

Department of Chemistry Newsletter

November Issue, 2023



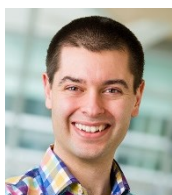
Irving K. Barber Faculty of Science, University of British Columbia
Syilx Okanagan Nation Territory

Announcement

Congratulations to:



Dr. Thu-Thuy Dang for being awarded the NSERC–DFG’s grant (\$ 300,000 over 3 years) for research in sustainable processes and chemistry with a proposed project entitled “Systematic development of new oxidative biocatalysis for the sustainable production of pharmaceutical compounds” in collaboration with Dr. Jakob Franke (University of Hanover, Germany).



Dr. Robert Godin for being awarded the NSERC–DFG’s grant (\$ 300,000 over 3 years) for research in sustainable processes and chemistry with a proposed project entitled “Development of organic photocatalyst materials to broaden the use of sustainable photocatalysis in organic syntheses” in collaboration with Dr. Burkhard König (University of Regensburg, Germany).



Vigneshkumar P. Narayanan (Dr. Conor Prancevicius’ group) for having successfully defended his MSc thesis entitled “Stabilization of low-valent group XIII complexes with polydentate ligands” on November 14th, and starting his PhD studies in January 2024 also in Conor’s group.

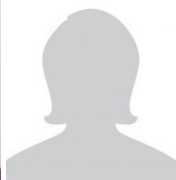


Helena H.C. Nunes (Dr. Thu-Thuy Dang’s group) for having successfully defending her MSc thesis entitled “The quest for new enzymes involved in the biosynthetic pathway of the anticancer drug camptothecin from *Camptotheca acuminata*” on November 16th.



Amanda Darbyshire (Dr. Kirsten Wolthers’ group) for being awarded the *Graduate Dean’s Thesis Fellowship* for her PhD studies.

New members:



Dr. Robert Szilagy's group warmly welcomes **Anmoldeep Kaur** and **Victoria Taylor**, who joined to study molecular dynamic simulation of glycine condensation reactions and the impact of relativistic effects of heavy nuclei on the chemical bonding in coordination compounds, respectively.

The group also wishes prosperous future endeavours to Teddy "James" Herriman and Bhavesh Gnanapareddy.

Recent publication

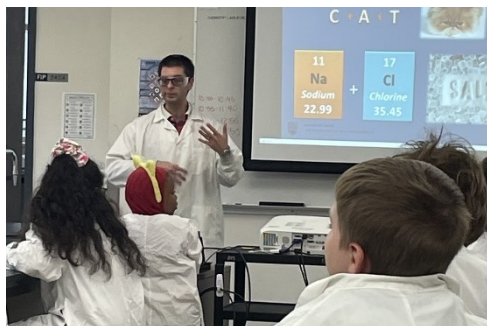


E.A. Stander, B. Lehka, I. Carqueijeiro, C. Cuello, F.G. Hansson, H.J. Jansen, T.D. de Bernonville, C.B. Williams, V. Vergès, E. Iezin, M.D.B.B. Lorensen, **Thu-Thuy Dang**, A. Oudin, A. Lanoue, M. Durand, N. Giglioli-Guivarc'h, C. Janfelt, N. Papon, R.P. Dirks, S.E. O'Connor, M.K. Jensen, S. Besseau, V. Courdavault (2023). The *Rauvolfia tetraphylla* genome suggests multiple distinct biosynthetic routes for yohimbane monoterpene indole alkaloids. *Communications Biology*. DOI: 10.1038/s42003-023-05574-8.

Recent events

STEM Engagement Day

By **Dr. Tamara Freeman** — On November 15th, over 700 elementary school participants stormed our UBC's Okanagan campus for our 2nd annual *STEM Engagement Day*. The *Chembassadors* had almost 200 students from grades 2 to 5, including a home learning group, join them over eight sessions of hands-on activities. Our amazing volunteers (12 of them!) worked non-stop to present concepts of surface tension, polymer beads and colour change titrations to our excited mini-scientists. One small visitor was so amazed that they have abandoned their NHL career to pursue a future in science. :)



A big thank you to everyone who helped with the event, allowing it to run smoothly. A special thank you to our fantastic technicians, **Michele Cannon**, **Eric Dennis** and **Emma Mitchell** and our two cameo profs, **Dr. Summer Li** and **Dr. Robert Godin**.

