

Message from the Associate Vice President  
Research, Engagement & Graduate Studies

Applied research at the University of the Fraser Valley is a strategic approach to enabling us to achieve our institutional goals of community engagement, providing experiential learning opportunities for students, and developing new knowledge that enhances understanding and provides a net benefit to society. UFV's nine centres and two institutes make significant contributions to UFV's mission of engaging learners, transforming lives and building community. In this past year, all of the research centres and institutes have secured external funding, added to their long list of community and international partnerships, disseminated their research through both conventional and innovative media, provided students with applied research opportunities, and have created new knowledge and understanding in response to the needs of our world.

Students are the primary focus at UFV and they comprise a significant proportion of the research labour and applied learning. This past year, UFV research centres and institutes provided paid research assistant positions for 77 UFV undergraduate students. In addition, there were 5 Masters students, and 12 PhD students that worked with researchers at various centers, providing excellent mentoring opportunities for UFV undergrads. Student research assistants made significant contributions to environmental plans, digital archives, web and graphic design, film making, lab-based activities, and work place assignments with a variety of partners throughout the region.

The student positions and the costs of the research activities are made possible primarily by funding from external sources. In the past year alone, UFV research centres and institutes secured more than \$2.1 million in funding, in addition to the more than \$2 million received in previous years for multi-year projects, and as co-investigators with UFV research chairs. Funding sources ranged from research contracts with not-for-profits, government agencies, industry partners and research grants from government, foundations, and the prestigious Tri-Council funding agencies of SSHRC, NSERC, and CIHR.

The majority of the funded research projects referenced above are the result of collaborations with community organizations, government agencies or industry partners. Currently, UFV's centres and institutes have 164 partners, and while some are international partnerships, the majority of them are located within the lower mainland region. These partnerships are key to meeting the needs of UFV's communities, and to providing excellent networking and work experience opportunities for students that want to find employment within their area of study. Partnerships also demonstrate to the community, industry and government, that UFV's teaching and research activities are current, valued and responsive.

We also find a variety of ways to communicate research results that include conventional peer reviewed publications, film, symposia, exhibitions, reports, books, workshops, and media interviews in newsprint and television. Overall, the activities of UFV centres and institutes produced 51 publications, 90 presentations, more than 30 news media interviews, two films and several exhibits.

Overall, UFV's research centers and institutes have put UFV on the academic map through their partnership building, investment in student learning, and nationally recognized expertise. The success of this past year is due to years of building a strong foundation, and I invite you to read further to learn of the ambitious plans for each institute in the coming year.

Respectfully submitted,



Dr. Garry Fehr

AVP, Research, Engagement, and Graduate Studies

<https://www.ufv.ca/research/>

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## Food and Agriculture Institute (FAI)

Lenore Newman, Director

May 2020 – April 2021

<https://www.ufv.ca/food-agriculture-institute/>

### Purpose

The Food and Agriculture Institute at UFV conducts research in the areas of food policy and agricultural innovation to foster sustainable intensive agricultural systems. We specialize in research that is regionally based and globally applicable, partnering with researchers, industry leaders and governments to ensure that British Columbia's food and agricultural systems continue to thrive. We involve students in our research programs, contributing to the development of tomorrow's food and agricultural leaders.

The vision of the FAI is building tomorrow's food systems.

The FAI is currently focused on agricultural land use policy, vertical agriculture, and cellular agriculture.

### Membership

The revised internal associate list for FAI currently includes Cherie Enns, Mariano Mapili, Jonathan Hughes, Stefania Pizzirani, Renee Prasad, and Michelle Superle. Our new external advisory includes Dr. Evan Fraser (Guelph), Isha Datar (New Harvest), Bill Vanderkooi (Nutriva), and Brian Coombs (CEPCO). There were also changes in our research staff; Zsofia Mendly-Zambo (York) is leaving, but Katherine Newman (UVic) is joining as a PhD researcher, and Evan Bowness (UBC) is joining as an incoming Postdoctoral Scholar. Dr. Lenore Newman, Dr. Rob Newell, Colin Dring, and Charmaine White remain in their current roles.

### Partnerships

- Agritech partnership with Dr. Evan Fraser, Director of the Arrell Institute at Guelph. Dr. Fraser is assisting FAI with various cellular agriculture projects. Multiple working reports and academic papers co-written by Arrell and FAI are in preparation or submission.
- ACARN: FAI is a member of the BC Agricultural Adaptation to Climate Change Steering Committee.
- BC Food Web: FAI is a member of the BC Food Web Advisory Committee.
- Dr. Newell is involved with the Local Food Economy Metrics Working Group organized by the Community Social Planning Council of Victoria.
- Cellular Agriculture partnership is with the NGO New Harvest on the FSC project. They are applicants on the FSC grant with FAI.
- Partnership with Cubic Farms and Nutriva Group. FAI completed a research report for Cubic Farms and Nutriva, and Dr. Newman is now chairing Cubic's Science Advisory Board.
- Dr. Newman is a co-applicant on a successful SSHRC Partnership Development grant with Dr. Tammara Soma of SFU's School of Resource and Environmental Management, "Digging into the Farm to School Movement".
- Collaboration with Quantotech on a Mitacs grant to explore ways of optimizing vertical farming in terms of operational costs, greenhouse gas emissions, and nutrient yield
- Dr. Newman is working with Dr. Rickey Yada at UBC Land and Food to prepare a whitepaper on agritech for the federal government.
- Collaboration with scholars at William Anglis University in Melbourne and the University of Melbourne (on hold during COVID-19 pandemic).

- Collaboration with the University of Victoria, Royal Roads University, and Island Health on a successful SSHRC Insight Grant to explore food systems through an integrated climate-biodiversity-health lens.
- Collaboration with the Fraser Valley Regional District and Royal Roads University on a successful SSHRC Partnership Engage Grant to explore food systems vulnerabilities and integrated approaches for addressing these vulnerabilities.
- Partnership with the BC Agricultural Research & Development Corporation (ARDCorp) to develop the Bertrand Creek Watershed Group Environmental Farm Plan.
- Collaboration with Waterlution in a successful grant application for a project that explores creative methods for disseminating research and information on water sustainability issues.
- Collaboration with the Public Health Association of BC on multiple proposals for research projects on integrated food systems planning.
- Partnership with iOpenTech, Archway Community Services, and Fraser Health on an Abbotsford food asset mapping project.
- Collaboration with the Delphi Group on proposals submitted to the BC Ministry of Agriculture, Food and Fisheries on a project that explores climate mitigation opportunities for the BC agriculture sector.
- Collaboration with Heriot-Watt University (Edinburgh, Scotland) on a grant application for a project that will explore tools for impact assessment and scenario planning in coastal areas.

### Students

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In the given reporting period student participation was down somewhat due to COVID-19. Student involvement is as follows:

- RA, Bertland Creek Project, Hayley Katan (UFV undergrad)
- RA, Bertland Creek Project, Taelyr Keeley (UFV undergrad)
- RA, Bertland Creek Project, Donovan Toews (UFV recent grad)
- Zsofia Mendly-Zambo (York PhD student)
- Katherine Newman (UVic PhD student)

This list includes direct participation, and does not include students employed by faculty research affiliates on their associated grants.

### Community Engagement

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As FAI focuses on applied research the institute engages extensively with stakeholders. During this year, this includes:

Abbotsford Tech District	Adaptation to Climate Change Team (SFU)
Agriculture Research and Development Corporation	Arrell Institute Guelph
BC Agricultural Climate Adaptation Research Network	BC Food Web
BC Ministry of Agriculture	Food and Fisheries
Bioenterprise	Biosphere Futures
Canadian Water Network	Cascadia Innovation Corridor
Cellular Agriculture Canada	City of Surrey
Community Social Planning Council of Victoria	CubicFarms
EcoDairy	Genome BC
Genome Ontario	Heriot-Watt University (UK)
iOpen Tech Group	Kwantlen Polytechnic University

New Harvest  
Perfect Day Foods  
RCI Science  
Ryerson University  
THRIVE agritech accelerator (SVG Ventures)  
Vancouver Island University  
Waterlution

Nutriva  
Public Health Association of BC  
Royal Roads University  
Terramera  
University of Victoria  
Vitalis  
Wildtype

FAI has had significant media exposure this year, including the following produced by FAI team members or reporters interviewing team members:

- Newman, Lenore. "As temperatures rise, Canada's farmers face an uncertain future." National Observer, 28 May 2020, <https://www.nationalobserver.com/2020/05/28/opinion/temperatures-rise-canadas-farmers-face-uncertain-future>.
- Fraser, Evan and Lenore Newman. "It's time to pivot Canada's food system into the 21st century." National Observer, 7 May 2020, <https://www.nationalobserver.com/2020/05/07/opinion/exploring-world-post-covid-digital-agricultural-renaissance>.
- Zeidler, Maryse. "B.C. food security report sparks debate on technology and agricultural land reserve." CBC News, 13 June 2020, <https://www.cbc.ca/news/canada/british-columbia/b-c-food-security-report-sparks-debate-on-technology-and-agricultural-land-reserve-1.5608661> [Article quotes Lenore Newman].
- Fraser, Evan and Lenore Newman. "The technologies - and thoughtful collaborations - that can build resilience in the food system after COVID-19." World Economic Forum, 23 June 2020.
- Fawcett-Atkinson, Marc. "Blueberries left to compost as COVID-19 hits B.C. agriculture sector." National Observer, 30 July 2020, <https://www.nationalobserver.com/2020/07/30/news/blueberries-left-compost-covid-19-hits-bc-agriculture-sector> [Article quotes Lenore Newman].
- Newman, Lenore. "Lost feast: Preventing species extinction at the dinner table." Alive, 19 October 2020, <https://www.alive.com/food/lost-feast/>.
- Gora, L. Sasha. Review of Lost Feast: Culinary Extinction and the Future of Food, by Lenore Newman. Gastronomica, vol. 20, no. 4, November 2020, pp. 109-110.
- Sileika, Antanas. "Antanas Sileika reviews two books that explore the connection between science and food." The Next Chapter, CBC Radio, 27 November 2020, <https://www.cbc.ca/radio/thenextchapter/full-episode-nov-28-2020-1.5814419/antanas-sileika-reviews-two-books-that-explore-the-connection-between-science-and-food-1.5814459> [Review of Lost Feast: Culinary Extinction and the Future of Food, by Lenore Newman].
- Newell, Robert. "What are nature-full cities?" National Environmental Treasure, 2020, <https://www.oursafetynet.org/2020/12/01/what-are-nature-full-cities/> [guest blog post].
- Zeldovich, Lina. "The chef preserving Canada's Indigenous identity." BBC Travel, 5 January 2021, <http://www.bbc.com/travel/story/20210104-the-chef-preserving-canadas-indigenous-identity> [Article quotes Lenore Newman].
- Nguyen, Alex. "How BC's fruit farming industry could go for gold again." The Tyee, 11 January 2021, <https://thetyee.ca/News/2021/01/11/BC-Fruit-Farming-Industry-Gold/> [Article quotes Lenore Newman].
- Basu, Brishti. "An Island couple is only eating food they harvest, but you probably shouldn't do the same." The Tyee, 29 January 2021, <https://thetyee.ca/News/2021/01/29/Island-Couple-Eating-Only-Food-They-Harvest/> [Article quotes Lenore Newman].

- Newman, Lenore and Evan Fraser. “3 technologies poised to change food and the planet.” The Conversation, 18 February 2021, <https://theconversation.com/3-technologies-poised-to-change-food-and-the-planet-153852>.
- Newman, Lenore. Interview on agricultural technology. CHQR 770 AM Calgary, 22 February 2021.
- Newman, Lenore. Interview on agricultural technology. ELMNT 106.5 FM Toronto, 3 March 2021.
- Lypka, Ben. “UFV Food and Agriculture Institute receives grant to explore future of food.” The Abbotsford News, 8 April 2021, <https://www.abbynews.com/news/ufv-food-and-agriculture-institute-receives-grant-to-explore-future-of-food/>.
- Fraser, Evan and Lenore Newman. “Enabling the digital agricultural revolution.” Policy Options, 23 April 2021, <https://policyoptions.irpp.org/magazines/april-2021/enabling-the-digital-agricultural-revolution/>.

## Funding

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### External Funding

- SSHRC Partnership engage grant, “Vulnerabilities and the future of food” – \$25,000, Year 1 of 1
- Future Skills Centre, “Viability of localized cellular agriculture” – \$235,000, Year 1 of 2
- SSHRC Insight, “The Climate-biodiversity-health nexus” – \$100,000, Year 1 of 2
- Abbotsford Tech District, “Agritech incubator study” – \$48,000, Year 1, completed
- Healthy Watersheds Initiative (Real Estate Foundation of BC and Watershed BC), “Bertrand creek plan” – \$63,500, Year 1, completed
- Genome Ontario, “Cellular agriculture” – \$25,000, Year 1
- Real Estate Foundation, “Innovative crop research” – \$105,000, Year 4 of 4, completed
- Marine Environmental Observation, “Prediction and Response (MEOPAR)” – \$35,000, Year 1 of 1

### Donor Update

- Pimm’s Greenhouses, “ALR research support” – \$25,000, one-time, received
- Anonymous, “Agritech research support” – \$500,000, Year 1 of 2, first installment September 2021

## Research

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The FAI has completed the following projects:

Hydroponic fodder and greenhouse gas emissions (completed 2020) - This project explored the potential hydroponic systems have for contributing to climate mitigation in fodder agriculture.

