Boeing Summer Science Camp Aims to Spark Young Minds... and Imitators

Got Camp?

That's a question Marie Mungaray, head of Education Relations for The Boeing Company [NYSE: BA] in Huntington Beach, wants businesses, educators, and communities everywhere to consider as a means of improving America's educational system and attracting more women to high-tech careers.

Mungaray knows first-hand the impact collaborative programs such as the Boeing Explore Engineering Summer Science Camp -- now in its ninth year and concluding this Friday and Saturday, July 21-22, at Oxford Academy in Cypress -- can have on stimulating youth interest in math, science, and engineering careers. Now she's anxious to share the company's recipe for success with others.

"High-tech companies are being threatened by a rapidly declining number of skilled people, especially women, who are attracted to high-tech jobs," she said. "If aerospace and other high-tech industries want to continue to attract qualified personnel, a broader, more involved, sustained effort is needed to improve the processes that produce young people's current attitudes and skills.

"Boeing believes programs such as our Summer Science Camp fill a critical need for students to become skilled, knowledgeable, and excited about the world of high tech, supplementing traditional classroom instruction. We welcome inquiries from other companies and educators interested in adopting the Boeing Summer Science Camp model for their industries and communities."

Mungaray said the Camp is a positive step toward addressing significant gender imbalances that currently exist in most high-tech organizations. "According to the Department of Commerce, only 28 percent of computer programmers, 26 percent of computer scientists, and nine percent of engineers are women. Consultants with the Association for Women in Computing are calling attention to the lack of role models and opportunities for direct interface with high-tech professionals who work in areas other than the production of battle games, fighting, and competition software -- areas of interest to young boys. Our Camp is one way Boeing is working to correct this gender imbalance."

Mungaray said Boeing has seen a 20-percent increase in female Camp attendees over the years, to approximately 40 percent of Camp enrollees today. She credits much of that increase to a decision in 1993 to lift the program's original restriction of one child per family. "Families with both boys and girls don't have to choose," she said.

Mungaray said another observation Camp organizers have made is that first-year female students tend to be less likely to choose workshops in more mechanical subjects such as electronics and fundamentals of flight, but repeated Camp participation appears to give them the confidence to venture into these areas.

She added that the experience of seeing other girls working with women engineers appears to excite females about their own career possibilities. "Simply providing information alone isn't enough to motivate young girls to make long-term career decisions," she said. "It's our personal experience that one-on-one interaction with positive role models encourages these girls to explore areas that previously were less likely to be chosen. In addition, interaction with Boeing women engineers appears to increase parents' enthusiasm for encouraging their daughters to participate."

This year's Camp, which began July 7, is the largest in the program's history. The nearly 340 students range from Kindergarten through 12th grade and hail from 72 primarily Southern California cities in five counties.

Students select from 13 "hands-on" science, math, and engineering workshops taught and facilitated by nearly 200 volunteers. The volunteers include Boeing engineers and technical support personnel -- the same people who developed the Space Shuttle, Delta rockets, and the International Space Station -- as well as parents, educators, and alumni. Topics range from astronomy and the challenges of human space flight to electronics. Reading and math instruction are also offered. Registration for the free Camp is first-come, first-served. Most workshops have no prerequisites.

Mungaray says three keys to the Camp's success are hands-on involvement, simplicity, and enthusiasm. "Our goal is to provide one hands-on activity for every 10 minutes of lecture to maintain student interest," she said. "Obviously, using traditional teaching techniques, this could become costly. We strive to use inexpensive, readily available household materials -- coat hangers, empty paper towel rolls, two-liter bottles, etc. -- materials that can be readily duplicated at home or in the classroom.

"For example, paper rockets powered by empty film containers filled with water and an over-the-counter effervescent tablet dramatically illustrate basic rocket propulsion concepts while thrilling the kids. Combine such activities with the enthusiasm of avid volunteer instructors and you have a recipe for success and a results-oriented learning experience." Mungaray said students are given "how to" notebooks to make it easy for them to repeat their lessons at home or share them with others.

An open house will culminate the Camp at noon Saturday, July 22, showcasing student final projects to parents, family, and friends. A career fair will also be held with other corporations and educational institutions to provide students and parents with

information about career opportunities.

This year's Camp is made possible through contributions from Boeing and many volunteer hours by Boeing personnel from the company's Huntington Beach, Long Beach, Anaheim, Seal Beach, and Canoga Park facilities. Educational partners include Oxford Academy, Cerritos College, Anaheim Unified School District, Latino Scholastic Achievement Corporation, Challenger Learning Center, Cal State Fullerton, and Cal State Long Beach. Other corporate sponsors include Vons; M&M Mars; The Circuit Tree, Arcadia; and Ford Electronics, Buena Park.

The Boeing Explore Engineering program is a nationally recognized, comprehensive community relations and educational outreach program that grew out of the company's participation in the National Engineering Week Discover Engineering Program. Its goal is to arouse and foster the natural curiosity of young people to get them interested in studying math, science, and engineering and eventually to consider pursuing careers in these fields, while helping them develop self-respect and confidence in their abilities. Since 1992, Boeing and community volunteers have invested more than 71,000 hours in math, science, and engineering instruction under the program. Additionally, nearly 3,600 teachers have directly participated in hands-on math and science workshops through the Camp's sister activity, the annual Educator Enrichment Day, reaching more than 325,000 students annually at a per-student cost of $0.96.

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Editor's Note: Photos available

Contact : (media only -- for additional information and to make arrangements to cover the Camp)

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