharmacologist Ross Feldman, PhD, starting more than 20 years ago.

More recently, Feldman and Rob Gros, PhD, have made fascinating findings about how other hormones—estrogen and aldosterone—act on blood vessels. The pair also demonstrated that these steroid hormones act on a receptor called GPR30 (G-protein coupled receptor 30), the function of which had been previously unknown (then misidentified as



an estrogen-only receptor, dubbed GPER), thus accounting for their formerly unexplained, fast-acting effects. Traditional steroid receptors do their work relatively slow. “Ross Feldman and I debunked the theory that GPR30 was an estrogen-only receptor,” said Gros, “and have shown that it can, more importantly, signal for aldosterone. While the underlying mechanisms aren’t yet clear, drugs that interfere with the aldosterone pathway reduce blood pressure and cardiovascular disease risk.”

What’s more, Feldman’s team has made a finding that helps explain estrogen’s sometimes contradictory cardiovascular effects: protecting against cell death under some circumstances, and promoting it in others. “It turns out if you change the balance between the traditional estrogen receptor and GPR30, you can turn estrogen into a bad actor,” Feldman said. “Same cells, same hormone—opposite effects.” One factor that seems to change the balance

TOP: Murray Huff, PhD
BOTTOM RIGHT: Rob Gros, PhD

“Within three weeks of the addition of nobiletin, the obesity is rectified by 25 per cent and by 12 weeks, it’s reduced by 50 per cent. The blood fats have dropped by half, and levels of glucose and insulin are completely normal.”

—Murray Huff, PhD



is blood vessel injury, which appears to cause estrogen to promote blood vessel re-growth. "Additionally, there is a genetic basis and in work with Dr. Rob Hegele, we've identified a pretty common variant of this receptor which has implications in terms of blood pressure and metabolic effects."

As director of the Martha G. Blackburn Cardiovascular Genetics Laboratory and an endocrinologist, Dr. Hegele is renowned for uncovering the genetic basis for various lipid abnormalities and other atherosclerosis risk factors using DNA sequencing. In collaboration with Feldman and Gros, Dr. Hegele also revealed a common variant of adenylyl cyclase (the master regulator of cardiovascular function) isoform IV, which is linked dramatic elevations in blood pressure.

Such findings, and countless others, have the potential to point drug developers toward promising new treatments like those Dr. Hegele is testing in phase II and III clinical trials involving patients with genetically induced, sky-high LDL cholesterol levels that don't respond to statin drugs. The medications, which are injected once a month, are monoclonal antibodies which essentially mimic the effects of a genetic variant that confers unusually low LDL levels. "We're at the point where these patients come in with cholesterol that's off the charts, and we find the misprint in a gene that explains why. By virtue of them coming here, we can offer them the opportunity to participate in a clinical trial of this new class of drugs. It's all part of a continuum." ■



Rob Gros, PhD is investigating cellular and molecular mechanisms involved in the regulation of vascular and cardiac function

1/5

Canadians has hypertension; another 1/5 has pre-hypertension

1/5

Canadian adults has metabolic syndrome

NEARLY 7 IN 10

Canadians 20 years and older have diabetes

500,000

Canadians are currently living with heart failure; 50,000 new patients are diagnosed each year

800,000

Canadians have peripheral artery disease

EVERY 7 MINUTES

Someone in Canada dies of heart attack or stroke-related illness

80%

of people with diabetes die of heart attack or stroke

\$12.2 MILLION

Cost on Diabetes in Canada each year

\$20.9 BILLION

Cost on heart attack and stroke in Canada each year

Canadians with diabetes are 23 times more likely to be hospitalized for a limb amputation than those without the disease

In the next half hour, four Canadians will die of heart attacks and strokes, and another three will be diagnosed with heart failure.

UNLOCKING THE MYSTERIES OF ALS

DR. MICHAEL J. STRONG, DEAN, SCHULICH SCHOOL OF MEDICINE & DENTISTRY, HAS SPENT THE PAST 25 YEARS LEARNING ABOUT ALS, AND HE'S CONFIDENT MORE MAJOR BREAKTHROUGHS ARE ON THE HORIZON

When Dr. Michael J. Strong was a third-year clerk, he saw a patient with a rare neurological disease, Amyotrophic Lateral Sclerosis (ALS) or Lou Gehrig's disease. He was told he might never see another case. Instead, Dr. Strong became one of the world's leading researchers in ALS.

Days after seeing that first case, Dr. Strong left for Denmark, where he worked for three months at a neuromuscular clinic that turned out to be the national referral centre for ALS. Back at Western University, he worked with Dr. Arthur Hudson, who had established the Canadian centre for ALS. It was during a rotation in neuropathology, Dr. Strong found himself seeing many of the patients in autopsy that he had treated clinically. Using an electron microscope, he was able to identify small "rocks" in the motor neurons of people with the disease. His interest piqued, he did a fellowship with Nobel Laureate, Dr. Carleton Gajdusek at the National Institutes of Health. He then set up his own lab, one of only three in Canada at the time, funded by the ALS Society.

"It should have been easy," said Dr. Strong. "When I started there had been less than 100 years of research in ALS. We knew it affected the motor neurons, the largest cells in the nervous system. How hard could it be to figure out what was going wrong?"

Very hard, as it turns out. ALS is a complex, multi-factorial disease. It involves the motor system, and in many patients also produces a cognitive syndrome. He is optimistic the next generation of researchers will solve the puzzle. "I'm absolutely convinced we will understand this disease. There are young scientists asking questions with methodologies I don't even understand—they'll build on our work and move it forward."

Early in his career, Dr. Strong developed a novel technique for taking motor neurons out of animal spinal cords and growing them in culture. Using the cultures he was able to induce the pathology seen in the animals.


"That told me this disease is a dynamic process that doesn't happen suddenly and perhaps can be reversed."