Bioengineering, telecoupling, and alternative dairy (completed 2020) - This project employed the concept of telecoupling, which refers to socioeconomic and environmental interactions over distances, to examine the potential cellular dairy may have for contributing to sustainable food production and consumption in BC, specifically by exploring three policy scenarios: (1) incentives for the growth of a cellular dairy industry, (2) cellular dairy incentivization with eco-certification, and (3) cellular dairy incentivization with local sourcing of feedstock.

Bertrand Creek Group Environmental Plan (completed 2021) – This project involved a collaboration between Agriculture Research and Development Corporation (ARDCorp) and the FAI to investigate the possibility/feasibility of establishing a Group EFP for the Bertrand Creek watershed, with the objective of addressing water quality issues in Bertrand Creek.



Incubators, accelerators, and agricultural technology and innovation (completed 2021) – This project explored the opportunities and challenges related to agritech incubators/accelerators, providing insight into the potential benefits to Canada’s agritech sector and guidance on how best to increase this capacity, particularly within BC and the Fraser Valley.

Innovative crop research (completed 2021) - This project was completed as a collaboration between the FAI (led by Lisa Powell) and Renee Prasad in the Department of Agriculture. Various crops including okra and sweet potato were put to trial over several seasons and feedback was gathered from stakeholders in the community and the ministry of agriculture.

## **Publications, Presentations and Reports**

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### **Publications**

Newell, Robert, and Ann Dale. "COVID-19 and climate change: an integrated perspective." *Cities & Health* (2020): 1-5.

Newell, Robert, and Ian Picketts. "Spaces, Places and Possibilities: A participatory approach for developing and using integrated models for community planning." *City and Environment Interactions* 6 (2020): 100040.

Newell, Robert, et al. "Communicating complexity: interactive model explorers and immersive visualizations as tools for local planning and community engagement." *FACETS* 6.1 (2021): 287-316.

Newman, Lenore, et al. "Bioengineering, telecoupling, and alternative dairy: Agricultural land use futures in the Anthropocene." *The Geographical Journal* (2021).

Newell, Robert, et al. "Hydroponic fodder and greenhouse gas emissions: a potential avenue for climate mitigation strategy and policy development." *FACETS* 6.1 (2021): 334-357.

Jost, François, et al. "Climate action assessment in three small municipalities in British Columbia: advancements vis-à-vis major neighboring cities." *Current Research in Environmental Sustainability* 2 (2020): 100010.

Jost, F., et al. "Evaluating development path changes using a novel climate action assessment framework in three municipalities in British Columbia, Canada." *Environmental Science & Policy* 114 (2020): 410-421.

Jost, F., R. Newell, and A. Dale. "CoLabS: A collaborative space for transdisciplinary work in sustainable community development." *Heliyon* 7.2 (2021): e05997.

Mendly-Zambo, Zsofia, Lisa Jordan Powell, and Lenore L. Newman. "Dairy 3.0: cellular agriculture and the future of milk." *Food, Culture & Society* (2021): 1-19.

Goudine, Alexei, Robert Newell, and Christopher Bone. "Seeing Climate Change: A Framework for Understanding Visualizations for Climate Adaptation." *ISPRS International Journal of Geo-Information* 9.11 (2020): 644.

Newman, Lenore. "The Promise and Peril of "Cultured Meat"." Green Meat?: Sustaining Eaters Animals and the Planet, edited by Ryan M. Katz-Rosene and Sarah J. Martin (2020): 169-184.

### **Presentations**

Newell, Robert. "Systems thinking and integrated community planning." Waterlution: Water Innovation Lab, 23 July 2020, online.

Newman, Lenore. "Cellular agriculture research: The future of food in Canada." City Age: The Future of Food, 10 September 2020, online.

Newman, Lenore. "Presentation to BCAC Board of Directors." BC Agricultural Council, 15 September 2020, online.

Newell, Robert. "Spaces, places and possibilities." RCI Science Event Series, 17 September 2020, online.

Newman, Lenore. "The future of agriculture." Abbotsford Science Talks, 6 October 2020, online.

Newman, Lenore. "Agricultural technology in the university." Abbotsford Tech Summit, 21 October 2020, online.

Newman, Lenore. "Lost Feast." Toronto Food Film Festival, 24 October 2020, online.

Newman, Lenore. "Growing stronger with cellular agriculture." Ontario Genomics and the Arrell Food Institute, 27 October 2020, online.

Newman, Lenore. "Cellular dairy." Science One at UBC, 9 November 2020, online.

Lenore Newman. "Growing stronger." 3rd Annual Arrell Food Summit, 18 November 2020, online.

Newell, Robert. "COVID-19 and climate change: Community vulnerability and the integration imperative." 4th Healthy City Design 2020 International Congress, 1 December 2020, online.

Newell, Robert. "Visualizing climate change impacts and environmental change in coastal protected areas." Living Lab for Climate Change and Conservation Program 4th Research Colloquium, 1 December 2020, online.

Newell, Robert. "Exploring the potential of visualization tools for food systems and agricultural land-use planning." Climate Adaptation Research for BC Agriculture, 2020 Provincial Workshop, 9 December 2020, online.

Newell, Robert. "Pursuing co-benefits to advance water management." Canadian Water Network, 26 January 2021, online.

Lenore Newman. "The future of food in an uncertain world." Environment Canada, 26 January 2021, online.

Lenore Newman. "Dairy 3.0: Cellular agriculture and the future of milk." SFU and Douglas College, 10 March 2021, online.

Lenore Newman. "Food, space and re-imagination." Yield Lab, St Louis, 13 April 2021, online.

Lenore Newman. "Lost Feast." Science Friday, 20 April 2021, online.

### **Reports**

Newman, L et al. Incubators, Accelerators, and Agricultural Technology: Opportunities for the Fraser Valley, BC. Prepared for the Abbotsford Innovation District (2021).

Melynychuk, D. et al. Bertrand Creek Watershed Group Environmental Farm Plan. Prepared for the BC Agricultural Research & Development Corporation (2021).

### **Plans for the upcoming year**

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The coming year will involve building research within our three areas of focus.

1. Cellular agriculture: The launch of the Artemis Project in September of 2021 will begin building a program of research funded by our anonymous donor. The FAI will rapidly become one of the largest cellular agriculture research groups in North America. We will also complete our contract with Genome Ontario to produce a cellular agriculture white paper for the federal government. The FSC project will continue to develop, with Evan Bowness leading day to day operations.
2. Agricultural land use policy: As Lenore Newman's work with the BC government continues, the FAI will develop a new direction of research looking at how land use must adapt to new technologies. Colin Dring will lead this area, and renewed partnerships will be made with industry and municipal government. In addition, Lenore Newman will renew her collaborations with her Australian collaborators if COVID-19 permits.
3. Vertical agriculture: Work will continue with Quantotech, plus Dr. Newman will continue to work with Avery Farms and Cubic Farms. Another company is exploring work on vertical strawberries. FAI's work in this area is hindered by a lack of personnel and facilities at UFV. FAI has initiated discussions with the AVP REGS regarding the potential for fundraising for controlled environment research space. Though the FAI's work in vertical agriculture is still evolving, there is considerable interest and potential in this subject area within our region.

## South Asian Studies Institute (SASI)

Satwinder Bains, Director

May 2020 – April 2021

<https://ufv.ca/sasi/>

### Purpose

The South Asian Studies Institute (SASI) at the University of the Fraser Valley brings together South Asia scholars and students from diverse backgrounds and disciplines to create a nexus point for programs and activities that support our vision. The Institute fosters interdisciplinary scholarly research, community and public engagement on issues of South Asia and the Canadian South Asian Diaspora - [www.ufv.ca/sasi](http://www.ufv.ca/sasi) & [www.southasiancanadianheritage.ca](http://www.southasiancanadianheritage.ca).

### Membership

SASI is guided by the South Asian Community Advisory Committee (SACAC), whose membership is appointed by the President and Vice-Chancellor of UFV. The role of the SACAC is to provide general advice to the university on the ongoing activities of the South Asian Studies Institute, the Canada-India Studies program, and the work of the BC Regional Innovation Chair in Canada-India Partnership Development. Current information about our advisory committee can be found by visiting the [SACAC webpage](#).

Faculty who teach in the Canada India Studies Program are appointed as Faculty Associates to the SASI by the Director. Their participation in joint research activities and in collaborative work supports the SASI research mandate.

### Partnerships

#### Canada Partners

- Abbotsford Community Foundation
- Abbotsford Historical Book Association
- Baltej Singh Dhillon
- BC Historical Federation
- BC Labour Heritage Centre
- Chetna Association
- Community Health and Social Innovation (CHASI) HUB
- Cowichan Valley Museum and Archives
- Cross Connect Media
- Dr. Kanwal Singh Neel
- Fraser Valley Indo Canadian Business Association
- Henna Mann Films
- Heritage BC
- Ismaili Centre, Burnaby
- Khalsa Diwan Society, Abbotsford
- Lantern Films
- Museums and Heritage Services Anvil Centre, New Westminster
- OMNI TV
- Open School BC
- Paneet Singh Films

- Peace and Reconciliation Centre, UFV
- Poetic Justice Foundation
- Rogers Media
- SFU Library
- The Reach Gallery Museum, Abbotsford
- The Royal BC Museum
- UBC Sociology Department
- University of Alberta – Kule Institute for Advanced Study
- Vancouver Maritime Museum
- Various Museums, Libraries, Archives and Galleries across BC

#### **International Partners**

- Guru Nanak Dev University (GNDU)
- Northumbria University, Newcastle, UK
- Panjab University, Chandigarh
- Punjabi University, Patiala
- Sanatan Dharma College, Chandigarh (UFV Campus in Chandigarh)
- Shastri Indo-Canadian Institute
- St. Bede's College, Shimla
- The University of Mumbai's Centre for Indo-Canadian Studies

#### **Students**

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- Shan Dhaliwal BBA, Research Assistant: Website development and digital content strategy
- Sadhvi Suri BCIS, Co-op Research Assistant: Digital Asset Technician and Assistant Web Developer for South Asian Canadian Digital Archive (SACDA)
- Imroze Singh Deol BGD, Research Assistant: Development of graphics for the We Are Hockey exhibit
- Jordan Rumsey BA, Research Assistant: Statement of Significance for the National Historic Site Gur Sikh Temple
- Harpreet Singh BBA, Research Assistant: South Asian Canadian Legacy Project (SACLP)
- Varun Chadha BBA, Research Assistant: Research of 15 historical sites in BC and event planner for Golf Day
- Gautam Ghai BCIS, Research Assistant: UI/UX designing of Canadiansikhheritage.ca website
- Dhanshree Shetye BCIS, Work Study: Designing and updating the webpages on SASI research
- Arshdeep Sandhu BCIS, MITACS Intern: Configured Collective Access and UX preparations
- Amanjot Dhaliwal BA, Research Assistant: Researched models for the South Asian Canadian Museum
- Tim Ubels LIBIT practicum: SACDA archival digitizing, cataloguing, and thesaurus construction
- Ben Arends LIBIT practicum: SACDA archival digitizing, cataloguing, and thesaurus construction
- Simran Chabba BBA, Work Study: Research on MV Sun Sea ship that brought 492 Sri Lankan refugees to BC

#### **Community Engagement**

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**South Asian Canadian Legacy Project:** Historic Sites of BC - Two short films premieres, OSBC consultations with teachers and administrators in the K-12 system, BC Labour Heritage Centre consultations with labour leaders.

**CRRP:** consultations with sports programs that aim to prevent youth from getting engaged in crime

**SASI Symposium 2020:** Caste, Diaspora & Future with Dr. Suraj Yengde

**SASI Lecture Series on Caste:** Farmers' Movement and Emerging Solidarities in Rural Punjab

**SASI:** Permanent Installation of Komagata Maru Exhibit at the Sikh Heritage Museum

**Haq and History:** Exhibit travels to various schools in the Abbotsford School District

**Advisory for Upcoming Exhibit:** At the Reach Gallery Museum Abbotsford – South Asian in the Valley

### Funding

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- BC Museums Association – Family Day 2020 \$1,000.00
- BC Historical Federation 2020 \$4,000.00
- Crime Reduction Research Program 2020 \$97,000.00 – year 2
- Province of BC Ministry of Multiculturalism 2020/21 \$1,140,000.00 – year 2
- Heritage BC 2020 \$1,200.00
- Vancouver Foundation Yosef Wosk Grant 2020 \$2,000.00
- MITACS 2020 \$5,000.00
- Heritage BC (Heritage legacy Fund) 2020 \$1,266.00
- UFV Work Study 2020-2021 – two work study positions
- BC Arts Council Infrastructure \$6,720.00
- BC Arts Council (Covid Support Grant) 2021 \$18,000.00
- Vancouver Heritage Foundation (KGM Catalogue) 2021 \$2,000.00
- UFV- Accelerate Grant \$2,015.00
- UFV PARC Farmers Movement 2021 \$3,000.00
- BC Arts Council Resilience Supplement Award \$2,000.00
- Canadian Council of Archives 2021 \$17,177.93
- BC History Digitization Centre Program 2021 \$9,978.00
- South Asian Research Fellowship (Farmers Movement) \$3,000.00

### Research

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- Two films for the South Asian Canadian Legacy Project (SACLP):
  - <https://www.youtube.com/watch?v=6t6s8g7KqIk>
  - <https://www.youtube.com/watch?v=br3BA5cckRo>
- Komagata Maru Exhibit Catalogue:
  - <http://canadiansikhheritage.ca/komagata-maru-2/>
- History of Abbotsford's Fraser River Crematorium

### Publications, Presentations and Reports

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1. Stirling B., Suryaprakash, N., Sawatzky, R., Mulldoon, M., Le Mercier, M., Moorthy, D., Gandhi, R., Bains, S., Li, L., Doyle-Waters, M., Brown, S., Goldsmith, L. (2020). Research agenda to improve patients' experience of knee replacement surgery: a patient-oriented modified Delphi study of patients of South Asian origin in British Columbia. *CMAJ Open* 2020. <http://cmajopen.ca/content/8/1/E226.full>.
2. Bains, S. (Winter 2020). Guest editor. *BC history*. British Columbia Historic Federation.
3. Bains, S. (Winter 2020). *The persevered and built a community*. BC History.
4. Sandhra, S. "Decolonized Then, Now and Forever." *BC Museums Association RoundUp*. September 2020.

