



**ASTROPHYSICS
SEMINAR SERIES**

**"The Role of Environment in the Birth of Stars and
Planets"**

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**Monday, November 11, 2013
Refreshments at 3:15pm in CAS 500
Talk begins at 3:30pm in CAS 502**

Abstract:

Most low mass stars form in the massive molecular cloud complexes that are also the sites of high mass star formation. These vast complexes contain a rich diversity of environmental conditions, from the dense centers of clusters where low mass stars are found in close proximity to massive stars, to sparse groups of low mass stars many tens of parsecs from the nearest massive stars. I will discuss an observational program to use these massive complexes as astrophysical laboratories for studying star formation across the mass spectrum and the formation of planets around low mass stars. This program uses multi-wavelength observations of rich star forming complexes such as the Orion molecular clouds to empirically characterize protostars, pre-main sequence stars, and disks in the diverse conditions found within the complexes. These observations show how the conditions in the cloud gas and the density of nearby stars influence the rate and efficiency of star formation, the multiplicity and mass function of the nascent stars, and the presence of circumstellar disks. The large numbers of young stars in these complexes also makes them valuable hunting grounds for rare objects that may be unusual or in short-lived phases of protostellar evolution; I will overview some recent finds of rare objects in Orion.