He and his team went on to demonstrate that when ALS-like symptoms are induced in animals, they are capable of making a full recovery. "I believe motor neurons have the capacity to reverse the disease process, because I've seen it happen," said Dr. Strong. The team has also shown that inflammatory cells produced by the immune system play a critical role in the progression of the disease.

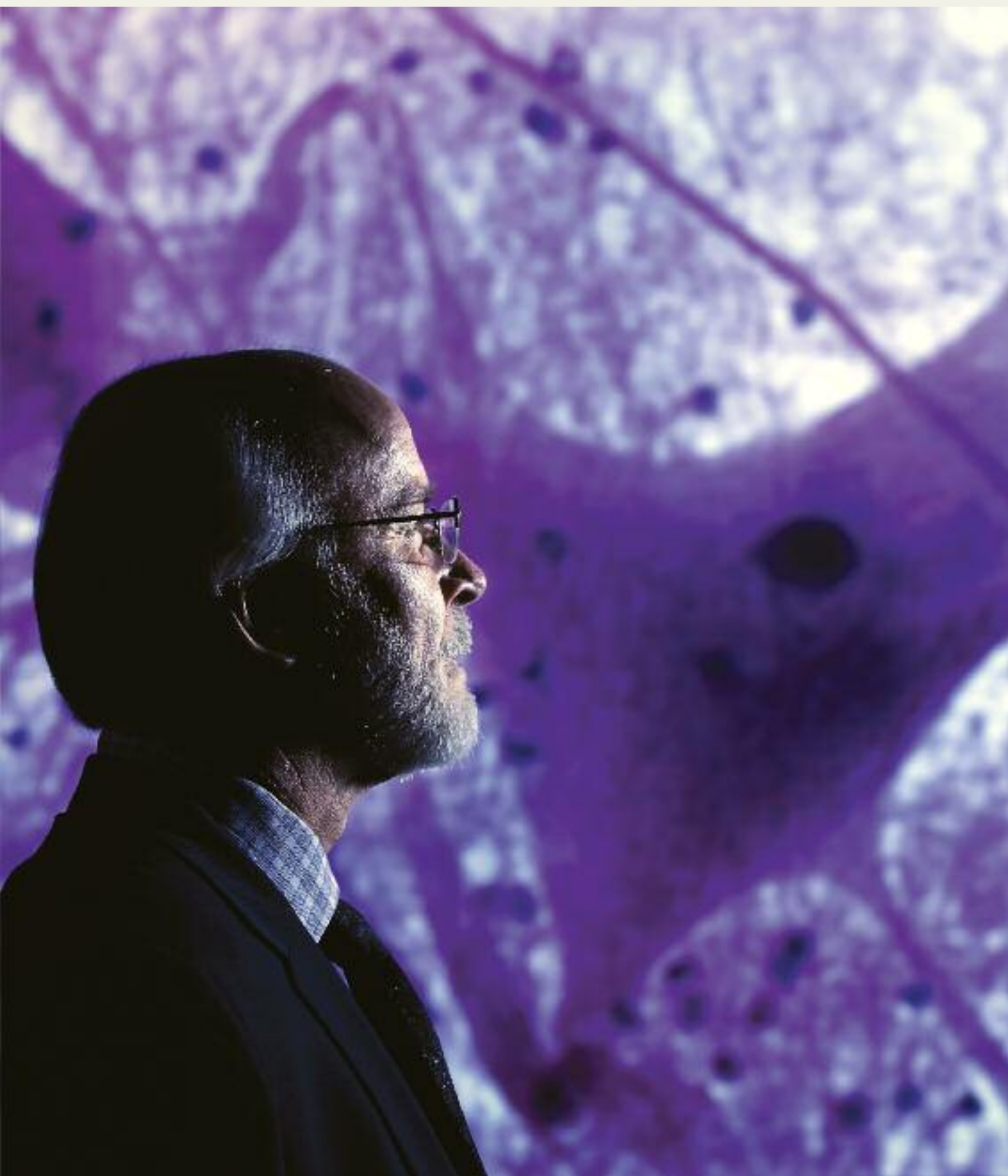
Earlier this year, Dr. Strong and his team announced another important discovery. They had identified a genetic mutation in a protein, RGNEF, which they had earlier described as forming pathological inclusions (the "rocks" that he first saw as a student) in motor neuron cells. Through this work, Dr. Strong and his team showed that virtually all known gene defects in ALS could be linked to dysfunction in the metabolism of RNA—an observation that is now considered to be the leading hypothesis regarding the cause of ALS.

Now, Dr. Strong is leading a major new project under the auspices of the recently created Ontario Brain Institute. Working with partners from two other universities and 90 patients, the team will develop a model to predict which ALS patients will also develop the cognitive syndrome. Forms of the dementia are found in other diseases too. "We know how to produce the pathology causing the cognitive component in cell culture and we can stop it. I'm convinced if we can identify the individuals who are likely to be affected up front, we can change the disease course."

Dr. Strong's commitment to his research program is clear, and he counts on an outstanding lab team, led by Kathryn Volkening, PhD, to keep the work moving forward. "This is an exciting time for ALS research, and I know that as Dean I can also do a lot to drive a culture of research in the School." ■



Dr. Michael J. Strong, dean, Schulich Medicine & Dentistry stands next to an image capturing a living motor neuron



OF MICE AND MIND

MARCO PRADO, PHD, TAKES HIS RESEARCH TO THE NEXT LEVEL

BY KATHY WALLIS

It's been five years since Marco and Vania Prado, both PhDs, moved to London from Belo Horizonte, Brazil and combined their two labs at Robarts Research Institute. Looking back, Prado said, "The move for us has been amazing. In the five years we've been here, our science has increased to a level that we probably could not have achieved in 10 to 15 years in Brazil."

One measure of that success is publications—more than 30 since 2009. Another measure is the amount of research funding he's received from agencies such as the Canadian Institutes of Health Research (CIHR), PrioNet Canada, Alzheimer's Association (USA), Heart and Stroke Foundation, and others. While that support is vital, Prado also credits the collaborations he has here at Schulich Medicine & Dentistry for helping to take his research to the next level.

