



TEXAS TECH UNIVERSITY

College of Agricultural Sciences & Natural Resources

Ph.D. Assistantship available – Optimizing cotton roots under water-deficit stress

IGCAST (<https://www.depts.ttu.edu/igcast/>) in collaboration with the TeCSIS (<https://www.depts.ttu.edu/forageresearch/>) - TAWC (<https://www.depts.ttu.edu/tawc/>) program, in the Department of Plant and Soil Science (<https://www.depts.ttu.edu/pss/>) at Texas Tech University, Lubbock, TX is seeking a Ph.D. student to begin in Spring/Summer 2023. The assistantship provides a 12-month stipend, tuition coverage, and health insurance for three years.

The student will participate in a multi-disciplinary integrated research to characterize diverse cotton germplasm for rooting traits with an aim to identify accessions with contrasting rooting architecture under water-deficit stress conditions. Data generated will be used for (i) GWAS analysis and (ii) detailed physiological and molecular investigation of root morphology and anatomy using the identified contrasting accessions. The successful candidate is expected to complement the physiological responses with molecular mechanisms using sequencing and other related techniques. The project objectives require the candidate to operate across lab, greenhouse and field components. The overall goal of the project is to identify cotton germplasm that possess ideal root morphological and anatomical characteristics that will allow for developing highly water use efficient cotton cultivars for water-limited environments.

Applicants should have an M.S. degree in agronomy/crop physiology with working experience on root morphology and anatomy in any row crop. Candidates with hands-on experience on using Winrhizo and basic molecular techniques will be preferred. Applicants should be self-motivated and have excellent written and oral communication skills, management and organization skills, and the ability to work both individually and with a diverse team of fellow researchers. A valid U.S. driver license is required for travel to field sites for maintaining trials, testing technology and data collection. The student will be expected to work in field settings that may involve hot and dry conditions.

Interested students should send application materials and/or questions directly to Dr. Gunvant Patil (Gunvant.Patil@ttu.edu), Dr Damar Lopez-Arredondo (Damar.Lopez-Arredondo@ttu.edu) and Dr. Krishna Jagadish (kjagadish.sv@ttu.edu). Application materials must include a CV, a cover letter describing research experience, interests, and qualifications, unofficial transcripts, GRE and TOEFL scores if applicable, and the names and contact information for three references. Application materials should be submitted before Oct 31, 2022, to be given full consideration.