

Optimizing life-long health.

A snapshot of achievement at the Schulich School of
Medicine & Dentistry, Western University 2013-2014

Our bold vision to become
a global leader in optimizing
life-long health continues
to lead to extraordinary
accomplishments in research,
education and community
engagement.





01

Top 10 in Canada for cancer research

Research by Shun-Cheng (Shawn) Li, PhD, was named one of “Canada’s Top 10 Cancer Research Stories of 2013” by the Canadian Cancer Society. Li, a Professor in the Departments of Biochemistry, Oncology and Paediatrics, is mapping the landscape for the epigenetic changes associated with chemotherapy. This information will be used to identify novel targets for more effective cancer treatment. The research was awarded a China-Canada Joint Health Research Initiative grant from the Canadian Institutes of Health Research (CIHR) and the National Natural Science Foundation of China (NSFC), intended to promote Canadian-Chinese scientific co-operation.

We are creating new knowledge, which will improve quality of life.

02

New medical imaging funding helps tackle Canada's most debilitating diseases

Three unique imaging initiatives received nearly \$5 million from the Canada Foundation for Innovation's Leading Edge Fund and New Initiatives Fund. All address some of the nation's most debilitating diseases. A multi-disciplinary team led by David Holdsworth, PhD, Trevor Birmingham, PhD, and Tom Jenkyn, PhD, received \$1.3 million to better understand how joints move under normal conditions and following therapy. Professor 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 treatment for cardiovascular disease and cancer. And Ravi Menon, PhD, from the Centre for Functional and Metabolic Mapping received \$2.4 million for additional tools which will help overcome challenges related to imaging vulnerable populations. The Centre, already houses Canada's only collection of high-field and ultra-high-field MRI systems, and it will now develop tools to conduct sophisticated fMRI studies of neonatal and paediatric subjects, and patients with neuropsychiatric and neurodegenerative disorders.

03

Understanding addiction

A new discovery has been made revealing the underlying molecular process by which opiate addiction develops in the brain. These findings will shed new light on how the brain is altered by opiate drugs and provides exciting new targets for the development of novel pharmacotherapeutic treatments for individuals suffering from chronic opiate addiction. Steven Laviolette, PhD, Department of Anatomy and Cell Biology and his team with the Addiction Research Group were able to identify how exposure to heroin induces a specific switch in a memory molecule in a region of the brain called the basolateral amygdala. It is involved in controlling memories related to opiate addiction, withdrawal and relapse. The team identified that the process of opiate addiction and withdrawal triggered a switch between two molecular pathways controlling how opiate addiction memories were formed. In a non-dependent state, a molecule was recruited for early stage addiction memories. Once the opiate addiction had developed, the scientists observed a function switch to a separate molecular memory pathway controlled by a different molecule.

04

New technology meets clinical need for the smallest patients

A new 3D ultrasound system developed at Robarts Research Institute will provide better imaging of small bleeds in the brains of premature babies. Until now, the bleeds have been imaged using 2D cranial ultrasound. Since the ventricles in the brain are three-dimensional and highly complex, it is important to know the volume and size of the ventricles, and 2D ultrasound measurements are sometimes inaccurate or variable. The 3D ultrasound provides a much more accurate measurement. Aaron Fenster, PhD, and his team, developed the 3D ultrasound system that can be used with a conventional clinical ultrasound scanner and features a hand-held motorized transducer that can be used while the baby is in the incubator. It is safer and more comfortable for the tiny newborn, and provides a much more accurate measurement. The system is currently being used as part of a study with neonates at London Health Sciences Centre.

05

Fighting cancer with your own immune system

Robarts Research Institute researchers Gregory Dekaban, PhD, and Paula Foster, PhD, conducted the first-ever human cellular MRI study in Canada 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. With the help of a Movember Discovery grant, Dekaban and Foster used novel imaging techniques to monitor the number of dendritic cells travelling to patients' lymph nodes where they interact with T cells. Current dendritic cell-based immunotherapy studies suffer from not knowing to what extent cell migration has been successful. In this way, this type of unique imaging plays a critical role in the advancement of cancer therapies.