Prado's focus remains on delving into the mechanism by which neurons talk to each other. The range of diseases he studies has widened to now include: Parkinson's, cardiovascular disease, stroke, and prion diseases such as "mad cow" disease.

"Alzheimer's is a very complex disease," said Prado. "However the speed we're learning about Alzheimer's is fantastic. I'm very optimistic that we will find ways to



Marco Prado, PhD

“Alzheimer’s is a very complex disease. However the speed we’re learning about Alzheimer’s is fantastic. I’m very optimistic that we will find ways to slow down or to cure Alzheimer’s disease in my lifetime.”

slow down or cure Alzheimer's disease in my lifetime, but it's unlikely to be next year, and it's unlikely to be one miracle drug." He says the changes in how neurons talk to each other can occur two decades before the dementia becomes noticeable, so it's important to find a way to test new drugs on people who are going to get Alzheimer's, not those who already have the symptoms.

One of the things that set the Prado lab apart from others is their mice. They have fine-tuned how to genetically alter mice to create models for various neurological diseases. They're studying sophisticated mice which can be taught to use a touch screen, ones that respond to light to activate certain neurons in the brain, and a line he calls "Forrest Gump," which has an increased amount of the neurotransmitter acetylcholine. Those mice can run incredibly fast, but they're not smart.

Scientists and postgraduate students from around the world are eager to work with those mouse models, and it's often easier to move people than mice. So they come to Robarts to work in the Prado lab, leading to a diverse environment, sometimes with as many as nine different nationalities working together on a common goal—to better understand the brain and the diseases which affect it. ■

STUDENT PROFILE



THE TIE THAT BINDS

REGARDLESS OF THEIR DISCIPLINE, STUDENTS ACROSS SCHULICH MEDICINE & DENTISTRY ARE BOUND BY A DESIRE TO BRING POSITIVE CHANGE TO THEIR COMMUNITIES

Radha Joseph, long inspired by the power of music to heal, is beginning her undergraduate medical education at Schulich Medicine & Dentistry

STUDENT PROFILE

BY JENNIFER PARRAGA

Recently during a convocation address, Dr. Michael J. Strong, dean, Schulich School of Medicine & Dentistry, quoted the lyrics “Kick at the darkness until it bleeds daylight,” from the song *Lovers in a Dangerous Time* written by his favorite musician Bruce Cockburn. According to Cockburn, the words mean; “we can’t settle for things as they are...or just throw up our hands.”

Not settling. Always seeking. These are in fact, just some of the qualities that bind graduates from the Schulich School of Medicine & Dentistry. While their stories are unique, throughout their journey at Schulich Medicine & Dentistry each has doggedly worked to achieve their goals while always seeking for improved care, enriched educational experiences for their colleagues, and change in their community.

A graduate of the BMSc Scholars Elective Program, Radha Joseph was inspired by her parents to consider how she could be a catalyst of change. It was through voluntarism Joseph realized she was able to enrich the lives of people in the London community. The bonus of course, came through the development of new skills and a greater knowledge of what truly mattered in life. With a passion for the arts and a love of music, becoming involved with Arts For All Kids programs seemed like a natural fit. Arts For All Kids offers free music lessons to children whose families cannot afford instruction. Working with young children really helped her to “understand the true power of music, its ability to heal and inspire confidence, self-esteem and trust.” Seeing her students return as volunteers themselves years later taught her “the impact of sharing with others is boundless.”

Stepping out of her comfort zone, Joseph also became involved with Habitat for Humanity UWO and took on the role as Chair of the Habitat London Youth Project. In each of the past three years, she had the opportunity to work alongside a local family and fellow volunteers to create a home. “Seeing the progress on a build site from start to finish, and sharing in the family’s joy at receiving a home makes for an incredibly moving experience.” She was inspired and motivated by those around her and quickly realized when you work with people who have a passion for community development, there is



Dr. Michael Verbora, now doing his residency, took a few moments to participate in a photo shoot in Toronto



very little that can't be achieved.

Joseph will begin her undergraduate medical education at Schulich Medicine & Dentistry in September 2013 and continue to bring change to her hometown community of London.

Dr. Michael Verbora, MD '13 arrived at Schulich Medicine four years ago with an MBA under his belt, a dream to become a physician and a plan to become a leader who could bring change through advocacy and the development of policy. These were not just ideals. Dr. Verbora was a man of action who took every opportunity to learn and grow in order to achieve his goals.

During his undergraduate years, he took on leadership and advocacy roles, serving as Class President for two years and School President for one year. He also mentored junior medical students, initiated an Innovator Grant for students, inspired an Ivey-Schulich Medicine partnership for business education for medical students and helped to initiate a podcast project. Taking the School's value of social responsibility to heart, he became involved with numerous class charitable causes, including volunteering at the Salvation Army, as well as Camp Trillium, a summer camp for children and their families living with cancer. As he begins the next phase of his medical training, Dr. Verbora will continue to develop his leadership skills to open doors for physician advocacy and health care policy development through the Ontario Medical Association and the Canadian Medical Association.

Like Dr. Verbora, Dr. David D'Silva, DDS '13 made it a priority to get involved with the community and with student politics on campus during the past four years. Growing up, his parents always encouraged him to get involved and find ways to give back to his community. Although he moved away from his home town, he brought this value with him to Schulich Dentistry. At the top of the list was his participation in the Dental Outreach Community Service (DOCS) program. It is a unique program providing dental care to low-income families without dental insurance.

With a keen interest in business and leadership, Dr. D'Silva found a place with student government becoming Class President of the UWO Dental Student Society. In this role he was able to work alongside the other class presidents

and the administration to resolve conflicts, and serve as the voice of the student body. He also had the opportunity to lead the transition and implementation of the new curriculum.

