

Research Experience

Andrew S. Voyles

August 17, 2018

University of California, Berkeley

Graduate Student Researcher / NRC Fellow

Berkeley, California

August, 2014 – Present

- Dissertation Title: “Nuclear Excitation Functions for the Production of Novel Medical Radionuclides” — measurement of cross-sections for neutron-induced and charged particle-induced reaction pathways for the production of emerging novel therapeutic and diagnostic medical radionuclides, with high specific activity.
- Dissertation Advisor: Dr. Lee A. Bernstein, University of California, Berkeley
- Developed intense mono-energetic neutron source capabilities for production of novel therapeutic radionuclides.
- Research carried out at the Lawrence Berkeley National Laboratory’s 88-Inch Cyclotron and the Los Alamos National Laboratory’s Isotope Production Facility at LANSCE.

University of Oslo

Visiting Researcher, Department of Physics

Oslo, Norway

April – May, 2018

- Studied preparation of a chelate-conjugated biomolecule carrying a radionuclide, in the Nuclear and Energy Physics group.
- Focus on the radiolanthanide ^{161}Tb and a peptidomimetic displaying dual-receptor targeting through the endothelial growth factor receptor and the HER2/neu antigen.

Institute for Laser Engineering, Osaka University

Visiting Researcher

Osaka, Japan

February – March, 2015

- Research and evaluation of solid debris collection diagnostics in search of evidence of nuclear-plasma interactions.

University of Utah

Undergraduate Researcher, Nuclear Engineering

Salt Lake City, Utah

August, 2010 – August, 2011

- Developed simulation of Neutron Activation Analysis, an analytical technique using neutron irradiation of matter to determine highly precise compositions of samples.
- Simulation optimizes irradiation times of samples to minimize resulting radioactivity.
- Presented paper at 2011 ANS Student Conference, 2011 2nd Utah Detection Conference.

Undergraduate Researcher, Chemistry

August, 2009 – May, 2010

- Synthesis and characterization of metal-doped Cadmium-Selenium quantum dots used to produce photonic crystals structured after iridescent scales of several Brazilian beetles.
- Applications include fully-optical circuitry and tunable, customizable photoluminescent sensors for desired molecules and/or cells.
- Later research involved sol-gel dip-coating quantum dots for use in geothermal wells.

University of West Florida

Visiting Researcher, Department of Physics

Pensacola, Florida

May, 2008 – January, 2009

- Modeled specific heat capacity anomalies of 4'-octyl-4-biphenyl-carbonitrile liquid crystals, due to the effect of mesophase transitions.
- Research proceeded to place third in the 2009 Florida State Science Fair, and as a finalist in the 2009 Intel International Science and Engineering Fair.