Sustainable Food-Energy-Water Nexus Postdoctoral Scholar

Job #JPF04773
- JOHN MUIR INSTITUTE-ENVIRON / RESEARCH / UC Davis

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APPLICATION WINDOW

Open date: February 28th, 2022

Next review date: Monday, Mar 28, 2022 at 11:59pm (Pacific Time)
Apply by this date to ensure full consideration by the committee.

Final date: Monday, Apr 25, 2022 at 11:59pm (Pacific Time)
Applications will continue to be accepted until this date, but those received after the review date will only be considered if the position has not yet been filled.

POSITION DESCRIPTION

Projections show that by 2050, we will need 60% more food and 40% more water to satisfy the demands of our growing population, all this in addition to 50% more energy thus adding significant stress at the nexus between water, energy and food. Agrivoltaics is a promising technology that can provide more food and energy with less water and land, thus maximizing the land and water efficiencies and leading to a healthier nexus. This is however crop and climate dependent, and achieving the real potential of agrivoltaics requires deeper understanding of plants response to different light spectra, thus allowing us to optimize the solar spectrum between food and energy production in the same land. Thus, we are recognizing the importance of understanding plant response to different light spectra under different climatic conditions is fundamental for the advancement of revolutionary agricultural concepts needed for sustainable food systems.

We seek a postdoctoral scholar to lead our agrivoltaics initiative with focus on greenhouse trials and modeling initiative. As a postdoctoral scholar, you will work under the supervision and mentorship of Professor Majdi Abou Najm on a series of greenhouse experiments of different crops under different lighting and environmental conditions common in California to develop a database of crop response, yield and water use efficiencies. You will also work on building the foundation of a global agrivoltaics network following models like the nutnet.org and to utilize the database to expand and validate a modeling framework that Prof. Abou Najm is working on. In addition to greenhouse experiments and modeling, the scope of work may include limited but focused field experiments, particularly following the activities of year 1. This position is based in Davis, but with potential regular visits to Kearney and other experimental sites in CA. It is expected that you will work closely with Prof. Abou Najm on writing publications, extension documents, and proposals. You will also be expected to work with a highly diverse and collaborative set of researchers and stakeholders on the project. Your primary duties will involve field and laboratory research, data analysis, writing of scientific publications, and field site coordination. You will be expected to use R, ArcGIS, and various software programs as needed. Publications, scientific talks, and workshops are expected products of your research and outreach activities.

PHYSICAL DEMANDS

• Wear personal protective equipment (PPE) and follow all health and safety protocols in the greenhouse, laboratory, field and on campus as required. Schedule COVID tests and submit daily symptom tracking as required.
• Work in laboratory or greenhouse setting sitting and standing for multiple hours processing samples.
• Crouch, stoop, reach, bend, lift, carry up to 20 lbs of research equipment in greenhouse, lab or field.
• Wear appropriate PPE in the field; hat, glasses, closed toed shoes, pants, etc.
• Work in varied temperatures; cold, wind, rain, fog, and heat to collect samples in various dirt/dust field locations within Coastal California.

WORK ENVIRONMENT

• Work in laboratory, wear face mask, practice physical distance between peers and promote hand hygiene.
• Work Monday – Friday from 8:00am to 5:00pm with flexibility to alter working hours when collecting samples in field.
• Occasional travel to other campuses and designated field sites of project.
• Current and valid Driver's License with good driving record.
• UC Davis is a smoke and tobacco free campus effective January 1, 2014. Smoking, the use of smokeless tobacco products, and the use of unregulated nicotine products (e-cigarettes) will be strictly prohibited on any UC Davis owned or leased property, indoors and outdoors, including parking lots and residential space.

SALARY:
Commensurate on experience level with a minimum salary of $54,540, benefits included for 12 months duration appointment at full time of 100%.

HOW TO APPLY:
Create an Application ID

Provide required information and upload documents
If any, provide required reference information

REQUIRED DOCUMENTS:
• Curriculum Vitae - Current/updated CV
• Cover Letter
• Statement of Research (Optional)
• Statement of Contributions to Diversity - Diversity contributions documented in the application file will be used to evaluate applicants. Visit http://academicaffairs.ucdavis.edu/diversity/equity_inclusion/index.html for guidelines about writing a diversity statement and why one is requested.
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QUALIFICATIONS

Basic qualifications (required at time of application)
• PhD in biogeochemistry, ecology, soil science, geology, environmental engineering/science, or a related field.
• Experience working in a greenhouse setting (testing crop growth and soil health) and/or relevant experimental experience working with food-energy coupled systems.
• Experience analyzing crop and soil samples to measure crop yield and growth as well as biogeochemical properties.
• Ability to use and code with common modeling, geospatial and statistical tools including R, Python, GIS, Matlab or other relevant software.
• Analytical skills to anticipate, identify problems, compare data, and conclude and disseminate data.
• Record of first-authored publications.

