What Do Physicists do with a Bachelor's Degree?

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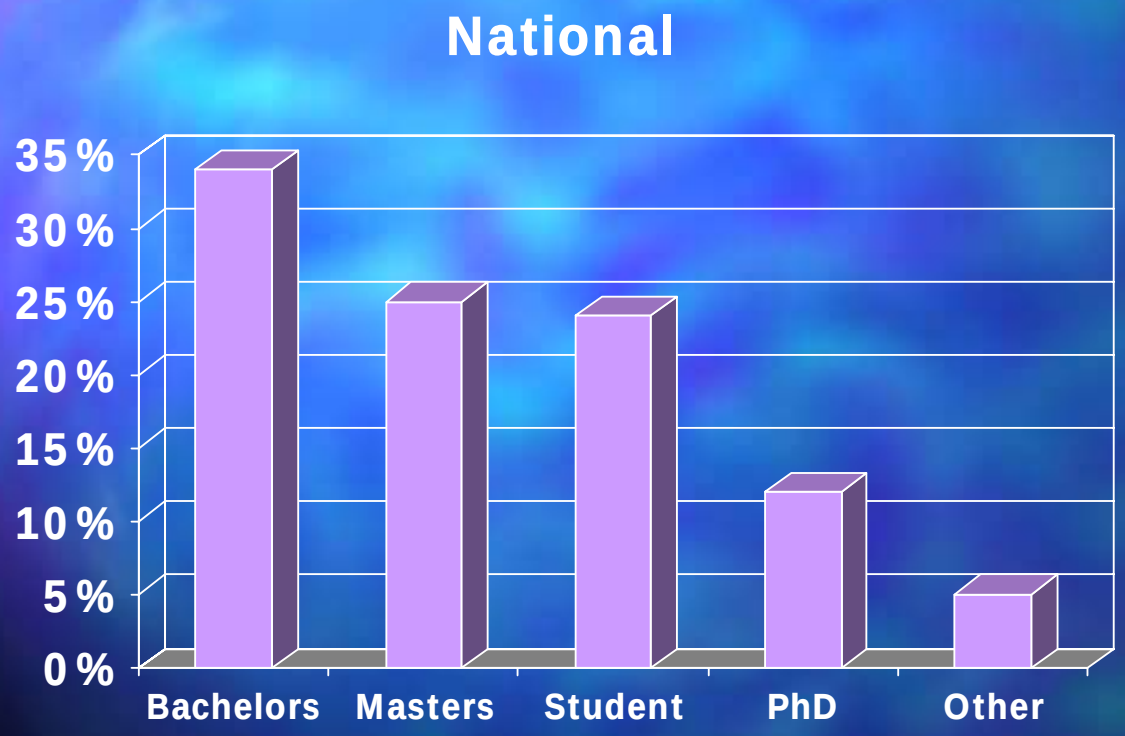
Introduction

- Education Choices
- Career
  - choice
  - change
- Continuing Education
- Job Responsibilities
  - skills
  - activities
- Advice

Background of AIP Study

- Physics Bachelors 5-8 years from degree
- Conducted in 1998-99
- Degrees received in 1991-93
  - recession
  - explosion of IT industry and internet
- 50% response rate from sample

Highest Degree



BYU

- Employment (30%)
- Graduate School (70%)

Degree Choices

- 40% intended to get graduate degree
- Another 15% went to some additional schooling
- 25% are in school, but not primarily students
- Only about 15% of this group never attended school after bachelor's degree

Continued Education

- ~55% attended grad/prof school
  - 40% with intention of degree (but didn't)
  - ~15% no intention of degree
- ~25% in school, but not primarily student
- 15% never attended school after receiving their bachelor's degree
- Those dropping out of graduate school did so for reasons other than poor preparation.

Employment

- 96% currently employed
- Most of the unemployed are stay-at-home mothers
- One two were unemployed and looking for word

Table 1. Type of Employment of Physics Bachelors 5 to 8 Years After Graduation

Type of Job	Percent
Software	24
Engineering	19
Science & Lab Technician	9
Management, Owner & Finance	20
Education	12
Active Military	6
Service and Other Non-Technical	10

Based on physics bachelors with no additional degrees who are not primarily students.

