

2022-2023

# Research Institutes Annual Report



Dr. Garry Fehr  
Associate Vice President  
Research and Graduate Studies

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Message from the Associate Vice President  
Research & Graduate Studies

Dear UFV Senate,

It is with great pleasure that I submit the UFV Research Centres and Institutes Annual Report for your review and information. We have twelve research centres, institutes, and labs at UFV that range from physical science labs to centres that aim to influence social policy, facilitate reconciliation with Indigenous peoples, and those that aim to improve the health and welfare of society.

Overall, they contributed to regional and national dialogues ranging from food security and innovation to the contributions of the South Asian diaspora to the advancement of Canadian society. They have provided many interviews and invited talks for universities, conferences, professional associations, news media on television, newspapers, and radio, workshops, public lectures, and exhibitions. Members of the centres and institutes are regularly consulted and interviewed for current events and issues as they are recognized as experts in their fields.

In the past year, the centres, institutes, and labs have in total been awarded or worked with multiyear funding valued at more than \$7 million in research grants and contracts. Some of the currently awarded funding will be stretched over multiple years for larger scale national projects. A genome Canada project and some Tri-Agency grants will span five years. Research activities at the centres, institutes, and labs have been conducted or supported by 91 UFV undergraduate students, two post doctoral fellows, eight PhD students and three masters' students. These projects have included partnerships with 137 partners that include universities, governments, community organizations, and industry partners.

All of this results in the production of policy, plans, academic publications including books and journal articles, workshops, museum exhibits, public lectures, and films. UFV's research institutes are leaders in advancing UFV's mission – engaging learners, transforming lives, and building community. Please read the following reports from UFV's various centres, institutes, and labs.

Sincerely,



Dr. Garry Fehr  
AVP, Research & Graduate Studies  
<https://www.ufv.ca/research/>

## Food and Agriculture Institute (FAI)

Lenore Newman, Director

May 2022 – April 2023

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

### Purpose

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The Food and Agriculture Institute (FAI) at the University of the Fraser Valley is an interdisciplinary organization that focuses on issues, challenges, and sustainability solutions related to food and farm systems. FAI partners with a diversity of researchers, industry leaders, and governments to build knowledge and tools for moving toward sustainable, resilient food systems for communities and regions in British Columbia, Canada, and across the globe. To this end, FAI conducts research under two major themes: (1) agricultural technology and innovation, and (2) food systems planning and policy. The mission and vision of FAI are as follows:

**Mission:** FAI 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.

**Vision:** Building tomorrow's food system.

At a practical level the institute currently addresses its two major themes through research into cellular agriculture, vertical agriculture, emerging technologies, and agricultural policy.

### Membership

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**Director:** Dr. Lenore Newman

**Associate Director:** Dr. Stefania Pizzirani

**Administrative Assistant:** Charmaine White

### Faculty Associates:

- Dr. Cherie Enns, SLUEC
- Dr. Lauren Erland, Agriculture
- Dr. Mariano Mapili, SLUEC
- Dr. Renee Prasad, Agriculture
- Dr. Saeed Rahman, Business
- Dr. Afia Raja, SLUEC
- Dr. Michelle Superle, English
- Dr. Frank Zhang, Computing

### External Research Associates:

- Dr. Evan Bowness, Trent University
- Dr. Alex Glaros, University of Guelph
- Dr. Robert Newell, Royal Roads University
- Sarah-Louise Ruder, University of British Columbia

### External Advisory Committee:

- Brian Coombs, CEPCO
- Isha Datar, New Harvest
- Evan Fraser, University of Guelph
- Garry Peters, Avery Farms

- Craig Toews, Abbotsford Chamber
- Bill Vanderkooi, Nutrivia

## Partnerships

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- Dr. Lenore Newman is co-chair of the Feeding the Future National Agritech Strategy with Dr. Evan Fraser of the Arrell Institute at University of Guelph and Peter Dhillon of Ocean Spray.
- FAI has partnered with several organizations including the Sto:lo First Nation, Trent University, UBC, Guelph, Dalhousie, New Harvest, Ophalia and others on major Genome BC and Genome Canada grants, led by Dr. Pizzirani (UFV), Dr. Newman (UFV), and Dr. Bowness (Trent University).
- 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.
- Partnership with QuantoTech and i-Open Technologies in the Mitacs-supported research project: The Potential Role of Vertical Agriculture in Sustainable and Resilient Community Food Systems. This project now includes a partnership with Dr. Robert Newell at Royal Roads in emerging virtual tools for the vertical agriculture industry.
- FAI has begun a new partnership with University of Calgary as a co-applicant on their successful partnership development grant exploring case studies in community action. We will be looking at community heat mapping in partnership with Abbotsford community groups.

## Students

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- Colin Dring (PhD, UBC) - Completed doctoral work and has now moved on from FAI after completing multiple community projects.
- Sarah-Louise Ruder (PhD student, UBC) - Emerging agricultural technologies and the future of food. Sarah-Louise is assisting on the Genome BC work and will join FAI in the fall full time as our newest postdoc.
- John Botti (SLUEC) - John worked with Dr. Newman as a Directed Studies student to explore a new model of agriburban development. John was an active member of the FAI community through fall of 2022.
- Weston Johnsrude (BESNS) - Completing a Directed Study with Dr. Erland on a literature review of the current understanding on melatonin use, its environmental impacts, and what that means for us in agriculture and environmental sciences.
- Max Hoyer (SLUEC) - completed a Directed Study with Dr. Pizzirani on an urban policy analysis for vertical agriculture.
- Olivia Jackson (SLUEC) - Currently working on a critical review and synthesis of research toolkits within an agriculture, resource management, and conservation context with Dr. Pizzirani.
- Lisa Horton (SLUEC) - Completed a GIS “food asset map” analysis for vertical agriculture and transportation.

## Community Engagement

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### Public Engagement

- Newman, L. (January 24, 2023) Half-day briefing with Peter Pokorny, BC Deputy Minister of Agriculture.
- Glaros, A. (2023). Food Systems of Today and Tomorrow. Lecture for Third Age Learning Kitchener-Waterloo. <https://tal-kw.ca/lectures/food-technologies-of-today-and-tomorrow/>
- Newell, R & Glaros, A. (2023). Vertical agriculture in the Lower Mainland, British Columbia: Considerations for food system sustainability and resilience. CAG lecture – Western Division: Abbotsford, BC.

- Lenore Newman (2023, April 19th) Arrows in the Quiver: Spotighting Unheralded Climate Fighting Technologies. Panel Discussion, TISED Symposium, Montreal.
- Lenore Newman (2022, October 31st) The Race to Feed the Future: Emerging Agricultural Technology and the Policy Landscape. Keynote Address, Alberta Institute of Agrologists, Banff.
- Lenore Newman (2022, June 7th) The Future of Protein. Arell Food Summit, Toronto. Panelist.
- Glaros, A., Newell, R. (2022). Socio-Economic Futures for Cellular Agriculture: The development of a novel framework. American Association of Geographers Annual Meeting: New York, New York.
- Glaros, A. (2022). A Cellular Agriculture Commons. Canadian Association for Food Studies: Toronto, ON.
- Newman, L. (May 30th, 2022) Deans dinner keynote. Redefining food: The boundaries of agricultural policy and technology.
- Newman, L. (December 8th, 2022) Talk to the California Historical Society. Poutine on Mars: Culinary tradition in unusual places.
- Newman, L. (May 27, 2022) Presentation to Abbotsford Chamber "Canada's Agricultural Hub."

### Selected Media Features

- (Oct 22nd, 2022) Lenore Newman. Is our food system in a permanent state of crisis?, TVO Today, TVO.
- (March 2023) Cultivating Success: Canada's Big Biomanufacturing Opportunity. Co-host with Dr. Evan Fraser, one hour TV show produced by CFIN.
- (February 3rd, 2023) Hui, A. Agtech pushes the boundaries of food production and fuels a debate on who is considered a farmer. Globe and Mail.
- (October 3rd, 2022) Dinner on Mars: How to grow food when humans colonize the red planet. CBC Ideas.
- (July 12, 2022) Lenore Newman, CBC TV interview on corn. Brittany Roffel.
- (Aug 16, 2022) Lenore Newman, Post Media, "The mental health of farmers is being put to the test."
- (Dec 28, 2022) Lenore Newman, CBC. "British Columbians are growing lemons and oranges."
- (May 5, 2023) Lenore Newman, Wired. "This is how space food will thrive on Mars."
- (Mar 9, 2023) Lenore Newman, CBC BC Today - Funding for food security.

### Funding

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• 2023 Genome Canada. <i>The Social Implications of Agri-Genomics</i>	\$3,177,500
• 2023 SSHRC PDG <i>Building the Just Transitions in Food Systems Network</i>	\$200,000
• 2023 Genome BC. <i>The Cultural Implications of Cellular Aquaculture</i>	\$130,000
• 2023 Vancouver Fraser Port Authority. <i>Exploration of Trade Enabling Land</i>	\$45,000
• 2022 SSHRC / New Frontiers. <i>Reimagining Food Systems</i>	\$136,913
• 2022 SSHRC connections. <i>Social implications of cellular agriculture</i>	\$25,000

### Research

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- *Cellular Agriculture* - We have nearly completed the three-year project "Emerging Agricultural Technologies" funded by Future Skills Center Canada. We have now begun the major projects on the social issues associated with cellular agriculture funded by Genome BC and Genome Canada.
  - *Vertical Agriculture* - Dr. Alex Glaros continues to lead our work in this area, which centres around our MITACs-funded partnership with Avery Farms and i-Open Technologies. The research involves trials of several emerging vertical technologies. This work also has a policy dimension involving the study of how to best serve this emerging industry.

- *Agricultural Policy* - Dr. Newman is leading a project to explore mitigation options for Vancouver Fraser Port Authority. They completed work advising the provincial government on amendments to processing legislation.

## Publications, Presentations and Reports

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### Refereed Publications:

Newman, L; Fraser, E; Newell, R; Bowness, E; Newman, K; Glaros, A. (2022). Cellular agriculture and the sustainable development goals. Lopez-Correa, C; Suarez-Gonzalez, A. *Genomics and the Global Bioeconomy*. : 3-23.

Dupuis, J; Cheung, L; Newman, L; Dee, D; Yada, R. (2023). Precision cellular agriculture: The future role of recombinantly expressed protein as food. *Comprehensive Reviews in Food Science and Food Safety*. 22(2): 882-912.

Dring, C; Newman, L; Wittman, H. (2023). Assessing governability of agricultural systems: Municipal agricultural planning in Metro Vancouver, Canada. *Frontiers in Sustainable Food Systems* 6:691.

Newman, L, Newell, R, Dring, C, Glaros, A, Fraser, E, Mendly-Zambo, Z, Green, G, Bahadur, K. (2023). Agriculture for the Anthropocene: Novel applications of technology and the future of food. *Food Security*: 1-15.

Newman, L., et al. (2022). Bioengineering, telecoupling, and alternative meat and dairy: Agricultural land use futures in the Anthropocene. *The Geographical Journal*.

Isaac et al. (2022). Integrated Sustainability Planning and Local Food Systems. *Sustainability* 14(11) 6724.

Pizzirani, S., Newell, R., Glaros, A., Rahman, S., and Newman, L. (2023). "Vertical Farming and Innovative Businesses for Improving Food Security and Conserving Biodiversity", *Amplify, Business and Biodiversity Special Issue*.

### Non-refereed Publications:

(2022) Newman, L. & Fraser, E. *Dinner on Mars*. ECW Press.

Benyam, A., Newell, R., & Glaros, A. (2022). The Potential Role of Vertical Agriculture in Building Sustainable and Resilient Food Systems: Outcomes from a Stakeholder Focus Group. <https://doi.org/10.13140/RG.2.2.16100.65926>.

Dring, C., & Newell, R. (2022). Summary Report: Building a Foundation to Resilient Food Systems in the Fraser Valley Region. <https://www.ufv.ca/media/assets/food-and-agriculture-institute/pdfs/Building-a-Foundation-to-Resilient-Food-Systems-in-the-Fraser-Valley-Region.pdf>

Dring, C., & Newell, R. (2022). A Survey Study: Food Systems Hazards, Vulnerabilities and Impacts in the Lower Mainland BC. <https://www.ufv.ca/media/assets/food-and-agriculture-institute/pdfs/Food-Systems-Hazards,-Vulnerabilities-and-Impacts-in-the-Lower-Mainland-BC.pdf>

Ghadiri, M., Issac, J., & Newell, R. (2022). Exploring Food Systems in the Comox Valley through a Climate-Biodiversity-Health Lens: Preliminary Analysis and Initial Insights.

<https://www.ufv.ca/media/assets/food-and-agriculture-institute/pdfs/CBHNexus-InterviewAnalysis-InitialInsights-July2022.pdf>

Glaros, A., Pizzirani, S., & Newell, R. (2023). Public perceptions of vertical agriculture and its potential contribution to food systems: Outcomes of a public survey in Vancouver, British Columbia.

[https://www.ufv.ca/media/assets/food-and-agriculture-institute/pdfs/Feb2023\\_The-Potential-Role-of-Vertical-Agriculture-in-Building-Sustainable-and-resilient-Community-Food-Systems\\_Final.pdf](https://www.ufv.ca/media/assets/food-and-agriculture-institute/pdfs/Feb2023_The-Potential-Role-of-Vertical-Agriculture-in-Building-Sustainable-and-resilient-Community-Food-Systems_Final.pdf)

### **Forthcoming Publications**

Hoyer, M., Glaros, A., Newell, R., Pizzirani, S., and Raja, A. "Growing Upward: The role of vertical agriculture in urban planning and food systems", Plan Canada

(in review) Glaros, A., Newell, R., Pizzirani, S., Newman, L. "Vertical agriculture's potential implications for food security and food system resilience: Outcomes of focus groups in the Fraser Valley, British Columbia"

### **Plans for the Upcoming Year**

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- We will be working to launch the Genome Canada project successfully.
- Dr. Newman will also be publishing a co-edited textbook on cellular agriculture with Dr. Evan Fraser, Dr. Rickey Yada, and Dr. David Kaplan.
- We also expect our vertical agriculture portfolio to grow as we await the results of our application to RBC.
- Dr. Glaros is working with companies such as Quantotech and Avery Farms to explore the creation of a vertical agriculture industry association and to examine the relationship between the BC Vegetable Marketing Board and vertical growers.
- Our policy work will also remain active as our work with Vancouver Fraser Port Authority continues.
- At a larger scale, Dr. Newman will continue to build bridges with Guelph and other universities through the national agritech strategy process and will continue to work with Advancement to raise endowment funding as FAI continues its journey to fiscal sustainability.



## South Asian Studies Institute (SASI)

Satwinder Bains, Director  
<https://www.ufv.ca/sasi/>

May 2022 – April 2023

### Purpose

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The South Asian Studies Institute (SASI) at the University of the Fraser Valley (UFV) brings together South Asia scholars and students from diverse backgrounds and disciplines to create a nexus point for programs and activities that support the vision of the Institute. The SASI fosters inter-disciplinary scholarly research, community, and public engagement on issues related to South Asia and the Canadian South Asian Diaspora.

