

Soil Agroecology Postdoctoral Researcher in the Departments of Wildlife, Fish, & Conservation Biology and Land, Air, & Water Resources- University of California, Davis

Application review begin date: October 31, 2018

Start Date: January 1, 2019.

SUMMARY:

We are seeking a Postdoctoral Researcher with expertise in foodborne pathogens, soil science, and/or soil microbial ecology to join Daniel Karp's Lab in the Department of Wildlife, Fish, and Conservation Biology and Kate Scow's Lab in the Department of Land, Air, and Water Resources at the University of California, Davis. The appointment will be for one-year with the possibility of extension based on performance. The postdoctoral researcher will join a collaborative team focused on exploring strategies for managing California agroecosystems to suppress foodborne pathogens. The project will be based at UC Davis (Prof. Daniel Karp and Prof. Kate Scow) and at the USDA Agricultural Research Service in Albany, California (Dr. Jeffery Garvey). The work is supported by the Center for Produce Safety.

Contaminated produce continues to be a leading cause of foodborne illness, yet farmers still lack the ability to predict when their crops are at-risk and effective strategies to manage those risks. While evidence is accumulating regarding the efficacy of many practices, results are often not made available to growers in a useable way. The goals of this project are two-fold. First, we will synthesize existing literature to develop pre-harvest, decision-support tools to help growers predict and mitigate risks associated with foodborne pathogens. Second, we will explore novel methods for suppressing foodborne pathogens. Specifically, we will study how soil amendments and soil management history affect soil microbial community dynamics and which factors lead to foodborne pathogen (*E. coli* & *Listeria*) suppression.

The project postdoc, with advice and mentorship from Karp, Scow, and McGarvey, will be responsible for the design and execution of all research activities. Specifically, the postdoc will (1) conduct a broad literature review to assess the efficacy, costs, and feasibility of on-farm food-safety practices and landscape risk factors, (2) coordinate an expert panel of scientists and farmers to review the compiled evidence, (3) conduct lab and field analyses on soils from a 25-year field experiment on the sustainability of farm management practices at the Russell Ranch Sustainable Agriculture Facility, and (4) investigate the relationship between soil microbial diversity and survival of *E. coli* O157:H7 and *Listeria monocytogenes* in lab studies to determine how microbial communities influence soils' suppressive capacity. Additionally, the postdoc will oversee a laboratory technician (with McGarvey), coordinate data management, conduct statistical modeling, prepare manuscripts, aid in grant reporting, and write outreach materials.

QUALIFICATIONS:

- A Ph.D. in Soil Science, Microbial Ecology, Microbiology, Agronomy, Ecology or a closely related field.
- Strong interpersonal and communication skills and an ability to work both independently and collaboratively with researchers and growers from different backgrounds.
- Demonstrated experience working in a microbiology laboratory.
- Experience executing fieldwork.
- Expertise in soil microbial ecology and/or foodborne diseases using molecular tools.
- Demonstrated ability to follow through on project deliverables and communicate findings in

high quality peer-reviewed journals.

- Strong statistical skills and demonstrated proficiency with R or another statistical program.
- Strong attention to detail, evidenced by prior research.

The following qualifications are preferred but not required:

- Prior experience working in agroecosystems and/or interfacing with growers.
- Experience in bioinformatics (*i.e.*, high throughput sequence analysis).
- Prior experience working with bio-safety level II pathogens (*e.g.*, toxigenic *E. coli*, *Listeria monocytogenes*, *Salmonella enterica*, *etc.*)
- Prior experience managing large-scale projects and mentoring students.
- Demonstrated ability and/or desire to integrate results across interdisciplinary teams.

SALARY:

Salary and benefits are consistent with UC Davis policy and applicant experience. Salary for a 1st year Postdoc is ~\$50,000.

TO APPLY:

Please apply by preparing: (1) your CV inclusive of publications, awards, and field/laboratory experience, (2) a cover letter discussing your qualifications, research interests, and motivations for this position, (3) a 1-2 paragraph summary about your commitment to and/or experience with furthering diversity in the sciences, and (4) contact information for 3 references. Send all materials to dkarp@ucdavis.edu with the subject line: "**Post-doc CPS Application.**"

For more information about research in Daniel Karp's and Kate Scow's labs, visit: <http://karp.ucdavis.edu> and <http://scowlab.lawr.ucdavis.edu/>. For Russell Ranch Sustainable Agriculture Facility see <http://asi.ucdavis.edu/programs/rr>.