Postdoc & Ph.D. positions: remote sensing of global change ecology at the Pennsylvania State University

The Qiu lab (https://www.ecotongqiu.com/) at the Department of Ecosystem Science and Management at the Pennsylvania State University is seeking a Postdoctoral Scholar and a Ph.D. student interested in using remote sensing and ecological big data to understand the impacts of habitat and climate change on forest ecosystems. Our lab at Penn State is interested in characterizing terrestrial ecosystem functions and services and understanding how they respond to global change at scales ranging from individual trees to the whole globe. We develop a data-model synthesis framework that integrates satellite and airborne remote sensing, ecological monitoring networks, forest inventory, and other field data to answer our research questions. Postdocs and students in our lab have opportunities to work with other researchers at Penn State, including but not limited to Plant Science, Geography, Geoscience, Computing and Data Science, etc. University-wide resources (e.g., computing cluster, Shale Hills CZO with Phenocam and Flux tower, and the Stone Valley Experiment Forest with long-term plots) are also available to lab members.

Postdoctoral scholar position:

We are looking for a postdoc with experience in synthesizing satellite and airborne remote sensing with ecological big data at a regional to global scale. The candidate is expected to derive forest and habitat characteristics (e.g., canopy and understory conditions) from a wide range of remote sensors (e.g., LiDAR, Hyperspectral, PlanetScope, Sentinel-2, Landsat, and drones). The candidate will develop and implement advanced statistical models and machine learning techniques to quantify changes in ecosystem functions (e.g., vegetation phenology, biodiversity, etc.). As such, we seek applicants with strong quantitative backgrounds in both remote sensing and ecological modeling. The selected scientist will contribute to fieldwork, data analysis and visualization, and manuscript preparation. There will also be exciting opportunities for the candidate to collaborate with an interdisciplinary team and leverage the university-level resources (e.g., computing cluster, Shale Hills CZO, and Stone Valley Experimental Forest) to develop nature-based solutions to mitigate climate change impacts on forest ecosystems.

Quantifications: Successful candidate is required to have and provide evidence of a Ph.D. in ecology, geography, environmental science, earth system science, forestry, or a closely related relevant area prior to the effective date of hire. Applicants should have strong programming skills (e.g., R or Python) in processing and visualizing geospatial and ecological big data. Experiences with data-model synthesis in the supercomputing environment are highly preferred. A strong record of publishing research in peer-reviewed journals is desired. Proficiency in spoken/written English is mandatory.

To apply: please upload (1) cover letter describing your research experience/interests, (2) a most recent CV, (3) names and contact information for three references. All of the

above should be compiled into a single pdf document and submitted through the Penn State online portal. Review of applications will begin on **November 14th, 2022** and continue until the position is filled. **The starting date of this position is flexible and can be as early as December 2022.** This position is for one year with the possibility of additional years pending satisfactory progress. Please contact Dr. Tong Qiu (tvq5043@psu.edu) with subject line: *application for geospatial and ecological modeling postdoc* if you have any questions.

Online portal:
https://psu.wd1.myworkdayjobs.com/PSU_Academic/job/Penn-State-University-Park/Postdoctoral-Scholar-in-Geospatial---Ecological-Modeling_REQ_0000036731-1

Fully funded Ph.D. student position (Fall 2023):

We are looking for talented and highly motivated students who are expected to work on the following broad themes:

- Quantifying effects of climate warming and remotely sensed habitat change on biodiversity change
- Understanding forest regeneration based on seed production and seedling recruits
- Model vegetation dynamics and their response to climate change and disturbance across different spatial and temporal scales
- Developing data science approaches to process geospatial and ecological big data

Quantifications: Strong quantitative and data science skills are required. Bachelor's or master's degree in remote sensing, ecology, engineering, environmental science, geoscience, or earth science is highly preferred. Proficiency in oral/written English is desired. Selecting an Ph.D. adviser that suits your interests is key to the success of your graduate school. Prospective students are thus encouraged to contact Dr. Tong Qiu (tvq5043@psu.edu) to discuss potential projects before their applications. Please include your transcripts, CV, names and contact information of up-to-three references, and a 2-page personal statement that describes your interests and qualifications that are relevant to the lab's research theme. Please use the subject line: *application for remote sensing of ecology Ph.D.* Qualified applications will be reviewed upon receiving.

To apply: Application instructions for the graduate program at **Ecosystem Science and Management** can be found at https://ecosystems.psu.edu/graduate/apply. **The due date is Jan 4th** (to be considered for departmental assistantship and university fellowships). For Intercollege Graduate Degree Program in **Ecology**, instructions can be found at https://www.huck.psu.edu/graduate-programs/ecology. **The due date is December 15th.** Apply portal and minimum requirements for both programs can be found at https://gradschool.psu.edu/graduate-admissions/how-to-apply/. International students should also meet the minimum requirement of TOEFL or IELTS.