Post-doctoral Position: Modeling of Managed Aquifer Recharge in the Mississippi Embayment

Dept. of Land, Air and Water Resources
University of California at Davis, Davis, CA

The Dahlke lab (http://dahlke.ucdavis.edu) at the Department of Land, Air and Water Resources (http://lawr.ucdavis.edu) at the University of California, Davis has an opening for a postdoctoral research associate to perform original research in water resources management. The selected candidate will develop and test numerical modeling scenarios to evaluate the impact of different managed aquifer recharge scenarios on surface water and groundwater resources in the Mississippi Embayment aquifer system, specifically the eastern Arkansas and western Mississippi region. The modeling results will be used to inform economic analyses of the direct and indirect costs and benefits of managed aquifer recharge programs within the Mississippi Embayment. The candidate ideally should have experience with MODFLOW 6 and/or MODFLOW OWHM, a strong background in theoretical or applied groundwater flow and modeling, strong programming skills and a fundamental understanding of stochastic processes and statistical analysis methods. The post-doc is expected to spend 50% of its time between California and Arkansas.

The position is available immediately and will be an initial 12-month appointment with the possibility of extension pending performance and availability of funding for a second year. Rank and salary will be commensurate with experience.

Duties and responsibilities:

- Work as part of a team of hydrologists to design and test different water management scenarios using integrated surface water – groundwater models.
- Develop new or extract/modify existing groundwater flow models based on different land use and climate scenarios.
- Produce high quality scientific and technical output including journal articles, conference papers and presentations, reports, and graphics.
- Support team members in the development of proposals to secure external funding for research.

Required qualifications:

Qualification for this position includes a PhD in hydrology, hydrogeology, engineering, water resources management or related field, with a strong background in the fundamentals of groundwater and surface water flow, water resources management, watershed hydrology, and programming. Experience in integrated surface water – groundwater modeling and the numerical flow code MODFLOW and/or MODFLOW OWHM is a must for this project. Strong programming skills (Fortran/C++/Python/Matlab/R) are required. Ability to work independently to fulfill project goals as well as in a collaborative environment with the USGS and project team members to meet project deadlines, and to conceptualize and report research findings to sponsors, stakeholders and the scientific community is desired.

Preferred qualifications:

Prior experience with large-scale numerical models and skills in parallel and high performance computing is desired. Ability to test relevant hypotheses and generate innovative solutions to flow problems and effective communication of modeling results and assumptions are encouraged. Good communication skills (clear written and spoken English) and ability to participate in and coordinate collaborative research is preferred. Applicants with U.S. Citizenship and/or current residency in the U.S. are preferred.

Application materials:

Please apply by sending your 1) CV including listings of publications, awards, and relevant laboratory, field and computer/modeling skills, 2) a copy of your PhD diploma, 3) a cover letter discussing your key modeling and experimental qualifications, research interest and motivations for this position, and 4) names and contact information for three potential references to Dr. Helen Dahlke (hdahlke@ucdavis.edu). Applications will begin being reviewed on February 15, 2018.

The University of California at Davis is rated as the #1 in the world for teaching and research in both agriculture and forestry and veterinary sciences.