5. Sandhra, S. "It Is Time for Change, Reflections from Sikh Women in Sikh Studies." *Baaz News*. January 18th, 2021.
6. Claxton, Nicholas XEMFOLTW, Denise Fong, Fran Morrison, Christine O'Bonsawin, Maryka Omatsu, John Price, and Sharanjit Kaur Sandhra. *Challenging Racist "British Columbia": 150 Years and Counting*. February 2021.
7. Claxton, Nicholas and Sharanjit Kaur Sandhra. "A New Book that Challenges Racist 'British Columbia.'" *The Tyee*. February 26, 2021.
8. Sandhra, S. "White Allyship: An Exercise in Fearlessness." *Visions: BC's Mental Health and Substance Use Journal*. Vol. 16, No. 3. February, 2021.

### Presentations

1. Bains, S. (June 2020). *Realities of Future Methods - Lessons and Learning: Practices of Inclusion in and beyond the Punjabi Canadian Legacy Project*. Association of Critical Heritage Studies. London, United Kingdom.
2. Bains, S. *Sikh Identity in Transition*. Discussant on book launch. University of Mumbai. Oct 2020.
3. Bains, S. (Nov 2020). Ted X Abbotsford. *How do perceptions affect our ideas of the world?*
4. Bains, S. Sikh Archives. Podcast – *Sikh feminisms*. <https://www.patreon.com/sikharchive>. Dec 2020.
5. Bains, S. (Feb 2021). *Threading Social Justice Perseverance into the Archive*. Chesapeake Digital Humanities Consortium.
6. Bains, S. (March, 2021). Keynote address at the Space, Narratives, and South Asian Canadian Diasporic/Transnational Experiences conference. *The perennation of Diaspora: loss, survival, recovery, recollection and response*. Mumbai University.
7. Bains, S. (March, 2021). Missing and unseen: Missing Women and the Media. Event for International Women's Day. *Media and Bias against women*. UFV Student Services.
8. Bains, S. (April 2021). *Conversations in Sikh Studies*. Sikh Foundation CA, USA.
9. Bains, S. (May 2020). BC Studies. *Relegated to the margins – resurrected Sites as places of knowing*.
10. Sandhra, S. Speaker. "#MuseumsAreNotNeutral: White Supremacy in Museums and Calls to Immediate Action." BC Museums Association. June 24, 2020.
11. Sandhra, S. Speaker. "Racialized Histories and Archival Erasures: South Asian History in British Columbia." Friends of Archives BC. July 2020.
12. Sandhra, S. Presenter. "RBCM@Home Sikh Heritage Museum." Royal BC Museum Series. September 15, 2020.
13. Sandhra, S. Presenter. "Building Anti-Racist Capacity." *2020 City of Richmond Virtual Diversity Symposium*. October 21, 2020.
14. Sandhra, S. Speaker. "Decolonized Museums and Sikh History in Canada." *Ramblings of a Sikh Podcast*. February, 2021.
15. Sandhra, S. Speaker. "The Dos and Don'ts of Anti-Racist Work in Museums." Museum of Surrey Anti-Racism Talks. February 26, 2021.
16. Sandhra, S and Lucy Bell. Speakers. "Not Without Us: Fostering Spaces of Belonging in Museums." Alberta Museums Association March Conference Series. March, 2021.
17. Sandhra, S. Co-speaker. "The Future of Sikh Studies." *Clubhouse*. April 9th, 2021.
18. Sandhra, S. Co-panelist. "Farmers Protest: Why it Matters." Royal BC Museum. April 27th, 2021.
19. Soni, K: Panelist at *Virtual Opening of Exhibition: Komagata Maru: Discrimination Meets Determination*: April 14th, 2021.
20. Soni, K: Panelist at *Sahirana: A commemoration of the poet's life and work – online conference* March 6-8, 2021.
21. Cindy Jardine, Kusum Soni, Marinel Kniseley, Sherry Wang, S. Michelle Driedger: Covid-19 data collection challenges and considerations with engaging priority populations. Presented at Covid-19

and Public Health Forum (Virtual), April 21-22, 2021. <https://youtu.be/H3a9qXBScUM> and <https://www.cpha.ca/covid-19-and-public-health-forum-program>.

22. Cindy Jardine, Kusum Soni, Marinel Kniseley, Sherry Wang: *A conversation on engaging communities in COVID-19 research and vaccine discussions*. Presented at BC COVID-19 Vaccine Communications Collaboration and Networking Workshop: April 7, 2021. The BC COVID-19 Strategic Research Advisory Committee <https://youtu.be/H3a9qXBScUM> and <https://www.mschr.org/our-work/covid-19-vaccine-communications-workshop>.

### Plans for the upcoming year

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1. South Asian Canadian Legacy Project: Social history of South Asian Canadians in BC. Labour movement and South Asian Canadians; Curriculum development for K-12; South Asian Digital Archive; Travelling exhibit on South Asian Canadian history and subsequent Province and nation wide communication.
2. CIHR Project on COVID-19 –Effects of Outbreaks on Temporary Foreign Agricultural Workers in BC.
3. The SASI is contributing five chapters on South Asian Canadian history/biographies to a book titled *A Diverse Tapestry* with a number of local community authors.
4. The SASI has received interest for its ‘Haq and History’ exhibit (based on three-year Punjabi Canadian Legacy Project work with the Royal BC Museum) to travel to the following locations: Museum of Surrey, Surrey Libraries, and local schools in the Abbotsford School District.
5. Curating exhibit of Oceans of Peace in partnership with the Anvil Centre in New Westminster.
6. Working paper series on the Farmers Movement in India and the Diaspora’s response.
7. Podcast Review for BC Studies of *Nameless Collective*.
8. Co-presenting with SACLP team: BC Library Association conference presentation.
9. Presenting for the BC Council for International Education pre-conference symposium.
10. Keynote panelist at the Asian Heritage Month at the Privy Council Office.
11. “Gender and South Asia,” the *South Asian Diaspora Journal* has accepted seven papers from SASI for a special edition of the Journal in the Fall of 2021 with special edition editor Dr. Satwinder Bains.
12. Satwinder Bains will be speaking to the Privy Council of Canada on South Asian Canadian contributions to Canadian society as part of the Government of Canada’s commitment to equity, diversity and inclusion.
13. Dr. Bains is part of an Asian Heritage Month video on behalf of the National Film Board of Canada and the Department of Canadian Heritage.
14. Dr. Bains is a member of the steering committee on the National Conversation on Anti-Asian hate, hosted by UBC - #stopasianhate.
15. Dr. Bains is contributing to Destination BC’s social media campaign on Asian heritage sites as part of Asian Heritage Month to raise awareness about the racialized histories of the Asian historic sites and educate for tourism in the summer. The National Historic Site Gur Sikh Temple, Abbotsford BC will be a part of this campaign.
16. Bains, S. (In press 2021). Editor. Social History of South Asian Canadians in BC. *South Asian Studies Institute*.
17. Bains, S. (In Press 2021). Editor Special issue. Gender and South Asia. *South Asian Diaspora*.
18. Bains, S. & Sandhra, S. (In Press 2021). The right to speak: academic freedom and South Asian scholarship in North America. *South Asian Diaspora*.
19. Bains, S. (June 2021). *The collision of power and protest in the farmer’s movement in India*. KPU’s Family, Diaspora, and Resistance: The Indian Farmers Movement.
20. Golf Tournament July 24 to raise funds for the South Asian Research Fellowship.



21. Applied for the Governor General's International Award in Canadian Studies 2021 <https://www.iccs-ciec.ca/governor-general-international-award-canadian-studies.php>.

## Centre for Education and Research on Aging (CERA)

**Shelley Canning, Director**

<https://www.ufv.ca/aging/>

May 2020 – April 2021

### **Purpose**

The mission of CERA is to promote collaboration within UFV and the Fraser Valley community around issues related to ageing. CERA's goals include providing multidisciplinary educational opportunities in ageing studies for both UFV students and the Fraser Valley community. CERA members seek to foster relationships and facilitate ongoing exchanges of information on the ageing process between UFV and Fraser Valley communities. Finally, CERA members are actively engaged in collaborative and multidisciplinary studies related to aging research.

### **Membership**

Director:

- Shelley Canning – Nursing

Members:

- Darren Blakeborough (Social, Cultural & Media Studies)
- Michael Corman (Sociology)
- Andrea Hughes (Psychology)
- Lesley Jessiman (Psychology)
- Gabriel Murray (Computer Information Systems)

### **Partnerships**

- CANARY group UBC (associated with dementia assessment using speech and eye-tracking study – Gabriel Murray)
- Centre for Addiction and Mental Health (Toronto)
- Community Health and Social Innovation (CHASI) HUB (Shelley Canning, Michael Corman, Lesley Jessiman, and Andrea Hughes)
- Chilliwack Healthy Community (includes 46 partner agencies in Chilliwack – Darren Blakeborough is the UFV representative and is on the Housing First Task Team and the Seniors Task Team)
- Compassionate Neighborhood Health Partners Society in Chilliwack (associated with study evaluating Intergenerational Program – Lesley Jessiman and Andrea Hughes)
- Elder College – associated with the following studies:
  - "Pen-Pals: Supporting intergenerational relationships during COVID19" by Shelley Canning, Darren Blakeborough, Michael Corman, Lesley Jessiman
  - "Nursing students and seniors: Using technology to maintain social connections during Covid19 studies" by Shelley Canning
  - Misperceptions of Elder Abuse as Functions of Ageism & Knowledge of Aging by Lesley Jessiman
  - Fear of Death & Spirituality by Lesley Jessiman
  - Loneliness and Social Isolation in the Face of COVID-19 by Andrea Hughes and Lesley Jessiman
  - Ageism & Fear of Death by Lesley Jessiman
- Esposito Family Centre for Innovation and Entrepreneurship

- Gerontological Nurses' Association of BC (collaborating partners in Podcast: "Gero Nurses: Tales from the Front" – Shelley Canning & Darren Blakeborough)
- Imagine Dance – Intergenerational dance company (associated with "Children's Experiences of an Intergenerational Dance Programme: A Follow Up Study" – Shelley Canning & Darren Blakeborough)
- McNally project for Paramedic research (associated with "Becoming a Medic" – Michael Corman and Shelley Canning)
- Neighbourhood Health Partners Society
- UBC CRPD (Centre for Research on Personhood in Dementia)

## Students

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1. Nicole Cusick (Research Assistant nursing student):  
Children's Experiences of an Intergenerational Dance Programme: A Follow Up Study  
Pen-Pals: Supporting intergenerational relationships during COVID19  
Nursing students and seniors: Using technology to maintain social connections during Covid19
2. Rosaley Klassen (Research Assistant nursing student):  
Pen-Pals: Supporting intergenerational relationships during COVID19  
Nursing students and seniors: Using technology to maintain social connections during Covid19
3. Jasleen Rakkar (Research Assistant psychology student):  
Social Isolation and Loneliness
4. Chelsey Perry-Ens (Work Study and Research Assistant psychology student)  
Perceptions of Elder Abuse (focus groups)
5. Hope Buchanan (Research Assistant psychology student)  
Misperceptions of Elder Abuse as Functions of Ageism & Knowledge of Aging
6. Regan Thompson (Research Assistant psychology student)  
Fear of Death & Spirituality
7. Bailey Cooper (Research Assistant psychology student)  
Ageism & Fear of Death
8. Michelle Grafton (Work Study sociology student):  
Becoming a Medic

## Community Engagement

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### Shelley Canning:

- Science Talks, April 6 - "Ageism: The Challenges of Staying Engaged and Included"
- Nurse and Nurse Practitioners of BC, December 2020 - "Optimizing Family Presence: Nurses' Role in LTC"
- Canadian Gerontology Nurses' Association, Sept 2020 - "Ageism"

### Michael Corman:

- Esposito Family Centre for Innovation & Entrepreneurship, April 2021: "Titrating the Ambulance: Interfacing work and technological "innovations" on the front lines of Emergency Medical Services"

- Northern Lakes College, Alberta, 2020: “Mental Health and Resiliency During Unprecedented Times”
- Faculty Workshop Series, UFV (with Adrianna Bakos), 2020: “Unprecedented Times”

**Lesley Jessiman:**

- Elder College & Building Community Engagement Program, 2021: “My Healthy Aging Brain”

**Funding**

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**Shelley Canning and Darren Blakeborough:**

- \$1720.00 (2021: Accelerate Research Fund - UFV) " Gero Nurses: Tales from the Front" Podcast collaboration with GNABC

**Michael Corman:**

- \$378,676.00 (2020-2024: CIHR # 428017) Co-Investigator, “Online Cognitive Behavioural Therapy for Substance Use Disorder: The impact of peer support.” (Lena Quilty, Principal Investigator, Centre for Addiction and Mental Health)
- \$5,974.00 (2020-2021: Research Accelerate Fund - UFV) Principal Investigator, “Becoming a medic: Exploring the social organization of health professions education in Emergency Medical Services”
- \$199,410.00 (2018-2020: Discovery Fund, Centre for Addiction and Mental Health) Co-Investigator, “Online Cognitive Behavioural Therapy for Addiction: Efficacy and Cost-Effectiveness in a Pragmatic Clinical Trial”

**Lesley Jessiman:**

- UFV Work Study Student Grants \$3,331.20

**Research**

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- Shelley Canning, dissertation research study: "Understanding the experience of emotional and social engagement for people with advanced dementia living in long-term care"
- Lesley Jessiman and Shelley Canning: "What do we Know About Elder Abuse? The Older and Younger Adult's Perceptions Voiced in a Focus Group Setting"
- Lesley Jessiman: "Misperceptions of Elder Abuse: An Examination of the Age of the Observer, the Abuse Type & the Dementia Status of the Victims"

**Publications, Presentations and Reports**

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**Presentations:**

Canning, S. (2021). Age-friendliness: promoting awareness and opportunities. Gerontological Nurses Association Annual Conference, Victoria, April 2021. (invited presenter)

Canning, S., and St-Martin E. (2021). Intergenerational pen pals: bridging social isolation through narratives. Canadian Gerontological Nurses' Association Conference, April 2021.

