DOES IT MATTER WHERE I GO TO COLLEGE?

EFFECTS OF PHYSICS DEPARTMENTS ON STUDENT OUTCOMES

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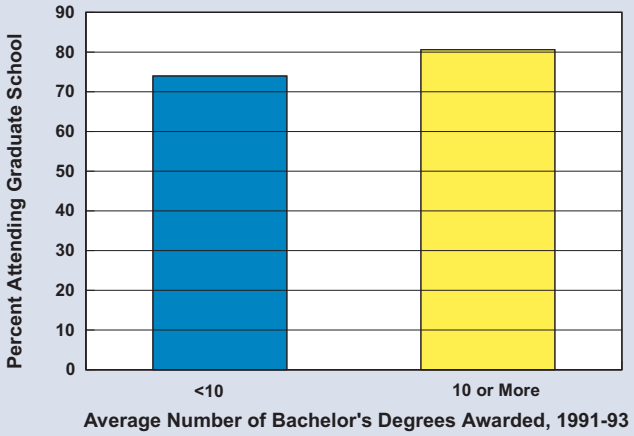
HIGHLIGHTS

- Does the type of department make any difference in the post-graduation lives of physics bachelors? This report compares outcomes for physics bachelors from large and small departments, defined by number of bachelor's degrees awarded. It also looks at differences in physics bachelors' outcomes between departments that grant PhDs in physics and those that award only a bachelor's degree in physics.
- Physics bachelors from large departments are more likely to attend graduate or professional school with the intention of earning a degree in any field than physics bachelors from smaller departments **(Figure 1)**.
- Graduates of large departments rate their physics and math preparation for a career more highly than graduates of smaller departments **(Figure 2)**. Graduates from departments that offer only bachelor's degrees in physics rate their career communication and teamwork preparation more highly than graduates of departments that offer PhDs in physics **(Figure 3)**.
- Physics bachelors are more satisfied with the department climate when they graduate from departments that do not offer graduate degrees in physics **(Figure 4)**.
- Many very important outcomes are *not* affected by size and type of department, including salary, working in a science or technology job, and length of time spent looking for work **(Table 1)**.
- Physics departments whose bachelors were very satisfied with the department's climate in the early 1990s had higher numbers of graduates per FTE faculty member in the mid- to late-1990s **(Figure 5)**. This occurred in spite of the overall decline in the number of physics bachelors during the 1990s.

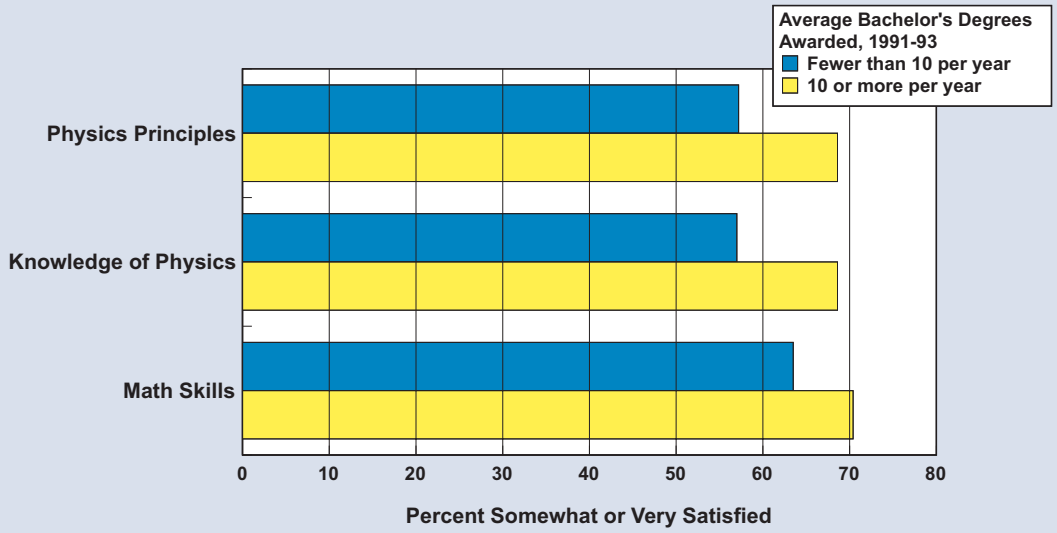
American Institute of Physics, 2004

Figure 1. Percent of Physics Bachelors Attending Graduate/Professional School, by Undergraduate Department Size



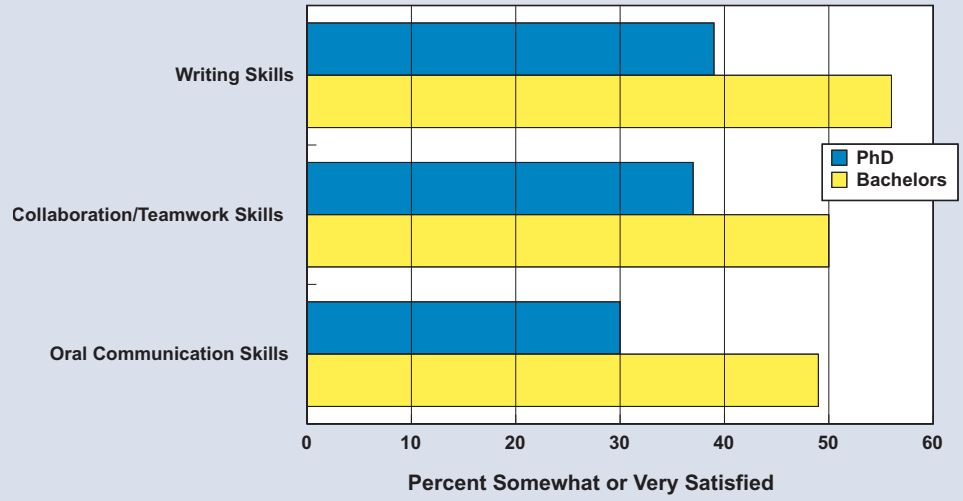
Source: American Institute of Physics, Statistical Research Center: *1998-99 Bachelors Plus Five Study* and *1991-93 Enrollments and Degrees Report.* Data are significant at $\alpha \leq .05$.

