

## Monthly Report to the Provost – Faculty of Science

The Faculty of Science (FoS) has the following to report for the months of **June-August 2022**:

### Engaging Learners

The FoS is excited to welcome our new full time faculty hires. **Dr. Lauren Erland** is the new Director of Berry Horticulture Research and an NSERC CRC2 candidate. Her department will be within Agriculture. **Dr. Javad Hadian** and **Dr. Tadhg O’Leary** have joined the Agriculture Technology department. **Dr. Dina Navon** joined the Biology Department as Assistant Professor. **Dr. Jake Spooner** was the successful candidate for the vacated position from Dr. Noham Weinberg’s retirement. He joins us as an Assistant professor after a few years as an LTA in Chemistry. The School of Land Use and Environmental Change is currently in the process of hiring for their area. To read more about our new faculty please read our science blog at <https://blogs.ufv.ca/science/2022/09/01/welcome-to-our-new-faculty-of-science-faculty/>

Math & Stats Associate Professor, **Dr. Kseniya Garaschuk** has been very busy over the past few months. She organized a conference session for the CMS Summer meeting held in St. John’s, NFLD in June called “Authentic Applications”. Recently she became the liaison between Eventmath (a Wikiversity project for collecting math lesson plans based on current events) and First Year Math and Stats in Canada community and helped organize a webinar held in July. <https://firstyearmath.ca> She consulted with the Canadian Center for Cyber Security regarding training sessions for the Cyber\*Sci challenge and served as one of the national coaches for the crypto session. <https://cybersecuritychallenge.ca/>

**Dr. Golfam Ghafourifar**, Chemistry Assistant Professor was invited to speak at the Canadian Chemistry Conference and Exhibition (CCCE) held in Calgary in June. She attended with her students **Maor Ard**, **Majot Benning** and **Connor Frey**. Connor won the Undergraduate Student Travel Award at the conference. Connor graduated with distinction in June with a BSc Biology Honours, Chemistry minor and was accepted into medical school at UBC this fall. **Rachel Sailer**, from **Dr. Linus Chiang’s** research lab, also attended the CCCE. She received one of three top undergraduate poster prizes. **Dr. Ghafourifar** was invited to present her research “Development of Immobilized Enzyme Microreactor for Bottom-up Proteomic Studies” online for Panjab University in Chandigarh in August.

**Dr. Lucy Lee**, FoS Dean, **Dr. Justin Lee**, from Biology and their research students: **Katriana Van Woudenberg**, **Heather Kelly**, **Ryan Goldbach**, and **Daylan Pritchard** attended the Society for In Vitro Biology (SIVB) held in San Diego, California in June. They each presented a poster and Dr. Lee gave a lecture on her research. Poster presentations and lecture are included in the Presentations/Publications below.

**Dr. Sandra Gillespie**, Associate Professor in Biology was invited to speak at the Islands Agriculture Show on Vancouver Island on the topic of the importance of Biodiversity in Agriculture in July.

**Drs. Longlong Huang** and **Shaun Sun** from the Mathematics and Statistics Department have been collaborating with UBC and the BC Cancer Center. Their research will be presented at the European Society for Medical Oncology (EMSO) Congress in Paris, France September 9-13, 2022.

Our Science Rocks (SR) program was successful in receiving \$5,000 as a Grassroots Grant from BC Hydro’s Community giving program. This funding along with the grants from the Canadian Mathematical Society (CMS) and the Abbotsford Community Foundation helped bring our summer camps back this summer. Williams Engineering also donated \$750 to sponsor 4 campers. SR finished up on August 19. Over the 6-week period, we welcomed a total of 140 campers from grades 4-7. Each week the kids enjoyed science-based demonstrations and activities. The SR Camp Coordinator, **Dr. Robin Endelman**, and science faculty members **Dr. Alan Reid** (Biology), **Dr. Vanessa**

**Radzimski** (Math & Stats), **Avril Alfred** (Biology Lab Tech & Sessional Instructor), **Dr. Longlong Huang** (Math & Stats) and **Dr. Ruwan Karunanayaka** (Math & Stats) supervised a camp each. The SR Team Leaders who ran each of the camps were UFV students, **Ronald Balagtas**, **Nav Bhatti**, **Jessica Lo**, and **Annette Vantil**. We also had some wonderful volunteers assisting each week: **Dario Jereb**, **Pearl Virk**, **Thom White**, and **Curtis Plug**. Special thanks to UFV Librarian, **Martin Warkentin** for introducing 3-D Printing to our Abbotsford Campers; and to Agriculture Department Head, **Dr. Renee Prasad** and her team for their time spent with our campers during our Chilliwack Camps. We were thrilled to welcome a former Snowbirds Team Leader, **Rob (Scratch) Mitchell**, who shared his experience with the campers at one of our Chilliwack camps. <https://blogs.ufv.ca/science/2022/08/18/science-rocks-campers-welcome-former-snowbirds-team-leader-scratch-mitchell/>

