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Presentation Requested: oral
Category: Role of AGN in Galaxy Evolution in the ALMA Era
Question: How does the AGN fraction evolve with redshift and in what types of galaxies? What is the contribution of AGN to the bolometric luminosity and energy budget in galaxies over cosmic time? How can ALMA and other new facilities help address these questions?

WISE AGN Luminous Radio Loud Quasars Caught in Their Youth

I will describe observations with ALMA, JVLA and VLBA of our z=1-3 sample of over 150 of the reddest, most obscured, luminous (up to 10^{14} $L_{\odot}$) quasars ever found. Selected by extremely red color in the WISE mid-infrared bands and matched to the radio NVSS / FIRST surveys, we have confirmed compact radio sources that lack extended lobes with JVLA imaging, and we resolve structure on mas scales with VLBA. These systems are likely in a brief phase at the peak of their black hole mass assembly, and their hosts are likely massive galaxies located in high-density peaks, by analogy to classical high redshift galaxies. We are undertaking a detailed multi-wavelength study of a subset of 20-30 of these systems over a range of size scales. Using a suite of interferometers at different configurations and frequencies we can delineate the radio morphology across a wide range of scales, from inner core/jet to many kpc, and compare it to the neutral & molecular gas morphology and kinematics, studied with VLA and ALMA, to trace jet-ISM interactions. We will combine these data with maps of the ionized gas velocities from optical-near infrared (OIR) IFUs. In combination these observing modes can greatly clarify the role of jet-driven feedback in these young radio-loud quasars. We are also studying the cluster environment with deep imaging in several bands.