The mission of the SASI is to conduct and disseminate research with a goal to address community needs and challenges, to affect and influence strategies in the development of government policy, and that restores the Canadian public record. The SASI investigates and considers the complex successes, challenges, and issues as well as the multi-faceted contributions of Canadian South Asians. The Institute supports and responds to UFV's three strategic goals:

- Provide the best undergraduate education in Canada
- Be a leader of social, cultural, economic, and environmentally responsible development in the Fraser Valley
- Be innovative, entrepreneurial, and accountable in achieving our goals

### Membership

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**Director:** Dr. Satwinder Kaur Bains

**Coordinator:** Alysha Mahil

**Administrative Assistant:** Antoinetta Holierhoek

**Digital Asset Archivists:** Thamilini Jothilingam and Alisa Sohi

### Faculty Associates

- Dr. Rajnish Dhawan, English
- Dr. Cherie Enns, SLUEC
- Dr. Garry Fehr, Associate Vice President - Research & Graduate Studies
- Dr. Geetanjali Gill, Global Development Studies
- Dr. Surinder Jodhka, Jawaharlal Nehru University
- Dr. Karun Karki, School of Social Work and Human Services
- Mary-Anne MacDougall
- Dr. Nicola Mooney, School of Culture, Media, and Society
- Dr. Sharanjit Kaur Sandhra, History

### External Research Associates:

- Dr. Fazeeha Azmi, University of Peradeniya
- Dr. Chanwahn Kim, Hankuk University of Foreign Studies
- Dr. Seongheui Kim, Hankuk University of Foreign Studies
- Dr. Christine Moliner, O.P. Jindal Global University

**Advisory Committee:**

- Dr. Bajwa
- Dr. Dhami
- Rajnish Dhawan
- Garry Fehr
- Anita La
- Susan Made Kiss
- Shruti Prakash Joshi
- Mindy Rama
- Bharathi Sandhu
- Ansh Seth

**Partnerships**

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- Chetna Association of Canada
- Ambedkerite International Co-ordination Society of Canada
- Burnaby Village Museum
- Port Moody Station Museum
- Golden Museum and Archives
- Hankuk University of Foreign Studies, Seoul, South Korea Institute of Indian Studies
- Surrey Art Gallery
- Royal BC Museum
- Khalsa Diwan Society
- Tourism Abbotsford
- University of Toronto Scarborough
- Waterloo University Library & Archives
- Institute of Islamic Studies, McGill University
- Kabir Cultural Centre
- South Asian Diaspora Action Collective
- Jain Society of Alberta
- Mount Royal University
- Provincial Archives of Alberta
- University of Alberta Archives
- University of Calgary Archives & Special Collections
- B. C. Electronic Library Network
- B. C. Forest Discovery Centre
- B. C. Labour Heritage Centre
- Chilliwack Museum & Archives
- City of Delta Archives
- Cowichan Valley Museum and Archives
- Kaatza Station Museum & Archives
- Paldi Heritage Museum
- Sikh Heritage Museum
- Simon Fraser University Library
- Tamil Cultural Society of B. C.
- The Reach Gallery Museum
- University of British Columbia, Barber Learning Centre
- University of the Fraser Valley Library
- University of the Fraser Valley Information Studies Department
- Vancouver Maritime Museum
- Vancouver Tamil World
- White Rock Museum and Archives
- Yucho Chow Community Archive
- Black Girl Hockey Club Canada
- Apna Hockey
- Hockey Equality
- 3Nolans
- Hockey Night in Canada Punjabi
- OMNI TV
- Poetic Justice Foundation
- Belonging Matters Consulting
- The Reach Gallery
- City of Abbotsford

**Students**

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**Research Assistants:**

- Gurkiran Aulakh
- Isaac Barker
- Mitali Bhardwa
- Manveer Singh Chatha
- Ravjeet Dyal
- Tyler Falk
- Prabhpreet Singh Gill
- Pat Garland
- Sargun Kaur
- Raaynaa Madaan
- Arnav Mehta
- Pratham
- Balraj Singh
- Shivam Vashist

### Web Developer

- Arshdeep Sandhu

### Community Engagement

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- *Voices from a Smouldering Underground* - Jan. 2023. SASI hosted an afternoon panel and dialogue on the critically important topic of caste and anti-casteism as a relevant issue in diaspora.
- *Youth Crime Prevention and Sports Colloquium* in partnership with UFV Kinesiology and UFV Criminology and Criminal Justice departments - November 25-26, 2022. The two-day event on November 25 and 26 brought together researchers, scholars, and practitioners to discuss the benefits and drawbacks of sports participation in reducing criminal behaviour.
- *Langar Project. 2022.* The SASI and UFV's Library partnered together in the Langar Project and created an exhibition on the history of Langar.
- *National Human Trafficking Awareness Event.* Screening of 'The Twelve Thousand' on Feb 28th, 2023, partnering with the UFV's School of Social Work and Human Services.
- '*WE ARE HOCKEY*', a SASI curated exhibition, travelled to the Peel Art Gallery Museum in Brampton, Ontario, Oct 15, 2022 - April 30, 2023. This was for the IIHF Women's World Championship 2023.
- *Ehsaas Readers and Writers Festival.* October 13th, 2022.
- 'Ocean of Peace' exhibition presented at the Sikh Heritage Museum, June 2022 - present.
- Screenings of '*Rails, Jails, Trolleys*,' a SASI produced film about the farmers' protest in India.
  - August 24th, 2022, UFV Launch Day in partnership with FSA Union and the Research Office.
  - October 1st, 2022, UFV partnered with Tourism Abbotsford for the Taste of Abby Festival.
  - Feb 2023 - screening with UFV Sustainability at Chilliwack Campus.
  - Jan 2023 - screening at LA Matheson School, Surrey BC.
- *Equality Day Celebration* - April 26th, 2023, in partnership with the Chetna Association of Canada.
- The '*Haq and History*' exhibition travelled to the Surrey Centre Library in 2022.
- *Paldi Heritage Minute Screening* on April 19th, 2023 at UFV.

### Funding

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Canadian Heritage Museums Assistance program: SACDA	\$254,713.00
BC History Digitization Project	\$15,000.00
BC Arts Council	\$15,000.00
SASI Research Fellowship Program Endowment	\$5,000.00
Ryerson University: Inclusive Communities for Older Immigrants	\$32,790.00
Royal BC Museum: Pop-up exhibit South Asian Canadian Community	\$3,500.00

### Research

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- Canadian Heritage MAP project – *Building the South Asian Canadian Digital Archive* – 2022-2024.
- Sikh Heritage Museum exhibition, '*Transnational Marriages in BC*' - July 2023.
- Produced the film '*Rails, Jails and Trolleys*' August 2022 - ongoing screenings worldwide.
- South Asian Canadian Legacy Project launch 2022 - ongoing engagement.
- Dr. Bains, Historical Consultant – *Historica Canada 2021/2022 – Heritage Minute Paldi.*
- Participant documentary: *Unarchived* – National Film Board 2022.
- Co-Lead on SSHRC grant 2020-2027: *Inclusive Communities of Older Immigrants* – Toronto Metropolitan University.

- Collaborator CIHR C 2021-2024. Effects of Epidemic/Pandemic Outbreaks on Temporary Foreign Agricultural Workers in BC.
- Collaborator CIHR 2020-2021: Developing COVID-19 Risk Communication and Community Engagement Readiness Strategy.
- Collaborator CIHR -Guidance for Travelers Visiting Friends and Relatives (VFR).
- SSHRC Grant 2021-present. Dr. Johnathan Crush at Wilfred Laurier University: South-South Migration and Migrant Food Insecurity: interactions, impacts, and remedies (MiFood Project).
- Provided consultation on the City of Mission Komagata Maru signage at the Waterfront, April 2023.
- Content consultation on City of Vancouver - Komagata Maru Secondary Street Naming – South Asian Cultural Redress, April 2023.

## **Publications, Presentations and Reports**

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### **Publications & Reports:**

Bains, S. (2024 in press). A century of Indian migration to Canada: a choreography of challenges and changes. India Migration Report – Editor S. Irudaya Rajan.

Bains, S. (2024 in press). Section Editor: Theology and Religion online - Bloomsbury Religion in North America. BRINA: Sikhism.

Bains, S. (2024 in press). Punjabi economic migration to Canada – a success story. In Palgrave Handbook on Migration of Indians to Southeast Asia. Rajan, I. & Kaur, A. (Eds.). London: Palgrave.

Crime prevention and youth (2022). <https://www.southasiancanadianheritage.ca/wp-content/uploads/2022/11/Short-Report-Crime-Prevention-Through-Sports.pdf>

### **Non-refereed Publications:**

Bains, S. (2023). The Canadian Encyclopedia. The Story of Paldi.

Bains, S. (2023). Ed. Keith Wallace. (Re)Making home away from home: memory, bravado and belonging. Vancouver: Figure 1 Publishing.

Bains, S. (May 2022). South Asian Canadian Legacy Project impact and influence. BC History, BC Historical Federation.

### **Article Reviews:**

Bains, S. (2022). Enhancing Female Status by Improving Nutrition: The Role of Corporate Social Responsibility in Nigeria's Oil Region. International Journal of Environmental Research and Public Health.

Bains, S. (2022). To Save a Girl-Child, You Must Train a Boy-Child: A Note on Situational Irony. International Journal of Environmental Research and Public Health.

Bains, S. (2022). Translation and validation of Nursing Students' Knowledge and Attitudes of Lesbian, Gay, Bisexual, Transgender Health Concerns Survey in the Greek language. Healthcare.

Bains, S. (2023). A Critical Discussion of the Visual Signs of Sikh Identity with an Emphasis on their Gender and Sexual Signification". Critical Research on Religion.

**Presentations:**

Bains, S. & Jothilingam, T. (May 2022). Multilingual digital archives as critical sites of social and epistemic justice. Digital Humanities Unbound.

Bains, S. & Jothilingam, T. (April 28, 2023). Connecting the Dots: Building Support for GLAM Partners in Digital Repository Networks [paper presentation]. Archives Association of BC conference, Access/Ability.

Bains, S., Jothilingam, T., Sohi, A. (April 27, 2023). Metadata creation workshop based on SACDA collections. ConnectED 2023, UFV.

Jothilingam, T. (March 13-15, 2023). South Asian Canadian Digital Archive. Global Digital Humanities Symposium, Michigan State University.

Bains, S. The Influence and Contributions of the South Asian Community in BC (March 29, 2023). ElderCollege Delta.

Bains, S. Activating the Archive (May 26, 2023). Heritage BC Conference, Chilliwack, BC.

Rajesh Vora: Everyday monuments - artist interview

<https://podcasters.spotify.com/pod/show/sikharchive/episodes/Interrogating-Gender-in-Sikh-Tradition-and-Practice-with-Professor-Satwinder-Kaur-Bains-e1mnkbt> May 2022.

**Media:**

Conrad, G. (March 22, 2023). Satwinder Bains Interview on the Punjab curfews and curtailment of internet service in Punjab. Vancouver Sun.

Cheung, C. (April 2023). Taking Paneer to the Skies. The Tyee.

TV Punjab (August 2022). The history of engagement of youth with gang warfare [video]. Youtube. <https://www.youtube.com/watch?v=ikFb8FglFoM>

Quinn, S. (April 19, 2023). Early Edition with Stephen Quinn: Paldi Heritage Minute. CBC Radio.

Craigie, G. (April 19, 2023). On the Island with Gregor Craigie: Paldi Heritage Minute. CBC Radio.

Joyce, S. (April 19, 2023). Daybreak Kamloops with Shelley Joyce: Paldi Heritage Minute. CBC Radio.

Walker, C. (April 19, 2023). Daybreak South with Chris Walker: Paldi Heritage Minute. CBC Radio.

de Ryk, C. (April 19, 2023). Daybreak North with Carolina de Ryk: Paldi Heritage Minute. CBC Radio.

Omni TV (April 20, 2023). The Making of the Heritage Minute. Omni TV.

**Plans for the Upcoming Year**

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- Sikh Heritage Museum exhibition, titled 'Transnational Marriages in BC' - July 2023.
- The 'Haq and History' exhibition has travelled to Port Moody (May-June) and will move on to the Golden Museum and the Nikkei National Museum & Cultural Centre.

- City of Abbotsford is working with the SASI to rename a street and create signage at the SHM to commemorate the Komagata Maru tragedy.
- SASI will be applying for the SSHRC Insight Grant for the Built Heritage project with multiple university partners.
- SASI will be welcoming visiting scholar Dr. Christine Moliner (May-June 2023).
- Research Associate Dr. Fazeeha Azmi (Feb 2023 - Jan 2025), will be giving a public lecture Fall 2023.
- 2023 Research Fellowship - Dr. Karun Karki - Nepali Canadian Diaspora.
- Working with the Province of BC on the South Asian Canadian Museum and Archive development and consultations.
- Section Editor BRINA Bloomsbury Religions Journal – Sikhism.
- Building exhibit on Karam Singh Daulatpur - philanthropist - 100-year anniversary.
- Golf Tournament fundraising on August 26, 2023.
- Contemporary histories project - 1970- present time.

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

Shelley Canning, Director  
<https://www.ufv.ca/aging/>

May 2022 – April 2023

### Purpose

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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 exchange 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

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**Director:** Dr. Shelley Canning

#### Faculty Associates:

- Darren Blakeborough, Media, Culture & Society
- Dr. Michael Corman, Media, Culture & Society
- Dr. Candace Couse, Visual Arts
- Dr. Gillian Hatfield, Kinesiology
- Dr. Andrea Hughes, Psychology
- Dr. Gabriel Murray, Computer Information Science
- Alison Pritchard Orr, Kinesiology
- Dr. Valentina Proietti, Psychology

#### Adjunct Faculty

Dr. Lesley Jessiman

### Partnerships

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- Abbotsford Hospice Society
- Age-Friendly Universities Global Network
- Auckland University of Technology
- BC Cancer
- Canadian Association for Health Humanities (CAHH) Advisory Council
- Canadian Gerontological Nurses' Association
- Elim Village
- Gerontological Nurses' Association of BC - GERO Nurses podcast
- Maplewood Housing Society
- School District #34
- UBC Centre for Research on Personhood in Dementia
- UBC Health Sciences and UBC Department of Computer Science on the CANARY project (Clinical data, natural language processing and eye tracking for dementia risk stratification)
- Yarrow Cycling without Age chapter

### Students

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The following students, represent all the disciplines of CERA members, and have worked on projects or studies as research assistants or work study students:

**Research Assistants:**

- Liya Benny, Computer Information Systems
- Cody Berends, Kinesiology
- Sidney Hoolsema, Psychology
- David Hughes, Psychology
- Varshaa Kashyap, Psychology
- Sanskriti Khurana, Computer Information Systems
- Kathleen Paddington, Sociology
- Alanna Sydenham, Psychology

**Directed Studies:**

- Jasleen Brar, Nursing: Dementia-Friendly Cancer Care. (Canning)
- Cassidy Dahl, Nursing: Intergenerational Knowledge Exchange Collaboration. (Canning & Couse)
- Gurneesh Purba, Kinesiology: UFV Trishaws: Exploring Intergenerational Relationships. (Pritchard Orr & Canning)
- Rachel Wan, UBC nursing: Dementia-Friendly Cancer Care. (Canning)

**Honours:**

- Amanda Hooze, Psychology: The Influence of Cell Phones and Driving on Cognitive Capacity. (Hughes)
- Anna Janzen, Kinesiology: The Physiological and Cognitive Effects of Pickleball Participation in Older Adults. (Hatfield)

**Work-study:**

- Divyapreet Sandhu: (Corman)
- Manny Sidhu, Kinesiology: Is altered muscle activation in knee osteoarthritis associated with balance and proprioceptive deficits and instability? (Hatfield)

**Doctoral Student:**

- Bryce Hastings, PhD student from Auckland University of Technology: An investigation of walking economy in individuals with hip joint osteoarthritis. (Hatfield)

**Community Engagement**

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- Blakeborough & Canning: Podcast - *GERO Nurses: A Tale from the Front*

**Canning Presentations**

- "UFV: An Age-Friendly University" Compassionate Communities, Chilliwack, December 2022.
- "Dementia-Friendly Cancer Care" BC Cancer, Abbotsford - Research Innovation & Engagement dinner, May 11, 2023.
- BC Cancer, Vancouver - Radiation Oncology Rounds, March 2023.
- Chilliwack Elder College, CERA Series, March 2023.
- Learning Plus, Abbotsford, January 2023.
- Alzheimer's Society of BC, Vancouver, December 2022.
- "Benefits of Intergenerational Relationships" Learning Plus, Abbotsford, November 2022.
- Centre for Research on Personhood in Dementia, UBC Vancouver, September 2022.

