John O'Donnell, M.S. in Atmospheric Science, Environmental Track at Creighton University, participated in two National Science Foundation research cruises on the RV Savannah. He performed offshore work for 9 day periods in both late July and late September as part of the Schalles Lab's involvement with cross-shelf track transects (from near shore to beyond the 400 m isobath in the Gulf Stream) in the Georgia segment of the South Atlantic Bight (SAB). The project is significantly expanding the ECSC-NOAA spectral library of coastal and estuarine waters. This effort began with the first ECSC sponsored AISA flyover at Apalachicola Bay NERR in 2002 and now consists of data collected with a consistent methodology from over 700 stations in 37 estuaries and offshore waters between Texas and Delaware. The current work is segued with acquiring new Landsat 8 data for John's coastal thesis studies. This work is also assisting in the classification of HICO (Hyperspectral Imager for the Coastal Ocean) imagery from the International Space Station for Dr. Schalles's study of the fate and distribution of materials transported from coastal systems into offshore waters of the SAB. Shown here is John O'Donnell deploying the rebuilt Creighton Ocean Optics spectroradiometer system into the Gulf Stream on September 28 using the A-frame on the Savannah's fantail. With the revised system, the instrument package is floated, with tethering lines, away from the ship, to acquire simultaneous solar downwelling irradiance and water upwelling radiance for 2,000 wavelengths. John and Dr. Schalles rebuilt the Creighton spectroradiometer system this spring with technical assistance from Bryan Leavitt of the CALMIT remote sensing group at the University of Nebraska. Control of the instruments and data transmission is accomplished with Bluetooth enabled communication to an onboard computer with CALMIT's CDAP2 software and a hardware configuration designed by Bryan Leavitt. Hundreds of spectra are acquired and averaged within several minutes of float time on the ocean.