BOSTON UNIVERSITY

ASTROPHYSICS
SEMINAR SERIES

"The Invisible, Large Reservoirs of Gas Around Galaxies"

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Refreshments at 3:30pm in CAS 500
Talk begins at 4:00pm in CAS 502

Abstract:
The most extended, gaseous components of galaxies relate closely to the gas inflows and outflows that are critical in driving galaxy evolution. In particular, the metal content of galaxies in their outermost regions -- from their extended neutral gas (HI) disks to their diffuse, ionized halos -- tells us about the interplay and connection between multiple gas phases across the disk and halo. In this talk, I will discuss three recent, related findings: (1) The outermost regions of galactic disks, as traced by outlying HII regions to 35 kpc, are far more metal rich than expected from simple assumptions based on current star formation rates and stellar yields; (2) There is significant absorption from metals in various ionization states (e.g. OVI, SiII, SiIII, CII, CIII) in the diffuse halos of galaxies out to 200 kpc; and (3) Only 25 - 50% of all the metals ever generated within a galaxy still reside in the galaxy disk. Connecting the dots between these three distinct results offers some tantalizing clues about the nature of galaxy-scale feedback and gas recycling.