

Bridging Disciplines, Empowering Students: A JGI-UC Merced Data Science and Genomics Training Program for the Energy Sciences Workforce

- **Principal Investigator:** Suzanne Sindi (University of California–Merced)
- **Co-Investigators:** Carolin Frank, Tomas Rube, Fred Wolf (University of California–Merced); Zhong Wang (Lawrence Berkeley National Laboratory; DOE Joint Genome Institute)

The proposed University of California–Merced (UC Merced)-DOE Joint Genome Institute (JGI) RENEW internship program is built upon a successful and established partnership between investigators. Since 2014, UC Merced (through Sindi) and Lawrence Berkeley National Laboratory/JGI (through Wang) have co-managed a summer undergraduate and graduate internship program. The program matches students with projects and mentor scientists at JGI that provide hands-on experience in cutting-edge genome research and applying experimental and computational tools to solve problems in computational biology and genomics. Initially, the program began with two graduate students, but in recent years has grown to an annual cohort size of 10. Since 2014, the program has supported 60 students who have contributed to approximately 40 JGI projects.

This UC Merced-JGI training program will be expanded through DOE’s RENEW program in four innovative directions: (1) expanding the summer internship to a yearlong research and training program; (2) engaging the training program’s alumni both for workforce building and mentoring of new trainees; (3) strengthening the research and scientific exchange between UC Merced and JGI; and (4) employing data-driven assessment to improve the training program and to serve as a model for other DOE and academic partnerships.

The proposed program extends the activities between UC Merced and JGI from the existing summer to throughout the entire calendar year. Graduate students will be supported to carry out their research during the academic year, providing continuity to their work and increasing the opportunity for engagement with research from students at UC Merced beyond the supported cohort. Joint workshops and seminars continuously provide engagement and scientific exchange between UC Merced and JGI. As in the past, the research questions approached by trainees will be aligned with UC Merced and JGI’s research to address important challenges in bioenergy and biosystems by using omics data to study microbial communities and critical species of interest.