

Physics Workforce Latest Data on Supply and Demand

**American Physical Society
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Acknowledgements

Data Sources

AIP

NSF

US Department of Education

SRC Staff

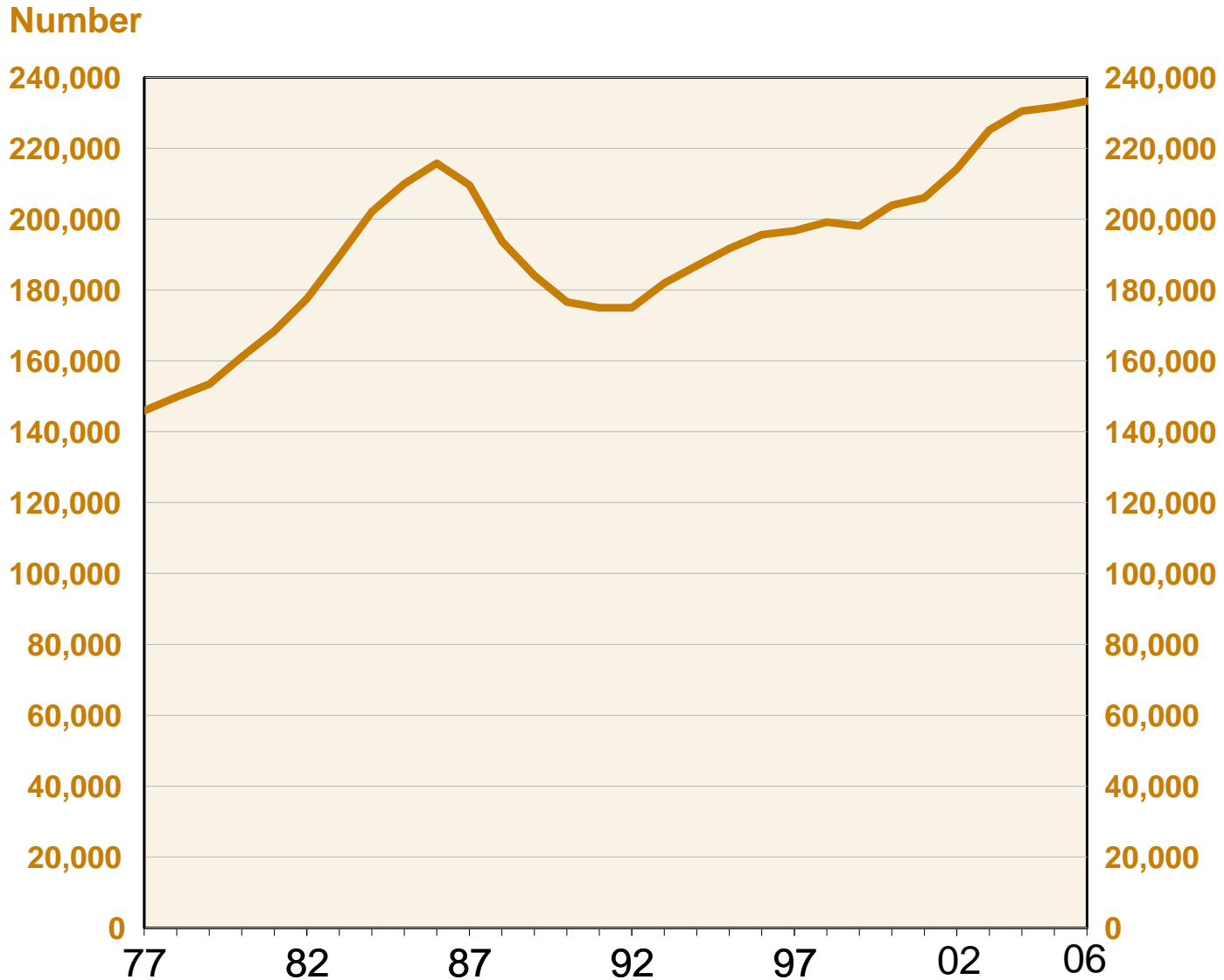
Patrick Mulvey

Starr Nicholson

Rachel Ivie

