



Presented by the McMaster
Women in Science and Engineering Initiative



March 9th – 10th, 2018, McMaster University
Celebrating International Women's Day

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Welcome Statement

Welcome to the Current Research in Engineering, Science, and Technology (CREST) 2018 Annual Meeting! CREST is a multi-disciplinary research conference hosted by the McMaster Women in Science and Engineering (WISE) Initiative. This year's meeting is taking place from March 9th to 10th, 2018 and marks our 12th meeting on the McMaster campus. We hope you find our meeting to be an educational, stimulating, and inspiring event.

We are thrilled to have Dr. Myra Fernandes as our Keynote Speaker for this year. Dr. Fernandes, a Professor in Cognitive Neuroscience and adjunct in the Research Institute of Aging at the University of Waterloo, has been recognized with numerous honours and distinctions throughout her career including the Canadian Psychological Association's President's New Researcher Award, and the Ontario Ministry of Research & Innovation's Research Excellence Award. Her research aims to identify cognitive processes and key brain structures supporting memory using a variety of methodologies in young adults, in aging individuals, and in those with a past head injury or concussion. She was the first recipient of the Women in Cognitive Science Canada Mentorship Award and her research is frequently featured in newspapers, magazines, radio interviews, blogs, and science documentaries worldwide, from journalists in the areas of Psychology, Law, Medical Sciences, Business, Biology, and Technology.

We are excited to have four other panelists join Dr. Myra Fernandes in a discussion about careers in academia (Dr. Laura Cirelli, Dr. Nidhi Jain, Dr. Sharonna Greenberg, and Dr. Barb Fenesi). We also have five panelists from industry (Dr. Carla Brown, Dr. Trina Foster, Ewelina Kusmider, Dr. Fiona Manning, and Ivana Postic) participating in CREST this year. Our panelists will be discussing their transitions from graduate school to the positions they are in today.

On Friday, we have the "Open Access: Why and How?" workshop hosted by Haley Kragness, a Ph.D. candidate in Dr. Laurel Trainor's Auditory Development Lab. In this workshop, Haley will discuss the benefits of making scholarly work freely available online and compliant with the Tri-Agency Open Access Policy and guide attendees in discovering resources for accessing and reading paywalled research without breaking the bank. Later in the afternoon, we have the "Creative Problem Solving: How to generate and optimize ideas for success" workshop led by Carol Chong (M.B.A., Director at Sklar, Wilton & Associates) that will provide you with fun, creative, and effective tools & techniques to help you generate and optimize your ideas. On Saturday, the Women in Engineering

Society (WIE), National Society for Black Engineers (NSBE), and McMaster EngiQueers will host “What, Why, How: A Discussion on Microaggressions in the Workplace”, a workshop inviting members of the STEM (Science, Technology, Engineering, and Mathematics) community to learn about microaggressions, and discuss how to handle such situations in a workplace environment.

The greatest part of CREST, as always, is the student participation. We have twenty student research talks taking place at CREST 2018 and prizes will be awarded for the top presentations. For further details regarding the research talk sessions, please refer to pages 20-23.

CREST 2018 is also our second year for EngSci Girl - a community outreach program catered to students from Grades 9-12 who are interested in pursuing STEM. Attendees will have the chance to listen and interact with many of the student presenters and engage in talks related to the latest cutting edge research. They will later participate in a challenge to summarize these presentations in 3 minutes, with prizes awarded at the end of the day. More information about this initiative can be found on pages 11 and 19.

This year, proceeds from CREST will be donated to the Organization for Women in Science in the Developing World (www.owsd.net). To read about the great work they do, please see page 24.

Have a look around at the various plants and flowers on the tables: these came from the McMaster Biology Greenhouse, which is right here on campus! To learn more about them, visit: <http://www.macbiogreenhouse.ca>.

Finally, you will notice several female scientists on the cover of our proceedings. Short biographies of these amazing women can be found on pages 25 and 26.

We hope you enjoy CREST 2018!

Your 2017-2018 WISE Initiative Organizational Committee:

Bahar Amani, Rana Attalla, Alison Bayzat, Harsukh Benipal, Stefania Cerisano, Julia de Lange, Brittany Duggan, Lisa Dyce, Yasamin Fazliani, Hanna Haponenko, Rachelle Ho, Daeria Lawson, Alice Li, Celine Ling, Vivian Liu, Ritchie Ly, Stellena Mathiapparanam, Sylvia Mills, Anna Parackal, Anna Park, Lyndsay Rayner, Tamara Rosner, Michelle Saoi, Sitara Sharma, Kara Tsang

