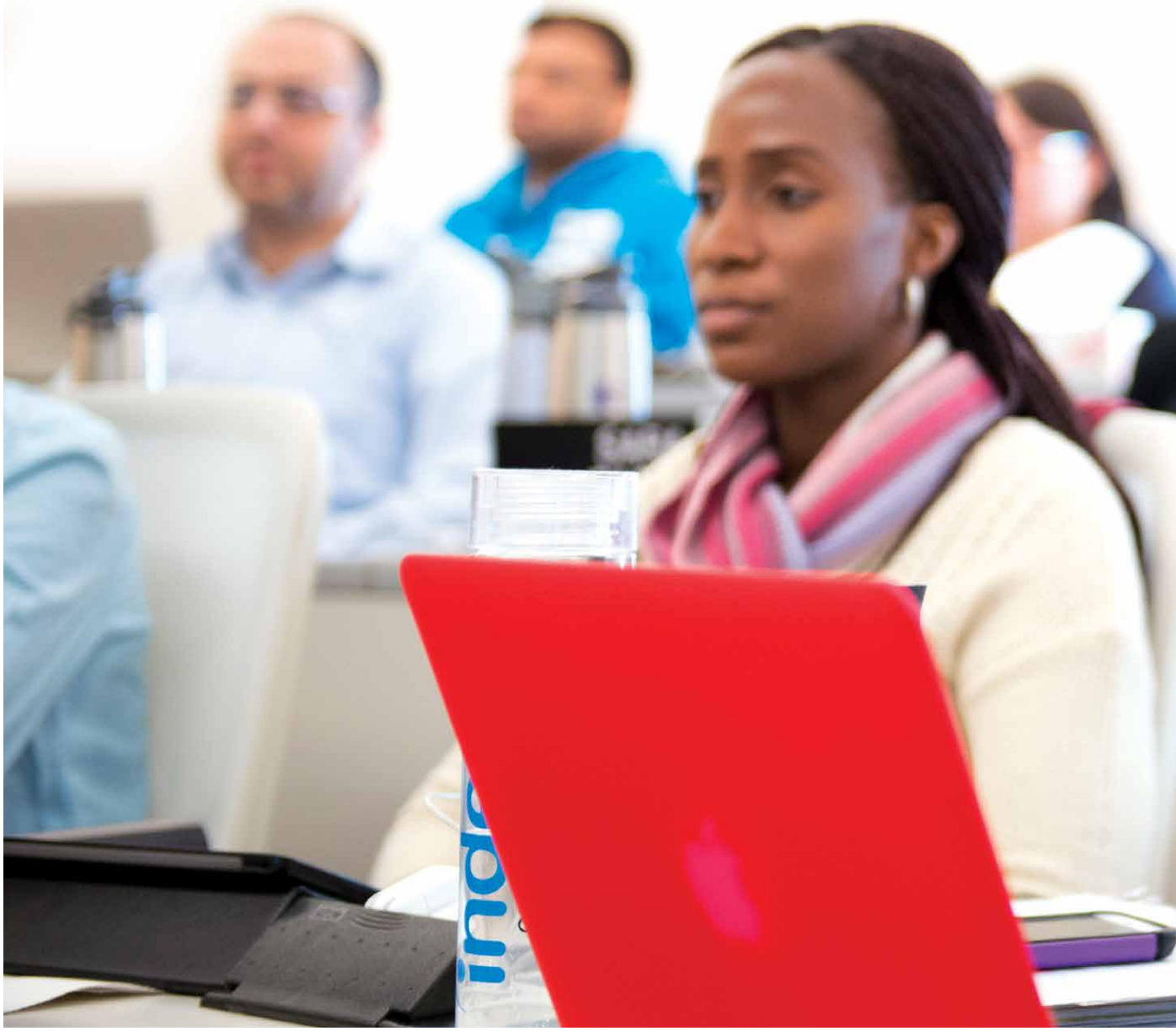
Schulich MEDICINE & DENTISTRY Western

A snapshot of achievement at the
Schulich School of Medicine & Dentistry
Western University 2014-2015

BOLD VISION. BRIGHT FUTURE.

Global leadership in optimizing life-long health. That's Schulich Medicine & Dentistry's bold vision. And we're getting there. Researchers, teachers, students, partners and communities all working together. The results? Extraordinary. The future? Even brighter.



“We are on an exciting journey into the future of health. Our researchers, educators, learners and community are working together to achieve great things. A vision that seemed impossibly ambitious four years ago, is now clearly within our reach.”