Miranda Kirby, PhD '13 is no stranger to leadership, especially when it comes to her research. Throughout her relatively short academic career, she has posted some truly impressive numbers including 30 awards, scholarships and distinctions, 23 peer-reviewed conference abstracts, 19 peer-reviewed oral presentations, 52 peer-reviewed poster presentations and four invited presentations. Add to that five publications in-press, 14 published, one under review, three in preparation, two published conference papers and it's hard to keep track.

Taking the School's value of social responsibility to heart, Dr. Verbora became involved with numerous class charitable causes.

For Kirby however, the greater meaning of these accomplishments is the difference her skills and research can make in people's lives. Early on, she came to value the importance of mentoring and sharing of knowledge. In addition to taking on the roles as graduate teaching assistant and supervisor, she volunteered for Let's Talk Science. A national organization with headquarters in London, the program inspires interest and enthusiasm for science and education in children and youth. Most importantly however, is how her research can help those people living with lung diseases including cystic fibrosis, asthma and bronchial dysplasia in children.

As Dr. Strong concluded his convocation address, he encouraged graduates to always remember the great lyrics of Bruce Cockburn as they become "leaders of our communities and of our society." It's clear that these students are our future leaders who have the skills and the passion to enrich our communities and our lives. ■

ALUMNI OF DISTINCTION

SCHULICH MEDICINE & DENTISTRY PROUDLY RECOGNIZES THE ACHIEVEMENTS OF ITS ALUMNI, HONOURING THEM THROUGH THE ALUMNI OF DISTINCTION AWARDS

BY JOHANNA MESJARIK

Annually, the Schulich School of Medicine & Dentistry recognizes the achievements of alumni through the Alumni of Distinction Awards. The prestigious awards are given to people who are leaders in their field, live the values of the School through their dedication, and are making the human experience and life's journey better for others.



Dr. James E. Jean, DDS '73

"Absolutely humbled" by the recognition, was one of this year's recipients Dr. James (Jim) E. Jean, DDS '73. However, as you learn more about his commitment to Schulich Dentistry and its

students, it is obvious that he is most deserving.

Upon graduating, Dr. Jean opened a dental practice, and a year later he went back to the School. This time, however, he wasn't the student, but the teacher, serving in the role as a part-time, pre-clinical instructor. That was 40 years ago. This fall, he returns to the clinic to teach once again. In addition to teaching on the clinic floor, Dr. Jean, now an Assistant Professor, also mentors 12 to 14 students annually.

After teaching for so many years, he remains inspired, knowing that he is contributing to the betterment of the School and knowing that graduates are prepared for their careers. "The possibility of making an impact, in some small way, in the functioning of the School and the quality of the students that come out of the program is important—I'm rewarded when I see students graduate." ■

Schulich Medicine graduates receive Western Alumni Association Awards

Every year the Western's Alumni Association offers annual awards that recognize alumni who have made outstanding contributions to their profession or communities. This year, two Schulich School of Medicine & Dentistry alumni were among the recipients. Congratulations to Dr. Robert Farley, BA '50, MD '54 on receiving the Dr. Ivan Smith Award; and to Dr. Margaret Kavanagh BA '74, MD '78 on receiving the Professional Achievement Award. To read more about their outstanding contributions to their profession and community please visit www.uwo.ca/alumni



Hugh Allen, MD '48
Community Service Award

If you know Dr. Allen, you know of his caring heart, the passion he holds for his job, the students he has taught, and the patients he has treated. You also know his compassion doesn't stop at a local level as he has played a significant role in addressing health disparities in under-developed countries. Living the School's value of social responsibility, he has made yearly visits to Yemen, one of the poorest countries in the world. With an extremely high prenatal and maternal mortality rate, Dr. Allen's visits involved the supervision of surgical training of obstetricians /gynaecologists. And true to his spirit of innovation, he modified his teachings and techniques to the needs and expertise of the trainees and the local environmental challenges.



Douglas Bocking, MD '43
Professional Achievement Award

Innovative, determined and passionate are just a few words that describe Dr. Bocking—retired physician, Professor Emeritus, former Dean of Medicine of Schulich School of Medicine & Dentistry, and Vice-Provost of Health Sciences at Western. Dr. Bocking's innovative leadership in medical education

led to the creation of the first academic department dedicated to family medicine. His fervent passion for bettering the lives of others is felt throughout the community. He has sat on numerous boards throughout his career giving back as an historian and conservationist. He has also been recognized with many awards, including being named a Member of the Order of Canada in 1999.



L. Suzan Ekim, DDS '01
Young Alumni Award of Distinction

Dr. Harinder Sandhu, director and vice-dean, Schulich Dentistry, will tell you, "whatever Dr. Ekim touches turns to gold," and he's not wrong. After graduating at the top of her class and receiving the gold medal of distinction, Dr. Ekim completed her Orthodontics Residency Specialty Certificate and master's degree in Science at the University of Minnesota. This young alumna is well-known amongst the orthodontic community and an educational leader in her field. Dedicated to giving her patients the beautiful smile they deserve, today she runs a successful practice and is a clinical Assistant Professor at the University of Minnesota teaching orthodontic care of cleft lip/palate and surgical orthodontic patients.



Brian Feagan, MD '83
Professional Achievement Award

Inflammatory bowel diseases are painful and debilitating, however, Dr. Feagan is fighting for better treatments on behalf of millions. His tireless efforts and unwavering dedication have been instrumental in advancing new therapies for those who suffer from the disease. Focused on the design and implementation of randomized clinical trials of therapy, he is an internationally recognized expert in the field and a leading force in clinical trials, research and evidence-based medicine. He has brought worldwide acclaim to the Robarts Research Institute. His tremendous achievements, together with his commitment to excellence in both clinical and academic medicine, truly set him apart as a role model for his students and colleagues.



