

Western University
Friday, May 5, 2023

Workshop Catalogue

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

Code E – Elborn College (bussing from the North Campus Building will be provided)

Code	Title	Description	AM	PM	Coordinator/Presenters (Department and Location)
A01	<i>Image Guided Interventions</i>	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
A02	<i>Purification of Enhanced Green Fluorescent Protein</i>	The jellyfish <i>Aequorea victoria</i> 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 Claire Zhang (Biochemistry) MSB 117
A03	<i>Extraction of DNA: Getting the instruction manual out</i>	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
A04	<i>Pediatric Surgery: An Unbiased Talk about the Best Job in the World</i>	In this workshop you will learn about what life as a pediatric surgeon is like. We will discuss how to become a surgeon, including details about medical training from university, medical school, residency and fellowship. We will discuss what the day-to-day of a pediatric surgeon is like, as well as how research and teaching are a big part of the job of an academic surgeon. We will review some interesting cases and learn about rare congenital defects that pediatric surgeons fix.	45	45	Dr. Natasha Seemann (Surgery) MSB 148

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A05	<i>The Physics of Medical Imaging</i>	How can physics help 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
A06	<i>The Virtual World in Psychology Research</i>	In this tour, you will have the opportunity to see and hear the "Audiodome", a hemispherical array of 91 speakers (+ 8 sub-woofers) that are 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 compared to traditional methods that have been used in Psychology for over a century and bring human testing into more real-world settings.	22	22	Dr. Laura Gonzalez Dr. Ysabel Macdonald Dr. Derek Quinlan (BrainsCAN) Western Interdisciplinary Research Building Cognitive Neuroscience Research Facility
A07	<i>Human Anatomy: Functional and Clinical Applications</i>	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	Bryn Bhalerao Erinn Brown Rebecca Elgie Meg Frank Cass Fu Meenaal Kaur Jorge Mejia-Lopez Supreet Singh (Anatomy & Cell Biology) DSB 2005
A08	<i>Biomechanics and Engineering: Understanding Injuries, Prevention and Repair</i>	In this workshop, you will learn how engineers contribute to better understanding the biomechanics of normal motion, injuries, injury prevention and repair. With will include tours and live demos in research labs that study human motion, joint behavior, and head impact.	0	15	Dominique Cava Grant Dickey Emma Donnelly Lauren Douglas Alexandre Galley Carter Goan Larissa Madia Dr. Haojie Mao Emilie Potts Dr. Ryan Willing (Mechanical & Materials Engineering) 3M Building, Room 1215 TEB 306 > TEB 327

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A09	<i>Tour of the Wearable Biomechatronics Laboratory</i>	Students will have the opportunity to learn about the latest advances in wearable devices for life-long mobility. The workshop will consist of demos and some hands-on activities.	15	0	Dr. Ana Luisa Trejos Sergio Salinas Brandon Edmonds Jose Guillermo Colli Mahshad Berjis Niloufar Ahmadian Zahra Habibollahi (Electrical & Computer Engineering) Amit Chakma Engineering Building 3410
A10	<i>Dementia from the Inside: What is it and the lived experience</i>	We will explore what dementia is and how it can impact our brain. We will hear from someone who is currently living with dementia to gain a better understanding of how it impacts their life.	30	35	Jessica Lawson (Alzheimer Society Southwest Partners) NCB 113
A11	<i>Organ Donation and Transplantation</i>	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.	30	35	Peter Barrett (Multi-Organ Transplant Program) NCB 101
A12	<i>Exploring the Medical Sciences!</i>	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 can intervene to treat disease. In this session, students will get exposure to three exciting areas of the medical sciences. Learn how improvements in medical imaging techniques help improve diagnosis of disease. Investigate the mysteries of the brain and neurological disease. Explore precision medicine and how scientists and physicians use genetics and other technologies to tailor therapies to the individual patient.	40	45	Dr. Adrian Owen Dr. Grace Parraga Dr. Brad Urquhart (Basic Medical Sciences Undergraduate Education) NCB 117
E01	<i>Audiology and Speech-Language Pathology: Hearing and Communication Health Specialists</i>	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.	20	0	Dr. Lisa Archibald Emily Gosselin Courtney Harasym Dr. Sheila Moodie Victoria Santarossa Sara VanDyk Susana Vieira de Paula (School of Communication Sciences & Disorders) Elborn College