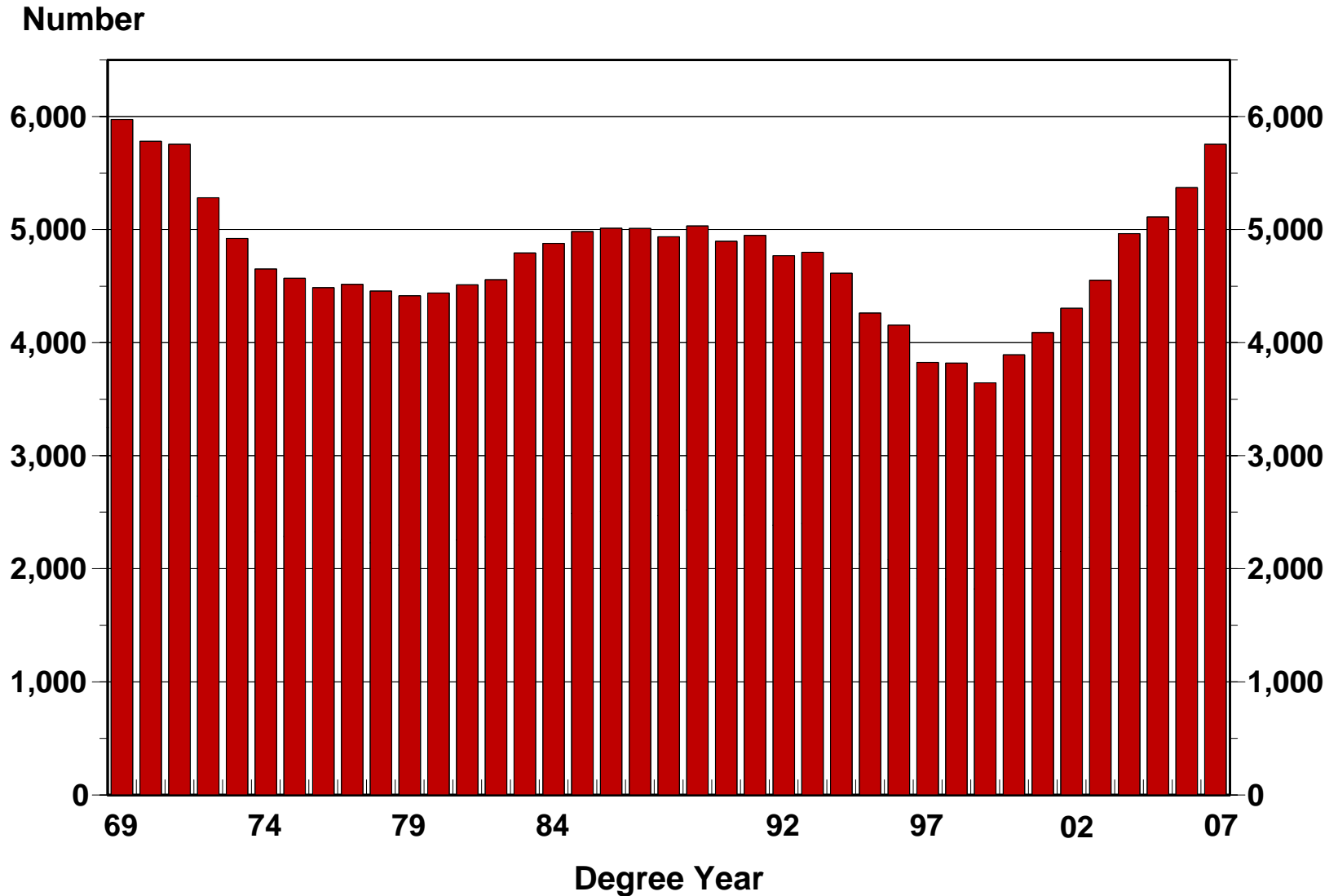
Bachelor's Degrees

Natural Sciences, Math & Engineering Bachelor's Produced in the US, 1977 to 2006.



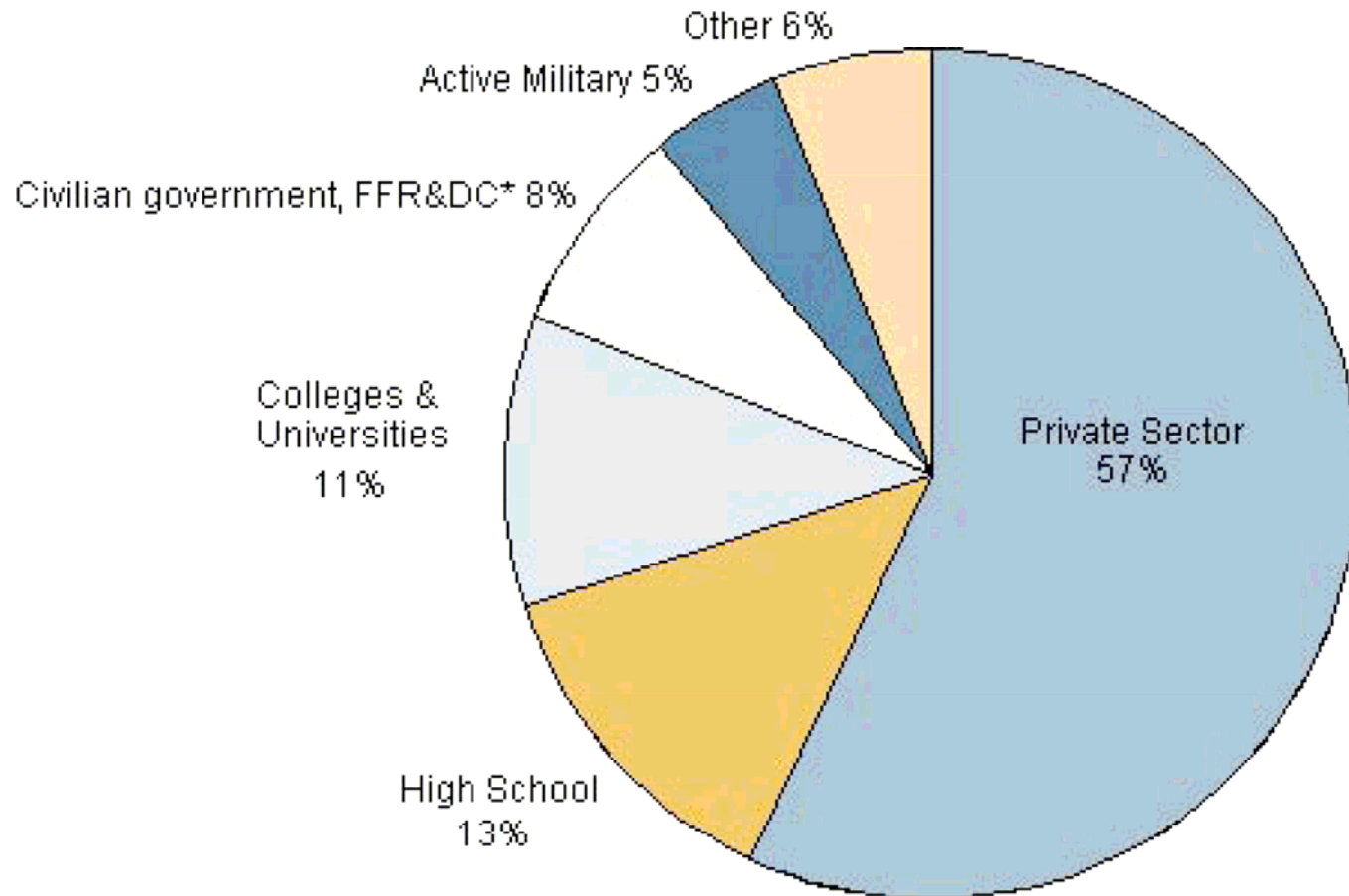
AIP Statistical Research Center, Enrollments and Degrees Report and
NCES Digest of Education Statistics

