



California State  
University

**CHEMISTRY**

C H A N N E L  
I S L A N D S

CHEMISTRY SEMINAR

# Valerie Scott, Ph.D.

NASA Jet Propulsion Laboratory

## Chemistry in the NASA world: A Chemist's Perspective on Technology Development For Space and Planetary Exploration Purposes



Aliso Hall  
Room 150

1PM, Friday  
October 26,  
2018

Free & open  
to the public

### ABSTRACT:

"Mars rover" is usually the first thing that comes to the public's mind when NASA's Jet Propulsion Laboratory is brought up. However, there is an abundance of research that happens before these attention-catching missions are sent, largely surrounding the development of the technology required to make the needed scientific measurements. The challenges that face these missions are vastly different than ones used in a laboratory on Earth. Size, mass, and power (SMAP) requirements are extreme because of the high cost of sending anything into space. Reliability requirements are higher because once you've left the Earth's surface, it is clearly better not to require any maintenance. Survivability and function under extreme environmental conditions are a must, and change significantly based on the target. Want to harvest water from the Martian soils or carbon dioxide from the atmosphere? Want to continue to function at the high temperatures on the surface of Venus? Or place an orbiter around the high radiation environment of Jupiter's moon Europa? These questions all are all applicable to current mission concepts that do not have answers as of yet. This talk will address technologies that tackle these challenges with a focus on how on the role that chemistry plays in each.

Hosted by CSUCI  
Chemistry Department

Funded by



California State  
University

**INSTRUCTIONALLY  
RELATED  
ACTIVITIES**

C H A N N E L  
I S L A N D S