

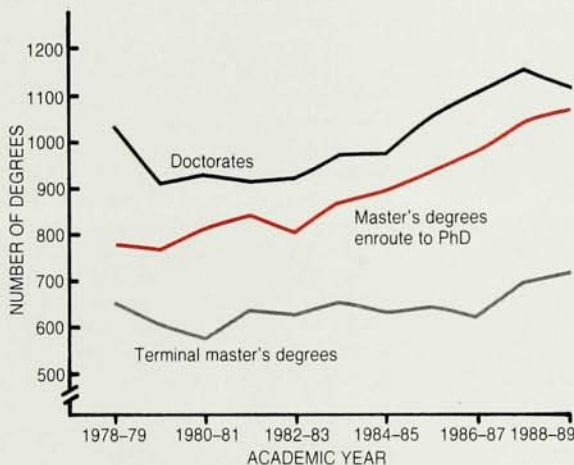
AIP SURVEY FINDS MORE PHYSICS GRAD STUDENTS, FEWER UNDERGRADS

Is the cup half empty or half full? Depending on the weight you attach to one or another indicator, the latest figures on US physics programs may strike you as good news or not-so-good news.

According to the 1989 survey of enrollments and degrees conducted by the American Institute of Physics, the number of US students in the first-year graduate population fell by 5.5% from 1988 to 1989, while the proportion of first-year foreign students reached an all-time high of 44%. This is the second year in a row that the size of the entering graduate population has dropped, despite serious efforts to recruit more Americans into physics graduate work. For the first time in five years, the number of new physics PhDs also shrank: There were 1100 physics PhDs granted in 1989, a drop of 3% from 1988.

On a more positive note, there were 1780 master's recipients in 1989, representing an increase for the ninth year in a row in the number of master's degrees awarded. According to Susanne D. Ellis, the survey's senior author, the increases have been a result of growth in the number of students getting master's degrees en route to PhDs. From 1980 to 1989, the size of that group expanded from 760 to 1100. Ellis is therefore projecting increases in the number of physics doctorates over the next three years, peaking at about 1260 PhDs in 1992. The physics graduate student population has been growing slowly but steadily since 1979, when 9600 were enrolled, to 13 700 in 1989.

The survey found that during the past five years the number of juniors and seniors majoring in physics has declined steadily. Likewise, from 1988 to 1989, the number of freshmen physics majors—as estimated by the chairpersons of physics departments—fell by 4%. But even with sagging undergraduate enrollments, US schools have continued to award about the same number of physics bachelor's degrees since 1985, about



Number of students taking master's degrees with intention of going on to earn doctorates in physics has increased notably. Trend was masked initially by presumption that students at non-PhD granting institutions would not seek doctorates. Growing numbers of foreign students at such institutions suggested that presumption would prove wrong.

5200 per year.

Enrollment in US astronomy programs showed substantial growth in 1989, as did the number of astronomy bachelor's and master's degrees awarded. For example, the number of master's degrees jumped from 75 in 1988 to 93 in 1989, a 24% increase. The number of first-year graduate students grew by 10%, to 186. The

number of astronomy PhDs awarded in 1989 was the same as in the previous year: 94.

Copies of the 1989 Survey of Enrollments and Degrees can be obtained from Susanne Ellis, Education and Employment Statistics Division, American Institute of Physics, 335 East 45 Street, New York NY 10017.

—JEAN KUMAGAI

US TEAM FACED TOUGH QUESTIONS IN LATEST PHYSICS OLYMPIAD

Alexander Barnett, a high school student from Great Britain, was the top scorer in the XXI International Physics Olympiad held in Groningen, The Netherlands, from 5-13 July. The result was a bit of a disappointment for the United States, which came away with the top honor last year. But the five students representing the US this year did garner two bronze medals and an honorable mention, and all the US contestants did well.

The twenty-first Olympiad—the fifth in which a US team has participated—drew 160 competitors from 32 countries. This year's questions proved to be particularly tough, says

Bernard V. Khoury, the new executive officer of the American Association of Physics Teachers, who accompanied the US team. There were only six gold medals awarded this year, compared to 11 last year, and overall there were 30% fewer medals than last year.

The number of medals is based on the average of the top three scores achieved on the Olympiad exam. To earn a gold medal, a student had to get at least 90% of that average. Reflecting the exceptional difficulty of this year's competition, the average score on the theoretical section was 9.8 out of a possible 30 and the average score on the experimental