

## Monthly Report to the Provost – Faculty of Science

The Faculty of Science (FoS) has the following to report for the months of **June-August 2021**:

### Dean's Office:

Due to renovations in the D building, the office of the FoS was temporarily moved to the K building and although most work was done remotely, we averaged personal attendance by either the Dean or her Admin assistant to twice per week.

**Dr. Lucy Lee** was an external panel member to review a new program proposal for BC DQAB, and has also been appointed to NSERC's Discovery Grants Evaluating Committee 1502 for a three-year term. Dr. Lee was also awarded a Service award for 2021 from the Society for In Vitro Biology for her work with the Society organizing the 15<sup>th</sup> Conference of Invertebrate and Fish Cell Culture Conference in June. She also participated virtually as a convener, a presentation competition judge, a panelist, a mentor and as a presenter in the Canadian Society of Zoologists meeting in May and in the World Congress for In Vitro Biology in June. **Dr. Justin Lee** from Biology and students **Heather Kelly** and **Daylan Pritchard** also participated in some sessions within these conferences as well as making presentations.

Faculty of Science SAC committee held interviews for the new Associate Dean position. **Dr. Ian Affleck** was the successful candidate and will begin his term September 1, 2021. He is completing his term as the Department Head in Mathematics and Statistics, for which he has served in the role since September 1, 2015. Ian brings with him a wealth of knowledge and experience and will be a great asset to the Dean's Office.

UFV science students, **Rhien Hare** and **Annabelle Czihaly**, spent the summer planning a number of one-day events for our new outreach program *Science Rocks! Days* (SR Days) to be held this fall for kids from grades 4-8 to visit our Abbotsford and Chilliwack campuses and work in a university lab <https://www.ufv.ca/science/science-in-the-community/science-rocks/science-rocks-days/>. Full details and dates will be released shortly. **Dr. Robin Endelman**, Science Rocks Coordinator, received a \$2,000 grant from the Canadian Mathematical Society to help support our SR Days program. This is in addition to the Abbotsford Community Foundation's "Smart & Caring Community Grant" she received earlier this summer for \$5,000.

The Fraser Valley Regional Science Fair (FVRSF) Committee met this month to discuss the 2022 Regional Science Fair. In addition to community members and educators from the Fraser Valley School Districts, the Committee includes members from the UFV Faculty of Science - from the Dean's office, **Dr. Lucy Lee**, **Dr. Ian Affleck**, **Janice Nagtegaal**, and **Caroline Majeau**; Chemistry Department **Dr. Jason Thomas** and **Dr. Linus Chiang**; and from **Biology Dr. Nathan Bialas**. We anticipate the 2022 FVRSF will be held in person at UFV the first week of April 2022.

The FoS has had the opportunity to send at least one student to the London Youth International Science Forum (LIYSF) since 2012 <https://www.liysf.org.uk/>. Due to Covid, our winner from last year **Annabelle Czihaly**, BSc student from Physics, was able to attend virtually and we hoped to send her this year to attend in person but unfortunately, due to the ongoing travel restrictions, LIYSF was held in hybrid mode, with live and virtual participants. Since it was virtual for us, we were able to have our second and third place winners participate in this event: **Heather Kelly** (Biology) and **Connor Frey** (Chemistry). Heather, Connor and Annabelle have each written a short article about their experiences at LIYSF 2021 which can be read on our Science Blog here:

<https://blogs.ufv.ca/science/category/trips/science-in-london/>

## **Biology Department:**

**Dr. Greg Schmaltz** is the new Department Head of Biology and a smooth transition of departmental duties from **Dr. Tony Stea** was made in June. Dr. Schmaltz along with colleagues from Biology and with Associate Professor, **Steve Marsh** from SLUEC received Work Integrated Learning (WIL) funding for a total of \$52,500 to go towards WIL for Students Solving Environmental Challenges and will include purchasing much needed equipment including water meters (two YSI ProDSS Quattro meters, solid state meters which have a reduced annual maintenance cost) as well as GoPro cameras.

The new Shakespeare Reconciliation Garden was unveiled on July 16th at UFV's Chilliwack Campus. The garden is a symbolic act of reconciliation that "keeps living" the former Shakespeare garden in a new, evolving form that connects to and honours the past, and also aims to celebrate creativity and provide a healing and reflective space. Biology Professor, **Dr. Alan Reid**, was instrumental in designing the Interdisciplinary Studies course which took up the challenge to design the new garden. Alan's extensive knowledge of plants and their significance in Stó:lō culture provides a valuable opportunity for learning.

<https://blogs.ufv.ca/science/2021/08/04/shakespeare-garden-returns-to-ufv-with-an-expanded-purpose/>

Adjunct Professor and Sessional Instructor, **Dr. Carin Bondar** spent two weeks on the Viking sky cruise ship touring Iceland as a resident naturalist and speaker. She is scheduled to shoot a new show for CBC Gem this August called 'Frick! I Love Nature' where she will be discussing the prevalence of strategies for cryptic female choice.