Drew, C., and Canning, S. (2021). Exploring the understanding and comfort levels of nursing students with medical assistance in dying (MAiD). Canadian Gerontological Nurses' Association Conference, April 2021. (poster presentation with a UFV nursing student)

Corman, M., and Grafton, M. (2021). *Becoming a medic: Exploring the social organization of health professions education in Emergency Medical Services*. Pacific Sociological Association, March 2021.

Hung, L., Gregorio, M., Jackson, L., Mann, J., Berndt, A., Wallsworth, C., Wong, L., Leitch, S., Gan, D., Canning, S., Chaudhury, H., and Phinney, A. (2020). *Creating a Dementia-Friendly Community for Social Inclusion: A Scoping Review*. Alzheimer's Association International Conference, Virtual Conference, July 2020. (poster presentation)

**Book Chapter:**

Corman, M. K. (2021). "Using Composites to Craft Institutional Ethnographic Accounts." Pp. 465-482 in *The Palgrave Handbook of Institutional Ethnography*, edited by P. Luken & S. Vaughan S. Palgrave Macmillan, Switzerland. [https://doi.org/10.1007/978-3-030-54222-1\\_24](https://doi.org/10.1007/978-3-030-54222-1_24)

**Publication:**

Canning, S. E. (2020). *Understanding the experience of emotional and social engagement for people with advanced dementia living in long-term care*. (Doctoral Dissertation, University of British Columbia. Retrieved from University of British Columbia: <http://hdl.handle.net/2429/76261>

**Plans for the upcoming year**

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All CERA members are planning to engage in the process of achieving "Age-Friendly University" (AFU) status for UFV through Dublin City University. This will entail undertaking an audit of current education programming and scholarship focused on ageing at UFV, followed by the development of programming and research initiatives that embrace the principles of AFU. Additionally, CERA members plan to continue to guest lecture in each other's classes sharing individual expertise and extending their multidisciplinary research relationships in their classrooms. Finally, individual members are planning to continue projects currently engaged in and initiate the following research studies/projects:

- Shelley Canning & Darren Blakeborough: launch podcast collaboration
- Promoting Dementia Awareness through Intergenerational Education and Partnerships
- Michael Corman & Shelley Canning: Exploring the New Normal on the Front Lines of Healthcare in Long Term Care During Covid19
- Andrea Hughes: Older & Younger Adults Memory for Experiences During a Pandemic; Health Care Support Workers Views on the Needs of Seniors in Long Term Care
- Lesley Jessiman: Linguistic Markers Associated with Perceptions of Elder Abuse
- Gabriel Murray: Dementia Assessment Using Speech and Eye-tracking; Linguistic Markers Associated with Perceptions of Elder Abuse

## Centre for Global Development (CGD)

**Edward Akuffo, Director**

<https://www.ufv.ca/gdi/>

May 2020 – April 2021

### **Purpose**

The Centre's vision is to work collaboratively and extend the practice of community development beyond the Fraser Valley region into the global context. To this end, the CGD promotes and encourages research and programs on sustainable human and community development in order to facilitate positive change. In concert with Canada's development priorities, the United Nations Sustainable Development Goals, and international human rights standards, the Centre focuses on these key areas:

1. Good governance, peace, justice and strong institutions
2. Children and development
3. Environmental sustainability
4. Education and training
5. Food security
6. Gender equality

### **Membership**

The Centre for Global Development is managed by the director and the management committee, (comprised of one associate of the CGD and an external member who provides oversight to ensure transparency and accountability). The director is appointed by the AVP Research, Engagement and Graduate Studies. The management committee provides advice and guidance on the CGD's activities, programs, strategic planning and plans for seeking funding for research activities. Associates of the CGD are UFV faculty and staff who are committed to teaching and research in the area of development in both the local and global contexts.

#### **Director:**

- Edward Akuffo

#### **Associates:**

- Cherie Enns
- Satwinder Bains
- Hayli Millar
- Stephen Piper
- Catherine Smith
- Stefania Pizzirani
- Jessica Price
- Jeffery Orr
- Geetanjali Gill

#### **Management Committee:**

- Edward Akuffo
- Stephen Piper
- Steven Schroeder

## Partnerships

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- South Asian Studies Institute (UFV)
- Centre for Rural Research and Industrial Development (India)
- Panjab University (India)
- Association of Universities and Colleges of Canada (Ottawa)
- International Centre for Criminal Law Reform & Criminal Justice Policy
- The World Scout Bureau – African Regional Office (Kenya)
- Institute of Human Settlements at Ardhi University (Tanzania)
- Developing Indigenous Resources (India)
- Shastri Indo-Canadian Institute (Delhi-Calgary)
- Radford University College (Ghana)
- Masinde Muliro University of Science and Technology (Kenya)
- Sri Lanka Centre for Development Facilitation (Sri Lanka)
- University of Ruhuna (Sri Lanka)
- UFV International Development Student Club
- Shanghai University of Finance and Economics (China)
- East Asian Institute (Singapore)
- Aga Khan University – East Africa Institute (Nairobi)
- UN Habitat (Nairobi)
- UNOPS(Nairobi)
- University of Nairobi

## Students

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- Brooke McLaughlin— United Nations, UN Habitat (currently UK)
- Natasha Knebelow—Ardhi University & City Lab; Dar es Salaam, Tanzania
- Ogechi Ukono—United Nations, UN Habitat (currently Nigeria)
- Taeyler Keeley— Center for International Forestry Research; Nairobi, Kenya
- Abbey Lin — Center for International Forestry Research; Nairobi, Kenya
- Stephanie Larson— Punjab University; Chandigarh, India (Shastri Project)
- Missy Caswell — Punjab University; Chandigarh, India (Shastri Project)
- Casandra Hincks— Punjab University; Chandigarh, India (Shastri Project)
- Alicia Dyck—Advocates without Borders, South Sudan
- Leanne Julian— PARC, Indigenous Land Use Planning
- Hayley Katan—CO-OP Regional Food System
- Jacqueline Fanta- UN Habitat

## Community Engagement

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Edward Akuffo was a panelists/participant/presenter in the following events:

- "Peace Operations and the future of Mali: Challenges, Dilemmas, and Opportunities"
- "DSFG Workshop - Mali: Prospects for a Durable Peace" (Defence and Security Foresight Group/DND/ University of Waterloo)
- "Dealing with Modern China" (UFV Peace and Reconciliation Centre)
- "Beyond Peacekeeping Operations: A Study of Canada's Support for Security Governance in West Africa" (UFV Scholarly Sharing Initiative)

- "AU-NATO Security Governance in Africa: Convergence and Divergence of Norms, Ideas, and Values" (International Studies Association)

Geetanjali Gill was the keynote speaker/ facilitator at a Workshop Series on 'Applying Gender-based Analysis+', held for NGOs in Canada, hosted by the BC Council for International Cooperation (BCCIC), November 4 & November 20, 2020. Fourteen Canadian-based development NGOs attended.

The Global Development Studies (GDS) program at UFV, together with BCCIC, held a virtual panel event for UFV students on the theme of 'Choose to Challenge' for International Women's Day, March 30, 2021. Sixty-five students attended.

The GDS program at UFV held a virtual event for International Development Week, Feb. 11, 2021, with more than 175 participants. The theme was students as global citizens.

Cherie Enns engaged in the following activities:

- Virtual Internships with all our QES partners (Universities Canada)
- Shastri Grant -Panjab University -research on child-friendly city policy
- RSF Grant -Ardhi University -applied play and food security research
- Lead SSHRC-Mifood Project (U of Waterloo and Laurier as well as global partners)
- Book (Routledge UK) co-authorship Professor Kombe
- Global Housing Challenge Project (IGLUS (Switzerland), AKU and UN-Habitat)
- EAC child-friendly Child Policy and Facilitation Guide/Training (EAC Secretariat and Save the Children)

## **Funding**

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Geetanjali Gill and Catherine Smith are co-Principal Investigators on a project funded by Global Affairs Canada and the Fund for Innovation and Transformation at the Manitoba Council for International Cooperation. The project, 'Leaving no one behind: empowering persons with albinism, particularly women and adolescent girls, in rural regions of Sierra Leone', runs from June 2021 until September 2022. Funding amount - \$237,000.

Geetanjali Gill is a co-Principal Investigator on a research grant (funded by the Global Women's Institute at George Washington University) on 'Developing and piloting play-based tools and approaches for collecting evidence on gender-based violence amongst adolescents in humanitarian settings in Uganda and Lebanon'. This project runs from May 2021 until October 2022. Funding amount - \$276,000.

Geetanjali Gill is the Principal Investigator on a SSHRC Partnership Engagement Grant, titled 'Socio-cultural norms and gender-responsive play-based education: a qualitative study of students, teachers, and families in Rwanda, Ghana, and Mozambique'. This project runs from June 2021 until July 2022. Funding amount - \$25,000.

## **Research**

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Jeffrey Orr collaborated on a documentary film called "Duty to Document" last year, which was publicly presented in May 2021 to some acclaim. The director was Dwayne Beaver (Film/Capilano University) and Edward Akuffo is credited as writer, research consultant and interviewer. The film was financed by the interPARES project at UBC as part of their archival and governance studies material, and produced by CIIPS (the Canadian Institute for Information and Privacy Studies).



Edward Akuffo has completed a working paper for the Defence and Security Foresight Group project funded by the department of national defence at the University of Waterloo titled: "AU-NATO Peacekeeping Capacity Building and implications for Canadian Foreign Policy."

### **Publications, Presentations and Reports**

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Akuffo, E. A. (2021). Morality as Organizing Principle: Making Sense of Canada Africa Relations, in Robert Murray and Paul Gecelovsky (eds.) The Palgrave Handbook of Canada in International Affairs New York: Palgrave MacMillan Invited. <https://www.palgrave.com/us/book/9783030677695>

Lee, Kelly, Edward Akuffo and Tim Shaw (2020). Canada's Covid-19 Response: Navigating National and Global Security. The Roundtable. The Commonwealth Journal of International Affairs. Invited. <https://www.tandfonline.com/doi/full/10.1080/00358533.2020.1759992>

Akuffo, E. A. and Cherie Enns (2020). Thinking about Global Humanitarian Interests in the midst of a Global Pandemic. <https://blogs.ufv.ca/president/guest-post-dr-edward-akuffo-and-dr-cherie-enns/>

Akuffo, E. A. (2020). The Military and Defence of Ghana: The Root of Persistent Controversies and the Way Out. <https://www.modernghana.com/news/1013765/the-military-and-defence-of-ghana-the-root-of.html>

### **Plans for the upcoming year**

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- The activities that have been planned include, (but are not limited to) the following:
  - The Center is exploring opportunities for a partnership with the Abbotsford Food Bank and Dental Unit. This will generate at least two work study positions for students.
  - The Center and associates have submitted proposals for consultancy opportunities at the Co-operative Development Foundation of Canada
  - Edward Akuffo will apply for a SSHRC Insight Grant in October 2021
  - Geetanjali and Catherine Smith will work on the projects listed above
  - Cherie Enns is the UFV lead-related to the Waterloo/Laurier Mifood Social Sciences and Humanities Research Council (SSHRC)
  - In collaboration with Political Science we will organise a Politalk Roundtable Series on topical national and international issues and/or events

## Centre for Public Safety and Criminal Justice Research (CCJR)

Irwin Cohen, Director

<https://cjr.ufv.ca/>

May 2020 – April 2021

### Purpose

The purpose of the Centre for Public Safety and Criminal Justice Research is to provide research services expertise to criminal justice agencies, governments, public safety agencies, municipalities, and community organizations on issues related to improving the efficiency and effectiveness of public safety operations, programs, partnerships, and initiatives in crime reduction. More broadly, the mission of the Centre for Public Safety and Criminal Justice Research is to assist government agencies related to public safety to evaluate crime reduction programs, policies, strategies; propose evidence-based initiatives to the criminal justice system and agencies of public safety to reduce crime; provide a full range of analytic solutions to allow public safety agencies and the criminal justice system to be information and intelligence led; evaluate emerging hardware and software solutions and to make recommendations on their adoption by public safety agencies; develop solutions to share with police and other public safety agencies to increase their efficiencies and effectiveness in preventing, responding, and reducing crime; provide learning opportunities for students, including applied and research skills; and train students and researchers in the latest crime and intelligence analysis software. The Centre for Criminal Justice Research is firmly established as the place for independent data analysis, program and policy evaluations, and criminal justice/public safety technology assessments.