Paula Foster, PhD, Robarts Research Institute, conducted the first-ever human cellular MRI study in Canada.

06

Collaborative research competition supports interdisciplinary research

The Collaborative Research Seed Grant Competition, a pilot project, provided nearly \$300,000 in funding to eight research projects that bring together new interdisciplinary research teams. The intent of the competition is to promote new collaborations building on different scientific and scholarly backgrounds, to facilitate breakthroughs in solving research questions in a collaborative manner, and to position the School's researchers to successfully respond to targeted request for proposals from Tri-Council or other funding agencies. "New funding initiatives from CIHR and other agencies are increasingly focused on collaborative and multidisciplinary activities as opposed to single investigator awards. This project provides the base for our researchers to start building their track records in alignment with this approach," said Denise Figlewicz, Vice-Dean, Research & Innovation.

We are providing an exceptional learning experience and preparing the next generation of health care and academic professionals.

07

Trainees recognized as Vanier Scholars

The School can add two more Vanier Canada Graduate Scholars to a long and impressive list of trainees who have received this national honour. The 2013 recipients are Mauricio Rodriguez-Torres, PhD Candidate, Anatomy and Cell Biology, and Dr. Faizal Haji, a resident with the Division of Neurosurgery and Clinician Investigator Program at Schulich Medicine & Dentistry and a PhD Candidate in Medical Science at the Institute for Medical Sciences, University of Toronto. Vanier Scholars are recognized for their leadership skills and high standard of scholarly achievement.

08

Excellence in teaching

Described as innovators, hailed as superb, and considered simply the best, Jerry Battista, PhD, and Brad Urquhart, PhD, received Western's highest teaching honours. Battista, Professor and Chair, Department of Medical Biophysics, received the Edward G. Pleva Award for Excellence in Teaching. Among his many in-class contributions, he has helped develop DeskCAT, a device that brings the concepts of CT scanners to the classroom, and transitioned

an in-class course into an online course. Urquhart, Professor, Department of Physiology and Pharmacology, received the Marilyn Robinson Award for Excellence in Teaching. Early on in his very young career, Urquhart has revised online and in-class courses incorporating many innovative teaching activities, including animations and videos, as well as CSI scenarios in which students are walked through virtual crime scenes to study the pharmacological aspects of the crime.



Brad Urquhart, PhD, and Jerry Battista, PhD, received two of Western University's highest teaching honours recognizing their innovation and dedication.

09

A new home for Public Health and Family Medicine

Public Health and Family Medicine are natural allies in the quest for healthier communities. The two now share a common space, as well as a common goal in The Western Centre for Public Health and Family Medicine. The new \$17 million facility houses the academic and research sides of the

Department of Family Medicine, along with the new Schulich Interfaculty Program in Public Health. During the official opening in October 2013, Dr. Michael J. Strong, Dean, Schulich Medicine & Dentistry, said, "our vision for Schulich Medicine & Dentistry is to be a global leader in optimizing life-long health. Public Health and Family Medicine both play important roles in achieving that vision. Having researchers, educators and learners from both disciplines in this wonderful new facility will lead to new collaborations and innovations to improve health care."

10

Investing in education

The Faculty Development Teaching Certificate offered through Continuing Professional Development is one example of how the School is investing in the future of teaching. The certificate program offers a variety of practical workshops and introductions to innovative teaching platforms, with participants earning a recognizable certificate upon completion. Through the Teaching Certificate and other professional development opportunities, Schulich Medicine & Dentistry aims to cultivate stronger and more confident educators and promote a culture of life-long learning.

11

The forefront of dental education

The completion of the new General Anesthetic Suite is an important achievement for Schulich Medicine & Dentistry and was marked by a grand opening ceremony in early 2014. The Suite puts the School at the forefront of dental education, and features two new operating rooms and six recovery bays. Because of this new Suite, the School will be able to offer dental students more hands-on clinical experience, offer more specialized support for patients with complicated requirements, and continue its commitment to exemplary care. The Suite represents a collaborative approach to health care, giving dental students the opportunity to work closely with the General Anesthesia program and other specialties.



The new General Anesthetic Suite puts Schulich Dentistry at the forefront of Dental Education.