WISE Mentors

Name	Department
Dr. Sigal Balshine	Psychology, Neuroscience, & Behaviour
Dr. Suzanna Becker	Psychology, Neuroscience, & Behaviour
Dr. Robin Cameron	Biology
Dr. Emily Cranston	Chemical Engineering
Dr. Juliet Daniel	Biology
Dr. Kim Dej	Biology
Dr. Sarah Dickson	Civil Engineering
Dr. Michelle Dion	Political Sciences
Dr. Sorina Dumitrescu	Electrical and Computer Engineering
Dr. Marie Elliot	Biology
Dr. Carolyn Eyles	Geography & Earth Sciences
Dr. Cecile Fradin	Physics & Astronomy
Dr. Deda C Gillespie	Psychology, Neuroscience, & Behaviour
Dr. Susan Searls Giroux	English and Cultural Studies
Dr. Gillian Goward	Chemistry & Chemical Biology
Dr. Kathryn Grandfield	Materials Science & Engineering
Dr. Deirdre Haskell	Mathematics & Statistics
Dr. Elizabeth Hassan	Mechanical Engineering
Dr. Kim Jones	Chemical Engineering
Dr. Lovaye Kajiura	Biology
Dr. Gail Krantzberg	Civil Engineering
Dr. Maureen MacDonald	Interdisciplinary Science
Dr. Sandra Monteiro	Health Sciences
Dr. Aimee Nelson	Kinesiology
Dr. Natalia Nikolova	Electrical & Computer Engineering
Dr. Laura Parker	Physics & Astronomy
Dr. Cheryl E. Quenneville	Mechanical Engineering
Elizabeth Rowan	Mechanical Engineering
Dr. Mel Rutherford	Psychology, Neuroscience & Behaviour
Dr. Kalai Saravanamuttu	Chemistry and Chemical Biology

Name	Department
Dr. Allison Sekuler	Psychology, Neuroscience, & Behaviour
Dr. Heather Sheardown	Chemical Engineering
Dr. Alison Sills	Physics & Astronomy
Dr. Rosa da Silva	Biology
Dr. Deborah Sloboda	Biochemistry & Biomedical Sciences
Dr. Sarah Symons	Physics & Astronomy
Dr. Valerie Taylor	Psychiatry and Behavioural Neuroscience
Dr. Ayse Turak	Engineering Physics
Dr. Elizabeth Weretilnyk	Biology
Dr. Christine Wilson	Physics & Astronomy
Dr. Xu-Dong Zhu	Biology

About the McMaster WISE Initiative

The McMaster Women in Science and Engineering (WISE) Initiative was formed in 2006 as a result of a survey conducted at McMaster University. This survey revealed a need for a forum in which female graduate students could identify, discuss, and learn about gender-related issues specific to their field of work and study. Under the initial leadership of ten female graduate students from various science and engineering departments at McMaster University, WISE began offering bi-weekly science talks featuring women in science and engineering as well as a round table conference.

WISE now hosts monthly social and professional development workshops open to all students on campus. These have included organizing nuclear reactor tours, co-hosting the 2014 Whidden Lecture, hosting social gatherings, and organizing TED Talk & Movie Nights featuring thought-provoking talks, films, and documentaries. WISE also facilitates a mentorship program called “Mentor of the Month” where each month, a faculty mentor leads a discussion on topics ranging from how to find a balance between personal life and work to the importance of saying “yes” (and sometimes “no”!) to new opportunities to developing a solid support network. If you are interested in talking to someone who has made it to the other end of the academic gauntlet, we highly encourage you to contact one of our WISE Mentors. Their contact information can be found on page 5.

Finally, WISE organizes CREST, our annual multidisciplinary meeting, to highlight and celebrate the exciting research conducted by students, postdocs, and faculty in sciences and engineering. The meeting gathers approximately 100 participants annually and features research presentations, workshops, panel discussions, and keynote addresses by leading female executives and scientists. Conference workshops focus on a range of topics, including grant-writing tips, effective negotiating, financial planning, and finding jobs both in and outside of academia.

This year marks WISE’s 12th anniversary on campus. This wouldn’t be possible without all of you joining us as we continue to support, celebrate, and advocate for women in science and engineering. WISE is run by a group of undergraduate and graduate students and postdoctoral fellows from various departments at McMaster University. Everyone - undergraduate and graduate students, postdocs, faculty of all genders - is welcome to attend our events or get involved with organizing! For more information about WISE, and regular updates about our monthly events, visit our website at <http://www.science.mcmaster.ca/wise/>. To send comments, questions, and ideas, email us at wiseinitiative@gmail.com.

Acknowledgements

WISE is deeply indebted to all of our sponsors from McMaster and the local community for their continued support in helping us achieve our goals. Without this support, none of our activities would be possible.

Platinum Level (\$1000)

Office of the Associate Dean, Science
Office of the Dean & Vice-President, Faculty of Health Science

Gold Level (\$500 – \$999)

Department of Chemical Engineering
Department of Mathematics and Statistics
Department of Mechanical Engineering
Department of Psychology, Neuroscience and Behaviour
Department of Surgery

Silver Level (\$250 – \$499)

Department of Electrical & Computer Engineering
Department of Chemistry and Chemical Biology
Department of Kinesiology
Department of Materials Engineering
McMaster Alumni Association
McMaster Integrative Neuroscience Discovery & Study (MiNDS)
Graduate Students Association (GSA)
Canadian Union of Public Employees (CUPE) Local 3906

We would also like to thank the many conference judges, workshop presenters, and volunteers for their time, effort, and support.