Physics Bachelor's Degrees, from 1969 through 2007

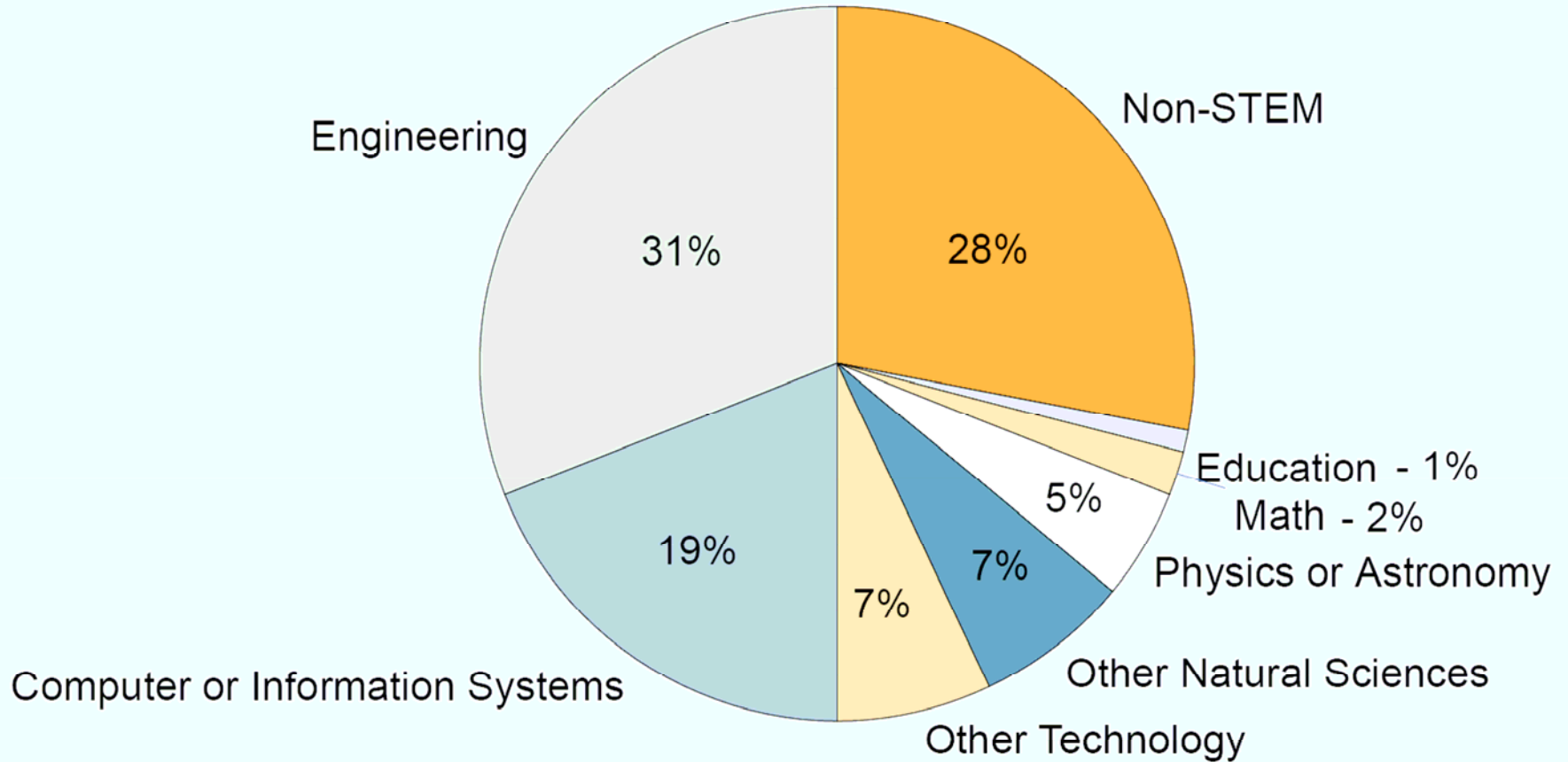


Source: Statistical Research Center

Employer distribution for full-time US employed physics bachelors, classes of 2005 & 2006.



Field of Employment for Physics Bachelors in the Private Sector, Classes of 2005 and 2006



STEM: Science, Technology, Engineering and Math

AIP Statistical Research Center, Initial Employment Survey.

Common Job Titles

Recent Physics Bachelors in the Private Sector

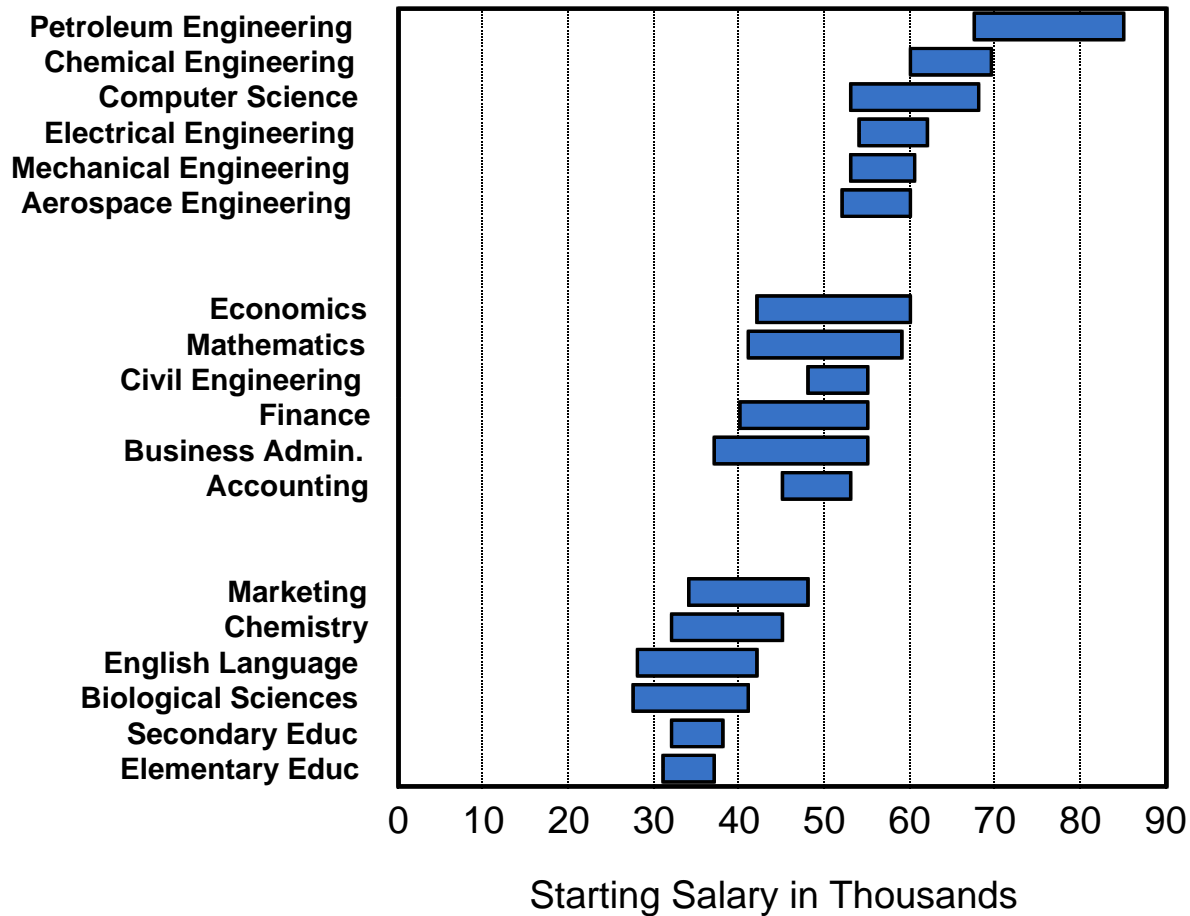
Design engineer
Electrical engineer
Process engineer
Project engineer
Quality assurance engineer

Programmer
Software engineer
Systems analyst
Systems engineer
Software developer

Scientist
Lab technician
Research associate
Research analyst
Research assistant

What's a Bachelor's Degree Worth?