**Dr. Javad Hadian**, Associate Professor from Agriculture welcomed students from UFV's Professional Cook program. They visited the greenhouse and got the chance to see how they grow culinary herbs. **Chef Sian Hurley's** students harvested the basil and parsley grown in the vertical towers, and garlic and zucchinis from Agriculture's outdoor classroom for their black box challenge. <https://www.instagram.com/ufvagriculture/>

### **Transforming Lives**

The London International Youth Science Forum <https://www.liysf.org.uk/> was held July 27-August 10, 2022. Biology student and 2022 representative, **Rhien Hare**, joined our 2020 representative and Physics student, **Annabelle Czihaly**, who has been patiently waiting to travel since the 2020 forum was postponed due to the pandemic. They joined 500 other leading young scientists from more than 70 participating countries. Their activities can be read on the FoS blog at: <https://blogs.ufv.ca/science/category/trips/science-in-london/>.

Congratulations to **Dr. Cherie Enns**, from the School of Land Use and Environmental Change and her research team on their Women RISE International Development Research Centre (IDRC) application: 'Catalyzing Women's Involvement in Post-Covid-19 Recovery through Agricultural Cooperatives in Kenya (WINRACK)'. <https://www.idrc.ca/en/initiative/women-rise>. Funding for this project will see \$250K to UFV and \$650K to the Kenyan partner.

In June, **Dr. Robin Endelman**, Associate Professor, Mathematics and Statistics and **Dr. Ian Affleck**, Associate Dean, Science attended the inaugural *Turtle Island Indigenous Science Conference* at University of Manitoba. This conference gave participants the opportunity to "explore the Indigenous scientific legacy and the value of the application of two-eyed seeing to modern science today". We look forward to inviting some of the conference speakers to visit UFV in the coming year and beginning a dialogue on how UFV might increase interest in local Indigenous youth to enter our Bachelor programs in Science, Environmental Studies, Agriculture Technology, and Regional and Community Planning. <https://news.umanitoba.ca/2022-turtle-island-indigenous-science-conference/>

**Dr. Lauren Erland**, Director of Berry Horticulture, received the Canadian Society of Plant Biology Award at the Plant Biology 2022 meeting in Portland in July <https://plantbiology.aspb.org/>. This award is for "outstanding contributions to plant biology by a postdoctoral fellow, based on initiative and originality of the research, productivity of the individual, and leadership during their postdoctoral fellowship."

**Heather Kelly** who received the Governor General's Silver medal for 2022 was the recipient of the Gordon Sato & Wally McKeenan award from the Society for in vitro biology. While **Katriana Van Woudenberg** who was the Science Dean's medalist for 2022 won the Joseph F Morgan award. See award descriptions here: <https://sivb.org/meetings/home/student-and-post-doc-opportunities/sivb-student-awards-program.html>.

**Dr. Justin Lee** (Biology) was the recipient of the prestigious NSERC Discovery grant for 5 years plus an Early Career supplement which brings \$145,000 to UFV for research and training of our students. See [NSERC - Research Grants Competition - Results by Institution - 2022 \(nserc-crsng.gc.ca\)](https://www.nserc-crsng.gc.ca/Competition-Results-by-Institution-2022)

### **Building Community**

The FoS was presented with the 2022 Community Matters Award by the Abbotsford Board of Education for their contribution to the Fraser Valley Regional Science Fair <https://www.ufv.ca/science-fair/>. **Dr. Lucy Lee, Science Dean, Caroline Majeau,** and **Janice Nagtegaal** accepted the award on behalf of the faculty on June 14 during the Public Board Meeting at the District office. <https://www.abbyschools.ca/news/ufv-faculty-science-receives-2022-community-matters-award>

The Honourable Gudie Hutchings, MP, Minister of Rural Economic Development toured the agriculture facilities. The tour was followed by a round table discussion with the Provost, AVP Research, **Dr. Lenore Newman,** and **Dr. Renee Prasad** regarding the role of agriculture education and research in rural development.