Schedule Overview

Friday, March 9th

10:00am – 10:30am	Registration	CIBC Hall
10:30am – 11:30am	Opening Remarks & Keynote Address Dr. Myra Fernandes	CIBC Hall
11:30am – 12:30pm	Lunch	CIBC Hall
12:30pm – 1:30pm	Panel Discussion: Careers in Academia Dr. Laura Cirelli Dr. Barbara Fenesi Dr. Myra Fernandes Dr. Sharona Greenberg Dr. Nidhi Jain	CIBC Hall
1:30pm – 1:45pm	Networking and Coffee Break	CIBC Hall
1:45pm – 2:45pm	Open Access: Why and How Haley Kragness	CIBC Hall
2:45pm – 3:00pm	Networking and Coffee Break	CIBC Hall
3:00pm – 4:00pm	Creative Problem Solving: How to generate and optimize ideas for success Carol Chong	CIBC Hall
4:00pm – 5:00pm	Wine and Cheese Reception	CIBC Hall

*CIBC Hall: third floor, McMaster University Student Centre
(Map on page 27)*

Saturday, March 10th

9:30am – 10:00am	Registration	ETB 223
10:00am – 11:00am	Oral Research Presentations	
	Session 1	ETB 224
	Session 2	ETB 230
	Session 3	ETB 119
11:00am – 11:30am	Networking and Coffee Break	ETB 223/238
11:30am – 12:30pm	Oral Research Presentations	
	Session 4	ETB 224
	Session 5	ETB 230
	Session 6	ETB 119
12:30pm – 1:30pm	Lunch	ETB 223/238
1:30pm – 2:30pm	What, Why, How: A Discussion on Microaggressions in the Workplace WIE, NSBE, and EngiQueers	ETB 237
2:30pm – 2:45pm	Networking and Coffee Break	ETB 223/238
3:00pm – 4:30pm	Panel Discussion: Careers in Industry Dr. Carla Brown Dr. Trina Foster Ewelina Kusmider Dr. Fiona Manning Ivana Postic	ETB 237
4:30pm – 5:30pm	Award Ceremony & Closing Remarks Wine and Cheese Reception	ETB 223

*ETB: Engineering Technology Building
(Map on pages 27)*

EngSci Girl @ CREST 2018

Saturday, March 10th

9:00am – 9:30am	Registration	ETB 228
9:30am – 10:00am	Orientation <i>Registration still open.</i>	ETB 228
10:00am – 11:00am	Oral Research Presentations	
	Session 1	ETB 119
	Session 2	ETB 224
	Session 3	ETB 230
11:00am – 11:30am	Research Talk Debrief <i>Talk to Graduate students about the presented research to gain a better understanding. Opportunity to ask questions.</i>	ETB 228
11:30am – 12:00pm	Challenge Preparation Period <i>Choose one presentation with group as Challenge topic. Prepare 3 minute summary.</i>	ETB 228
12:00pm – 12:30pm	EngSci Girl Research Talk Challenge	ETB 228
12:30pm – 1:30pm	Lunch	ETB 223/238
1:30pm – 2:30pm	Panel Discussion: Student Mentors Samantha Aung Maryam Badv Monica Black Daniella Lato Srinidhi Shaw	ETB 228
2:30pm – 2:45pm	Networking and Coffee Break	ETB 223/238
3:00pm – 4:30pm	Panel Discussion: Careers in Industry Dr. Carla Brown Dr. Trina Foster Ewelina Kusmider Dr. Fiona Manning Ivana Postic	ETB 237
4:30pm – 5:30pm	Awards Ceremony & Closing Remarks	ETB 228

ETB: Engineering Technology Building (Map on page 27)

CREST 2018 Keynote Speaker

Friday, March 9th: 10:30am – 11:30am, CIBC Hall

Myra Fernandes, Ph.D.

Professor in Cognitive Neuroscience

Adjunct Professor in the Research Institute of Aging

University of Waterloo

Dr. Myra Fernandes is a Professor in Cognitive Neuroscience and is an adjunct in the Research Institute of Aging, at the University of Waterloo. Dr. Fernandes' research aims to identify cognitive processes and key brain structures supporting memory using a variety of methodologies such as fMRI and behavioural testing in young adults, in aging individuals, and in those with a past head injury or concussion.

Dr. Fernandes has been recognized with numerous honours and distinctions throughout her career, including the Canadian Psychological Association's President's New Researcher Award, and the Ontario Ministry of Research & Innovation's Research Excellence Award. She is also an associate editor for the journal 'Memory & Cognition', past associate editor for the 'Journal of Gerontology', and holds numerous editorial board positions. Dr. Fernandes was recently named a Fellow of the Association for Psychological Science. Dr. Fernandes serves on the Natural Sciences and Engineering Research Council of Canada's (NSERC) Biological Systems and Functions panel, reviewing grants from Canadian researchers. She is a former Chair of NSERC's Scholarships and Fellowships committee, as well as past Chair of the Ontario Graduate Scholarships panel. Dr. Fernandes was the first recipient of the Women in Cognitive Science Canada Mentorship Award.

Dr. Fernandes has published numerous peer-reviewed articles, multiple book chapters as well as books, including a widely used Introduction to Cognition textbook. Her research is frequently featured in newspapers, magazines, radio interviews, blogs, and science documentaries worldwide, from journalists in the areas of Psychology, Law, Medical Sciences, Business, Biology, and Technology.

Dr. Fernandes holds a BSc degree in Psychology & Biology from University of Waterloo (1995), as well as a Masters (1996) and PhD (2001) in Cognitive Neuropsychology from University of Toronto.

CREST 2018 Keynote Address

Understanding the Landscape for Women in Science: Creating Opportunities and Strategies for Success

Friday, March 9th: 10:30am – 11:30am, CIBC Hall

How do people make decisions about career paths? As early as elementary school, subtle biases shape decisions. Finding ways to pursue your interests and avoid getting derailed requires confidence in your abilities, persistence, positive surroundings, knowledge of the landscape, luck, and a tough skin.

