



# The Cheminar



**Susan M. Kauzlarich, Ph.D.**

Department of Chemistry  
The University of California, Davis

**Tuesday Oct. 10<sup>th</sup>**

Seminar **11 AM – 12 PM**

*Classroom Building* **CR 170**

## **Advancement of Zintl Phases from Curiosities to Thermoelectric Materials**

There are many technologies where progress towards higher efficiencies and broad application are materials limited. Zintl phases are one important class of materials where good thermoelectric efficiencies have been demonstrated. This seminar will outline the requirements for efficient energy conversion from waste heat direct to electricity (thermoelectric property). Zintl phases are intermetallics, compounds made from all metals, that exhibit both ionic and covalent bonding and are typically semiconductors. I will provide the context of important structural and electronic design of new Zintl phases and highlight a couple of investigations to demonstrate the strength of chemical principles in discovery.

### **About the Speaker**

Susan Kauzlarich (she/her) is a Distinguished Professor of Chemistry at the University of California Davis. She received her BS degree in Chemistry from the College of William and Mary and her PhD from Michigan State University. She joined the University of California Davis faculty after postdoctoral work with John Corbett at Iowa State University. She is a world-renowned expert on Zintl phases and the synthesis and characterization of nano-materials, with interests ranging from solar photovoltaics to thermoelectrics and quantum materials. She pioneered the inclusion of rare earth and transition metal analogs of Zintl phases. Prof. Kauzlarich is a Fellow of the American Association for the Advancement of Science and the American Chemical Society. She received the Mayer Distinguished Scholar Award from Argonne National Laboratory, the Francis P. Gavan – John M. Olin Medal, and the American Chemical Society 2022 Inorganic Chemistry Award. She received a NASA Tech Brief Award for her work on thermoelectric power generation. She has been very active in service to the profession: she currently serves as a Deputy Editor for *Science Advances* after 15 years as an Associate Editor for *Chemistry of Materials*. She has been recognized for her outstanding mentoring of STEM students, including a U.S. Presidential Award for Excellence in Science, Math, and Engineering Mentoring (2008).