David Jaffray, PhD '94
Excellence in Basic Sciences Research Award

Identified as one of Canada's Top 40 Under 40, and a recipient of Western's Young Alumni Award in 2004, it can be said Dr. Jaffray has accomplished much in a short period of time. The head of Radiation Physics at Princess Margaret Hospital and a senior scientist within the Ontario Cancer Institute, Dr. Jaffray's

research in image-guided radiation therapy focuses on the development of novel imaging systems and concepts to improve the precision of therapy and translating these advances to clinical practice. Along with being a Professor in Departments of Radiation Oncology, Medical Biophysics, and Institute for Biomaterials and Biomedical Engineering at the University of Toronto, Dr. Jaffray's interest in commercialization has led to the development of a variety of commercial products including software and hardware.



Kenneth H. Wright, DDS
Honorary Alumni of Distinction Award

A much loved Professor, Dr. Wright has been described as "a highly regarded periodontist, a popular and inspiring teacher, a man of enormous consciousness and sense of personal responsibility, and a creative and resourceful innovator." Among his many accomplishments, Dr. Wright created the Dental Outreach Community Services (DOCS), a program which, for the past five years, has been providing free dental care to people in the City of London who cannot afford dental treatment and don't have access to dental insurance.



Working and living in Stratford, Dr. Patricia Nascu (shown with her daughter Claudia), gets to share with students what it's like to work in, and run, a rural practice



PRACTICAL EXPERIENCE VITAL TO STUDENT LEARNING

AS A PRECEPTOR IN STRATFORD, ONTARIO, ALUMNA DR. PATRICIA NASCU IS PROVIDING VITAL HANDS-ON TRAINING RESIDENCY TRAINING AS PART OF SCHULICH MEDICINE'S DISTRIBUTED MEDICAL EDUCATION PROGRAM

BY JOHANNA MESSJARIK

Growing up in Romania, Dr. Patricia Nascu studied medicine in the city of Timisoara. The scarcity of resources in the country had a huge impact on her training to say the least. Not only did she not receive hands-on training, the hospital she worked in could only produce 10 x-rays per month.

It wasn't until she arrived in Canada and began her clerkship, she became more involved as a learner. Today as a preceptor in Stratford, Ontario, supporting distributed medical education for Schulich Medicine, she has the opportunity to provide students with a learning experience she only dreamed of as an undergraduate student.

Dr. Nascu came to Canada with her husband in 1998. After learning English and writing a multitude of screening exams, she started her Obstetrics and Gynaecology residency training at Schulich Medicine.

During this training, she really experienced what it means to be a doctor. "In Romania, I had seen births, but it's transforming when you do it yourself. Here, they would say, put your gloves on and go help that baby and you just have to do it... it's one of those experiences when all of the hair on your body stands up on end and it changed everything for me."

Today, in her practice, Dr. Nascu is able

to offer the same hands-on training she received in her residency program to the students who train with her.

"Being able to provide this opportunity, this mentorship, to these students is wonderful. From my own experience I know that having six students standing around watching a surgery is not an ideal way to learn." Dr. Nascu and her partner recognize the knowledge and abilities the students bring with them, and they let them be as independent as possible, while guiding them as if they were the only person in the world who is learning.

Working in Stratford, Dr. Nascu also gets to share with students what it's like to work in, and run, a rural practice. She believes that by working in a rural community the learner gets the best of both worlds as there is a lot of variation of what is done on a daily basis. "I see pregnant women, deliver babies, care for women with gynaecological difficulties, perform surgery, and work with my colleagues at the hospital."

It seems unlikely that Dr. Nascu's family would ever leave Stratford. The niche and lifestyle she has carved out for herself and family, the ability to give students hands-on experience as a preceptor, knowing her patients and staff outside her practice, and seeing babies she's delivered grow up offers the best of all worlds. ■

A STORY IN THE MAKING

DR. JOHN DENSTEDT BEGINS A NEW CHAPTER IN HIS LIFE AS THE SPECIAL ADVISOR ON GLOBALIZATION, INTERNATIONALIZATION AND SIMULATION AT SCHULICH MEDICINE & DENTISTRY

BY JENNIFER PARRAGA

As a public school student, Dr. John Denstedt, MD '82, happened across a paperback book called *The Making of a Surgeon*, by William Nolen. As he turned the pages of the story about a young man doing his medical training in the heart of New York City, he was inspired. He knew immediately he wanted to be a surgeon.

Years later, he found himself studying science at Western University. Medical school and residency training at Schulich Medicine & Dentistry followed shortly after. He then ventured to Washington University in St. Louis to complete a fellowship in endourology with Dr. Ralph Clayman, now Dean of Medicine at University of Irvine, and considered an icon of urology. A few years later Dr. Denstedt was back in London, Ontario. He became a faculty member at Schulich Medicine, and set up his practice in urology. That was 23 years ago.

Now Dr. Denstedt is turning the page on another chapter in his own story. Recently he took on a new role as Special Advisor to the Dean on Globalization, Internationalization, and Simulation. In doing so, he will provide leadership for the implementation of the Schulich School of Medicine & Dentistry White Paper on Globalization and Internationalization. With research and training experience spanning the globe,

this new role is the perfect fit.

Dr. Denstedt will focus on creating partnerships between academic institutions from around the world. "We want our students to be global citizens," he said. "It's extremely important that people have an outward view of the world and being able to provide this to our students is a key driver of our work."

He will also be building upon and integrating the current expertise in simulation training at Schulich Medicine & Dentistry and across the London health sector to develop a comprehensive educational and international operational strategy for simulation training for the School. (see page 6-9 for more on this initiative)

Working with Western University, in particular the Faculties of Engineering and Health Sciences, he will coordinate the development of biomedical devices addressing the innovation gap. The gap is created when engineering discoveries are made for the benefit of health care, but never make it to the manufacturing level, therefore never benefiting patient care. "We have a lot of capacity here in London, so the vision of the Biomedical Devices Institute at Schulich Medicine & Dentistry will help meet this demand, as our researchers begin

to translate their discoveries and ultimately be manufactured," said Dr. Denstedt.

