**NCAC SOT Sponsors Girl Scout Science Day**

The National Capital Area Chapter of SOT sponsored the 3rd Annual Girl Scout Nation's Capital Science Day on January 23-24, 2009 organized by the Girl Scouts Council Nation's Capital Service Unit. This event introduces scientific terms and ideas to Brownies (grades 1 – 3), Juniors (grades 4 – 6) and Cadets (grades 10 – 12) with hands-on experimental protocols. Experimental protocols are designed to be performed by a group of 10 -12 girls in 30 minutes. As in past years, experiments are led by Cadet Girl Scouts with the assistance of volunteers, including troop 'moms' and 'dads' and area scientists. All participating Girl Scouts rotate through 4 to 6 experiments depending on their age group and the theme their troop has selected. This year, Brownies earned either a Chemistry Try-It or a Science in Action Try-It while the Juniors earned a Science Sleuth badge or a Science Discovery badge. For the first time, we also added a component to expose the Cadets to multiple aspects of science and earn a Chemistry IP.

For the second year in a row, Dr. Mary Stapleton of the University of Maryland Biotechnology Institute (UMBI, Baltimore, MD) assisted in supplying materials and volunteers to assist in performing experiments with the Brownies and Juniors. Brownies earning the Science in Action Try-It were exposed to different phases of matter (Weird Glop); the idea of germs and how they spread (Germ Spread/Making Soap); what is carbon dioxide (Balloon Blow-Up/Dancing Raisins) as well as why some things dissolve and others do not (Dissolving). For the Chemistry Try-It, Brownies learned about polymers (Meg A. Mole Bouncing Ball), oxidation and toxicology (Lemons, Onions and Fruit, Oh My!), chromatography (Chromatography) and how chemistry helps to make ice cream (Making Ice Cream).
The afternoon session with the Junior Girl Scouts for the Science Discovery badge involved experiments on pH (Acidity), water pressure (Water In, Water Out), how to design experiments using fungus (Friendly Fungus), what things impact surface tension (Surface Tension) and what is static electricity (Static Electricity). Juniors also looked at how to make gum, and how different ingredients impact the final product (What Makes Gum Gummy). The Science Sleuth badge focused on where DNA comes from (Make Your Own DNA), and how genetics can determine different traits (Which Gene Do I Have?). Juniors learned how different materials added to a mixture can have a different chemical effect (Baggie Science). Juniors also learned about polymers and emulsions (Making Lotion), as well as density (Density) and how temperature can affect the rate of a reaction (Seltzer Reactions). Throughout all the experiments, Girl Scouts were encouraged to think scientifically about what reactions are occurring and why, and to write their hypotheses and results in the supplied lab notebooks. All experiments had questions at the end for the students to answer before leaving the 'bench'. Students were encouraged to work together and discuss as a group the results of each experiment.

For the Chemistry IP, the Cadets performed more technical experiments in a Friday night session. Again with the assistance of UMBI and area scientists, the Cadets went through three experiments in three main areas: DNA (Make Your Own DNA), protein (The Crooked Cell) and blood typing (No Trace Left Behind). Further, a fourth rotation was designed to expose the Cadets to career paths in the sciences. Area scientist in the fields of medicine, nursing, pathology, and risk assessment discussed with the Cadets their career path and experiences. Experiments and panel discussions were led by area scientists from EPA, NIH, UMBI, CPSC and NIOSH.
Based on the evaluation responses from the troops attending and their leaders, Science Day was a great success. The Brownies and Juniors enjoyed the hands-on experiments, and learned a variety of scientific facts. For the first time, the Cadets were also exposed to new areas of science, and were able to discuss potential career paths in science. The Girl Scouts were able to take copies of experimental protocols home to share with their family. These lab notebooks not only included the experimental set-ups, but also the Instructor's Notes to help explain the protocols to their families. In some cases, the Girl Scouts were also able to bring home the results of their experiments, including DNA necklaces, vials of lotion that they made and personalized weird glop. Many of these experiments would not have been possible without the financial support of the NCAC SOT Regional Chapter, and through them, the SOT Education Committee. This year we were also pleased to include some experiments, supplies and staff from UMBI (Baltimore, MD) and MDBio (Frederick, MD). The hope is to continue this collaborative relationship for future Science Days, which will allow us to introduce even more aspects of science to the Girl Scouts in our area.