Figure 2. Percent Respondents Indicating High Satisfaction with Undergraduate Career Preparation, by 1991-93 Average Number of Bachelor's Degrees Awarded in their Department



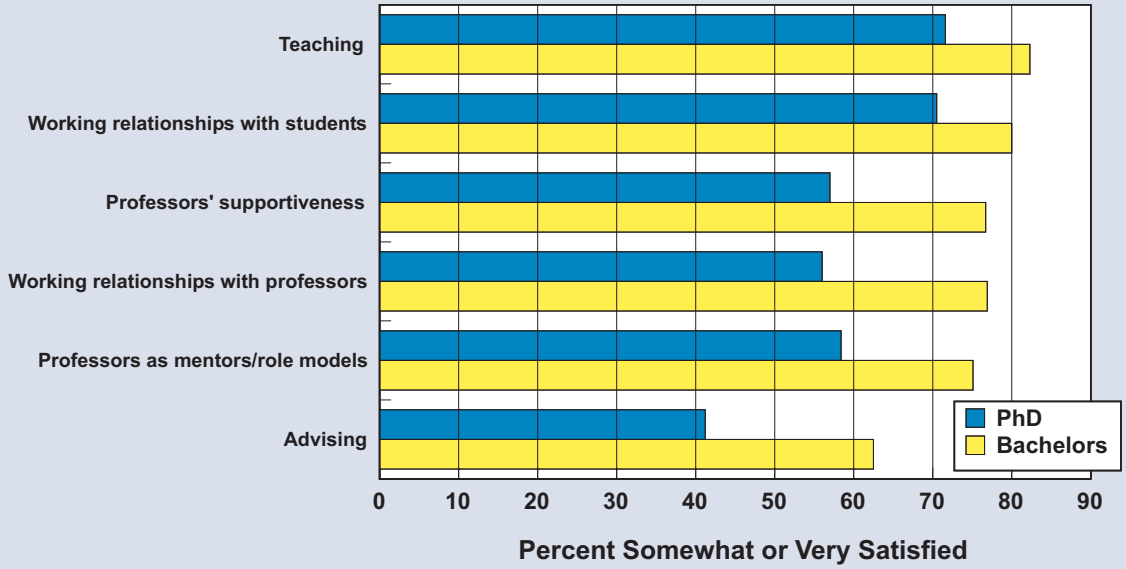
Source: American Institute of Physics, Statistical Research Center: *1998-99 Bachelors Plus Five Study* and *1991-93 Enrollments and Degrees Report.* Data are significant at $\alpha \leq .05$ in multivariate models.

Figure 3. Percent Respondents Indicating High Satisfaction with Undergraduate Career Preparation, by Department Type



Source: AIP Statistical Research Center: *1998-99 Bachelors Plus Five Study.* Data are significant at $\alpha \leq .05$.

Figure 4. Percent Respondents Indicating High Satisfaction with Facets of Undergraduate Education, by Department Type



Source: AIP Statistical Research Center: *1998-99 Bachelors Plus Five Study.* Data are significant at $\alpha \leq .05$.

Table 1. Things That Are Not Affected by Type of Department or Size of Department

Whether or not physics bachelors held a career path job

Whether or not physics bachelors work in a STEM job

Number of interviews for a first career path job

Length of time spent looking for a first career path job

Number of offers for a first career path job

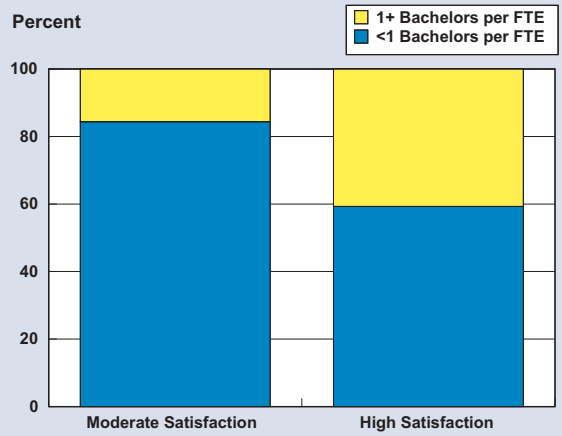
Perception that physics degree helped them get a first career path job

Number of university resources used to find a first career path job

Salary, when controlling for type of job, degree, years of experience, gender, and hiring bachelor's level employees

1998-99 Bachelors Plus Five Study

Figure 5. 1994-2001 Mean Ratio of Bachelor's Degrees Awarded to Full-Time Equivalent (FTE) Physics Faculty, by Student Satisfaction with Undergraduate Physics Climate



Student Satisfaction is the mean response value of students' reported satisfaction with their undergraduate program's teaching; professors' mentoring/role modeling skills; advising; supportiveness of professors; and working relationships with both professors and other students.

Data are statistically significant at $\alpha \leq .05$

Source: AIP Statistical Research Center, *1994, 1996, 1998, 2000 Academic Workforce Report*; *1994-2001 Enrollments and Degrees Report*; and *1998-99 Bachelors Plus Five Study*.