Originally, Dr. Denstedt chose to attend Western University because of the diversity and the quality of training he knew he would receive. As an alumnus, he is proud to be working on such important initiatives that will advance the School and impact the education of our next generation of leaders.

Dr. Denstedt's schedule is a busy one. While maintaining an active practice, he also teaches, takes part in research and serves as City-Wide Chair/Chief, Department of Surgery. However, one year into his new role and he has already accomplished a number of key initiatives, including a partnership agreement with West China School of Medicine and West China Hospital in ChengDu, China. The appointment of Dr. Bob Kiai as the Ray and Margaret Elliott Chair in Surgical Innovation has also been a major milestone.

This story is definitely one that will continue, as Dr. Denstedt takes on the world in developing new partnerships, advancing the School's vision for simulation education and training and establishing a new Biomedical Devices Institute. ■



“It’s extremely important that people have an outward view of the world and being able to provide this to our students is a key driver of our work.”

—Dr. John Denstedt, MD '82

SCHOOL LIFE

Pursuing medicine as a career was never an expectation of the Howard children however, as the youngest, Jocelyn, begins her final year of undergraduate medical training, it appears as though medicine has become a family affair.

BY JASMIN NEIL

For the Howard family children, being raised by parents who are doctors lent itself to some very different childhood experiences. Instead of learning just colours and shapes, they were taught the different bones and muscles of the body. Teaching videos done by their father, Dr. John Howard, a paediatric gastroenterologist and Professor in the Departments of Paediatrics, and Medicine at Schulich Medicine & Dentistry, were much more interesting to watch than anything on cable television. Dinner conversation encompassed everything from how the day went, to various bodily functions.

That upbringing led two of the children, Jocelyn and Jessica, to follow in their parents' footsteps and become doctors.

Pursuing medicine as a career was never a given, nor an expectation of the Howard children, however. Family matriarch, Dr. Nicole LeRiche, associate professor, Department of Medicine, and a rheumatologist, notes that while she and her husband Dr. Howard are both practising physicians, neither of them ever expected their children to join what was becoming a family legacy "My father was a physician as well, and I never felt pressure to follow in his footsteps. Both John and I felt it was important for our children to create their own paths and pursue a career they love knowing they had our full support, no matter what."

Jocelyn, the youngest member of the Howard family, and a fourth-year medical student has an undergraduate degree in voice performance from the University of Toronto.

It wasn't until after her graduation that she started seriously thinking about medicine. "It sounds like a cliché, but I was travelling through Europe and thinking about what I wanted for my future. While I was in Paris, I fully decided I wanted to go to medical school and applied to write my MCATs from there." Luckily, Jocelyn had always been interested in science, and picking up the occasional summer course simplified the transition.

Dr. Jessica Howard, MD '07, the eldest daughter in the family, considered a few different career paths before deciding upon medicine. Graduating with her Bachelor of Science degree in physiology and pharmacology in 2003, Jessica applied to both teacher's college and medical school, hearing back from medical school first. Currently, she works as a family physician with a specialization in skin disorders. Like her parents, she also holds an academic position at Schulich Medicine, as an Assistant Professor in the Department of Family Medicine.

Meanwhile, Brendan, the squeamish one of the three siblings, chose not to go into medicine and has a successful career in management consulting.

While it was never an expectation, both Dr. LeRiche and Dr. Howard are pleased both their daughters have chosen medicine. Now that a third generation of Howard doctors are embarking on their own careers, not much has changed around the dinner table. The family, who gets together often, still discusses more 'unconventional topics' over a delicious meal. ■





MAKING MEDICINE A FAMILY AFFAIR

TRIPLING THE POWER OF PHILANTHROPIC SUPPORT



LEVERAGE GIVING, THE BIGGEST TREND IN PHILANTHROPY, ALLOWS DONORS TO INCREASE THE INVESTMENT POWER OF THEIR DONATION MULTIPLE TIMES OVER

BY CHRISTINE WARD

Give Dr. Michael J. Strong a dollar and he'll turn it into three. And, no, Dr. Strong isn't a magician, playing the stocks, or a whiz at online poker. The Dean of the Schulich School of Medicine & Dentistry prefers to think of himself as an "opportunity-maker" who is committed to doing what he can to leverage investments in his School.

That's the very can-do attitude that attracted Brent and Marilyn Kelman to Roberts Research Institute. The long-time supporters of numerous organizations in the community, routinely seek out giving opportunities that include a capacity for matching dollars. Last fall, they offered \$260,000 to Western University's Be Extraordinary Campaign to help

"It's not a policy or a stated program, but the University is very receptive to this approach. Where the opportunity arises and I can make the most to help to school, I do it."—Dr. Strong

The School recently received a \$100,000 gift from a donor. "He wanted to invest in research," said Dr. Strong. "I told him you can advance research by helping the entire Institute." Dr. Strong used the gift to attract matching funding from the Michael Halls endowment, established in 2001 by a generous ALS patient. The funds were leveraged again as part of a special University program and then again by a corporate partner.

The result was more than \$300,000 in centrifuges for use throughout all of Roberts Research Institute.

Welcome to one of the biggest trends in philanthropy. From challenge gifts and individual-corporate partnerships, to public-private partnerships, even research grants matched by philanthropic gifts, leverage giving allows donors to increase the investment power of their donation multiple times over.

"It's not a policy or a stated program," explained Dr. Strong, "but the University is very receptive to this approach. Where the opportunity arises and I can make the most to help the School, I do it."

the Molecular Brain Research Group purchase a \$750,000 super-resolution multiphoton microscope. The couple challenged Dr. Strong and research group director Stephen Ferguson, PhD, to use their gift to jumpstart other funding opportunities.