**Corman Presentations**

- "Ageing in Society" Four lecture series, Chilliwack Elder College, Feb-March 2023.
- "Health Illness & Society": Chilliwack Secondary School.



- "Structural Competency" - facilitated workshop between UFV Soc399 and NURS101 students, March 2023.

#### Corman Podcast Interview

- Ganam, Shaye. (Mar. 7, 2023). The Parkland Institute EMS Report (Podcast). 630CHED/770CHQR. Available at:  
<https://open.spotify.com/episode/5Nyj6SL8VyRMakqtSPA8uF?si=piHbZiLeSHaXtWX50dnCZg>

#### Corman News Media

- Patterson, Kelsey. (Mar. 7, 2023). More Funding Not a Long-Term Solution to Fix Alberta's 'Broken' Emergency Care System: Report. City News, Everywhere. Available At:  
<https://edmonton.citynews.ca/2023/03/07/funding-alberta-emergency-care-system/>
- RDNews Staff. (Mar. 8, 2023). News Report from Parkland Institute Examines Alberta's EMS Crisis. rdnewsNOW. Available at: <https://rdnewsnow.com/2023/03/08/new-report-from-parkland-institute-examines-albertas-ems-crisis/>
- Junker, Anna. (Mar. 7, 2023). Parkland Institute Report Outlines EMS Crisis in Alberta. Edmonton Journal. Available at: <https://edmontonjournal.com/news/local-news/parkland-institute-report-outlines-ems-crisis-in-alberta>
- Amato, Sean. (Mar. 7, 2023). Alberta has Lots of Paramedics but a 'Toxic Work Environment,' Narrow View of Health: Report. CTV News Edmonton. Available at:  
<https://edmonton.ctvnews.ca/alberta-has-lots-of-paramedics-but-a-toxic-work-environment-narrow-view-on-health-report-1.6303039>
- Cowley, Paul. (Mar. 8, 2023). Alberta's EMS Shortcomings Examined in New Report. Red Deer Advocate. Available at: <https://www.reddeeradvocate.com/news/albertas-ems-shortcomings-examined-in-new-report/>
- Bradley, Jonathan. (Mar. 8, 2023). Report Finds More Funding Will Not Fix Alberta's Emergency Care System. Western Standard. Available at: [https://www.westernstandard.news/news/report-finds-more-funding-will-not-fix-alberta-s-emergency-care-system/article\\_fd11a8ba-bddb-11ed-960f-7326a8cbbc50.html](https://www.westernstandard.news/news/report-finds-more-funding-will-not-fix-alberta-s-emergency-care-system/article_fd11a8ba-bddb-11ed-960f-7326a8cbbc50.html)

#### Couse Exhibition Curator/Facilitator

- "Perceptions" An Examination of Social Perceptions and Imagined Truths.
- S'eliyemetaxwtexw Art Gallery, UFV, Abbotsford, October 2022.
- "Here and There" Collaborative Studio Practice: Intergenerational Knowledge Exchange.
- S'eliyemetaxwtexw Art Gallery, UFV, Abbotsford, April 2023.
- "The Body" 2023 Fraser Valley Biennial
  - The Reach Gallery Museum, Abbotsford, January – May 2023.
  - The Langley Arts Council, Langley, May - June 2023.
  - Ranger Station Art Gallery, Harrison Hot Springs, August 2023.
  - Kariton Gallery, Abbotsford, September 2023.
  - O'Connor Group Art Gallery, Chilliwack, November 2023.

#### Hatfield Presentations

- "Tools for your Toolkit: Biomechanical Risk Factors and Treatments for Knee Osteoarthritis", Chilliwack Elder College CERA Series, March 30, 2023.
- "Staying Active with Knee Osteoarthritis", Chilliwack Pickleball Club, April 2023.

- "Staying Active with Knee Osteoarthritis and Lower Back Pain", Chilliwack Hospice Society, May 2023.

Hughes Presentation

- "Remembering the Good Times: Some Positive Truths about Memory and Ageing" Chilliwack Elder College CERA Series, March 2023.

Pritchard Orr:

- "Cycling Without Age Spring 2023 Launch" Chilliwack, May 2023. Joint promotional event with CERA Trishaw Rides and Cycling without Age- Yarrow chapters.
- "Exercise and Aging as well as Exercise and Hearing Impairments" supervised Kinesiology student presentations for Chilliwack Elder College CERA Series March 2023.

## **Funding**

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Canning

- Alzheimer's Society of Canada; 2022-2025; PI: "Implementing Dementia-Friendly Care Approach for Cancer Patients Living with Dementia" \$100,000
- SSHRC Explore - UFV; 2021-2022; Principal Investigator \$5,116
- UFV Provost's Strategic Imperatives Fund; 2021-2022; Principal Investigator "How Age-Friendly is UFV: An Audit." \$5,407

Corman:

- Canadian Institutes of Health Research (CIHR) Catalyst Grant:2023-2024 Co-Investigator. "A comparative analysis of regulatory approaches to the assisted living/retirement home sector in Ontario and British Columbia." \$150,000
- Canadian Institutes of Health Research: 2020-2024 Co-Investigator. "Online Cognitive Behavioural Therapy for Substance Use Disorder: The impact of peer support." \$378,676

Couse:

- 2023 CIHR Planning and Dissemination Grant; 2023-2024; Co-Investigator "The Fine Arts of Creating Space in Health Education: A Multilingual Conference in Quebec about Bridging Cultures and Sustainable Health Humanities" \$9,750

## **Research**

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Canning:

- "Implementing Dementia-Friendly care approach for cancer patients living with dementia."

Canning & Couse:

- "Understanding student perceptions to support education promoting ageing & dementia awareness."
- "Exploring knowledge exchange through an intergenerational art collaboration."

Corman:

- Becoming a Paramedic: Explore the Social Organization of Health Professions Education in Emergency Medical Services.

- Lights and Sirens: The Critical Condition of EMS in Alberta. Parkland, Institute, The University of Alberta.

Hatfield:

- "Altered muscle activation in knee osteoarthritis associated with balance and proprioceptive deficits and instability?"
- "The Physiological and Cognitive Effects of Pickleball Participation in Older Adults."
- "An investigation of walking economy in individuals with hip joint osteoarthritis."

Hughes:

- "Investigation of cognition, motivation and life-satisfaction of older adults who play pickle ball." Data collection for this study will take place at the 55+ BC Seniors Games in Abbotsford August 2023. Currently writing proposal and ethics, data gathering summer 2023.

Hughes & Jessiman:

- " Social Isolation and Loneliness in the Face of COVID-19: An Examination of the Outcomes and the Key Protective/Predictive Factors."
- "Personal Memories for a Global Pandemic."

Pritchard Orr & Canning:

- "Exploring the intergenerational relationships through cycling without age"

## Publications, Presentations and Reports

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*UFV students indicated by \**

### Publications:

Canning, S. E., & Drew, C.\* (2022). Canadian nursing students' understanding, and comfort levels related to Medical Assistance in Dying. *Quality Advancement in Nursing Education*, 8(2). DOI:10.17483/2368-6669.1326.

Seim, J., Corman, M., & McCann, L. (2022). Producing paramedicine: Case studies in the medical labor process. *Social Science & Medicine*, 309. <https://doi-org.proxy.ufv.ca:2443/10.1016/j.socscimed.2022.115231>.

Soroski, T., da Cunha Vasco, T., Newton-Mason, S., Granby, S., Lewis, C., Harisinghani, A., ... & Jang, H. (2022). Evaluating Web-Based Automatic Transcription for Alzheimer Speech Data: Transcript Comparison and Machine Learning Analysis. *JMIR aging*, 5(3), e33460.

### Reports:

Corman, M. (2023). Lights and Sirens: The Critical Condition of EMS in Alberta. Parkland, Institute, The University of Alberta. Available at: [https://www.parklandinstitute.ca/lights\\_and\\_sirens](https://www.parklandinstitute.ca/lights_and_sirens). (Peer Reviewed).

### Catalogue Essay:

Couse, Candace. 2023 Fraser Valley Biennial, The Reach Gallery Museum, 2023.

### Conference Presentations:

Canning, S. E., McKenzie, M., St-Martin, G., Kaur, J., Percival, N., Wan, R., Brar, J., Jackson, L, & Makartoff, S. (2023). Implementing Dementia-Friendly Cancer Care. Canadian Organization of Medical Physicists & Canadian Association of Radiation Oncologist (joint scientific meeting), September, Montreal, Quebec (abstract accepted).

Canning, S. E., McKenzie, M., St-Martin, G., Kaur, J., Percival, N., Wan, R., Brar, J., Jackson, L., & Makartoff, S. (2023). Implementing Dementia-Friendly Cancer Care. Canadian Gerontological Nurses Association, April, Niagara, Ontario.

Canning, S. E., & Hung, L. (2023). Engaging Undergraduate Students in Gerontology Through Research. Canadian Gerontological Nurses Association, April, Niagara, Ontario.

Canning, S. E., Blakeborough, D., Corman, M., Couse, C., Hatfield, G., Hughes, A., Jessiman, Murray, G., & Pritchard Orr, A. (2022) How age-friendly are we? Conducting an age-friendly university audit. Canadian Association on Ageing, October, Regina.

Canning, S. E., St-Martin, E., Brown, J., Cusick, N\*, & Klassen, R.\* , & Couse, C. (2022) Introducing age and dementia awareness learning activities to school children. Canadian Association on Ageing, October, Regina.

Canning, S. E., St-Martin, E., Ramirez Luis, Z., \* & C. Couse, (2022) Employing arts-based methods to explore perceptions of age and dementia among school children. Canadian Association on Ageing, October, Regina.

Canning, S. E., Hung, L., Kaur, J., McKenzie, M., & St-Martin, G. (2022) Implementing a Dementia-Friendly Care Approach for Cancer Patients Living with Dementia. Canadian Association of Nurses in Oncology, October, Victoria.

Couse: Co-organizer. The Fine Arts of Creating Space in Health Education: A Multilingual Conference in Quebec about Bridging Cultures and Sustainable Health Humanities supported by the Canadian Association for Health Humanities (CAHH) and Laval University and in conjunction with the annual conference of the International Congress on Academic Medicine (ICAM), Quebec City QC, Canada (April 11th and 12th).

### **Plans for the Upcoming Year**

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- Continue to support and advance UFV's AFU initiatives. Planning for Oct 13, 2023, celebration of Older Person's Month.
- Blakeborough & Canning: Continue to produce podcasts for "Gero Nurses: Tales from the Front" exploring the work of gerontological nurses.

Blakeborough & Corman:

- "Later Life Learning – a qualitative study of elder university students."
- "Seniors and Sexuality – still working out the kinks."

Canning:

- Continue development of age and dementia education modules for K-12 and post secondary systems.

Corman:

- Revise and Resubmit journal article: Kearney, G., Gormley, G., & Corman, M.. Unstandardizing standardized ways of knowing: Institutional ethnographic perspectives on health professions education. (Social Science & Medicine).

- Continue working on research and complete data collection for Becoming a Paramedic study.
- Complete Primary Care Paramedic Training (full-time for 4.5 months beginning winter 2024).
- Work on book manuscript - Working Title: The Anatomy of a Crisis – Pre-Hospital Emergency Medical Services, COVID-19, and the Social Organization of a Disaster.
- SSHRC IDG Grant (Under Review) - Hussain, Corman, et al – Exploring Community-Paramedicine in Remote and Isolated Indigenous Communities. This grant, if funded, will initiate a new program of research on community paramedicine in indigenous communities in rural and remote sites in Canada.

"The Body". (Curator) The 7th Fraser Valley Regional Biennial. Exhibition series below:

- The Reach Gallery Museum, Abbotsford January – May.
- The Langley Arts Council, Langley, May – June.
- Ranger Stationi Art Gallery, Harrison Hot Springs, August 2023.
- O'Connor Group Art Gallery, Chilliwack, November - December 2023.
  - ii. "Perceptions"
  - iii. "Here and There"

Couse & Canning:

- "Projections and Extensions: Exploring Dementia Through Visual Practice". Book under preparation with Small Walker Press, 2023.

Hatfield:

- Abstract & manuscript submission for "Is altered muscle activation in knee osteoarthritis associated with balance and proprioceptive deficits and instability?"
- Data collection for "The Physiological and Cognitive Effects of Pickleball Participation in Older Adults" study.
- "An investigation of walking economy in individuals with hip joint osteoarthritis"- A systematic review examining interventions to improve walking economy.

Hughes:

- Data collection for "Investigation of cognition, motivation and life-satisfaction of older adults who play pickle ball."

Murray:

- "Natural language processing and eye tracking for dementia risk stratification."
- Grant writing & grad student supervision

Murray & Jessiman:

- Develop second phase of previously completed study "Computational linguistics and machine learning for analyzing age-related patterns in clinical transcripts."

Pritchard Orr & Canning:

- Continuation of the CERA Trishaw Rides program and research studies. Seeking funding for UFV Trishaw programme sustainability. Submitted Abstract: Canadian Association on Ageing Annual Conference (October 2023) Cycling Without Age: Experiences of Intergenerational Pilots and Passengers.

## Centre for Global Development (CGD)

Geetanjali Gill, Director

May 2022 – April 2023

<https://ufv.ca/centre-global-development/>

### Purpose

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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.

The Centre is made up of diverse faculty associates who engage in local and global dialogue, research, and action for equity, justice, and sustainability. We aim to contribute to transformative socio-economic and environmental change, action, and resiliency. Our work promotes interdisciplinary collaboration, critical thought, local ways of knowing, and participatory and decolonial practices and approaches. We provide opportunities for the co-creation and generation of diverse knowledge and community-informed responses and actions.

### Membership

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**Director:** Dr. Geetanjali Gill

#### Faculty Associates:

- Dr. Satwinder Bains, School of Culture, Media, & Society, SASI
- Dr. Rita Dhungel, School of Social Work & Human Services
- Dr. Cherie Enns, SLUEC
- Dr. Sumin Fang, Communications
- Dr. Karun Karki, School of Social Work & Human Services
- Catherine Liao, Nursing
- Dr. Hayli Millar, Criminology & Criminal Justice
- Dr. Jeffrey Orr, Communications
- Dr. Stefania Pizzirani, SLUEC
- Dr. Jessica Price, Political Science
- Dr. Carlos Ponce, Criminology & Criminal Justice
- Dr. Amea Wilbur, Adult Education

### Partnerships

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- Community-based Research Canada Network.
- Abbotsford Food Bank - on-going project, led by Jeffrey Orr and Jessica Price.
- Albinism Royal Foundation and Fund for Innovation and Transformation - project that finished in 2022 in Sierra Leone, led by Dr. Geetanjali Gill and Catherine Liao. Possible new project to begin in 2023 (waiting to hear from Global Affairs Canada).
- George Washington University, Global Women's Institute (US) - on-going project in Uganda and Lebanon, and new research project development, led by Dr. Geetanjali Gill.
- Right to Play International (NGO) - on-going projects in Uganda, Lebanon, Mali, and Senegal, led by Dr. Geetanjali Gill.
- National Association of People living with HIV in Nepal, Southwest Eastern College in Nepal - on-going project in Nepal, led by Dr. Geetanjali Gill and Dr. Rita Dhungel.
- McGill University - new global project in development, Dr. Geetanjali Gill as co-applicant.