12

Orientation beyond the gates

Orientation Week 2013 for the Undergraduate Medical Education Program was one like no other. For the first time students were given the opportunity to experience and prepare for what the next chapter in their life as a physician would bring them. It was a week full of powerful realizations, exciting experiences, and new friendships. It began with the White Coat Ceremony, a symbolic event celebrating the upcoming four-year journey, and offered wonderful social opportunities. Most importantly, students travelled beyond the gates of the University to the communities across Southwestern Ontario, where they will be learning and even practising. This gave the students a chance to understand regional health care environments, community cultures, and the health challenges and opportunities that exist across the region. The week concluded with Mission Statement Day, when students created their class statement, which guides them through their studies.



First-year students enjoyed an Orientation beyond the University gates visiting communities across the region where they will be learning and even practising.

13

Exploring careers in academia

The first "Careers in Academic Dentistry" workshop, sponsored by the Network for Canadian Oral Health Researchers (NCOHR), was held at Schulich Medicine & Dentistry. Dental students and faculty members from across Canada discussed expanding educational and training opportunities for the next generation of Canadian oral health researchers. This was an important step toward supporting research capacity within the Canadian oral health community.

14

Building community partnerships

A new pilot community elective opportunity at the Huronia Area Aboriginal Management Board has been created. In the summer of 2014, two Schulich Medicine students will work alongside local physicians in Grey and Bruce counties, providing health care to aboriginal communities. The program aims to introduce the students to living, learning and working with these communities, and to inspire local youth to consider careers in health care. Schulich Medicine & Dentistry works with a number of community partners in rural and regional Southwestern Ontario as part of its commitment to distributed medical education.



15

Mastering Public Health

Canada's only 12-month, case-based Master of Public Health program welcomed its inaugural class in September 2013. The class of 36 students comes from across Canada and as far away as Liberia. The students have a wide variety of backgrounds, such as nursing, dentistry, philosophy, and medical biophysics. The rigorous curriculum, which includes a variety of courses from health promotion to social cultural determinants of health is complemented by a practicum and an international field trip. "The MPH continues the School's rich tradition of offering an exceptional learning experience," said Dr. Michael J. Strong, Dean, Schulich School of Medicine & Dentistry. "Once the students have graduated, they will have the opportunity to lead change in public health across Canada and around the world."

We are improving health through global and sustainable partnerships.

16

See the Line

Concussion research and clinical care innovations took centre stage at the See the Line Symposium, an educational community event. World-renowned researchers and health care leaders from across Schulich Medicine & Dentistry, the Faculties of Health Sciences and Engineering, as well as London's hospitals, came together to create this unique collaborative, annual initiative. The goal was to educate the public on the latest research, and raise funds for concussion-related research and clinical projects. The two-day event also featured a golf tournament and gala dinner.



Arthur Brown, PhD, a scientist at Robarts Research Institute, presents some of the latest concussion research at the inaugural See the Line Symposium at Western University.

17

New research opportunities for Windsor Program undergraduate medical students

A new partnership between the Schulich Medicine – Windsor Program and the University of Windsor has led to the creation of the Schulich UWindsor Opportunities for Research Excellence Program (SWORP). An extension of the existing Student Opportunities Research Program, 10 medical students at the Schulich Medicine – Windsor Program will now have the opportunity to work in labs at the University of Windsor with faculty members in Science, Engineering and Human Kinetics. The program is intended to foster an appreciation for, and proficiency with, the research process. Funding is provided through Schulich Medicine & Dentistry and the University of Windsor.

18

Strengthening relationships and health programs in our own backyard

The Southwestern Ontario Academic Health Network (SWAhN) was officially established in 2013. Weeks after its creation, it immediately launched into a number of new initiatives. A retreat, focused on the creation of new

synergies in simulation education and training across the region, was held in the fall. Meanwhile, a group focused on community initiatives rolled up their sleeves to identify priorities on improved nutrition in communities. Educators and researchers, along with community health providers, will continue to work together to enrich the health and well-being of the people across Southwestern Ontario. SWAhN is a key deliverable in the School's strategic plan, and the stage is now set for unique change-focused health care and education collaborations.

