

VOLUME 7 • JUNE 2021

# Department of Biological Sciences Newsletter

FROM BIOMOLECULES TO THE BIOSPHERE

## IMPORTANT DATES

**SPRING CONVOCATION**  
MAY 31 - JUNE 4

**VANIER PAF DEADLINE**  
JUNE 8

**END OF CLASSES**  
JUNE 17

**LAST DAY TO WITHDRAW  
FROM A COURSE**  
JUNE 17

**START OF SUMMER  
SEMESTER**  
JUNE 28

## CONGRATULATIONS TO:



**Selina Robson**, of the Theodor lab, who passed their candidacy exam on May 28th, 2021!

**Maria Santa**, of the Musiani and Ruckstuhl labs, for their first author publication in PLoS Neglected Diseases titled "Deep amplicon sequencing highlights low intra-host genetic variability of *Echinococcus multilocularis* and high prevalence of the European-type haplotypes in coyotes and red foxes in Alberta, Canada"!

*If you or someone in your lab have something to celebrate, including successful defences and awards, please contact [biogsa@ucalgary.ca](mailto:biogsa@ucalgary.ca) to have your accomplishment included in the next newsletter!*

# GRADUATE STUDENT AFFAIRS

## **Ph.D. Candidacy Oral Examination - Candidacy Exams are Closed Exams.**

**Jessie Chisholm** (Supervisor: Dr. D. Morck) will be holding her PhD Candidacy Examination on June 10, 2021.

**Mario Valdes Tresanco** (Supervisor: Dr. S. Noskov) will be holding his PhD Candidacy Examination on June 11, 2021.

**Colton Unger** (Supervisor: C. Rolian) will be holding his PhD Candidacy Examination on June 30, 2021.

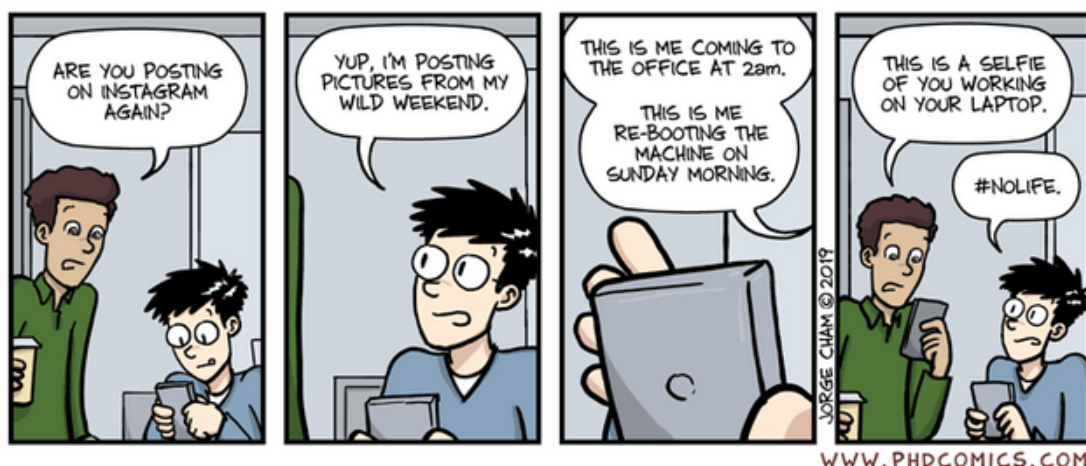
## **Thesis Oral Examinations - Exams are "Open" unless otherwise noted.**

**Affan Siddiq** (Supervisor: Dr. A. Buret) will be holding his MSc Thesis Examination titled "The role of extracellular vesicles in Giardia Microbiota interactions" on June 8, 2021 at 10:00 am. (Exit Seminar at 9:00 am).

**Christopher Cahill** (Supervisor: Dr. J. Post) will be holding his PhD Thesis Examination titled "Unveiling uncertainty and complexity in inland fisheries" on June 15, 2021 at 1:00 pm. (Exit Seminar at 12:00 pm).

**Alynne Ribano** (Supervisor: Dr. M. Samuel) will be holding her MSc Thesis Examination titled "Investigation of the Role of Kinase-Associated Protein Phosphatase (KAPP) in Pistil-Pollen Interactions in *Brassica napus* (canola)" on June 17, 2021 at 12:00 pm. (Exit Seminar at 11:00 am).

**Yevhen Cherniavskiy** (Supervisor: Dr. P. Tieleman) will be holding his PhD Thesis Examination titled "Computer simulations of lipids and surfactants" on June 25, 2021 at 2:00 pm. (Exit Seminar at 1:00 pm).





