

Every time I've had a discussion with the president, I've told him, "Mr. President, every time I've talked with you about an issue in my zone of responsibility—global climate change, CAFE standards, issues like that—I always feel better." Then I pause for effect, and say, "It's your staff that screws up."

PT: How good are scientists at understanding the Washington political system?

BOEHLERT: In the eyes of many in the scientific community, politics is viewed as dirty business where you get your hands soiled if you get involved. I find that scientists are not particularly good

at lobbying for their interests, or at making difficult choices like people in the public arena have to make every day. I mean, do you invest more for cancer research or heart research?

PT: What do scientists need to do to keep science visible as an issue in Washington?

BOEHLERT: I tell them all the time, whether it is the science community or the business community, that it's not rocket science. In January there will be a swearing in of 50 or 60 new [House] members. Make sure you get these new members, during their first year, before they shape their approach to policy, and tell them how important science is.

And you don't do it by knocking at their door with a high-priced lobbyist from Washington. You do it by getting your university researcher from the university back home, you get the corporate people in from their home turf, and you say this is very important, not just for America, but for our [congressional] district. Look at what science produces in terms of benefits for your district.

PT: You're out of here at the end of the congressional session. What are you going to do?

BOEHLERT: Whatever I damn well please.

Jim Dawson

TV series gives teens hands-on experience with machines

So intrigued was 18-year-old Natasha by the machines she helped conceive, design, and construct on the set of a kids' TV show slated to air this winter that she changed her college major in order to continue the work in school.

Natasha is one of eight teens who were selected for the cast of *Design Squad*, a live-action science and engineering series produced by WGBH-TV in Boston. On the show, cast members are filmed as they ponder, brainstorm, experiment on, and finally build a variety of machines ranging from an automatic pancake maker to a racecar to a wedding gown that turns into a tent. The series begins airing the week of 19 February 2007 on Public Broadcasting Service stations around the US.

"I just had a blast," Natasha said about working on the series. "I did things I didn't think I could. I was interested in political science, but now, after doing this show, I [also] want to go into mechanical engineering. There's so much satisfaction in making a machine—and making it work."

"The big idea was to get kids excited about science and engineering and provide hands-on experience with materials," explained Marisa Wolsky, the show's executive producer. "You used to watch your father repair his car in his driveway, but nobody does that anymore, and most kids today couldn't hammer a nail in. We wanted to [show how] science and math solve problems. And we wanted to show kids that [science and engineering] are a really viable career option for them."

In each of the show's 13 half-hour episodes, two four-member teams, guided by two hosts and adviser David Wallace, a mechanical engineer at MIT,

compete to build a real machine or device. In response to a different challenge for each episode, teams come up with their own designs for each machine, and members are scored for their ability to think creatively. In the final episode, the top two scorers compete for a \$10 000 college scholarship.

Natasha's favorite creation grew out of a challenge that required teams to design a functional piece of clothing. Based on her own concept, the resulting

product was a wedding dress that could be converted into a pup tent. The dress concealed fishing rods, which acted as its frame. Metal hoops inside the skirt could also double as the tent's frame, and the tulle on the skirt was made of mosquito netting for use inside the tent. The top layer of the dress was sewn out of windbreaker fabric and could serve as the tent skin.

Natasha also liked a dragster built from two cordless drills and a tricycle. She and her team used the drill motors to run the tricycle dragster and raced the other team—which was using a child's wagon as its racecar—on a track in front of a crowd of 300.

"I raced the tricycle and I won," Natasha said with a laugh. "I got up to



Natasha, a member of the cast of the TV science series *Design Squad*, drills a hole in a door hinge on the set in Cambridge, Massachusetts. She is making an abstract fish to hang inside a fishbowl sculpture for an episode that requires cast members to design and build wind-powered kinetic art from recycled materials. The prize-winning sculpture (right) is exhibited outdoors at the DeCordova Museum and Sculpture Park in Lincoln, Massachusetts.



at least 20 miles per hour. That was the most excitement I ever had."

On the show the teens also design and fashion a man's business suit that can be converted into a jogging suit; a wind-powered kinetic sculpture that was donated to the DeCordova Museum in Lincoln, Massachusetts; an automated soccer-ball-passing machine; and a machine that produces peanut butter from unshelled peanuts.

The series was funded by the Intel Foundation, NSF, Intel Corp, and Tyco Electronics, with additional monies from the Harold and Esther Edgerton Family Foundation, the Noyce Foundation, and the American Society of Civil Engineers. The Intel Foundation also contributed scholarship funds for the grand-prize winner and bought com-

puters for all eight contestants.

Wallace said series participants, even the younger teens, were learning and applying the same basic principles he teaches in his undergraduate classes. He's hopeful that viewers of all ages will find the show inspirational.

"Having kids succeed with their ideas makes it a lot more accessible," he said of the science, physics, and engineering concepts illustrated in the series. "Having such a diverse range of challenges highlights how many different things you can do within the science and technology field—there's a huge range of possibilities. We want viewers to think, 'Hey, maybe I can do my own project now'—and maybe go into science or engineering for a career."

Karen H. Kaplan

NASA science advisers dismissed when philosophies clash

An apparent clash over the role of advisers on the NASA Advisory Council led to the dismissal of two members of the council's science committee and the resignation of a third in August, according to NAC chairman Harrison Schmitt and one of the affected scientists. The tension between NASA administrators and the scientists is centered on ongoing disputes at the space agency about the balance between the science and manned programs. Although NASA's overall R&D funding is likely to increase by more than 7% in fiscal year 2007, virtually all of that increase is expected to go to developing new manned space vehicles. Science funding would stay flat, which follows sharp cuts that were made to the program last year.

NASA administrator Michael Griffin asked for the resignations of Wesley Huntress, a chemical physicist who spent much of his career at NASA's Jet Propulsion Laboratory in California, and physicist Eugene Levy, provost of Rice University in Houston, Texas. Shortly after the two received phone calls from Griffin asking them to step down, physicist Charles Kennel, former director of the Scripps Institution of Oceanography in La Jolla, California, offered his resignation.

Griffin asked for the resignations after consultation with Schmitt, a geologist, *Apollo* astronaut, and former Republican senator from New Mexico. Schmitt, who was the only scientist to walk on the Moon, was unapologetic about the dismissals. "The most important function of the council is to focus

on the implementation of policy," he said. "It is a waste of time to argue with national policies within the council, or to make recommendations without suggesting how they could be implemented."

Levy said that although he disagrees with the direction in which NASA appears to be headed under President Bush's Moon and Mars initiatives, he was working within the parameters of NAC's science committee, and was chairman of a subcommittee developing plans for science that could be done when humans return to the Moon. "Returning to the Moon is fine," he said, "but we shouldn't lose focus on robotic scientific missions. We were trying to serve the program as it moves forward, but without losing sight of other important issues. Nobody was violating the context of the committee, but nor were we pretending to agree with everything and act as a rubber stamp."

Levy cited two disputes with Schmitt, but said he didn't think they rose to a level to warrant dismissal. In one, Levy argued that the committee should not make a specific budget decision that he felt was the responsibility of NASA management. The other dispute was over the content of a mission statement for returning humans to the Moon. "I've been on advisory committees for 30 years," he said. "What happened here was odd," he said of the dismissals, "especially given how little the precipitating causes were."

Schmitt said he "wants to see us do the best science we can with the constraints we're under." Science research