Department of Chemistry Newsletter

Issue 2 (February), 2022

Irving K. Barber Faculty of Science, University of British Columbia

Syilx Okanagan Nation Territory

Announcements

Congratulations to:

The Teaching Labs for the Green Research Prize Draw for recycling clean glass in January 2022. The Green Research Program facilitates the sustainable reduction of the research footprint on the environment. For more information see https://hse.ok.ubc.ca/environment/greenresearch/ or contact Ieva Zigg.

Dr. Wes Zandberg for the invitation to submit a LOI to the Ono Pharma Foundation's Breakthrough Science Initiative Award addressing Chemical Biology research. This was already a highly competitive process and he is the only Okanagan researcher whose project is moving forward from UBC.

Dr. Steve McNeil and Riley Petillion's Chemistry Education research has reached the 100 citation milestone! Their work has examined delivery and curriculum transformations in the first-year general chemistry classroom, and more recently the student experience of emergency remote teaching (10.1021/acs.jchemed.0c00733) and online organic chemistry teaching laboratories (10.1021/acs.jchemed.1c00549).

Facilities/Instruments News

New instruments in the Li's laboratory:

- a multifunctional plate reader and
- a plasma cleaner.

Please contact Dr. Li for training.

A New, Fun Twist on an Old Spectrometry Experiment

The current first year lab curriculum includes a UV-Vis spectrometry experiment that has utilized 1-10-phenanthroline to produce an orange coloured iron complex that students use to measure iron concentration with a benchtop spectrometer. A major drawback to using 1-10-phenanthroline has been the production of large amounts of toxic aqueous waste that needs to be disposed of through the hazardous waste procedures. The undergraduate teaching labs gained funding last year through The UBC Green Lab Fund to explore new procedures to eliminate the use of 1-10-phenanthroline and produce less toxic waste generated by this important introduction to spectroscopy in the first-year labs.

Over the course of Term 1, two of our undergraduate TAs, Heather Ng-Cornish and Paige Dafoe, took on this challenge under the guidance of Dr. Tamara Freeman and Dr. Steve McNeil. Heather and Paige were able to develop a robust method for measuring the absorbances of aqueous solutions of simple, non-toxic food dyes using the same benchtop spectrometers used in the first-year labs. Replacing the toxic iron-phenanthroline complex with safe food dyes achieved the Green Lab Fund objective to eliminate the hazardous waste produced from the experiment. The team also took advantage of the food dyes to add a touch of scientific detective work to this experiment. Students will be presented a scenario in lab where a victim has been given a solution of "poison" (red colour) and "antidote" (blue colour). They will then use spectrometry to calculate the concentrations of the poison and antidote to determine if the victim will survive or not. This intends to bring a more curious, inquiry-based approach to this exercise than the current procedure. A first run of this new version of the experiment is planned for coming summer semester.

(contributed by Dr. Eric Dennis)

Welcome

A warm welcome to Lindsay Odne, BA who recently transitioned into the role of Grad Program Assistant. For the past 7 years, she worked as an adjuster as well as in administration at ICBC. She has her Bachelors of Arts in Psychology from Simon Fraser University. She has a 4-year-old daughter and 2 year-old-son as well as 2 dogs. The whole family moved up to West Kelowna last June and she is very excited to be part of the team!

Welcome to all incoming students, who started in January 2022

- Teddy Herriman (M.Sc.) – Szilagyi lab
- Sutripto Khasnabis (Ph.D.) – Godin lab
- Minh Tuan Anh Nguyen (Ph.D.) – Dang lab
- Vignesh Pattathil Narayanan (M.Sc.) – Pranckevicius lab
- Jessica Valentina Zarama Buritica (M.Sc.) – DiLabio lab

Recent publications/presentations

Darbyshire, AL, Makins, C, and **Wolthers, KR** (2021) Steady-state and pre-steady state kinetic analysis of ornithine 4,5-aminomutase, Methods in Enzymology vol 667 Marsh ENG.(Eds). ISSN 0076-6879 https://doi.org/10.1016/bs.mie.2021.11.016

Student affairs

Schmidt Science Fellowship

Nominations for the Schmidt Science Fellowships are being solicited. This program provides the world's best emerging scientists with new skills and perspectives to develop novel solutions to society's challenges, become scientific and societal thought leaders, and accelerate ground-breaking discoveries. If successful, the applicant will pursue a one to two-year postdoctoral placement at a leading laboratory anywhere in the world. For full competition details, please visit **schmidtsciencefellows.org**.

Value: $100,000 USD annually
Duration: up to 2 years
Nomination Deadline: March 31, 2022

Eligibility: Must have completed, or expect to complete, all the requirements for the conferral of their UBC PhD, including a successful defense, between 1 June 2022 and 30 July 2023. Have conducted their graduate degree in the natural sciences (Astronomy, Biology, Chemistry, Physics and Earth Sciences), Engineering, Mathematics, or Computing – and all sub-disciplines therein. Be available for the entire period of the 2023 program, from July 2023 to September 2024 including attendance at the Global Meeting Series (whether virtual or in-person as conditions allow, and including additional virtual programming).

We would like to express our gratitude for the land on which we gather, work, and live, which is the unceded territory of the Syilx (Okanagan) Peoples.

If you would like to contribute to, or have any suggestions for, our Department's upcoming newsletters, please contact Thuy Dang (thuy.dang@ubc.ca) or Robert Szilagyi (robert.szilagyi@ubc.ca).