Chicago Section members organize workshop for Junior Girl Scouts

Members of the ANS Chicago Section and other area professionals engineered a Junior Girl Scout workshop, "Atomic Fission Fun with the American Nuclear Society," held on January 26 at the Illinois Institute of Technology's Rice Campus in Wheaton, Ill. Cecelia Dygdon, an educator with Computer Explorers, and Natalie Zaczek, an engineer at Exelon, led the effort.

Several other volunteers assisted with the organization and execution of the event, including Laural Briggs, Lenka Kollar, and Kirsten Laurin-Kovitz, of Argonne National Laboratory; Jeffrey Dunlap and Jill Fisher, of Exelon; and Pamela Frendreis, a local high school science teacher.

The section supported a similar Girl Scout workshop in March 2012, but more than twice as many Girl Scouts attended this year's event, with 80 Scouts and 16 parents present. According to Dygdon, effectively advertising the event to the target audience was critical to that success. "Natalie and I worked with Ashley Smith, STEM [science, technology, engineering, and math] program manager at Girl Scouts of Greater Chicago and Northwest Indiana, to spread the word via the Girl Scouts' *Program Essentials,* which was published in August 2012 to promote events for the upcoming year," Dygdon said.

Volunteers at the workshop included (from left) Natalie Zaczek, Ashley Smith, Lenka Kollar, Kirsten Laurin-Kovitz, Laural Briggs, Pam Frendreis, Cecelia Dygdon, and Jill Fisher.

Based on observations and feedback from the 2012 event, Dygdon and Zaczek made some enhancements to the workshop. "We changed our introduction to ensure that all the students have a good foundation in understanding what ionizing radiation is," Dygdon said. "We introduced the concepts of atoms, ions, and ionization to lead into the topics of ionizing and nonionizing radiation." A new cloud chamber apparatus purchased by the Chicago Section was used to illustrate the emission of alpha particles from a radioactive source.

The Scouts were divided into four groups of 20 to attend four different sessions: half-life and medical uses of radiation; effects of radiation, radiation dose counting, and a hunt for a radium watch; nuclear energy, including a fission game; and a session about alternative forms of energy titled "It's your planet—love it!" The Scouts also learned about careers in the nuclear industry.

One of the highlights of the day was the nuclear energy fission game, in which the Scouts stand in a closely packed group with each girl holding two balloons representing neutrons. The reaction starts when a balloon (source neutron) is thrown into the group by a volunteer. When a Scout is hit by a falling balloon, she "fissions" by throwing her two balloons into the air. The addition of "control rods" (people who grab balloons out of the air, making them unavailable to cause fission) can slow or stop the reaction.

The workshop closed with a music-accompanied slide show featuring photographs of the girls working on their activities, and a *Jeopardy!*-style game that gave every girl a chance to "buzz in" and show what she had learned during the day's events.

Junior Girl Scouts played the roles of fissioning atoms and control rods.