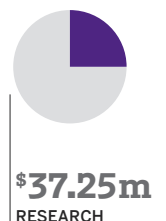
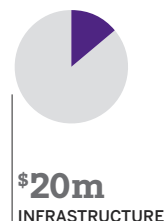
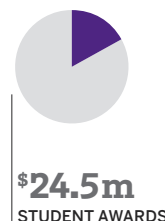
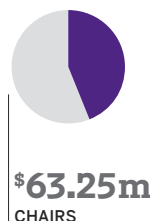
This spring, Schulich Medicine & Dentistry at Western became the first institution in Canada to house a ground state depletion microscope, funded by the Kelmans, a matching corporate partner and the School itself. The cutting-edge technology allows researchers to see cells at a five times higher resolution, much like the bull's eye on a dartboard compared to the entire board visualized through a regular resolution microscope.

"If not for the leverage of the Kelman's gift, we wouldn't have the microscope," said Ferguson.

That's exactly the kind of impact Brent Kelman wanted to wield with his donation. "There are very good scientists doing excellent work here who could be aided and abetted by new technology."

New technology and the right mix of partners. ■

Through the Be Extraordinary Campaign, the School seeks to raise \$145 million to enrich the experience of students and become a leader in optimizing life-long health. For more information, visit extraordinary.westernu.ca



Brent and Marilyn Kelman, offered \$260,000 to Western University's Be Extraordinary Campaign, funding a super-resolution multiphoton microscope

ENDOWED CHAIRS PROVIDE CRITICAL FUNDING TO RETAIN AND ATTRACT THE FINEST FACULTY RESEARCHERS WHO WILL MOVE SCIENCE FORWARD

BY CHRISTINE WARD

Several days a week, Dr. Amit Garg cares for his patients by not seeing them at all. Dr. Garg is a nephrologist, and he's also a Schulich School of Medicine & Dentistry researcher committed to improving the health and care of patients with kidney disease through new discoveries. As a past holder of a Clinician Scientist Award from the Canadian Institutes of Health Research, 70 per cent of Dr. Garg's time is protected for research—a stand-out in a world where most physicians earn a living through clinical services.

If Dr. Michael J. Strong, dean, Schulich Medicine & Dentistry, has his way, though, the School will soon be home to more faculty researchers like Dr. Garg.

Western University's fundraising campaign, Be Extraordinary, seeks support to establish 100 new endowed chairs to attract and retain the world's best faculty to the University.

"An endowed chair allows you to do two things right away: retain really great people and attract new," explained Dr. Strong. Interest from a chair endowment enables the School to remunerate researchers for time spent away from the bedside exploring clinically-relevant questions. For many clinician scientists, an offer of financial support is key to their ability to pursue research and to pursue it at Schulich Medicine & Dentistry.

In keeping with the School's 10-year vision to become "a global leader in optimizing life-long health through innovations in research, education and active engagement with our communities," Dr. Strong plans to recruit and retain researchers in areas of existing strength—public health, stroke prevention, cardiac surgery and hemodialysis research, among them.

"We need to be able to create chairs that

build worth. I would never establish a chair in an area in which we have no strength; I would also never bring in a chair doing exactly what we're already doing. A really good chair moves

"We need to be able to create chairs that build worth. A really good chair moves the School and the science forward."
—Dr. Strong

the School and the science forward."

In the Division of Nephrology, for example, recruitment is underway for the Research Chair in Better Kidney Health, funded through \$3 million in private gifts and matching funding from the University and Department of Medicine. Fundraising is also underway for the Chair in Dialysis Research, proposed to be named in honour of Dr. Robert Lindsay an internationally recognized Schulich Medicine & Dentistry clinician scientist.

Division head, Dr. Peter Blake, hopes the funds will attract additional, clinical researchers (and the students who will follow them) to a unit already recognized for its life-changing discoveries. Dr. Lindsay led the only Canadian team in a North American study that showed daily dialysis can have a positive impact on the quality of life and cardiac health of patients with kidney disease. Dr. Bill Clark and Dr. Garg conducted the longest-running study of the chronic health conditions of Walkerton's residents following the contaminated water tragedy. ■



Dr. Amit Garg, professor,
Division of Nephrology



BUILDING RESEARCH STRENGTH ONE CHAIR AT A TIME

A PASSION FOR EDUCATION

BY JASMIN NEIL

Anita Woods, PhD, has a passion for education, learning, and her students. Her multiple teaching awards are proof of her hard work and dedication. Blending her two loves, technology and education, Woods is constantly searching for new ways to integrate technology into her lessons, keeping content fresh and interesting. She also reads each student evaluation and comment she receives, making changes to lesson plans based on student feedback.

Woods' passion for education started at a young age. Growing up one of four children in a Mennonite family, Woods did not have a typical upbringing. Her parents immigrated from Mexico and encouraged their children to further their education and follow their dreams. All of the Woods children have gone on to big careers: civil engineering, race car design, interior design, and professorship.

"My parents weren't allowed to go to school; they grew up on farms in Mexico. As soon as my cousins got to grade eight, most of them emigrated back to Mexico to work on the family farm. School was always this special thing we got to do that other family members didn't," Woods noted. She readily admits it is one of the main reasons she has never actually left school.

Her love for learning grew, taking her to a two year master's degree with the plan of teaching high school science. Woods found an ideal opportunity with Frank Beier, PhD, and the discovery of a new love—research. During her time in Beier's lab, Woods extended her master's to a PhD and began to think about postdoctoral research and a career as a traditional academic.

However, the week before her PhD defence, Woods learned her mother had been diagnosed with pancreatic cancer. Three months later, her mother lost her courageous battle.

"I don't even know how I defended my



Anita Woods, PhD

thesis to be honest. All the things I had planned were put on hold. Frank (Beier) was really great. He let me stay in his lab while I tried to put everything together. It was a difficult time to be making major decisions."

Luckily, a year-long teaching contract opened up in the Department of Physiology and Pharmacology, giving her time to figure out her next steps. During her contract, Woods received excellent reviews, leading to an offer of a full-time teaching position with one catch—having to give up research. It was one of the toughest decisions she's ever had to make, but one she has never regretted. "Looking back, when I think about it, everything was the way it should have always gone. I think I would have really missed out on teaching, something I love to do, had I pushed forward with Plan A."