In this talk, Dr. Fernandes will touch on her own experiences in the STEM field, while highlighting recent research on a variety of related topics. Figuring out how to match up your interests with opportunities that will stimulate and allow you to make a meaningful contribution isn't always an easy task. She will be discussing the myriad of opportunities and ways to get involved in science and engineering, from the programs females select to study, the questions females feel bold enough to ask in seminars, to the importance of self-assurance when presenting research findings at conferences. There are ways to develop that skill set. Maintaining a balance across the multiple roles you want to play in your life and career doesn't happen without active planning.

She will highlight some strategies to stay organized, create your own opportunities, and develop supportive connections. There are ways to make it work. Defining your role and forging a reputation in science can happen in a lot of different ways. She will look at the career trajectory of females in STEM fields and outline some challenges such as the two-body problem, varying and ongoing expectations at work and at home, as well as differences in the kinds of research topics, and approach to science, across the genders. She will recommend some concrete steps one can take at each career stage to advance scientific theories, allow for cross-fertilization of ideas, get credit, and build an identity in STEM fields. There are many ways to disseminate and broadcast your contributions, of overcoming societal stereotypes and bias, of making a mark, and giving back, that can allow science to progress with equal contributions from males and females alike.

Workshop and Panel Schedule

WORKSHOP 1: *Open Access: Why and How?*

Friday, March 9th: 1:45pm – 2:45pm, CIBC Hall

In this interactive workshop, we will hear about the benefits of making our scholarly work freely available online and compliant with the Tri-Agency Open Access Policy - not locked behind a paywall. We will also discover resources for accessing and reading paywalled research without breaking the bank.

Relevant links:

Find the preprint server that's right for your work: <https://osf.io/preprints>

Find out journal policies on archiving your work:

<http://www.sherpa.ac.uk/romeo/index.php>

Browser extension for finding free versions of paywalled work: <http://unpaywall.org/>

Haley Kragness

**Ph.D. Candidate, Psychology, Neuroscience & Behaviour,
McMaster University**

Haley Kragness is a PhD candidate in Dr. Laurel Trainor's Auditory Development Lab. Her doctoral research uses music as a tool to investigate children's understanding of timing, hierarchical structure, and emotional communication. Outside of the lab, she is very involved in science communication and open access initiatives. Find Haley on twitter: @haleykrag.

WORKSHOP 2: *Creative Problem Solving: How to Generate and Optimize Ideas for Success*

Friday, March 9th: 3:00pm – 4:00pm, CIBC Hall

This session will provide you with fun, creative, and effective tools & techniques to help you generate and optimize your ideas.

Carol Chong

Director at Sklar, Wilton & Associates

Carol is a Director at Sklar, Wilton & Associates, a marketing consulting agency in Toronto that applies strategic advisory services and marketing research and analytics to solve tough business challenges. She has worked with global brands we know and love including M&Ms, Mars, Four Seasons, and Dyson.

WORKSHOP 3: *What, Why, How: A Discussion on Microaggressions in the Workplace*

Saturday, March 10th: 1:30pm – 2:30pm, ETB 237

McMaster's WIE, EngiQueers, and NSBE is pleased to be hosting a workshop that invites members of the STEM community to join in on a conversation about microaggressions in the workplace. Please join us for this exciting opportunity to network, educate oneself on microaggressions, and how one should handle these in a workplace environment. This workshop will be an opportunity for students to open up about personal experiences, and discuss ways to create a more diverse and inclusive STEM culture.

McMaster Women in Engineering Society (WIE)

The McMaster Women in Engineering Society is proud to offer strong support, networking, and mentorship programs for inspiring female engineering students!

The National Society of Black Engineers (NSBE)

As a national student and professional based organization, The National Society of Black Engineers (NSBE) dedicates itself to increasing the participation of minority students in the fields of Engineering and Applied Science.

McMaster EngiQueers

EngiQueers is a club within the McMaster Engineering Society aimed to promote the inclusion of LGBTQ+ students within the community through events, services and ally support.

PANEL DISCUSSION I: *Careers in Academia*
Friday, March 9th 12:30pm – 1:30pm, CIBC Hall

This panel discussion will help you to learn more about traditional and nontraditional jobs in academia. Our panelists, with diverse backgrounds in science and engineering, will present different perspectives and provide insights on how to establish a successful career in an academic setting. Come prepared with questions!

Dr. Laura Cirelli (Ph.D.)

Postdoctoral Fellow, University of Toronto Mississauga
Soon-to-be Faculty, University of Toronto Scarborough

Dr. Laura Cirelli is currently a Postdoctoral Fellow at the University of Toronto Mississauga in the Psychology Department. She will be starting a tenure-track faculty position at the University of Toronto Scarborough this July. She completed her PhD at McMaster University in the Psychology, Neuroscience, & Behaviour Department in 2016. Her research focuses on how infants respond to and engage with music, and the social-emotional effects of these activities.

Dr. Nidhi Jain (Ph.D.)

Research Associate, Department of Mechanical Engineering,
McMaster University

Born and raised in India, Dr. Nidhi Jain arrived in Canada after receiving her doctoral degree from the Indian Institute of Technology Bombay. Dr. Jain did her post-doctoral fellowship at Queen's University where she investigated mechanisms of platinum drug resistance in small cell lung cancer. After moving to Hamilton, Ontario, she joined the Thrombosis and Hemostasis research group at Henderson Hospital and studied the role of Thrombin Activatable Fibrinolytic Inhibitor in blood coagulation. She is currently working at McMaster University in the Department of Mechanical Engineering and her research focus is on microfluidics and tissue engineering.