**Dr. Renee Prasad** and her team hosted the 4-H 'Food for Thought' program in July. Thirty-five delegates from ages 14-15 years of age, rotated through different activities at our facility. Read more on our blog: <https://blogs.ufv.ca/science/2022/08/02/agriculture-welcomes-4-h-food-for-thought-group/>.

**Dr. Javad Hadian, Dr. Tadhg O'Leary,** Program Technician **Angela Oscienny,** Department Assistant **Michelle Morier,** and student volunteers, **Jack Duiven** and **Josh Stolee** gave up their weekend to represent UFV at the Chilliwack Fair in August. As a title sponsor in collaboration with the Faculty of Applied and Technical Studies it was a great opportunity to engage with the community. <https://www.instagram.com/ufvagriculture/>

The CARBON documentary <https://www.thecarbonmovie.com/> that Biology/SLUEC Sessional Instructor, **Dr. Carin Bondar** was involved in, has won several official selections and accolades since it premiered in March. Most recently, the narrator, Sarah Snook, was nominated for an Emmy. Carin has created a new series called 'What She Said'. The series consists of 10 one-hour episodes. She aims to showcase the many amazing women in our own community. Season 1 includes MLA Kelly Paddon, Indigenous Studies Professor **Dr. Wenona Hall,** Chilliwack District Superintendent Paula Jordan, and Associate Professor **Dr. Awneet Sivia.** Season 1 will premiere online mid-September. Dr. Bondar is currently planning an Indigenous Elders interview series, as a partnership together with the Chilliwack Metis, where she will interview local Elders on aspects of their lives and culture.

**Dr. Lucy Lee** travelled to Nelson, NZ in July to finalize an on-going collaboration with the Plant and Food Research Institute. She also visited collaborators at the University of Otago in Dunedin. In August Dr. Lee attended the Victoria Forum <https://victoriaforum.ca/> and met several dignitaries as well as participating in the forum whose theme this year was on Turf, Truth, and Trust.

The new pollinator garden which is now located behind Baker House is an ongoing collaboration between a variety of UFV departments including SLUEC and Biology. They are currently working on an interactive PDF for the first set of planting and are trying to redesign the swamp area behind Baker House into a more ecological teaching garden that will act as a pollinator garden and a teaching area for most plant and environmental courses. A tour through the area and other ethnobotanical areas near Baker House is planned for October with the collaboration of the Reach Gallery in Abbotsford. It will be run in conjunction with their regular series called C3 coffee culture and cookies. <https://blogs.ufv.ca/blog/2022/08/pollinator-garden-helps-rebuild-local-ecosystem-after-2022-flood-and-heat-dome/>

SLUEC Associate Professor, **Dr. Stefania Pizzirani** spent the summer on several fieldtrips collecting data for the “Forest Systems and Wellbeing” project which is a collaboration between UFV and the Stó:lō Research and Resource Management Centre (SRRMC). The UFV project team includes **Dr. Stefania Pizzirani**, **Dr. Mariano Mapili**, and **Steve Marsh** all from SLUEC as well as two students, **Abbey Riddolls** and **Aiden Haagenen**. They are determining the variations in soil and water quality in old growth vs regrowth forests surrounding Chilliwack Lake.

**Dr. Ian Affleck**, Associate Dean, Science Rocks Coordinator, **Dr. Robin Endelman** from Math & Stats, and their team of volunteers participated in the STEM Zone at the 2022 Abbotsford International Airshow. They showcased many of our science outreach programs including Science Rocks! Summer Camps, Math Challengers, and the Fraser Valley Regional Science Fair. <https://blogs.ufv.ca/science/2022/08/16/science-rocks-at-the-2022-abbotsford-airshow/>

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

Dowd, G.C., Chong, G., Lee, L.E.J., Bols, N.C. (2022). Isolation and characterisation of a muscle-derived cell line obtained from Australasian snapper (*Chrysophrys auratus*). *In Vitro Cell Dev Biol Anim* 58 (suppl 2): A-3008. Presented at the *In Vitro Biology Meeting*. San Diego: June 4-7.

**Enns, Cherie C.** and Kombe, Willibard J. *Child Rights and Displacement in East Africa* 1st Ed. New York, Routledge, September 1, 2022. ISBN 9781003187820

**Garaschuk, K.** (2022). Learning benefits of collaborative exams. *Journal for Research and Practice in College Teaching*, 7(1), p. 42-55.

Goldbach, R., Lee, J.B., Bols, N.C., Lee LEJ (2022) Explant Cultures of Rainbow Trout Olfactory Rosettes (ORs): Cell Outgrowth, Degeneration, Propagation, and Characterization. *In Vitro Cell Dev Biol Anim* 58 (suppl 1): A-2003. Presented at the *In Vitro Biology Meeting*. San Diego: June 4-7.

