

VOLUME 4 • MARCH 2021

Department of Biological Sciences Newsletter

FROM BIOMOLECULES TO THE BIOSPHERE

IMPORTANT DATES

**UCALGARY 3MT
REGISTRATION DEADLINE**
MARCH 1

**DEPARTMENTAL AWARDS
DEADLINE**
MARCH 5

**ABSTRACT DEADLINE FOR
BGSA SYMPOSIUM**
MARCH 5

GSA EXECUTIVE ELECTION
MARCH 8-9

EDI AWARD DEADLINE
MARCH 12

**BIOLOGICAL SCIENCES
GRADUATE SYMPOSIUM**
MARCH 25-26

**DEADLINE TO APPLY FOR
SPRING CONVOCATION**
MARCH 31

CONGRATULATIONS TO:



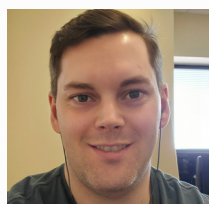
Williams Miranda, of the Noskov lab, who won the Student Research Achievement Award for his poster titled "*Molecular mechanism of HERG1 channel regulation by ceramides*" at the 65th Biophysical Society meeting!



Chantel Biegler, of the Dunfield lab, who passed her Ph.D. Candidacy Exam on February 18, 2021!



Ferdous Nawar, of the Wrona lab, who received a Faculty of Science Graduate Excellence Award!



Damon Brown, of the Turner lab, for his first author publication in the journal Applied Environmental Microbiology titled, "*Lessons and considerations for the creation of universal primers - targeting non-conserved, horizontally mobile genes*"!



Colton Unger, of the Rolian lab, who won the 1st place talk award for his talk at the GSA Peer Beyond Graduate Research Conference titled, "*Skull Evolution in Mice Bred for Longer Limbs*"!



Kayla Dias, of the Ro lab, who won the 2nd place talk award for her talk at the GSA Peer Beyond Graduate Research Conference titled, "*The Unsolved Mystery of Natural Rubber Biosynthesis*"!

CONGRATULATIONS CONTINUED:



Ana Carolina Lima, of the Wrona lab, for her newly accepted paper in the journal *Ecological Informatics*, "*SDesti: An R package for the analysis of aquatic benthos environmental studies' data*"! Ana was also recently accepted into the WISE Planet Fellowship program!



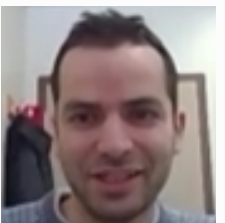
Meriem Gaci, of the Hynes lab, for her first author publication in the journal *Plant and Soil* titled "*Phylogenetic diversity of indigenous Rhizobium trapped from the natural habitat of Pisum sativum L. in eastern and central Algeria*"!



Neil Hickerson and alumnus **Matija Stanic**, of the Samuel lab, for their publication in the journal *Plant Biotechnology* titled "*Gene-editing of the strigolactone receptor BnD14 confers promising shoot architectural changes in Brassica napus (canola)*"!



Augusta Schmidt, of the Hynes lab, for her recent publication in the journal *Microorganisms* titled "*Molecular biology in the improvement of biological nitrogen fixation by rhizobia and extending the scope to cereals*"! Augusta and her husband Rodrigo are delighted to announce the birth of their son Igor Schmidt Reis just before midnight on February 4th. Igor and his parents are doing well!



Dr. Ali Pormohammad and alumnus **Nadia Monych**, of the Turner lab, for their publication in the journal *International Journal of Molecular Medicine* titled "*Zinc and SARS-CoV-2: A molecular modeling study of Zn interactions with RNA-dependent RNA-polymerase and 3C-like proteinase enzymes*"!



Joseph Utomo and alumnus **Sean Baek**, of the Ro lab, for their publication in the journal *Metabolic Engineering* titled "*The yeast platform engineered for synthetic gRNA-landing pads enables multiple gene integrations by a single gRNA/Cas9 system*"!

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



SEMINARS

ECOL601 Seminar - Monday 12:00pm Meeting ID: 518 1943 338

March 1 - **Jamey Creighton** - Morphological analysis of a nectridean lepospondyl, *Diceratosaurus*, from Linton, Ohio.

