

that can typically be done by working in groups." In studying and doing science, he says, "the primary hurdles that a blind person faces are the attitudes of others."

Changing those attitudes will be made easier when blind students are less reliant on sighted people—hence the attractiveness of Dots Plus and AsTeR. "Both projects are still experimental, under development and under evaluation," cautions Scadden. But it

is both his hope and his expectation that these innovations will be widely adopted in the future. Blind scientists, engineers and mathematicians in the US and elsewhere have already tested Dots Plus and AsTeR, Scadden says, and "there seems to be almost total unanimity that they have great potential for improving mathematics notation for the blind."

►JEAN KUMAGAI

Congressional Fellows Add Their Expertise to the Political Process

The Congressional Fellows program, organized by the American Association for the Advancement of Science, sends scientists to Washington, where they lend their personalities and their technical knowledge to the legislative process. In the 104th Congress, fellows sponsored by the American Institute of Physics and two of its member societies are now at work. AIP sponsors Laura Philips in the office of Senator Joseph Lieberman, a Democrat from Connecticut. The American Geophysical Union fellow, J. David Applegate, assists the Senate Energy and Natural Resources Committee. John Morgan, sponsored by the American Physical Society, works in the office of California Representative Dana Rohrabacher, a Republican who heads the House subcommittee on energy and environment.

The five fellows profiled last year (see PHYSICS TODAY, May 1994, page 65) have completed their terms. The APS sponsored Duncan Moore, who was able to extend his appointment by several months so that he could continue to assist West Virginia Senator Jay Rockefeller IV, a Democrat, with three bills, on technological competitiveness, reauthorizing the National Science Foundation and commercialization of technology. Moore, a participant in this month's PHYSICS TODAY Roundtable discussion (see page 42), came to the program with about 20 years of experience in science and technology. He saw this background as a great advantage: He had had direct involvement with many of the topics that interest Rockefeller. Moore urged senior scientists from industry and academe to participate in the fellowship program. He helped to provide another opportunity to do so by convincing the Optical Society of America to sponsor its fellowship in tandem with the Materials Research Society.

Sponsored by AIP, AGU and APS, physicists help to develop and review legislation on issues ranging from nuclear waste to patent law. Past participants in the program report a gratifying experience.

Ruth Howes, who was a AAAS fellow, spent a sabbatical year away from Ball State University in Muncie, Indiana, in the education office of the Senate Committee on Labor and Human Resources, which was headed by Democrat Edward Kennedy of Massachusetts. She worked on general science policy and funding issues in higher education (for example, student loans). Howes enjoyed the work, but she noted that in contrast with the pace of university life, there was rarely the "luxury of foresight" in her experience on Capitol Hill. Howes has taken a second sabbatical year to work as a program director of physics in the division of undergraduate education at the National Science Foundation.

Carmina Londoño has returned to her position as a principal engineer in optics with Polaroid in Cambridge, Massachusetts, after completing her fellowship on the House subcommittee on technology and competitiveness. This subcommittee of the Science, Space and Technology Committee was known for its many hearings, and Londoño organized several: on the GATT subsidies code and its impact on research and development, on export controls and their impact on high-technology industries, and on international standards.

Londoño said that "putting on a hearing is like putting on a small conference." She explained that by building a public record and establishing authority, hearings are critical to getting a bill passed—a kind of "hearing or perish." For Londoño, who completed her fellowship in December, the experience reinforced the importance of

"accommodating other people's viewpoints."

Effects of an earthquake

One of last year's APS fellows, Philip (Bo) Hammer, spent his year on Congressman George Brown's subcommittee on science when Brown, a Democrat from California, headed the House science committee. Hammer, a native Californian, worked on issues of earthquake and fire safety—referred to by the committee, he said, as "shake and bake." In November 1993 Brown thought that the National Earthquake Hazards Reduction Program needed better direction, but he could get no support. Two months later the Northridge earthquake hit Southern California, and Hammer was asked to help plan the "lessons learned" hearing. He is now the assistant to AIP Executive Director Marc Brodsky.

Elizabeth Cohen, a fellow with the National Economic Council, has returned to her business, Cohen Acoustical Inc, and her earthquake-stricken home in Los Angeles. Cohen was sponsored by the Acoustical Society of America.

