

UCLA Division of Astronomy & Astrophysics

Astronomy Colloquium

Wednesday, Oct. 14 at 3:30 PM
Room 1-434 PAB

Dr. Adam Leroy
(Ohio State University)



“Gas, Stellar Feedback, and the Interstellar Medium with ALMA, JWST, and more”

Stars form in the context of a complex interplay of gravity, stellar feedback, and dynamical processes in the interstellar medium (ISM) of galaxies. I will present results from surveys that aim to understand these processes by resolving galaxies into the individual units of this gas-star formation-feedback cycle. I will highlight PHANGS, which has observed nearby galaxies using ALMA, JWST, Hubble, and the VLT. PHANGS reveals how the properties of molecular clouds traced via both spectral imaging and multi-line spectroscopy depend on the large scale environment where the clouds are found. I will show how combining tracers of gas and recent star formation reveal the timescales and feedback mechanisms dispersing molecular clouds and shaping HII regions. And I will illustrate how JWST has opened new windows to trace the ISM and star formation using emission from the smallest dust grains. Finally I will discuss the new sSCALES and LGLBS surveys, which improve on the resolution of PHANGS by 10x by focusing ALMA, JWST, and the VLA on the nearest systems, and so aim to forge a direct connection between extragalactic and Milky Way work.

Hosted by Professors Smadar Naoz and Alice Shapley