

**10 YEAR**  
ANNIVERSARY AT UM

THE FACULTY OF GRADUATE STUDIES PRESENTS

# THREE MINUTE THESIS FINAL



**WATCH LIVE ONLINE – APRIL 7**



**University  
of Manitoba**



## EMCEE

**COLLEEN BREADY**

Weather Specialist

Colleen Bready [BA(Adv)/03] is the Weather Specialist for CTV News Winnipeg and hosts the entertainment segment, "Spotlight." Born and raised in Winnipeg, she holds a Bachelor of Arts (Advanced) degree with a major in Political Studies from the University of Manitoba. Colleen started her career in broadcast journalism in radio at 680 CJOB in 2005 and has since covered a wide range of topics from politics, crime and courts to health and human interest stories.

**Three Minute Thesis (3MT®)** is an international research communication competition for graduate students in a thesis-based program. The University of Manitoba 3MT is part of an overall strategy to highlight our graduate students, promote UM research and connect with the community.

## PRIZES

DR. ARCHIE McNICOL PRIZE FOR FIRST PLACE **\$2,500**

UM RETIREES ASSOCIATION PRIZE FOR SECOND PLACE **\$1,250**

THIRD PLACE **\$750**

PEOPLE'S CHOICE AWARD **UM BOOKSTORE GIFT CERTIFICATE**

## 2022 CHALLENGERS

### HEAT 1

Tarin Farhana, Chitra Sivakumar, Amanda Slagerman, Jhannelle Francis, Kaitlynn Weisgerber, Sikta Chattopadhyaya, Jenna Drummond, Alekhya Lavu, Badriya Mubashshira, Chris Voth

### HEAT 2

Farinaz Shariatzadeh, Chioma Victoria Nwachukwu, Daniel Schwade Araujo, Nicole Stonyk, MacKenzie Wilke, Johanna Alpert, Sanjana Chauhan, Sonia Wilson, Weiang Yan, Zayra Batun, Ryan Ha, Jeff Paul

### HEAT 3

Erwin Taguiam, Alexander Araujo, Behzad Fakour, Christophe Turcotte-van de Rydt, Marissa Jampolsky, Olya Myhalatyuk, Matthew Cook, Shayna Giesbrecht, Pranav Mishra, Stephanie Borlase, Akshi Malik

## JUDGES



### JOHN REYES

**Minister of Advanced Education, Skills and Immigration**

The Honourable Jon Reyes was the first Canadian-born person of Filipino descent elected to the Manitoba legislature. Prior to elected office, he served with great distinction and honour as a veteran of the Canadian Armed Forces and was awarded the Special Service Medal (NATO) for his dedicated military service.

As a business owner, he founded and was President of the Manitoba Filipino Business Council. He has also served as director of the Kidney Foundation – Manitoba Branch and volunteered with the CFL and Manitoba Football Officials Association. He is a recipient of the Premier's Volunteer Service Award.



### COLEEN RAJOTTE

**Founder/Artistic Director, Winnipeg Aboriginal Film Festival; CEO, Vitality Television Inc.**

Coleen Rajotte [BA(Adv)/89] is an award-winning Cree and Métis director/producer and former CBC journalist with a passion for telling the stories of her people. Rajotte's first film, "Jaynelle: It's Never Easy To Escape The Past" is used internationally as a training tool for social workers. Her documentary, "Back to Pikangikum", about suicide among Indigenous youth, has screened globally and won the Chris Statuette and the Bronze Plaque at the Columbus International Film Festival. She is a recipient of the Queen Elizabeth II Golden Jubilee Medal, and is currently filming "Vitality Gardening", a show about Indigenous gardening and plant medicines.



### MARK EVANS

**President & CEO, Conquest Planning Inc.**

Mark Evans [PhD/88] is a respected entrepreneur, philanthropist, and former faculty member in UM's department of computer science. He founded Emerging Information Systems Inc. and built the company into the world's largest supplier of financial planning software. Evans co-chaired the fundraising campaign for the Engineering and Information Technology Center at UM, and has been on the board of CancerCare Manitoba Foundation since 2012. He has received the Lieutenant Governor's Volunteer Service Award, and Philanthropist of the Year from the Association of Fundraising Professionals.