She is proud that she was able to do some "very, very practical things" in telecommuting that helped people in the Los Angeles area after the Northridge earthquake. Her experience as an acoustician—which she describes as being at the interface between technology and the arts—also prepared her well to help draft "white papers" on accessibility for people with disabilities and on arts and humanities on the National Information Infrastructure.

During much of Winston Tao's AGU fellowship year in Congressman Brown's office, he dealt with issues of low-level radioactive waste. He also studied the Clinton Administration's clean-car initiative from many different angles. Tao said he was exposed to a tremendous amount of new science and technology as a fellow—"more in one year than in the last five." He also said that perhaps the main reward was the repeated demonstration that "there are multiple points of view in a rapidly changing world."

Tao remains in Washington at the Office of Technology Assessment, where he is an "in-house contractor" hired specifically for research on "earthquakes hazard mitigation in the US." Eventually he would like to return to academe and teach undergraduate courses in environment, technology and policy.

1995: Geology, patents and technology

Applegate, this year's AGU fellow, received his BS in geology and geophys-

ics from Yale in 1989 and his PhD in the same subjects from MIT in 1994. After a short time as a postdoctoral researcher at MIT, he began his fellowship in mid-October on the (now) minority staff of the Senate Energy and Natural Resources Committee, whose ranking member is Louisiana Democrat J. Bennett Johnston.

Applegate chose to work for this committee because of its "oversight role" for the Energy and Interior Departments. One of Applegate's particular interests—which Senator Johnston shares—is the proposed nuclear-waste repository in Nevada's Yucca Mountain, an issue with obvious geological content.

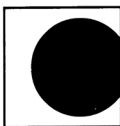
Morgan, who started his APS-sponsored fellowship on 1 December, comes to Capitol Hill with much more formal political experience than the typical fellow: Since 1991 he has served as a state delegate to Maryland's General Assembly, which meets for 90 days at the start of each year. From January through March Morgan has been working in Washington on Mondays and in Annapolis the rest of the week.

Morgan received his MSE (1988) and his PhD (1990) in engineering and materials science from Johns Hopkins University. He took a one-year postdoc at the Johns Hopkins Applied Physics Laboratory before becoming a senior engineer in APL's materials laboratory in 1991. He thinks of himself as a "citizen legislator," and he considers his position in the materials laboratory his "real job." Morgan has been spending most of his time on a bill to revise US patent law, which he called "a great assignment for a science fellow."

Philips, the AIP fellow, received her BA in chemistry from Williams College in 1979 and her PhD in physical chemistry from the University of California at Berkeley in 1985. After a postdoctoral fellowship at the University of Chicago, she joined the faculty of Cornell University in 1987 as an assistant professor in the chemistry department. She left the department last year, continuing a transition toward policy and government that began with her completing the first year of a master's program in business administration while still at Cornell.

Philips began working in Lieberman's office at the beginning of October. Now that the Republicans have achieved majority status in both houses of Congress, Philips is helping Lieberman defend Federal technology programs such as the clean-car initiative, the Technology Reinvestment Program and the Advanced Technology Program (see PHYSICS TODAY, November, page 75).

►DENIS F. CIOFFI

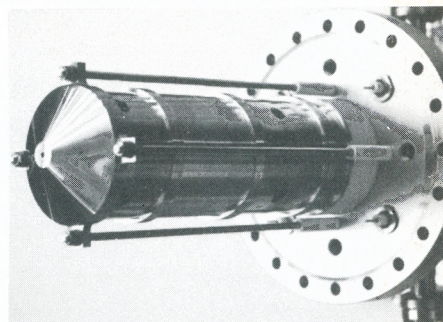


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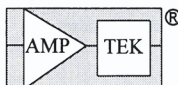
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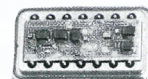
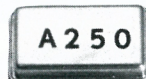
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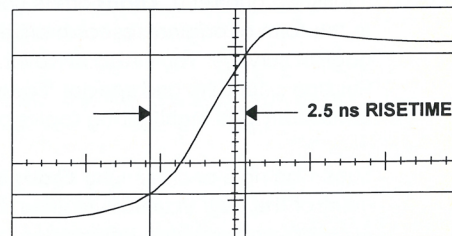
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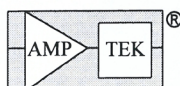
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