### Membership

The Centre has a Director, Dr. Irwin Cohen, who is responsible for the functioning of the Centre and maintaining its website. The Centre has an advisory board composed of:

- Dr. Amanda V. McCormick (School of Criminology and Criminal Justice)
- Dr. Zina Lee (School of Criminology and Criminal Justice)
- Dr. Erin Osterberg (School of Criminology and Criminal Justice)

The advisory board did not meet over the past year.

### Partnerships

- Federal RCMP
- 'E' Division RCMP
- BC Government Police Service
- Office of Crime Reduction and Gang Outreach
- British Columbian municipal police departments in Vancouver, Delta, Abbotsford, and West Vancouver
- British Columbia's Provincial integrated units, specifically the Integrated Homicide Investigation Team (IHIT) and the Integrated Municipal Provincial Auto Crime Team (IMPACT), the Real-Time Intelligence Centre (RTIC-BC), The Combined Forces Special Enforcement Unit BC (CFSEU), and Integrated National Security Enforcement Teams (INSET)
- British Columbia Lottery Commission

## Students

The Centre has had three PhD students from SFU working on several police-focused research projects. The work has involved writing literature reviews, conducting interviews, and interview note taking for three research projects. These students have worked on the Examining Police Protest and Conflict Liaison Practices in Canada, Development of Profiles of Dial-A-Dopers in BC, Examination of Police-Based Prolific Offender Programs and Teams in BC, and Examination of the Impact of Recent Court Rulings on Police Investigation Time and Resources.

We currently have one UFV undergraduate and three former UFV undergraduate students working as paid research assistants to conduct interviews as part of our VSE project.

## Community Engagement

The activities of the Centre have made a number of contributions that are relevant to the community. The Centre's website is a source of current police, fire, and public safety research that can be accessed by anyone. Many publications have been posted on the Centre's website this year. In addition, the website houses a public safety search portal that provides access to thousands of reports, articles, books, legislation, and other data from Canada and around the world. As a result of the website, all of the research conducted by the Centre is made available to anyone. All of the research projects conducted by and through the Centre have community partners and receive a copy of all final reports.

## Funding

New Funding for this Reporting Cycle:

- Best Practice Inventory and Analysis of Hate Crime Reduction Policy Initiatives, external funding in the amount of \$76,406.25
- An Evaluation of Situation Tables in British Columbia, external funding in the amount of \$89,375.00
- Money Laundering Offender Typologies in British Columbia, external funding in the amount of \$60,937.50
- The Effects of the COVID-19 Pandemic on Crime in British Columbia, external funding in the amount of \$63,750.00

## Publications, Presentations and Reports

Research Reports:

Cohen, I.M., Osterberg, E., & Lee, Z. (2021). Assessing the Effectiveness and Efficiency of School Liaison Officers in British Columbia: A Qualitative Study of School Liaison Officers and School District Administrators. Report for the Office of Crime Reduction and Gang Outreach. Centre for Public Safety and Criminal Justice Research.

Lee, Z. and Cohen, I.M. (2021). Abbotsford Police Department Diversity Survey. Report for the Abbotsford Police Department. Potus Consulting.

## Plans for the upcoming year

As in previous years, the Centre will engage in a number of research projects over the next year. At this point, the Centre will be focused on working on the BCLC Project, and the Office of Crime Reduction and Gang Engagement projects, publish reports and academic articles based on this research, and present the findings at national and international conference.

## Community Health and Social Innovation (CHASI)

**Martha Dow, Director**

May 2020 – April 2021

<https://www.ufv.ca/health-and-social-innovation/>

### **Purpose**

The Community Health and Social Innovation (CHASI) Hub positions UFV and the communities it serves as leaders in recognizing the integral nature of practitioner, academic, government, and community relationships in developing innovative approaches to current and emerging public issues shaping individual and community experiences of health and wellness. The Hub provides a physical and virtual space for researchers, municipal, provincial, and federal government partners, and community and corporate collaborators to engage in a manner that sparks and fuels out of the box thinking from inception to implementation. CHASI encourages multi-sectoral engagement with a wide range of health and social issues through research, program evaluation, policy analysis, training, and educational opportunities. The Hub initiates these activities and support community partners in the identification and exploration of issues and the development and implementation of innovative approaches to health and social issues.

### **Membership**

#### **Faculty Associates:**

- Dr. Satwinder Bains
- Dr. Sarah Beaulieu
- Dr. Shelley Canning
- Dr. Michael Corman
- Dr. Luisa Giles
- Dr. Geetanjali Gill
- Dr. Jessiman
- Dr. Kathy Keiver
- Dr. Iris Lesser
- Alison Pritchard Orr
- Dr. Amir Shabani
- Dr. Joanna Sheppard
- Catherine Smith
- Dr. Katherine Watson
- Dr. Kathleen Rodgers

#### **Internal Advisory Committee:**

- Jerri-Lynne Cameron
- Dr. Martha Dow
- Dr. Garry Fehr
- Dr. Alastair Hodges
- Dr. Jacqueline Nolte
- Dr. Amir Shabani
- Dr. Lesley Jessiman
- Dr. Katherine Watson

## Partnerships

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- Aboriginal Firefighters Association of Canada
- Abbotsford Division of Family Practice
- Abbotsford Police Department
- Abbotsford School District
- Abbotsford Youth Commission
- Ann Davis Transition Society
- Archway Community Services
- BC Centre for Disease Control
- BC Silver Alert
- Canadian Centre on Substance Use and Addiction
- Central Fraser Valley Search and Rescue
- Chilliwack Child and Youth Committee
- Chilliwack Community Action Team
- Chilliwack Division of Family Practice
- Chilliwack Food Council
- Chilliwack Food Hub
- Chilliwack Healthier Community Table
- Chilliwack Poverty Reduction Task Team
- Chilliwack Social Planning and Research Council
- Chilliwack Society for Community Living
- City of Abbotsford
- City of Chilliwack
- City of White Rock
- Cyrus Centre, Chilliwack
- Dementia Alliance International
- First Nations Health Authority
- Fraser Valley Regional District
- Inclusion BC
- International Consortium on Dementia and Wayfinding
- Ministry for Children and Family Development
- Mission Division of Family Practice
- Mitacs
- Skwah First Nation
- Sto:lo First Nation
- Wild Salmon Defenders Alliance
- Woods Hole Oceanographic Institutions

## Students

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- Chloe Raible (Research Assistant, Mitacs Intern): Early School Leavers at UFV; Student Retention during COVID-19
- Michelle Grafton (Research Assistant, Mitacs Intern): Community Food Security Assessment for Chilliwack
- Ekaterina Marenkov (Research Assistant, Mitacs Intern): Sexualized Violence on Campus

- Gina Dhinsa (Research Assistant): Community Food Security Assessment for Chilliwack, Dementia Diaries, Data Analysis for Sexualized Violence on Campus project, Vessi Funding Application
- Jeff Mijo-Burch (Intern): Designed 9 social media graphics; wrote and posted 45 original social media posts; managed four social media accounts, including shares and responding to comments/requests; wrote multiple blog posts; created a layout for the project summary; video editing
- Celina Koops (Intern): Designed social media illustrations/animations/graphics for 13 observances and 12 team announcements on four platforms; designed illustrations for external clients
- Vicki Lin (Research Assistant): AFAC Community Scan
- Linh Nguyen (Research Assistant): Food (In)Security at the University of the Fraser Valley: An Overview: Understanding the Antecedents, Prevalence, and Impact of Food Insecurity

### **Community Engagement**

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This past year there were several opportunities to engage our local community in research dissemination beyond research consultation. This includes:

- ScienceTalks (Turning Knowledge into Action: UFV's CHASI Hub Reinventing Community Research);
- Excelerate 2021 (Humanizing Healthcare: The Cost to Businesses and Women Business Owners);
- Stories of Racism Initiative - Archway/Resilience BC Spokes; Student Services - Living and Learning Communities: Advocates for Change;
- Anti-racism Training: IBPOC Professional Trainers Portfolio (RAN);
- Fraser Valley Regional District Board CHASI Orientation.

### **Funding**

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- \$300,000.00 Divisions of Family Practice (2020-2021, Year 2)
- \$22,556.00 National Indigenous Fire Safety Council (2020)
- \$5,250.00 National Indigenous Fire Safety Council (2021)
- \$17,456.00 National Indigenous Fire Safety Council (2020)
- \$2,221.56 Centre for Addictions (2020)
- \$15,000.00 VP, Students sponsor of CHASI's Research Assistant Development Program (2021)
- \$22,500.00 Mitacs (2021)
- \$7,875.00 Chilliwack Social Research and Planning Council (2021)
- \$14,070.00 Social Planning and Research Council of BC (SPARC) (2021)
- \$40,422.00 Tamarack Community Innovation Fund (2021)

### **Research**

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- Moving from Risk Assessment to Risk Reduction: An Analysis of Fire-related Risk Factors in First Nation/Indian Band or Tribal Council Areas across Canada, prepared by Spencer Huesken (MA), RuoYu Xiao (BA), Charles Jennings (PhD), Martha Dow (PhD) for the National Indigenous Fire Safety Council
- Siting of NIFSC Regional Centres Through GIS Analysis, prepared by Mariano Mapili (PhD) and Greg Laychak (MA) for the National Indigenous Fire Safety Council
- Community Directory, prepared for the National Indigenous Fire Safety Council
- Student Information Report (UFV and UM) (with University of Manitoba for Canadian Centre on Substance Abuse)
- VFR Students Infographics Report distributed to students at the University of Manitoba and University of the Fraser Valley

- The Utility of Physician Referred Outdoor Physical Activity for South Asian Women, prepared by Iris A. Lesser (PhD) and Navdeep Rai, (BKin) in partnership with the Abbotsford Division of Family Practice and the City of Abbotsford Parks, Recreation and Culture
- SSHRC Partnership Engage Grant to study 'Socio-Cultural Norms and Gender Responsive Play based Education in Rwanda, Ghana and Mozambique', June 2021-July 2022. This research is being conducted collaboratively with the NGO Right to Play International and Principal Investigator, Dr. Geetanjali Gill. The grant funds are a total of \$24,957.00.
- Global Women Institute's Building GBV Evidence Grant at George Washington University (USA) on 'Developing and piloting play-based tools and approaches for collecting evidence on gender-based violence among adolescents in humanitarian settings in Lebanon and Uganda', June 2021-September 2022. This research is being conducted collaboratively with the NGO Right to Play International, as well as Makerere University in Uganda and Co-Principal Investigator, Dr. Geetanjali Gill. The grant funds are a total of \$215,000.00 USD.
- The Impact of International Student Learning experiences on the Canadian Undergrad (Led by Dr. Joanna Sheppard and Chelsea Novakowski, Research Assistant).

### **Publications, Presentations and Reports**

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#### Presentations:

- "Community Food Security: Assessing Communal Factors Impacting Food Security in Chilliwack". A presentation by Larissa Kowalski to the Chilliwack Healthier Communities Poverty Reduction Task Force.
- "Understanding Elderly Missing Persons in Canada". Missing Persons Research Hub Podcast, Larissa Kowalski.
- Alzheimer's Society of Ontario BrainXChange, "Persons living with dementia who go missing: What do we know and how can we manage the risks?" A presentation by Larissa Kowalski to the International Consortium of Dementia and Wayfinding.
- "A Preliminary understanding of older adults who go missing in Canada: Evidence from two cities." A presentation by Larissa Kowalski to the Congress 2021 and Pacific Sociological Association, 2021.
- "Wet'suwet'en Sovereignty and Colonial Structures: Representation of Indigenous Political Actions in Online News Articles." A presentation by Esther Jimenez Atochero to the Pacific Sociological Association, 2021.

#### Reports:

- VFR Students Infographics Report distributed to students at the University of Manitoba and University of the Fraser Valley.
- "Moving from Risk Assessment to Risk Reduction: An Analysis of Fire-related Risk Factors in First Nation/Indian Band or Tribal Council Areas across Canada," prepared by Spencer Huesken, RuoYu Xiao, Charles Jennings, and Martha Dow for the National Indigenous Fire Safety Council.
- "Siting of NIFSC Regional Centres Through GIS Analysis," a report prepared by Mariano Mapili and Greg Laychak for the National Indigenous Fire Safety Council.
- "Community Directory," an instrument prepared for the National Indigenous Fire Safety Council.
- "Student Information Report (UFV and UM)". A report prepared by Spencer Huesken and RuoYu Xiao with the University of Manitoba for Canadian Centre on Substance Abuse.
- "The Utility of Physician Referred Outdoor Physical Activity for South Asian Women". A paper prepared by Iris A. Lesser (PhD) and Navdeep Rai, (BKin) in partnership with the Abbotsford Division of Family Practice and the City of Abbotsford Parks, Recreation and Culture.