## FINALISTS



### ALEKHYA LAVU

PHARMACY (DOCTORAL)

Advisor: Dr. Sherif Eltonsy

#### **Antiseizure treatments during pregnancy and neonatal birth outcomes.**

Specializing in drug safety and pharmacoepidemiology, Alekhya's focus is on AEDs medications in pregnancy and neonatal safety outcomes. An important issue in women's health, she hopes that the knowledge provided through her research will one day help physicians decide on optimal treatment regimens, leading to improvements in the quality of life of newborns within Canada and beyond. Alekhya's career goal is to pursue her post-doctoral studies and establish herself as a pharmacoepidemiologist.



### ALEXANDER ARAUJO

NATURAL RESOURCES INSTITUTE (MASTER'S)

Advisor: Dr. Nicola Koper

#### **Impacts of restoration: assessing if grazing by reintroduced plains bison affects bird abundance and diversity in Banff National Park.**

Focusing on how bird communities respond to grazing by reintroduced plains bison, Alexander's research was inspired after he and a friend undertook a long journey to see the bison in their 'familiarization pasture' in the backcountry of Banff National Park in 2018. Along with his bachelor's degree in environmental and conservation science from the University of Alberta, Alexander hopes his UM graduate degree will help him join the resource conservation team in one of the mountain parks and "contribute to the great work they do".



### CHIOMA VICTORIA NWACHUKWU

PHYSIOLOGY AND PATHOPHYSIOLOGY (MASTER'S)

Advisor: Dr. Jeremy Chopek

#### **Electrical stimulation improves walking and organ function after spinal cord injury: But how?**

After listening to residents with spinal cord injuries recount their physical, psychosocial, and economic struggles, Chioma decided to focus her study on understanding how the spinal cord functions and how to prevent secondary complications that come with injury. With the emergence of spinal electrical stimulation as a therapeutic intervention, she is currently investigating how we can use electrical stimulation to improve walking and precisely optimize the functions of organs necessary for movement and exercise, like the heart. She holds a bachelor of medicine and a bachelor of surgery from the University of Nigeria. Her goal is to become a physician-scientist equipped with technical skills that will enable her to solve medical issues from multiple perspectives.



### CHITRA SIVAKUMAR

BIOSYSTEMS ENGINEERING (DOCTORAL)

Advisor: Dr. Jitendra Paliwal

#### **Non destructive analysis of pulse flours.**

Passionate about helping develop a world that is healthy and hunger-free, Chitra chose to investigate the microstructural properties of pulse flours such as chickpea, navy bean, green lentil, and yellow pea. Using non-destructive imaging techniques, basic food products can be developed with increased nutritional content and textural properties at an affordable cost. She holds a master's of science in biosystems engineering from UM and hopes that her research will provide a solution to preventing protein deficiency among people.

## FINALISTS



**DANIEL SCHWADE ARAUJO**  
APPLIED HEALTH SCIENCES (DOCTORAL)  
Advisor: Dr. Todd Duhamel

**Examining the associations between different physical fitness phenotypes and cardiovascular risk factors in older females.**

After being introduced to the concept of physical activity phenotypes by one of his mentors, Daniel was inspired to pursue research on cardiovascular disease prevention to help improve the lives of those who suffer with chronic disease. His current research looks at the different ways in which muscle strength and cardiorespiratory fitness affect cardiovascular disease risk in older females. Daniel holds a bachelor of science in physical education from the Federal University of Rio Grande do Norte, Brazil and recently completed his master's of science in kinesiology at UM.



**JHANNELLE FRANCIS**  
MICROBIOLOGY (MASTER'S)  
Advisor: Dr. Miguel Uyaguari

**Waterways (or rivers) as vehicles of enteric viruses.**

An aspiring scientist, Jhannelle's focus is on how current wastewater treatment processes and water-use policies can be improved to enhance the quality of wastewater discharged into surface waters through the development of novel viral markers of contamination. She holds a bachelor of science (honours) from the University of Toronto and is passionate about translating therapeutic strategies into the clinical setting, pushing towards affordable and individualized vaccines for preventable diseases in public health. Once her MSc is complete, she hopes to continue her studies in medical microbiology at the doctoral level.



**KAITLYNN WEISGERBER**  
BIOLOGICAL SCIENCES (MASTER'S)  
Advisor: Dr. Gary Anderson

**Investigating spontaneous autopolyploidy in wild and hatchery Lake Sturgeon.**

Passionate about conserving aquatic species, particularly those which are evolutionarily ancient and historically significant, Kaitlynn's focus is on investigating and comparing wild and hatchery lake sturgeon. Her research addresses the concerns of fish hatchery managers who want to ensure they are not unintentionally inducing changes in fish ploidy (number of chromosomes) during fertilization. She holds a bachelor of science from MacEwan University and hopes to work as an environmental consultant, and eventually become an instructor in the long-term.



