

Department of Chemistry Newsletter

September Issue, 2023



Irving K. Barber Faculty of Science, University of British Columbia
Syilx Okanagan Nation Territory

Orange Shirt Day

National Day for Truth
and Reconciliation

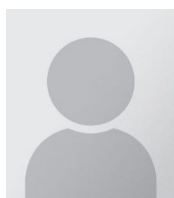


Announcement

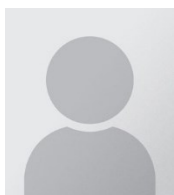
Congratulations to:



James “Teddy” Herriman (Dr. Robert Szilagyi’s group) for having successfully defended his M.Sc. thesis entitled “Peptide bond formation mechanism for understanding plausibility of *in aquo* emergence of metabolism” on August 18th.



Ezra Sebastian, co-supervised by Dr. Wesley Zandberg and Dr. Kenneth Chau (School of Engineering), for having successfully defended his Master’s thesis entitled “Development of compact optical oxygen and carbon dioxide gas sensors for portable metabolic analyzers” on September 12th.



Stefan Siljeg (Dr. Rober Szilagyi’s group) for having completed a successful research summer by working on a collaborative computational project with Dr. Connor Pranckevicius’ group. Stefan is showcasing his research in the upcoming thematic issue of the Canadian Journal of Chemistry dedicated to celebrating undergraduate research.

New members:



Dan Gaudet started his PhD studies in Dr. Susan Murch's group in September. He is working on climate resiliency and plant growth regulation in wine grapes.



Ashley Pacifico and **Chuyi Yuan** joined Dr. Robert Szilagyi's group for their undergraduate research projects on building a bridge between the mechanical properties of dyes and their colours.

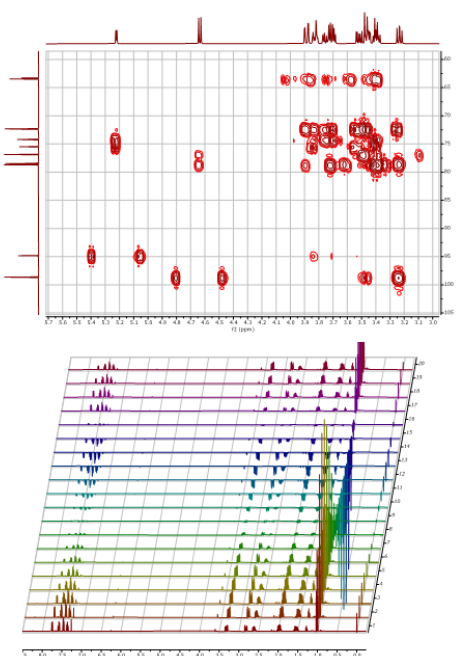


Mai Huynh from VNU–Ho Chi Minh City University of Science (Viet Nam) joined Dr. Thu-Thuy Dang's group with a *Canada–ASEAN Scholarship & Educational Exchanges for Development* funding in September. Thuy's group also welcomed **Tanner Pereschitz** for

his honours thesis, and **Mary Olson** and **Riya Naik** for their work-study projects.

New courses:

Advanced NMR spectrometry: CHEM 568Y will be offered next term by Dr. Paul Shipley.

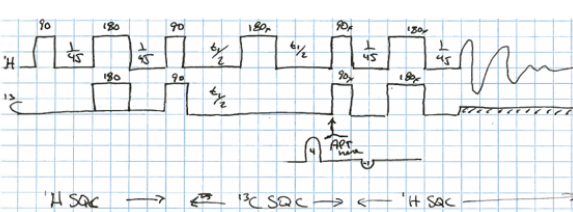


Chemistry 568Y – Advanced NMR Spectrometry

A graduate-level course on the theory and practice of NMR spectrometry

What will you learn?

