2024 Discovery Day in Health Sciences
Western University

WORKSHOP CATALOGUE
Content Guide

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If you are interested in...	Attend our...
Biomedical Engineering	"Health Pros Tell All" panel discussion from 2:15 - 3:15
Dentistry	
Family Medicine	
Medical School Admissions	
Nursing	

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Western University
Friday, May 3, 2024

Workshop Catalogue

Code A – Western campus, including Robarts Research Institute (RRI) and University Hospital (UH)
Code E – Elborn College

Code	Title	Description	AM	PM	Coordinator/Presenters (Department) and Location
A01	***Use of the Digital Care and Communication Platform in Perioperative Settings***	The healthcare system needs help with transitional care. Post-operative recovery after discharge from the hospital often presents pain and recovery challenges for patients/care partners. Our two-way communication video platform delivers empathetic care to understand our patient's needs and address their concerns remotely. Join us as we demonstrate how technology is used to help patients feel more supported and empowered in their healing journey.	20	20	Dr. Nida Fatima Dr. Mahesh Nagappa Dr. Yamini Subramani Dr. Natasha Wood (Anesthesia & Perioperative Medicine)
A02	***Purification of Enhanced Green Fluorescent Protein***	The jellyfish Aequorea victoria can emit a fluorescent glow because of a protein it produces naturally called green fluorescent protein. Because of its fluorescent properties, this protein has become a powerful tool for studying movement of proteins within cells. In this workshop, students will use an affinity tag and column chromatography to purify a modified version of green fluorescent protein from a complex mixture of proteins in a cell extract.	0	24	Dr. Derek McLachlin Sarah Wilhelm (Biochemistry) MSB 117
A03	***Human Anatomy: Functional and Clinical Applications***	Join us for an interactive session where we will learn about 4 different human organ systems by discussing the functional gross anatomy through activities and interactions with human cadaveric specimens! We will be looking at structure and function of the anatomy, and also dive into clinical applications for medicine and other fields!	40	40	Amrutha Elanko Meg Frank (Anatomy & Cell Biology)
A04	***Dream Doctors***	In this workshop you will learn what the life of an anesthesiologist is like and why we love our job. You will learn about intubations and other airway skills, ultrasound guided procedures, epidurals, and resuscitation techniques. You will get hands-on experience practicing these skills on simulators in CSTAR.	20	20	Dr. Saleh Al-Nahdi Dr. Tammy Symons Dr. Curtis Van Doormal Dr. Hamza Zidan (Anesthesia & Perioperative Medicine) CSTAR B7-200 University Hospital
A05	***An Inside Look at Medical Imaging***	This workshop will take a case-based review of interesting clinical scenarios that will highlight the diverse and exciting world of Medical Imaging and the wide array of career choices that are available.	20	20	Dr. Narinder Paul (Medical Imaging)

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A06	***The Physical and Virtual World of Psychology Research***	In this tour of Psychology research, you will have the opportunity to hear about and see different research methods such as EEG, fNIRS, gait, and eye tracking, from experienced researchers. You will also get an opportunity to experience the "Audiodome", a hemispherical array of 91 speakers used to reproduce sound environments with stunning realism. This speaker array can be used in combination with virtual reality, allowing researchers to replicate highly realistic visual and auditory scenes, where all aspects of the experimental stimuli can be controlled and are reproducible. This allows for more innovative research, bringing human testing into more real-world settings.	40	40	Dr. Leah Brainin Aditi Nayak Dr. Derek Quinlan (BrainsCAN) Western Interdisciplinary Research Building (WIRB) Cognitive Neuroscience Research Facility
A07	***Understanding the Human Brain and Advanced Research Technologies***	In this workshop, you will have the unique opportunity to explore cutting-edge equipment used in collecting brain-related data, such as electroencephalogram (EEG). We will demonstrate how this equipment works and explain how it is utilized in applied research on clinical populations. For example, you will learn how we analyze gait in individuals with Parkinson's disease. Additionally, the workshop may showcase how virtual reality integrates with research tools. Participants will get hands-on experience by simulating the role of a research participant. The workshop will feature a dedicated focus on the intersection of music and the brain.	40	40	Caitlin Fitzpatrick Catherine Lin Dr. Karli Nave Sarah Park Dr. Riya Sidhu Diana Urian (Schulich School of Medicine & Dentistry) Western Interdisciplinary Research Building (WIRB)
A08	***Image Guided Interventions***	In this workshop you will learn about medical imaging modalities, such as ultrasound, Magnetic Resonance Imaging, and X-Ray Computed Tomography, and how they are applied in modern medicine. You will also learn about how computers and tracking system (think GPS for surgery) can be used to help doctors perform surgeries. You will be playing with the state-of-the-art ultrasound machine and see first-hand how computer-assisted surgical technique works.	25	25	Dr. Elvis Chen (Robarts Research Institute) RRI 2nd Floor Conference Room
A09	***Dementia Knowledge Translation:*** ***Learning from persons with lived experience***	This workshop will explore the benefits of expanding your learning beyond the classroom - by stepping into the community! Hear from a Western University student whose volunteer experience with persons living with dementia has complemented their "formal" academic learning. "*I've gained practical insights into the complexities of cognitive impairment and the importance of holistic care, aligning perfectly with my aspirations to pursue a career in occupational therapy.*"	25	0	Megan Fife Susan Oster Stephanie Pullam (Alzheimer Society Southwest Partners) Arts & Humanities Building, Room 1B02