Dr. Sharonna Greenberg (Ph.D)

Assistant Professor, Department of Chemistry & Chemical
Biology, McMaster University

Dr. Sharonna Greenberg is an Assistant Professor, teaching-track, in Chemistry & Chemical Biology at McMaster University. Her research interests encompass science pedagogy, including new assessment methods

and online learning platforms. She is passionate about making chemistry accessible to her students and to the public.

Dr. Barbara Fenesi (Ph.D.)

Postdoctoral Fellow, McMaster University

Soon-to-be Faculty, University of Western

Barbara Fenesi is a postdoctoral fellow in the NeuroFitLab in the Department of Kinesiology at McMaster University. She will soon join the Faculty of Education at the University of Western as Tier II Canada Research Chair in the Science of Learning. She applies her interdisciplinary background in psychology to better understand factors that promote brain and body health. Specifically, she examines how mental and physical health impact learning and academic success across a diverse student body.

Dr. Myra Fernandes (Ph.D.)

Professor, Cognitive Neuroscience

Adjunct Professor, Research Institute of Aging

University of Waterloo

Dr. Myra Fernandes is a Professor in Cognitive Neuroscience and is an adjunct in the Research Institute of Aging, at the University of Waterloo. Dr. Fernandes' research aims to identify cognitive processes and key brain structures supporting memory using a variety of methodologies such as fMRI and behavioural testing in young adults, in aging individuals, and in those with a past head injury or concussion.

PANEL DISCUSSION 2: *Careers in Industry*

Saturday, March 10th: 3:00pm – 4:30pm, ETB 237

This panel brings professionals in science and engineering who are at different stages of their careers to discuss options, experiences and the transition process from graduate school to non-academic jobs, including industry, government and consulting companies. Come prepared with questions!

Dr. Carla Brown (Ph.D.)

Research Chemist, Xerox Research Centre

Carla Brown completed her undergraduate degree in the Arts and Science Program at McMaster University in 2012. After completing an MSc at the University of Toronto, Carla returned to McMaster to undertake a PhD in Organic Chemistry. Carla completed her PhD in 2017, and now works at Xerox Research Centre as a research chemist.

Dr. Trina Foster (Ph.D.)

Executive Director, Ontario Centre for Workforce Innovation

Dr. Trina Foster is the Executive Director at the Ontario Centre for Workforce Innovation (OCWI). With over 10 years experience, she is a proven leader in the creation, management, and translation of research across a wide range of topics/areas. She has worked in a variety of environments and across sectors to demonstrate how research-based activities can inform and support relevant stakeholder communities. Her past roles all involved developing and leading multifaceted, interdisciplinary and cross-sectoral teams that use research to address complex questions of importance to society. Prior to joining OCWI, Trina was Director, Research & Global Academy at the Canadian Institute for Advanced Research (CIFAR) where she provided oversight and leadership to international research networks as well as led the strategic development and operationalization of CIFAR's activities to support tomorrow's research leaders. She serves on the board of, and volunteers with, several not for profit organizations and charities; is an active advocate for women in science; and continues to advise/speak-on the importance of evidence-informed decision making.

Ewelina Kusmider (M.B.A.)

Vaccines Pricing Analyst, Public Affairs and Reimbursement, GSK

Ewelina Kusmider joined GSK in May 2011 and is currently the Vaccines Pricing Analyst within the Public Affairs and Reimbursement department at GSK. Prior to joining the pricing team, she was a Marketing Programs Specialist supporting Marketing and Sales operations, and a Territory Associate responsible for delivering patient-focused solutions to customers. Before joining GSK, she was the respiratory portfolio lead at Pfizer and a medical sales representative at two other pharmaceutical companies. In total, she has over 10 years of pharmaceutical industry experience working for companies operating across different stages of the business and product life cycle. Ewelina received her Honours Bachelor in Health Sciences from the University of Western Ontario in 2006 and her MBA from the Richard Ivey School of Business in 2011.

Dr. Fiona Manning (Ph.D.)

Research Analyst, Canadian Institute for Advanced Research

Dr. Fiona Manning is a Research Analyst at the Canadian Institute for Advanced Research (CIFAR), a non-profit organization that supports global, interdisciplinary research networks. Prior to joining CIFAR, she worked as

a postdoctoral researcher at Concordia University. Beyond research, Fiona has taken on roles that aimed to enhance data and science literacy. She worked as Sessional Faculty at McMaster University teaching Inferential Statistics, developed online tools for teaching statistics and data visualization, and served as a scientific liaison in the community to convey psychological research to the public. Fiona holds a BSc and PhD in Psychology, Neuroscience, & Behaviour from McMaster University. Her research focused on temporal prediction and sensorimotor integration, specifically addressing how movement and auditory inputs are combined and processed in the brain.

Ivana Postic (B.Sc.H.)

Ph.D. Candidate, Chemical Engineering, McMaster University

Ivana graduated from McMaster University with an Honours B.Sc degree in Biochemistry (Molecular Biology specialization). She is currently in the final stage of her PhD degree in Chemical Engineering with Dr. Heather Sheardown. While completing her PhD degree, Ivana completed an internship at a biotech company in the U.S. developing artificial cornea, and worked for 1.5 years at a boutique consulting firm specialized in strategy for pharma.

