Preparing the Next Generation Atmospheric Scientists from Department of Meteorology and Climate Science, San Jose State University

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A. Preparing students for the workforce:

The department's undergraduate curriculum meets and exceeds the federal requirements for employment as a Meteorologist as well as the minimum requirements of curricular composition, faculty size, and facilities recommended by the American Meteorological Society (AMS). Nevertheless, in order to further prepare our students' ability for the workforce, we will:

BS Program

1. To broaden the metrics of success defined by the department (e.g., program description) to stretch beyond the core goals to progress graduates to advanced degrees in the profession or employment as a federal meteorologist.
2. To streamline the core curriculum so that it can be taken in two years. Work on this has begun: we are seeking to put our core sophomore-level classes (METR 60 & 61) online so that they can be taken in community college.
3. To consider converting some of the current required courses (e.g., senior thesis) into elective courses (e.g., internship/co-op)

MS Program

1. To define clearly that the graduate program's metric of success is completion of a M.S. degree (i.e., thesis, conference presentations, journal publications).
2. To consider allowing graduate students without B.S. degrees in meteorology to take the courses required to meet the federal requirements. This can be done via MS curriculum changes (with the proviso that a certain number of courses for the MS must be at the 200-level).
3. To develop certificate programs (Professional Masters Degree Programs) that may include large online enrollments.

B. Alumni are employed

http://www.sjsu.edu/meteorology/people/alumni/alumni_by_year/index.html

C. The knowledge and skills that have been most important in supporting success.

For college level students, my primary strategy is for them to obtain a well-rounded education that will prepare them to apply their knowledge upon graduation for future employment. As an instructor, the most important job is to spur interest and motivation in the subject matter. Emphasis must be made on the comprehension of concepts and application to real life examples. Hands-on experience for students is essential. Through some specialized field projects and co-op, juniors and seniors can apply their acquired knowledge and develop new skills to solve real-world problems.

Graduate level students are expected to perform at a higher level, and to work independently and creatively. A significant portion of graduate education is associated with research. Graduate students need to increase their level of knowledge above an undergraduate understanding. This is an important component and allows for creative and independent problem solving. Research skills should be prepared include computational skills, the preparation of a final report (i.e., thesis) and publication in a peer-reviewed journal. Technical writing and presentation should be incorporated into class assignments whenever possible. Acquiring a variety of tools is an important part of any research endeavor and enables students to solve problems independently. Guidance on course work is important in order for students to be prepared for the desired topic. The ultimate goal of the graduate school experience is to conduct original, independent and innovated work. Before a grad student can be granted with a M.S. degree, the requirements for the individual are to prepare a manuscript that can be submitted to a peer-reviewed journal, as well as conference presentations.