

Teaching Statements

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What goals do I have for my students?

I set four goals for my students:

- 1) mastery of the fundamental content of the courses
- 2) acquisition of analytical skills that transfer across disciplines
- 3) ability to construct and evaluate logical arguments
- 4) appreciation for atmospheric sciences via personal awareness of weather events, climate phenomena, and principles at work in the “everyday” world

How can I facilitate the teaching process?

To make my teaching effective, I research my students' backgrounds and then define an appropriate prospectus that outlines the theme and contents of the course. While teaching *Physical Climatology*, for instance, I give a diagnostic exam in the first class to assess the students' knowledge of climate sciences. I find this has been well received by my students who normally come from several different colleges. The students can find the course materials on the course web page. They can also use the online Blackboard to access lecture slides and engage in discussions. In addition to these resources, I hold regular office hours, and I make myself available to them through emails over weekends and holidays, especially before an exam is given. The Blackboard discussion has been really effective for *Climate: Past, Present and Future*. To make lectures interesting, I use various teaching aids, including demonstrations, videos and Powerpoint presentations. Recognizing that each student learns in a different way, I evaluate students using different techniques (e.g., exams, lab projects, essays or works that demonstrate their critical thinking).

In graduate teaching, I help graduate students establish a sound scientific background in climate system sciences and acquire skills in mathematical analysis and numerical modeling. Students learn more through the completion of complex projects that consolidate large areas of the material being covered. I also want my students to understand how meteorological variables are measured; taking them to an eddy-covariance flux tower site is a good way for them to gain first-hand observational experience.

Because the climate-related courses at UT have been limited to date, I have initiated regular research meetings with my graduate students during which we discuss research, share news, and work to improve their presentation skills. (I will continue doing this when there are more climate faculty members in the future.) I provide students with guidance in selecting relevant courses offered by other departments. I encourage my students to attend climate-related seminars at other units within the Jackson School or outside the Jackson School. I encourage them to work on topics that are at cutting edge and of mutual

interest to me and other colleagues. I also encourage my students to attend professional conferences and submit their significant results for publication. Usually, I provide my graduate students with a sufficient period of research assistant support for them to develop research skills, and then I encourage them to compete for federal fellowships. This has proved to work well. As reflected in my CV, four of my students were successful in obtaining fellowships from agencies such as NSF, DHS, NASA, and NOAA. They also won external support to attend summer schools and visit national (NCAR, NASA) labs. They all published high quality research papers within first two years of joining my group.