Science Research and Innovation Newsletter – December 5, 2022

The thesis defense seminars are as follows:

**GEOS** MSc Final Seminar: “Pyrite and pyrrhotite in a prograde metamorphic sequence, Hyland River region, southeast Yukon: Implications for orogenic gold” by Colin Padget (Supervisor: Dr. David Pattison) on Monday December 5, 2022 at 1:00pm on Zoom. Please contact the Geoscience Department for zoom details (geoscience@ucalgary.ca)

**CPSC** PhD Final Seminar: “Using Machine Learning Towards Decision Support for Epilepsy Refractory Cases” by Bijan Farhoudi (Supervisor: Dr. Frank Maurer) on Tuesday, December 6, 2022 at 3:00pm Hybrid ICT 618B or on Zoom. Please contact the Computer Science Department for zoom details (cpsc@ucalgary.ca)

**BISI** PhD Final Seminar: “Metabolic and protein engineering in plant isoprenoid metabolism” by Joseph Utomo (Supervisor: Dr. Dae-Kyun Ro) on Thursday December 8, 2022 at 9:00am Hybrid Bi 211 or Zoom. Please contact the Biological Sciences Department for zoom details (biosci@ucalgary.ca)

**CHEM** PhD Final Seminar: “Formation and Characterization of Mono- and Bimetallic Nanoparticles via Thermal and Pulsed Laser-induced Dewetting” by Stephanie Bonvicini (Supervisor: Dr. Yujun Shi) on Thursday December 8, 2022 at 3:00pm in ICT 121

**CPSC** Msc Final Seminar: “Be Careful What You Write, Someone Might Read It: Logging Personally Identifiable Information on Android” by Allan Lyons (Supervisor: Dr. Joel Reardon) on Friday December 9, 2022 at 12:00pm on Zoom. Please contact the Computer Science Department for zoom details (cpsc@ucalgary.ca)

**CHEM** Msc Final Seminar: “Development of Poly(vinylidene fluoride) and Poly(vinyl pyrrolidone) based Solid Polymer Electrolyte for Next Generation of Solid-state Sodium ion Battery” by Afshana Bristi (Supervisor: Dr. Venkataraman Thangadurai) on Friday December 9, 2022 at 9:00am on Zoom. Please contact the Chemistry Department for zoom details (chem.info@ucalgary.ca)

**CPSC** Msc Final Seminar: “Utilizing Natural Language Processing to Produce and Present Film: An Exploratory Analysis” by Kyle Jorgensen (Supervisor: Dr. Mea Wang) on Monday December 12, 2022 at 10:00am on Zoom. Please contact the Computer Science Department for zoom details (cpsc@ucalgary.ca)

**BISI** PhD Final Seminar: “Leishmania donovani Cathepsin B: Impact on Proteins and ncRNAs of Small Extracellular Vesicles, and on Infection Metabolism” by Camila Meira (Supervisor: Dr. Lashitew Gedamu) on Friday December 16, 2022 at 10:30am on Zoom. Please contact the Biological Sciences Department for zoom details (biosci@ucalgary.ca)

**GEOS** MSc Final Seminar: “The effects of water-rock interactions on the permeability of the Precambrian Basement in Southern Saskatchewan” by Taylor Smith (Supervisor: Dr. Benjamin Tutolo) on Tuesday December 20, 2022 at 1:00pm in ES 136

Seminars & Events

**MTST** Fall 2022 Lunch at the Mathematical and Computational Finance Laboratory (MCFL) “Forecasting Stock Options Prices via the Solution of an Ill-Posed Problem for the Black-Scholes Equation and Neural Network Machine Learning” by Kirill Golubnichiy (Department of Mathematics & Statistics, University of Calgary) on Tuesday December 6, 2022 at 12:00pm in MS 569
**GEOS GOLD (Geoscience Open Lunch Discussion) seminar** "Wet-dry cycling and subsurface refugia in prebiotic alkaline lake environments" by Ben Tutolo (Dept. Of Geoscience, University of Calgary) **Wednesday, December 7, 2022 at 12:00pm** on Zoom. Please contact the Geoscience Department for zoom details (geoscience@ucalgary.ca)

**SSE Schulich Innovates:** “Artificial Intelligence and Structural Engineering: Towards Sustainable and Resilient Infrastructure” by Dr. Muntasir Billah (Department of Civil Engineering) on **Wednesday December 7, 2022 at 12:00pm** in ENG 207 or via Zoom. Please contact Schulich School of Engineering for details (schulichresearch@ucalgary.ca)

**MTSC PIMS Lunchbox Lecture:** “Spiking Networks and Neuromorphic Computing” by Dr. Wilten Nicola (Department of Cell Biology & Anatomy) on **Thursday, December 14, 2022 at 12:00pm** in Room 416, University of Calgary Downtown Campus, 906 8 Avenue SW. Please contact Carrie Ragan if you need bus tickets for transportation. Advance registration required. Please register by Sunday December 11, 8pm.