AIP Statistical Research Center, 1998-99 Bachelors Plus Five Study

Career Change

Table 2. Change To and From Science-Related Jobs for Physics Bachelors

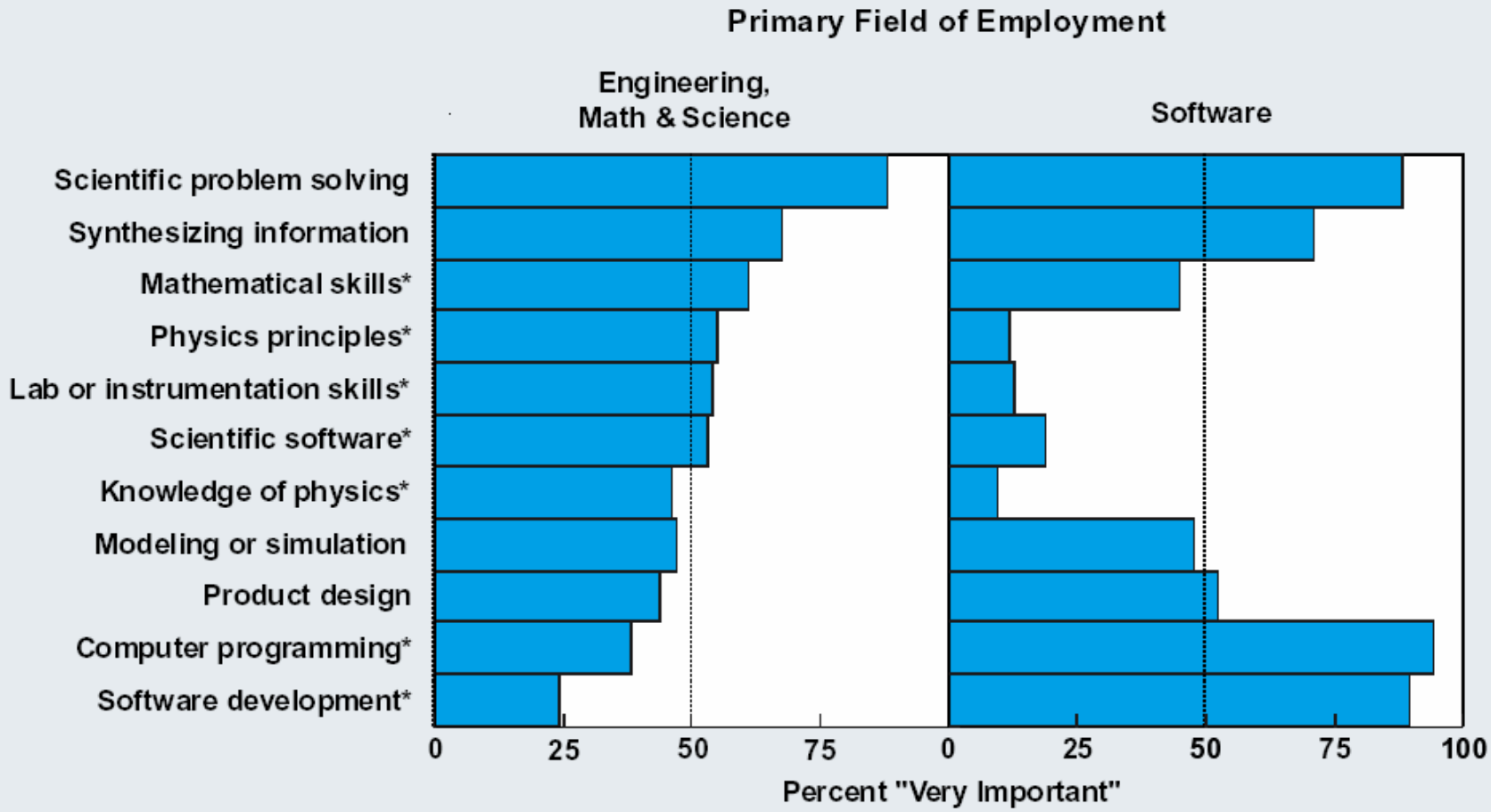
		Current Job*		Number of Respondents
		Non-Science	Science	
First Career Path Job	Non-Science	76%	24%	86
	Science	7%	93%	246

*Current job is job at time of survey, 5 to 8 years after graduation.

Based on physics bachelors with no additional degrees who are not primarily students.

AIP Statistical Research Center, 1998-99 Bachelors Plus Five Study

Figure 2. Knowledge and Skills Rated as Important by Physics Bachelors 5 to 8 Years After Graduation



These data reflect the percentage who chose 4 or 5 on a 5-point scale where 1 = completely unimportant and 5 = essential. Based on physics bachelors with no additional degrees who are not teachers or primarily students.

