1. Program of Studies and Research

The Department of Atmospheric Sciences is a small but vigorous academic program, with four full-time faculty, three regular adjunct faculty, and approximately 60 majors. Since 1983 the department has demonstrated its substantial and continuing commitment to a full, coherent, and integrated program of studies by awarding 287 BS degrees. The ATMS curriculum is designed to satisfy federal civil service requirements and to meet recommendations by the American Meteorological Society. There are two tracks available: Weather Forecasting and Climatology. In the Weather Forecasting track, students learn the basics of weather analysis and forecasting and how to communicate meteorological information to the public. The Climatology track provides strong preparation for students interested in graduate school, specializing in climatology with additional courses in mathematics. Students from both tracks take core ATMS courses that include synoptic meteorology, physical meteorology, meteorological instrumentation, physics, chemistry, and weather analysis. The department offers a course each in thermodynamics, dynamics, physical climatology, weather analysis, remote sensing, mesoscale, tropical, hydrology, forecasting, and mountain weather, plus a two-course senior-level series in synoptics, an applied climatology and physical meteorology pair, and an exceptional number of programming and statistics courses. This is an amazingly well rounded curriculum for such a small faculty. The faculty members come from strong graduate programs. The ATMS department attracts students from around the southeast United States. Compared to all departments at UNC Asheville, ATMS has the highest percentage of out-of-state students (50%). Many students participate in the local student chapter and Asheville chapter of the American Meteorological Society. The program has a strong reputation in the community for preparing its students well. Over 70% of all ATMS graduates are still working in the meteorology/climatology fields. Though there is no formal program in broadcast meteorology (one is under consideration) ATMS has placed a number of student interns into local and regional broadcast studios.

Though the department is small and facilities modest, they adequately support the strong program of teaching and undergraduate research. Facilities include a synoptic laboratory/classroom, a research lab, and a second classroom used primarily for instruction. Renovations in the next year will result in the acquisition of additional space, including a broadcast studio, a 19-seat computer lab (recently funded by the Unidata Equipment Awards program), and additional office/lab space. Computing facilities include 6 Windows machines in the synoptic lab, a 16 node Linux cluster, a computer lab containing 3 Linux boxes, the departmental server, and 2 Windows/Linux machines, a LDM server, and a number of additional machines spread across faculty offices and smaller lab spaces.

2. Progress in the Atmospheric Sciences.
As a small department with no graduate program, the Department of ATMS has nonetheless made a definitive, substantial, and continuing commitment to progress in the atmospheric sciences as evidenced by the scholarly pursuits of its faculty. Faculty members have 8 peer-reviewed journal articles and numerous conference presentations in the past two years, remarkable in view of the teaching loads in ATMS. They have received a modicum of external (and internal) funding, much of it for upgrade of the computing environment. They have numerous collaborations with colleagues in NOAA and at other universities. Furthermore, UNC Asheville is the founding institution of the National Conferences on Undergraduate Research and the ATMS Department prides itself on getting undergraduate students involved in either research grant or independent research studies. Collocation with the NCDC and proximity to two National Weather Service forecast offices have provided students with a number of internship and volunteer opportunities.

3. Participation in UCAR Activities

Faculty members in the Department of ATMS have had numerous collaborations and interactions with UCAR scientists over the years. In particular, Dr. Godfrey has been involved in activities related to the Weather and Society*Integrated Studies (WAS*IS) group at NCAR, leading to collaboration with a SOO in the NWS and to development of a Weather and Society course in ATMS. Also, Dr. Miller, in collaboration with a SOO, was awarded a COMET Outreach Partner Project grant in 2007. The objective of Sounding-based Experiment on Mixed Precipitation Events (SEMPE) was to observe vertical profiles of temperature, moisture, and wind during expected mixed precipitation synoptic events. The program has been very successful and continued through the 2009-2010 winter. Several equipment proposals with Unidata headed by Dr. Huang and most recently by Dr. Hennon have allowed ATMS computer facilities to remain viable. ATMS uses Unidata software for the majority of its instructional activities. GEMPAK remains the primary tool for weather data visualization in classes such as Synoptic Meteorology and Weather Forecasting. New Unidata equipment will allow the department to adopt IDV and install a THREDDS server. The Local Data Manager (LDM) provides classes and undergraduate research students with real-time and archived weather data. COMET case studies have also been used in ATMS for many years.

Recommendation

The ATMS department at UNC Asheville has been educating meteorologists and climatologists for more than 30 years. Despite the small size of the department, it has earned a strong reputation in the community for academic rigor and contributions to undergraduate research. The department pledges to increase its commitment to active participation in UCAR activities, including governance, programs and facilities. The UCAR Membership Committee concludes that the criteria for membership as an Affiliate have been met, and recommends to the Members' Representatives that the University of North Carolina at Asheville be admitted to membership as provided for in the bylaws.