**Opportunities**

**Simons Foundation Neuroscience Collaborations – Call for Vision Statements 2023**

The Simons Foundation seeks to create strong collaborations and foster the cross-pollination of ideas between investigators, as these interactions often lead to unexpected breakthroughs. The current call seeks vision statements to identify new, emerging breakthrough areas of neuroscience that are poised for high-impact funding by the Simons Foundation. The call seeks bold and cutting edge, idea-generating research that focuses on basic principles of brain function and may be overlooked or too risky for other funding organizations. The Simons Foundation will offer an informational webinar on **Monday, December 12, 2022 at 12:00pm** from 11am-noon MT (1pm-2pm ET); please email sci.ad.admin@ucalgary.ca for zoom info.

Vision statements may be submitted beginning January 11, 2023, due to the funder in early March. Invitations to full proposal will be issued in June 2023. Notify Research Services at ipd@ucalgary.ca if interested in submitting a vision statement.

**Reminder: NSERC and German Research Foundation joint call on sustainable processes and chemistry**

The proposed Canada-Germany collaborative research projects must focus on basic and fundamental research and are expected to generate new knowledge and address one or more research challenges related to environmental sustainability. Canadian academic researchers may receive up to $100,000 per year for up to three years from NSERC to support their participation in the collaborative research project while German researchers may receive funding from DFG. This call for proposals includes a two-stage application process whereby Canadian researchers must first submit a modified Alliance International Collaboration grant application to NSERC by **December 7, 2022** (RMS approvals should be obtained 3 business days in advance of submission).

**Reminder: NSERC-CNSC Small Modular Reactors Research Grant Initiative**

The Canadian Nuclear Safety Commission (CNSC) regulates the use of nuclear energy and materials to protect health, safety, security, and the environment; to implement Canada’s international commitments on the peaceful use of nuclear energy; and to disseminate objective scientific, technical and regulatory information to the public.

The NSERC-CNSC Small Modular Reactors Research Grant Initiative is intended to support activities that will:

- Increase the scientific information available to support regulatory decision-making and oversight
- Increase capacity to regulate SMRs
- Enhance the capabilities of Canadian universities to undertake research related to SMRs
- Increase training and help produce a new generation of nuclear scientists, engineers and policy-makers.

Research proposals must address one or more of the specific research challenges and knowledge gaps mentioned [here](#).

**RSO Internal Deadline:** December 8, 2022, 12:00 PM MT.
Reminder: Genome Canada: Genomic Applications Partnership Program (GAPP) April 2023 (Round 25)
Note: the funding deadline calendar posting for GAPP Round 25 has been updated to reflect Genome Canada’s revised deadlines
Genome Canada, in partnership with Genome Alberta (GAB), is seeking proposals for the Genomic Application Partnership Program (GAPP). The GAPP funds downstream research and development projects driven by challenges and opportunities identified by end-users such as industry, government, not-for-profits, or other receptor organizations. This is an ongoing competition and Expressions of Interest for Round 25 of the competition must be submitted to Genome Alberta by December 12th, 2022, for submission to Genome Canada in December. Interested parties are asked to contact Genome Alberta in advance of providing the EOI for submission, cc’ing ipd@ucalgary.ca to engage University of Calgary Research Services support.

Reminder: Innovation for Defence Excellence and Security (IDEaS) Program advances promising technology quickly through a phased approach, and the present opportunity (Component 1A) helps to establish the innovativeness and impact of a solution and its ability to address a specific defence and security challenge. Innovators have up to six months to refine and advance their product and showcase it to Department of National Defence/Canadian Armed Forces.
RSO Internal Deadline: December 15, 2022 - 12:00 PM
RSO Contact: Tempest Emery

Reminder: Canadian Space Agency: Enhancing Industry/University Collaboration with CSA Funding for Highly Qualified Personnel Training (EIUC) aims to support research projects that will contribute to the development of new scientific knowledge and space technologies at Canadian universities for a project that has received a grant under the NSERC - Alliance Grants Program. Each project could be eligible to receive a yearly amount matching the grant received yearly from the NSERC Alliance program, up to $100,000 per year for a maximum duration of 5 years. To be eligible, projects must demonstrate their link to one of the priorities identified in Space Strategy for Canada or the recently announced Canada’s Strategy for Satellite Earth Observation, or must further the research in the field of quantum technology in the space sector. The CSA may to prioritize projects related to the following research disciplines: quantum technology in the space sector, adapting to climate change with space-based data, innovative technology in the space sector including advanced robotics, deep space food, deep space health and understanding space weather. Deadline is December 16, 2022 to submit your application to be considered in the first round of funding. Please note that an RFAA will be used for institutional approval for this competition. Click here to access the EIUC AO and obtain information on how to apply.