—Dr. Michael J. Strong, Dean, Schulich School of Medicine & Dentistry

RESEARCH

CREATING NEW KNOWLEDGE FOR A HEALTHIER WORLD

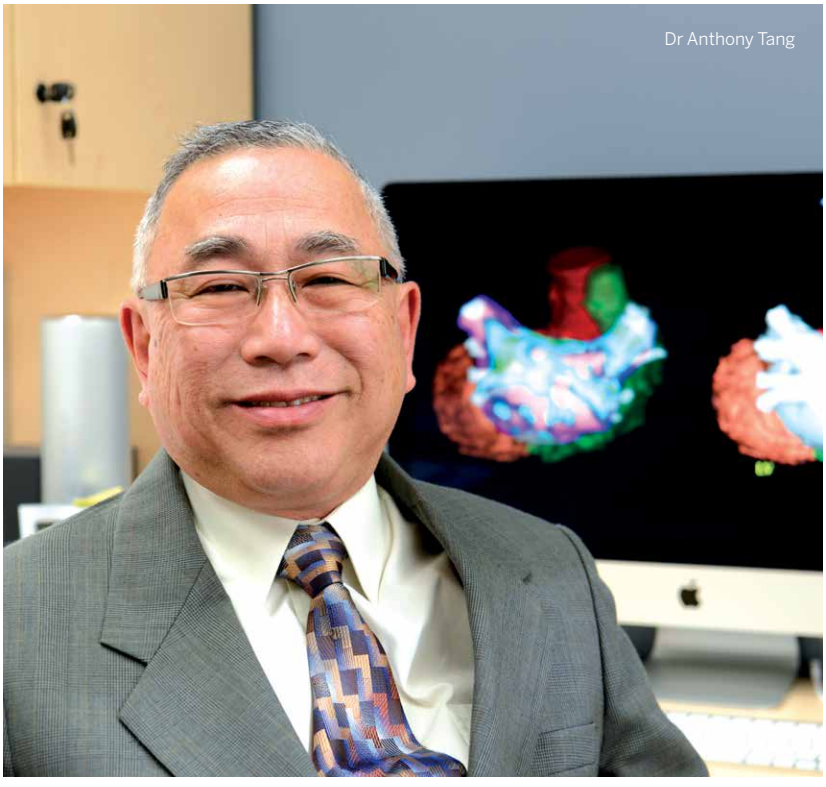
“Our team is motivated by the tremendous impact musculoskeletal conditions have on quality of life.”

Investing in research excellence

David Holdsworth, PhD, the Dr. Sandy Kirkley Chair in Musculoskeletal Research, is leading a team of 70 all-star bone and joint researchers as the Director of the Western Cluster of Research Excellence in Musculoskeletal Health. He is joined by another five core participating researchers from Schulich Medicine & Dentistry and the Faculty of Science: Frank Beier, PhD; Dr. Jeff Dixon; Blaine Chronik, PhD; Dr. Graham King; and Dr. Janet Pope.

The new cluster is expected to drive high-impact interdisciplinary research with the goal of providing life-long mobility. Researchers will study conditions such as arthritis, osteoporosis, trauma, and work, sport and exercise-related injuries. Discoveries will lead to new preventive and rehabilitative medical and surgical therapies, diagnostic techniques, and medical and assistive devices. Western University has invested $5 million to support this work.

Cheryle Séguin, PhD, is one of the 70 researchers of the Western Cluster of Research Excellence in Musculoskeletal Health



Dr Anthony Tang

Dr. Anthony Tang leads the Canadian Arrhythmia Network

Dr. Anthony Tang is leading the newly established Canadian Arrhythmia Network (CANet) as its Scientific Director and CEO. Professor Tang and his team were awarded $26.3 million in funding from the Government of Canada to help host and establish CANet as a Networks of Centres of Excellence of Canada. With more than 100 investigators involved, the goal of CANet is to improve the health of millions of patients across Canada suffering from heart rhythm disturbances, by developing, and implementing new technologies and strategies. The funding will be used to help reduce the burden of health conditions related to arrhythmia, such as atrial fibrillation and sudden cardiac death.

Creating ImPaKT for HIV/AIDS research

The Imaging Pathogens for Knowledge Translation (ImPaKT) Facility, the first of its kind in Canada, will facilitate the development of new diagnostic and therapeutic approaches for the treatment of infectious diseases including HIV/AIDS. The Facility will combine imaging technology with a world-class biocontainment facility and allow for real-time, non-invasive assessments of interactions between the pathogen and the host.

Eric Arts, PhD, considered one of the most important researchers studying HIV/AIDS in the world today, will lead the work within the ImPaKT facility. Now serving as the Chair of the Department of Microbiology and Immunology, Arts will build on a rich history of outstanding research and reputation of that department.