- Tuesdays focus on practical and useful NMR theory, including the basics on how 2D NMR works, and building blocks to create useful experiments
- Thursdays focus on the practice of complex structural elucidation and answering research questions using NMR
- Classes will be conducted in a group environment, with students working together to solve structures and master concepts
- The only required text is free online to UBC students



Pan-Canadian computational chemistry program (PC3): The new graduate program PC3 in applied computational chemistry currently involves eight faculty members, including Dr. Gino DiLabio and Dr. Robert Szilagyi, from seven universities (UBC, University of Saskatchewan, Dalhousie

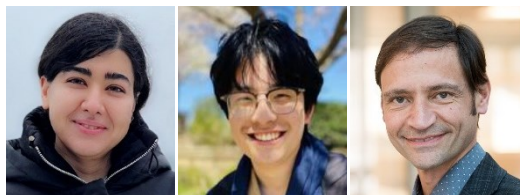
University, University of Ottawa, University of Winnipeg, and Spain's University of Oviedo). In this inaugural offering, an introductory 3-credit course and two advanced 1.5-credit modules are offered to students from these eight institutions. Dr. Alireza Sadeghifar has worked over the last several years to pull together the program and is doing phenomenal work in coordinating the present courses.

New instrument:



Single-crystal X-ray diffractometer: Dr. Conor Prancevicius, Dr. Robert Szilagyi, and Dr. Gino DiLabio's groups are excited to share that the foundation of a structural determination laboratory has been laid in FIP 128. Conor's CFI-JELF funding brought in a Bruker single-crystal XDR. The in lumen, experimental technique will be supplemented with funding from Robert's CFI-JELF for organic, organometallic, and inorganic crystal structure databases and powerful computational servers. Together with Gino's group, a Department's computing cluster is established for education and research, notably to support the aforementioned PC3 program.

Recent publications



Mahsa N. Ashani, Qinan Huang, A. Mackenzie Flowers, Alex Brown, Antoine Aerts, Alberto Otero-de-la-Roza, Gino A. DiLabio (2023). Accurate potential energy surfaces using atom-centered potentials and minimal high-level data. *Journal of Physical Chemistry A*. DOI: 10.1021/acs.jpca.3c04558.



Sergio Sisti, Fabio Ioele, Filippo Scarchilli, Marco Galeotti, **Gino A. DiLabio**, Michela Salamone, Massimo Bietti (2023). Activation and deactivation of benzylic C-H bonds guided by stereoelectronic effects in hydrogen atom transfer from amides and amines to alkoxyl radicals. *European Journal of Organic Chemistry*. DOI: 10.1002/ejoc.202300419.

Recent events

“Welcome to Science” meet & greet BBQ

The *Biochemistry, Chemistry, Microbiology, Quantitative Sciences Course Unions*, and the *PreMed* and *iGEM Clubs* hosted a welcome BBQ in the courtyard in the afternoon of Wednesday, September 27th. Students were welcomed (and welcomed back) to campus with faculty members and fellow students.



It was an excellent opportunity to meet new and old faces, and learn about all the resources and opportunities offered by the course unions and clubs.

Recent presentations:

Matthew McConnachie and **Tuan-Anh Nguyen** together with **Dr. Thu-Thuy Dang** gave a presentation, followed by enthusiastic discussion about biosynthesis of therapeutic compounds from plants with members of Lake Country's Rotary Club visiting the Okanagan Institute for Biodiversity, Resilience & Ecosystem Services (BRAES) on September 28th.



Dr. Robert Godin coordinated the launch on the Okanagan Campus of UBC's Climate Solutions Research Collective (at the same time with the launch on the Vancouver Campus), and moderated a robust discussion that followed. The Collective is a new initiative to build connections across UBC's climate research initiatives, and Robert is one of two members from our campus to sit on the Steering Committee (<https://climatesolutions.ubc.ca/>).



We acknowledge that the land on which we gather is the unceded territory of the Syilx (Okanagan) Peoples. Kukwtsétsemc / kʷu kʷukʷstp !

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