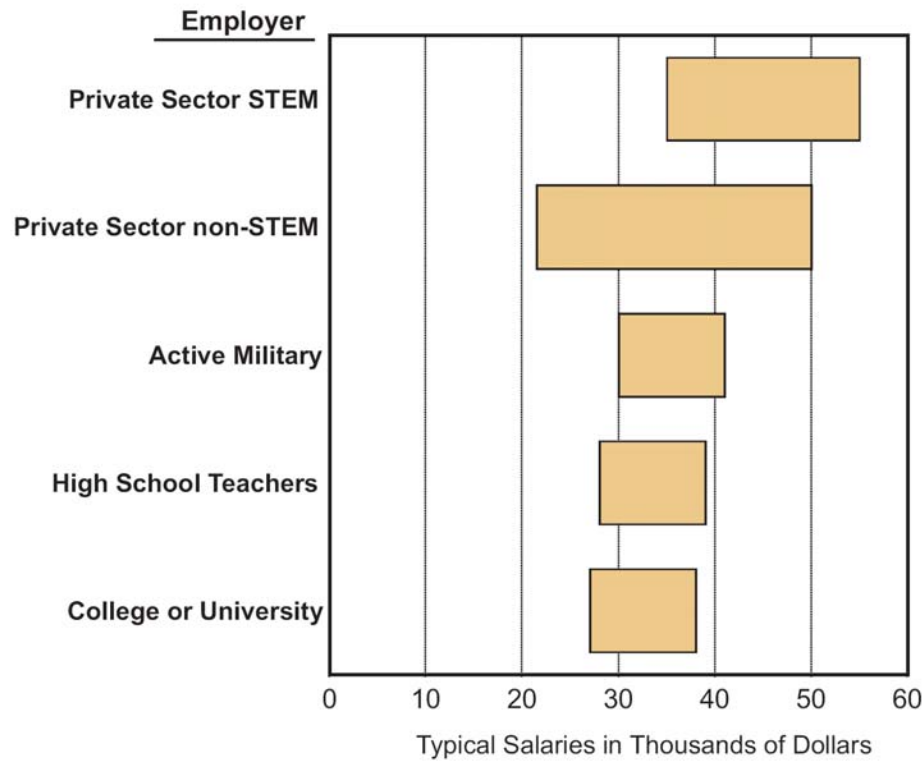
Job offers for 2007-08 graduates



AIP Statistical Research Center compiled from data collected by the National Association of Colleges and Employers.

