

Postdoctoral Scholar in Remote Sensing of Biotic Stress

Description

The University of California, Riverside is recruiting a Postdoctoral Scholar to develop improved tools for the detection of biotic stress (diseases and weeds) in annual crops in the Southwestern U.S. The Scholar will support the USDA-NIFA-funded project “Artificial Intelligence for Sustainable Water, Nutrient, Salinity, And Pest Management in The Western U.S.” (<https://ai4sa.ucr.edu/>). The overall goal of this project is to develop advanced tools for early stress (abiotic and biotic) detection and decision support for crop management. The Scholar will work with agricultural scientists, extension personnel, and growers and other industry clientele to collect imagery via unmanned aerial systems (UAS) and satellites, and georeferenced data on pest outbreaks via field surveys. The Scholar will use these data in collaboration with computer scientists to develop machine learning algorithms for the detection and management of biotic stress. The crops and pest systems to be included in this project are flexible but are expected to be relevant to agriculture in Arizona and California.

Responsibilities

- Manage small plot field experiments on detection of diseases or weeds with remote sensing.
- Collect imagery of controlled experiments and commercial fields using a UAS and satellite platforms(s).
- Collect georeferenced data on the incidence and severity of disease and weed outbreaks.
- Collect and assemble weather or environmental data associated with areas of interest, and collate epidemiological or phenological information on diseases and weeds from the literature.
- Develop models and/or algorithms to detect the presence of biotic stress (weeds, pathogens) on vegetable crops.
- Mentor undergraduate students participating in this project.

Required Qualifications

- Ph.D. in an agricultural science (e.g., plant pathology, weed science), agricultural engineering, computer science, or a related discipline.
- Demonstrated ability to independently plan and conduct research, and communicate results at professional meetings and in peer-reviewed journals.
- Excellent written and oral communication skills, and the ability to actively participate in a mutually-supportive and respectful team environment.

Preferred Qualifications:

- Knowledge and experience in plant pathology, weed science, or pest management.
- Experience with agricultural field work and collaborating with growers and industry clientele.
- FAA Part 107 certification or experience with UASs.

- Knowledge and experience in data science including spatial and temporal analysis of imagery data, GIS, or machine learning.

Appointment

The position is 100% time and available immediately with an expected start date in Fall 2021. The successful candidate will be initially appointed for one year, with funding available for reappointment of up to two additional years based on satisfactory performance. The position will be based on the University of California, Riverside main campus, and will include travel to field locations in Southern California. Information on salary ranges, benefits, and other aspects can be found [here](#).

To Apply

Please submit a cover letter, current curriculum vitae, and contact information for three references to Dr. Milt McGiffen (milt.mcgiffen@ucr.edu) and Dr. Alexander Putman (alexander.putman@ucr.edu). Review of applications will begin September 6, 2021 and continue until the position is filled.

UCR is a world-class research university with an exceptionally diverse undergraduate student body. Its mission is explicitly linked to providing routes to educational success for underrepresented and first-generation college students. A commitment to this mission is a preferred qualification.

The University of California is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, disability, protected veteran status, or any other characteristic protected by law.

Additional Information

In the Heart of Inland Southern California, UC Riverside is located on nearly 1,200 acres near Box Springs Mountain in Southern California; the park-like campus provides convenient access to the vibrant and growing Inland region. The campus is a living laboratory for the exploration of issues critical to growing communities' air, water, energy, transportation, politics, the arts, history, and culture. UCR gives every student, faculty and staff member the resources to explore, engage, imagine and excel. UC Riverside is recognized as one of the most ethnically diverse research universities in the country boasting several key rankings of which we are extremely proud. For example, UC Riverside is the top university in the United States for social mobility (U.S. News 2020) and is a member of the University Innovation Alliance, the leading national coalition of public research universities committed to improving student success for low-income, first-generation, and students of color.

Questions

Feel free to contact Dr. Milt McGiffen (milt.mcgiffen@ucr.edu) and/or Dr. Alexander Putman (alexander.putman@ucr.edu) with any questions