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A10	***The Physics of Medical Imaging***	How can physics helps us see into the human body to reveal structure and detect disease? This workshop will provide a glimpse into four types of medical imaging and the basic physical concepts behind these methods. It will include a presentation on magnetic resonance imaging (MRI) and functional MRI, including examples of current research and innovations, followed by hands-on activities to explore computed tomography (CT) and ultrasound.	20	20	Dr. Alexei Ouriadov Dr. Tamie Poepping Dr. Andrea Soddu (Physics & Astronomy) PAB 100
A11	***Extraction of DNA: Getting the instruction manual out***	Biochemistry and Synthetic Biology involve the manipulation of genetic information contained in the DNA sequence of genes from different organisms. To create novel genes with new functions DNA must first be extracted from an organism and purified. In this laboratory exercise students will use biochemical techniques to extract, purify, and analyze DNA from bacterial cultures. Some of the techniques used by students in the lab will include use of micropipettes, centrifugation, and gel electrophoresis.	20	0	Elizabeth Connelly Dr. Anne Rintala-Dempsey Dr. Brian Dempsey (Biochemistry) MSB 120
A12	***Molecules in Motion: Exploring the wonderful applications of chemistry***	From particle accelerators to pharmaceuticals, chemistry is all around us. Explore the various uses and opportunities that chemistry has to offer from environmental conservation to molecular simulations. Come join us for four presentations to learn about some of the fun chemistry has to offer, stories about life in university, and some *EXPLOSIVE* experiments. ***NOTE: Safety dress code for all participants entering our labs*** - 'shoulder to toe coverage' - long ankle length pants and socks with no exposed skin at the ankles. Shoes that completely cover the feet - like running shoes, not sandals. No exposed midriffs so t-shirts are fine (you do not need to have long sleeves.) We will provide safety glasses.	10	10	Nicholas Bainbridge Clement Lee Matthew Rossini Jessica Winslade (Chemistry) MSA 1220
A13	***The Good, the Bad, and the Ugly: A day in a life of a student researcher at Western***	In this workshop, you will gain an honest insight on Western as a university from a student's perspective. We will discuss the path to get into medical research, medicine in Canada, and my personal path from high school all the way to my medical school interview. Lastly, we will touch on stem cell biology, my primary research area of interest. You will learn how we conduct stem cell experiments in the lab, micropipetting, the basics of molecular sequencing and the clinical applications of stem cells in the future!	40	40	Bryan Lung (Schulich School of Medicine & Dentistry)

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A14	***Organ Donation and Transplantation***	An introduction to organ donation and transplantation, we will begin by covering criteria for donation and the establishment of brain death as well as how organs are allocated, procured and transported to recipient operating rooms. The second part of the presentation focuses on the history and evolution of transplantation and the current transplant process.	20	20	Peter Barrett (LHSC Organ Donation Program) Arts & Humanities Building Rm 1B04
A15	***Exploring the Medical Sciences***	Buckle up for an exploration of the medical sciences! Scientists at Western's Schulich School of Medicine & Dentistry investigate how the body works, what goes wrong in disease and how we can intervene to treat disease. In this session, students will get exposure to three exciting areas of the medical sciences. Learn how anatomists are helping surgeons improve their practice. Investigate the mysteries of the brain and neurological disease. Explore how cells of our immune system play a role in homeostasis and disease processes like infection, heart disease and pneumonia.	40	40	Dr. Olamide Adebiyi Dr. Bryan Heit Dr. Brad Urquhart Dr. Tim Wilson (Basic Medical Sciences Undergraduate Education) Arts & Humanities Building Rm 1B06
A16	***MedReach: Navigating pathways and skills to medical school***	This workshop will be led by our group of *MedReach* medical students and Dr. George Kim, our Associate Dean of Admissions. Come learn about their individual pathway to medicine, each one unique and diverse. Not only will you learn ways to medical school, but you can even try it on by testing a few clinical skills like suturing.	0	20	Dr. George Kim Kelsey Lavigne (Schulich School of Medicine & Dentistry)
E01	***Physiotherapy: Exploring different areas of practice***	In this interactive workshop, you will have the chance to hear about what it is like to work in different areas of physiotherapy practice. You will also get the chance to experiment with performing a variety of common physiotherapy assessment and treatment techniques.	20	0	Dr. Laura Brunton Dr. Laura Graham Dr. Erin Miller Dr. Janelle Unger Dr. Tina Ziebart (School of Physical Therapy) Elborn College
E02	***Audiology and Speech-Language Pathology: Hearing and Communication Health Specialists***	Audiologists provide health care related to hearing, balance, and auditory disorders such as tinnitus (ringing in the ears). Speech-language pathologists provide services to those with concerns related to swallowing, speech, and oral and written language. In this session, you'll experience some of the assessment and interventions offered to those with communication and swallowing disorders. You'll also learn more about these health professions including educational requirements and practice contexts.	0	20	Dr. Lisa Archibald Dr. Sheila Moodie (School of Communication Sciences & Disorders) Elborn College