

Two post-doctoral positions available: *F. falciforme* species complex diversity, ecology and epidemiology to advance holistic IPM strategies and decision support for emerging high impact pathogens across annual/perennial cropping systems.

Start date is very flexible, for some time in mid-2024

Applications received Nov 15-Dec 15 will be considered on a rolling basis.

As allocation of projects is very open, this position is appropriate for people interested in advancing their skills and knowledge in a range of areas including pathogen ecology and evolution, disease epidemiology, systems management strategies, population biology, pathogenomics, molecular diagnostics, disease diagnostics, and / or extension/outreach.

This project emphasizes three recently defined species (*F. martii*, *F. noneumartii* and *F. falciforme* sensu stricto) in the *F. falciforme* species complex, which are emerging as high impact pathogens in California annual and perennial crops. Allocation of projects is flexible and responsive to the interest of competitive applicants. **Areas include but are not limited to:**

1. Characterizing pathotype diversity in *F. noneumartii* across diverse crops (ex. tomato, melon, potato, hemp, sweet potato, amaranth) based on biological host ranges, clonal diversity, mating biology, and genome-based analyses of populations (collaboration with Geiser and Martin labs)
2. Characterizing pathotype diversity in *F. martii* across diverse crops (ex. tomato, watermelon, potato) based on biological host ranges, clonal diversity, mating biology, and genome-based analyses of populations (collaboration with Geiser and Martin labs)
3. Characterizing pathotype diversity for the putative transkingdom pathogen, *F. falciforme* sensu stricto, across diverse crops (ex. melon, beans, pepper, leek, pistachio) and understanding relationship to animal (turtle egg and human skin/eye) associated isolates based on biological host ranges, clonal diversity, mating biology, and genome-based analyses of populations (collaboration with Geiser and Martin labs)
4. Developing novel pathogenomic-based diagnostic tools for high profile pathotypes in the *F. falciforme* complex—qPCR and RPA tool validation, real-time beta testing and optimization (collaboration with Geiser and Martin labs)
5. Evaluating host associations to understand epidemiology and develop rotation recommendations across crop cycles: Evaluating cryptic host ranges (both symptomatic and endophytic) of a high-profile *F. falciforme* complex pathotype across common rotation crops
6. Survival/saprophyte biology. Evaluating inoculum load dynamics associated with host and non-host crop rotations; ecological roles as saprophytes; competition dynamics within saprophyte communities and effects on decomposition rates and long-term survival in infested tissue (using molecular and traditional tools); development of strategies to suppress pathogen survival in soil/promote infested tissue decomposition
7. Expanding understanding of pathotype/ecotype diversity in the *F. falciforme* complex based on studies of in natural ecosystems: roles as pathogens of plants in natural systems and members of

decomposer communities in soil and aquatic environments in natural systems (using molecular and traditional tools)

8. Outreach efforts (workshops, protocol development) to promote use of decision support tools (training of diagnosticians)
9. Outreach efforts (articles, outreach videos, presentations, consultations) to promote use of effective crop rotation (and related) IPM tools

All project members will also be trained in disease diagnostics and contribute to diagnosing diseases submitted to the lab to provide decision support to annual crop growers.

Additional position information:

This position will be based in the Department of Plant Pathology at UC Davis, mentored by Dr. Cassandra Swett; genomic/genetic research objectives will be jointly mentored by Drs. Frank Martin, David Geiser and Ningxiao Li (continuing post doc)

More information on the Swett lab can be found here: <https://swettlab.faculty.ucdavis.edu/>

Funding is available for at least two years.

Application directions:

Please submit a cover letter and CV with three references to Cassandra Swett: clswett@ucdavis.edu

We are open to applicants interested in either focusing in certain areas (eg. (1) pathotype diversity and pathogenomic-based diagnostic tool development and (2) pathogen ecology and epidemiology) or applicants interested in working across the broader suite of project areas. In your application, please indicate which project(s) are of specific interest to you, how your background prepares you for working in these areas, and how you see these projects furthering your professional goals.

Feel free to contact Dr. Swett with any questions relating to the position or application.

Deadlines:

Interviews will be conducted on a rolling basis.

Priority deadline: Nov 15, 2023

Final deadline: Dec 15, 2023