- United Nations Association of Canada (lower Mainland BC branch) - Dr. Geetanjali Gill is co-President. Future collaborative events.
- Cooperative University of Kenya, for on-going project, led by Dr. Cherie Enns.
- Youth Cafe Kenya, Mathare Environmental Youth Conservation Centre, City Lab Ardhi University, University of Nairobi, Public Space Network Kenya, UN Habitat, KidzCare Tanzania - on-going and new QES internship program, led by Dr. Cherie Enns.

## **Students**

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- Two student research assistants worked on the Abbotsford Food bank project with Dr. Jessica Price and Dr. Jeffrey Orr (UFV Accelerate Grant).
- Dr. Geetanjali Gill and Catherine Liao have engaged five student Research Assistants for on-going and recently completed projects in 2022-23.
- Dr. Geetanjali Gill is working with student Research Assistant, Amanjot Dhaliwal, on a Faculty Student Research and Scholarly Grant for a qualitative study of gender norm change amongst adolescents in Rwanda, Ghana, and Mozambique.
- Dr. Geetanjali Gill and Dr. Rita Dhungel will be hiring up to four student Research Assistants for their New Frontiers in Research (SSHRC) project in Nepal in June 2023.
- Dr. Anea Wilbur co-supervised four Research Assistants for SSHRC Standard Institutional Grant (SIG Explore), SIF Grant, Faculty/Student Research and Scholarly Activity Fund through the University of the Fraser Valley (UFV): Images of Newcoming.
- Dr. Rita Dhungel is working with three UFV students as Research Assistants.
- Dr. Stefania Pizzirani hired two student Research Assistants for a new project on the sustainable fashion sector.

## **Community Engagement**

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- "Symposium on decolonizing research: participatory and community-based approaches", Nov. 27, 2022. Organized and moderated by Dr. Geetanjali Gill and Dr. Rita Dhungel.
- "*I am Belmaya*" film screening and discussion on International Women's Day, and Photovoice exhibition by Dr. Rita Dhungel on their work with sex-trafficking survivors in Nepal, as part of UFV's March for Sustainability, Evered Hall, March 8, 2023. Organized by Dr. Geetanjali Gill.
- Gill, Geetanjali. "Uganda Workshop: Participatory data analysis with adolescents in refugee settings," March 27-31, 2023, Right to Play International and George Washington University.
- Gill, Geetanjali. & Maureen. Murphy. "Lebanon Workshop: Participatory data analysis with adolescents in refugee settings," Feb. 27-Mar. 3, 2023. Right to Play International and George Washington University.
- Gill, Geetanjali. "Mozambique Virtual Training on Qualitative Methods with Adolescents," Aug. 10, 2022, Right to Play International.
- Gill, Geetanjali. "Rwanda Virtual Training on Qualitative Methods with Adolescents," July 5th, 2022, Right to Play International.
- Gill, Geetanjali. "Ghana Training on Qualitative Methods with Adolescents," May 31-June 3, 2022, Right to Play International.
- O'Doherty and Hayli Millar, 2023, are providing pro bono technical expertise to SWAN Vancouver, which provides frontline services and advocacy to support the rights, health and safety of im/migrant women who engage in indoor sex work, as they aim to address dis/misinformation by developing a microsite for journalists.
- Geetanjali Gill is co-President of the United Nations Association in Canada (Lower Mainland BC branch).

## Funding

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- UFV's Accelerate Grant - Abbotsford Food Bank Exploratory Project \$4000
- Fund for Innovation and Transformation – Share findings from "Leave no one behind" project in Sierra Leone with Albinism Royal Foundation, Dr. Geetanjali Gill and Catherine Liao. \$19,861
- New Frontiers in Research Fund - Project with sex-trafficking survivors with HIV/AIDS in Nepal. Dr. Geetanjali Gill and Dr. Rita Dhungel. \$377,954
- New Frontiers in Research Fund - Project in Mali and Senegal with Right to Play International (NGO). Dr. Geetanjali Gill. \$212,046
- UFV Faculty Student Research Scholarly Activity Grant- qualitative study of gender norm changes amongst adolescents in Ghana, Rwanda, and Mozambique. \$4000
- Catherine Liao secured funding for a special burn unit in Sierra Leone.
- Rita Dhungel, Gender Based Violence Against Immigrants and Refugees Living with HIV/HIV-Risk in Canada: A Systematic Review through an Intersectional Lens SSHRC Knowledge Synthesis Grant.
- Dr. Stefania Pizzirani received funds from the UFV Research Office for a project on the sustainable fashion sector.
- Dr. Geetanjali Gill applied for a New Frontiers in Research Fund grant for a project on gender-transformative approaches to community-led climate change adaptation and mitigation in Bangladesh with George Washington University (US) in 2023. CAD \$1,320,000 and USD \$546,361. Will be announced in 2023.
- Dr. Geetanjali Gill is a co-applicant on the TRANSFORM: Engaging Youth for Social Change SSHRC Partnership Grant with McGill University and other universities. Will be announced in 2023. \$2,000,000.
- Dr. Geetanjali Gill and Catherine Liao applied to Global Affairs Canada's Development Impact Window grant for a project on inclusive education in Sierra Leone. Will be announced in 2023. \$1,880,000.

## Research

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### Completed:

- "Leave no one behind" project with persons with albinism in Sierra Leone, funded by Fund for Innovation and Transformation, Dr. Geetanjali Gill and Catherine Liao.
- Rita Dhungel collaborated with Southwestern PhD Research Centre on a study to examine men's involvement in gender justice by carrying out focus groups with men.

### On-going:

- " Center for Global Development (CGD)-Abbotsford Food Bank Exploratory Project", Dr. Jessica Price and Dr. Jeffrey Orr.



- Dr. Geetanjali Gill and Catherine Liao, Fund for Innovation and Transformation in 2023 to share findings from their "Leave no one behind" project in Sierra Leone with Albinism Royal Foundation.
- Dr. Geetanjali Gill and Dr. Rita Dhungel, project with sex-trafficking survivors with HIV/AIDS in Nepal from the New Frontiers in Research Fund in 2023.
- Dr. Geetanjali Gill, New Frontiers in Research Fund in 2022 for a two-year project in Mali and Senegal with Right to Play International (NGO).
- Dr. Geetanjali Gill and UFV student, Amanjot Dhaliwal, UFV Faculty Student Research Scholarly Activity Grant for their qualitative study of gender norm change amongst adolescents in Ghana, Rwanda, and Mozambique in 2023.
- Amea Wilbur collaborated with several other scholars on a various research projects including Dr. Brianna Strumm (UFV), Dr. Tess Maginess from Queens University, Belfast and Dr. Allyson Eamer from the University of Ontario.
- Amea Wilbur continued their research on trauma-informed adult education through an unfunded project with Dr. Allyson Eamer. They have recently submitted a SSRCH proposal that will allow the development of a survey exploring compassion fatigue with language instructors.
- Amea Wilbur is a co-researcher with Dr Brianna Strumm, Dr. Tess Maginess and Dr. Tanis Sawkins on Images of Newcoming project. The purpose of this research study is to garner migrant women's perceptions and reflections on belonging and exclusion within institutions, programs and community in Canada and Northern Ireland.
- Hayli Millar and Megan Capp, Cedar Outreach Society in Abbotsford, are developing a research proposal for September 2023 to research the legal and other needs of unsheltered criminalized/victimized/justice-involved women.
- Rita Dhungel collaborated with University of Calgary and Alberta Health Services for a systematic review to examine how systemic racism, sexism, and social stigma intersect to escalate the vulnerability of immigrant and refugee women living with HIV/HIV-risk in Canada.
- Dr. Stefania Pizzirani is carrying out a project on the "Creation of a transparency metric tool for critical assessment of the sustainable fashion sector."

## **Publications, Presentations and Reports**

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### **Presentations:**

- Gill, Geetanjali. "Global Development Studies and the South Asian Diaspora," presentation delivered at 5th Annual SASI Symposium: Building a Diasporic Roadmap through Inquiry and Engagement, June 6, 2022.
- Gill, Geetanjali, R. Pell, C. Cheta, M. Murphy. 2022. "Localizing the development of participatory tools to understand social norms related to gender-based violence amongst adolescents in refugee settings", Canadian Conference on Global Health, November 21st.
- Gill, Geetanjali, & R. Pell. 2022. "Using play-based tools to understand refugee and adolescents' experiences with gender-based violence in Lebanon and Uganda", Conference for the Canadian Association of Refugee and Forced Migration Studies (CARFMS), November 2-4th.
- Gill, Geetanjali, & A. Adham. 2022. "The Use of Participatory Research Methods to explore gender norm change amongst adolescents in Ghana, Rwanda, and Mozambique", Conference for the Canadian Association for the Study of International Development (CASID), May 17th.
- Gill, Geetanjali, C. Liao, & S. N'Gaiwa. 2022. "'Leaving no one behind': Empowering persons with albinism, particularly women and girls in rural regions of Sierra Leone, 2021-22", Global Affairs Canada Global Gossip, October 28th.

- Gill, Geetanjali, & C. Liao. 2022. "Gender transformation, innovation, and partnership: 'Leaving no one behind' project, University of the Fraser Valley and Albinism Royal Foundation Sierra Leone", Ontario Council of International Cooperation (OCIC) Symposium 2022, Sept. 22nd.
- Gill, Geetanjali, C. Liao, & S. N'Gaiwa. 2022. "'Leaving No One Behind': Empowering Persons with Albinism, particularly women and girls in rural regions of Sierra Leone", Foundation for Innovation and Transformation Community of Practice on Gender, July 13th.
- Wilbur, Amea, & Strumm, B. (2023) Belonging and Exclusion for Newcomer Women the Lower Mainland and Northern Ireland. CASAE.
- Atleo, M. ?eh ?eh naa tuu kwiss. & Wilbur, Amea. (2023) Using a Narrative Knowing Approach to build community between Worldviews: Two-way bridging to support diversity in a good way. CASAE.
- O'Doherty and Hayli Millar, 2023, submitted a brief to the House of Commons Standing Committee on the Status of Women for their Study on Human Trafficking of Women, Girls, and Gender-diverse People in Canada Date in April 2023:  
<https://www.ourcommons.ca/Committees/en/FEWO/StudyActivity?studyActivityId=11853466>
- Hayli Millar and Satwinder Bains presented at UFV's PD Days in May 2022 on the exploitation of international students based on two 2020-2022 separate research projects involving UFV students: Understanding the Exploitation of International Students in Canada: Developing evidence and strategies to prevent and reduce the precarity and exploitation of international university students.'
- Dr. Stefania Pizzirani presented at the Western Canada Canadian Association of Geographers conference in March 2023.

### **Plans for the Upcoming Year**

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- CGD plans to increase the activities of the Centre at UFV and globally.
- Hold regular events at UFV for International Development Week, International Women's Day, World Refugee Day, symposiums on decolonizing global research, International Day of Solidarity with Migrants, International Migration Day, World AIDS Day, a talk program on poverty, and an event on Food Justice.
- Improve the CGD website by adding resources on GBA+, Decolonizing Global Research, and having dedicated web pages for all CGD on-going research projects and findings.

## Centre for High Pressure Research (CHPR)

Jacob Spooner, Director

May 2022 – April 2023

### Purpose

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The mission of the UFV Centre for High Pressure Research (CHPR) is to foster and coordinate collaborative research and disseminate the acquired knowledge in the field of high pressure effects on condensed-phase systems. Its main objective is a development of a sustainable program of multi-faceted high pressure research of international standing with active involvement of undergraduate students. This program will include, but not be limited to, such areas of high pressure research as synthetic applications of high pressures, experimental and theoretical studies of kinetics and thermodynamics of physical, chemical, and biochemical processes under elevated pressures, mechanistic studies using high pressure techniques, spectroscopic studies of physical, chemical, and biochemical systems under high pressures. Further extension of the program at a later stage may include biological applications of high pressures and their use in food processing and drug manufacturing. The versatility and potential of pressure as a synthetic tool, stems from the fact that as opposed to temperature which accelerates indiscriminately all process – wanted and unwanted, pressure can selectively accelerate one (the desired) process while suppressing all other. Pressure is also an indispensable instrument for mechanistic studies since high pressure measurements of chemical and biochemical kinetics generates useful information about volumetric properties of transient reactive states and reaction intermediates.

### Membership

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**Director:** Dr. Jacob Spooner

#### Faculty Associates:

- Dr. Cory Beshara, Chemistry
- Dr. David Fenske, Chemistry
- Dr. Pedro Montoya-Pelaez, Chemistry
- Dr. Jason Thomas, Chemistry
- Dr. Noham Weinberg, Professor Emeritus

### Partnerships

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#### External Collaborations:

- Dr. Robert Britton (SFU Burnaby)
- Dr. Roger Linnington (SFU Burnaby)
- Dr. Heather Wiebe (VIU Nanaimo)
- Dr. Vance Williams (SFU Burnaby)
- Dr. Peter Wilson (SFU Burnaby)

### Students

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- Sukhleen Chane - Study of cycloaddition reactions under high pressures, (Supervisor: Cory Beshara)
- Directed Studies Student - Study of the effect of pressure on the structure and stability of lipid nanoparticles, (Supervisor: David Fenske)

### Community Engagement

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- UFV Research Centres, Labs, and Institutes showcase — Sept 15, 2023 — University of the Fraser Valley.

## Funding

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- Project Title: Centre for High Pressure Research: CHPR. Canada Innovation Fund (CFI)/BC Knowledge Development Fund (BCKDF) John R. Evans Leaders Fund (JELF). \$531,298

## Research

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Project Title: Centre for High Pressure Research: CHPR. Canada Innovation Fund (CFI)/BC Knowledge Development Fund (BCKDF) John R. Evans Leaders Fund (JELF).

Mechanistic studies of high pressure reactions and biochemical transformations

1. Diels-Alder and other cycloaddition and cyclization reactions.
2. Pressure dependence of racemization kinetics of 1,1'-binaphthyl.
3. Pressure induced unfolding of a diazo-bridged polypeptide helix.

High pressure biochemistry and deep-sea marine biology

1. Pressure effects on lipid bilayers and its relation to depth adaptation.
2. Volume change ( $\Delta V$ ) of unfolding for pressure-resistant proteins.

## Plans for the Upcoming Year

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### *1. Acquisition and installation of specialized high pressure equipment.*

The CHPR has been successful in acquiring infrastructure funding from CFI/BCKDF. With these funds, the Centre will acquire and install a range of specialized instruments dedicated to high-pressure research. These instruments will greatly expand the investigative capabilities of the centre and positively impact its HQP training capabilities and will position the CHPR to become a regional resource centre for innovation in the field of high pressure science.

