

November 28, 2015

Dear Professor Kaufman and members of the search committee,

Enclosed for your review are the materials for my application for the position of Assistant Professor at San Jose State University. I believe that my research leadership, unique teaching background, and extensive experience mentoring undergraduate and graduate students make me an excellent fit for San Jose State. I am an observational astronomer who specializes in using the cutting-edge capabilities of new radio and millimeter facilities. At San Jose State I will use this background to build active research collaborations with other astronomers in the department that take advantage of world-class facilities like ALMA and the expanded VLA. I will also engage in cross-departmental partnerships to provide research opportunities and mentoring support for San Jose State undergraduates in STEM fields. As a professor I will teach courses that challenge students to develop and practice the professional skills applicable to their future careers.

The research I will do at San Jose State will lead to a groundbreaking understanding of the evolution of molecular gas properties in galaxies as a function of cosmic time, and their influence on the history of star formation. I am a world expert on gas conditions in the extreme environment of our Galactic center, and am currently using this experience to produce the first parsec-scale map of molecular gas outside of our own galaxy, a transformational achievement. At San Jose State I will give undergraduate and graduate students unique training in becoming experts in radio and millimeter astronomy. As one of few astronomers with more than 90 hours of ALMA time, I have a demonstrated ability to give students experience working with data from this revolutionary facility.

As a mentor, I am committed to giving students singular research experiences that feed their interest in science and connect them to a global research community. Working with me, students at San Jose State will gain international experience visiting and working with my collaborators in Europe, Asia and Australia. I believe that student success also depends on their experience outside of the lab, and I devote significant time to building strong personal connections with students: taking them camping, and hosting dinners at my house. As a Jansky fellow, I have led a program that provides students from underrepresented groups with research and year-round mentoring to succeed in a STEM career, and I have independently mentored 6 undergraduate students from diverse backgrounds. Four of my students are now in graduate school, and two are writing first author papers. I will apply this experience to enhancing the partnership between San Jose State and the CAMPARE and CALBRIDGE programs to increase the diversity of California astronomers.

As a professor at San Jose State, I will design my courses to give students the opportunity to model real-life research and professional practices, from writing and assessing scientific proposals to participating in the “Astro 2020” process of setting the research priorities in astronomy for the next decade. I will use the practice of current astronomy research as a medium to teach professional skills valuable for students in any discipline and career. Having spent a year teaching in a middle school classroom as a graduate student, I have a proven ability to balance teaching with research and incorporate my research into the classroom. I look forward to bringing the energy and enthusiasm I have demonstrated in my research, mentoring, and teaching to San Jose State.

Sincerely,

Dr. Elisabeth A.C. Mills