The Facility will be complete in the fall of 2015 and provide a unique training ground for the next generation of scientists in microbiology, immunology, pathology, public health and clinical infectious diseases.

Ontario Neurodegenerative Disease Research Initiative gets underway

In what is being termed the most complex, long-term observational study in the world involving 20 clinical, academic and research centres across the province, imaging studies are underway as part of the Ontario Neurodegenerative Disease Research Initiative (ONDRI).

The Integrated Discovery Program, as part of ONDRI, based out of Robarts Research Institute, is working to understand the commonalities and distinguishing characteristics of five neurodegenerative disorders: Alzheimer's, Parkinson's, ALS, frontotemporal lobar dementia and vascular cognitive impairment.

In 2015, more than 600 participants will take part in magnetic resonance imaging and positron emission tomography brain scans, as well as eye tracking, blood and gait analysis, and cognitive testing. All the data will be entered into a central database, which will be analyzed in an effort to answer research questions related to the diagnosis and treatment of the neurodegenerative disorders.

ONDRI is removing the barriers that might exist between institutions, researchers and diseases. In doing so, it is taking a new approach at looking at the complexity of the diseases of each person.

Robert Bartha, PhD, leads the imaging platform for ONDRI

A royal fellow

Dr. Vladimir Hachinski, Professor and Distinguished University Professor, was elected as a Fellow to the prestigious Royal Society of Canada. Dr. Hachinski co-founded the first successful stroke unit, discovered the brain region involved in sudden death following stroke, and helped expound the stroke-Alzheimer's disease connection. He is known for developing the concepts of brain attack, multi-infarct dementia, leukoaraiosis, vascular cognitive impairment and the ischemic score. Dr. Hachinski joins approximately 1,450 fellows and foreign members who are elected for life through a peer review process on the basis of excellence in science.

Collaborating nationally to tackle the challenge of dementia

Drs. Michael Borrie and Manuel Montero-Odasso, as well as Robert Bartha, PhD, and Jane Rylett, PhD, are leading the charge as part of the Canadian Consortium on Neurodegeneration in Aging (CCNA), a collaborative research program focused on tackling the challenge of dementia and other neurodegenerative diseases.

They will work with more than 300 researchers across Canada as part of the Consortium. As a national theme leader, Rylett will provide direction to six research teams looking at prevention of age-related cognitive impairment and dementia. Dr. Borrie is serving as a platform leader for clinical cohorts and will oversee the recruitment of 1,600 subjects.

Bartha will lead a team developing imaging techniques and studying the earliest changes in the synapses associated with neurodegenerative diseases; while Dr. Montero-Odasso will lead the Mobility Exercise and Cognition Team. Each has received $1 million to support their work.

LEARNING

PROVIDING EXCEPTIONAL LEARNING EXPERIENCES

Pain Medicine Residency Program — a Canadian first

Chronic pain is a condition that currently affects one in five Canadians. And yet, until this past year, there was no medical subspecialty training available in Canada.

Through the efforts of Dr. Patricia Morley-Forster, Professor, along with the leadership from the Postgraduate Program, a two-year residency program was established to address the need. As a leader in pain management, and home to the Earl Russell Chair in Pain Management, the School was uniquely positioned to host the program effectively. Dr. Michael Pariser and Dr. Amjad Bader are the first residents in the program.

Dr. Michael Pariser (left) joins Dr. Patricia Morley-Forster and Dr. Amjad Bader in discussing a case as part of the new postgraduate program

"Charles Trick exemplifies Edward Pleva's sentiment that teaching is one of the highest callings."

Charles Trick, PhD

A passion for teaching

Charles Trick, PhD, has been called a world-class scholar, a modest gentleman and an exceptionally gifted educator. And he's earned every ounce of the admiration. As one of this year's recipients of the Edward G. Pleva Award for Excellence in Teaching, Trick is recognized for his highly interdisciplinary approach to teaching in the classroom and on the global stage.

Professor Trick's teaching philosophy aims to train his students to become strong in the area of ecosystem health through engagement, professionalism and leadership. Apart from his excellence in classroom teaching, Trick also practises outstanding, high-impact, experiential teaching. He has taken his students to Africa, Central America and Southeast Asia to learn.

In his 25 years at Western University, he has received numerous teaching awards, and was honoured with the inaugural Western Humanitarian Award.

Reshaping Distributed Education

With the goal to be a leading program in Distributed Education, a new strategic plan was launched which will aid in evolving the School's highly successful Distributed Education model. Six strategic directions to guide change and reshape the academic mission were established.

Under the leadership of a steering committee, chaired by Dr. Bertha Garcia, Vice Dean, Education, significant progress has been made on achieving the goals. Dr. George Kim, who was recently appointed as the Assistant Dean, Rural & Regional Community Engagement, is a member of the steering committee and oversees the Distributed Education program.

