

THE 2021 CENSUS OF INTERSTELLAR, CIRCUMSTELLAR, EXTRAGALACTIC, PROTOPLANETARY DISK, AND EXOPLANETARY MOLECULES: WHAT ARE THE PRESSING SPECTROSCOPIC NEEDS FROM THE LABORATORY?

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To date, 220 individual molecular species, comprised of 19 different elements, have been detected in the interstellar and circumstellar medium by astronomical observations. In this talk, I will provide a 30,000 foot view of the demographics of this inventory, the history and lessons learned from where these molecules were first detected, and discuss interesting trends that may help guide future observations. Most importantly, I will identify critical gaps in our knowledge of this inventory, and the areas in which spectroscopic investigations in the laboratory might be most efficiently used to continue driving the ever increasing pace of molecular discovery in the ISM.