Tech Trek is a program run by the AAUW (American Association of University Women) designed to encourage girls to stay interested and involved in STEM subjects. Two groups of about 75-80 girls ready to enter 7th grade spend a week at Stanford. They live in a dorm and do activities from dawn to dusk. The girls are selected by their local schools and many AAUW sections from all over Northern California sends students to participate.

The Silicon Valley section has sponsored an evening of chemistry experiments at the Stanford Tech Trek for the last 14 years. This year, we did the chemistry experiments with about 80 girls and we were able to use the chemistry laboratories at Stanford. Most of these girls had never been inside a real laboratory classroom before. Their reactions were all very positive. The girl’s general knowledge and experience level is highly variable. Some of the girls demonstrate a good understanding of basic science and are very comfortable. Others have never left home before and are amazed by all the new experiences.

We did a simple experiment involving a qualitative assessment of vitamin C content of various juices based on titration with iodine/starch complex. The redox chemical reactions are beyond most of the student’s level of chemical understanding, but the principles of qualitative assessment using a color change, use of a standard, and a discussion of potential biases and errors are all meaningful. In addition, the general ranking of the vitamin C content of orange juice, lemonade, red bull, monster drink and Sobe drink is very relevant and, for some students, a surprise.

This event also brings volunteers into the local section. We had volunteers from local high schools, from local industry, and from the Silicon Valley local section.