Steven Girard, Ph.D.

**Award:** Research Infrastructure Program; $10000.00

**Title:** Assistant Professor, Chemistry

**Project:** Nanostructured Silicides for Next-Generation Radiosotop Thermoelectric Generators

**Abstract:** (First Paragraph of Proposal)Radioisotope thermoelectric generators (RTGs) have been used as a mainstay of most long-term and deep space NASA missions to power primary electronic and mechanical components on spacecraft, satellites, and rovers. However, the power-generating thermoelectric elements in RTGs are limited by low efficiencies and are typically made of expensive or toxic elements. Here, we propose a research effort in the laboratory of Dr. Steven Girard at UW–Whitewater to develop low-cost, non-toxic nanostructured silicide materials for high efficiency RTG applications. The grant will support research efforts over ten weeks during Summer 2017 and support the work of two undergraduates, Dr. Girard, and provide travel support for Dr. Girard to attend the 2017 International Conference on Thermoelectrics in Pasadena California, hosted by the Jet Propulsion Lab (JPL) and California Institute of Technology in Summer 2017.

**Biography:** Steven N. Girard earned a Bachelor of Arts Degree in Chemistry and Bachelor of Music Degree in   
 Cello Performance from Lawrence University in Appleton, Wisconsin, and a Ph.D. in Inorganic   
 Chemistry from Northwestern University in Evanston, Illinois. His research interests include   
 nanostructured thermoelectric materials, sustainable synthesis of inorganic and nanostructured   
 compounds, blowing things up, and flux chemistry. He was hired as Assistant Professor of  
 Chemistry at UW-Whitewater in 2014.

**Congressional District**: 5

**Congressional Representative**: James Sensenbrenner