<https://www.cbc.ca/mediacentre/program/frick-i-love-nature>

**Dr. Alida Janmaat** recently participated in the Quantitative Biology at Community Colleges (QB@CC) project which is supported by the National Science Foundation <https://qubeshub.org/community/groups/qbcc>. She was in an incubator group which biology and math faculty worked together to produce interdisciplinary open educational resources. The module created, highlights issues of methylmercury contamination of traditional food resources that impact many indigenous communities in Canada.

BSc Biology grad of 2020, **Eryn Braley**, published her undergraduate research work with **Dr. James Bedard** and with **Angela Bedard**, adjunct faculty in two papers. See publications list below.

## **Chemistry Department**

**Dr. Golfam Ghafourifar** along with her research students, **Kenneth Ku** and **Connor Frey** gave an oral presentation at the 104<sup>th</sup> Canadian Chemistry and Exhibition (CCCE 2021) held virtually in Montreal in August.

<https://www.cheminst.ca/conference/ccce2021/>

A whooping 14 UFV names were included within the CCCE2021 participants names. In addition to Golfam, Kenneth and Connor, **Drs, Linus Chiang, Jacob Spooner, Noham Weinberg** and **Dr David Chu** (Math & Stats), participated in this conference along with students **Kyla Woelk, Anmol Sharma, Maor Arad, Amna Hadzovic, Khuong Ho, Kenneth Mejia** and **Jordan Penner**. Their presentations are listed below under the publications heading.

## **Mathematics & Statistics Department**

As previously reported, **Dr. Kseniya Garaschuk** received the Canadian Mathematical Society's Graham Wright Award for Distinguished Service in recognition of her contributions to the Canadian mathematical community. She was also named a Fellow of the Canadian Mathematical Society (CMS), making her the youngest person to date awarded this honour. In June, she was an invited panelist on "CMS/CMESG Joint Panel: Data Literacy", at the CMS 75<sup>th</sup>+1 Anniversary online Summer Meeting <https://summer21.cms.math.ca/>; and in May she was invited to the

Pacific Institute for the Mathematical Sciences (PIMS) Changing the Culture 2021 and was a panelist on “How has Coronavirus changed the teaching of Mathematics?”. <https://mathtube.org/lecture/video/changing-culture-panel-discussion-how-has-coronavirus-changed-teaching-mathematics>.

**Dr. Ben Vanderlei** completed his sabbatical the end of August and returned as the new Department Head of the Math and Stats Department taking over from **Dr. Ian Affleck** who held this position for the past 6 years. The main product of Ben’s sabbatical work was his Open Education Resource titled, “Jupyter Guide to Linear Algebra” which was published this summer as part of the Executable Book Project <https://bvanderlei.github.io/jupyter-guide-to-linear-algebra/>. He also presented on the project in August at MathFest 2021, the summer meeting of the Mathematical Association of America <https://www.maa.org/node/1301332/>. The title of his presentation was Jupyter Books, and it was contributed to the session Closing Wallets while Opening Minds: Adopting Open Education Resources in Mathematics.

**Dr. Erik Talvila** gave an online talk “The  $L_p$  primitive integral on the real line” as part of the Mathematical Congress of the Americas, Buenos Aires in July 2021. <https://www.mca2021.org/en/tools/view-abstract?code=3710>

**Dr. Longlong Huang** and **Dr. Shaun Sun** also had busy summers with participation in conferences and co-authorship in manuscripts and conference presentations (See Publications list below). Dr. Sun, along with department colleagues were also successful in securing WIL funding for \$14,750 to expand Data Analysis Certificate students’ experiential learning opportunities.

#### **School of Land Use and Environmental Change (SLUEC)**

**Drs. Stefania Pizzirani, Mariano Mapili** and SLUEC Director, **Dr. Jonathan Hughes** attended a field trip with the Sto:lo Resource and Research Management (SRRMC) on August 20 to explore collaborative research opportunities.

**Dr. Cherie Enns’** project with the Queen Elizabeth Scholars (QES) was profiled in the QES 2020-2021 Annual Report (see page 16 of that report).

#### **Sample List of Presentations/Publications (UFV student names underlined> by FoS personnel:**

Beigi, A., Vafaei-Nodeh, S., **Huang, L., Sun, S.Z.**, Ko, J.J. (2021). Survival outcomes associated with first and second-line palliative systemic therapies in patients with metastatic bladder cancer. Manuscript submitted to Current Oncology for publication.

Bols, N.C., Brale, E.F., Pritchard, D.T., **Lee, J.B.**, Pumputis, P.G., Dayeh, V.R., **Lee, L.E.J.** (June 2021) Effects of sodium butyrate and nitrite on rainbow trout epithelial cells. A-2006. 2021 Society for In Vitro Biology Annual Meeting (virtual)

Bols, N.C., Chen, C.C., Liu, X., Bornstein, J.M., Adams, J.A., Brown, R.S., **Lee, L.E.J.**, Hodson, P.V. (June 2021) Use of fish cell lines to assess the toxicity of heavy fuel oil (HFO). 15th International Conference on Invertebrate and Fish Cell Culture.