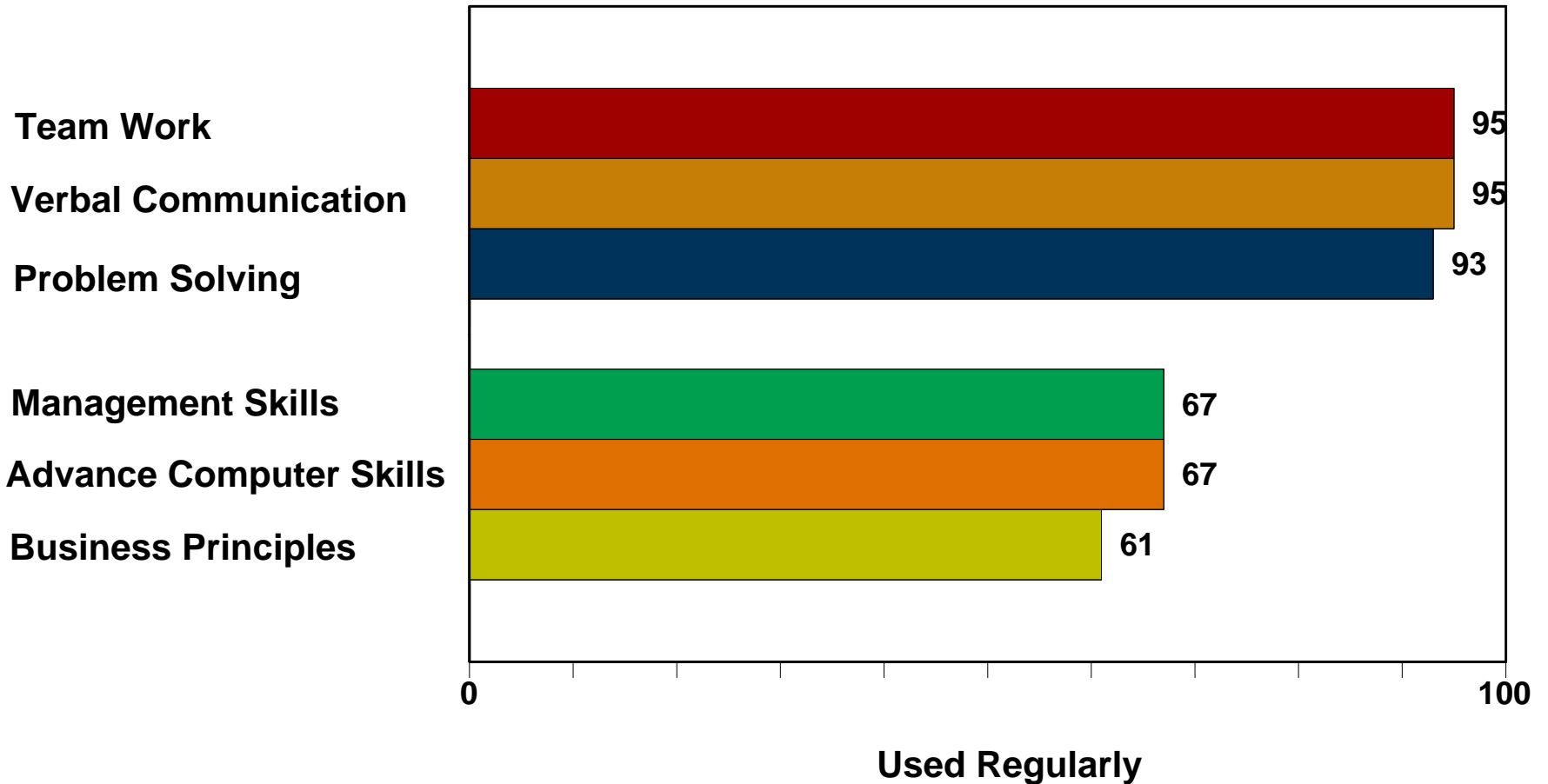
Bachelor's Starting Salaries

Physics Bachelor's of 2005 & 2006



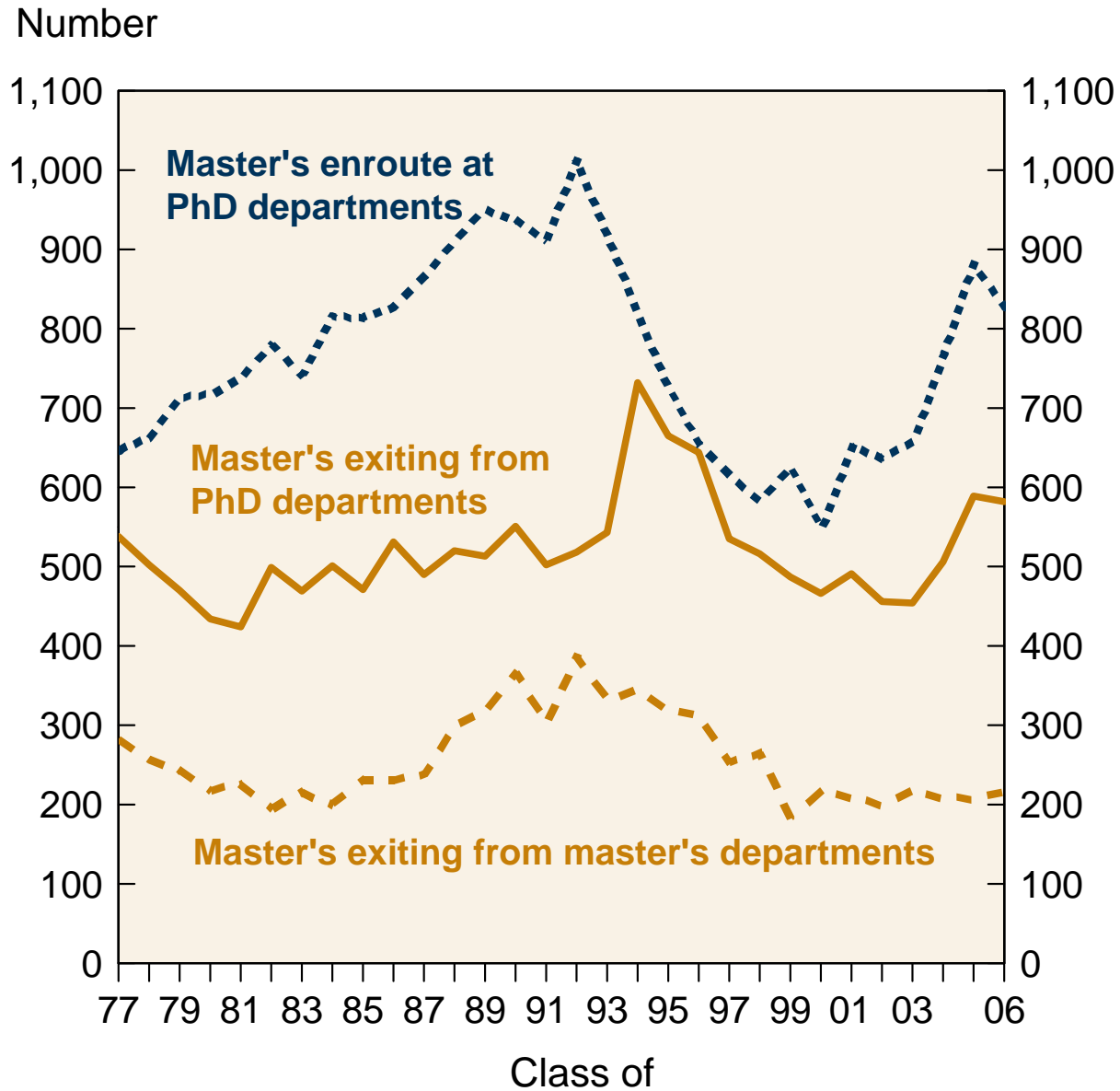
Typical salaries are the middle 50%, i.e. between the 25th and 75th percentiles.
STEM refers to positions in Science, Technology, Engineering, and Math.