19

Agreement increases international study opportunities

New opportunities now exist for Schulich Medicine & Dentistry students, residents and faculty to gain experience with an international university. A Memorandum of Understanding was signed with Nanjing Medical University in China. The Agreement provides for increased academic and clinical interchanges and rotations, as well as potential research collaborations between Nanjing and Schulich Medicine & Dentistry. Nanjing is ranked in the top 200 of the world's medical schools, and is home to 10,000 medical students.

We are driving research and knowledge into action.

20

New option for those living with ulcerative colitis and Crohn's disease

An international clinical trial, led by Dr. Brian Feagan, Professor, Departments of Medicine and Epidemiology and Biostatistics, has found that the investigational antibody vedolizumab is an effective treatment for those suffering from ulcerative colitis (UC) and Crohn's disease (CD), when other treatments have failed. The results were published in the *New England Journal of Medicine*, and if approved, could bring the more than four million people world-wide living with UC and CD a new option for inducing and maintaining clinical remission. The studies are a culmination of 15 years of work. The molecule involved was initially developed by the late Dr. Andrew Lazarovitz, a former Professor of Medicine, and Microbiology and Immunology, and a Scientist at Robarts Research Institute. He developed the molecule while doing postdoctoral work in Boston.

21

HIV vaccine clinical trial holds great promise

The Phase 1 Clinical Trial of the first and only preventative HIV vaccine based on a genetically modified killed whole virus has been successfully completed with no adverse effects in all patients. Chil-Yong Kang, PhD, Professor Emeritus, Department of Microbiology and Immunology and his team, developed the vaccine with support from Sumagen Canada. This result holds tremendous promise for success of the final phases of clinical testing. It is currently the only HIV vaccine developed in Canada currently in clinical trial, and one of only a few in the world.

22

Innovative solutions to improve primary care

Dr. Stewart Harris and Moira Stewart, PhD, Department of Family Medicine, will lead two research teams looking at innovative solutions for primary care with support from \$33 million in funding. Dr. Harris will focus on a program called Transformation of Indigenous Primary Healthcare Delivery (FORGE AHEAD). It will develop community driven, primary

health care models that enhance chronic disease management in First Nations communities. Type 2 diabetes will be the chronic disease targeted, however, the project will also produce a tool-kit of tested strategies to be used for other chronic diseases. Moira Stewart, along with Dr. Brian W. Gilbert, will lead a mainly Ontario and Quebec team investigating "Patient Centred Innovations for Persons with Multimorbidity." The team will work to change disease prevention and management programs from a singular disease focus to a multiple disease focus.



Moira Stewart, PhD, and Dr. Stewart Harris, Department of Family Medicine, will lead two research teams to look at innovative solutions for primary care.

23

Giving young athletes new life following surgery

Dr. Al Getgood, Professor, Department of Surgery, and Orthopaedic Surgeon, Fowler Kennedy Sport Medicine Clinic, is conducting research on the possible role of the anterolateral ligament (ALL) in anterior cruciate ligament (ACL) reconstruction surgery. While ACL reconstruction surgery is a proven procedure, allowing about 60 per cent of athletes to recover to pre-injury level following surgery, Dr. Getgood is hoping to increase this rate up to 90 per cent by focusing on the role of the ALL. Dr. Getgood has received a \$200,000 grant award from the International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine and the Orthopaedic Research and Education Foundation. He will conduct a study involving six centres in Canada and Europe to identify if the addition of ALL reconstruction to standard ACL reconstruction will aid in reducing graft failure following surgery. Dr. Getgood hopes to initiate a new way of thinking about ACL reconstruction and reduce failure rates, allowing young athletes to regain full function and quality of life following surgery.



