Women in Science at Columbia Are Looking for a Few Good Women

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S
ome rules—at least according to the 65 girls who attended Columbia’s Girls Science Day on Nov. 15—Sponsored by Women in Science at Columbia (WISC), a networking group of graduate students and post-doctoral assistants, the program offered girls fifth through eighth grade the chance to be scientists for a day. An experiment on polymers, where students made their own slime, proved the most popular of several activities in chemistry and physics.

Divided into groups of roughly a dozen girls, students were led through the experiments by WISC members in an effort to stimulate interest in areas of science where women are typically underrepresented. Studies have shown that girls usually lose interest in science during their middle school years. The program was designed to pique their interest and hold it—perhaps inspiring some of them to pursue careers in science.

Amy Petros, a biomolecular chemist and WISC member, noted, “We’re very pleased with the turnout. Even a few women professors came.” Reshmi Mukherjee, an associate professor of physics and astronomy at Barnard College, was one of them.

“It’s so exciting to see so many girls here,” she said. Mukherjee’s enthusiasm was topped only by that of the girls. When asked which experiment was their favorite, a group of about 20 fifth graders yelled, “Slime!” And they were quickly seconded by another group of seventh and eighth graders. The mix of borax, glue and water did more than stimulate their imaginations. It also opened a lot of doors.

Several seventh-grade students said that they’d never done science experiments of this type in their schools and that they were eager to learn more. That desire to learn more about science is exactly what WISC hopes to achieve. The other Columbia groups that sponsored the event—Materials Research Science & Engineering Center, Nanotechnology Science and Engineering Center and the Departments of Physics and Chemistry—and laboratory equipment supplier Fisher Scientific share that goal.

Ninety-five percent of the students attend schools in Manhattan, many from northern Manhattan. Petros hopes to see some of them at future WISC events. “We developed a survey to track them,” she said. After the last experiment, the girls are asked to fill out the survey in exchange for a Girls Science Day T-shirt.

When asked if they wanted to become scientists, several girls replied that they wanted to become lawyers or business owners. But an equal number—with obvious glee in their voices—indicated they wanted to be chemists. Women in Science at Columbia may have achieved their goal thanks to their dedication, determination and a blob of slime.

Girls Science Day Experiments

1. Which Is Water? By investigating and comparing the properties of several liquids, students determined which one of them was water.

2. Polymers and Slime: The girls learned what a polymer is and made their own slime.


4. Fractals: Using a computer program, students generated fractals, patterns of irregular shapes.

5. Saturation and crystals: The girls made rock crystals from a kit to understand the concept of saturation.

6. Graphing Your Motion: Kids used motion detectors connected to laptops to make position-time graphs.

7. Mathematical Physics: The girls determined the center of mass of several objects through experimentation.

8. Secrets of Sound Revealed: The physics of waves and music were uncovered.

9. Astronomy: Kids learned about the galaxy through images from the Hubble Deep Field telescope.

Earth Institute’s Earth Clinic Opens for Business

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and associate director of the Earth Institute. “The Earth Clinic also works closely with local partners on design and implementation of projects to ensure their long-term effectiveness.”

BANGLADESH

Over the last several years, an Earth Institute research team and its Bangladesh partners dramatically reduced the exposure to arsenic of about 70,000 people by testing their wells for arsenic, providing health education, encouraging them to share existing safe wells and installing deep, safe community wells at 50 villages.

KENYA—MILLENNIUM VILLAGES PROJECT

The first Millennium Village, Sauri, located in western Kenya near Lake Victoria has 4,648 residents. The village has strong communal ties but lacks the revenue for basic services necessary to sustain economic growth. Working with village leaders and the community over the next 10 years, the Earth Clinic team will help the Sauri toward economic stability at an estimated cost of less than $50 per person. A key component of the project is a concept, developed by Vijay Modi, chair of the mechanical engineering department, for a village vehicle that will transport villagers to hospitals for emergency medical treatment. The Earth Institute will launch the Millennium Villages project in March 2005 and expects to expand the project to other areas of the developing world.

ETHIOPIA

Earth Clinic funds have helped Awashe Teklehaimanot, professor of clinical epidemiology at the Earth Institute, support the work of the newly formed Center for National Health Development in Ethiopia. The government of Ethiopia plans to train 25,000 health workers over the next five years and to build and upgrade close to 3,000 health care centers and up to 14,000 primary health posts.

SÃO TOMÉ AND PRÍNCIPE

Since mid-2003, a team led by Professor Sachs has advised the government of São Tomé and Príncipe on how to manage and invest its new oil revenues. This includes drafting new laws to ensure transparency of deposited oil revenues and their investment into sustainable economic development measures.

Professor Sachs provides overall strategic guidance to the Earth Clinic. Professor Schlösser chairs the Earth Clinic’s steering committee and serves as director of the clinic’s projects and activities. The steering committee includes senior faculty and scientists with expertise in environmental engineering, agriculture and agro-ecology, energy, infrastructure in low-income countries, climate and society interactions. In addition, Earth Institute fellows, Ph.D. students, master’s degree students and undergraduates in affiliated departments participate in Earth Clinic projects.