### Plans for the upcoming year

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As we report on our first year and make plans for the coming year there are many projects that are being undertaken by our Faculty Associates, our core CHASI team, and our community partners. This list represents activities for the coming year:

- Developing COVID-10 Risk Communication and Community Engagement Readiness Strategy Guidance for Travelers
- Visiting Friends and Relatives (funded by CIHR)
- "In-risk of going missing: An examination of the spatial dimensions of elderly missing person cases and risk factors for repeatedly going missing." Presentation for American Society of Criminology's Annual Conference, Chicago, IL
- Mitigating the Effects of Epidemic/Pandemic Outbreaks on Temporary Foreign Agricultural Workers and Farm Operations in British Columbia (funded by CIHR)
- ReSurge Africa: An Impact Assessment (funded by ReSurge Africa)
- Channeling Youth Voices Project (funded by Tamarack Canada)
- An Analysis of Student Experiences using UFV's Advising Centre (funded by UFV Student Services)
- BLM documentary of the BLM Social Justice Art project with Shelley Stefan, Desirée Dawson, Cherie Enns, Larissa Horne, Miranda Ting, Laura Authier, Breanna Willock (funded by UFV Marketing)
- Responding to the Pandemic: A Community Scan and Needs Assessment for the City of White Rock (funded by the City of White Rock)
- Pandemic-Related Changes in Post-Secondary: An Overview of Students' Surveys and Institutional Responses for BCCAT
- Monashee Excavation: A Documentary (funded by the Canadian First World War Internment Recognition Fund)
- Equine Therapy: Understanding therapeutic models within an efficacy discussion
- "Moms on the Move: Lessons on postpartum exercise for new mothers and health practitioners," (Led by Dr. Iris Lesser)



## Esposito Family Centre for Innovation & Entrepreneurship (EFCIE)

**Jon Thomas, Director**

May 2020 – April 2021

<https://www.ufv.ca/innovation-entrepreneurship/>

### Purpose

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The Esposito Family Centre for Innovation & Entrepreneurship (EFCIE) is a new research hub at the University of the Fraser Valley that launched in 2020. EFCIE works to foster an inclusive, vibrant and resilient space for innovation and entrepreneurship initiatives for the UFV and Fraser Valley communities. EFCIE's activities include research, course development, and mentoring both students and local entrepreneurs. We also emphasize community outreach through events and projects that explore the interactions between technology, innovation and society. This connection between innovation and society is in fact a unique aspect of the Centre. The understanding that innovative technologies impact society, and society in turn shapes technological progress guides the research and work we do.

### Membership

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EFCIE Internal Advisory Council:

- Dr. Garry Fehr, Associate Vice-President (Research, Engagement, and Graduate Studies)
- Dr. Tracy Ryder-Glass, Dean (Faculty of Professional Studies)

EFCIE Faculty Associates at UFV:

- Dr. Jon Thomas, Director (EFCIE), BC Regional Innovation Chair, Associate Professor (School of Business)
- Mark Breedveld, MBA (Associate Professor, School of Business)
- Dr. Michael Corman (Assistant Professor, Sociology)
- Dr. Sandra Gillespie (Assistant Professor, Biology)
- Dr. Gillian Hatfield (Assistant Professor, School of Kinesiology)
- Dr. Mandeep Pannu (Assistant Professor, School of Computing)
- Dr. Saeed Rahman (Assistant Professor, School of Business)
- Dr. Amir Shabani (Assistant Professor, School of Computing)

Industry Mentor at EFCIE

- Dr. Michael Parr, President & Chief Scientific Officer, Sitka Biopharma

### Partnerships

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- UFV Student Union Society - Student engagement
- UFV Alumni Association - Community engagement
- UFV Faculty of Science - Student research support through the EFCIE Innovation Grant
- Enactus UFV - Student Organization - Student engagement
- UFV Office of the VP Students - Student research support through the EFCIE Innovation Grant

### Students

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- Jordan Evans (Patent Project)
- Olena Bogdanov (Smart City Project)
- Jasleen Sandhu (Wildfire Response Project & Patent Project)

## Community Engagement

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### Public Lectures:

April 7, 2021: Titrating the Ambulance: Interfacing work and technological ‘innovations’ on the front lines of Emergency Medical Services

Speaker: Dr. Michael Corman, Assistant Professor, Social, Cultural & Media Studies; EFCIE Faculty Associate

March 24, 2021: Venturing into Biotechnology

Speaker: Michael Parr, PhD, President and Chief Scientific Officer of Sitka Biopharma; EFCIE Industry Mentor

March 17, 2021: Human-centered A.I. in Sustainable Energy Optimization for Smart Homes and Buildings

Speaker: Dr. Amir Shabani – Assistant Professor, Computer Information Systems; EFCIE Faculty Associate

March 10, 2021: Innovation and Competitiveness Linkages in India: Exploring Opportunities for IIT Bombay & Canada Cooperation

Speaker: Dr. Kirankumar S. Momaya – Professor, Shailesh J. Mehta School of Management, IIT Bombay

February 4, 2021: Tools for Your Toolkit: Biomechanical Treatment for Knee Osteoarthritis

Speakers: Dr. Gillian Hatfield – Assistant Professor, Kinesiology, UFV & EFCIE Faculty Associate; Jesse M. Charlton – MSc, PhD(c), UBC

January 20, 2021: Social Enterprise Workshop

Speaker: Stacey Corriveau – Founding Executive Director, BC Centre for Social Enterprise

November 25, 2020: Innovation & entrepreneurship in times of uncertainty

Speaker: Dr. Jon Thomas – Director (EFCIE), BC Regional Innovation Chair, Associate Professor (School of Business)

## Funding

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UFV Work-study - May 1st 2021 - onwards (for one year)

## Research

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### *Innovation in the Fraser Valley*

This project has resulted in the collection of several decades of patent data on inventors from the Fraser Valley. Jordan Evans, the student research assistant worked on this project and presented the initial results of this research at an international conference in Ottawa in 2019. Additional work is ongoing.

### *Examining smart cities – The Case of Abbotsford*

Olena Bogdanov is examining how cities can implement innovative technologies to improve the quality of life of their residents. Drawing on dynamic capabilities theory, this study develops a framework from which sustainable initiatives and smart city ecosystems can emerge. Recommendations to identify valuable initiatives and adapt existing systems to maintain long-term competitive advantage are provided. Additional work is ongoing.

*Identifying commercialization challenges for entrepreneurial firefighting start-ups*

Jasleen is a third-year student in the Bachelor of Computer Information Systems program, investigating emerging technologies that facilitate the gathering, storing, and visual analysis of large amounts of real-time data to support effective wildfire response. The technology needs of firefighters are also assessed. Beyond technology development, the public and private funding secured by US-based firefighting start-ups are compiled and analyzed. This study provides a comprehensive view of both the technology development as well as the commercialization challenges faced by firefighting start-ups in the United States. Additional work is ongoing.

**Publications, Presentations and Reports**

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Thomas, V. J., Bliemel, M., Shippam, C., & Maine, E. (2020). Endowing University Spin-offs Pre-formation: Entrepreneurial Capabilities for Scientist-entrepreneurs. *Technovation* 96–97, August–September 2020, 102153. [Peer-reviewed academic journal publication]  
<https://doi.org/10.1016/j.technovation.2020.102153>

Hatfield, G.L., and Lesser, I.A. Does body size impact muscle recruitment during law enforcement Physical Control Simulator use? *Ergonomics*. 2020; Aug 17;1-31. doi: 10.1080/00140139.2020.1808247. Online ahead of print. [Peer-reviewed academic journal publication]

**Plans for the upcoming year**

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MOUs with Seabird Island Community and Stolo Community Futures have been established to provide training on innovation and commercialization over the coming year.

EFCIE has been approved for three Mitacs scholarships to bring three international students to Abbotsford collaborate on three research projects in early 2022.

## Peace and Reconciliation Centre (PARC)

Keith Carlson, Director

May 2020 – April 2021

<https://www.ufv.ca/peace-and-reconciliation/>

### Purpose

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The University of the Fraser Valley's (UFV) Peace and Reconciliation Centre (PARC) works from the individual, to the regional, to the global, to engage in interdisciplinary research and transformative action that focuses on enlarging our understanding of the roots of conflict, developing creative approaches to reconciliation, and promoting engagement aimed at transforming conflict into peace; building capacity and sustainability where injustice, and tension have resulted in harm and marginalization. Our mission is to "envision and facilitate constructive and innovative processes that promote healthy relationships, transform conflict, and build just communities."

Our strategic goals are to:

1. Create a safe and supporting space for peace-building and facilitating interpersonal and group process for reconciliation locally and beyond
2. Coordinate among existing services in the community to create civil society and citizen engagement
3. Provide programs, services and resources that contribute to building community, healthy relationships and transform conflict

### Membership

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Over the past four months PARC has made significant progress in expanding our scholarly networks, broadening the scope of our community partnerships, and increasing our engagement with students. In addition to the Director's (Keith Carlson), ongoing focus on partnering with Indigenous communities to promote the resurgence of rights, title, and culture, and the building of reconciliation between Indigenous and settler societies, PARC has established a team of four additional Commitment Leaders who each have responsibility for growing and nurturing thematically defined Communities of Practice:

- Steven Schroeder for a Community of Practice focusing on Trauma Healing and Harm Reduction
- Amanda McCormick for a Community of Practice focusing on Domestic Violence Reduction
- Lolehawk (Laura Buker) for a Community of Practice focusing on Indigenous Ecological Justice and Land-based Learning
- Geetanjali Gill for a Community of Practice focusing on the International Refugee Crisis and Experience

Our Community Steering Committee Members include:

- Keith Carlson, PARC Chair and Director
- Benjamin Vanderpol, PARC Vice Chair, Oikodome Foundation
- Steven Schroeder, Commitment Leader for Trauma Healing and Harm Reduction, UFV Peace and Conflict Studies
- Amanda McCormick, Commitment Leader for Domestic Violence Reduction, UFV's School of Criminology and Criminal Justice
- Lolehawk (Laura Buker), Commitment Leader for Indigenous Ecological Justice and Land-based Learning, co-Chair of UFV's Indigenous Studies Department
- Geetanjali Gil, Commitment Leader for International Refugee Crisis and Experience, UFV's Global Development Studies Program and the School for Global Stewardship and Social Justice

- Dr. Jacqueline Nolte, UFV Dean of Arts (to be replaced by incoming Dean, Sylvie Murray July 1, 2021)
- Fran Vanderpol, Oikodome Foundation
- Grand Chief Kat Pennier
- Shirley Hardman, UFV Senior Advisor on Indigenous Affairs
- Chief Mike Serr, Abbotsford Police Services
- Rod Santiago, CEO Archway Community Services
- Christine Bomhof, Executive Director Abbotsford Restorative Justice Association
- Kelly Chahal, Abbotsford City Councillor
- Anita Nielsen, UFV Executive Director in Advancement & Alumni Relations

NOTE: The Steering Committee will be expanding to include representatives from the communities of practice overseen by our new Commitment Leaders.

### Partnerships

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Stó:lō Tribal Council; Stó:lō Research and Resource Management Centre: a collaborative community-engaged scholarship (CES) research and consultation project that involves UFV student researchers to develop a comprehensive allyship and reconciliation program for the Fraser Valley region that will include a credentialing component. Keith Carlson is the coordinator of this initiative.

Abbotsford Police Department: PARC and the Abbotsford Police Department co-created a new community Indigenization and EDI committee called "Connection Circle: Re-imagining Community" to facilitate a process whereby positive relationships between police and community can be formed. PARC Director Keith Carlson is the Chair of this committee.

Kwantlen First Nation: A Collaboratorium summer internship project to build community capacity through a digitization program to create a community database of previously undigitized and unpublished resources and historical images.

Reach Gallery: A Collaboratorium summer internship project to research and re-design the museum exhibit so that it meaningfully includes Indigenous, South Asian, and other racialized and marginalized groups.

Heritage Abbotsford: A Collaboratorium summer internship project to research and design exhibits that tell the story of Indigenous and international agricultural labourers in the Fraser Valley and an exhibit telling the story of Indigenous land use and the impacts of settler colonialism.

Stó:lō Research and Resource Management Centre / (Saanich) W̱SÁNEĆ First Nation / University of Victoria: A SSHRC Insight Grant (Dr. Carlson is the Principal Investigator, and Dr. John Lutz from UVic is the co-Principal Investigator) examining the history of and historical consciousness relating to smallpox on the Pacific Northwest.

Fraser Health Region: A Collaboratorium summer internship project to conduct a comprehensive literature review of the history of medial research involving the Indigenous people of the Lower Mainland, Fraser Valley, and Fraser Canyon.

Fraser Health Region: A collaboration in organizing the first ever "Strengthening the Circle: Fraser Salish Indigenous Health Research Symposium," (June 3-4, 2021).

Matsqui First Nation: A collaborative CES project to develop Indigenous K-12 curriculum resources for the Abbotsford and Langley School Districts. This project involves Dr. Keith Carlson and Dr. Vandy Britton, along with other faculty and students from UFV's department of Teacher Education.

Shakespeare Reconciliation Garden Project: A Collaboratorium summer internship project working with Dr. Melissa Walters and Stó:lō and non-Indigenous community members to create an original and unique reconciliation garden on the Chilliwack CEP campus.

PARC partnered with the UFV History Department to design and deliver a new micro-credential program in digital story-telling and oral history. The weekend-long program involved instructors from UFV (Keith Carlson and Anne Russel) and others (high profile scholars and critical race theory activists from Ontario and Philadelphia). The program ran at full capacity (25 students) and attracted a wide range of students (established scholars, undergraduates, museum curators, and Indigenous researchers) from as far as Brazil and Saskatchewan, and those from the Lower Mainland. This pilot offering is being evaluated and a suite of digital-storytelling and oral history micro-credential offerings (beginner, intermediate, advanced) are in design.

Abbotsford News: This partnership has seen the newspaper providing PARC with media sponsorship that includes in-kind advertising and media coverage for a three-part series on domestic violence.

UFV School of Criminology and Criminal Justice, UFV School of Nursing, Abbotsford Community Services and Abbotsford Crown Counsel: Ongoing partnerships related to community outreach initiatives PARC leads on Domestic Violence awareness.

Advocates for Change Living Learning Program: PARC is a partner with this student-led and designed initiative to provide undergrad students an opportunity to live together in housing and partake in extracurricular activities that incorporate common interests, passions and goals.