### *2. Pressure-controlled molecular machines.*

Drs. Spooner and Weinberg will design pressure-driven molecular rotors and other pressure-controlled molecular machines and investigate their properties. The newly acquired HUB880 barocycler, capable of generating pressure pulses of a desired shape, will be used to subject the perspective molecular machine candidates to the effects of dynamic pressure.

### *3. Polycyclopentadiene nanothreads.*

Formation of nanothreads have been reported at extreme pressures of 150-350 kbar for a number of aromatic substrates. Due to differences in structure and reactivity at ambient conditions compared to currently used materials, it is suspected that cyclopentadiene may form nanothreads at more moderate compressions not exceeding 5 kbar. Dr. Spooner will investigate the feasibility of this process using a combination of theoretical and experimental techniques. The polymerization reactions will be carried out in newly acquired HUB440-RCLG high pressure reactors at a series of pressures and temperatures to study their effect on the process. The necessary pressures will be generated using the HUB880 barocycler.

## Centre for Philosophy for Children (CP4C)

Anastasia Anderson, Director

May 2022 – April 2023

<https://www.ufv.ca/centre-philosophy-children/>

### Purpose

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The mission of the Centre for Philosophy for Children (CP4C) is to support education, community outreach, research, and the dissemination of research in philosophy for children and in the related areas of children's rights, child development, and childhood studies. The Centre aims to act as a hub for research on issues of importance to children and childhood from a large cross-section of disciplines.

### Membership

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**Director:** Anastasia Anderson

#### Faculty Associates:

- Anna Cook, Philosophy
- Shelley Liebembuk, School of Creative Arts
- Madison Pesowski, Psychology
- Vanessa E. Radzinski, Mathematics and Statistics
- Christine Slavik, Child, Youth, and Family Studies
- Josh Friesen, Teacher, Abbotsford School District
- Susan Gardner, Capilano University
- Fiona McDonald, UNBC
- Jana Mohr Lone, University of Washington and Director of PLATO
- Barbara Salingre, Teacher Education, UFV
- Elizabeth Wilson, Teacher, Abbotsford School District

#### Advisory Council:

### Partnerships

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- Barrowtown Elementary School ('Ask Them' project)
- Vedder Elementary School; Windebank Elementary School (Math Mania)
- Fraser Valley Youth Society (The Laramie Project)
- BCTF Social Studies Teachers Association
- SFU
- Ethics Bowl Canada
- Vancouver Institute for Philosophy for Children
- Blue Jay Elementary School; Dasmesh Punjabi School; Prince Charles Elementary School; Watson Elementary School (PHIL365 (Teaching Children Philosophy) field work in May/June 2022)

### Students

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UFV students involved in the "Ask Them" Project:

- Amanda Hooge
- Ekam Banipal
- Ariel Dennison-Hardy

The students were trained and conducted two studies with children at Barrowtown elementary school for the "Ask Them" Project conducted by Faculty Associate Madison Pesowski and UFV Professor

Michelle Superle. Their responsibilities included conducting the studies, inputting data, and transcribing and coding children's responses.

UFV student volunteers for the Thinking Playground summer camps:

- Nicole Biernicik
- Dale Braybrook
- Alexis Neurauter
- Karla Toro-Chacon
- Nicky Whithouse

Training in Philosophy for Children took place throughout the 2022/2023 academic year. Students were also involved in camp curriculum development. Camps were in July 2022 and this year will be in July 2023. Four students from high schools in the community also volunteered at the Thinking Playground summer camp.

### **Community Engagement**

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- June 7, 2022: Webinar: Indigenous Story Telling and Philosophy for Children (Presenter: Andrea Sullivan-Clarke, University of Windsor).
- July 4-15, 2022: Thinking Playground Summer Camps (for children ages 6-13). The camps use a P4C approach to teaching children critical, collaborative, caring, and creative reasoning skills with an emphasis on the development of practical wisdom.
- October 2022: Math Mania Event at Vedder Elementary School (Facilitated by Faculty Associate, Vanessa Radzimski). Math Mania is an evening of fun for school children (and their parents) to show them how exciting math can be through hands-on play and games.
- Nov. 24, 2022: UFV Community Outreach with Children: Panel Discussion (Panelists: Christine Slavik, Michelle Superle, Robin Endelman, Tamara Courage, Anastasia Anderson).
- Nov. 26, 2022: Philosophy for Children Workshop: Getting Started. (Facilitated by Co-Coordinators Anastasia Anderson and Anna Cook).
- February 2023: Fraser Valley Math Challengers competition, (facilitated by Faculty Associate Vanessa Radzimski). Fraser Valley Math Challengers is an enrichment, coaching and competition program that promotes mathematics achievement among students in Grades 8, 9 and 10.
- February 25, 2023: BC Regional High School Ethics Bowl (supported by CP4C through Anastasia Anderson's work as a judge and case writer). The Ethics bowl is a collaborative and competitive event that gives teams of high school students the opportunity to discuss and analyze current ethical issues.
- March 25, 2023: Faculty Associate Shelley Liebembuk who directed UFV's production of The Laramie Project, invited members from the Fraser Valley Youth Society (FVYS) to co-facilitate a post-show community conversation with students of UFV's Pride Collective. This invitation was warmly received, and generated several mentorship meetings wherein FVYS members were able to provide suggestions and guidance on facilitation to UFV students.
- May 2023: Math Mania Event at Windebank Elementary School, (facilitated by Faculty Associate Vanessa Radzimski).
- May 2023: BC Secondary School Mathematics Contest for students in the Fraser Valley, (hosted by the UFV Department of Mathematics and Statistics with assistance from Faculty Associate Vanessa Radzimski).

### **Research**

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Faculty Associate, Madison Pesowski, recently completed the "Ask Them" project in collaboration with Michelle Superle. This project included two studies examining children's beliefs about education and

schools in relation to the United Nations Convention on the Right of the Child (UNCRC). The project has been submitted as a manuscript to the Canadian Journal of Children's Rights.

Co-coordinator Anastasia Anderson is engaged in ongoing research on the role of philosophy for children in children's moral education.

## **Publications, Presentations and Reports**

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### **Peer Reviewed Publications:**

Nancekivell, S.E., & Pesowski, M.L. (in press). Ownership as an extension of self: An alternative to a minimalist model. *Behavioral and Brain Sciences*.

Pesowski, M.L., Powell, L.J., Cikara, M., & Schachner, A. (in press). Interpersonal utility and children's social inferences from imitation. *Cognition*.

Pesowski, M.L. & Powell, L.J. (2023). Ownership as privileged utility. *Cognitive Development*, 66, Article 101321.

### **Presentations:**

Anderson, A. (2022, October). Facilitating Philosophical Dialogue in the Classroom [Conference workshop]. BC Social Studies Teachers Association Conference, Vancouver, Canada.

Cook, A. (2022, October). Teaching Philosophy with Games [Conference workshop]. BC Social Studies Teachers Association Conference, Vancouver, Canada.

### **Plans for the Upcoming Year**

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- The Centre plans to continue offering workshops for teachers in philosophy for children with a special emphasis on reaching out to high school teachers.
- We are planning a two-day conference and community event to disseminate research and show the practical applications of the research for work with children.
- We plan to offer community events throughout the year on campus (e.g., a drop-in board game day with information about how the games relate to children's cognitive development).
- The Centre will have a work study student in fall 2023 which will allow us to make more community connections and fill some of the requests to have us do philosophy sessions in schools.
- At least two Faculty Associates expect to be supervising honours students next year in areas related to the work of the Centre.

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

Irwin Cohen, Director  
<https://cjr.ufv.ca/>

May 2022 – April 2023

### Purpose

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The purpose of the Centre for Public Safety and Criminal Justice Research is to provide research and consulting 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

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**Director:** Dr. Irwin Cohen

#### Faculty Associates:

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

### Partnerships

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- 'E' Division RCMP
- BC Government Policing and Security Branch, Ministry of Public Safety and Solicitor General
- British Columbian municipal police departments in Vancouver, Delta, and Abbotsford
- RCMP Detachments
- The Combined Forces Special Enforcement Unit BC (CFSEU)
- The Integrated National Security Enforcement Teams (INSET)
- British Columbia Lottery Commission

### Students

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The Centre had one PhD student from SFU (Sarah Negrin), working on a research project about non-criminal justice responses to hate crimes in British Columbia. The work involves contributing to a literature review and interview note taking for three research projects.



### **Research Assistants:**

- Bailey Cooper - A review of best practices in responding to intimate partner violence, the effects of pre-charge restorative justice referrals and the use of restorative justice in power-based crimes, and an assessment of the civil protective order process and its effectiveness in BC.
- Jacey Giesbrecht - Police investigations of intimate partner violence strangulation files, and a review of best practices in responding to intimate partner violence.
- Mahek Gill - The effects of pre-charge restorative justice referrals and the use of restorative justice in power-based crimes.
- Amelia Hayes - A review of best practices in responding to intimate partner violence, and the effects of pre-charge restorative justice referrals and the use of restorative justice in power-based crimes.
- Brenna MacDonald - A review of best practices in responding to intimate partner violence, the effects of pre-charge restorative justice referrals and the use of restorative justice in power-based crimes, an assessment of the civil protective order process and its effectiveness in BC, and ARJAA Project Safe Relationships.
- Alida Swanson - ARJAA Project Safe Relationships.

### **Community Engagement**

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The activities of the Centre have had a number of aspects 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 the public. 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. All of the research projects conducted by and through the Centre have community partners and receive a copy of all final reports.

### **Funding**

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Mental Health Crisis Co-Response Models - Funded by PSSG	\$121,875.00
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### **Research**

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#### **Ongoing Projects:**

- Effects of Pre-Charge Restorative Justice Referrals and the Use of Restorative Justice in Power-Based Crimes
- Predictive Value of Non-Conviction Information
- An Assessment of the Civil Protective Order Process and its Effectiveness in BC
- Street Checks in RCMP Jurisdictions in BC - Phase II
- Policing Interactions with Mental Illness
- Police Investigations of Intimate Partner Violence Strangulation Files in RCMP Detachments in British Columbia
- Best Practices Inventory and Analysis of Hate Crime Reduction Policy Initiatives
- The Effects of the COVID-19 Pandemic on Crime in British Columbia
- Money Laundering Offender Typologies in British Columbia
- An Assessment of the ICAT model in BC

## Publications, Presentations and Reports

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### Research Reports:

McCormick, A.V., Lee, Z., & Cohen, I.M. (2022). Evaluation of Project Safe Relationships. Report for the Abbotsford Restorative Justice and Advocacy Association. Centre for Public Safety and Criminal Justice Research.

McCormick, A.V., Cohen, I.M., & Davies, G. (2022). The Complexities of Investigating and Clearing Harassment Related Intimate Partner Violence Files. Report for Public Safety Solicitor General. Centre for Public Safety and Criminal Justice Research.

### Presentations:

“The Perils of Using Police Data to Understand Criminal Pathways.” Presented at the 2023 Western Society of Criminology Annual Conference, Vancouver, BC, February.

“Exploring the Self-Exclusion Journey: Early Program Experiences Amongst a Sample of Self-Excluded Gamblers in British Columbia, Canada.” ‘Virtually’ Presented at the 2022 International Gambling Conference, Auckland, New Zealand, June.

“Police Responses to Elder-Involved Family Violence Files.” Presented at the 2022 American Society of Criminology Annual Conference, Atlanta, Georgia, USA, November.

“Terrorism and Islamic Fundamentalism.” Presented at the 2022 Vancouver Police Department/RCMP CTIO Training Course, Richmond, BC, November.

### Plans for the Upcoming Year

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As in previous years, the Centre will engage in several research projects over the next year. At this point, the Centre will be focused on completing the various Office of Crime Reduction and Gang Engagement (PSSG) research projects, publishing reports and academic articles based on this research, and presenting the findings at national and international conference.

## Community Health and Social Innovation Hub (CHASI)

Martha Dow, Director

May 2022 – April 2023

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

### Purpose

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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. CHASI 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. CHASI initiates these activities and supports community partners in the identification and exploration of issues and the development and implementation of innovative approaches to health and social issues.

### Membership

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**Director:** Dr. Martha Dow

- Chelsea Klassen - Lead Researcher
- Esther Jiménez Atochero - Researcher
- Leah Bishop - Researcher
- Spencer Huesken - Researcher
- Imran Tatla - Research Assistant
- Carlanna Thompson - Research Assistant
- Jeff Mijo Burch - Communications and Design Specialist

### Faculty Associates:

- Dr. Satwinder Bains, School of Culture, Media, and Society
- Dr. Sarah Beaulieu, School of Culture, Media, and Society
- Dr. Shelley Canning, Nursing
- Dr. Keith Carlson, History
- Dr. Cherie Enns, SLUEC
- Dr. Luisa Giles, Kinesiology
- Dr. Sharon Gillies, Biology
- Dr. Lesley Jessiman, Psychology
- Dr. Karun Karki, School of Social Work and Human Services
- Dr. Kathy Keiver, Kinesiology
- Dr. Iris Lesser, Kinesiology
- Dr. Mariano Mapili, SLUEC
- Alison Pritchard Orr, Kinesiology
- Dr. Bosu Seo, Economics
- Dr. Amir Shabani, Computing
- Dr. Joanna Sheppard, Kinesiology
- Dr. Evan Taylor, School of Social Work and Human Services
- Dr. Katherine Watson, School of Culture, Media, and Society

## Partnerships

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- Archway Community Services (Abbotsford flooding, food security, housing)
- Suncor Energy Foundation (Community Action Cohort, general funding)
- City Of Abbotsford (Gang prevention)
- Haida Gwaii Old Massett Village Council (assistance locating missing children)
- Tk'emlúps te Secwépemc, Kamloops Indian Band Development Corporation (assistance locating missing children)
- TD Ready Commitment Fund (Social connectedness of youth and older adults)
- Cyrus Centre and Chilliwack Building Youth Futures (Channeling Youth Voices)
- Abbotsford Hospice Society (client support training curriculum)
- Abbotsford Restorative Justice and Advocacy Association (reimagining referral system)
- Cedar Outreach Society (evaluation of services)
- National Indigenous Fire Safety Council (firefighter wellness manual)
- UFV SOCA/Theatre (The Laramie Project)
- UFV College Of Arts (Work integrated learning)
- UFV Student Affairs (Together Empowered)
- UFV Community Engagement (Evidence-informed decision-making matrix)

## Students

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### Research Assistants:

- Lysie Beaulieu: TD Older Adults, Flooding
- Miranda Erickson: TD Youth
- Ekaterina Marenkov: Food Security, Hospice
- Andrea Moorhouse: Hospice, Laramie

### Interns:

- Kristen Bencze: Designed social media graphics; wrote and posted original social media posts; managed four social media accounts; video creation.
- Frankie Fowle: Illustration for reports and social media; design for projects and events; research for Haida Gwaii.
- Mara Haggquist: Design for reports, marketing materials; data visualizations.
- Jeff Mijo-Burch: Social media and website management; designed reports, online course, Excel matrix; created videos and podcasts.
- Chloe Raible: Flooding; Gang Prevention.
- Sharon Strauss: Developed ongoing comic exploring themes of identity; created illustrations for social media and blog posts.

