As our understanding of the solar system and exoplanetary systems continues to grow, our view of planet formation processes must expand to accommodate the incredibly diversity of formation outcomes. I will focus this talk on my favorite technique for studying planet formation processes in action - molecular spectroscopy. I will review the techniques of molecular spectroscopy and discuss how they can be used to tackle key questions about planet formation, including: Where does water freeze, and does this correspond with giant planet formation? Are there spectroscopic signatures of disk evolution, or the presence of planets? What factors determine the final chemical make-up of a planet? I will highlight some of the incredible progress that has been made on answering these questions in recent years, and provide updates on ongoing projects, including several involving undergraduate students.

Bio: I use spectroscopy and other astronomical techniques to study the formation of planetary systems. In particular, I’m interested in understanding the origin of the diversity of planets and planetary systems. I use spectroscopy of the gas in disks to study both the chemistry and physics of planet formation.