



### **Ph.D. Graduate Research Assistantship**

The AgroHydrology Lab in the Department of Agricultural & Biological Engineering at Mississippi State University is seeking a highly motivated Ph.D. student to join the research group in Spring or Summer of 2026. The position will broadly focus on (1) *understanding the effects of conservation agricultural practices on soil hydrological properties and processes* and (2) *developing innovative frameworks for modeling the impacts of conservation agriculture on ecosystem services across scales*. The successful candidate will perform field measurements, process-based agrohydrological modeling, and explore the use of machine learning models as a part of their Ph.D. dissertation. The student will be expected to present research findings at conferences and stakeholder meetings and prepare manuscripts for publication.

#### **Required Qualifications:**

- MS in Agricultural Engineering, Civil Engineering, Hydrology, Soil and Plant Science, or closely related disciplines.
- Demonstrated excellence in English writing and communication
- For international applicants, a valid TOEFL score of 79 iBT or an IELTS score of 6.5.
- Demonstrated expertise in hydrologic, water quality, crop, or ecosystem modeling.
- Proficiency in programming languages (R or Python)
- Experience in GIS, remote sensing, and handling high volumes of data.

#### **Preferred Qualifications:**

- Skills in the instrumentation and maintenance of sensors and sensor networks.
- Knowledge of machine learning models.
- Knowledge of processing imagery from satellite platforms or UAVs.

#### **Instructions for Applying:**

Qualified applicants must submit (1) Curriculum Vitae including names and contact details of three professional references, (2) a one-page Cover Letter describing your research experience and interests, (3) Academic Transcripts, and (4) Test scores (if applicable) to Dr. Sayantan Samanta ([ssamanta@abe.msstate.edu](mailto:ssamanta@abe.msstate.edu)) using subject line “AgroHydrology-PhD”. The successful candidate will need to apply to Mississippi State University. Please visit <https://www.grad.msstate.edu/students/admissions> and <https://www.abe.msstate.edu/> for more details. Review of applications will begin immediately and continue until the position is filled.

#### **About the AgroHydrology Lab**

The AgroHydrology Lab is led by Dr. [Sayantan Samanta](#) who is an Assistant Professor in the Department of Ag & Bio Engineering. He earned his Ph.D. from Texas A&M University and served as a Postdoctoral Research Associate at Texas A&M AgriLife Research before joining Mississippi State University. The primary research focus of the lab is to explore strategies to promote soil & water conservation and maximize agricultural productivity while enhancing sustainability and ecosystem services benefits. Dr. Samanta investigates strategies to improve mechanistic representation of changes in soil hydrological processes associated with agricultural management practices in agrohydrological models. His research also focuses on enhancing water productivity and irrigation water use efficiency in cropping systems.

#### **About Mississippi State University**

Mississippi State University, a Carnegie Foundation R1-Very High Research Activity Doctoral University, is a comprehensive public institution with more than 23,000 undergraduate and graduate students and nearly 1,500 full time faculty members. Representative of the American land-grant tradition yet distinctive in character and spirit, MSU is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award baccalaureate, masters, specialist, and doctoral degrees. The university is in Starkville, Mississippi, approximately 2 hours by car from Memphis, Birmingham, and Jackson and about 4 hours from New Orleans, Atlanta, and Nashville. Starkville is a vibrant college town with several signature weekend events highlighting arts, culture, and sports. Its location opens doors to adventures and relaxation in natural settings.