Brale EF, **Bedard AC**, Nuk J, Hong Q, **Bedard JEJ**, Sun S, Schrader KA. Patient ethnicity and cascade genetic testing: a descriptive study of a publicly funded hereditary cancer program. *Fam Cancer*. 2021 Jul 7. doi: 10.1007/s10689-021-00270-0. Epub ahead of print. PMID: 34232459.

**Enns, C.** and Mbuya, E. (July 7-8, 2021). Co-Production of Play Space in Nairobi and Dar es Salaam - Challenges and Opportunities. Play 2021 Virtual Conference, University of Birmingham. <https://www.playfulplanet.org.uk/play2021>

Frey, C., Arad, M., Ku, K., Ghafourifar, G. (August 2021) Peptide Mapping Utilizing In-Situ Immobilized Microreactor Fabricated Via Covalent Attachment Between Triethoxysilylbutyraldehyde and Pepsin. 2021 Canadian Chemistry Conference.

**Gillespie, S.** (2021) Flowering invasive plants and native pollinators: Exotic buffet or food desert. Virtual presentation for the Washington Native Plant Society. <https://www.youtube.com/watch?v=b60Hospbv9E>

**Gillespie, S.** (2021) Cultivar variation in pollination deficit in B.C. Cranberries. PNW Cranberry Congress. Vancouver, BC. Virtual. Invited talk.

**Ghafourifar, G., Frey, C., Ku, K., Chu, D.** (August 2021) Fabrication and Optimization of Immobilized Microfluidic Enzyme Reactor (IMER) Using Capillary Electrophoresis (CE) to Immobilize Enzymes Based on Principal Component Analysis (PCA). 2021 Canadian Chemistry Conference.

Hadzovic A, Chiang L. (August 2021) Electronic structure and electrochemistry investigation of a pyridazine-bridged bimetallic nickel compound towards CO<sub>2</sub> reduction. Poster, 2021 Canadian Chemistry Conference.

Ho K, Chiang L. (August 2021) Electronic structure and electrochemistry investigation of a homobimetallic dicopper compound towards CO<sub>2</sub> reduction. Poster, 2021 Canadian Chemistry Conference.

**Janmaat, A.,** Kaslik, P., Jr, R. L., Simpson, K. D., Zimble-DeLorenzo, H. S. (2021) Grassy Narrows and Muskrat Falls Dam: Hypothesis Testing and t-Tests. Spring 2021 QB@CC Incubator #1, QUBES Educational Resources. [doi:10.25334/BGJO-6W91](https://doi.org/10.25334/BGJO-6W91)

Kelly, H.M., Chen, S., Tam, Y.Y.C., Lee, L.E.J., Lee, J.B. (June 2021) Use of Rainbow Trout Fish Cell Lines to Study Cellular Uptake of Fluorescently Dil-labeled Lipid Nanoparticles Encapsulating siRNA In Vitro. A-1003. 2021 Society for In Vitro Biology Annual Meeting (virtual).

Ku, K., Frey, C., Ghafourifar, G. (August 2021) Development and Optimization of Capillary Electrophoresis (CE) Facilitated Capillary-based Microfluidic Immobilized Enzyme Reactor ( $\mu$ IMER) Employing Chymotrypsin. 2021 Canadian Chemistry Conference.

**Lee, L.E.J., Cho, S.E., Pritchard, D.T., Lee, P.W.C.** (June 2021) Initiation of Cell Cultures from Pandalid Shrimp and Effects of Astaxanthin. A-2008. 2021 Society for In Vitro Biology Annual Meeting (virtual).

Meija K, Chiang L. (August 2021) Development of Co-salen complexes for H<sub>2</sub>O oxidation electrocatalysis. Poster, 2021 Canadian Chemistry Conference.

Sharma A, Chiang L. (August 2021) Experimental investigation on the electronic structure of electron rich and deficient Cu-salen complexes. Poster, 2021 Canadian Chemistry Conference.

**Spooner J, Woelk K, Weinberg N** (August 2021) Calculation of Pressure Effects on Reactivity and Equilibria of Compressed Species: Diels-Alder Reactions of Maleic Anhydride. 2021 Canadian Chemistry Conference.

Vafaei-Nodeh, S., Beigi, A., **Huang, L., Mimmack, G., Sun, S.Z.,** Ko, J.J. (2021). Survival outcomes associated with different palliative systemic therapies (PSTs) in patients with metastatic bladder cancer (Mbc). Manuscript submitted to *Journal of Clinical Oncology* for publication.

Wang, C., Lester, B., **Huang, L., Sun, S.,** and Ko, J.J. (2021) Survival outcomes in cervical cancer: what factors affect recurrence? European Society for Medical Oncology, 2021 Congress.

Wilson, D., Penner, J., Spooner J, Weinberg N (August 2021) High Pressure Vibrational Spectra of Molecules via Molecular Dynamics Simulations. 2021 Canadian Chemistry Conference.