

# Phenomenological and Predictability Studies of the Structure and Evolution of Arctic Cyclones, Polar Lows, and Tropopause Polar Vortices (Bosart and Keyser)

- **Hypothesis:** The predictability of Arctic cyclones is sensitive to the configuration of ice-covered–open-ocean boundaries as the melt season proceeds. This hypothesis rests on the idea that concave boundaries relative to the oncoming surface flow will be more effective in generating low-level cyclonic vorticity because the Laplacian of the diabatic heating term will favor low-level cyclonic vorticity growth due to vortex stretching.
- **Required Measurements:** Ice–water boundary configuration, surface wind field, and surface sensible and latent heat fluxes.
- **Desired Measurements:** Vertical profiles of temperature, moisture, and wind in the planetary boundary layer.