Teaching at the University of Texas at El Paso

Final Report
July 15, 2013

During the spring semester of 2013, Shanlin Wang taught a graduate-level course entitled “Energy Use & Climate Change” at the University of Texas at El Paso (UTEP). This is a regularly taught elective course from the Environmental Science and Engineering Ph.D Program in the Department of Mechanical Engineering. There were 8 students in the class. Most of these students are first-year graduate students in engineering majors.

The class met for 3 hours per week (Monday and Wednesday) and covered topics of general science related to different climate components (Atmosphere, Ocean, Land, Biogeochemistry, Cryosphere, etc), climate modeling, climate mitigation and adaptation, renewable energy and “green” technologies. As part of the course, students were required to work on projects related to climate change and energy and produce a review paper of research advances. This enhanced the students’ understanding about climate science and encouraged students to explore research opportunities linking climate science and engineering. Shanlin also provided academic advice to students on their study plans and helped students to learn skills of scientific presentations and writing.

Shanlin spent roughly 40 hours per week learning energy systems, preparing lectures, and helping students. The substantial workload was mainly due to an unanticipated change of teaching assignment and the fact that Shanlin was unfamiliar with the topics of energy technology and engineering. The teaching experience allowed Shanlin to gain more knowledge of the societal dimensions of climate science, broaden her views of research and develop materials that can be used in the future. Shanlin gave a seminar about her research about ocean biogeochemistry to the department and
introduced NCAR (or, the National Center of Atmospheric Research) to students and faculty at UTEP during her visit. In fact, when surveyed, of the six students who responded, only one had heard of NCAR before Shanlin’s visit.

Six of the Eight students responded to an anonymous survey regarding their experiences in the course. The students were very positive about the course and Shanlin. They expressed sentiments such as:

- I had an excellent experience during this course with Dr. Shanlin. She organized the course content very well, which helped us to get into it.
- I liked the class. It was so informative and well organized.
- I truly loved her class as she was always cheerful and had a lot of information to enhance our perspective towards climatology.
- She's very knowledgeable about climate change.
- This course helped me to understand the underlying issues about our environment and how important it is to research our atmosphere. Our Instructor, Dr. Shanlin Wang, was great.
- I got lots of information about climate change modeling and research work from this class. The instructor was so organized and cooperative.

One student suggested that it would be helpful to have some kind of small project in collaboration with NCAR. We’ll consider this for future postdoc teaching assignments.

Dr. Barry Benedict, a Professor at UTEP School of Engineering, had this to say about the visit:

Dr. Shanlin Wang made a very positive contribution to UTEP, the Mechanical Engineering Department, and the Environmental Science and Engineering (ESE) Ph.D. program during her stay here.

She did an excellent job teaching ESE 6312 (Climate Change). I presented some material in one of her class sessions. I also know most of the students in her course from having them in one or more of the ESE courses I teach. They told me they were impressed with her breadth of knowledge, approach to teaching, and commitment.

I must also admit that we did not take full advantage of her time here. I should have assured that she made contacts more widely on campus. If we are fortunate enough to have another such Post-Doc, we will be very intentional about our efforts to integrate her (or him) more fully into our efforts.

In our collective opinion, Dr. Wang has a very bright future, and I look forward to seeing her future career and works. I do hope she benefited from her time here. I know we did.

Outcomes

In the original proposal, we identified three goal areas for the UTEP exchange that would measure success:

1. “Shanlin will benefit from the visit by gaining experience about teaching and interacting with students. In particular, she will work in a cultural environment different
Shanlin’s confidence in her teaching abilities grew significantly as a result of this visit. Before the visit, Shanlin wasn’t sure if a faculty position was right for her. Because of this visit, she learned that she enjoys teaching and hopes to pursue a career in this direction. As she searches for her post-ASP job, her experience at UTEP will undoubtedly be a big point in her favor as it was to Jia Yue and Song-Lak Kang.

2. *As a result of this proposal we also expect to expand the previous Memorandum of Agreement between NCAR and Historically Black Colleges and Universities (HBCUs) to include Hispanic Serving Institutions. This MOA is intended to motivate future collaboration between NCAR and several minority serving institutions. UTEP was not part of the original MOA that ran from 2008-2011, and we would like to add it into the next MOA which should begin in early 2013. A long-term educational and collaborative visit would seem an ideal way to begin the period covered by this agreement. UTEP has signed the cooperative agreement, so this goal has been met.*

3. *Furthermore, as a result of this visit, we will request that UTEP identify a graduate student (and advisor) to participate in a three-month visit to NCAR in 2013. We have identified a graduate student who will most likely visit in 2014. The next step will be to make arrangements for this visit.*

While it’s not always clear what the ultimate outcomes of an outreach activity like this will be, it is clear that Shanlin’s visit elevated NCAR’s visibility at the university among the students and faculty members, and provided opportunities for recruiting more students for ASP’s visitor and fellowship programs.