Naturally, she has not been able to leave her love of research behind. Working with Jay Loftus, Instructional Designer, Strategic Technology Commons, she is trying to better understand how to evaluate the student experience. Each year she works to improve her teaching methods and lessons, bringing in new technology and updating material based on feedback and evaluations provided by students.

To keep content interesting, Woods has introduced some new technology into her lessons including the use of Twitter and iPads, the latter

allowing her to instantly upload any diagrams or formulas she uses to her class' online learning site.

Woods believes bringing technology into the classroom is a good thing. "It forces me to think about what I'm saying as I say it, slows the pace and allows students to build with me, but I do it on an iPad instead of a chalkboard. I haven't invented anything new—I'm just using what's available a little differently."

The next big advancement she is going to try is augmented reality. This fall, students will receive cards in their study guides which, when placed in front of a webcam, will show a virtual model of an organ on a computer screen.

It is obvious teaching is Woods' calling. This year, she made the University Students' Council (USC) Teaching Honour Roll, and received both the USC Award of Excellence in Undergraduate Teaching and the Marilyn Robinson Award for Excellence in Teaching. These awards, in her words, "mean everything", and help validate all her hard work, especially after what she calls the toughest teaching year she's had.

With only five years of teaching experience, Woods is focused on the future, searching for the next way to improve her lesson plans and teaching methods. It seems Woods has finally found a way to mix her two loves—education and research—into the perfect blend. ■

A middle-aged man with glasses, wearing a tan suit, blue shirt, and striped tie, smiles while holding a clear glass model of a long bone. He is standing in a pediatric clinic, with a child's pelvis model on a stand to his left and colorful decorations on the wall behind him.

Extraordinary healing starts here.

As a boy, Dr. Peter Armstrong (MD'72) volunteered at his home town hospital and was determined to one day become a doctor. Today, as Chief Medical Officer at OrthoPediatics Corp., and previously at Shriners Hospitals for Children and the Hospital for Sick Children, he has advanced paediatric orthopaedics around the world. And his commitment to children's health began at Western.

Help develop the next generation
of extraordinary leaders.

extraordinary.westernu.ca

Be Extraordinary.

The Campaign for Western



LEADERS IN INNOVATION

— DINNER 2013 —

Robarts Research Institute

LONDON'S PREMIER
RESEARCH EVENT

Monday, November 18

London Convention Centre

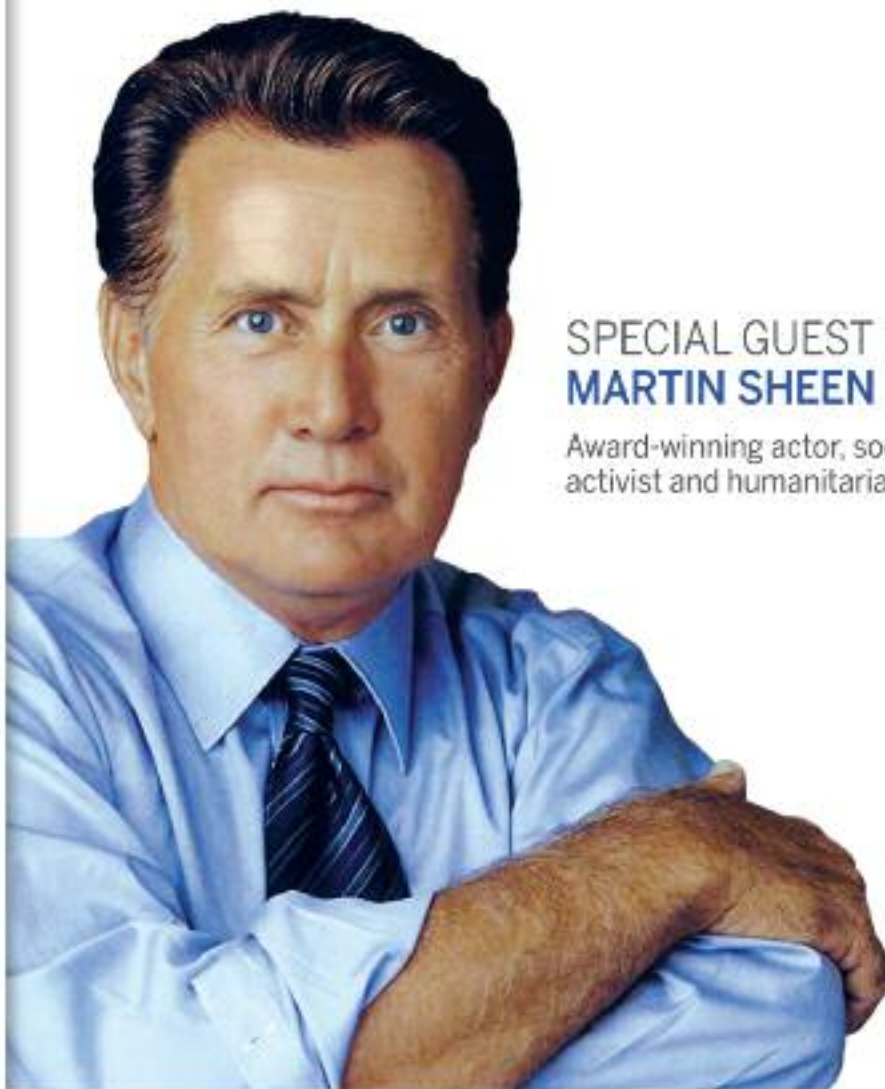
5:00 to 9:00 p.m.

Purchase your tickets today
westernconnect.ca/robarts-dinner
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MA'87, LLD'11, Anchor,
CBC News Network



Celebrating innovations in cardiovascular research and featuring the presentation of the 2013 J. Allyn Taylor International Prize in Medicine awarded by Robarts Research Institute to **Dr. Salim Yusuf**.



SPECIAL GUEST
MARTIN SHEEN

Award-winning actor, social
activist and humanitarian

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