Reminder: Emissions Reduction Alberta (ERA) Industrial Transformation Challenge
Note: This is a 2-stage competition consisting of an Expression of Interest (EOI) stage and a Full Project Proposal (FPP) stage. The FPP stage is by invitation only.
The Industrial Transformation Challenge (ITC) is intended to support and accelerate the efforts of Alberta’s industrial sector to achieve net-zero greenhouse gas (GHG) emissions. This call welcomes EOIs that will advance technology to the stages of field pilot, demonstration, or first-of-kind commercial implementation by project completion. Funding is open to applicants from across Alberta’s industrial sectors, including petrochemical, agriculture, forest products, manufacturing, energy, and more.
RSO Internal Deadline (EOI): January 16, 2023 at noon
For more information, please contact Katie Cupello in RSO. For additional support, you may also contact Michael Blough, Manager, Strategic Opportunities, Office of the Vice President (Research).
Reminder: Canada-Japan 3+2 Collaborative Call for Proposals
Working together, the governments of Canada and Japan aim to foster and support collaborative industrial research and development (R&D) projects with a high potential for commercialization. This call for proposals is open to organizations from Canada and Japan who wish to form project consortia for collaborative projects focused on developing AI-based solutions for well-being, better living environments and social connection for aging populations.
Research Services Office Internal Pre-Application Deadline: January 18, 2023 - 12:00 PM
RSO Contact: Tempest Emery

Reminder: Campus Alberta Small Business (CASBE) program Stream II
Alberta Innovates has launched the 2022-23 CASBE program with two new matching opportunities: 1. NSERC Alliance Quantum Grants, and 2. Approved NSERC Applied Research and Technology Partnership grants (ARTPs) that align with the Alberta Innovates CASBE requirements. Although this is a continuous intake program, potential applicants should submit their applications as soon as possible. RSO Contact: Katie Cupello

Reminder: Alberta Innovates: Agri-Food and Bioindustrial Innovation Program (ABIP) supports the development and advancement of technologies that increase productivity, enhance competitiveness, boost the value of agriculture and forestry commodities, and lower greenhouse gas emissions. This is a continuous intake program. Expressions of interest are submitted using the SmartSimple online intake system. If invited to full proposal, approvals from RMS must be obtained by noon, three business days before intended submission.

Opportunities – Awards
For any award, including those listed below, if you are planning on submitting a nomination for yourself or someone else, and would like support in developing the nomination package, please contact Danielle Demiantschuk as early as possible. Other opportunities can be found on the FOS awards site, and in the RSO awards database.

Peter Gruber Foundation Cosmology Prize celebrates individuals whose achievements have produced fundamental advances in our understanding of the structure and evolution of the universe may be nominated. Details here. Deadline: December 15, 2022.

Calgary Awards, offered by the City of Calgary, celebrate and recognize outstanding achievements and contributions made by Calgarians. There are four main categories of awards. The next round will open on January 4th. Details here. Deadline: February 1, 2023.

Reminder: Killam Annual Professor Awards – recognize five faculty members who have demonstrated excellence in research, teaching, and service. Each award carries $10,000. Details here. Deadline: December 15, 2022

Reminder: Killam Visiting Scholar Award – provides sponsorship ($50,000) of a distinguished scholar who will make significant contributions to academic life at the UofC through a visit during the winter or fall term (2022-2023) Details here. Deadline: December 15, 2022

Opportunities – Health Sciences
Reminder: Alex’s Lemonade Stand Foundation — Young Investigator Grant is a three-year award designed to support early career researchers, such as postdoctoral fellows, clinical fellows, or instructors, pursuing promising childhood cancer research ideas. These grants aim to cultivate the best and brightest researchers of the
future who demonstrate a commitment to a research career in pediatric cancer. A mentor is required, and a career development plan must be included.

- **RSO Internal Deadline: December 7, 2022 at noon**

  RSO contact Emma Koiston.

**Reminder: Alex’s Lemonade Stand Foundation — RUNX1 Early Career Investigator Program**

promotes the establishment of a new generation of basic and translational scientists interested in tackling inherited hematologic malignancy predisposition disorders with a focus on RUNX1-familial platelet disorder. The RUNX1 Early Career Investigator grant is designed to fund research investigating strategies that will lead to the development of therapies that will prevent the transition from pre-malignancy to overt hematologic malignancy in patients with RUNX1-FPD. Applicants must have research experience working in, and a deep understanding of, normal or malignant hematopoiesis and/or immunology.