# BIOSCI IN THE NEWS

**Stories summarized from UToday Features**

## ***New research reveals bacteria sense heat to learn about their location***

Dr. Joe Harrison, PhD, Department of Biological Sciences

Trevor Randall, Department of Biological Sciences

Dr. Henrik Almlad, PhD, Department of Biological Sciences

Dr. Justin MacCallum, PhD, Department of Chemistry,

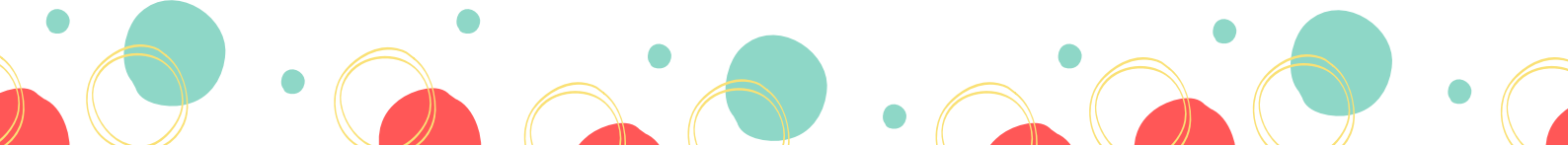
Bacteria, like all organisms, need to be able to respond to changes in their environment. A key molecule called c-di-GMP allows *Pseudomonas aeruginosa*, a pesky bacteria for lung, wound and medical infections, to regulate swimming and biofilm forming behaviour. This is important to understand because when *P. aeruginosa* infects a person, it forms a biofilm - a sticky, slimy layer protective layer that makes it very hard to fight with antibiotics.

A team from the Harrison lab in the Department of Biological Sciences has found a new c-di-GMP-producing enzyme that can sense temperature, providing important insights into how *P. aeruginosa* infect hosts. When an infectious bacterium detects an increase in temperature, they can confidently believe that they have found a warm host to infect. The bacterium must then activate a virulence program that allows it to settle in and form a biofilm. The Harrison lab has found that the production of c-di-GMP by the temperature-activated enzyme TdcA is key to activating this response. Dr. Harrison hopes to be able to repurpose this mechanism to help fight infections in the future.

The Harrison lab's discovery benefited from an interdisciplinary team of collaborators including genome sequencing by Weerayuth Kittichotirat and Roger Bumgarner from the University of Washington; and lethality assays by Karen Brassinga and Ayush Kumar from the University of Manitoba and Dr. Bryan Yipp, MD, from the Cumming School of Medicine.

And an important reminder to all of us researchers - problems can often become valuable insights. This discovery came about as a result of a curious issue noticed by the Harrison lab:

*"Somehow, when these bacterial strains were shipped to my lab in a FedEx envelope, we'd found they'd lost their ability to produce biofilms. We thought there might have been something wrong with the bacteria. We re-grew them in the incubator and they grew normally — then it occurred to me that the only difference was the heat."*



The Chem Grad Student Association presents:

# Science Communication Month

## -June 2021-

Join the CGSA for a month of SciComm awareness! We have invited several interesting speakers who will share their experiences and teach you to be an effective science communicator! Click on the links below for more information about speakers.

[SciLine](#): June 2<sup>nd</sup> @ 12-1 pm



[Jay Ingram](#): June 9<sup>th</sup> @ 12-1 pm



[Brian Malow](#): June 10<sup>th</sup> 1-2:30 pm

[Dr. Shupey Yuan](#): June 16<sup>th</sup> @ 12-1pm

[Dr. Korie Grayson](#): June 22<sup>nd</sup> @1-2:30 pm



[Farah Qaiser](#): June 23<sup>rd</sup> @ 12-1 pm



[Dr. Bryan Dewsbury](#): June 30<sup>th</sup> @ 12-1 pm

Door prizes will be drawn at the end of each talk!

All are welcome to attend any number of talks and workshops!  
Registration will be opening soon – look out for an email from the CGSA in the coming weeks



Door Prizes Funded by:



## Are you ready to start feeling better now?

If you struggle with depression, anxiety, or stress - you are not alone! Millions of Canadians face those same mental health challenges every day.<sup>1</sup>

### SilverCloud can help.

SilverCloud is a digital mental health platform that uses proven tools to help you think and feel better. Accessible any time on your computer, tablet, or phone, SilverCloud is 100% confidential so you can be honest and true to yourself.



**Get Started: [silvercloud.morewaystobenefit.ca](https://silvercloud.morewaystobenefit.ca)  
Access Code: UCalgary GSA**