WISE OUTREACH: EngSci Girl Student Mentorship Panel
Saturday, March 10th: 1:30pm – 2:30pm

This panel is intended for the high school students attending EngSci Girl. The panel consists of a mixture of undergraduate and graduate students studying Science and Engineering who will speak about their experiences as STEM women. They have been selected because of their contributions to the community and will hopefully inspire the high school delegates. We encourage attendees to be prepared with questions!

Samantha Aung	4th year Life Science, B.Sc Candidate
Maryam Badv	Biomedical Engineering, Ph.D Candidate
Monica Black	4th year Electrical Engineering & Management, B.Eng Candidate
Daniella Lato	Bioinformatics, Ph.D Candidate
Srinidhi Shaw	2nd Chemical & Bioengineering, B.Eng Candidate

Oral Presentation Schedule

Saturday, March 10th: 10:00am – 11:00am

ETB 224

SESSION 1

PRESENTER:

- | | | |
|---------|--|---|
| 10:00am | INVESTIGATING THE ROLE OF MINDFULNESS IN THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND MENTAL HEALTH | Allison Mizzi
<i>Kinesiology</i> |
| 10:15am | STRONGER IS WEAKER: MANIPULATION OF SENSATION IN THE CUTANEOUS RABBIT ILLUSION | Akash Deep
<i>Psychology, Neuroscience & Behaviour</i> |
| 10:30am | THE RELATIONSHIP BETWEEN OBJECTIVELY-MEASURED PHYSICAL ACTIVITY DURING THE PRESCHOOL YEARS AND VASCULAR FUNCTION IN SCHOOL-AGED CHILDREN: A PROPOSAL | Joey Bacauanu
<i>Kinesiology</i> |
| 10:45am | A COMPARATIVE STUDY OF WOUND HEALING IN THE FLIGHT MEMBRANES OF EGYPTIAN FRUIT BATS AND THE BIG BROWN BAT | Lucas Greville
<i>Psychology, Neuroscience & Behaviour</i> |

Saturday, March 10th: 10:00am – 11:00am

ETB 230

SESSION 2

PRESENTER:

- | | | |
|---------|--|--|
| 10:00am | THE EFFECT OF "FITSPIRATION" SOCIAL MEDIA ON BODY DISSATISFACTION AND MENTAL HEALTH IN YOUNG FEMALES | Kristen Lucibello
<i>Kinesiology</i> |
| 10:15am | AN EMBODIED MODEL OF LITERARY PLOT STRUCTURE: ANALYSIS USING CLASSIFICATION AND CLUSTERING METHODS | Carmen Tu
<i>Psychology, Neuroscience & Behaviour</i> |

10:30am	MIND THE (GENDER) GAP: ENGAGING STUDENTS AS PARTNERS TO ADDRESS GENDER INEQUITY IN HIGHER EDUCATION	Anita Acai <i>Psychology, Neuroscience and Behaviour Office of Education Science, Department of Surgery</i>
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Saturday, March 10th: 10:00am – 11:00am

ETB 119

SESSION 3

PRESENTER:

10:00am	CAN EXERCISE BREAKS DURING LECTURE LEAD TO HIGHER RATES OF ACADEMIC SUCCESS FOR STUDENTS WITH ADHD?	Michelle Ogrodnik <i>Kinesiology</i>
10:15am	RAPID REDUCTION IN ANXIETY SCORES IN IBD PATIENTS AFTER INFLIXIMAB INFUSION IS ASSOCIATED WITH CHANGES IN KYNURENINE/TRYPHTOPHAN METABOLISM	Caroline Seiler <i>Medicine</i>
10:30am	FAIRY TALE READING AS A FORM OF ACTING	Kiran Matharu <i>Psychology, Neuroscience & Behaviour</i>
10:45am	BACH INTO EXPLORING TIMING ON MUSICAL EMOTION	Joyce Chan <i>Psychology, Neuroscience & Behaviour</i>

Saturday, March 10th: 11:30am – 12:30pm

ETB 224

SESSION 4

PRESENTER:

11:30am	ONTOLOGICAL CLASSIFICATION OF RESISTANCE GENE ANNOTATIONS FOR ANTIMICROBIAL SURVEILLANCE	Bhavya Singh <i>Biology Biochemistry</i>
11:50am	THE IMPACT OF CO-ACTIVATOR-ASSOCIATED ARGININE METHYLTRANSFERASE I ON SKELETAL	Naomi S. Misquitta <i>Kinesiology</i>

MUSCLE FIBER CROSS-SECTIONAL AREA
DURING DENERVATION-INDUCED ATROPHY

- 12:10pm THE DEVELOPMENT OF EMOTION
PERCEPTION STRATEGIES IN CHILDREN
Victoria Foglia
*Psychology,
Neuroscience &
Behaviour*

Saturday, March 10th: 11:30am – 12:30pm

ETB 230

SESSION 5

PRESENTER:

- 11:30am SEXUALIZATION LEADS TO THE VISUAL
PROCESSING OF BODIES AS OBJECTS
Ruth Hofrichter
*Psychology, Neuroscience
& Behaviour*
- 11:50am CANNABIS FOR PAIN IN ORTHOPAEDICS: A
SYSTEMATIC REVIEW FOCUSING ON STUDY
METHODOLOGY
Kim Madden
Health Research Methods
- 12:10pm THE ATTENTION RESTORATION THEORY:
AN INSUFFICIENT EXPLANATION
Lydia Hicks
*Psychology, Neuroscience
& Behaviour*

