Quasar feedback at high redshift

- **Radio-mode quasar feedback and SF quenching**
  - Continuum + gas content/dynamics → link with multi-λ galaxy properties
  - High-z galaxies with massive outflows
  - Comparison with predictions from hydro simulations of galaxy evolution
- **Cosmic evolution of radio quasars**
  - Redshift-dependent luminosity function
  - z-size and z-alpha relations
- **AGN identification in high-z radio deep fields**
  - Disentangle SF/AGN emission in this population
- **Black hole growth in the early Universe**
  - Implications for galaxy/MBH formation from high-z radio AGN demographics
- **Duty cycles over wide luminosity/z range**
  - Implications for evolutionary importance at different cosmic epochs
- **Role of quasars in re-ionizing the Universe**
  - SZ effect measurements

SWG: Galaxy Assembly

Radio jet-gas feedback physics

- **Energetics and physical properties**
  - Spectral index and aging studies utilizing the wide frequency range of the ngVLA
  - L_{radio}-P_{jet} correlation
- **Role of outflows driven by lower-luminosity AGNs**
  - Directly compare radio jet energetics and atomic/molecular gas conditions
  - Test observational predictions from different feedback models based on MHD simulations
  - Importance of positive vs. negative feedback
- **Low-mass AGNs & intermediate-mass black holes**
  - Distinguish between MBH seed formation models
- **Gas dynamics black hole mass measurements**
  - Calibration of M-sigma relation
- **Dual AGNs/re-coiling black holes**
  - Key constraint for gravitational wave studies
- **Radio AGN fueling**
  - Gas inflow studies of cold-mode AGN accretion
  - Radio variability/tidal disruption events

SWG: Galaxy Ecosystems

Missing Topics?

- **Nature of radio emission in radio-quiet AGNs**
  - Star formation, shocks, weak radio AGNs
- **Polarization studies of radio AGNs**
  - Magnetic field morphology and strength
- **Rotation measure synthesis**
  - Important for studies of AGNs imbedded in dense environments?
- **Other?**