

## **Hands-on training, professional development, and career readiness through summer internships for environmental science undergraduate students**

LIXIN JIN<sup>1</sup>, VANESSA L. LOUGHEED<sup>2</sup>, ELIZABETH J. WALSH<sup>2</sup>, DIANE I. DOSER<sup>1</sup>, AND GUADALUPE CORRAL<sup>3</sup>

<sup>1</sup>Department of Geological Sciences, University of Texas at El Paso, El Paso, TX 79968, USA, ljin2@utep.edu

<sup>2</sup>Department of Biological Sciences, University of Texas at El Paso, El Paso, TX 79968, USA

<sup>3</sup>Research Evaluation and Assessment Services, University of Texas at El Paso, El Paso, TX 79968, USA

We revised the curriculum at the junior and senior levels for the Environmental Sciences undergraduate program at the University of Texas at El Paso (UTEP), with support from the NSF-IUSE program, to increase retention and graduation rates, and better prepare underrepresented students for future STEM careers. Specifically, an innovative and interdisciplinary stratified mentoring approach was used to support and retain Hispanic students throughout their college years. A critical component was to provide stipends and allow students to work with professionals from federal, state, and local agencies, industry, private sectors, and academia as summer interns. Students learned through practice how to work as part of an interdisciplinary team and gained technical skills (e.g., data analysis, integration, and synthesis, application of cutting-edge technologies), as well as soft-skills (e.g., project management, collaboration, leadership, interpersonal skills, communication, critical thinking) that are essential for productive team work and success in graduate school and the workforce. This internship opportunity also exposed students to environmental science-related career paths and provided them with on-the-job training opportunities. To assess how the program activities impacted student participants, pre- and post-surveys, and a modified version of the Undergraduate Student Self-Assessment (URSSA) were used. Collectively, the students in the internship program reported very positive experiences, and produced research posters, outreach materials, and articles in the local newspaper. Some were supported to attend and present their research at national conferences. The evaluations showed great gains in students' specific technical skills, professional and soft skills, and students' awareness of and interest in environmental sciences-related careers.