

# INORGANIC CHEMISTRY SEMINAR



**Dr. Allegra T. Aron**

Skaggs School of Pharmacy and Pharmacology, UC San Diego

## “Finding Metal-Binding Molecules: Native Electrospray-based Metabolomics”

**Abstract:** Metals are required for life, and microbes have evolved a number of small molecules to compete for, acquire, and utilize metals. Metal-binding compounds are important in a number of fields – these compounds can alter the growth of the microbial communities, enhance plant yields, control harmful pathogens, deliver metals in diseases of deficiencies, or can be used for bioremediation. Systematic methods for the discovery of metal-small molecule complexes from biological samples remain limited. In this talk, I describe a native electrospray ionization mass spectrometry-based method, in which post-column metal-infusion and pH adjustment is combined with ion identity molecular networking, a rule-based informatics workflow performed using the Global Natural Products Social Molecular Networking (GNPS) platform. This method has been used to identify metal-binding molecules in complex samples based on defined mass ( $m/z$ ) offsets of ion features with the same chromatographic profiles. As this native metal metabolomics approach can be easily implemented on any liquid chromatography-based mass spectrometer, this method has the potential to become a key strategy for elucidating and understanding the role of metal-binding molecules in biology.

**Wednesday, October 27<sup>th</sup> 2021**

**UCLA** College | Physical Sciences  
**Chemistry & Biochemistry**

More information: [jzabala@chem.ucla.edu](mailto:jzabala@chem.ucla.edu)

**4:00 p.m. | Via Zoom**