One of the most surprising discoveries of the Cassini mission to Saturn has been the presence of geyser-like plumes at the south pole of the icy moon Enceladus which ejects up to 300 kg/s of material into Saturn's magnetosphere (see Science, 311, 2006, for discovery details). In situ and remote observations (Waite et al. 2006; Hansen et al. 2006) have shown that the primary plume constituent is H$_2$O, and thermal measurements indicate intense heating in cracks believed to be plume vents on the surface (Spencer et al. 2006). These observations have led to speculation that the plumes are fed from a liquid water reservoir beneath Enceladus' surface. Gas and ice grains escaping form Enceladus form an extensive torus around Saturn, the tenuous E ring, and are the dominant source of plasma in Saturn's magnetosphere. I will review the observations of Enceladus and the Saturn system which have been used to understand the plume source mechanism and dynamics.

TIME: 3:45-4:40 pm, Thursday the 14th of February 2008

PLACE: 101 Corcoran Hall, GWU
725 21st Street, N.W. (Between G and H Streets)

METRO STATION: GWU/FOGGY BOTTOM (BLUE & ORANGE LINES)