

UIUC is recruiting multiple Postdocs and PhD students on watershed hydrology and water quality

The **Water, Agriculture, and Conservation Innovation Lab (WACI Lab)** led by [Dr. Bin Peng](#) at University of Illinois Urbana-Champaign (UIUC) is recruiting multiple postdoctoral researchers and graduate students on watershed hydrology and water quality. We are looking for highly motivated and enthusiastic members who are interested in unraveling the complexities of water, nutrient, and carbon cycles within diverse agricultural landscapes and their interconnectedness with downstream water quality.



Position 1: Watershed hydrology and water quality modeling

This position is to build next-generation hydrological and water quality models and use the systems modeling to advance our understanding of the complex two-way scaling from field-scale farming management to watershed-scale water quality. Candidates with strong background in agroecosystem modeling, biogeochemical modeling, coupled surface-subsurface hydrological modeling, watershed hydrological modeling, reactive transport modeling, river hydraulic modeling are particularly encouraged to apply.

Position 2: Environmental data science for hydrology and water quality

This position is to develop high-resolution environmental (such as field-scale soil moisture and inundation) and management (such as conservation practices) data layers with advanced remote sensing and geospatial big data analytics and to further build data-driven models linking environmental and management drivers with watershed-scale hydrological and water quality variables. Candidates with strong skills in quantitative remote sensing (optical, thermal, and microwave), machine learning, deep learning, geospatial analytics are particularly encouraged to apply. Experiences in handling large-scale datasets are highly preferred.

Position 3: Hydrological and water quality monitoring, sensing, and data analytics

This position is to discover knowledge with high-frequency hydrological and water quality monitoring data from IoT sensor networks and to reveal spatial patterns of water quality variables through integrated sensing with unmanned aerial vehicles (UAVs) and satellites. Candidates with strong interests and experiences in using high-frequency sensor data to investigate mechanisms and controls of nutrient export patterns and pathways from field to watershed scales or with experiences with water quality remote sensing are encouraged to apply for this position. Experiences in water quality sensor development, calibration, deployment, maintenance, data analytics and/or remote sensing are highly preferred.

Position 4: Agricultural water footprint

This position is to improve the quantification of green, blue and gray water footprints of agricultural production with improved process-based modeling and remote sensing capacities at regional to global scales. Candidates with strong interests and skills in improving crop growth models and soil biogeochemistry models in earth system models and using large-scale remote sensing products to estimate agricultural water use are encouraged to apply.

• **Qualifications for Postdoc positions:** (1) Applicants should have a Ph.D. in earth and environmental science, hydrology, hydrogeology, remote sensing, environmental engineering, electronic engineering, meteorology, geography, mathematics, or a closely related field. Candidates will be considered if graduation with a Ph.D. is expected by the targeted starting date. (2) Prior research experiences in process-based modeling and/or remote sensing of water quality are highly preferred. (3) Strong programming skills (e.g., Python, R, 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. (4) Excellent writing skills, demonstrated by publication records. To ensure full consideration, qualified candidates must send a cover letter, CV, unofficial transcripts for undergraduate and graduate programs, and contact information of three references via email with the subject of “**Prospective postdoc**” to **Dr. Bin Peng (binpeng@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 greatly appreciate all the interested applications, but advise that only candidates shortlisted for interview will be notified of the application results. The appointment is renewed annually, contingent upon the performance. Salary is competitive and commensurate with experience in relevant research.

• **Qualifications for PhD student positions:** Strong quantitative programming skills and domain science knowledge (such as hydrology, environmental biogeochemistry, plant physiology, biogeochemistry, remote sensing, and electronics) are required for successful PhD student candidates. Proficiency in spoken/written English is mandatory. All applicants should meet the minimum requirements of GPA by graduate admission (<http://www.grad.illinois.edu/admissions/apply/requirement>). International students should also meet the minimum requirements of TOEFL or IELTS (the same link above). Information for applying to the PhD program at Department of Crop Sciences can be found here: <https://cropsciences.illinois.edu/future-students/admissions/graduate-admissions>. Prospective graduate students are encouraged to **Dr. Bin Peng (binpeng@illinois.edu)** first via email with



the subject of “**Prospective PhD student**” to share potential research projects and opportunities before applying. In emails, please include the following items: curriculum vitae, unofficial transcripts, TOEFL or IELTS score, GRE score (if you have one, but this is not required by the Department any more), names and contact information of three references, and a brief personal statement. 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 the year, not confined to only the fall semester. Therefore, the enrollment time is **flexible**.

The newly joined members will have abundant opportunities to work with world-leading collaborators at the Agroecosystem Sustainability Center, [College of Agricultural, Consumer and Environmental Sciences](#), [Department of Civil and Environmental Engineering](#), and [National Center for Supercomputing Applications](#) at University of Illinois Urbana-Champaign and other partner institutes.

UIUC 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. UIUC ranks top worldwide in Agricultural Science, Computer Science, and Environmental Science. 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. The Urbana-Champaign twin cities, which "sandwich" the University campus, are welcoming, diverse, and vibrant. It is a 2-3 hour drive to three major metropolitan centers – Chicago, St. Louis, and Indianapolis. The University is conveniently located in proximity to affordable and beautiful neighborhoods with high-quality schools.