## Students

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PARC has supported many student related Initiatives:

PARC Collaboratorium (Launched May 2021) - The first-of-its kind at UFV, the vision and purpose of the Collaboratorium is to bring together passionate undergraduate students and communities to conduct original research that is driven by community priorities and concerns, and that contributes to building a foundation for reconciliation.

A video snap shot of the program can be viewed at: <https://libguides.ufv.ca/PARCCollaboratorium>.

With careful attention to Indigenous, Equity, Diversity, and Inclusive objectives, PARC has secured paid Collaboratorium summer research internships for the following students:

- Holly Janzen
- Harla Sidhu
- Jackie Drummond
- Maaria Zafar
- Paul Jakhu
- Catana Tommy

- Chandler Farlin
- Michaela Sapielak
- Olivia Daniel
- Brooke Higgenbottom
- Kelsey Jones
- Aliyah Freisen

College of Arts Collegium (Launched in March 2021) - The student led faculty round tables was initiated to provide students with an avenue to discuss matters pertaining to their campus experience. The theme of the first session was "The Challenges of Online Learning". It was attended by over 25 students and faculty. Additional round tables will take place in the fall. The Collegium is led by Professor Rashad Mammadov, Department Head and Assistant Professor in Communications.

The Peace (Re)conciliation and Social Justice Student Forum sponsored by PARC, was facilitated by Anna Griffith, Assistant Professor, School of Creative Arts and Dr. Michelle La Flamme, Associate Professor, English. This first ever forum will now be an annual PARC student activity.

A Workplace Integrated Learning grant funding provided paid research assistant positions in winter and summer semesters for the following students:

- Holly Janzen
- Lorisa Williams
- Jaime Fournier
- Harla Sidhu

In addition, through our PARC Fellowship and Grants program we have provided financial support to the following students:

#### Student Catalyst Scholarships

- \$1500 was provided to Indigenous student Leanne Julian, her faculty sponsor is Cherie Enns, UFV Associate Professor Land Use and Environmental Change. The funding will be used to further Leanne's proposed work plan in Indigenized and Regional Community Planning.
- \$1500 was provided to Indigenous student Calista Thirsk, her faculty sponsor is Dr. Lolehawk Buker. The funding will be used for Calista's project in Peace and Reconciliation: Appreciating the Halq'emeylem Language and Taking Back Indigenous Place Names.

#### Community Engagement

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PARC hosted/sponsored events were:

"When Your Partner Abuses You: Practice, Prevention & the Public Health Crisis of Intimate Partner Violence" - February 13, 2020 (The first of a three-part series)

PARC Launch (September 29, 2020) - The social justice themed launched featured keynote speakers Grand Chief Steven Point and Ambassador Bob Rae. The virtual launch had 405 registrants and was moderated by Professor Keith Carlson.

A Trauma Informed Discussion About Interpersonal Violence (January 21, 2021). Featuring World Renowned Canadian Clinical Psychologist, Dr. Lori Haskell, this virtual dialogue had 490 registrants and a first ever global audience for PARC with attendees from the UK, US and Australia.

The Peace (Re)conciliation and Social Justice Student Forum sponsored by PARC was a student forum highlighting the original research of students working on peace-building and reconciliation projects. It was facilitated by Anna Griffith, Assistant Professor, School of Creative Arts and Dr. Michelle La Flamme, Associate Professor, English. This first-ever forum will now be an annual PARC student activity.

The College of Arts Collegium (launched in March 2021) is a student-led faculty-supported round table that was initiated to provide students with an avenue to discuss matters pertaining to their campus experience.

PARC launched a new monthly speaker series titled "Peace Talks" on April 14, 2021, with the topic "The Crown as an Agent of Reconciliation". The event featured Commissioner of Nunavut, the Honourable Eva Qamaniq Aariak (CM, ONU). The virtual event like others was free and open to the public.

The Centre's second Peace Talk took place on April 29, 2021 with the topic "Dealing with Modern China" presented by Guy Saint-Jacques, former Canadian Ambassador to China (2012-2016). The conversation was hosted and moderated by Professor Steven Schroeder, Professor Edward Akuffo, and Professor Fiona MacDonald.

Director Keith Carlson engaged in numerous scholarly presentations and public/community outreach activities relating to PARC's mandate and his reconciliation-related research activities. These included:

- Abbotsford Science Talk (Dec 2020) - Over 800 views on YouTube, nearly three time higher than the second most popular of the talks in that series
- Teacher Pro-d presentations for Fraser Cascade School District, Chilliwack School District, and Surrey School District
- Presentations for students (in their classrooms on zoom) on aspects of Indigenous and settler colonial history (Fraser Cascade School District, Abbotsford School District, and Prince Albert School District)
- Seabird Island History Conversations (Feb, April, 2021)
- Squiala Colonial Research History Discussion (April 2021)
- Media: Interviews by The Tyee, Aggazis News, Chilliwack Progress, Abby News, CBC Radio, CBC TV, and CTV
- Abby School Board EDI and Indigenization workshop (May 2021)
- Abby Police committee (Chair of this bi-monthly meeting committee)
- BC Studies research paper presentation and organizer of two conference panels - one highlighting the innovative 'peace and reconciliation' pedagogies of UFV faculty and the other highlighting the CES of past Stó:lō Ethnohistory field school students

PARC was highlighted in the media several times over the past year:

2021 –

The Abbotsford News, Jan. 19: UFV hosted an online session about interpersonal violence - Peace and Reconciliation Centre in Abbotsford held a discussion on Thursday, Jan. 21.



2020 –

The Abbotsford News, Nov. 14: UFV Peace and Reconciliation Centre offered funding opportunities for scholars and community members, which was open to UFV faculty and students, visiting scholars, community activists/artists, and guest speakers.

CBC Radio, Sept. 26: B.C. University launched the first peace and reconciliation centre in Canada. Peace and Reconciliation Centre offered funding and scholarships to students, faculty and community members.

CBC Radio, Sept. 24: On the Coast with Gloria Macarenko - Interview with Keith Carlson.

The Abbotsford News, Sept. 17: UFV to launch Peace and Reconciliation Centre in Abbotsford - Online event on Sept. 24 features keynote speaker Bob Rae and Steven Point.

The Abbotsford News, Feb. 12: Transformational conflict: a new approach at UFV in discussing intimate-partner violence - UFV forum to use resolution strategy used in ethnic conflicts to open dialogue on domestic abuse.

### **Funding**

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- Okidome Foundation – \$54,000.00
- Rotary Foundation – \$1,000.00
- SSHRC Insight – \$314,000.00 (Keith Carlson PI; John Lutz, UVic, co-PI)
- WIL – 360 hrs for student Research Assistants
- UFV Work Study – 240 hrs for student Research Assistants
- Fraser Health – \$10,000.00
- Kwantlen First Nation – \$10,000.00
- Reach Gallery – \$5,000.00
- Heritage Abbotsford – \$18,500.00

### **Research**

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In terms of research completed by PARC with grant funding that was secured externally there is nothing to report yet as the research activities only started in December 2020. Research work is ongoing.

In terms of research completed by faculty and their academic and/or community partners, PARC has facilitated a wide range of research, scholarly, and artistic works. This was accomplished through our PARC fellowship and grant offerings that we provide to UFV faculty and to external academics, activists, and artist. The rationale behind PARC's funding of fellowships and grants is to stimulate and enhance research scholarly and artistic work that connects UFV faculty to others in ways that create original creative programs of research aligned with the mission and vision of PARC and that simultaneously contribute to UFV's vision.

### **Publications, Presentations and Reports**

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PARC started awarding fellowship funding to faculty, students, activists and artists in December 2020. Each of these come with obligations for the awardee to produce research, scholarly, or artistic outputs

within a 12-month period. PARC will be able to start reporting the success of these activities in next year's annual report.

PARC's Director, Keith Carlson, has several articles and book chapters that were submitted over the past academic year and are now in the peer review process.

PARC's Director Keith Carlson is currently working with the Matsqui First Nation, the Squiala First Nation, and the Seabird Island First Nation on collaborative research projects that will result in technical reports over the next coming months.

PARC's Director Keith Carlson is working with Dr. Vandy Britton on a curriculum development initiative with Matsqui First Nation that will be launched in the Abbotsford and Langley School Districts in the coming school year.

### **Plans for the upcoming year**

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Since its launch in September 2020, and the appointment of Keith Carlson as the Director in January 2021, PARC has set the groundwork for a wide range of research, scholarly, artistic, action, and pedagogical initiatives.

With the appointment of four Commitment Leaders in May 2021 to carry PARC's commitment with four separate but overlapping communities of interest, PARC is poised to greatly widen its range of activities and its collaborative partnerships.

Over the coming year the above initiatives will be solidified and where appropriate, expanded. In addition, the Director will be working with UFV Advancement, the College of Arts, and Research, Engagement & Graduate Studies to secure renewed and new financial support to sustain and grow PARC's programs.

## The Luminescence Dating Laboratory

**Olav Lian, Director**

May 2020 – April 2021

<https://ufv.ca/land-and-environment/facilities/luminescence-dating-laboratory/>

### **Purpose**

The Luminescence Dating Laboratory is an externally-funded laboratory that conducts original research on long term environmental (landscape) change. It also helps UFV achieve its goal of expanding inquiry-based learning. As such, the laboratory is a place where UFV students can acquire advanced scientific training and learn from being involved in real cutting-edge research; they interact with graduate students and visiting scientists from other universities and government institutions, thus giving them opportunities that are, in most cases, available only to graduate students at larger institutions. The Luminescence Dating Laboratory has been recognized formally in the 2016-2021 UFV Strategic Research Plan within one of its priority areas. Training and learning done in the laboratory is based on a program of supervised student mentoring where UFV undergraduate research students, who have been trained by its director, Dr. Olav Lian, work closely with and are mentored by MSc and PhD students, and, on occasion, a postdoctoral fellow, that are also under Dr. Lian's direct supervision. Senior undergraduate research students often conduct independent research of their own, often of a caliber that can be published and/or presented at professional conferences. To attract the external funds necessary to operate the laboratory, all of the research conducted in it, or at least the vast majority of it, must be of high caliber so that it can be published in high-impact peer-reviewed journals. This also serves to attract good graduate students from other universities, which also is required to attract funds from NSERC, and from other sources, and to maintain external collaborations. Another purpose of the laboratory is to provide UFV students with employment (i.e., paid research assistant experience) and, as such, all students conducting research in the laboratory are paid. Part-time students are paid through the UFV Work-Study Program, with funds from the Research office, and/or from external grants held by its director. Students that work more than part time are paid from funds acquired through external research collaborations, from the Director's NSERC Discovery Grant, or through the NSERC Undergraduate Student Research Award (USRA) program.

### **Partnerships**

- Natural Resources Canada (NRCan), Geological Survey of Canada; Dr. S.A. Wolfe, Dr. R. Paulen. Projects: Climate Change Geoscience Program (NAM1), Permafrost project; The GEM2 Southern Mackenzie Surficial activity
- BC Ministry of Energy, Mines & Petroleum Resources; Dr. A.S. Hickin. Project: Geomorphic and ecological age constraints for paraglacial to boreal transition on northeastern British Columbia
- Manitoba Geological Survey, Mr. Tyler Hodder, Dr. Michelle Gauthier. Project: Character and timing of long-term (>100,000 years) landscape change, Hudson Bay Lowlands, Northern Ontario and Manitoba
- Simon Fraser University, Dept. of Earth Sciences (Drs. J.J. Clague and B.C. Ward), Dept. of Geography (Dr. T.A. Brennand). Projects: Postglacial adjustment of large river systems, southcentral BC; Landscape change driven by long-term climate change, southern and central coast BC
- University of British Columbia, Geography (Dr. M. Hassan); Postglacial landscape connectivity
- University of Northern BC, Geography Program (Dr. B. Menounos, Dr. P. Sanborn). Projects: Provenance studies of coastal sands on Calvert Island, BC; Pedagogical trends and implications for forest productivity in a Holocene soil chronosequence, Calvert Island, BC

- Tasmania (Australia) Forest Practices Authority (Dr. P.D. McIntosh, Dr. A. Slee). Project: Late Pleistocene and early Holocene aeolian deposits in Tasmania, Australia, and their climate implications
- University of Waterloo, Earth and Environmental Sciences, Dr. M. Ross, Dr. Jesse Rice. Project: Glacial dynamics of the Quebec-Labrador sector of the Laurentide Ice Sheet in north-central Quebec/Labrador

### Students

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- Libby Griffin, BSc UFV 2013, NSERC USRA student summers 2013, 2014; MSc SFU (defended April 13, 2017) under Lian's supervision, currently (spring 2021) writing manuscript for publication
- Dr. Andrew Perkins, SFU PhD student under Lian's co-supervision (defended in fall 2015), manuscript for publication currently under internal review
- Dr. Adrian Hickin, UVic PhD student under Lian's co-supervision (defended in 2013), manuscript currently (spring 2021) in review
- Jordan Bryce, BSc Hons UFV 2016, NSERC USRA research student, summers 2014, 2015, and 2016; work-study student fall and winters of 2014, 2015, and 2016; SFU MSc student under Lian's supervision, currently writing-up her thesis with a goal to defend in summer 2021
- Travis Gingerich, BSc Hons 2018 UFV, NSERC USRA research student, summers 2015, 2016, 2017, commenced his MSc at SFU in fall 2018 under Lian's supervision. Currently (spring 2021) writing his thesis, with a goal of defending it in late spring 2021
- Audrey Faber, BSc UFV 2017; currently an MSc student at UNBC under Lian's co-supervision, currently (spring 2021) writing her thesis
- Jonathan Cripps, SFU PhD student, is writing his thesis during spring and summer 2021; Lian is on his supervisory committee
- Jesse Rice, Grant Hagedorn, and Tyler Hodder, currently graduate students at the University of Waterloo, are all collaborating on their PhD research with the Luminescence Dating Laboratory
- Lee-Ann Nelson, an MSc student at UNBC, for which my laboratory provided absolute age information for her study of ancient soils on the BC central coast, is currently (May 2021) revising a co-authored peer-reviewed paper that was very recently accepted for publication
- Matthew Taylor, (BSc University of Edinburgh, 2020), has joined the laboratory as a new SFU MSc student under my co-supervision, and will be expanding on Travis Gingerich's research on postglacial river adjustment in southcentral BC
- Michael Turley, (MSc UBC) has joined the laboratory as a new UBC PhD student under my co-supervision, and will be looking at the connectivity of postglacial sedimentary landforms in southcentral BC
- Vanessa Brewer, UFV BSc student, worked as a work-study student in fall 2020, winter 2021, and is currently (summer 2021) working full-time as a research assistant supported by an NSERC USRA award
- Nicola Ferguson, UFV BSc student, worked as a work-study student in fall 2020, winter 2021, and is currently (summer 2021) working as a full-time research assistant, supported by funds from the Director's NSERC Discovery Grant
- Both Nicola and Vanessa are assisting on the Hudson Bay Lowlands project, and it is anticipated that parts of this project will form their Honours theses to be completed in winter 2022.

