Physiology
UNIVERSITY OF TORONTO

PhysioLINK

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MESSAGE FROM THE CHAIR

Thanks to all of the graduate students and Postdocs who have participated in the new "**Breakfast with the Chair**" Program. Your enthusiastic and insightful comments will be very helpful for us as we work to revise our strategies around improving the postgraduate trainee experience in the department.

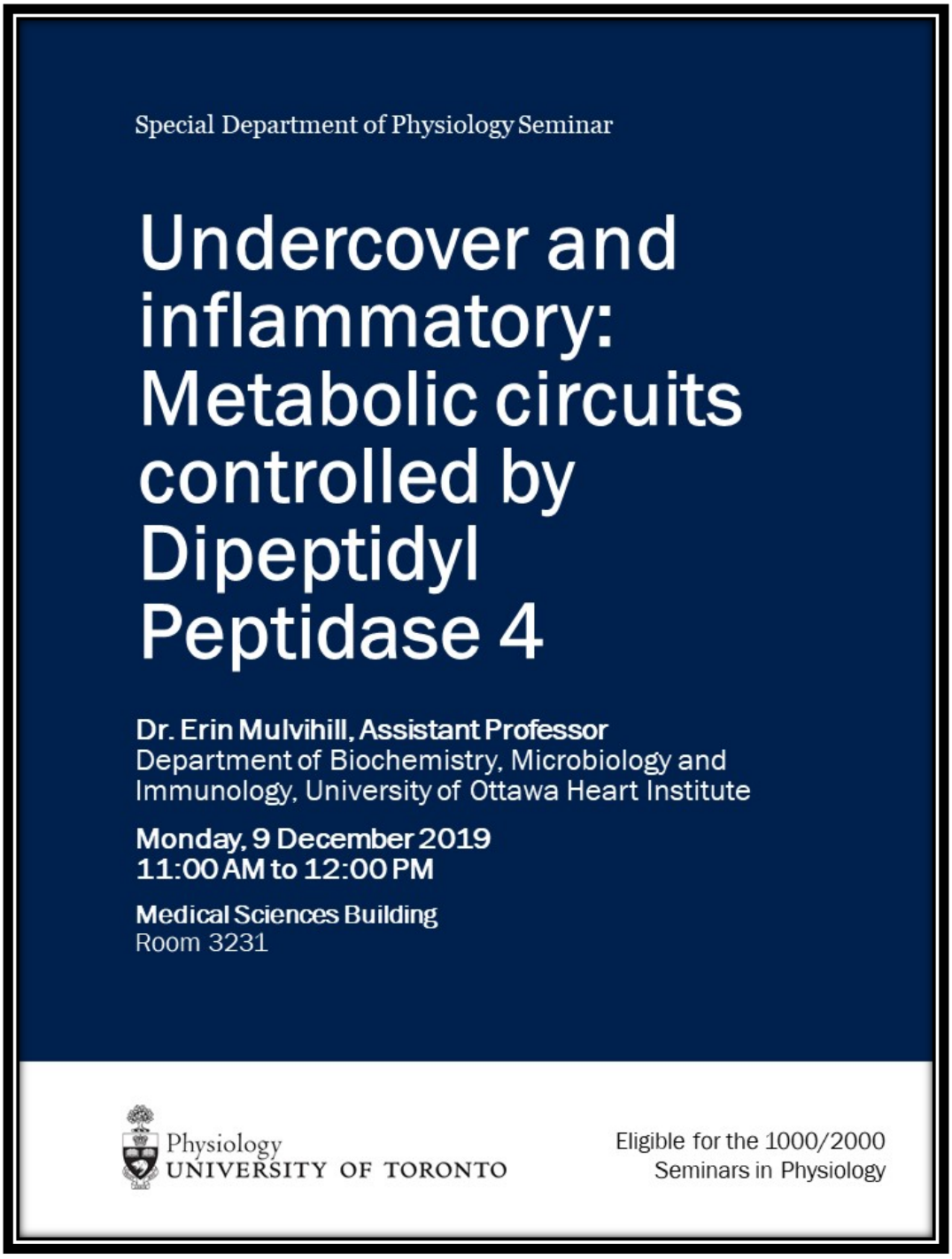
Please look for more opportunities to enjoy this program in the new year.