- **RSO Internal Deadline: December 16, 2022 at noon**

  RSO contact Emma Koiston.

**Opportunities – Social Sciences**

**2023 Social Sciences and Humanities Research Council Insight Development Grant**

**Competition** support research in its initial stages. The grants enable the development of new research questions, as well as experimentation with new methods, theoretical approaches and/or ideas. Funding is provided for short-term research development projects of up to two years that are proposed by individuals or teams. SSHRC welcomes applications involving Indigenous research, as well as those involving research-creation.

**RSO Internal Deadline: Monday January 30, 2023 at noon**

RSO Contact: Stephanie Patrick

**RSO SSHRC Insight Development Grant Information Session**

Please join Dr. Penny Pexman, Associate Vice-President (Research) and the Research Services Office on December 7, 2022 from 1 – 2:30 PM, ONLINE for a discussion of the SSHRC Insight Development Grant Program in advance of the February 2023 submission deadline. We will include an overview of the program, institute success rates, application and submission instructions, as well as tips and tricks. Panelists Dr. Lorelli Nowell (Nursing) and Dr. Ruth Pogacar (Haskayne) will speak to their experiences with the IDG Program. Presentation will be followed by an open discussion/Q&A period.

Everyone is welcome. To join this session, please email Stephanie Patrick by December 5 to register.

You will receive the Zoom link and password on December 6.

**Opportunities – Postdocs and Graduate**

**Faculty of Science Curriculum Review Support Graduate Research Assistant, Faculty of Science (3 Positions)**

Under the supervision of the Associate Dean Teaching and Learning, the graduate student research assistant will provide research support to the Faculty of Science curriculum review and mapping project. This includes, but is not limited to, conduct environmental scans, literature review, and needs assessments. This position will work remotely, with options for regular on-site and/or remote meetings with the research team and supervisors. For more information visit the job posting.
Mitacs The Canadian Science Policy Fellowship (CSPF) is now accepting applications from PhD holders interested in a year-long policy position, starting in September 2023, with a Canadian government host office. Approved fellows receive an annual salary of $70,000 to $80,000 from their host offices, as well as professional development and networking opportunities facilitated by Mitacs. Application deadline: February 1, 2023 (11:59 p.m. PT) For more information, please visit Mitacs website

Congratulations!

Dr. Erik Holmes proposal for the Alberta Number Theory Days XIV meeting has been approved by PIMS, congratulations Erik!

Dr. Jinniao Qiu won a 2022 PIMS-Europe Fellowship, please join us in congratulating Jinniao!

Congratulations to Danielle Demiantschuk on the successful completion of the Research Administration Program through Mohawk College!

Did You Know?

Reminder: 2022/2023 Annual Compliance Certificate due by December 5, 2022. All project holders of externally and internally restricted funds at the University of Calgary are required to complete this on-line certificate.

For more information on the process, please refer to the FAQ document. To assist you with the completion of the certificate, a Summary of Changes document outlining a list of policy changes/updates over the past year is available. As in the past year, the certificate will be completed on-line and can be accessed through the Research tab on your My U of C portal.

W2023 Special Topics Courses for Science Grad students

CPSC 601.30 High Performance Scientific Computing and Visualization will be offered (Tu-Th 9:30 – 10:45, ST 057). A CPSC course that is open to anyone who knows how to program in C/C++. Modern scientific computing and data science workflows are increasingly relying on the capabilities of parallel and distributed computing architectures for high performance. This course will introduce students to data management principles and programming paradigms that are central to these workflows. Students will be exposed to multithreading in C++, GPGPU computing with CUDA, and programming distributed memory architectures via the Message Passing Interface (MPI). The focus will be on the use of these technologies to accelerate the performance of core techniques and to handle large datasets. Use cases will be drawn from various areas such as numerical linear algebra, image processing, machine learning, computer graphics, and data visualization. Additionally, students will be able to explore their own domain of interest via case studies and a term project. For more information please contact Usman Alim
SCIE 507.33 Emerging Technologies and Entrepreneurial Thinking in Evolving Energy Systems will be offered (Tu 2:00 – 4:45 pm, ENF 334). Open to graduate students in any program in the Faculty of Science. For more information please contact David Eaton.

GEOP 699.01 Global Seismology will be offered (Tu-Th 11:00-12:15). In addition to geophysics grad students with an interest in seismology, this course may be of interest to mathematically-inclined geology grad students who have an interest in earthquakes and/or the Earth's deep interior. For more information please contact David Eaton.

Science Research and Innovation Newsletter (SRIN) comes out every Monday. If you have a seminar notice, congratulations or awards for the newsletter please submit it by noon on Friday to sci.borg@ucalgary.ca to ensure it is added.