## Community Engagement

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As the research conducted in the laboratory, and that conducted by its external collaborators, is associated with understanding the nature and timing of changes to the landscape (mostly in western Canada) as a result of significant long-term (1000s of years or more) shifts in climate, its activities have no immediate relevance to the Fraser Valley community. However, discoveries made in the laboratory should help enable predictions to be made about future landscape change, including that in the Fraser Valley, in response to significant shifts in future climate (e.g., global warming). Since the opening of the laboratory in 2007 its research has been presented to the community from time to time in local Abbotsford and Chilliwack newspapers, to Elder College (Chilliwack), to Abbotsford Learning Plus, in Skookum Magazine, in the UFV Viewbook, in the UFV blog roll, The Cascade newspaper, UFV's Faculty of Science Magazine, and most recently (March 2021) via the virtual ScienceTalks series. The lab's work has also had exposure in media, directly or indirectly, outside the Valley (e.g., The Vancouver Sun, Hakai Magazine, and Global News).

## Funding

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External:

- NSERC Discovery Grant: \$154,000.00 (2017-2024) (5-year grant extended for two years due to Covid)
- NSERC USRA grants: \$10,500.00
- Natural Resources Canada: \$13,000.00 (2021)
- Manitoba Geological Survey: \$4500; \$10,000.00 – pending, due to Covid

Internal:

- Research Option releases to Lian (Two section releases per academic year)
- Work-study student positions (Four during the reporting period)
- Accelerate Research Fund: \$6,000.00

## Research

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Most of the research listed below is on-going, although components of it have been completed, and some components have been published. Some of the research listed below originally appeared in the 2020 report as being completed, but is repeated here as some of its final stages were expanded and/or completed at a much reduced pace due to restrictions as a result of Covid-19:

- Research on the evolution of the ancient aeolian (sand dune) landscape of Tasmania, Australia (one new paper published in 2020)
- Research on the evolution of ancient aeolian (sand dune) deposits in the Rocky Mountain Foothills was completed, and a peer reviewed paper was published in 2021
- Research on the significant Holocene (last 11,000 years) soil chronosequence on the BC central coast was completed, and a peer-reviewed paper has been accepted (May 2021), pending minor revisions
- Research on adjustment of the Fraser River, southcentral BC, immediately following the last glaciation (field and lab work has been completed, write-up still underway)
- Research on stabilization of the landscape in northeastern BC immediately following the demise of the Cordilleran Ice Sheet (c. 10,000 years ago) was completed and a revised paper has been submitted (May 2021) following peer review (all but accepted)
- Research on the late glacial permafrost history preserved in the Pine Bar

### **Publications, Presentations and Reports**

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Peer-reviewed journal papers: published and in press (students and PDFs indicated by an asterisk):

Nelson, L.-A.\*, Sanborn, P., Cade-Menun, B.J., Walker, I.J., and Lian, O.B. Pedological trends and implications for forest productivity in a Holocene soil chronosequence. Calvert Island, British Columbia, Canada. *Canadian Journal of Soil Science*, in review.

Hickin, A.S.\*, Lian, O.B., Telka, A., Levson, V.M., and Geertsema, M. 2021. Geomorphic and ecological age constraints for paraglacial to boreal transition in northeastern British Columbia. *Quaternary Science Reviews*, in review.

Wolfe, S.A., and Lian, O.B. 2021. Timing, rates and geomorphic controls on Holocene aeolian sand deposition using multiple chronometric methods, southeastern Cordillera, Alberta, Canada. *Aeolian Research*, 50: 100687.

McIntosh, P.D., Neudorf, C.\*, Lian, O.B., Slee, A.J., Walker, B., Eberhard, R., Doyle, R., and Dixon, G. 2020. Late Pleistocene and early Holocene aeolian deposits of Tasmania and their climatic implications. *Quaternary Research*, doi:10.1017/qua.2020.83.

Conference abstracts (refereed):

Paulen, R.C., Rice, J.M.\*, Ross, M., and Lian, O.B. 2020. Glacial Lake Low: a previously unidentified proglacial lake in western Labrador. 2020 Geological Society of America annual meeting (virtual), October 26-30, 2020. Program with Abstracts.

Paulen, R.C., Rice, J.M.\*, Ross, M., and Lian, O.B. 2020. Timing and paleogeographic reconstruction of glacial Lake Low in western Labrador. 2020 Geoconvention (virtual), <https://geoconvention.com/2020-technical-program-oral-presentations/>. September 21-22, 2020.

Note: Due to covid-19, many conferences were cancelled, postponed, or were changed to a virtual format. As such, the presentation of much research, especially that conducted by students, has been postponed until it can be presented in a face-to-face format again. The covid-19 situation also resulted in the pace of research publication and presentation slowing down dramatically as students and professional collaborators adjusted, often with challenges, to the new environment.

### **Plans for the upcoming year**

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Virtually all of the research conducted by the Luminescence Dating Laboratory requires access to sophisticated equipment found only in the laboratory. During the covid-19 lock-down last early spring laboratory work ceased and the pace of office work (manuscript and thesis writing) slowed significantly. Later that spring (early summer), after appropriate risk & safety measures could be implemented, laboratory work was able to continue at a reduced pace, and that situation has remained until the writing of this report (May 2021). As such, much of the coming year will be dedicated to catching up on research that was delayed by covid-19, especially that being conducted in the Hudson Bay Lowlands with the Manitoba Geological Survey. It is hoped that by fall 2021 Covid restrictions will be relaxed, allowing more people to work in the lab at the same time (currently only two sufficiently spaced researchers at a time are allowed), and at that time additional UFV undergraduate students will be sought, and the incoming graduate students will be able to use that facility. Field work is also planned

for the coming year (summer 2021), as Covid restrictions on field work specific to collaborating institutions are revised or lifted. This will include field work in the Nicola River Valley (BC), and in the Fraser River Valley near Lillooet to expand on our postglacial river adjustment research. As travel becomes less risky, we will continue our tradition of presenting our research at national and international conferences.

## The Molecular Modeling Lab

**Noham Weinberg, Director**

May 2020 – April 2021

<https://www.ufv.ca/chemistry/contact-us/faculty/weinberg-noham.htm>

### Purpose

Molecular modeling is an interdisciplinary field where computers and numerical methods of applied mathematics are used to solve precise and approximate physical models of atomic, molecular, and supramolecular systems of interest in physics, chemistry, biology, material sciences, and geosciences. With advancement of computer technology, the accuracy of its predictions reaches the level comparable to experimental and, as a result, molecular modeling complements and increasingly replaces often costly and dangerous experimental work.

Over 20 years of its existence The UFV Molecular Modeling Lab housed more than 80 undergraduate students from various departments, including Chemistry, Biology, Physics, Math, and Computing, working on various interdisciplinary projects.

### Membership

Current faculty associates of the lab include Drs. Noham Weinberg (director), Jacob Spooner, and Gennady Shustov.

### Partnerships

Internal collaborations:

- Drs. Cory Beshara, David Fenske, Pedro Montoya-Palaez, and Jason Thomas - on establishment of the UFV High Pressure Research Centre
- Dr. Cory Beshara - on studies of nitration of trichloroacetylpyrrole

External collaborations:

- Dr. Heather Wiebe (VIU, Nanaimo) - on a wide range of topics related to chemistry of high pressures
- Dr. Erika Plettner (SFU, Burnaby) - on studies of pheromones
- Dr. Charles Walsby (SFU, Burnaby) - on studies of Ru complexes, potential anti-cancer drugs
- Dr. Michael Eikerling (RWTH Aachen, Germany) - on studies of catalyst-ionomer interface structure in polymer electrolyte fuel cells
- Dr. Bo Chen (Ikerbasque Basque Foundation for Science, Spaine) - on theoretical studies of furan and thiophene nanofibers
- Dr. Dmitry Kornilov (Kazan University, Russia) - on studies of high pressure Diels-Alder reactions

### Students

- Kyla Woelk - High pressure Diels-Alder reactions of maleic anhydride
- Jordan Penner - Molecular dynamics calculations of high pressure vibrational frequencies
- Khuong Ho - Molecular dynamics calculation of partition coefficients
- Kevin Gajsek - Theoretical studies of molecular machines
- Brianna Whatley - Theoretical studies of molecular machines
- Gavyn Lastoria - Theoretical studies of molecular machines



## Community Engagement

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There were no outreach activities due to COVID.

## Funding

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External:

NSERC Discovery grant - \$120,000 for 2015-2022 (extended due to COVID)  
NSERC USRA (Kyla Woelk) - \$4,500.00

Internal:

ROSA - \$15,000.00  
Accelerate Research Fund - \$6,000.00

## Research

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Completed:

- MD calculation of high pressure vibrational frequencies
- Calculation of thermodynamic properties of petroleum hydrocarbons
- Diels-Alder reactions of maleic anhydride
- A novel algorithm for constant pressure molecular dynamics simulations
- Molecular dynamics calculation of partition coefficients of simple molecules and ions
- Molecular modeling of catalyst-ionomer interface in polymer electrolyte fuel cells
- Water-catalyzed reaction of methane with nitrosonium cation

In progress:

- Theoretical studies of molecular machines
- Theoretical studies of furan and thiophene nanothreads
- Mechanism and regioselectivity of nitration of 2-trichloroacetylpyrrole
- Pressure-assisted cis addition to olefins

## Publications, Presentations and Reports

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Papers submitted to peer-reviewed journals:

- N. Weinberg, E. Edwards, L. Huber, Z. Sentell, J. Spooner, A Newtonian Algorithm for Constant Pressure Molecular Dynamics with Periodic Boundary Conditions. Submitted to Molecular Physics.
- Z. Sentell, J. Spooner, N. Weinberg, Molecular Dynamics Calculations of Partial Molar Volumes of Amino Acids in Aqueous Solutions. Submitted to the Canadian Journal of Chemistry.
- J. Spooner, M.J. Eslamibidgoli, K. Malek, M. Eikerling, Molecular dynamics study of the proton density distribution at ionomer-substrate interfaces in PEFC cathode catalyst layers. Submitted to Electrocatalysis.

Papers in preparation for submission to peer-reviewed journals:

- D. Wilson, J. Penner, J. Spooner, N. Weinberg, Molecular Dynamics Calculations of Vibrational Spectra of Compressed Species (to be submitted to the Journal of Chemical Physics in August-September 2021).
- K. Woelk, Z. Sentell, J. Perkins, J. Spooner, N. Weinberg, Force Field Parameterization for Molecular Dynamics Calculation of Molecular and Activation Volumes (to be submitted to the Canadian Journal of Chemistry in August-September 2021).

- G. Shustov, Theoretical Study of Water-Assisted Reaction between Methane and Nitrosonium Cation (to be submitted to the Canadian Journal of Chemistry in August-September 2021).

Presentations at professional conferences:

- J.A. Spooner, N. Weinberg, Reaction Profiles and Energy Surfaces of Compressed Species under Extreme Conditions. Presented via zoom at the American Physical Society meeting in March 2021.
- D. Wilson, J. Penner, J.A. Spooner, N. Weinberg, High Pressure Vibrational Spectra of Molecules via Molecular Dynamics Simulations. Presented via zoom at the American Physical Society meeting in March 2021.

Accepted abstracts:

- J.A. Spooner, D. Wilson, J. Penner, N. Weinberg, High Pressure Vibrational Spectra of Molecules via Molecular Dynamics Simulations. To be presented at the Canadian Chemical Conference and Exhibition CCCE 2021 in August.
- J.A. Spooner, K. Woelk, N. Weinberg, Calculation of Pressure Effects on Reactivity and Equilibria of Compressed Species: Diels-Alder Reactions of Maleic Anhydride. To be presented at the Canadian Chemical Conference and Exhibition CCCE 2021 in August.

**Plans for the upcoming year**

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Grants:

- Thermodynamic Stability of Petroleum Hydrocarbons at Geochemical Conditions - \$70,000 for 3 years - to be submitted to PRF ACS in October 2021

Research projects:

- Theoretical studies of molecular machines
- Theoretical studies of furan and thiophene nanothreads
- Calculation of partition coefficients of Ru complexes
- Pressure-assisted cis addition to olefins
- Mechanism and regioselectivity of nitration of 2-trichloroacetylpyrrole