EDUCATION

Students with Disabilities Launch Careers in Science and Engineering

A significant number of students with disabilities are graduating with degrees in science and technology. But getting a job in which they can use their skills can prove more difficult.

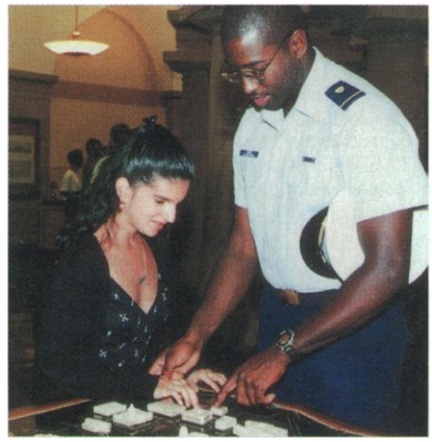
Students across the United States are participating in a AAAS program that helps them get the experience they need to enter the workforce. Entry Point! provides summer internships for graduate and undergraduate students with disabilities pursuing technical careers, in an effort to create a career pipeline for students with disabilities and to promote diversity in the workforce.

This summer, Entry Point! placed 20 students at 9 NASA sites, 30 students at 11 IBM locations, and four students at the National Science Foundation (NSF). The program has grown since 1996, when it was first launched with six students. Plans for 2000 include increasing the number of students participating in the program and expanding the sites to include other industries, such as chemistry, chemical engineering, and biotechnology.

Eight of the Entry Point! students this year were placed in the Washington, D.C., area and they capped off their internships with a visit to Capitol Hill. Robert Hill, a mechanical engineering student at the University of Illinois at Urbana–Champaign, got a chance to meet Senators Richard Durbin (D) and Peter Fitzgerald (R) from Illinois at a breakfast meeting. Hill, who has cerebral palsy and uses a wheelchair, completed an internship at NASA's Goddard Space Flight Center. "This was a really good opportunity for him to get some experience," said Robert's mother, Mary Hill, who was visiting him. "I was a little nervous since it was his first time on his own, but it worked out really well."

Unemployment figures demonstrate the need for such programs as Entry Point!. Currently, almost 75 percent of working-age Americans with severe disabilities remain unemployed. "If our society is to remain prosperous into the next century, we must create a diverse workforce that mirrors the population," said Virginia Stern, director of AAAS's Project on Science, Technology, and Disability. "It makes sense to invest in people with disabilities to help them lead productive lives; it also makes business sense in terms of what they will contribute to a company's bottom line or to the federal research enterprise."

Yet many people with disabilities who have completed degrees in science and engineering remain out of the workforce. According to a 1998 NSF report, almost one-third of scientists and engineers with disabilities are out of the labor force, compared with 11 percent of those without disabilities.



Entry Point! interns Royce James and Ivonne Mosquera tour the U.S. Capitol.

CREDIT: BILL FITZ-PATRICK

The Entry Point! program accepts students with all types of disabilities, which have included vision and hearing impairment, deafness, paraplegia, cerebral palsy, muscular dystrophy, and learning disabilities. Students meet the same high qualifications required in other corporate internship and NASA programs. That includes majoring in science or engineering, maintaining a B grade point average, and getting outstanding faculty recommendations.

Companies must be able to provide mentors as well as necessary accommodations, such as computers adapted to the interns' disabilities. Companies may invite students back on successive summers, with potential conversion to full-time employment after graduation. "A lot of students have extended from summer and turned their internships into co-op experiences, and several have joined IBM as full-time regular employees," said Jean Morrell, an IBM executive on loan to the Entry Point! program.

Jesse Leaman, a physics major at East Stroudsburg University in Pennsylvania, hopes to participate in a co-op with NASA next summer and eventually get hired. This summer, Leaman completed an internship at Goddard, where he studied astrophysics by exploring the structure and evolution of the universe. He also participated in the Entry Point! program last year, with an internship at the Marshall Space Flight Center in Huntsville, Alabama. Leaman is paralyzed from the neck down from a 1996 fall. He uses a voice-activated computer at

MEETINGS

Call for Resolutions

The next meeting of the AAAS Council will take place during the Annual Meeting and will begin at 8:00 a.m. on 20 February 2000 at the Marriott Wardman Park Hotel in Washington, DC.

Individuals or organizations wishing to present proposals or resolutions for possible consideration by the Council should submit them in written form to the AAAS Executive Officer Richard Nicholson by 1 November 1999.

Items should be consistent with AAAS's objectives and be appropriate for consideration by the Council. Resolutions should be in the traditional format, beginning with "Whereas" statements and ending with "Therefore be it resolved."

The Committee on Council Affairs will hold its open hearing on submitted items at 2:30 p.m. on 19 February 2000. Late proposals or resolutions delivered to the AAAS Executive Officer in advance of the 19 February meeting will be considered provided that they deal with urgent matters and are accompanied by a written explanation of why they were not submitted by the November deadline.

Summaries of the Council meeting agenda will be available during the annual meeting at both the AAAS Information Desk and in the AAAS Headquarters office. A copy of the full agenda will also be available for inspection in the Headquarters Office.

MEMBERSHIP

NEW AAAS DUES RATES APPROVED FOR 2000

The AAAS Board of Directors approved a dues increase for 2000 at its June meeting. The Board authorizes increases to cover two kinds of expenses: unavoidable costs associated with running AAAS and publishing *Science* and new expenses that add value to membership. Postage increases and developing new features for *Science* Online and other electronic products are examples of the kind of expenses the Board anticipated in setting the 2000 dues rates.