Schulich School of Medicine & Dentistry by the numbers

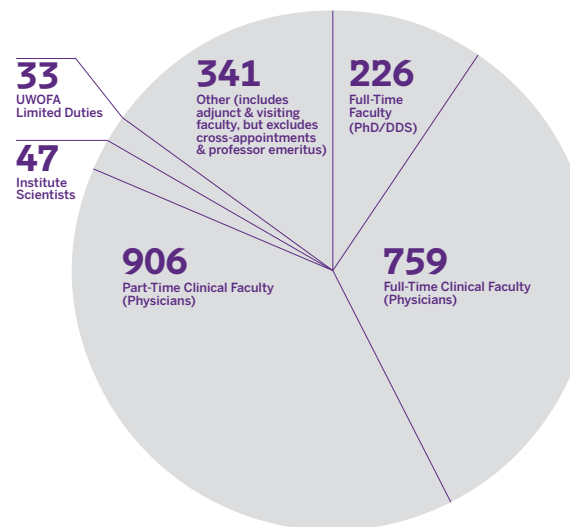
RESEARCH FUNDING (IN MILLIONS) 2009-2013

2009-2010	140m
2010-2011	130m
2011-2012	139m
2012-2013	125m

FUNDRAISING DOLLARS (IN MILLIONS) 2009-2013

2009-2010	6.0m
2010-2011	10.0m
2011-2012	14.0m
2012-2013	14.0m

HUMAN RESOURCES: FACULTY COMPLEMENT 2,312



HUMAN RESOURCES: STAFF COMPLEMENT 1,716



CANADA RESEARCH CHAIRS

Frank Beier, PhD
MUSCULOSKELETAL RESEARCH

Aaron Fenster, PhD
MEDICAL IMAGING

Dr. Victor Khin Maung Han
FETAL AND MATERNAL HEALTH

Dale W. Laird, PhD
GAP JUNCTIONAL INTERCELLULAR COMMUNICATION AND DISEASE

Ravi S. Menon, PhD
FUNCTIONAL MAGNETIC RESONANCE IMAGING

Moira Stewart, PhD
DR. BRIAN W. GILBERT CANADA RESEARCH CHAIR IN PRIMARY HEALTH CARE

Ann Chambers, PhD
ONCOLOGY

Stephen S.G. Ferguson, PhD
MOLECULAR NEUROBIOLOGY

Dr. Robert A. Hegele
EDITH SCHULICH VINET CANADA RESEARCH CHAIR IN HUMAN GENETICS

Shun-Cheng (Shawn) Li, PhD
FUNCTIONAL GENOMICS AND CELLULAR PROTEOMICS

Peter Rogan, PhD
GENOME BIOINFORMATICS

Dr. Amardeep Thind
HEALTH SERVICES RESEARCH

Sean Cregan, PhD
NEURODEGENERATION AND STEM CELL REGENERATION

S.M. Mansour Haeryfar, PhD
VIRAL IMMUNITY AND PATHOGENESIS

Morris Karmazyn, PhD
EXPERIMENTAL CARDIOLOGY

Charles McKenzie, PhD
TRANSLATIONAL MAGNETIC RESONANCE IMAGING

Gary S. Shaw, PhD
STRUCTURAL NEUROBIOLOGY

Dr. Charles Weijer
BIOETHICS

SCHULICH SCHOLARSHIPS

MEDICINE

60

ANNUAL RECIPIENTS

\$20,000

TOTAL VALUE PER STUDENT, PER YEAR

\$80,000

TOTAL VALUE PER STUDENT OVER LENGTH OF PROGRAM

\$1,200,000

TOTAL ANNUAL VALUE OF THE SCHOLARSHIP

DENTISTRY

15

ANNUAL RECIPIENTS

\$10,000

TOTAL VALUE PER STUDENT, PER YEAR

\$40,000

TOTAL VALUE PER STUDENT OVER LENGTH OF PROGRAM

\$150,000

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

*OGS stands for Ontario Graduate Scholarships. QEII stands for Queen Elizabeth II Scholarships.