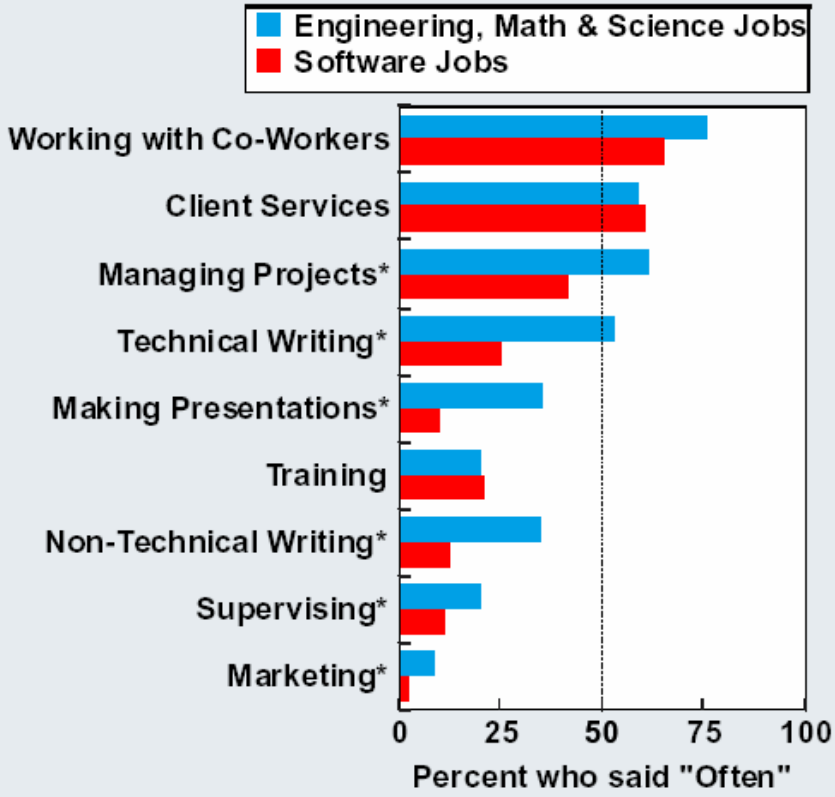
*Differences between the two fields of employment are significant at $\alpha \leq .05$

AIP Statistical Research Center, 1998-99 Bachelors Plus Five Study

Job Activities

- Supervisory Roles
  - SME more likely in management
  - Software just as likely to hire others (mostly CS)
  - SME most like to hire engineers w/ physics as a close second (many more engineers in market than physicists)

Figure 3. Time Spent on Job Activities by Physics Bachelors 5 to 8 Years After Graduation



These data reflect the percentage who chose 4 or 5 on a 5-point scale where 1 = none and 5 = extensive. Based on physics bachelors with no additional degrees who are not teachers or primarily students.

*Differences between the two fields of employment are significant at $\alpha \leq .05$.

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Difference with a PhD

Skill	Low	Med	High
Oral Presentation	8%	12%	80%
Writing reports/articles	13%	16%	72%
Critical thinking	2%	7%	90%
Analyzing data	10%	13%	76%
Designing research projects	20%	16%	63%
Work in interdisciplinary context	14%	18%	62%
Grant writing	52%	14%	33%
Management responsibilities	20%	18%	62%
Financial management	42%	26%	32%
Classroom teaching	64%	9%	27%

Education Advice

- Seek opportunities to develop communication skills
  - Writing
  - Presentations
  - Group projects
- Management skills are helpful
  - Leadership opportunities
  - Finance/project management
- General scientific skills are important beyond specific knowledge

Job Seeking Advice

- Choose first job carefully, you'll usually stay there.
- Emphasize unique skills
  - Breadth and flexibility
  - Problem solving abilities
  - Non-technical skills (church/extra-curricular)
    - Group work
    - Writing
    - Presentation

On the Job Advice

- Networking
- Learning non-technical skills
- Continuing education
  - For improving current job and maintaining flexibility in opportunities
  - Expecting to go back and get a graduate or professional degree later is probably unrealistic
  - Mentoring is critical

Summary

- A terminal bachelors degree in physics qualifies you for a good job.
  - Interesting
  - Uses training well
  - Secure (low unemployment)
- Continuing education should be an expectation.
- Non-major classes provide important preparation in job skills.
- Don’t forget teaching as a career

More Information

- AIP Pub. Number R-433
- www.aip.org/statistics
- Am. J. Phys., Vol. 70, No. 11, November 2002