A new geographic model has been developed, with more than 60 communities across Southwestern Ontario brought together in six hubs: Elgin-Middlesex, Huron-Perth, Kent-Lambton, Oxford, Grey-Bruce and Essex. Regional Academic Directors have been hired to support the academic missions within the hubs.

Behind the scenes, operational changes have been made to create greater efficiencies, and communications needs have been identified. Work on the strategic plan is expected to continue throughout 2015.

Dr. George Kim, Assistant Dean, Rural & Regional Community Engagement

"From dental students to community dentists, our efforts to try to lessen the disparities in oral health are acknowledged."

DOCS completes approximately 300 appointments annually for people in the community

A hero in the community

The School's Dental Outreach Community Services (DOCS) program, which gives fourth year dental students the opportunity to provide supervised dental care to clients from local social service agencies, received the 2014 Partnered Community Hero Award from the Glen Cairn Community Resource Centre. The Award recognized the program's commitment to building healthy, happy and vibrant communities in London, Ontario. Dr. Les Kalman, Director of the DOCS program, said the award was recognition for everyone that contributes to DOCS.

Trainees stand among nation's elite

Schulich Medicine & Dentistry trainees continue to shine at the national level. Ayden Scheim, PhD Candidate, was named a 2014 Trudeau Scholar, a prestigious scholarship that supports doctoral students who are committed to solving issues of critical importance to Canada and the world. Scheim is the first trainee from a Canadian medical school to receive this national honour. His research is focused on understanding how marginalization and discrimination impact the health of transgender people.

Scheim was also one of two 2014 recipients of the Vanier Graduate Scholarship from Schulich Medicine & Dentistry, along with Dibakar Mondal, PhD Candidate, Biomedical Engineering. Vanier Scholars are recognized for their leadership skills and high standard of scholarly achievement.

Being there for the students

Throughout her 23-year career, the late Mrs. Marion Murray was "there" for the students, faculty and staff within the Department of Microbiology and Immunology. As a lab technician, she supported the research needs of the Department; as a committed staff member, she supported the success of graduate trainees; and as a philanthropist, she has supported the mission of the School.

Through her legacy donation of $1.6 million supporting new endowed scholarships for graduate trainees in Microbiology and Immunology, as well as Pathology and Laboratory Medicine, the beloved friend, teacher and colleague will continue to "be there" for the people who were close to her heart throughout her career.

Through their eyes

A new second-year undergraduate medical education course has been created to prepare students for clerkship and act as a bridge between studies in first and third year.

In the Professional Portfolio course, students work in groups of three and follow a patient and their family in the community for nine months to better understand the impact chronic disease has on their lives. Using a journal approach, students chronicle the experience through the eyes of their patients and families. The goal is to reflect on the patient's lived experience. Students also design and present a final project based on their experience, using a variety of models including music, art, poetry and film.

"I find we learn at such an advanced pace and such an advanced level, that dialing the switch back to make the vast amounts of scientific knowledge we learn relatable can be challenging. Through the Portfolio patient meetings and the self-reflection that follows, I feel as though I have learned great lessons in health literacy," said Tehmina Ahmad, Medicine Class of 2017.

PARTNERSHIPS

REACHING OUT TO THE GLOBAL COMMUNITY

Addressing the needs in palliative care

The SouthWestern Ontario Academic Health Network (SWAHN) has launched a Palliative Care Working Group to address the growing needs in palliative care.

The Working Group is comprised of a cross section of health care professionals from across the communities of Southwestern Ontario, academic and health care institutions, as well as LHINs 1, 2 and 3. Their work will be guided by the Declaration of Partnership & Commitment to Action.

Together, they will focus on improving the lack of consistency of education and training available for health care providers in palliative care. Specifically, they will be developing an inventory for all health and human service professionals across Southwestern Ontario, developing a gap analysis of the curriculum based on the inventory, creating a strategy to improve consistency within core curriculum, and developing a survey of palliative care research.

