

Solar Cooling Demonstration Project: improving the efficiency and cost of a solar thermal technology in the Central Valley. (Mentor: Roland Winston) There is an ongoing effort at UC Solar in Atwater, CA to more efficiently deliver thermal power in the temperature range 100-300 degrees Celsius. It is based on the previous efforts of Master's graduates Kevin Balkoski and Heather Poiry. REU students in the Winston Lab understand quickly that working in this Lab will be quite a different experience than most, as it is outdoors. This specific project provides them skills in several fields – Mechanical Engineering, data analysis, computer network design and construction. Undergraduates gain basic plumbing skills, operate, troubleshoot and calibrate key components under the supervision of fellow graduate student team members; utilize data analysis skills to gain experience with specialized lighting software; design a network for the system and learn to properly apply reflective mirror film to the solar troughs. Collectively, these efforts improve the efficiency and cost of the system, creating alternative energy solutions for a healthier planet.