Skills Used Regularly by Physics Bachelor's Working in the Private Sector, Class of 2007.



Masters Degrees

Master's degrees conferred by type of degree and department, 1977-2006.



**Departments with the master's as the highest degree offered averaging
5 or more physics master's degrees per year,
classes of 2004, 2005 and 2006.**

	Annual Average
Ball State U (IN)	9
Christopher Newport U (VA)	8
CA State U, Fresno	6
Cleveland State U (OH)	6
San Diego State U (CA)	6
U of Mass, Boston	6
Appalachian State U (NC)	5
CA State U, Fullerton	5
City College (NY)	5
Miami U (OH)	5
U of Louisville (KY)	5
U of Mass, Dartmouth	5
Western Illinois U	5

Note: List includes only those departments who contributed degree data for all 3 years.
AIP Statistical Research Center, Enrollments and Degrees Report.

Professional Master's Degrees in Physics

- **Fundamental Knowledge is the foundation**
- **Specialized skills that are valued in the workplace**

Common Features

Active external advisory committee

Required coursework outside the physics dept.

Require an internship or off-campus work experience

Cater to part-time students through evening courses

Professional Science Master's

Alfred P. Sloan Foundation

www.sciencemasters.com

Physics

Appalachian State Univ.

Arizona State Univ.

Case Western Reserve Univ.

Illinois Institute of Technology

New York Univ.

Oregon State Univ.

Rice Univ.

Univ. of Arizona

Univ. of Houston – Clear Lake

Univ. of Northern Iowa

Univ. of South Carolina

Univ. of Utah

Western Carolina Univ.

