PhD and Postdoc positions at University of Illinois in Ecosystem Modeling

We are recruiting multiple PhD students and Postdoctoral Researchers through Institute for Sustainability, Energy, and Environment (iSEE), Department of Natural Resources and Environmental Sciences (NRES) and National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign (UIUC). Funding up to five years is guaranteed for PhD student candidates through competitive fellowship, research-assistant, and/or teaching-assistant. The postdoctoral position is full-time, 1-year duration, with possibility of annual extension, contingent upon performance and funding.

Summary: The successful candidates will work on a few recently funded research projects of developing a “system of systems” solution to quantify field-scale carbon credit over the U.S. agroecosystem. Carbon sequestration through adaptive management practices over the cropland may have a great potential to mitigate climate change, improve soil health and sustain crop productivity. However, we are currently lacking scalable and accurate solutions to quantify the changes of soil organic carbon and greenhouse gas emissions at individual field levels. The successful candidates will use extensive ground observations, multi-source satellite remote sensing and airborne hyperspectral data, advanced process-based modeling, deep learning, and systematic model-data fusion to build such a first-of-its-kind solution. Candidates will directly work with an interdisciplinary team and leading scientists at multiple U.S. institutes and DOE national labs; the research projects are led by Dr. Kaiyu Guan and Dr. Bin Peng.

Specific responsibilities:
Ecosystem Modelers: improving process-based ecosystem models by developing new modules, efficient calibration methods, and advanced model-data fusion; building operational systems for agricultural monitoring and modeling over the U.S. agroecosystems.

Responsibility: preparing peer-reviewed publications and education materials; managing projects and reporting; and communicating research at professional meetings; postdocs will also mentor graduate and undergraduate students.

Qualifications for PhD student positions: The project will involve intense data processing/analysis, large-scale model simulation, and possibly field work. Strong quantitative and programming skills are required for successful PhD student candidates. Proficiency in spoken/written English is mandatory. All applicants should meet the minimum requirements of GPA and GRE by the graduate admission
Information for applying to NRES can be found here: https://nres.illinois.edu/graduate/apply. International students should also meet the minimum requirements of TOEFL (the same link above). When contacting by email, please include the following items: unofficial transcripts, curriculum vitae, GRE score, names and contact information of three references, and a brief personal statement that highlights skills relevant to the above directions. We greatly appreciate all the interested applications, but advise that only candidates shortlisted for interview will be notified of the application results. Starting Date: We accept students at any time of a year, not confined to only fall semester. Therefore, the enrollment time is flexible.

Qualifications for Postdoc positions: Applicants should have a Ph.D. on earth and environmental science, hydrology, remote sensing, environmental engineering, meteorology, geography, mathematics, or a closely related field. Prior research experiences in ecosystem modeling and remote sensing are highly preferred. Strong programming skills (e.g., Python, C/C++, and/or Fortran in the Linux environment) and prior experience in supercomputing or big data analytical systems is required, as the applicant will be working routinely in the supercomputer environment. Candidates will be considered if graduation with a Ph.D. is expected by the targeted starting date. Proficiency in spoken/written English is mandatory. The appointment is renewed annually, contingent upon the performance. Salary is competitive and commensurate with experience in relevant research. Starting Date: Ideal starting window ranges from Sep 1, 2021 to Mar 1, 2022, and prefer to start as soon as possible. The position is open till filled.

Application Process: To ensure full consideration, qualified candidates must send a cover letter, CV, and contact information of three references via email to linxin@illinois.edu. All requested information must be submitted to the above email in order for your application to be considered. Incomplete applications will not be reviewed. Qualified applicants will be immediately reviewed upon receiving the application while the search may continue until the position is filled. We will only give feedback to those candidates that we plan to interview.

Information about the Dr. Guan’s lab can be found at: http://faculty.nres.illinois.edu/~kaiyuguan/. Dr. Guan is a Blue Waters Professor in ecohydrology and remote sensing in the Institute for Sustainability, Energy, and Environment (iSEE), Department of Natural Resources and Environmental Sciences and National Center for Supercomputing Applications (NCSA). Guan’s lab uses computational models, remote sensing data, field work, machine learning, and supercomputing to address how climate and human practices affect food security, water resource availability, and ecosystem functioning.

The University of Illinois at Urbana-Champaign is a world leader in research, teaching and public engagement, distinguished by the breadth of its programs, broad academic excellence, and internationally renowned faculty and alumni. Illinois serves the world by creating knowledge, preparing students for lives of impact, and finding solutions to critical societal needs. The University of Illinois is an Affirmative Action/Equal Opportunity Employer. The administration, faculty, and staff embrace diversity and are committed to attracting qualified candidates who also embrace and value diversity and inclusivity. Visit www.inclusiveillinois.illinois.edu. International students have flexibility to study remotely considering the COVID-19 situation.