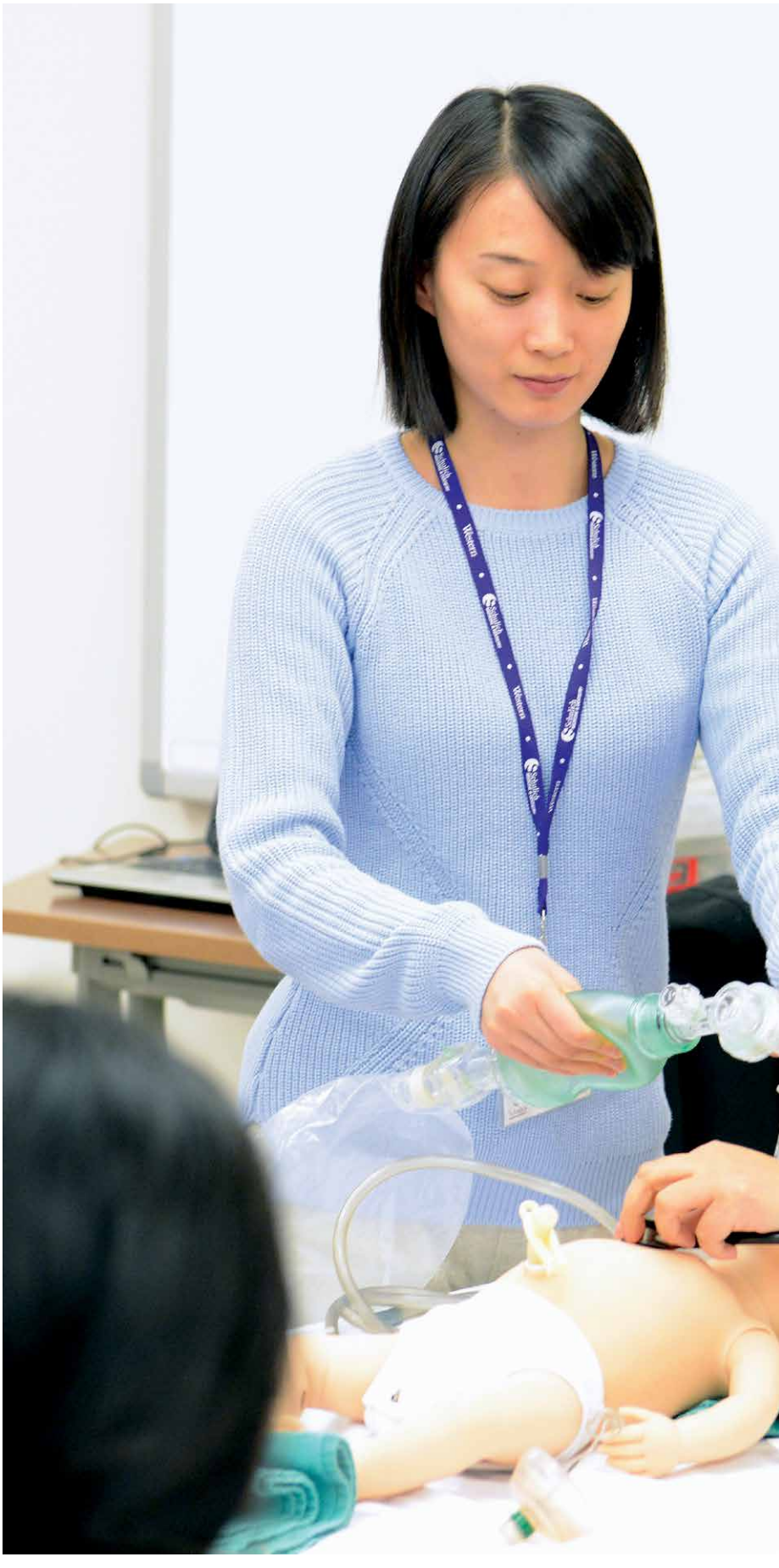
"No other institution in Canada has such a broad range of experts dedicated to solving the problem of sports-related concussion. This partnership is a big step toward solving the concussion crisis in Canada."

Dr. Michael J. Strong (second from left) announces a new partnership with Sports Legacy Institute

Partnership broadens expertise

A new partnership with the Sports Legacy Institute (SLI) aims to help understand and mitigate the long-term effects of concussion. SLI operates prevention, education and awareness programs across Canada. It is also world-renowned for its Brain Bank, a resource for researchers to study donated brains of athletes in order to investigate the long-term effects of head trauma. By combining the School's—and more broadly Western University's—leading expertise in medical research and education with SLI Canada's reputation for concussion awareness, the partnership sets a new standard for the quality of education, research and health care related to concussions in sport. It also solidifies the School's position as the Canadian centre for concussion education and research.

“Through the training, our students, faculty and staff are well-positioned to become catalysts for change.”



Students benefit from Indigenous Cultural Competency training

A collaboration between Schulich Medicine, the Provincial Aboriginal LHIN Network, and the Southwest Ontario Aboriginal Health Access Centre created an opportunity for medical students in London and Windsor, as well as faculty and staff to receive Indigenous Cultural Competency training. The curriculum for the competency training was developed in British Columbia and has a track record of great success.

