



# Research Day

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**March 4, 2025 | 1:00 pm – 5:00 pm**  
**Apotex Building – Bannatyne Campus**

Recognizing accomplishments in research and innovation  
in the College of Pharmacy, University of Manitoba.

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University  
of Manitoba

Rady Faculty of  
Health Sciences

# PROGRAM

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- 1:00 pm** Welcome Address by the Acting Dean and Co-Chair  
Dr. Lavern Vercaigne  
Dr. Kaarina Kowalec  
*050 Apotex Centre*
- 1:15 pm** Dr. Argel Aguilar-Valles, Carleton University  
*“Rewiring the Mind with Ketamine and Psychedelics for Lasting Antidepressant Effects”*  
Invited speaker (45 min present + 15 min Q&A)  
*050 Apotex Centre*
- 2:15 pm** Dr. Samantha Pauls, University of Manitoba  
*“Immune cells gone rogue: understanding and targeting immune dysfunction in obesity and metabolic disease”*  
Faculty speaker (45 min present + 15 min Q&A)  
*050 Apotex Centre*
- 3:15 pm** Poster Session  
*3rd floor atrium—Apotex Centre*
- 4:45 pm** BREAK  
Judges select poster winner
- 5:00 pm** Poster Award, Closing remarks  
Dr. Anna Chudyk  
*3rd floor atrium—Apotex Centre*

## KEYNOTE SPEAKER

# Rewiring the Mind with Ketamine and Psychedelics for Lasting Antidepressant Effects

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**Tuesday, March 4, 2025 | 1:15 pm – 2:15 pm**

050 Apotex Building | Bannatyne Campus | University of Manitoba



**Speaker: Argel Aguilar Valles, MSc, PhD**  
Associate Professor, Carleton University  
Department of Neuroscience

**Dr. Argel Aguilar-Valles** received his Ph.D. in Neuroscience from McGill University in 2011. He completed two postdoctoral fellowships at the Scripps Research Institute (Florida Campus) in 2012 and at McGill University in 2018. He joined Carleton University in 2019 as a faculty member. The Aguilar-Valles Lab is interested in the molecular mechanisms that underlie psychiatric and neurodevelopmental disorders. They use a combination of biochemistry, molecular biology, neuronal culture, and animal models to understand how genetic risk factors contribute to mental illness.

### Learning Objectives:

- Gain insights into how ketamine and psychedelics promote neural plasticity and why this is crucial in alleviating symptoms of depression
- Learn about the molecular pathways through which these compounds exert their antidepressant effects, including their impact on synapse formation and brain connectivity
- Discuss the therapeutic potential psychedelics beyond psychiatric of ketamine and illness

## FACULTY PROGRAM

# Immune cells gone rogue: understanding and targeting immune dysfunction in obesity and metabolic disease

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**Tuesday, March 4, 2025 | 2:15 pm – 3:15 pm**

050 Apotex Building | Bannatyne Campus | University of Manitoba



**Speaker: Samantha Pauls, PhD**  
Assistant Professor, University of Manitoba  
College of Pharmacy

**Dr. Samantha Pauls** is an Assistant Professor at the College of Pharmacy, Rady Faculty of Health Sciences, University of Manitoba. She completed a PhD in Biochemistry and Medical Genetics at the University of Manitoba in 2016 followed by a postdoctoral fellowship at the Canadian Centre for Agri-Food Research in Health and Medicine (CCARM) from 2016-2020. Her current research seeks to understand and target defects in immune cell metabolism and function that may contribute to the development or progression of obesity-associated metabolic diseases. She also serves as the programming lead for graduate and postdoctoral professional development at the Rady Faculty of Health Sciences and as chair of the Manitoba Student Research Forum.

### Learning Objectives:

- Define the field of “immunometabolism”
- Explore the connection between obesity and inflammation
- Explain how cell metabolism can impact immune cell function
- Examine the impact of n-3 polyunsaturated fatty acids on cell metabolism and function

# POSTERS

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POSTER#	Poster Title	Name
#1	"Increased Incidence of Parkinson's Disease Associated with Antiseizure Medication Use"	Aboulatta, Laila <i>Ph.D. Student</i>
#2	"Antidepressant Persistence in Mood, Anxiety, and Related Disorders: A Retrospective Cohort Study"	Aziz, Md. Abdul <i>Ph.D. Student</i>
#3	"Omega-3 fatty acids modify monocyte energy metabolism through mitochondrial bioenergetic rewiring"	Byun, Michael <i>M.Sc. Student</i>
#4	"Adverse Drug Reactions During Community-Based Intravenous Antimicrobial Therapy"	Einarson, Jennifer Gustafson, Shaelyn <i>Undergraduate Students</i>
#5	"Effect of NMDA Receptor Knockdown on Aged Astrocyte Morphology and Neuronal Synapses"	Fan, Anita <i>Undergraduate Student</i>
#6	"Acute eGFR Dip with SGLT2 Inhibitors vs. Other Antihyperglycemic Medications Among People with HIV"	Haider, Lara <i>Ph.D. Student</i>
#7	"The impact of omega-3 fatty acids on glucose metabolism in macrophage cell models"	Houenagnon, Floriane <i>M.Sc. Student</i>
#8	"Contribution of astrocytic N-methyl-D-aspartate (NMDA) receptors in modulating cortical neuronal function via purinergic signaling"	Kantroo, Meher <i>Ph.D. Student</i>
#9	"Exploring Patient and Caregiver Perceptions of the Facilitators and Barriers to Patient Engagement in Research: A Participatory Qualitative Study"	Kullman, Sasha <i>Ph.D. Student</i>
#10	"Cost-Effectiveness of Capivasertib as a Second-Line Therapy for Advanced Breast Cancer"	Nguyen, Thi Huyen Trang <i>M.Sc. Student</i>
#11	"A protocol for co-designing a study to understand knowledge and perspectives toward pharmacogenetic testing in mental health care among youth with lived/living experience of mental illness and their parents"	Pilkey, Grace <i>Undergraduate Student</i>
#12	"Genetic Contributions to Treatment Resistant Schizophrenia: A Scoping Review"	Riel, Hayley <i>Ph.D. Student</i>
#13	"Multiple Sclerosis, Comorbid Depression and the Association with Different Blood Biomarkers"	Safa, Mira <i>Ph.D. Student</i>
#14	"Global proteomic and phosphoproteomic biomarker profiling of a trifunctional boron-based pyrazole (an Edaravone analog) that increases survival, delays disease onset, and prevents weight loss in a hSOD1 model of Amyotrophic Lateral Sclerosis."	Sanghai, Nitesh <i>Ph.D. Student</i>
#15	"Polygenicity of Cognitive Ability and Educational Attainment in Multiple Sclerosis"	Trojillo, Gerald <i>M.Sc. Student</i>
#16	"Islet-Derived Extracellular Vesicles – A Potential Biomarker for Amyloid Formation in Type 2 Diabetes and Human Islet Transplants in Type 1 Diabetes"	Tyagi, Rushie <i>Ph.D. Student</i>