Hirabayashi, K., Murch, S.J., **Erland, A.E.** (2022). Predicted impacts of climate change on wild and commercial berry habitats will have food security, conservation and agricultural implications. *Science of The Total Environment*, 845. <https://doi.org/10.1016/j.scitotenv.2022.157341>.

Issac, J., Newell, R., Dring, C., White, C., Ghadiri, M., **Pizzirani, S.**, and **Newman, L.** (2022). Integrated sustainability planning and local food systems: Examining areas of and gaps in food systems integration in community sustainability plans for municipalities across British Columbia *Sustainability* 14(11), 6724; <https://doi.org/10.3390/su14116724>

**Janmaat, A.F.**, Fung, V., Rempel, C., Quik, R., Kabaluk, T., and Cory, J. (in press) Lack of avoidance of the fungal entomopathogen, *Metarhizium brunneum*, by male *Agriotes obscurus* beetles. *Journal of Invertebrate Pathology*.

**Janmaat, A.F.**, Koch, D., and Kabaluk, T. (2022) Are *Metarhizium brunneum* conidia transferred between male and female, *Agriotes obscurus*, adults? *Biocontrol Science and Technology*, DOI: [10.1080/09583157.2022.2085244](https://doi.org/10.1080/09583157.2022.2085244)

Kelly, H.M., Chen, S., Tam, Y.Y.C., **Varankovich, N.**, Gill, S., Lee, L.E.J., and LEE, J.B. (2022). The Investigation of LNP-siRNA Formulations for Rainbow Trout Fish Cell Lines Through the Examination of Cellular Uptake and Reporter Gene Knockdown In Vitro. *In Vitro Cell Dev Biol Anim* 58 (suppl 1): A-2008. Presented at the *In Vitro Biology Meeting*. San Diego: June 4-7.

**Lee, L.E.J.** (2022). Developing cell lines from fish and shellfish - cellular aquaculture invitromatics. *In Vitro Cell Dev Biol Anim* 58 (suppl 2): A-1007. Presented at the *In Vitro Biology Meeting*: San Diego: June 4-7.

Leung, E., Tremblay, C., Liao, D., **Huang, L., Sun, S.Z.**, and Ko, J. (2022). Treatment patterns and outcomes of patients with locally advanced vulvar or vaginal cancer in British Columbia. *Medical Oncology (ESMO) Congress*. Paris: September 9-13.

Sharma, A., Mejia, K., Ueno, H., Zhou, W., **Chiang, L.** (2022). Copper complexes of strongly electron rich and deficient salen ligands. *Inorganica Chim Acta*, 542, DOI: [10.1016/j.ica.2022.121106](https://doi.org/10.1016/j.ica.2022.121106)

**Pizzirani, S.** (2022) HyFlex challenges, opportunities, and advice. *NorQuest College faculty training* (invited speaker), August 24.

Pritchard, D.T., Alfred, A., Bols, N.C., **Lee, LEJ** (2022) Exploring the actions of reactive nitrogen compounds on rainbow trout through fish epithelial cell line models and strategic integration of open-source computational tools. *ISTA20* Saskatoon: Aug 15-18. <https://conferences.usask.ca/ista2022/abstract-book1.pdf>, pg. 17.

Pritchard D.T., Braley, E.F., Pumputis, P.G., Dayeh, V.R., Bols, N.C., **Lee, L.E.J.** (2022). Effects of Sodium Butyrate and D-and L-lactate on Rainbow Trout Intestinal Epithelial Cells *In Vitro Cell Dev Biol Anim* 58 (suppl 1): A-2002, presented at the *In Vitro Biology Meeting*. San Diego: June 4-7.

**Spooner, J. and Weinberg, N.** (2022). High Pressure Energy Surfaces and Profiles. Presented at the *12th Triennial Congress of the World Association of Theoretical and Computational Chemists*, Vancouver: July 3-8.

Van Woudenberg, K.N., Chen, S., Tam, Y.Y.C., **Lee, L.E.J., Lee, J.B.** (2022). Investigation of Endocytic Mechanisms of Lipid Nanoparticles (LNP-siRNA systems) into Rainbow Trout Fish Cells in Vitro. *In Vitro Cell Dev Biol Anim* 58 (suppl 1): A-2009. Presented at the *In Vitro Biology Meeting*. San Diego: June 4-7.