P1.15 ADOPTING A STATEWIDE SURFACE METEOROLOGICAL NETWORK FOR DEVELOPING A HANDS-ON INSTRUMENTATION COURSE AT NORTH CAROLINA STATE UNIVERSITY

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A project underway at North Carolina State University seeks to design, implement, and evaluate the development of undergraduate level course with a focus on meteorological instrumentation and observations of climate variables, along with the analysis and interpretation of climate data, and community interactions to develop cause - effect associations. This project is under the auspices of the Awards For Geophysical Education (AFGE) through the National Science Foundation. A number of meteorology and geoscience courses do a sufficiently intensive job of educating the students on the skills required for dynamical aspects of the hazard prediction, as well as the physics of the environmental quality, there is a lack of cross - disciplinary foci on assessing the issues pertaining to climate monitoring, variability and feedback. Hence, it is pivotal that undergraduate students are educated on evolving emphasis on climate and social interactions. Study areas specially highlighted, and relevant, to the educational needs include: understanding climate monitoring, and climate variability, assessing the interactions of natural and human systems; and the role of the observational and modeling capabilities to address these problems. Project objectives are to: (i) Educate and Train undergraduate students with practical applications of field instrumentation, measurements and observations; (ii) Introduce students to the synthesis of heterogeneous instrumentation output, with human observations, for data assurance and interpretation, and multidisciplinary applications, and (iii) Promote and Emphasize student - community interactions for understanding the microvariability in climatological observations, and its feedback on regional perceptions.

Accordingly a course was developed and offered as a 'Special Topic' for meteorology undergraduate and graduate students. We will present initial conclusions related to: (i) the initial experiences for student - faculty and community interactions; (ii) the attitudinal shifts noticed for the students related to observations and instrumentation analysis; and (iii) possible enhancements, such as a field component, that can be achieved in future efforts.

Students from the Instrumentation Meteorology course installing a 30-ft tower at a field site in Cherry Farm Agricultural Research Station, as part of the NC AgNet / ECO Net.

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Students from the Instrumentation Meteorology course have a hands-on training on the instrumentation and data formats at the Chapel Hill AWOS station.

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The concepts for data logger programming, site selection, instrumentation characteristics, and communication and data retrieval were discussed in the class while the actual implementation of the class room teaching was made in the field setup.

Students studying spatial heterogeneity in observations and geo-referencing the observations for a microclimatological analysis.