The training is designed to increase Aboriginal-specific knowledge, enhance individual self-awareness and strengthen skills for any professional working directly or indirectly with Indigenous people.

Modelling family medicine

As part of a growing partnership between Schulich Medicine & Dentistry and Nanjing Medical University, the Department of Family Medicine recently hosted Drs. Yayun Wang and Lingxia Wu, delegates from Nanjing Medical University, with the aim of helping to solve the challenging task of filling an immense gap of primary physicians in China. Only three per cent of all doctors in China practise family medicine, compared to roughly 50 per cent in Canada.

Using Schulich Medicine & Dentistry's renowned Family Medicine program as a model, they spent three months gaining first-hand knowledge on how to set up effective family medicine training programs at home by shadowing physicians, observing postgraduate family medicine teaching, and participating in departmental meetings.

TRANSLATIONAL RESEARCH

TRANSLATING KNOWLEDGE INTO BETTER CARE AND RICHER LIVES

Dr. Arlene MacDougall, Assistant Professor

Research CREATEs new recovery model for mental illness

Dr. Arlene MacDougall, Assistant Professor, has initiated a project, which will develop a business in Kenya, designed to employ people with mental illnesses, and provide a tool-kit of psychological and social supports. The goal is to promote recovery and successful reintegration into society.

Using the guiding principle that meaningful and productive employment is an effective way to alleviate and reduce symptoms, Dr. MacDougall and her colleagues at the University of Toronto, Queen's University and the Africa Mental Health Foundation have developed a new model of recovery from mental illness.

The project, called Community Recovery Achieved through Entrepreneurism (CREATE), will be based in Machakos, Kenya.

Identifying risk factors for heart disease in women

Research led by Dr. Ross Feldman, Professor, identified a common gene variant in women which makes them significantly more likely to have high blood pressure, the single biggest risk factor for heart attack and stroke. The G-protein coupled estrogen receptor 30 (GPER) normally functions to relax blood vessels and lower blood pressure. This study demonstrated many women have a less functional GPER, increasing their risk of developing high blood pressure. Dr. Feldman's research will help determine the women who are more prone to heart disease as a result of this gene variant, and is a step toward developing new approaches to treatment.

Kelcey Patterson (right) is working with David Hess, PhD (left) and supervisor, John McCormick, PhD

Strep throat bacteria fights cancer

Bacteria primarily responsible for causing strep throat can be used to fight colon cancer. Kelcey Patterson, a PhD Candidate, working with the supervision of John McCormick, PhD, Associate Professor, has engineered a streptococcal bacterial toxin that attaches itself to tumour cells, forcing the immune system to recognize and attack cancer.

The engineered toxin significantly reduced the size of human colon cancer tumours in mice, with drastic reduction in the instances of metastasis. By using mouse models that are stripped of their immune system, they were able to create a "humanized mouse," one that would grow human colon cancer cells and support a human immune system to test the anti-cancer immunotherapy.

Seed and soil hypothesis advances research

Research led by Alison Allan, PhD, Associate Professor, shows why breast cancer often spreads or metastasizes to the lung. The study stemmed from previous work in which Allan observed that breast cancer stems cells (CSC) have a propensity to migrate toward and grow in the lung. She identified specific interactions between breast CSCs and lung-derived proteins that could be disrupted to reduce metastatic behaviour of breast cancer.

Based on the seed and soil hypothesis, Allan's team looked more closely at the "soil" or the lung. In doing so, they have uncovered some specific proteins that are produced in the lung that seem to interact with CSCs, making lungs fertile soil for cancer cells to grow.

The results of this study will lay the groundwork for future clinical studies aimed at investigating whether increased CSCs in the primary tumour may pre-dispose some patients to lung metastasis, and if so whether imaging or ex-vivo analysis may be beneficial for early detection and successful treatment.

Injuries prevented, lives saved

Evelyn Vingilis, PhD, evaluated the deterrent impact of Ontario's Street Racers, Stunt and Aggressive Drivers Legislation (Bill 203), and found that it is making a difference. The study found that 700 fewer men aged 16-24 have been injured or killed in speed-related crashes annually since the law passed in 2007. The research was conducted in collaboration with the Ministry of Transportation, and worked with data from 2002-2011. Under the law, upon conviction, offenders could face a fine of $2,000-$10,000, license suspension for up to two years, or six demerit points and the possibility of up to six months in jail. The study's findings support the deterrence theory to the effect that certain, swift and severe sanctions can deter risky driving behaviour.

Using hockey culture to improve men's health

In Canada, 40 per cent of men are overweight, which is one of the highest risk factors for chronic diseases like heart disease. Of those men, sports fans are more likely to have poor health.

