



College of Liberal Arts and Sciences
Fall 2022 Chemistry Seminar Series
Friday, October 14th

Andrea Goforth, Ph.D., Associate Professor
Portland State University

My Chemical Adventures with Crystals and Nanocrystals

Research Program Abstract

At PSU, Prof. Goforth has developed a robust research program which has been focused on developing colloidal and solid-state synthesis methods to produce functional, tailored inorganic nanoparticles and nanocomposites with the aim of furthering their use in biological and other technological applications. The tailored nanomaterials we design and synthetically optimize include tunable nanoparticle light absorbers and fluorophores, colloidal and plastic X-ray attenuating materials, magnetic contrast agents, and porous drug delivery vehicles. In order to design improved nanoscale materials for a variety of purposes, we are also interested in gaining atomic-level insight in order to understand how to manipulate the key nanoparticle physical, chemical, or photophysical properties in synthesis and post-processing.

Biography

Andrea Goforth is an Associate Professor in the Department of Chemistry at Portland State University (PSU) in Portland OR. Goforth earned her B.S. in Chemistry at the University of Tennessee at Chattanooga (2001), where she synthesized organic ligands and inorganic coordination compounds in her undergraduate research with Prof. Greg Grant. She went on to earn her Ph.D. in Inorganic Chemistry at the University of South Carolina (2005), where she synthesized and characterized novel light-absorbing metal halide compounds with Prof. Hanno zur Loye. Afterwards, she was a post-doc with Prof. Susan Kauzlarich at the University of California, Davis (2006-2008), where she synthesized novel magnetic compounds, and where she became interested in the synthesis of magnetic and fluorescent colloidal nanomaterials.

Goforth joined the PSU Chemistry Department as an Assistant Professor in 2008 and was promoted to Associate Professor in 2014. She trains graduate and undergraduate researchers in nanomaterials synthesis, characterization and optimization, teaches inorganic, solid state and general chemistry, and directs both the PSU X-ray Diffraction & Scattering Laboratory (since 2010) and the PSU Center for Electron Microscopy and Nanofabrication (since 2022). She is also a scientific consultant and partner in a startup company, Stark Street Materials Corp., that produces non-lead X-ray shielding fabrics.