

High school physics enrollment hits record high

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"More U.S. high-school students are taking physics than ever before, and the number of physics bachelor's degree recipients in the nation has increased 31 percent since 2000, according to new data presented today by the American Institute of Physics (AIP). In addition, physics bachelor's degree recipients are eight times more likely to go on to earn any kind of PhD than those with non-physics bachelor's, the new data show. Michael Neuschatz, senior research associate at AIP's Statistical Research Center, will present these new data in a physics education symposium entitled --"Overcoming Gravity"-- at this week's joint meeting of the American Association of Physics Teachers (AAPT) and the American Astronomical Society in Seattle.

"Good physics education is the backbone of a first-class workforce in science, technology, engineering, and mathematics," said Toufiq Hakim, AAPT's Executive Director, who organized the "Overcoming Gravity" session. "The future of U.S. economic competitiveness hinges on strong science education in our country."

Presenting new data that encourage this outlook, Neuschatz will show that enrollment in high school physics classes is up and likely to continue increasing. The data show more than 30 percent of high school seniors have taken physics classes, more than ever before. This percentage has been rising steadily since the mid-1980s.

In addition, the percentage of 18-year-olds who have taken physics is also at an all-time high in the nation. In 1930, 29 percent of 18 year-olds

in the U.S. graduated high school, rising to 77 percent by 1970. In 1930, only 15 percent of 18 year-olds took physics. In 2005, says Neuschatz, the figure increased to a high of 25 percent.

Girls and minorities are also enrolling in high school physics classes at higher rates. Female students who made up only 39 percent of high school physics students in 1987 now represent 47 percent. The percentages of African Americans and Latinos taking high school physics classes have more than doubled since 1990, moving from 10 percent of African Americans and 10 percent of Latinos to 23 percent and 24 percent, respectively.

Neuschatz attributes these surges to the wider variety of physics classes now available to students, whereas in the past students often only had a choice of whether or not to take the single type of physics class that was offered. A higher percentage of students than ever before is now taking conceptual, or non-computational, physics classes, as well as honors and Advanced Placement physics classes. In addition, getting a physics class on one's high school transcript may be considered appealing by students applying to colleges seeking applicants who have taken challenging classes.

The number of physics bachelor's degrees earned in the United States is also on the rise, up more than 31 percent since 2000, to over 5000 students in 2005. For example, enrollment in physics classes at the University of Washington-Seattle has seen a recent boom, mimicking national trends of increased college physics class enrollment.

Neuschatz will suggest ideas to continue this increase in physics majors and physics-class enrollments. His suggestions include marketing physics classes to a wider variety of non-science majors and training more physics majors to become high school physics teachers. In 2005, only 23 percent of high school physics teachers had bachelor's degrees in physics

or physics education. With enough recruitment, Neuschatz says, the figure could someday rise to 50 percent.

Physics bachelor's recipients are far more likely to pursue advanced degrees than recipients of non-physics degrees. While 63 percent of non-physics bachelor's degree recipients stop at the bachelor's level, only 39 percent of physics bachelors do not pursue further degrees. Thirty-six percent of physics majors earn master's degrees. Most strikingly, 25 percent of physics bachelor's recipients go on to earn PhDs, compared to three percent of non-physics bachelor's degree recipients. Neuschatz says that he has not seen any other major with a higher percentage of bachelor's recipients going on to earn PhDs.

Source: American Institute of Physics

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