## Community Engagement

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### Events:

- The Laramie Project: celebration of production and digital art contest (March 22, 2022).
- CHASl's Second Birthday: research open house and documentary screening (June 2, 2022).
- Channeling Youth Voices documentary screened at SFU's HORIZON's conference (May 27, 2022) and Chilliwack International Film Festival (November 15, 2022).
- CHASlcast podcast, with guests Dr. Sharanjit Kaur Sandhbra (May 11, 2022), Esther Jiménez Atochero (July 7, 2022), Dr. Shelley Canning (October 19, 2022), Dr. Sarah Beaulieu (November 16, 2022 & January 23, 2023), and Dr. Shelley Liebembuk (March 21, 2023).

### **News Media Coverage:**

- "CHASI continues to innovate by creating a repository dashboard for BCCAT" – The Cascade, June 6, 2022.
- "Unearthing Canada's First World War Internment History" — Canadian Museum of History, June 27, 2022.
- "CHASI and UFV Theatre student digital art contest" — The Cascade, January 30, 2023.
- "Night Sky" (follow up to previous, interviewing art contest winner) — The Cascade, May 17, 2023.

### **Funding**

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- Archway Community Services (Abbotsford flooding, food security, housing)
- Suncor Energy Foundation (Community Action Cohort, general funding)
- City Of Abbotsford (Gang prevention)
- Haida Gwaii Old Massett Village Council (assistance locating missing children)
- Tk'emlúps te Secwépemc, Kamloops Indian Band Development Corporation (assistance locating missing children)
- TD Ready Commitment Fund (Social connectedness of youth and older adults)
- Cyrus Centre and Chilliwack Building Youth Futures (Channeling Youth Voices)
- Abbotsford Hospice Society (client support training curriculum)
- Abbotsford Restorative Justice and Advocacy Association (reimagining referral system)
- Cedar Outreach Society (evaluation of services)
- National Indigenous Fire Safety Council (firefighter wellness manual)
- UFV SOCA/Theatre (The Laramie Project)
- UFV College Of Arts (Work integrated learning)
- UFV Student Affairs (Together Empowered)
- UFV Community Engagement (Evidence-informed decision-making matrix)

### **Research**

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#### Completed:

- Developing and piloting play-based tools and approaches for collecting evidence on gender-based violence amongst adolescents in humanitarian settings in Uganda and Lebanon with Right to Play International, Global Women's Institute, George Washington University (US).
- Impact of COVID-19 on Post-Secondary Students: A systematic Review of Institutional Instruments with British Columbia Council on Admissions & Transfer.
- Channeling Youth Voices: Pathways to Resilience in Chilliwack, British Columbia with Sparc BC, Tamarack Institute's Communities Building Youth Futures Community Innovation Fund.
- Sociocultural norms and gender responsive play-based education: A qualitative study of students, teachers, and families in Rwanda, Ghana, and Mozambique (2021–2022) with Right to Play International; Funded by SSHRC Partnership Engage Grant and UFV's Faculty Student Scholarly Activity Fund.
- Contested Spaces: Responding to the Need for Peer-Engaged Programming with Archway Community Services.
- Gang Prevention Project: Community-based Gang Prevention Strategy, Multi-Phase Evaluation Plan, Sustainability Plan with City of Abbotsford.
- After the Flood: Community Response and Recovery with Archway Community Services.

**Ongoing:**

- Improved Understanding, Enhanced Access: Utilizing Artificial Intelligence and Machine Learning to Strengthen Social Connections as a Path to Improve Health Outcomes with TD Ready Commitment Fund.
- Community Action Cohort with Suncor Energy Foundation.
- Understanding Food (In)Security in an Intersectoral Model of Service Delivery, with Archway Community Services.
- Tk'emlúps te Secwépemc Ground-Penetrating Radar Preliminary Surveys and Analysis with Tk'emlúps te Secwépemc, Kamloops Indian Band Development Corporation.
- Work Integrated Learning (WIL) (2022–2023) with College of Arts – University of the Fraser Valley.
- Haida Gwaii Reconciliation through Truth-Seeking Project (2022–2023) with Old Massett Village Council.
- Reimagining Abbotsford Hospice Society's Client Support Training Curriculum with Abbotsford Hospice Society.
- Together Empowered with Student Affairs – University of the Fraser Valley.
- Mobilizing Strategic Planning within an Evidence-informed Decision-making Matrix with Community Engagement — University of the Fraser Valley.
- Rising Together: Reimagining the Referral System for Restorative Justice in Abbotsford with Abbotsford Restorative Justice and Advocacy Association.
- Evaluation of CEDAR Outreach Society services with CEDAR Outreach Society.
- Firefighter Wellness Manual with National Indigenous Fire Safety Council.

**Publications, Presentations and Reports**

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**Reports:**

- After the Flood: Community Response & Recovery
- Contested Spaces: Responding to the Need for Peer-Engaged Programming
- Reducing the Likelihood of Youth Becoming Gang Involved

**Presentations:**

- Ebb and Flow: Conducting Community Research Post Disaster (Chelsea, UFV Microlectures)
- Jetsetting: Tips and Tricks for Travelling with a Family (Chelsea, International Nanny Association conference)

**Plans for the Upcoming Year**

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- Improved Understanding, Enhanced Access: Utilizing Artificial Intelligence and Machine Learning to Strengthen Social Connections as a Path to Improve Health Outcomes with TD Ready Commitment Fund
- Community Action Cohort with Suncor Energy Foundation
- Understanding Food (In)Security in an Intersectoral Model of Service Delivery, with Archway Community Services
- Tk'emlúps te Secwépemc Ground-Penetrating Radar Preliminary Surveys and Analysis with Tk'emlúps te Secwépemc, Kamloops Indian Band Development Corporation
- Work Integrated Learning (WIL) (2022–2023) with College of Arts – University of the Fraser Valley
- Haida Gwaii Reconciliation through Truth-Seeking Project (2022–2023) with Old Massett Village Council

- Reimagining Abbotsford Hospice Society’s Client Support Training Curriculum with Abbotsford Hospice Society
- Together Empowered with Student Affairs – University of the Fraser Valley
- Mobilizing Strategic Planning within an Evidence-informed Decision-making Matrix with Community Engagement — University of the Fraser Valley.
- Rising Together: Reimagining the Referral System for Restorative Justice in Abbotsford with Abbotsford Restorative Justice and Advocacy Association.
- Evaluation of CEDAR Outreach Society services with CEDAR Outreach Society
- Firefighter Wellness Manual with National Indigenous Fire Safety Council
- LGBTQ+ History in the Valley Project
- Community Action Cohort events
- Continue CHASIcast Charmed Circle
- Pride art installation
- Podcasts

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

Jon Thomas, Director

May 2022—April 2023

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

### Purpose

The Esposito Family Centre for Innovation & Entrepreneurship (EFCIE) is a research centre at the University of the Fraser Valley which launched in 2020. EFCIE is working to foster an inclusive, vibrant, and resilient space for innovation and entrepreneurship initiatives for 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 technology, innovation and society is 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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**Director:** Dr. Jon Thomas

#### Internal Advisory Council:

- Dr. Garry Fehr, Associate Vice President (Research and Graduate Studies)
- Dr. Tracy Ryder-Glass, Acting Provost and Vice President, Academic

#### Faculty Associates

- Dr. Opeyemi Adesina, School of Computing
- Dr. Michael Corman, Sociology
- Dr. Sandra Gillespie, Biology
- Prof. Karin Jager, Graphic and Digital Design
- Dr. Mandeep Pannu, School of Computing
- Dr. Saeed Rahman, School of Business
- Dr. Kirsten Robertson, School of Business
- Dr. Bosu Seo, Economics
- Dr. Amir Shabani, School of Computing

#### External Associates

- Dr. Thillai Rajan Annamalai (IIT Madras)
- David Leger, Founder and former President & CEO (H2 Portable), former-CEO (Loop Energy)
- Mike Manion, Agri-food Consultant
- Dr. Michael Parr, Former President & Chief Scientific Officer, Sitka Biopharma

### Partnership

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- UFV Student Union Society
- UFV Alumni Association
- Enactus UFV - Student Organization
- UFV Faculty of Science
- UFV - Office of the VP Students
- UFV - Office of the VP Community Engagement
- Community Futures South Fraser - Innovation Partner
- Community Futures North Fraser - Innovation Partner
- Seabird Island Band - Innovation Partner
- Abbotsford Chamber of Commerce - Innovation Partner
- CREST (Research Centre at IIT Madras) - Innovation and entrepreneurship research projects



## **Students**

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- Abdul Aziz Abdul Ghafoor (Clinician entrepreneurship) - Abdul has now been accepted into the UBC Medicine program
- Vaibhav Bector (BUS 492) - Exploring renewable energy technologies for public transport in Canada and India
- Nichaela Jacob - Veterinary Industry Study
- Varshaa Kashyap - Veterinary Industry Study, Cultural Entrepreneurship Project

## **Community Engagement**

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- Invited Talk - Dr. Jon Thomas - (September 2022) – The work of the Esposito Family Centre for Innovation & Entrepreneurship, at the Mission Rotary Club.
- Invited Panel Member - Dr. Jon Thomas - (October 2022) – “The Fraser Valley and Abbotsford as an Industrial Hub for International Trade”. Organized by the UFV School of Business for students of the University of Applied Sciences and Arts (Lucerne, Switzerland).
- Invited Talk - Dr. Jon Thomas - (November 2022) – The work of the Esposito Family Centre for Innovation & Entrepreneurship. Sto:lo Youth Entrepreneurship Initiative.
- Invited Talk - Dr. Jon Thomas - (November 2022) – The role of scientist-entrepreneurs in innovation in Canada, UFV School of Business.
- Panel Series - Collaborative Governance & Shared Innovation - Part 1 (January 2023). Co-organized by UFV Continuing Education & EFCIE. This panel series brought together leaders from First Nations and municipal governments.
- Invited Keynote Speaker - Dr. Jon Thomas - (February 2023) – "Invention and Innovation in Abbotsford", launch of the Abbotsford Innovation Network.
- EFCIE Talk (March 2023) - "Verification & Validation (V&V) Challenges and Emerging Solutions for Next-Gen Automotive Electronic Control Systems (ECS)" Speaker: Dr. Ramesh Sethu, Senior Technical Fellow, General Motors R&D. former Professor (Computer Science and Engineering) IIT Bombay. (Co-organized and hosted by Dr. Opeyemi Adesina and Dr. Amir Shabani).
- Panel Series - Collaborative Governance & Shared Innovation - Part 2 (March 2023). Co-organized by UFV Continuing Education & EFCIE. This panel series brought together leaders from first nations and municipal governments.
- EFCIE community networking event in partnership with the Abbotsford Chamber of Commerce (April 2023) – “Scaling up business in the Fraser Valley”. Co-organized by Dr. Jon Thomas (EFCIE) and Craig Toews (Abbotsford Chamber of Commerce).

## **Research and Funding**

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- Academic Lead Supervisor - Strategic analysis of blockchain applications in the agriculture industry in Canada and India. 2022 Mitacs Globalink Research Internship which provided funding to bring student researcher from India to Canada for a period of 12 weeks in the Summer 2022.
- Academic Lead Supervisor - Strategic analysis of blockchain applications in the fishing industry in Canada. 2022 Mitacs Globalink Research Internship which provided funding to bring student researcher from India to Canada for a period of 12 weeks in the Summer 2022.

## Publications, Presentations and Reports

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### Refereed Publications:

Park, A., Goudarzi, A., Yaghmaie, P., Thomas, V. J., Maine, E. (2022) Rapid response through the entrepreneurial capabilities of academic scientists. *Nature Nanotechnology*. Impact Factor (2020): 42.237.

Park, A., Goudarzi, A., Yaghmaie, P., Thomas, V. J., Maine, E. (2023) The role of pre-formation intangible assets in the endowment of science-based university spin-offs. Special Issue on: Intangible Assets and Innovation Management. *International Journal of Technology Management*.

The Potential of Commercialization Postdocs as a Mechanism for Unleashing Breakthrough Research. R&D Management Conference, Sevilla, Spain 19-21 June 2023.

Scaling-up emerging innovation ecosystems - An actor perspective. R&D Management Conference, Sevilla, Spain 19-21 June 2023 (presented by co-author E. Maine as Jon Thomas was teaching at UFV).

Identifying commercialization challenges for entrepreneurial firefighting start-ups. Portland International Conference on Management of Engineering & Technology, August 7-11, 2022 in Portland, Oregon. (Presented by UFV student co-author Jasleen Sandhu).

The role of pre-formation intangible assets in endowing science-based university spin-offs. Policies, Processes and Practices for Performance of Innovation Ecosystems (P4IE) 2022 – Measuring Metrics that Matter. Ottawa and online. May 9-11, 2022.

Rapid response through the entrepreneurial capabilities of academic scientists. Policies, Processes and Practices for Performance of Innovation Ecosystems (P4IE) 2022 – Measuring Metrics that Matter. Ottawa and online. May 9-11, 2022.

Actors' positioning in an emerging innovation ecosystem – The case of green hydrogen. Processes and Practices for Performance of Innovation Ecosystems (P4IE) 2022 – Measuring Metrics that Matter. Ottawa and online. May 9-11, 2022.

### Plans for the Upcoming Year

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- EFCIE has multiple partnerships with the leading research institutions in India such as IIT Madras and the Indian Institute of Science (Bangalore), as well as with the Management Development Institute (Gurgaon). We are in the process of working on several initiatives and research projects with each institution over the coming months and years. These are visualized as long-term partnerships and are the result of the work of Dr. Jon Thomas as the BC Regional Innovation Chair in Canada-India Partnership Development. IIT Madras and IISc Bangalore are currently ranked as the top two universities in India as per NIRF 2023.
- Dr. Jon Thomas has been appointed a Visiting Faculty Fellow at IIT Madras and will be visiting IIT Madras as their invited guest in Fall 2023.

- A postdoctoral fellow with a PhD from IIT Kanpur is expected to join EFCIE and work with Dr. Jon Thomas on innovation and entrepreneurship research starting July or August 2023.
- EFCIE is involved in the initial stages of a multi-country NFRF proposal (Canada, Germany, Norway, and potentially India) led by SFU with the potential to examine commercialization of water filtration/ green hydrogen technologies in a climate-change affected part of the world.
- Two researchers from the Government of South Korea are currently being supervised by Dr. Jon Thomas. Some guidance is also being provided to one of the researchers by EFCIE Faculty Associate Prof. Amir Shabani.
- Dr. Jon Thomas is working with a Mitacs Globalink Research Intern from Delhi Technological University (DTU) on mapping the EV startup ecosystem in India.
- EFCIE has provided innovation grants to 10 UFV Faculty member and student teams in 2023. These teams generate national and international conference papers, poster presentations, book chapters, and other research outcomes. Several EFCIE Faculty Associates have received these grants.
- Student, Shashank Joshi, has been accepted with a full scholarship into a master's program at the University of Waterloo to begin in the fall of 2023. Dr. Jon Thomas is working with them to expand their report into a research paper.