Scott P. Heximer, PhD
Interim Chair,
Department of Physiology

PHYSIOLOGY SEMINAR SERIES

~ Eligible for PSL1000H / PSL2000H Course Seminar Attendance ~

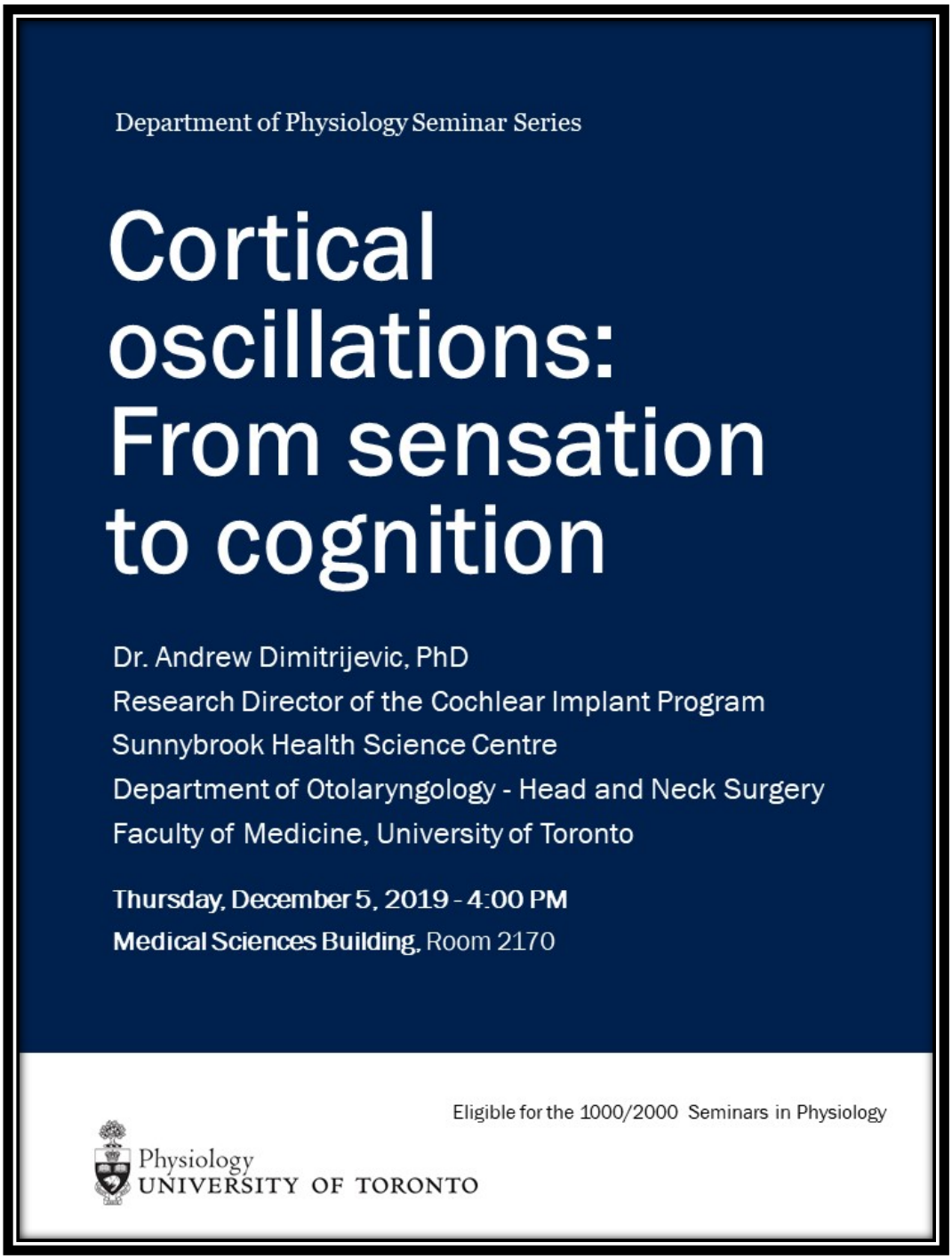
Special Seminar: Monday December 9th at 11 am in the Physiology Seminar Room