**OLYA MYHALATYUK**  
PHARMACOLOGY AND THERAPEUTICS (MASTER'S)  
Advisor: Dr. Tiina M Kauppinen, Dr. Michael F Jackson

**Shining light on microglia responses in Alzheimer's disease.**

Inspired by a family member's Alzheimer's diagnosis, Olya worked closely with patients with neurodegenerative diseases while completing her undergraduate medical studies in her native Ukraine. Driven by her experience, her thesis focuses on whether disrupting the pro-inflammatory signaling pathway in microglia can reduce synaptotoxic effects of amyloid beta and thus prevent impaired neuronal function and memory loss. Interested in therapeutic development, she plans to use her scientific knowledge in clinical research and further implement it in her medical practice.

## FINALISTS



### PRANAV MISHRA

PHARMACOLOGY AND THERAPEUTICS (DOCTORAL)

Advisors: Dr. Paul Fernyhough and Dr. Benedict Albensi

**Potential of sex hormone estrogen in prevention of Alzheimer's disease – a sex based study.**

A graduate of the University of Delhi with a master's of science in zoology, Pranav's focus is on the potential of hormones in preventing Alzheimer's disease. His research involves working with the sex hormone estrogen, to see how it can decrease inflammation and increase mitochondrial function in the brain consequently improving the survival of neurons. He loves working in the field of academia and hopes to one day become an expert in his area of research.



### RYAN HA

MEDICAL MICROBIOLOGY AND INFECTIOUS DISEASES (MASTER'S)

Advisor: Dr. Zulma Rueda

**Development of a new method for studying Legionella infections.**

Interested in how pathogens cause infections and how our immune systems prevent infection, Ryan's research involves the development and optimization of a trans well culture simulating human lungs for studying Legionella Pneumophila infections. While his study is focused on Legionella, he hopes it can also be adapted for other pathogens. Ryan holds a bachelor of science degree in biochemistry from UM, and plans to become a researcher and continue studying medical microbiology to help improve people's lives.



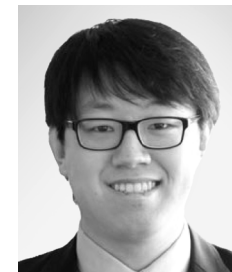
### SHAYNA GIESBRECHT

MICROBIOLOGY (MASTER'S)

Advisor: Dr. Michael Becker

**Molecular detection and quantification of the prevalence of sexually transmitted blood-borne infections in Canadian waste water samples.**

Motivated by the COVID-19 pandemic to pursue microbiology, Shayna's thesis focus is on developing and optimizing methods to detect common sexually transmitted blood-borne infections from wastewater. She hopes her research can be especially impactful in remote communities where access to healthcare and STI testing can be quite limited. Shayna completed her bachelor of science (honours) in biological sciences at UM, and plans to one day work in public health.



### WEIANG YAN

PHYSIOLOGY AND PATHOPHYSIOLOGY (DOCTORAL)

Advisor: Dr. Sanjiv Dhingra

**New immuno-engineered biomaterials to prevent rejection of transplanted hearts.**

A graduate with a doctor of medicine from the University of Western Ontario, Weiang's research looks at the role inflammation plays in heart disease and the potential use of novel biomaterials to control the immune response and inflammation to help limit damage in transplanted hearts. He hopes his findings will help develop new treatments for heart disease patients. His career goal is to work as a clinician scientist at a Canadian academic institution and to help develop new translational therapies for patients with heart disease.



## DR. ARCHIE McNICOL PRIZE

Dr. Archibald (Archie) McNicol, Associate Dean in the faculty of Graduate Studies, passed away suddenly in December 2016. Dr. McNicol earned a BSc (Hons) and a PhD in pharmacology from the University of Glasgow and had been with the University of Manitoba since 1993 when he joined the department of oral biology in what was then the Faculty of Dentistry. He taught in the College of Dentistry, the School of Dental Hygiene and the College of Rehabilitation Sciences within the Rady Faculty of Health Sciences. His globally-recognized research focused on blood-clotting mechanisms and the function and dysfunction of human platelets.

Dr. McNicol was a gifted teacher and researcher who was an enthusiastic supporter of graduate students and of the Three Minute Thesis competition. To honour his legacy, the Dr. Archie McNicol Prize is awarded annually to the first place winner of the University of Manitoba's Three Minute Thesis Competition.



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