** UC Davis Dept. of LAWR, Dahlke Laboratory - Assistant Specialist **

JPF04095

POSITION DESCRIPTION

We are seeking a highly motivated and enthusiastic individual to join our team in a position as Assistant Specialist at the UC Davis Dept. of Land, Air & Water Resources, Dahlke Laboratory.

Job Location: Davis, California

BACKGROUND

The Dahlke Laboratory undertakes research to improve mechanistic understanding of flow and transport processes in agricultural and mountainous landscapes in California and across the globe. We are studying water and biogeochemical cycles through ground-based measurements, stochastic analysis and numerical modeling. We are interested in identifying shifts and thresholds in the hydrology and biogeochemistry of these systems to advance our predictive ability and to support planning and resource management decisions. Research topics include:

- Assessing the feasibility of winter flooding of agricultural fields for groundwater recharge
- Measuring the flow processes of recharge water and their effect on the transport of pollutants including nitrogen, pesticides, arsenic, etc.
- Modeling the effect of winter recharge on local- to regional-scale water balances
- Modeling water quality as impacted by pesticide and nutrient inputs on agricultural fields
- Estimating forest management practices on nutrient fluxes from mountainous watersheds
- Examining social and economic factors affecting water resources management decisions

Appointee to the Assistant Specialist will be required to conduct laboratory and field studies on university- and privately owned land from cooperating growers. The ideal candidate will have strong problem-solving, interpersonal, and communication skills, as well as the ability to work both independently and as part of a team. They will also have demonstrated the attention to detail required to successfully collect, organize, and store field- and laboratory-collected data, as well as to communicate critical project needs, changes, or challenges to senior staff and faculty in a collaborative setting.

Under the supervision of Dr. Helen Dahlke, the duties of this position are designated to the following criteria:

MAJOR RESPONSIBILITIES AND DESIGNATED AREAS OF EXPERTISE

I. RESEARCH IN SPECIALIZED AREAS (90% EFFORT)

a. Laboratory analysis of soil and water samples (60%)

Be responsible for conducting laboratory and fieldwork as part of a research team in a project that is measuring a suite of soil and hydrologic parameters in the fields and assessing field collected samples and data in laboratory analysis. Collaborate with other research and extension personnel affiliated with research activities involving the use of field-collected data in numerical models. Conduct research and outreach activities that showcase the feasibility of selected agricultural management practices to a variety of stakeholders. Details include the followings:

i. Assist in and independently perform soil sample analysis including soil texture, soil pH, EC and soil nitrate and soil carbon analysis.
ii. Organize and maintain a field site inventory and sensor maintenance program.
iii. Develop and maintain a database of field-collected data, protocols of data quality and quality control.
iv. Develop and maintain protocols for water sample analysis for nitrogen species, dissolved and particulate organic carbon, base cations/anions, gas sample analysis for CH₄, N₂O and CO₂.
v. Visualize collected field and laboratory data using Grapher, Strater or other selected software packages.
vi. Outreach the research outcomes to a wider audience by conducting workshops and presenting at conferences, and encourage various stakeholders to adopt the developed research findings.

b. Field deployment of soil, gas and water sensors (20%)
i. Assist in and independently deploy and maintain soil temperature, EC, redox potential, oxygen and moisture sensors in the field.
ii. Assist in and independently deploy and maintain soil suction cups from different manufacturers (e.g. Irrometer, Soil Moisture Inc.).
iii. Asssit in the deployment and maintenance of gas flux chambers for measurement of CO₂, CH₄, N₂O and NOx gasses
iv. Contribute to the development of new technology for experimental use in the field and in the laboratory related to soil and hydrologic research

c. Publication and scientific literature research (10%)
i. Participate in the development of scientific products for dissemination (e.g., reports and peer-reviewed journal articles).
ii. Develop a thorough database of published works on the topic of vadose zone flow and transport of nitrogen, carbon, phosphorus, and pesticides under various agricultural management practices.

II. PROFESSIONAL COMPETENCE AND ACTIVITY (5% EFFORT)
a. Create and contribute to posters and/or oral presentations at stakeholder workshops, meetings with project partners and collaborators, and others including workshops led by California state agencies.
b. Participate in outreach activities including grower demonstration and field days to extend the usability of the developed knowledge.

III. UNIVERSITY AND PUBLIC SERVICE (5% EFFORT)
a. May maintain liaison and respond to the needs of various industry organizations, state and federal agencies, and other external groups on issues related to area of expertise.
b. The incumbent may assist in training or mentoring of other junior scientists or project personnel or participate in university or other groups to improve equity and inclusion in the sciences.

BASIC QUALIFICATIONS:

- For Assistant Specialist: Master’s degree (or equivalent degree) in Environmental Science or a related field, or five years of experience demonstrating expertise in the relevant specialization.
- Laboratory and/or field experience in soil science, hydrology, and/or hydrogeology related research.
- Strong organizational and communication skills.
• Experience in Word, Excel, Access, PowerPoint or other appropriate computer programs to organize, summarize and analyze data.
• Good oral and written skills to communicate data summary to staff and colleagues.
• Ability to work independently and as part of a team.
• Ability to think critically and troubleshoot problems.

PREFERRED QUALIFICATIONS:
• Experience deploying, managing, and decommissioning environmental sensors from different manufacturers.
• Experience with soil laboratory analysis methods and instruments.
• Experience with statistical data analysis tools (e.g. Strater, Grapher, Surfer, GIS).
• Experience in working in a laboratory setting and knowledge of basic laboratory safety standards.
• Experience and willingness to work outdoors under warm temperature for extended hours of time (up to 8 hours per day).
• Experience and willingness to perform physically demanding work (e.g. soil and water sampling, sensor installation) that requires candidate to equipment with a weight up to 25 kg.
• Proficiency in both written and verbal English and Spanish.

TERM OF APPOINTMENT: Starting ASAP. Initial appointment percentage and length will be based on funding and programmatic need; may be part-time. Appointment may be extended dependent upon progress and funding.

SALARY RANGE: Salary dependent upon candidate’s qualifications/experience.

APPLICATION DETAILS:

TO APPLY: Please go to the following link: [https://recruit.ucdavis.edu/JPF04095]. Applicants should submit cover letter indicating how you meet the minimum and preferred qualifications, your most recent CV and contact information for 2-3 recent references. Documents/materials must be submitted as PDF files by the indicated Next review date.

QUESTIONS: Please direct questions to Helen Dahlke via email hdahlke@ucdavis.edu.

Relevant Websites:
https://www.lawr.ucdavis.edu/
https://dahlke.ucdavis.edu/

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If you need accommodation due to a disability, please contact the recruiting department.