



**The University of Texas at El Paso  
College of Science, Department of Biological Sciences and the Environmental Science  
and Engineering Program**

**Position: Postdoctoral Research Assistant in Remote Sensing and Physiological Ecology**

**Position Description:** The Systems Ecology Lab (SEL) housed within the Department of Biological Science and the Environmental Science and Engineering Program at the University of Texas at El Paso (UTEP) announces a non-tenure track Postdoctoral Research Assistant. The postdoctoral researcher will be supporting the study “*Clarifying linkages between canopy solar induced fluorescence (SIF) and physiological function for high latitude vegetation*” led by Dr Fred Huemmrich at NASA’s Goddard Space Flight Center and the University of Maryland Baltimore County (UMBC). This study is a key contribution to the NASA Arctic-Boreal Vulnerability Experiment (ABoVE, <https://above.nasa.gov/>). ABoVE is an interdisciplinary field study of environmental change in high latitude ecosystems and its implications for social-ecological systems.

Remote sensing of chlorophyll fluorescence is a growing and dynamic research field that has the potential to provide innovative tools for assessing plant status and photosynthetic function at multiple scales. This project examines the relationship between SIF and vegetation photosynthetic capacity from the plot to landscape levels at multiple locations within the geographical domain of ABoVE. Measurements will include multi-temporal sampling of leaf and canopy fluorescence and photosynthesis along environmental gradients. Sampling will include a range of plant communities, plant functional types, and species. Higher temporal frequency measurements will be made using automated sensors at select locations and subsampling will focus on quantifying the spatiotemporal heterogeneity in SIF emissions. Field measurements will be scaled up using both empirical approaches and physical models to link canopy SIF and photosynthetic function, which is required for interpreting satellite retrievals of SIF for high latitude ecosystems. The successful applicant will be required to spend two summers (2020, 2021) leading field measurement activities based out of Utqiagvik (formerly Barrow), and Fairbanks, Alaska. S/he will be responsible for measurements, data processing and analysis, establishment and maintenance of a data archive, publication and presentation of results, maintenance of collaborative relationships with project and ABoVE personnel, and the supervision of a graduate/undergraduate assistant/s. The successful candidate will receive career mentorship commensurate to their career goals.

**The Systems Ecology Lab (SEL):** SEL was established in 2005 and consists of an interdisciplinary team of postdocs with expertise in ecological and data science; technicians with expertise in GIS, remote sensing, software engineering, data science and sensor hardware design and development; and graduate (PhD and MSc) and undergraduate students from 9 academic programs spanning science and engineering. The lab includes an ecology lab, GIS-remote sensing and software engineering lab, and a lab for hardware engineering. We conduct research throughout the northern Chihuahuan Desert, the Arctic, and East Kalimantan on the island of Borneo. These activities are funded by NSF, USDA, USAID, BOEM, USFWS, and DHS and generally include extensive local to international collaboration. More information can be viewed at <https://selutep.squarespace.com/>.

**About UTEP and El Paso:** The University of Texas at El Paso is a Carnegie R1 and Community Engaged doctoral research university located in one of the largest binational communities in the world. The University enrolls more than 25,000 students, invests \$91 million in research annually, and offers 170 bachelor's, master's and doctoral degree programs in 10 colleges and schools. The University maintains an operating budget of \$450 million and employs approximately 4,000 people. It has one of the lowest out-of-pocket costs of any research university in the U.S., underscoring its commitment to make education accessible to all.

El Paso County is a highly livable, bi-cultural community of approximately 800,000 people, which offers affordable homes and attractive neighborhoods. It is the safest large city of its size in the United States. Embraced by mountains on three sides, El Paso experiences more than 300 days of sunshine annually and a dry climate, making it possible to enjoy outdoor activities year round. The city of El Paso is adjacent to both the state of New Mexico and the country of Mexico, making it the 6th largest city in Texas and 19th largest city in the United States.

**Required Qualifications:** The successful candidates must have a Ph.D. degree in a relevant field at the time of appointment. A demonstrated capacity for working in an interdisciplinary team, collecting and analyzing field spectral reflectance and/or ecophysiological data, and presenting and publishing scientific papers is required. The successful applicant must be physically able to conduct field work (carry heavy loads, climb towers, drive a vehicle etc).

**Preferred Qualifications:** Candidates with experience in satellite remote sensing, SIF, and/or physiological ecology are strongly encouraged to apply. Experience mentoring students and managing an interdisciplinary team as well as teaching experience in the field, laboratory or classroom is desired. Demonstrated participation in national and international networks and collaborations will be valued highly.

**Application Procedures:** Review of applications will begin immediately and will continue until the position is filled. The anticipated appointment date is Fall 2019/ early Spring 2020. Applications must be submitted electronically via email as a single PDF file that includes the following: (1) a letter of application; (2) a curriculum vitae; (3) a manuscript related to the position description; and (4) complete contact information for at least three references.

For applications, please include "NASA-ABOVE SIF Postdoc: YOUR NAME" in the subject block of the email addressed to:

Dr. Craig E. Tweedie.

[ctweedie@utep.edu](mailto:ctweedie@utep.edu)

Professor, Department of Biological Science

Director, Environmental Science and Engineering Program

This position is funded by a NASA grant and will be renewable annually to 2022, contingent with performance and available budget.

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