Saturday, March 10th: 11:30am – 12:30pm

ETB 119

SESSION 6

PRESENTER:

- 11:30am THE OPTIMIZATION OF ANTIMICROBIAL
RESISTANCE SURVEILLANCE TOOLS
Tammy Lau
Biochemistry
- 11:50am EXAMINING THE NEUROPROTECTIVE
EFFECTS OF PHYSICAL ACTIVITY ON
HIPPOCAMPAL FUNCTION IN OLDER ADULTS
Alexis Bullock
Kinesiology
- 12:10pm THE OPTIMIZATION OF LEARNING BENEFITS
THROUGH HYBRID STUDY SCHEDULES
Mrinalini Sharma
*Psychology, Neuroscience
& Behaviour*

*Full Research Abstracts can be found on the WISE website.
(<http://science.mcmaster.ca/wise/CREST.html>)*

WISE Outreach

EngSci Girl



The WISE Initiative believes that it is essential to provide mentorship and support to high school girls and students interested in pursuing careers in STEM (Science, Technology, Engineering, and Mathematics). This belief is what inspired EngSci Girl, a community outreach program catered to girls from grades 9-12. With the success of last year's inaugural event, we have expanded the program in size and duration. These girls will have the chance to listen to and interact with many of the student presenters and engage in talks related to the research happening at McMaster. They will challenge themselves to summarize these research presentations in three minutes. The delegates will be mentored throughout the day by graduate level students and later, be given the opportunity to ask the diverse panel of role models questions about their experiences. Finally, the girls will have a chance to listen to Industry professionals who will speak about their professions and their journeys. EngSci Girl @ CREST 2018 provides the opportunity for high school level girls to make connections and learn more about the growing opportunities in STEM.

Our goal is to give participants a chance to:

- Interact with women studying engineering, science and math at McMaster university
- Engage in panel discussions held by upper year students, professors, and industry professionals
- Be exposed to the current and stimulating research happening at McMaster
- Participate in fun mentorship activities

CREST Donation

Organization for Women in Science in the Developing World

About OWSD

The Organization for Women in Science for the Developing World (OWSD) is an international non-profit organization based at the offices of The World Academy of Sciences, in Trieste, Italy, a programme unit of UNESCO.

OWSD was founded in 1987 and is the first international forum to unite eminent women scientists from the developing and developed worlds with the objective of strengthening their role in the development process and promoting their representation in scientific and technological leadership. OWSD provides research training, career development and networking opportunities for women scientists throughout the developing world at different stages in their careers.

By supporting OSWD...

we will give young women from the poorest countries in the world the opportunity to develop their scientific careers and thereby participate in and influence the structural and economic development of their countries.

To learn more about OSWD, please visit www.oswd.net.

Donations

This year, donations from attendees, drink ticket sales, and abstract submission fees will be donated by WISE to OSWD to support the outstanding work that they do to support women in STEM.

Cover Art – Biographies

Hedy Lamarr (1914 – 2000)



Hedy Lamarr was an Austrian-American inventor that contributed exceptionally in aiding allied forces during World War II by developing a radio navigation system for torpedoes. Lamar started her career as a well known Hollywood actress celebrated for her incredible beauty and charisma. Always interested in invention, she went on to patent traffic stoplights and tablets that produced carbonated drinks. During the world war, she and a colleague designed and patented a frequency hopping spread spectrum technology that allowed allied torpedoes to not be intercepted and led off course. This technology was adapted by the Navy and used in warfare, and to this day is the foundation of Wi-Fi and Bluetooth technology.

Marjorie Lee Browne (1914 – 1979)



Dr. Marjorie Lee Browne is a recognized mathematician and was notable for her success as a mathematical educator. She attended the University of Michigan and graduated with honours, becoming the first African-American woman in the US to obtain a doctorate in mathematics. Throughout her career, Browne strived to provide underrepresented groups an opportunity to be educated in the field of mathematics. Her goal was to give minority students an equal opportunity to pursue higher education. Her students founded the Marjorie Lee Brown Trust Fund in her honour, funding scholarships and lecture series that further establish her cause.

Yoky Matsuoka (1972 –)



Recipient of the MacArthur “genius” award, Dr. Yoky Matsuoka is the Vice President of Technology at Nest Labs. She was the driving force behind the invention of the self-learning, energy efficient, smart thermostat that has allowed US to save billions of dollars in energy expenses. Matsuoka earned her Ph.D. in electrical engineering and computer sciences at Massachusetts Institute of Technology. Later, she led a research program in Carnegie Mellon and build a robotic arm that could be used in the rehabilitation of stroke patients, a leap forward in the field. It was for this that she was recognized for the MacArthur Genius Award. Her research program allowed her to become a pioneer in the field of neurotics, with the goal to integrate the fields of science and engineering to make artificial intelligence an asset to everyday life.

Cover Art – Biographies (*cont'd*)

Barbara McClintock (1902 – 1992)



Dr. Barbara McClintock is a Nobel Prize scientist in the field of genetics, whose studies focused on the structure and function of chromosomes. McClintock received her Ph.D. in botany from Cornell University in 1927. During her Ph.D. she established and defined the fundamental aspects of genetic recombination. She developed techniques that allowed for clear visualization of chromosomes under the microscope to successfully demonstrating chromosomal crossover and the ability of genes to move within chromosomes. Her groundbreaking contribution to the field was celebrated and she became the first woman to win an unshared Nobel Prize. In 1986 she was inducted in the National Women's Hall of Fame.