PHYSIOLOGY SEMINAR SERIES

~ Eligible for PSL1000H / PSL2000H Course Seminar Attendance ~

Dr. Dimitrijevic is applying for a status-only appointment in the Department. Please come out to hear about his exciting research.



HONOURS & AWARDS

Congratulations to **Dr. Hirotaka Hamada** (Matthews Lab), who received a DOHAD International Travel Award **and** Best Trainee Oral Presentation Award at the 2019 World Congress of the International Society for Developmental Origins of Health and Disease (DOHaD), held in Melbourne, Australia 20-23rd Oct, 2019. His presentation was entitled 'Prenatal glucocorticoid exposure modifies germ cell microRNA expression in adult male offspring across 3 generations: Paternal transmission'.

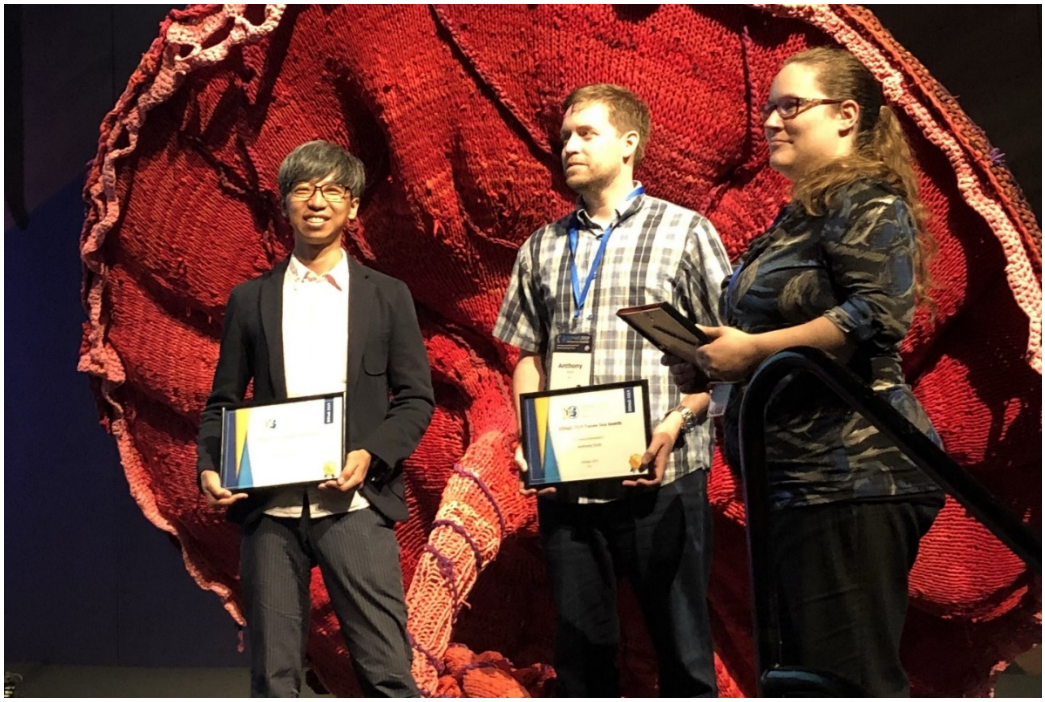


Photo: Dr. Hirotaka Hamada (first on left)

HOLIDAY RAFFLE

It's that time of year again. Please support the raffle by making a donation or supporting the graduate students when they come around selling tickets All donations will be going to the CP24 CHUM Christmas Wish Fund to help make the holidays special for all children (info at: www.thewish.ca). Please contact Denise as soon as you can d.belsham@utoronto.ca to get your name and donation on the flyer. Every little bit helps…

NEW FACULTY MEMBER

A warm welcome to **Dr. Benjamin Steinberg**, our newest status-only faculty member effective December 1st. Ben will be participating in the activities of the Neuroscience Research Platform.