BCEM601 Seminar - Monday 4:00pm Meeting ID: 966 0864 7151 Passcode: BCEM601

March 1 - **Azin Baharain** - Combating brain edema by drug repurposing.

BIOL601 Seminar - Wednesday 12:00pm Meeting ID: 950 3831 8705 Passcode: 601-is-fun

March 3 - **Ciara Goldsmith** - The Effect of a Biocide on Bacteria and Archaea to Mitigate Microbiologically Influenced Corrosion.

ICB601 Seminar - Friday 3:00pm Meeting ID: 957 5461 2969 Passcode: 5n575h

March 5 - **Sara Far** - Understanding storage protein accumulation in oilseed crops.

ECOL601 Seminar - Monday 12:00pm Meeting ID: 518 1943 338

March 8 - **Ferdous Nawar** - Implication of surface cover properties on the productivity and composition of microbes in the seasonally ice-covered lakes.

BCEM601 Seminar - Monday 4:00pm Meeting ID: 966 0864 7151 Passcode: BCEM601

March 8 - **Moiz Kapasi** - TBA

BIOL601 Seminar - Wednesday 12:00pm Meeting ID: 950 3831 8705 Passcode: 601-is-fun

March 10 - **Triet Tran** - Metabolic prediction and phylogenetic reconstruction of a deep-branching uncultured thermophile S2R-29 from Dewar Creek hot spring using SAGs.

ICB601 Seminar - Friday 3:00pm Meeting ID: 957 5461 2969 Passcode: 5n575h

March 12 - **Justin Nichol** - TBA

ECOL601 Seminar - Monday 12:00pm Meeting ID: 518 1943 338

March 15 - **Tegan Heusinkveld** - Diagnosing the Fossil Rhizodontids of Blue Beach, Nova Scotia, Canada, and Their Implication for Tetrapodomorph Phylogeny.

BCEM601 Seminar - Monday 4:00pm Meeting ID: 966 0864 7151 Passcode: BCEM601


March 15 - **Sierra Mitchell** - Characterizing the interaction of protein phosphatases RLP2 and PP1 with the D group MPKs from *Arabidopsis thaliana*.

BIOL601 Seminar - Wednesday 12:00pm Meeting ID: 950 3831 8705 Passcode: 601-is-fun

March 17 - **Affan Siddique** - The role of Extracellular vesicles in Giardia-microbiota interactions

ICB601 Seminar - Friday 3:00pm Meeting ID: 957 5461 2969 Passcode: 5n575h

March 19 - **Hayley Newman** - Microbial Degradation of Naphthenic Acids in Oil Sands Process-affected Water.





SEMINARS CONTINUED



BioSci Connected - Friday 4:00pm Meeting ID: 954 7355 5098 Passcode: 717911
March 19 - Dr. Jessica Theodor

ECOL601 Seminar - Monday 12:00pm Meeting ID: 518 1943 338
March 22 - **Tanisha Henry** - Is Bigger Better? The Impact of Rocky Mountain Bighorn Sheep Horn Morphology on Male Dominance and Reproductive Success.

BCEM601 Seminar - Monday 4:00pm Meeting ID: 966 0864 7151 Passcode: BCEM601
March 22 - **Spencer Wildmar** - TBA

BIOL601 Seminar - Wednesday 12:00pm Meeting ID: 950 3831 8705 Passcode: 601-is-fun
March 24 - **Meng Ji** - Hydrocarbon-degrading microbial communities in Arctic sea ice, seawater, and sediment along shipping routes in Canada's Kivalliq region.

ECOL601 Seminar - Monday 12:00pm Meeting ID: 518 1943 338
March 29 - **Brenten Vercruysse** - Implications of Salinity in Influencing the Macroinvertebrate Community of a Reference Condition Saline Spring Fen in the Alberta Oil Sands Region.

BCEM601 Seminar - Monday 4:00pm Meeting ID: 966 0864 7151 Passcode: BCEM601
March 29 - **Sridhar Dwadasi** - In Silico Titration of SLC4 Transporters.

BIOL601 Seminar - Wednesday 12:00pm Meeting ID: 950 3831 8705 Passcode: 601-is-fun
March 31 - **Brielle Hrymoc** - From hot to cold: The dispersal of endospore-forming bacteria from deep subsurface fluids to Arctic sediments.