May-Britt Moser (1963 –)



Dr. May-Britt Moser was a neuroscientist that started her training in psychology and later obtained her Ph.D. from the University of Oslo in 1990. She played a large role in the discovery and elucidation of the grid cells in the brain, which allow animals to establish mental signals used to navigate their environment. This research provided an avenue for scientists to further understand the process involved in things like memory processing and cognitive impairment in Alzheimer's patients. In 2014 she and two of her colleagues were awarded the Nobel Prize for their contribution in science.

Tu Youyou (1930 –)

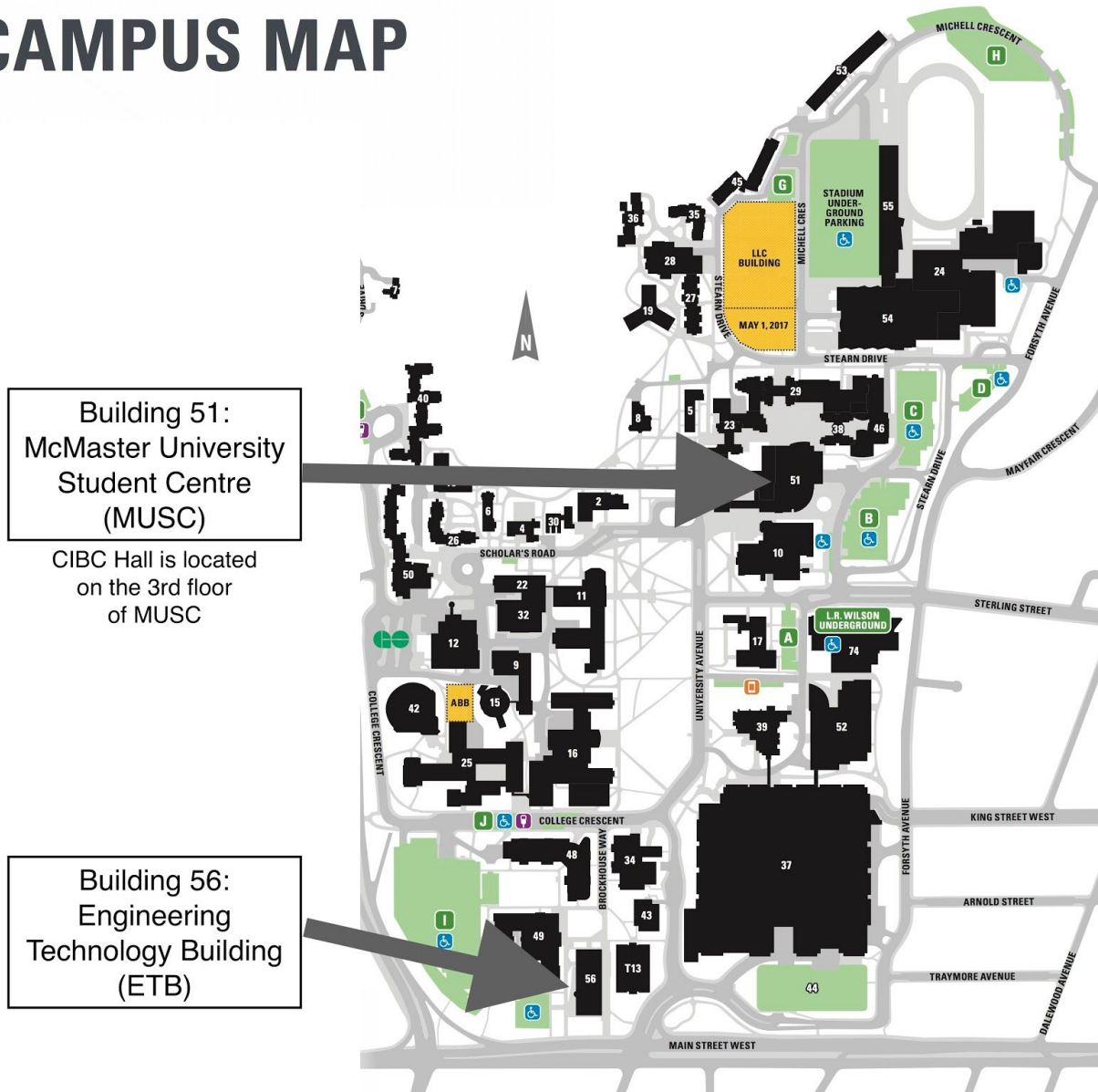


Dr. Tu Youyou is a pharmaceutical chemist known for discovering a class of compounds used to treat malaria that save millions of lives around the world every year. Dr. Youyou is known as The Professor of Three Noes: no post graduate degree, no research experience from abroad, and not a member of any Chinese national academies. Her passion for scientific discovery led her and her team of scientists to screen plants used in traditional Chinese medicine as malaria treatments. This effort resulted in the isolation of a compound that controlled malarial fevers and later the isolation of the compounds that completely treated malaria. Dr. Youyou was awarded the Nobel Prize in 2015 for her findings.

Cover art designed by: Daeria Lawson

Map

CAMPUS MAP



Notes