

# POSTDOCTORAL POSITION IN MICROBIAL GENETICS AND PLANT- MICROBE INTERACTIONS

The Plant Gene Expression Center, USDA-ARS, Albany, CA  
Plant and Microbial Biology Department, the University of California at Berkeley, Berkeley, CA

A two-year postdoctoral research position is available starting immediately in the Plant Gene Expression Center under the supervision of Dr. Devin Coleman-Derr and Dr. Frank Harmon ( <https://pgec.berkeley.edu/coleman-derr-lab-0> ) at the United States Department of Agriculture. The lab is affiliated with the Plant and Microbial Biology Department at the University of California at Berkeley, and is located in the city of Albany, California within the San Francisco Bay Area. The postdoctoral fellow will help develop a new research program in the area of microbiome research in wine grapes, specifically focused on the new challenge smoke taint.

Smoke taint involves the absorption by grapes of specific volatile phenols found in smoke from burning wood. These compounds can fuse with grape berry produced sugars to produce glycosides, removing the volatiles from the skin. However, interaction with microbes and microbial metabolism during wine fermentation and during ingestion of smoke tainted wine can cause these glycosides to break down, releasing the volatile compounds and introducing alternate flavors in the wine. For the wine industry, the end result of use of grape berries with smoke taint is wine with undesirable sensory characters, including smoky and medicinal flavors. The economic cost of smoke taint is substantial, and new strategies with near-term deployment for smoke taint detection and remediation are needed. Strategies that do not require the development of new grape germplasm will be of particular benefit, as the wine industry would suffer substantial costs for solutions that require the development and replanting of grapevines, which are perennial, long-lived crops.

This research program will involve the development of microbial-based approach that makes use of isolation and characterization of microbes with preferential ability to catabolize the key volatile phenols that cause smoke taint in wine grapes. In addition, the program will involve the identification of specific microbial genes that control this metabolism for use in downstream methods of smoke taint detection and remediation. Finally, the program will explore alterations in grape transcriptional response across exposure to smoke taint and identified microbial targets to discover methods for validation of the proposed microbial-based strategy.

The postdoc will work closely with other members of the Coleman-Derr lab that are working on externally funded research projects in the crop microbiomes. Applicants should have a doctoral degree in Microbial Biology, Plant Biology, or a related field. Experience with microbiology is required. The postdoc appointment will be for two years, with the possibility of extension.

Application process: Interested candidates should apply by March 31st, 2021, but the position will be filled as soon as possible. Applicants should submit their CV and names of three referees to Dr. Devin Coleman-Derr at [colemanderr@berkeley.edu](mailto:colemanderr@berkeley.edu). Candidate selection will be based on: 1) a PhD in an appropriate field of biological research, 2) demonstrated experience in microbial genetics or microbial cultivation, 3) experience with plant microbiome analyses, 4) experience with plant transcriptomics, 5) demonstrated ability to conduct high quality research and deliver impactful publications, 6) well-developed verbal and written communication skills, 7) ability to work effectively both in an independent role and collaboratively with others in a diverse academic setting.