

PHAmily Update

A newsletter celebrating student success around PHAS!

August 2022



Publications

from PHAS students who were first or second author



Ali Mohandesi, "Altitude Distribution of Large and Small-Scale Equatorial Ionospheric Irregularities Sampled From an Elliptical Low-Earth Orbit", *Journal of Geophysical Research: Space Physics*, May 2022

Devin Van Elburg, "Commissioning of an ultrasound-compatible surrogate vaginal cylinder for transvaginal ultrasound-based gynecologic high-dose-rate brachytherapy", *Medical Physics*, April 2022

Hadi Zadeh Haghighi, "Radical pairs can explain magnetic field and lithium effects on the circadian clock", *Scientific Reports*, January 2022

Hadi Zadeh Haghighi, "Radical pairs may play a role in microtubule reorganization", *Scientific Reports*, April 2022

Jia-Wei Ji, "Proposal for room-temperature quantum repeaters with nitrogen-vacancy centers and optomechanics", *Quantum*, March 2022

Omid Golami & Ken Sharman, "Ab initio and group theoretical study of properties of a carbon trimer defect in hexagonal boron nitride", *Physical Review B*, May 2022

Pictures:

- **Top:** Photo by **Mykhaylo (Mike) Shumko** - accompanies the article, "*University of Calgary space physicist participates in NASA rocket mission to study pulsating aurora*", featuring PHAS professor **Dr. Emma Spanswick**.
- **Left:** Illustration by **Grace Kabengele** - accompanies the article, "*Canadian women in physics and astronomy*", published in *The Gauntlet* April 2022 by PHAS PhD candidate, **Pamela Freeman**.
- **Right:** Photo featuring PHAS professor **Dr. Daniel Oblak** touring Premier **Jason Kenney** and University of Calgary President **Dr. Edward McCauley** around lab following government announcement of \$23 million investment in quantum training, research and innovation hub.

Omid Khajehdehi, "Spatiotemporal Clustering of Seismicity in the Kiskatinaw Seismic Monitoring and Mitigation Area", *Frontiers in Earth Science*, January 2022

Omid Khajehdehi, "The effect of correlated permeability on fluid-induced seismicity", *Geophysical Research Letters*, January 2022

Peng Cheng Liao, "Topological graph states and quantum error correction codes ", *Physical Review A*, April 2022

Rebecca Frederick, "Orientation dependence of inhomogeneous magnetization transfer and dipolar order relaxation rate in phospholipid bilayers", *Journal of Magnetic Resonance*, May 2022

Rishabh Rishabh & Hadi Zadeh Haghighi, "Radical pairs may explain reactive oxygen species-mediated effects of hypomagnetic field on neurogenesis", *PLoS Computational Biology*, June 2022

Rishabh Rishabh & Hadi Zadeh Haghighi, "Radical pairs may explain reactive oxygen species-mediated effects of hypomagnetic field on neurogenesis", *PLoS Computational Biology*, June 2022

Salini Karuvade, "Observing a changing Hilbert-space inner product", *Physical Review Research*, January 2022

Salini Karuvade, "The operational foundations of PT-symmetric and quasi-Hermitian quantum theory ", *Journal of Physics A: Mathematical and Theoretical*, May 2022

Thomas Mann, "Fast stereotactic radiosurgery planning using patient-specific beam angle optimization and automation", *Physics and Imaging in Radiation Oncology*, January 2022

Thomas Mann, "Increasing demand on human capital and resource utilization in radiotherapy: The past decade", *International Journal of Radiation Oncology, Biology, Physics*, February 2022

Defences and Candidacies

Aaron Barclay, PhD Defense

Alireza Poostindouz, MSc Defense

Amy Frederick, PhD Defense

Anustup Das, MSc Defense

Bishnu Behera, PhD Candidacy

Blaine McLaughlin, MSc Defense

Hadi Zadeh-Haghighi, PhD Defense

Joseph Madamesila, PhD Candidacy

Mahsa Faraydras, MSc Defense

Maryam Abrashi, MSc Defense

Matthew Patrick, PhD Defense

Mohsen Bagherimehrab, PhD Defense

Omid Gholami, MSc Defense

Pamela Freeman, PhD Candidacy

Robert Bell, MSc Defense

Robert Nerem, MSc Defense

Shahrzad Taherizadegan, PhD Candidacy

Please let the DGA know about your and your group's future successes!