

**Title:Hidden crystallographic gems to link materials' properties: stannides, germanides, and antimonides**

**Abstract:**The discovery and characterization of novel intermetallic compounds is important for broadening the understanding of structure-property relationships of functional materials. Our current research interests in superconductivity, unusual magnetism, thermoelectrics, and magnetocalorics, rely heavily on the intimate relationship between structure and physical properties. Likewise, the determination of anisotropic physical properties from high quality single crystals is vital in probing the intrinsic electrical and the competing magnetic interactions to understand the chemistry and physics of these materials. In this talk, I will highlight the crystal growth, characterization, and properties of stannides and layered antimonides and the potential for compounds in reduced dimensions.