GRADUATE STUDENT AFFAIRS

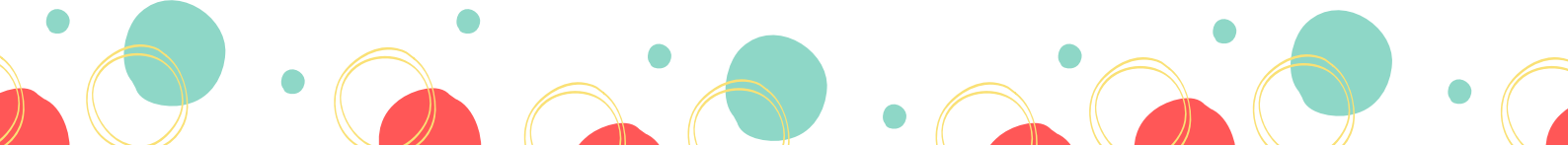


Thesis Oral Examinations - Exams are "Open" unless otherwise noted.

Amber Whitebone (Supervisor: Dr. Jason Anderson) will be holding her MSc Thesis Examination titled "A Multi-Method Analysis of Differential Enthesis Microstructure: Implications for Paleontological Soft Tissue Reconstructions" on March 1 at 2 pm. (Exit Seminar at 1pm).

Andrew Thompson (Supervisor: Dr. M. Vijayan) will be holding his PhD Thesis Examination titled "Developmental and endocrine impacts of early-life exposures to venlafaxine in fish" on March 4, 2021 at 11 am. (Exit Seminar at 10 am).

Emilie Toews (Supervisor: Dr. M. Musiani) will be holding her MSc Thesis Examination titled "*Echinococcus multilocularis* infections in domestic dogs" on March 22, 2021 at 11 am. (Exit Seminar at 10 am).



BIOSCI IN THE NEWS

Stories summarized from UToday Features

UCalgary scientists produce new canola type for potentially higher crop yield

Dr. Marcus Samuel, PhD, Faculty of Science

Matija Stanic, Faculty of Science

Neil Hickerson, Faculty of Science

Dr. Rex Arunraj, PhD, SRM Institute of Technology

A team of researchers in the Department of Biological Sciences has successfully used CRISPR for the first time in Canola - to impressive results. In order to improve crop yield, the team set out to engineer shorter, more branched plants, which are less susceptible to heavy snow, strong wind and hail. Shorter crops allow more plants to grow in the same space, and their resistance to harsh weather prevents bending at the stem, which in turn improves yield. In order to improve branching, the Samuel lab built on previous research showing that shorter, branched plants have less sensitivity to a hormone called strigolactone. Therefore they targeted the endogenous BnD14 gene, the receptor for strigolactone. Targeting BnD14 increased the number of branches from 20 to 60 and increased flower production by 200% within the same reproductive lifespan of canola grown in Canada. Importantly, the team then was able to remove the foreign DNA required to perform CRISPR, creating improved non-GMO crops. This kind of targeted gene editing is an excellent strategy that improves on traditional methods of obtaining better crops. Rather than selecting the best plants and breeding them over several generations like farmers have always done, researchers can identify genes that are responsible for desired traits and make the change within one generation. The Samuel lab is currently in discussions with Agriculture and Agri-Food Canada to move into field trials and confirm that these sturdier plants provide higher yield. The lab is also looking to expand into other crops such as chickpeas!



THE BEST THESIS DEFENSE IS A GOOD THESIS OFFENSE.

5th Biological Sciences Graduate Symposium

March 25-26, 2021

Keynote
speaker



*Nobel
Laureate*

*Dr. Martin
Chalfie*

InclusiveSTEM



*Dr. Lisa
Willis*



Register to present a talk or
poster and/or 3MT

EXTENDED DEADLINE:

MARCH 5TH

- Win door prizes and presentation prizes!
- Learn about the implementation of GFP as a molecular tool from the pioneer Dr. Martin Chalfie!
- Learn how inclusiveness makes us stronger scientists and how to write an effective EDI statement from Dr. Lisa Willis!
- Share your work with your community!



Biological Sciences
from biomolecules to the biosphere



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In Partnership with the University of Calgary