Engineering Physics

Nanoscience

Physics for Entrepreneurship

Health Physics

Physics

Applied Physics

Nanoscale Physics

Applied and Industrial Physics

Physics, Technical Management

Applied Physics

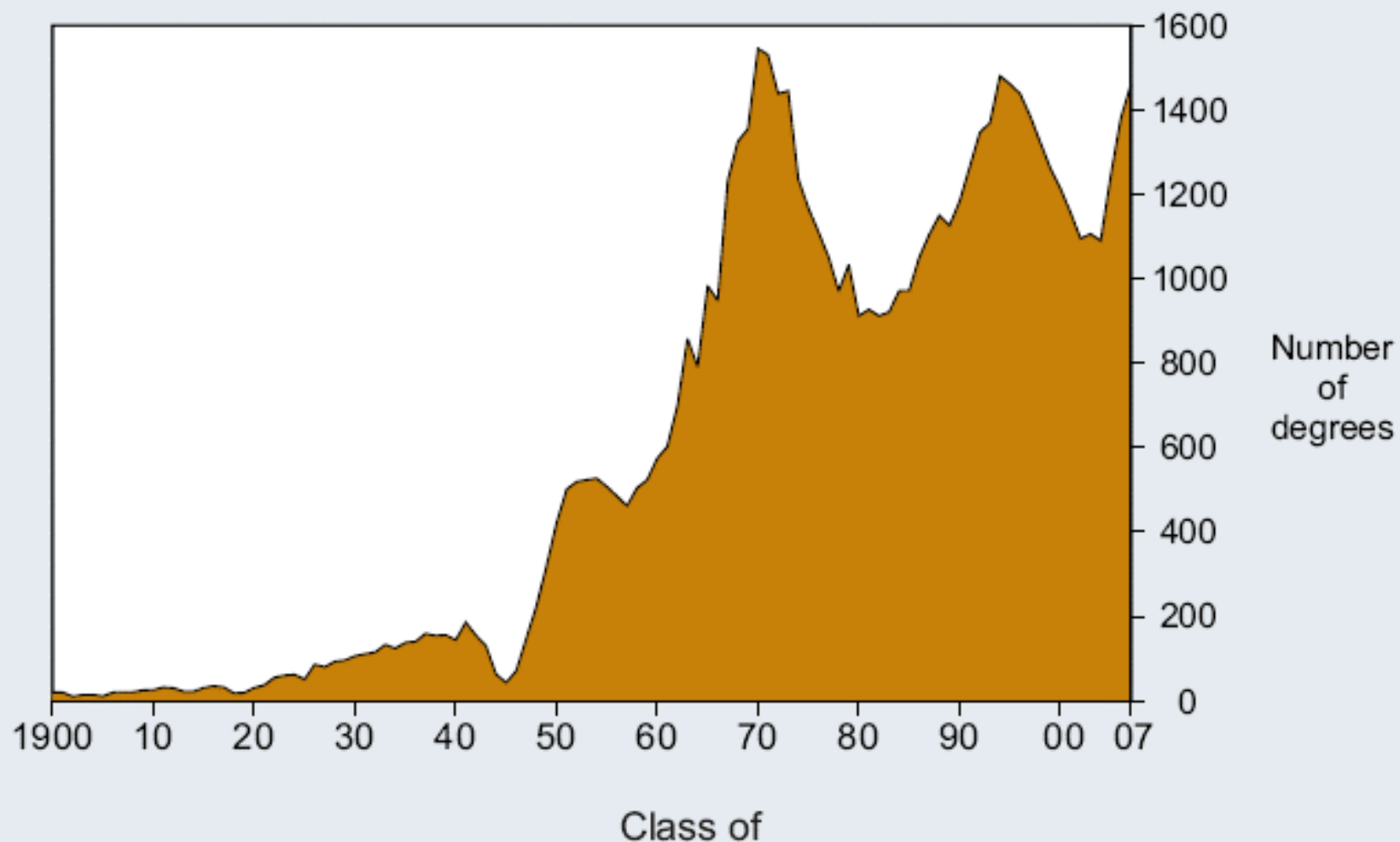
Modeling of Corporate Applications

Science Instrumentation