Recent presentation

Dr. Thu-Thuy Dang gave a talk on her research at the 2023 Kelowna Showcase of Life Sciences BC on November 8th. Other speakers included Dr. Philip Barker and Dr. W. Francois Louw from UBC, representatives from *Interior Health*, *Accelerate Okanagan*, and *Lexaria Bioscience Corp.*



(image: Life Sciences BC)

Recent trip

By **Dr. Robert Szilagy** — The Szilagy's group spent the first three weeks of November at the Canadian Light Source (CLS) in Saskatoon, SK. The SGM, IDEAS, and BioXAS beamlines provided them with tunable energy access to soft, tender, and hard X-ray energy ranges for X-ray absorption spectroscopic measurements. They collected close to 600 scans for 100-s samples that included: Fe-S minerals and nanoparticles; methanogens reductively dissolving pyrite, pyrrhotite, and mackinawite samples; the entire 4-electron transfer series of [4Fe-4S] clusters; samples from Dr. Conor Pranckevicius and Dr. Kirsten Wolthers' laboratories; and modified kaolinite nanoparticles prepared during the summer visit by Dr. Orsolya Fonagy and Dr. Balazs Zsirka from the University of Pannonia.

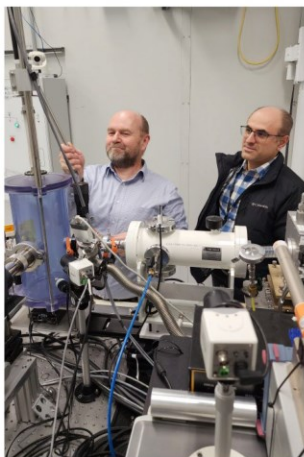
Exploratory measurements were made toward Ni/Pd/Pt chloro-complexes and a family of Ca inorganic compounds as potential imaging reference compounds for visualizing biological Ca signalling. The minerals and nanoparticles were prepared at Montana State University in Dr. Eric Boyd's and Dr. Eric Shepard's laboratories. The Fe-S clusters are from Dr. Victor Moguel's laboratory at ETH Zurich. They estimate that the collected data will allow for at least 6 publications.

The group's honourable members **Ieva Zigg** and **Dr. Alireza Sadeghifar** joined for the last week to discuss incorporating synchrotron experiments into our undergraduate curriculum with an enthusiastic welcome by the educational outreach team at CLS. The upbeat and optimistic atmosphere of the trip is well represented by the "beamtime comic strip" from photos taken by Ieva, whose style might have been inspired by some surrealist lately. *The collage is featured in our full-page colour format on the last page.*

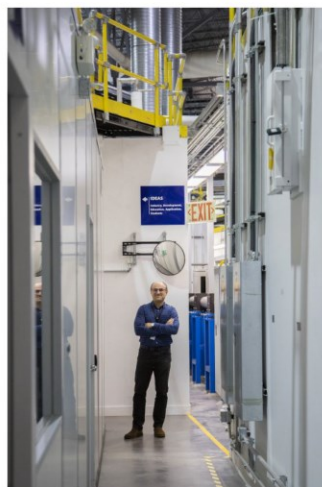


We acknowledge that the land on which we gather is the unceded territory of the Syilx (Okanagan) Peoples. Kukwstsetsemc / k^wu k^wuk^wstp !

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).



"Madonna! I am so pleased to impress Alireza how confidently I can hold the end of the prop stick for the sample holder as a well-fed kindergardener after their nappy-poo!" - Robi



"Remember, all I am offering is the truth! Take that red pill and stop complaining that it is too big to swallow." Alireza Morpheus



"Dude Herzberg, roll over! Don Alireza is "in Da House"!"



"Waiting for beam to be delivered ...
... dreaming about the poetry of Neruda"



"Beam is delivered. The Lamp is lit!
... nuda sei semplice come una delle tue mani ..."



"Waaait! Did you say mo' beamtime? Oh, yes, bring it on.
Make my smile spread on my face like a butterfly!"