Dr. Robert Petrella, Professor, and his colleagues are beginning a pilot project called Hockey Fit with the aim of motivating these sports fans to get into shape and live healthier lifestyles. The Hockey Fit program was one of 15 projects across Canada to receive a Men's Health & Wellbeing Challenge Grant from the Movember Foundation.

By using sports teams, including the London Knights and Sarnia Sting, as motivation, Hockey Fit will recruit men at the greatest risk for poor health and provide them with the skills and tools to lose weight.

"Our goal is to create momentum and excitement around men's health and associate it with club-based sports."

Courtesy of London Knights Hockey team

Mitchell Marner, plays for the London Knights Hockey team (top).
Dr. Robert Petrella leads Hockey Fit

Schulich School of Medicine & Dentistry by the numbers

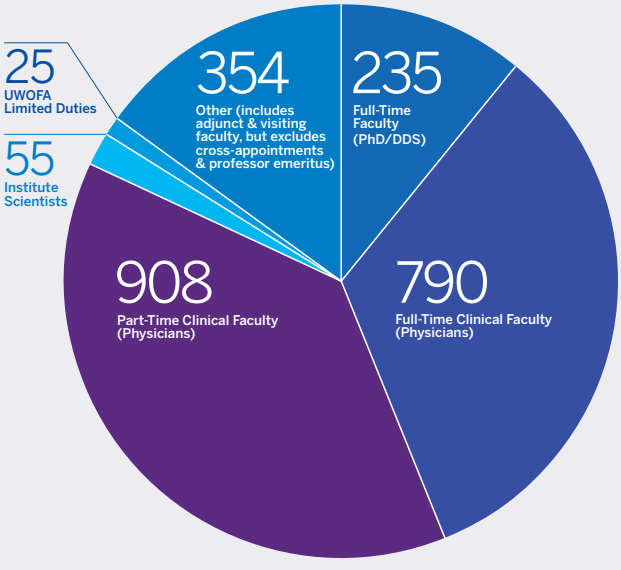
RESEARCH FUNDING DOLLARS 2010-2014

2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
140 million	130 million	139 million	125 million	126 million

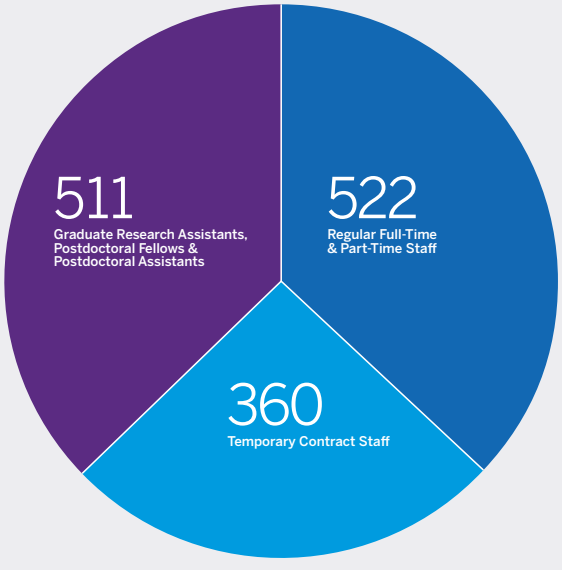
FUNDRAISING DOLLARS 2010-2014

2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
6 million	10 million	14 million	14 million	12.7 million

HUMAN RESOURCES: FACULTY COMPLEMENT 2,367



HUMAN RESOURCES: STAFF COMPLEMENT 1,393



NOTABLES/AWARD WINNERS

Dr. Jeff Dixon
Distinguished University Professor

Terry Peters, PhD
MICCAI Society Enduring Impact Award

Charles Trick, PhD
2014 Edward G. Pleva Award for Excellence in Teaching

Lina Dagnino, PhD
Faculty Scholar

David Edgell, PhD
Faculty Scholar

David Heinrichs, PhD
Faculty Scholar

Dr. David Dixon
Dr. Faisal Rehman
Dr. Wassim Saad
2015 CAME Certificate of Merit

Dr. Ted Osmun
Family Physician of the Year Award

Dr. Paul Adams
Honorary Fellow of the Royal College of Physicians of Ireland

Dr. Susan McNair
Alumni of Distinction—Community Service Award

Dr. Al Yuzpe
Alumni of Distinction—Professional Award

Dr. Theresa Hofstede
Dr. David Palma
Alumni of Distinction—Young Alumni Award

Rebecca Fahrig, PhD
Brad Thompson, PhD
Alumni of Distinction—Excellence in Basic Sciences Research Award