## Peace and Reconciliation Centre (PARC)

Keith Carlson, Director

May 2022 – April 2023

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

### Purpose

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The 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:

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

### Membership

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**Director:** Dr. Keith Carlson

- Community Co-Chair: Grand Chief Clarence Pennier
- Community of Practice (CoP) Leads
  - Dr. Keith Carlson - Indigenous-settler Reconciliation
  - Dr. Geetanjali Gill - International Refugee Crisis and Experience
  - Dr. Lolehawk (Laura Buker) - Indigenous Ecological Justice and Land-based Learning
  - Dr. Amanda McCormick - Domestic Violence Reduction
  - Dr. Steven Schroeder - Trauma Healing and Harm Reduction
- Holly Janzen, Program Coordinator
- Members of the CoP come from criminal justice (police-based victim services, policing), community (community-based victim services, non-profit organizations), health care (forensic nursing), and academia (one student member, and a PhD student who studies intimate partner violence in 2S/LGBTQIA+ populations)

### Partnerships

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- Homalco First Nation (Campbell River BC) partnership to analyze the history of post-smallpox epidemic. “Čęęgataw†” (Helping Each Other).
- Sto:lo Tribal Council: Successfully launched Xwelítem Siyáya: Allyship and Reconciliation Building, a program designed to build non-Indigenous and settler people’s capacity for reconciliation-building. This program is 10 months in length and has 106 registered participants.
- Fraser Valley Metis Association, Fraser Valley Regional Library, Abbotsford Fire and Rescue, Abbotsford Police Department, City of Abbotsford, The Reach Gallery, Tourism Abbotsford, Literacy

Matters: Partnership developed to plan events happening in Abbotsford for National Day for Truth and Reconciliation on September 30th, 2023, and likely years to follow.

- Commitment Leader Steven Schroeder formed partnerships with people who work in ACCESS Abbotsford, City of Abbotsford, Community Action Team Abbotsford, and Community Action Team Chilliwack to further strengthen and develop their Community of Practice focusing on Trauma Healing and Harm Reduction.
- PARC also formed partnerships with various organizations that are sponsoring students to work on research projects that the organizations themselves have identified as a part of PARC's Collaboratorium Internship Program. The organizations include:
  - Fraser Basin Council
  - Seabird Island First Nation
  - Matsqui First Nation
  - Alongside Research and Consulting
  - Hope & District Arts Council
  - CEDAR Outreach Society

## **Students**

### **Research Assistants:**

- Breanna MacDonald – Supporting the work of the Reducing Domestic Violence CoP.
- Aliya Friesen – Populating a research database created in partnership with Naxaxalts'i (Sonny McHalsie) that includes transcripts of all known Stó:lō Transformer stories recorded prior to 1990.
- Jackie Drummond:
  - Transcribing the records of early American boundary surveyors who visited Stó:lō territory in 1857-58.
  - Reviewing historical government records pertaining to Indigenous people's health in British Columbia.
  - Reviewing and transcribing select historical Indian Agent Letterbook documents.
  - Compiled a report regarding the creation of Indian Reserves in British Columbia
  - Pulled together biographies of Elders, information on Seabird Island veterans, research into the creation and reduction of the Seabird Island reserve.
  - Digitized documents collected by Dr. Carlson for various research projects.
- Brooke Higginbottom:
  - Conducting research into aspects of the history of Seabird Island for a project with Seabird Island that is creating K-12 curriculum resources.
  - Transcribed files consisting of Indian Affairs letters for the Lytton Agency.
  - Completed tape logs from interviews with Coast Salish elders and Knowledge Keepers
  - Interview transcriptions for the Seabird Island history project.
- Tyece Broad, Kate Simpson, Jacob Peterson:
  - Reviewing and transcribing select historical Indian Agent Letterbook documents.
- Jakob Petersen - Transcribed primary source documents written by Stipendiary Magistrates and other colonial officials and created tape logs from interviews with Coast Salish elders and Knowledge Keepers.
- Kate Simpson - Transcribed excerpts from the diaries of Bishop Hills and Colonial Correspondence from W.H. Franklyn.
- Ravjeet Dyal - Completed tape logs from interviews with Coast Salish elders and Knowledge Keepers for the Homalco project, as well as interview transcriptions for the Seabird Island history project.
- Max Hoyer - Created maps for Homalco Research Project.

- Tyece Broad:
  - Completed tape logs from interviews with Coast Salish elders and Knowledge Keepers for the Homalco project.
  - Reading through Indian Affairs letter-books from the New Westminster Agency to locate and transcribe any information that could be useful for the Unmarked Graves and Smallpox projects.

**Fraser Basin Council:**

Brooke Higginbottom and Amanda LaBoucane will be working with the Fraser Basin Council on their Realizing UNDRIP Initiative. The students will be completing a trends analysis on the Realizing UNDRIP story hub to identify future success stories, identify keys to success and best practices, and develop a visually engaging learning tool for the Realizing UNDRIP Website.

**Seabird Island First Nation:**

Aliyah Friesen, Zachary Mattie, Chloe Balanger, and Gurpreet Saini will create curriculum resources (lesson plans, teachers guides, and learning tools) that can be used by teachers in the Seabird Island schools. They will include developing land-based learning and science focused classes.

**Matsqui First Nation:**

Tyece Broad and Jakob Petersen will be compiling and processing materials into an organized form that will be searchable and accessible to the Matsqui leadership and community. Students will be digitizing materials that have not yet been digitized and will inform a community history book that is being written by Keith, in partnership with Matsqui First Nation.

**Alongside Research and Consulting:**

Alongside Research and Consulting is developing and delivering a course that aims to support the revitalization of cultural identity among Stó:lō youth through teaching and learning about respectful land and resource use, land stewardship, and governance. For this project Han Wood will assist in the delivery of this course by serving as assistant to the Alongside Research and Consulting team as they set up and deliver each of the course components.

**Hope & District Arts Council:**

Brooke Higginbottom will be undertaking a cultural inventory/mapping of the arts and cultural assets in the Hope community/district. This work would be primarily conducted online with some work visiting cultural assets to collect data in person and take photos/videos where required.

**CEDAR Outreach Society:**

Patti Neufeld will be researching relations between policing and people experiencing homelessness. In particular, Patti will be researching various outreach models that exist and have been implemented in other cities with the goal of implementing a successful outreach program for people experiencing homelessness in Abbotsford, BC.

**Smallpox Project:**

Melissa Casswell will be reviewing Indian Agent letter books and recording content related to residential school conditions, abuses, death, illness, and vaccinations. Students working on this project will also be reaching out by email and phone to targeted museums and archives that may have reminiscences and diaries related to epidemics.

### **Unmarked Graves:**

This project is being carried out in partnership with the Stó:lō Resource and Research Management Centre (SRRMC). Kate Simpson and Han Wood will be reviewing all of the Indian Agent letter books for New Westminster Agency and the Lytton Agency. As the student reviews the letter books, they will be pulling out content related to residential schools, sickness, death, and injury.

### **Homalco:**

This project is in collaboration with the Homalco First Nation to identify how they were impacted by the 18th and 19th century smallpox epidemics and how they adapted in the aftermath. Ben Morrison will be assisting in transcribing primary and secondary sources, as well as interviews that provide insight to this experience.

### **Education Book:**

Keith Carlson has three public presentations that have been recorded. Ben Morrison will transcribe and format these presentations. Ben will then review the content of these talks and conduct a literature review to see if any new content has come out related to the presentation topics. Eventually these presentations will be developed into a short book (about 60 pages), with graphics.

## **Community Engagement**

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### Keith Carlson:

- Shared results of research with Matsqui First Nation at three separate half-day-long community engagement meetings.
- Shared results of research with Squiala First Nation on family-owned resources.
- Invited by Seabird Island First Nation to make two presentations to Chief and Council regarding their research into the history of that community. Has been providing the Seabird Community with in-depth, twice per month, presentations on detailed aspects of their research findings pertaining to that community since January 2023.
- Since January 2023, Prof Carlson has additionally delivered 41 presentations to a wide range of community organizations and academic audiences. At one of these presentations Prof. Carlson was co-keynote speaker alongside the renowned environmentalist David Suzuki.
- Book Launch: Chinese Translations of Two Works of Stó:lō History: At this event, PARC celebrated the Chinese translations of two works of Stó:lō history: Keith Carlson's *Power of Place*, and Hank Pennier's *Call me Hank*.

### Peace Talks:

- *Why intimate partner violence isn't reported*. October 20th, 2022 at UFV. Dr. Amanda McCormick (PARC Commitment Leader and UFV professor), Lisa Faria (APD Detective), SARA for Women, and Archway Community Services hosted a panel presentation, with Q&A to follow, on the barriers to reporting victimization.
- *Love in the Time of Fentanyl*: November 24th, 2022 at UFV. There was a screening of this 80-minute documentary film followed by a panel with special guests from the film.
- *Genocides Across Time and Space: Holocaust Remembrance*. November 30th, 2022 at UFV. Panelists: Dr. Keith Carlson, Dr. Steven Schroeder, Dr. Sebastian Huebel, and Larissa Horne. An examination of genocides from across time and space, looking at what makes them distinct, and at what makes them all so tragically similar.

- *Pakistan Floods*. February 9th, 2023 at UFV. Moderator: Dr. Geetanjali Gill. In collaboration with UFV Global Development Studies, the UFV's Peace and Reconciliation Centre (PARC) hosted a panel discussion on the Pakistan floods.
- *Palestinian and Indigenous Solidarity - A Personal Story*. May 16th, 2023 at UFV. Sto:lo Elder and Indigenous rights and environmental activist, Larry Commodore, shared the story of their arrest and abuse at the hands of Israeli police when they travelled to show solidarity with Palestinian people.

Dr. Geetanjali Gill

- Chaired monthly CoP on Refugee Crises and Experiences. Members include UFV students, faculty, and community members.
- Research project: "Exploring the Refugee and Newcomer Landscape in the Fraser Valley: Voices, Actions, and Partnerships", UFV Accelerated Research Fund, \$6000, Principal Investigators Dr. Geetanjali Gill, Dr. Jessica Price, Dr. Stefania Pizzirani, Dr. Prabhjot Parmar. We would like to develop an easy-to-read narrative report of case studies as one form of dissemination geared for resettlement agencies.
- "Capturing and Valuing the Lived Experiences of Refugees in the Fraser Valley through Digital Storytelling", UFV Strategic Initiatives Fund, \$6500, Principal Investigator Dr. Geetanjali Gill. This project concluded. Geetanjali is speaking to facilitator, Shanga Karim, to continue a project with refugee women, funded through a Tri-Council grant. There is also some interest to carry out storytelling activities in Archway and other resettlement agencies.
- Organized and moderated a PARC Peace Talks on 'Climate Change, Food Security, and Gender Justice', panel discussion on the Pakistan floods.

Dr. Amanda McCormick

- May 17, 2022: Recognizing and Responding to Brain Injuries among Survivors of Intimate Partner Violence in the Fraser Valley. This was a full-day webinar with approximately 50 registered attendees who work in criminal justice, community/social service, or government sectors supporting survivors of gender-based violence.
- Successfully applied for a PARC Visiting Scholar grant to bring Dr. Charlotte Barlow from the University of Lancashire to BC to participate in talks and research work with our DV CoP. The funding was granted early 2023, and the event took place June 2023.

Lolehawk Buker

- Annually gathers with local Indigenous elders to write new Indigenous songs.
- UFV Event – Sept 29, 2022 at the Gathering Place, Chilliwack Campus. Chowiyes/Xwithet! – Rise up/Wake up! A large community gathering held the day before Truth and Reconciliation Day 2022. The program is in remembrance of all Indigenous children who went to Residential Schools. The organization of this event is well underway this Spring with funding in place.
- Summer 2022 – Fall 2022 – Supporting a research project by UFV student Calista Thirsk. They will be creating a short documentary on the "importance of learning Halq'emeylem." The narrative will take the viewer to the lands, river, and mountains that surround Stó:lō territory and give voice to an old story of the land, and how the language describes the reciprocity of "taking care of the land and all that is here."



• Interviews – Podcasts 2022-2023:

- Interview 1: (October) Bringing Together two or three participants from the April Roundtable – 7 Generations to Come. What climate actions and reflections have continued to inform them since that gathering?
- Interview 2: (December) Wisdom of the Elders: An interview with Siyamiyateliot and their daughter Vivian Williams. The importance of language and what steps are still to be taken for revitalizing our Halqemeylem language?

## Funding

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Keith Carlson:

- Bank of Montreal endowment for sustained funding for PARCS Community engagement Collaboratorium \$480,000
- Matsqui Collaboratorium participation to hire two UFV Research Assistants to create a database of Matsqui oral history from previously conducted interviews \$20,000
- Seabird Collab Collaboratorium participation to hire four UFV Research Assistants \$48,000
- Saskatchewan Law Foundation to hire a summer student to update the Gladue Rights Database \$10,000
- City of Abbotsford \$3000
- Alongside Research and Consulting Collaboratorium participation to hire a student to help with the implementation of their new course for Sto:lo youth \$5,600
- Hope and District Arts Council Collaboratorium participation to hire a student to carry-out a cultural mapping project in the region. \$6,000
- Fraser Basin Council Collaboratorium participation to hire a student to work on their Realizing UNDRIP Initiative. \$10,000

## Research

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Commitment Leader, Steven Schroeder has global and local ongoing research in areas of drug policies, harm reduction theory, laws, and practices and local applications of evidence-based findings.

## Publications, Presentations and Reports

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### Refereed Publications:

“On the Corner of Hawks and Powell: Settler Colonialism, Indigenous People, and the Conundrum of Double Permanence, Kent McNeil and John Borrows, eds., Indigenous Voices: Cultural Appropriation, University of Toronto Press. (10,668 words).

Keith Thor Carlson with Albert “Sonny” McHalsie, Colin Osmond, and Tsandlia Van Ry, “The Collaboration Spectrum: Reflections on Community-Engaged Scholarship in a Historical Study of

Gendered Territoriality Among the Stó:lō,” In Benjamin J. Barnes & Stephen Warren, eds., *Replanting Cultures: Community-Engaged Scholarship in Indian Country*, SUNY Press.

**Non-refereed Publications:**

“The Promise of the Crown in Indigenous-Settler Relations,” in D. Michael Jackson and Christopher McCreery eds., *A Resilient Crown: Canada’s Monarchy at the Platinum Jubilee*, (Toronto: Dundurn Press, 2022), 65-80.

“Indian Reserves in British Columbia,” Canadian Encyclopedia,  
<https://www.thecanadianencyclopedia.ca/en/article/reserves-in-british-columbia>

**Presentations:**

Since January Professor Carlson has made 41 presentations, speaking to over 1,750 people. These have ranged from presentations to Stó:lō communities, to presentations for K-12 school teachers at Professional Development workshops, to presentations for not-for profit organizations, to academic conference papers such as they delivered at the Canadian Historical Association annual meeting at York University.

Harm Reduction in the Fraser Valley: Compassion Work for All on November 17th, 2022.

**Plans for the Upcoming Year**

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- PARC is currently working with representatives from the various faith communities to create a new community of practice in ‘Heart Work’. A Faculty Commitment Leader will be identified to lead the Heart Work CoP in September. We are also looking to add another additional Faculty Commitment Leader in the field of Gender and Sexuality Affirmation.

**Steven Schroeder:**

- Plans to continue research in global, and local drug policies and harm reduction work.
- Host public dialogues with community partners in addressing substance use, addiction, and mental health.

**Amanda McCormick:**

- In June 2023 we will be hosting our event on Clare's Law featuring Dr. Charlotte Barlow, as well as presentations from EVA-BC and the E-Division RCMP. Charlotte will visit for a week during which we will work on a publication based on the Clare's Law event, write a proposal for funding to pilot Clare's Law in Abbotsford, and develop a research proposal for a project on coercive control. In October 2023 we are planning the third event in the domestic violence series. Our CoP is continuing to seek opportunities for funding to support the development of a community-based hub to address healthcare and related needs among survivors of gender-based violence, and to develop a public awareness campaign about issues relating to gender-based violence in our communities.

