issues &events

Boehlert brought science to the forefront on Capitol Hill

After serving 24 years as a Republican congressman, the last 6 as chair of the House Committee on Science, Sherwood Boehlert is retiring. He says he's leaving with a smile on his face, but science advocates in Washington aren't smiling about the loss of one of their strongest supporters.

Sherwood Boehlert isn't subtle about his interests. Step into his office in the Rayburn House Office Building on Capitol Hill, and you see two white cabinet doors covered with signatures—one from astronauts who have flown in space and the other from major-league baseball players who have made it into the Hall of Fame.

DAVID SIMS

Boehlert

When Boehlert announced last March that he was ending his 24-year career as the Republican congressman from the New York district that includes the National Baseball Hall of Fame in Cooperstown, political pundits wrote articles in which they worried about the loss of an increasingly rare "moderate" Republican and one of the last "down the middle" players in Washington. In announcing his retirement, Boehlert said he was proud of the moderate label because he believes "that the overwhelming majority of thinking people reject the extremes of the left and the right."

Although Boehlert spent his career advocating for environmental issues, his visibility in the science community increased dramatically six years ago after he became chairman of the House Committee on Science and one of the most forceful proponents in Congress for more funding for basic science research and K–12 science education. He quickly moved the science committee beyond its former reputation as being just "the space committee" dealing with NASA's budget and not much else.

Boehlert has held hearings on global climate change, the collapse of the World Trade Center buildings, hurricane forecasting, cybersecurity, corporate average fuel economy (CAFE) automotive standards, problems with the National Oceanic and Atmospheric Administration satellite system, and scores of other science-related issues. He lists the increased power of the science committee as one of his top accomplishments. "I'd like to think I'm identified with taking that committee from JV status to varsity," he said. "It's in the big leagues now."

Sitting in his office, across a table stacked with baseballs signed by greats of the game, Boehlert talked with PHYSICS TODAY about the state of science in the polarized atmosphere of Washington.

PT: You've been given credit for turning the science committee into an important player on the hill. Do you think it will maintain that status after you leave?

BOEHLERT: I hope so, because there is the general realization now in Congress that the world has changed. I'm reminded constantly that the great bubble of the 1990s, the boom in our economy, came because of investment in technology. We're the age of technology. The agricultural age, the industrial age, all of these ages are behind us. This is the new information age, and unless we do a better job of investing in long-term research and development, we're not going to maintain our preeminent position.

The new dynamic, the thing that really changed the equation and was immensely helpful, was the National Academy of Sciences report, *Rising Above the Gathering Storm* [see PHYSICS TODAY, December 2005, page 25]. What I tell people is, now you've got the business community involved. And boy, this administration listens to the business community. And [the business community is] saying you've got to invest more in basic R&D.

PT: Despite the economic importance of science, it typically isn't on the center stage of political debate. How do you sell science to your colleagues?

BOEHLERT: Few, if any, of my colleagues campaigned on the idea that they were going to come to Washington and do everything in their power to convince Congress that we have to address basic R&D and do a better job of science and math education. They campaign on dealing with the war on terrorism, on how we've got to extricate ourselves in an honorable way from Iraq. Or on social security problems and prescription drug benefits for the elderly. I'm trying to convince them that there is something else you can campaign on. As a matter of fact, I've provided them with a textbook guide on how to do it—the American Competitiveness Initiative.

PT: With the budget tight and deficits high, where do you get money for science?

BOEHLERT: I made a big pitch for more investment in R&D last year, culminating with the December 6th innovation meeting [based on the *Gathering Storm* report] at the Commerce Department. We met with Josh Bolten [then head of the Office of Management and Budget], and his response was that it was a good idea, but where were we going to get the money? I said there is an odd-shaped building [the Pentagon] on the other side of the bridge that wastes more than we're talking about on a coffee break. And that doesn't mean I'm not a hawk on defense. But, we're talking about a few billion dollars. So I suggested that.

To the credit of this administration ... the president announced the American Competitiveness Initiative in his State of the Union address. Oftentimes the State of the Union is nothing but a feel-good, rah-rah pep talk. But there it was, in black and white, the administration requesting money to put the National Science Foundation, the Office of Science in the Department of Energy, and NIST on a path to double their budget over 10 years. Bolten followed through. We were heard. We were heeded.

PT: But the administration has a reputation as being anti-science, or at least of ignoring science it doesn't like.

BOEHLERT: I tell people I work in a town where everyone likes to say they are for science-based decision making until the scientific consensus leads to a politically inconvenient conclusion. Then they want to go to plan B, and I'm not referring to the morning-after pill. There is a perception out there that there is an organized attempt within the administration to muzzle science, to change science, or to ignore science. I don't think there is any effort from on high to muzzle science. I think there is a conscious effort to question science. And I think, in some instances, there is an attempt to ignore science.

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.