Dr. Arthur Worth
Alumni of Distinction—Dentistry Award

Dr. Nii Otu Nartey
Honorary Alumni of Distinction—Dentistry Award

SCHULICH SCHOLARSHIPS

MEDICINE

60
Annual Recipients

$25,000
Total value per student, per year

$100,000
Total value per student over length of program

$1,500,000
Total annual value of the scholarship

DENTISTRY

16
Annual Recipients

$10,000
Total value per student, per year

$40,000
Total value per student over length of program

$160,000
Total annual value of the scholarship

GRADUATE STUDIES BASIC MEDICAL SCIENCES

50+
Annual Recipients

$15,000
($5,000 Schulich scholarships, $10,000 OGS/QEII)

$750,000+
Total annual value of the scholarship

CANADA RESEARCH CHAIRS

Frank Beier, PhD
Musculoskeletal Research

Ann Chambers, PhD
Oncology

Sean Cregan, PhD
Neurodegeneration and Repair

Aaron Fenster, PhD
Medical Imaging

Stephen S. G. Ferguson, PhD
Molecular Neurobiology

S.M. Mansour Haeryfar, PhD
Viral Immunity and Pathogenesis

Dr. Victor Khin Maung Han
Fetal and Maternal Health

Dr. Robert A. Hegele
Edith Schulich Vinet Canada Research Chair in Human Genetics

Morris Karmazyn, PhD
Experimental Cardiology

Dale W. Laird, PhD
Gap Junctions and Disease

Shun-Cheng (Shawn) Li, PhD
Functional Genomics and Cellular Proteomics

Charles McKenzie, PhD
Translational Magnetic Resonance Imaging

Ravi S. Menon, PhD
Functional Magnetic Resonance Imaging

Patrick O'Donoghue, PhD
Chemical Biology

Peter Rogan, PhD
Genome Bioinformatics

Gary S. Shaw, PhD
Structural Neurobiology

Moira Stewart, PhD
Dr. Brian W. Gilbert Canada Research Chair in Primary Health Care

Dr. Amardeep Thind
Health Services Research

Charles Weijer, PhD
Bioethics

Schulich School of Medicine & Dentistry by the numbers

EDUCATION PROGRAMS

681
Medical Students

226
Dentistry Students

885
Students in year three and four of the Bachelor of Medical Sciences

968
Postgraduate Medical Trainees

4
Hospital-Based Postgraduate Dental Residents

9
Training in Specialized Postgraduate Dentistry

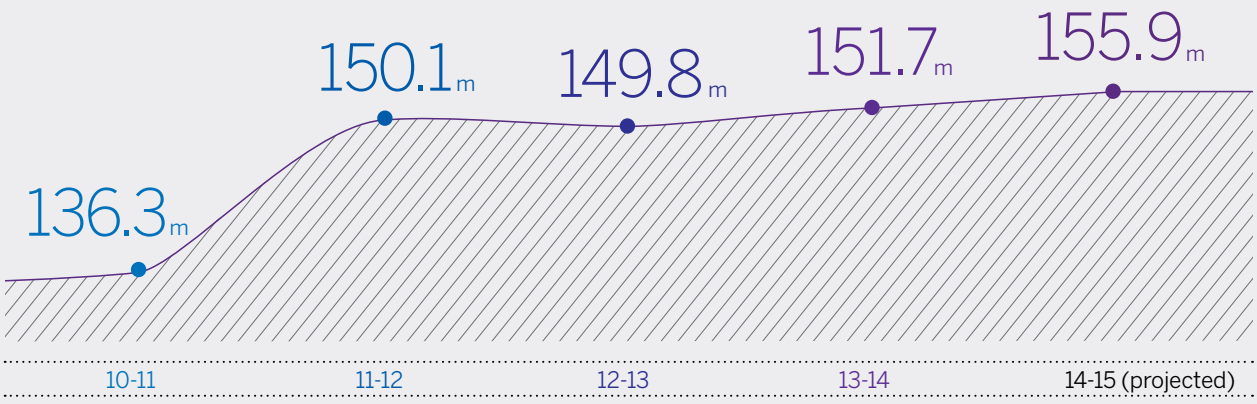
6
Graduate Students in Oral and Maxillofacial Surgery

42
Students in the Internationally Trained Dentists Program

120
Postdoctoral Trainees

665
Graduate Trainees

TOTAL OPERATING REVENUE (IN MILLIONS) 2009-2015



REVENUE BREAKDOWN (IN MILLIONS) 2013-2014

83.4 million
Western University to Medicine & Dentistry

32.3 million
Other-includes CRC funding, donations & student fees

6.4 million
Alternate funding plan

11.7 million
Clinical tithes & transfers from fund accounts

17.9 million
Ministry of Health & hospital envelope funding

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