

## **Multimolecular Studies of Gas in Protoplanetary Disks with the SMA and ALMA**

Studying the composition of protoplanetary disk materials provides insight into the ingredients available during planet formation. Furthermore, spectral line surveys of protoplanetary disks in nearby star-forming regions can help us constrain the amount of chemical diversity across different circumstellar planet-forming environments. This is crucial step in determining the relationship between the compositions of mature planets and their formation conditions. The Submillimeter Array (SMA) and the Atacama Large Millimeter/submillimeter Array (ALMA) have enabled the characterization of disk gas in many protoplanetary disks. While some disks have been observed in great detail, our knowledge of the molecular gas content in the majority of disks is limited to measurements of CO alone. The next step in characterizing the composition of the bulk gas present in protoplanetary disks is to increase the sample size of disks investigated with larger set of molecular tracers. I will present the results of multiple mini-surveys of additional molecular tracers of the disk gas, including  $\text{N}_2\text{H}^+$ ,  $\text{HCO}^+$ , and HCN, in comparison with existing data from the literature.