The new rates are effective for terms beginning after 31 December 1999. As listed below, they do not include postage for international members, which is additional.

Regular professional members	$112
Postdocs and K-12 teachers	$89
Emeritus members who receive *Science*	$80
Students	$64
Patrons	$250
Corporate	$1000
Spouse, supporting and emeritus members who do not receive *Science*	$50
Libraries and institutions	$340
High Schools	$275

Full-text *Science* Online will continue to be available to members receiving *Science* for an additional $12 above dues. Institutions may purchase subscriptions to *Science* Online with site-wide desktop access or with access limited to workstations physically located in the library. For further information, librarians should contact AAAS or their catalog agents, or go to http://www.sciencemag.org/subscriptions/libinfo.shtml on the web.

All members whose membership term expires during 2000 will be advised of the new dues rates on their renewal notices.

Member dues and voluntary contributions form the critical financial base for a wide range of AAAS activities. For more information, contact the AAAS Membership Office at 202-326-6417, http://www.aaas.org/membership/.

work and an electric wheelchair. "My mentor wants me to be a space physicist, but I want to be an astrophysicist," Leaman said. "There's a difference, you know."

New and developing assistive technologies have allowed persons with disabilities to function effectively in the workplace. Speech recognition, print-to-voice output, cochlear implants, vibrating pagers, and other telecommunication devices are among the technologies that remove barriers for persons with disabilities. Some accommodations, such as a wheelchair ramp or a TDD line, need not be expensive. According to the President's Committee on Employment of People with Disabilities, the average cost of a job accommodation for a person with a disability is $200.

Entry Point! also allows students an opportunity to contribute to the field of scientific research. Royce James, a physics major at New Mexico State University who has a learning disability, completed an internship with NSF this year as well as one with Goddard the year before. During his internship at NASA, James studied space plasma physics, working with data gathered by the Hawkeye satellite. The satellite, which gathered information from 1974 to 1978, was launched six days after James was born, so he felt a certain affinity to the project. His work was recognized this summer when he was chosen as a speaker at the International Physics Conference in Helsinki.

EXHIBIT

The Art of Science

A scientist who views a photograph of the night sky may think about the birth and death of stars or the formation of galaxies. An artist, however, will see new forms and shades of color. Science and art will come together this fall, when AAAS will install at its building a large-size photograph of the Horsehead Nebula taken by scientist David Malin.

The Horsehead Nebula: The horsehead shape is a dusty cloud silhouetted against a backdrop of glowing gas.

Measuring 19 feet high and 31 feet wide, the photo will be displayed in an outdoor niche of the William T. Golden Center for Science and Engineering specifically designed for this type of exhibit. The photo of the nebula, a distinct anomaly in the constellation Orion, was made with the UK Schmidt Telescope, one of two operated by the Anglo-Australian Observatory. The 3M Corporation contributed to the production and installation of the photo.

"The niche was designed to showcase the intersection of art and science, and the installation of David Malin's extraordinary photo of outer space will do just that," said Geraldine Graves, acting director of development at AAAS.

The photo will also help AAAS fulfill its goal of using its building to increase the public understanding of science. The Center for Science and Engineering not only houses the association's offices, but also offers a place where scientists, policymakers, and the public can meet and discuss science and technology issues. Since its founding in 1848, AAAS has played a vital role in the education of policymakers and the public about science.

"I'm interested in using these pictures to capture the public's interest in science," Malin said. "The photos reveal an unseen world that most people are not aware of. They are surprised at the beauty of the sky and leave knowing a little more about the distant universe than they did before. The pictures make the point that science can be spectacular and beautiful."

Malin also will deliver a lecture on astronomy and photography at AAAS to science students from local high schools. He said the photos are especially helpful in communicating science to young people. "Many young people have never seen a dark sky," Malin said. "They're blown away by these photos and don't believe they're real."

In addition to hosting a dedication ceremony for the installation of the photo, AAAS will exhibit about 40 photographs of outer space taken by Malin. The photos, on loan from the National Academy of Sciences, will be displayed at AAAS until 15 January.

Malin is a photographic scientist with the Anglo-Australian Observatory and adjunct professor of scientific photography at the Royal Melbourne Institute of Technology. His work on the photographic detection of extremely faint objects has led to many important discoveries, including the discovery in 1989 of one of the most massive galaxies, now known as Malin-1. His photographs were recently featured on a series of Australian postage stamps and in the film *Contact*. Malin has authored or co-authored five books, including a history of Australian astronomy, and lectures widely on astronomy and photography.

Malin says he's looking forward to speaking to the high-school students at AAAS. "They're always asking squirrelly questions," Malin said. "They catch you off guard."

CREDIT: © AAO/ROE, PHOTOGRAPH FROM UK SCHMIDT PLATES BY DAVID MALIN

CORRECTION

In the article "Scientists Trade Test Tubes for Reporter's Notebooks" (30 July 1999, p. 767), the fellow quoted from KUNC in Greeley, Colorado, was Tanya Ditschun, a graduate student in food science at the University of California–Davis. Ilana Harrus is a postdoctoral student at the Harvard-Smithsonian Center for Astrophysics.