My research training is in cell biology of the immune system (Dr. Sergio Grinstein, The Hospital for Sick Children, Toronto) and neuroscience (Dr. Kevin Tracey, Feinstein Institute for Medical Research, New York). In conjunction with my clinical interest in pediatric and neuroanesthesia, these experiences informed my current research program at the Hospital for Sick Children, which investigates the interface between the nervous and immune systems in the pathobiology of disease. My initial studies of the neuro-immune interface delineated how sensory nerves respond to systemic inflammatory responses. This work is rooted in a new area of biomedical and translational research termed bioelectronic medicine that aims to treat and diagnose disease and injury using medical device technologies that can read and write the electrical activity within the body's nervous system. This combination of real-time diagnostic and therapeutic potential exploits the dense innervation of all the body's tissues by the peripheral nervous system. Recording devices can be implanted on nerves to monitor and read neural activity. Decoding this activity may allow us to monitor patient physiology, diagnose disease and prognosticate. In turn, nerve stimulating or inhibiting devices have the potential to write or modulate specific nerve activity to change tissue function and restore health.

Along with *in vitro* mechanistic cell biological studies, my laboratory employs bioelectronic medicine approaches to delineate how the nervous and immune systems interact. Using pulmonary arterial hypertension and neuropathic pain as specific contexts, we are developing novel approaches that use neuromonitoring and modulation to diagnose and treat disease. Importantly, our findings have the potential to impact on a variety of other clinically important diseases, such as sepsis, trauma, and cognitive dysfunction.

benjamin.steinberg@sickkids.ca

FACULTY IN THE NEWS

If you could erase the worst memory of your life, would you? Scientists are working on a pill for that

Researchers are working on ways to edit memories — to make the intolerable bearable — by, say, blocking the synaptic changes needed for a memory to solidify.

Ten years ago, **Sheena Josselyn's lab** was the first to offer fairly convincing evidence that we can erase a specific fear memory in mice, without erasing every one of the rodent's fears. The University of Toronto neuroscientist used a toxin to destroy a handful of neurons housing the memory "It wasn't like a huge legion. If you take out the entire brain, the mouse doesn't remember a darn thing."

UNDERGRADUATE STUDENT NEWS

Lauren Xu, an undergraduate student in physiology, recently participated in the SCINAPSE Undergraduate Science Case Competition in collaboration with three other medical science students. As a team, they designed an investigation: "The combined psychophysiological effects of THC and CBD manifesting in the suppression of nociception in mice." Their abstract was among the top twelve percent and the team was invited to the provincial finalist conference at the University of Ottawa.

At the conference, they presented their poster, networked with colleagues from across Canada, and have now been invited to publish their investigation as an article in Undergraduate Research in Natural and Clinical Science and Technology (URNCST) Journal.

GASP NEWS

Holiday Luncheon after-party

GASP is again hosting an after party to continue the holiday luncheon festivities in the evening on December 12th! Join us for an evening of good times and even better company with the Department – all members (students, postdocs, faculty, staff, etc) are welcome! Details: **TBA** – Keep an eye out for emails!

Thank you

A huge thank you to all the students who have attended our events so far, it is incredible to see the warm student community growing each and every year. Here is a picture from our last pub night, which took place right after the GASP seminar on how to prepare for your first committee meeting!

Shahin Khodaei
GASP President

We want to hear about the great things happening in Physiology!

Please share your accomplishments, awards...
Send news items to the Chair's Office c/o
e.katsoulakos@utoronto.ca