**Keith Carlson:**

- Secure funding to ensure long-term sustainability of staff and programs.
- Review and where appropriate revise the newly Xwelitem Siyaya Allyship Building program so it can be offered for a second time in 2024, and a second level of program can be offered for graduates of the first cohort of graduates.

- Expand the award-winning Community-engaged Collaboratorium initiative that partners with community groups and provides students with paid summer research internships.
- Continue an active outreach and engagement program relating to reconciliation, decolonization, and Indigenization.
- Devote time to publishing the results of current and ongoing research.

## Luminescence Dating Lab (LDL)

Olav Lian, Director

May 2022 – April 2023

<https://www.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. 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 undergraduate students at larger institutions. The Luminescence Dating Laboratory has been recognized formally in the 2023-2028 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 are trained by the lab's Director, Dr. Olav Lian. 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.

### Membership

The laboratory is directed and managed by Dr. Olav Lian, with the assistance of a full-time on-site postdoctoral fellow (currently Dr. Maria Schaarschmidt) and the help of senior research students. To date, Lian has been responsible for the acquisition of external funds necessary to keep the laboratory operational. As of 2021, UFV faculty member Carolyn Atkins (MSc) has joined the laboratory as an associate member.

### 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 (mineral exploration).
- B.C. Ministry of Energy, Mines & Petroleum Resources; Dr. A.S. Hickin. Project: Using luminescence signals and emission spectra to characterize mineral bearing rock.
- 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, related to mineral exploration.
- 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; postglacial geomorphic history of BC coastal land systems.
- University of British Columbia, Geography, Dr. M. Hassan, Project: Postglacial landscape connectivity; Dr. M. D'Arcy, Project: postglacial adjustment of major river systems, British Columbia.
- 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 California, Santa Barbara (USA), Drs. I.J. Walker and A. R. Simms, Project: Evolution of aeolian environments at Point Conception, California.

## Students

- Dr. Maria Schaarschmidt (BSc Marburg, MSc Bayreuth, PhD Wollongong) joined the laboratory in winter 2022 for a two-year postdoctoral fellowship. They will be co-supervising on several of the laboratory's long-term research projects and will be developing new projects of their own. In spring 2023 they co-authored a paper with Dr. Lian for Elsevier's Encyclopedia of Quaternary Science (3rd ed.).
- Sam Woor (BA Oxford, MRes UCL), currently a DPhil student at Oxford, joined the laboratory in summer 2022 to initiate a project on the postglacial history of Thompson Valley near Spences Bridge, BC. They returned for more field work in April 2023, and will start a postdoctoral position in the laboratory in fall 2023.
- Tyler Hodder (BSc, MSc Waterloo), currently a PhD student at University of Waterloo co-supervised by Dr. Lian, continues research in 2022-2023 on the glacial history of Hudson Bay Lowland, as applied to understanding the dispersal of economic minerals.
- 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 Dr. Lian's supervision, successfully defended their thesis in spring 2022.
- Travis Gingerich, (BSc Hons 2018 UFV), NSERC USRA research student, summers 2015, 2016, 2017, commenced their MSc at SFU in fall 2018 under Dr. Lian's supervision. Travis successfully defended their thesis in spring 2021 and is currently (spring 2023) working to publish parts of their thesis research.
- Audrey Faber, (BSc UFV 2017) is currently an MSc student at UNBC under Dr. Lian's co-supervision, currently (spring 2023) writing their thesis.
- Jonathan Cripps, an SFU PhD student, continues to write their thesis during spring 2023; Dr. Lian is on their supervisory committee.
- Dr. Christina Neudorf, former UFV Postdoctoral Fellow under Dr. Lian's supervision, fall 2012 – spring 2016, UFV Research Associate spring 2016 – July 2018, currently employed as a research professor at Desert Research Institute (Nevada, USA), continues to collaborate on projects on postglacial history of eastern North America. One manuscript is in press (spring 2023) and others are in preparation.
- Matthew Taylor, (BSc University of Edinburgh, 2020), joined the laboratory as an SFU MSc student under Dr. Lian's co-supervision, and worked on expanding on Travis Gingerich's research on postglacial river adjustment in southcentral BC. Their field work was in Nicola Valley, BC. Matthew successfully defended their thesis in early spring 2023 and is now working to publish it.
- Michael Turley, (BSc Utah State, MSc UBC) joined the laboratory as a new UBC PhD student under Dr. Lian's co-supervision in 2021 and is looking at the connectivity of postglacial sedimentary landforms in southcentral BC. Their field work commenced in summer 2022, and is currently (spring 2023) doing lab work.
- Vanessa Brewer, UFV BSc Hons student (physical geography), worked as a work-study student in the laboratory from fall 2020 to winter 2022, supported by three NSERC USRA awards. Their BSc Hons research on glacial history in the Hudson Bay Lowland is currently being written up for publication. Vanessa will start their MSc work in the laboratory next year, via UBC, likely on aeolian environments on coastal California.

- Nicola Ferguson, UFV BSc Hons student (physical geography), worked as a full-time research assistant in summer 2021, and a part-time in fall 2021 and 2022. They are currently (spring 2023) completing their BSc Hons research on the timing of glacial retreat in the Albany area of New York State.
- Justine Stoeckly, UFV BSc student (physical geography), worked in the laboratory as a research assistant from September 2022 to April 2023. They will return to the laboratory in fall 2023 and will likely pursue honours research.
- Alison Goeres, UFV BSc student (biochemistry) worked in the laboratory as a research assistant from September 2022 to April 2023. They will return to the laboratory in fall 2023.

### **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., climate change). 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 via the virtual ScienceTalks series. Our work has also had exposure in media, directly or indirectly, outside the valley (e.g., The Vancouver Sun, Toronto Sun, Hakai Magazine, Global News). There were no opportunities to engage with the media in 2022-2023, but we will continue to do so as opportunities arise.

In 2023-2023 the laboratory and its collaborators continued our close collaboration with two First Nations situated in our field areas, namely the Bonaparte (Secwépemc) Nation and the Skeetchestn Nation in south-central BC.

### **Funding**

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• NSERC Discovery Grant (2018-2023)	\$154,000
• NSERC Discovery Development Grant (two years, awarded May 2023)	\$40,000
• NSERC USRA grants	\$6,000
• Natural Resources Canada	\$10,000
• Manitoba Geological Survey	\$50,000
• Work-study student positions	\$5,000
• Accelerate Research Fund	\$12,000
• Faculty/Student Research and Scholarly Activity Fund	\$4,000
• Centres and Institutes Sustainability and Innovation Fund (2022-2023)	\$50,000

### **Research**

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- Research on adjustment of the Fraser River, south-central BC, immediately following the last glaciation. The part of this study that formed Travis Gingerich's MSc research has been completed, and a manuscript for publication is being constructed. Continuation of this research into the Nicola Valley has been completed (2023, was headed by MSc student Matt Taylor). Continuation of this

work into the Thompson Valley has begun, with field work in August 2022 and April 2023 completed; this work is in collaboration with the St'uxwtews and Skeetchestn First nations.

- Research on the late glacial history preserved in the Pine Barrens region of New Jersey, USA, has been completed. A manuscript has been completed (spring 2023) and another has been initiated. Continuation of this work into the Pine Barrens region in Albany, New York State, has commenced (headed by UFV BSc Hons student Nicola Ferguson).
- Research into postglacial sediment storage residence time in the Lillooet Valley continues (headed by PhD student Mike Turley).
- Parts of our research on landscape change in the Hudson Bay Lowland has been completed (some of it headed by UFV BSc Hons student Vanessa Brewer), and a manuscript for publication is in press. Three other manuscripts on this work are in progress (one has been written, and two others are nearly written).
- Research on ancient sand dunes in Tasmania, Australia, which reflect environmental change in the area over the last ~500,000 years will continue. One new conference abstract was published this spring, and a manuscript is in preparation. New field work was completed, and new samples were collected by Maria Schaarschmidt in April 2023. This work is in collaboration with the Tasmanian Forest Practices Authority).

## **Publications, Presentations and Reports**

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### **Refereed Publications**

Hodder, T.J., Gauthier, M.S., Ross, M., and Lian, O.B. 2023. Assessing the timing of the penultimate deglaciation in the western Hudson Bay Lowland, central Canada. *Quaternary Research*, in press.

Wolfe, S.A., Demitroff, M., Neudorf, C.M., Woronko, B., Chmielowska-Michalak, D., and Lian, O.B. 2023. Late Quaternary eolian dune-field mobilization and stabilization near the Laurentide Ice Sheet limit, New Jersey Pine Barrens, eastern USA. *Aeolian Research*, 62 (100877), in press.

### **Conference Papers:**

McIntosh, P.D., Slee, A., Neudorf, C. and Lian, O. 2022. Ancient shorelines of northwest Tasmania: a preliminary report. Presented paper, Australasian Quaternary Association Conference, Adelaide, 6-8

December 2022. AQUA Conference Program and Abstracts, p. 77.

Hodder, T.J.\*, Gauthier, M.S., Ross, M., Lian, O.B., Brewer, V.\* and Schaarschmidt, M.\* 2022. Assessing the timing of nonglacial conditions in central Canada, with implications for the Laurentide Ice Sheet evolution during MIS 3. Geological Society of America annual meeting Oct 9–12, Denver, Colorado, USA. Program with Abstracts 143-2.

Gauthier, M., Brewer, V.\*, Lian, O.B., Schaarschmidt, M.\* 2022. Laurentide Ice Sheet advance and decay in the Roseau Eiver area of southern Manitoba, Canada. American Quaternary Association biennial conference, program and abstracts: <https://www.amqua.org/amqua2022-biennial-meeting.html>

### Plans for the Upcoming Year

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- In the coming year the Luminescence Dating Laboratory will continue with the research projects and will initiate new research into the use of luminescence emission spectra to identify 'critical minerals', such as lithium, in ore-bearing rock.
- The Luminescence Dating Laboratory will welcome a second postdoctoral fellow, Sam Woor, in fall 2023, and a new MSc student, Vanessa Brewer (former UFV BSc Hons student).
- The Luminescence Dating Laboratory will also begin a new collaboration with colleagues in the Geography and Earth Sciences departments at University of California, Santa Barbara, The Nature Conservancy, and the Jack and Laura Dangermond Preserve in southern California. Our research will be on the evolution of an important dune ecosystem at Conception Point, California.



## Molecular Modeling Lab (MML)

Jake Spooner, Director

May 2022 – April 2023

<https://www.ufv.ca/research/research-office/centres-and-institutes/>

### Purpose

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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 a level comparable to experiment 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

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**Director:** Dr. Jacob Spooner

#### Faculty Associates:

- Noham Weinberg (Professor Emeritus)

### Partnerships

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Internal collaborations:

- Dr. Cory Beshara, Chemistry

External collaborations:

- Dr. Bo Chen (Ikerbasque Basque Foundation for Science, Spain)
- Dr. Erika Plettner (SFU, Burnaby)
- Dr. Charles Walsby (SFU, Burnaby)
- Dr. Heather Wiebe (VIU, Nanaimo)

### Students

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- Gavyn Lastoria - Theoretical studies of lipophilicity of Ru anticancer complexes. (Directed Studies - CHEM 409)
- Arshdeep Kaur - Molecular dynamics calculations of molecular volumes for constrained molecules. (Directed Studies - CHEM 407)
- Monesha Mann - High pressure formation of furan and thiophene nanothreads. (Research Assistant)
- Nathan Slingerland - High pressure effects on reaction energy profiles for hydrogen transfer and Diels-Alder reactions. (work-study)

### Community Engagement

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- UFV Research Centres, Labs, and Institutes showcase — Sept 15, 2023 — University of the Fraser Valley

## Research

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- Theoretical calculation of partition coefficients for Ru anticancer complexes.
- Theoretical studies of furan and thiophene nanothreads.
- Theoretical studies of pressure-driven molecular machines.
- Molecular dynamics calculation of activation volumes for diels-alder reactions of thiobenzophenone.
- Molecular dynamics calculations of molecular volumes for constrained molecules.
- Thermodynamic stability of petroleum hydrocarbons at geochemical conditions.

## Publications, Presentations and Reports

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### Conference Presentations:

Spooner, J.\*, Weinberg, N., (2022) High Pressure Energy Surfaces and Profiles: General Approach, 12th Triennial Congress of the World Association of Theoretical and Computational Chemistry. (Oral presentation)

Spooner, J.\*, Weinberg, N., (2022) High Pressure Energy Surfaces and Profiles: Specific Examples, 12th Triennial Congress of the World Association of Theoretical and Computational Chemists. (poster)

Lastoria, G.\*, Penner, J., Weinberg, N., Spooner, J. (2023) Theoretical Calculation of Lipophilicities of Anticancer Ruthenium Complexes, UFV Student Research Day. (Poster)

Spooner, J.\*, Weinberg, N., (2023) Molecular Dynamics Calculations of High Pressure Vibrational Spectra, Canadian Chemistry Conference and Exhibition. (Oral presentation)

## Plans for the Upcoming Year

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Plans for ongoing research projects:

### 1. Theoretical Calculations of Molecular Volumes for High Pressure Applications.

The ability to accurately calculate molecular volumes by theoretical methods is a key component of the MML lab research. Over the past ten years, members of the MML have worked on the development of a novel method for calculation of molecular volumes which has now been applied to discuss a wide range of problems in high pressure chemistry, including calculations of activation volumes, analysis of high pressure conformational equilibria, and description of pressure-induced deformations of energy landscapes of chemical reactions. We are currently focused on further improving this methodology to widen its applicability.

The main limitation of the volume calculation method is the need for molecule specific parameters that define the interactions between molecules in our simulations. Over the past year two research assistants (Monesha Mann and Arshdeep Kaur) have been engaged in projects aimed at addressing this limitation and developing adaptations of the volume calculation method that rely less heavily on the availability of these parameters. These efforts will continue over the coming year.

### 2. Theoretical Calculations of Lipophilicity of Ru Anticancer Compounds.

The primary objective of this project is to develop a methodology for theoretical calculation of lipophilicity of ruthenium anti-cancer drugs. The ability to accurately predict lipophilicity of potential

drug candidates via theoretical methods constitutes a cheap and efficient alternative to experimental methods and complements them in drug design.

The development and testing of an improved methodology has been the subject of a BIOC 409 directed studies project (F2022/W2023) conducted by undergraduate student Gavyn Lastoria under my supervision. During this time, we have been able to identify major issues with current methodology, investigate and test alternative methodologies available in the literature, and make preliminary steps to improve our own methodology. Further work on this project will be conducted over the next two years, with funding for student researcher support provided by the UFV Faculty/Student Research and Scholarly Activity Fund.

### 3. Thermodynamics of petroleum mixtures at extreme pressures

The primary objective of this project is to use molecular dynamics calculations to address one of the most fundamental questions of petroleum chemistry – how pressure and temperature affect thermodynamic stability of petroleum hydrocarbons and their mixtures over a wide range of geological conditions, from those of oil reservoirs to the conditions of the upper mantle.

In March of 2022 an application for research funding titled "Thermodynamics of petroleum mixtures at extreme pressures" was submitted to the American Chemical Society Petroleum Research Fund by myself and Dr. Noham Weinberg. Unfortunately, this application was unsuccessful. However, in November 2022 we received the detailed feedback from reviewers. Despite being rejected for funding, reviewer comments were very positive indicating that this was a good proposal. I have since been in contact with the program manager for the fund who has encouraged us to resubmit after the required waiting period of twelve months. Over the next year, further simulations will be conducted to improve the proposal in preparation for resubmission.