

## Department of Physics and Astronomy Colloquium Series

Tuesday, January 24<sup>th</sup>, 2023, 2:30pm - virtual talk

**Speaker:** Hua Yang

**Institution:** Research Scientist, Life Sciences Division, TRIUMF

**Title:** Emerging radionuclides for cancer treatment and imaging

### **Abstract:**

Therapeutic radionuclides are gaining global interest in recent years, following the remarkable results seen with [<sup>177</sup>Lu]Lu-DOTATATE (Lutathera) to treat neuroendocrine tumour, [<sup>223</sup>Ra]RaCl<sub>2</sub> (Xofigo) to treat symptomatic bone metastasis in prostate cancer, and more recently [<sup>225</sup>Ac]Ac-PSMA617 to treat metastatic prostate cancer. One of the limitations of unconventional radionuclide therapy is the production of the isotopes and subsequent chemistry development. TRIUMF is Canada's prime cyclotron facility, and one of our major commitments is to produce medical isotopes and support related research. In this seminar, Dr. Yang will talk about the characteristics and limitations of emerging cancer theranostic isotopes including <sup>161/155</sup>Tb, <sup>225</sup>Ac, <sup>213</sup>Bi, and <sup>227</sup>Th and TRIUMF's efforts to produce some of the isotopes to ease the supply shortage. She will also review the recent advances in chelation chemistry for the unconventional isotopes, conjugation to biomolecules (peptides) and their applications in several preclinical studies.