

# FACULTY RESEARCH TALKS

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Zoom talk | Friday, July 15, 2022 | Noon to 1 p.m.



CO-PRESENTER 1:

**KERRI  
DONALDSON  
HANNA**

Assistant Professor,  
Planetary Science  
Group, Department of  
Physics

## **Lunar-VICE: The Upcoming NASA Surface Science Mission to the Moon's Gruithuisen Domes**

The Lunar Vulkan Imaging and Spectroscopy Explorer (Lunar-VICE) was recently selected through NASA's Payloads and Research Investigations on the Surface of the Moon (PRISM) call to be delivered to the lunar surface on an upcoming Commercial Lunar Payload Services (CLPS) lander. The UCF-led payload and team will investigate the regolith and boulders comprising the Gruithuisen Domes using a suite of cameras on the CLPS lander, and two multi-spectral imaging systems and a gamma ray and neutron spectrometer on a rover. In this talk, Dr. Donaldson Hanna and Dr. Dove will describe the proposed investigation, including the process of building a team and developing a proposal to respond to a NASA small mission call.

Dr. Donaldson Hanna combines spacecraft and telescopic observations of solar system planetary bodies with laboratory measurements of analog materials utilizing bespoke environment chambers. She is the PI of the Lunar-VICE mission and is a co-investigator on several space missions, including the Diviner Lunar Radiometer Experiment, L-CIRiS and Lunar Trailblazer.

Dr. Dove studies dust charging and dynamics on planetary surfaces, planet formation, and plasma interactions with planetary and spacecraft surfaces because understanding these phenomena is key to successful planetary exploration. She is the Deputy PI of the NASA SSERVI-funded Center for Lunar and Asteroid Surface Science (CLASS) and the Lunar-VICE Mission.



CO-PRESENTER 2:

**ADRIENNE  
DOVE**

Associate Professor,  
Planetary Science  
Group, Department of  
Physics

## **Towards Zero-Carbon Electric Energy**

In this talk, Dr. Li will introduce his group's efforts in helping society achieve an energy future with zero carbon emission. He has developed advanced computational tools, such as convex and data-driven optimization. Dr. Li has also designed new engineering solutions, including controlling flexible electric-driven water facilities to improve the power grid's hosting capacity of intermittent renewable energy, such as wind and solar.

Dr. Li's research interests include optimization, control and data analytics with applications in network systems, such as power, water and gas networks. His ongoing research is sponsored by the National Science Foundation and the Department of Energy. He received his Ph.D. in electrical engineering from Arizona State University in 2016. Before joining UCF in 2018, he was a postdoctoral associate in the Department of Mechanical Engineering at Massachusetts Institute of Technology.



PRESENTER 3:

**QIFENG LI**

Assistant Professor,  
Electrical and Computer  
Engineering,  
RISES Cluster