Preferred qualifications
• Experience in modeling plant growth and/or response to solar radiation.
• Knowledge pertaining to solar radiation impact on carbon assimilation, stomatal conductance, transpiration, and water use efficiency.
• Experience communicating science to the general public and scientific audiences and communities.
• Strong publication record.
• Analytical skills that include modeling of soil-based processes.
• Familiarity with coastal California and various crop system and rangelands in both the Central and Imperial Valleys.
• Ability to write and edit analysis contributions and method development.
• Experience with project management.
• Experience working with diverse groups.

APPLICATION REQUIREMENTS

Document requirements
- Curriculum Vitae - Your most recently updated C.V.
- Cover Letter
- Statement of Research (Optional)
- Statement of Teaching (Optional)
- Statement of Contributions to Diversity, Equity, and Inclusion - Contributions to diversity, equity, and inclusion documented in the application file will be used to evaluate applicants. Visit https://academicaffairs.ucdavis.edu/faculty-equity-and-inclusion for guidelines about writing a statement and why one is requested.

Reference requirements
- 3-5 required (contact information only)

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Help contact: nbmorrill@ucdavis.edu

CAMPUS INFORMATION

UC Davis is a smoke and tobacco-free campus (http://breathefree.ucdavis.edu/).

We are an Affirmative Action/Equal Opportunity employer, and particularly encourage applications from members of historically underrepresented racial/ethnic groups, women, individuals' with disabilities, veterans, LGBTQ community members, and others who demonstrate the ability to help us achieve our vision of a diverse and inclusive community. For the complete University of California nondiscrimination and affirmative action policy see: http://policy.ucop.edu/doc/4000376/NondiscrimAffirmAct

Under Federal law, the University of California may employ only individuals who are legally able to work in the United States as established by providing documents as specified in the Immigration Reform and Control Act of 1986. Certain UC Davis positions funded by federal contracts or sub-contracts require the selected candidate to pass an E-Verify check. More information is available at: http://www.uscis.gov/e-verify

The University of California, Davis (UC Davis) is committed to inclusive excellence by advancing equity, diversity and inclusion in all that we do. UC Davis celebrates the multi-cultural diversity of its community by creating a welcoming and inclusive environment demonstrated through a variety of resources and programs available to academics, staff, and students. Diversity, equity, inclusion, and belonging are core values of UC Davis that are embedded within our Principles of Community and are tied with how to best serve our student population. Our excellence in research, teaching, and service can best be fully realized by members of our academic community who share our commitment to these values, which are included in our Diversity and Inclusion Strategic Vision, our strategic plan: "To Boldly Go," our Principles of Community, the Office of Academic Affairs' Mission Statement, and the UC Board of Regents Policy 4400: Policy on University of California Diversity Statement. UC Davis is making important progress towards our goal of achieving federal designation as a Hispanic-Serving Institution and an Asian American, Native American, and Pacific Islander-Serving Institution. The Office of Diversity, Equity, and Inclusion offers a plethora of resources on their website, and the Office of Health Equity, Diversity, and Inclusion (HEDI) has outlined similar goals in their Anti-Racism and DEI Action Plan." There are a plethora of links available on the About Us webpage where you can learn more about our Administration, Diversity and Inclusion, Rankings, Locations, Native American Land Acknowledgement, Sustainability, Visiting UC Davis, UC Davis Health, and Campus Safety.

The university is consistently ranked among the top institutions in the world for campus sustainability practices by the UI Green Metric World University Rankings. UC Davis is focused on achieving net-zero greenhouse gas emissions and repeatedly shown its commitment to preserving a healthy and sustainable environment for generations to come.

As a condition of employment, you will be required to comply with the University of California SARS-CoV-2 (COVID-19) Vaccination Program Policy. All Covered Individuals under the policy must provide proof of Full Vaccination or, if applicable, submit a request for Exception (based on Medical Exemption, Disability, and/or Religious Objection) or Deferral (based on pregnancy) no later than the applicable deadline. New University of California employees must (a) provide proof of receiving at least one dose of a COVID-19 Vaccine no later than 14 calendar days after their first date of employment and provide proof of Full Vaccination no later than eight weeks after their first date of employment; or (b) if applicable, submit a request for Exception or Deferral no later than 14 calendar days after their first date of employment. (Capitalized terms in this paragraph are defined in the policy.) Federal, state, or local public health directives may impose additional requirements.

JOB LOCATION

Davis, CA