

CSUPERB is: Collaborative Researchers

Carol Lauzon (CSU East Bay; 2013 Joint Venture Grant recipient). Dr. Lauzon won a Joint Venture (JV) grant to work with a collaborator at the U.S. Food & Drug Administration (FDA). They wanted to investigate the utility of FT-IR spectroscopy methods and a proprietary algorithm to rapidly and accurately detect and identify harmful bacteria in food samples. However, even the best planned-out external partnership plans sometimes unravel; her research partner left the FDA to take a job at a biotech company. Quickly pivoting Dr. Lauzon found another collaborator, Dr. Lisa Gorsky, at the US Department of Agriculture (USDA) lab in Albany, California, interested in developing the technology. The USDA matched CSUPERB's Joint Venture grant by purchasing a state-of-the-art FTIR machine for the research team. As a result a group led by Dr. Shunlin Wang from Bruker Optics, Inc. has been instrumental in the team's success. Dr. Lauzon writes, Dr. Wang "has been invaluable. [He] hosted us at Bruker for a personal workshop on the use and theory of FTIR for bacterial identification. We have an excellent relationship with the company as a result of this funding." CSU East Bay students,

Nicole Herbold, Kelly Romanolo and Bijan Kashmanian, involved in the project presented research results at the May 2014 American Society for Microbiology meetings and the group published a paper in *Current Microbiology*. Ms. Romanolo is now employed at the USDA lab and Ms. Herbold is working at the Joint Genome Institute. Dr. Lauzon concludes, "This grant program is extremely valuable, especially for our students and also to facilitate faculty engagement with outside agencies."



Bijan Kashanian (left) works with **Kelly Romanolo** (right) at the USDA ARS Laboratories in Albany, CA, to develop methods to rapidly identify and classify *Salmonella* spp. using FTIR. Mr. Kashanian is currently a graduate student working with Dr. Lauzon at CSU East Bay; just this week he got a job offer to work as a research associate at a biotech company. Ms. Romanolo recently completed her master's degree at CSU East Bay and is now employed at USDA, working with Dr. Gorsky.

Nathan Rank (Sonoma State University; 2013 Joint Venture Grant recipient). Dr. Rank used the JV grant to bring new genetic and genomic technologies into his research program investigating how montane leaf beetles in the eastern Sierra Nevada might cope with stressful temperatures and climate change. As he explained in his proposal, "...genomic innovations have enabled scientists to study non-model organisms in the wild, addressing physiological

and evolutionary questions that would have been unapproachable just a few years ago." To tackle the questions he had, Dr. Rank recruited a global network of evolutionary biologists from Sweden, Canada, Finland and Belgium; and used DNA sequencing centers in the United States. The JV grant specifically funded preliminary data collection and analysis with collaborators at Santa Clara University and Stockholm University. By May 2015 Dr. Rank's group received external funding (\$408,986) from the National Science Foundation, graduated the lead Sonoma State student researcher into an Integrative Biology doctoral program at UC Berkeley, enriched student learning at Sonoma State University with a workshop on cutting-edge PoolSeq methods, and deepened a partnership with researchers at the Stockholm University. Dr. Rank writes in his final report, "The CSUPERB grant program has had an amazingly positive impact on my research program...Without the CSUPERB award for the joint venture, I do not believe we would have put this work together or received the award."



Team Beetle at the Start of the field season, 2010. (Back row, left to right) Elizabeth Dahlhoff (Professor, Santa Clara University), Nathan Rank, Kevin Roberts (Sonoma State, now PhD student at UC Berkeley), Chris Macko (Santa Clara), Mike Carlson (SSU). (Front row, left to right) Malia Naomi Grobbel-Rank, Maggie Abercrombie (Santa Clara), Julie Lynn (SSU), Rae Heitcamp (Santa Clara), Nic Zavala (Santa Clara), Victoria Dahlhoff, Sarah Heidi (SSU).