

US Team Grabs Top Honors at Physics Olympiad

The US physics team achieved the top overall score of the 54 countries participating in the 34th International Physics Olympiad in Taipei, Taiwan, in August. The five high-school students won three gold and two silver medals and earned four special prizes. South Korea, with three gold and two silver medals, came in second, and Taiwan placed third.

Gold medalist Pavel Batrachenko of Rochester, Minnesota, was the overall winner at the Olympiad, and shared the prize for the best experimental score with a student from Thailand. Other US gold medal winners were Chintan Hossain of Wilmington, Delaware, and Daniel Gulotta of Doylestown, Pennsylvania. Gulotta also won the prize for the best score on the theoretical portion of the Olympiad. Emily Russell of Yorktown Heights, New York, won a silver medal and took the prize for the best score among female participants. Immanuel Buder of Alexandria, Virginia, took home a silver medal.



The winning 2003 US physics team includes (left to right) Daniel Gulotta, Emily Russell, Chintan Hossain, Immanuel Buder, and Pavel Batrachenko.

"We're ecstatic about the success of the team—they worked really hard and they deserve it," said Bernard Khoury, executive officer of the American Association of Physics Teachers. The association and the American Institute of Physics are the primary sponsors of the team. "We've never had this kind of confluence of great students before. It's all the more remarkable, since the event might

never have been held."

The students' participation in the Olympiad was uncertain because of the SARS outbreak in Taiwan (see PHYSICS TODAY, July 2003, page 35). The team also lost two of its original members who, because of that uncertainty, decided to attend other competitions. The team was accompanied by academic director Mary Mogge of California State Polytechnic Univer-

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sity, Pomona, and senior coach Bob Shurtz of the Hawken School in Gates Mills, Ohio.

As in previous years, the competition consisted of a five-hour theory section and a five-hour experiment section. For example, one of this year's problems required that students observe and determine the optical properties of a nematic liquid crystal cell.

When not competing, students enjoyed colloquiums, sightseeing tours of landmarks in Taiwan, and social activities with participants from other countries. "It was an incredible experience to spend time with students from a dozen different countries in such a relaxed and friendly setting," said Russell.

Next year, the Olympiad will be held in July in Pohang, South Korea.

Anthony Tweed

Report Card Shows Improvements in High-School Physics

High-school physics enrollments are growing, girls are filling nearly half the seats in physics classrooms, and salaries of high-school teachers are rising. In those areas, high-school physics gets an A, though other areas still need improvement, according to a recent report by the American Institute of Physics, which surveyed more than 3000 public and private high schools across the US.

In 2001, 31% of students took physics in high school, compared with only 20% in 1987. Contributing to the rise, the report says, are an increase in the percentage of high-school graduates who attend college and a perception that colleges have stiffened

their entrance requirements. Because of the greater demand for physics, high schools are offering more advanced, honors, and conceptual physics courses. According to the report, conceptual physics courses are "likely to have had the biggest impact on enrollments."

Girls approached parity with boys in high-school physics classes in 1997—the year studied in AIP's previous high-school physics survey—and dipped slightly in 2001, from 47% to 46%. Hispanic and African American students, traditionally underrepresented in physics classes, accounted for nearly half of the absolute gain in physics enrollments in the past decade. In 2001, 21% of Hispanic and 22% of African American high-school students took physics, while 47% of their Asian American and 33% of their white schoolmates did.

In 2001, the corps of high-school physics teachers numbered 21 000. That's an increase of about 15% since 1987; during the same period, the number of students taking high-school physics grew nearly 50%, from 624 000 to 931 000. To handle the increased enrollments, teachers now teach more physics classes. As a result, the report says, a higher proportion of physics teachers than in earlier surveys see themselves as physics specialists and say they are better prepared to teach physics.

Only about a third of high-school physics teachers majored in physics or physics education in college, though most majored in math or a science discipline.

Salaries for high-school physics teachers have outpaced inflation over the past 15 years. The median annual starting salary was \$28 000 in 2001, while for experienced high-school

physics teachers the median was \$49 100. Nevertheless, teachers holding a bachelor's degree in physics earned on average almost 50% less than physics bachelors working in government and industry.

AIP also reports that about a quarter of high-school physics teachers are members of the American Association of Physics Teachers and around a third are members of the National Science Teachers Association, fractions that have been steady over the past 15 years. Those figures include overlap, and AIP found that, of the more than half of high-school teachers who belong to neither organization, few have established other networking forums with their peers.

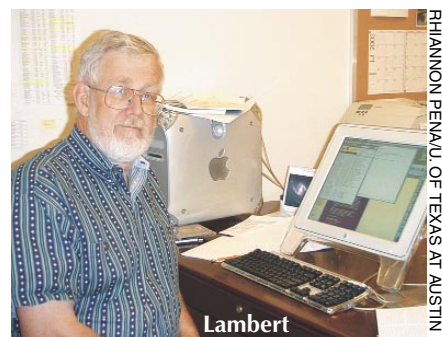
For the first time, AIP surveyed teachers about "physics first," the movement that advocates switching the order in which the sciences are taught in high school (see *PHYSICS TODAY*, September 2001, page 11). Most respondents strongly opposed switching to physics first. However, the report notes, few teachers have had direct experience with putting physics first in the science curriculum.

These and other findings about students, teachers, and courses in US secondary schools are reported in *Broadening the Base: High School Physics Education at the Turn of a New Century*. Single copies of the report may be obtained free of charge from AIP, Statistical Research Center, One Physics Ellipse, College Park, MD 20740; e-mail stats@aip.org. The report may also be downloaded from the Web at <http://www.aip.org/statistics/trends/hstrends.htm>.

Toni Feder

News Notes

McDonald Observatory director. Cosmochemist David Lambert assumed the directorship of the McDonald Observatory on 1 October. Located in West Texas, the observatory is run by the University of Texas at Austin, where Lambert has been on the astronomy faculty since 1969. He



Lambert