NOTABLES

Dr. Stewart Harris
Dr. Charles Weijer

HELLMUTH PRIZE FOR ACHIEVEMENT IN RESEARCH

Cheryl Forchuk, PhD
Dr. Michael Rieder

DISTINGUISHED UNIVERSITY PROFESSOR

Jerry Battista, PhD

2014 EDWARD G. PLEVA AWARD FOR EXCELLENCE IN TEACHING

Brad Urquhart, PhD

2014 MARILYN ROBINSON AWARD FOR EXCELLENCE IN TEACHING

Dr. Mandar Jog

FACULTY SCHOLAR

Dr. Sharon Hatcher

GEORGES LACHAPELLE SCHOLARSHIP

Dr. Kenneth Wright

MAYOR OF LONDON HONOREE LIST FOR 2014

Dr. William Wall

MEDICAL ACHIEVEMENT AWARD DAVID FOSTER FOUNDATION

Cheryl Forchuk, PhD

RECOVERY RESEARCH AWARD

Dr. Bhooma Bhayana

2013 COLLEGE OF FAMILY PHYSICIANS OF CANADA GEETA GUPTA AWARD FOR EQUITY AND DIVERSITY

Jane Rylett, PhD

FELLOW, CANADIAN ACADEMY OF HEALTH SCIENCES

Dr. Mariamma Joseph

Dr. Claude Kortas

Dr. Michele Weir

CAME CERTIFICATE OF MERIT AWARDS

EDUCATION PROGRAMS

171

MEDICAL STUDENTS

56

DENTISTRY STUDENTS

849

STUDENTS IN YEARS THREE AND FOUR OF THE BACHELOR OF MEDICAL SCIENCES

866

POSTGRADUATE MEDICAL TRAINEES

4

HOSPITAL-BASED POSTGRADUATE DENTAL RESIDENTS

9

TRAINING IN SPECIALIZED POSTGRADUATE DENTISTRY PROGRAMS

6

GRADUATE STUDENTS IN ORAL AND MAXILLOFACIAL SURGERY

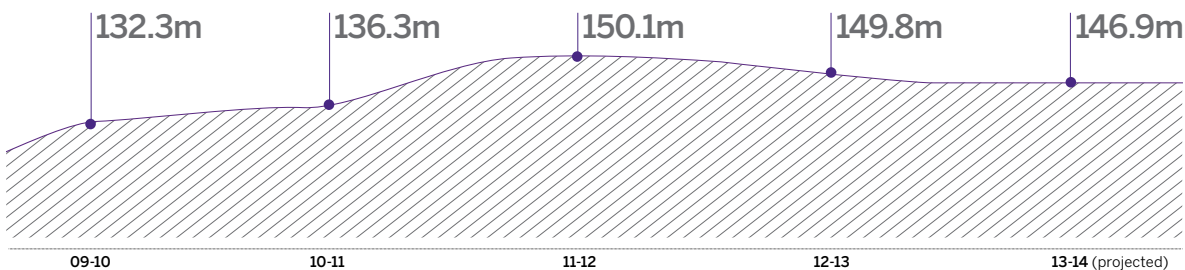
42

STUDENTS IN THE INTERNATIONALLY TRAINED DENTISTS PROGRAM

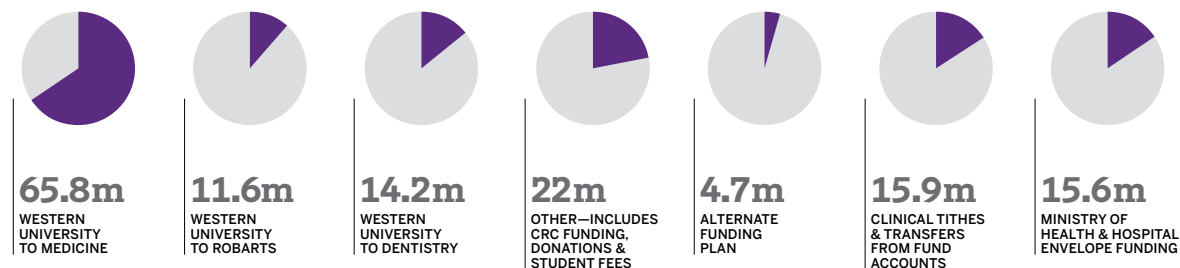
568

GRADUATE STUDENTS

TOTAL OPERATING REVENUE (IN MILLIONS) 2009–2014



2012–2013 REVENUE BREAKDOWN (IN MILLIONS)



At the Schulich School of Medicine & Dentistry, we are proud of our achievements. We have a clear vision and a passionate commitment to our goals: knowledge creation and translation; exceptional education and learning; partnership and networks that span the globe; international leadership that helps people live long and healthy lives.

We are optimizing life-long health.

