Take our Daughters to Work Day: Mysteries of Light and Extreme Cold Uncovered

April 25, 2002

On April 25, over 20 girls and their parents learned about some of the scientific programs at the National Synchrotron Light Source (NSLS), and even performed their own scientific experiments. The one-day visit was part of the national "Take our Daughters to Work Day."

At the NSLS, the girls learned that light can take many forms, from microwaves to x-rays, and have many applications in electronics, lasers, microscopes, and medicine.

NSLS scientist Lisa Miller offered a tour of the experimental floor to the girls, who discovered how synchrotron infrared light is used to study diseases like osteoporosis, osteoarthritis, and Alzheimer's disease. NSLS scientist Vivian Stojanoff also showed the girls how the study of protein crystals is used to develop new drugs. Later, the girls toured the Control Room, where Machine Operator Gary Weiner told them how synchrotron light is made.

The girls also performed their own scientific experiments. By suspending an inflated balloon in the cold vapor above liquid nitrogen, they discovered that the air inside of the balloon contracts, and then re-expands when warmed up. In another experiment, the girls found, much to their surprise, that they could

suspend soap bubbles in a gaseous carbon dioxide layer over a block of dry ice.

Perhaps one of the girls' most memorable experiments involved freezing natural and artificial flowers in liquid nitrogen. Both the girls and their parents learned that it is much more fun to freeze and crumble a living flower than to take it home as a souvenir.

-Patrice Pages