Exploring Distant Galaxies with Gravitational Telescopes

As the largest gravitationally bound structures in the Universe, clusters of galaxies are efficient lenses, magnifying images of distant galaxies that happen to lie behind them. Dr. Livermore will present the results of a program using this effect to boost both the flux and spatial resolution of high-redshift (1 < z < 5) galaxies, studying their dynamics and star formation morphologies with integral field spectroscopy and narrowband imaging, and probing their molecular gas content with millimeter interferometry. She will also present early results from the Hubble Frontier Fields program, using gravitational lensing to find galaxies during the epoch of reionization.