Science Entrepreneurship

Physics PhDs

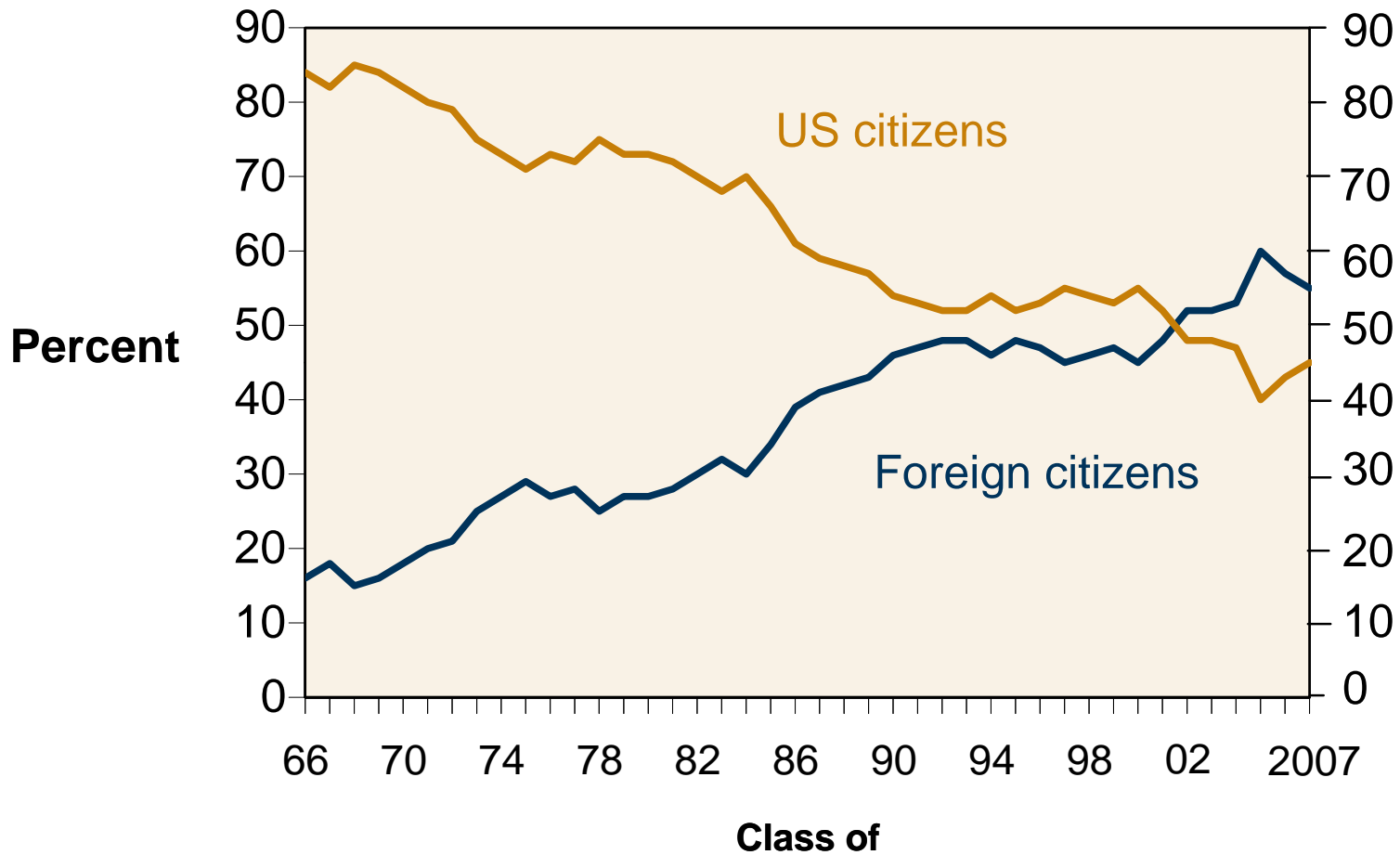
Number of physics PhD's conferred in the United States, 1900 to 2007.



Sources: ACE (1900-1919), NAS (1920-1961), AIP (1962-2007)

AIP Statistical Research Center, Enrollments and Degrees Report.

Citizenship of Physics PhDs, 1966 - 2007

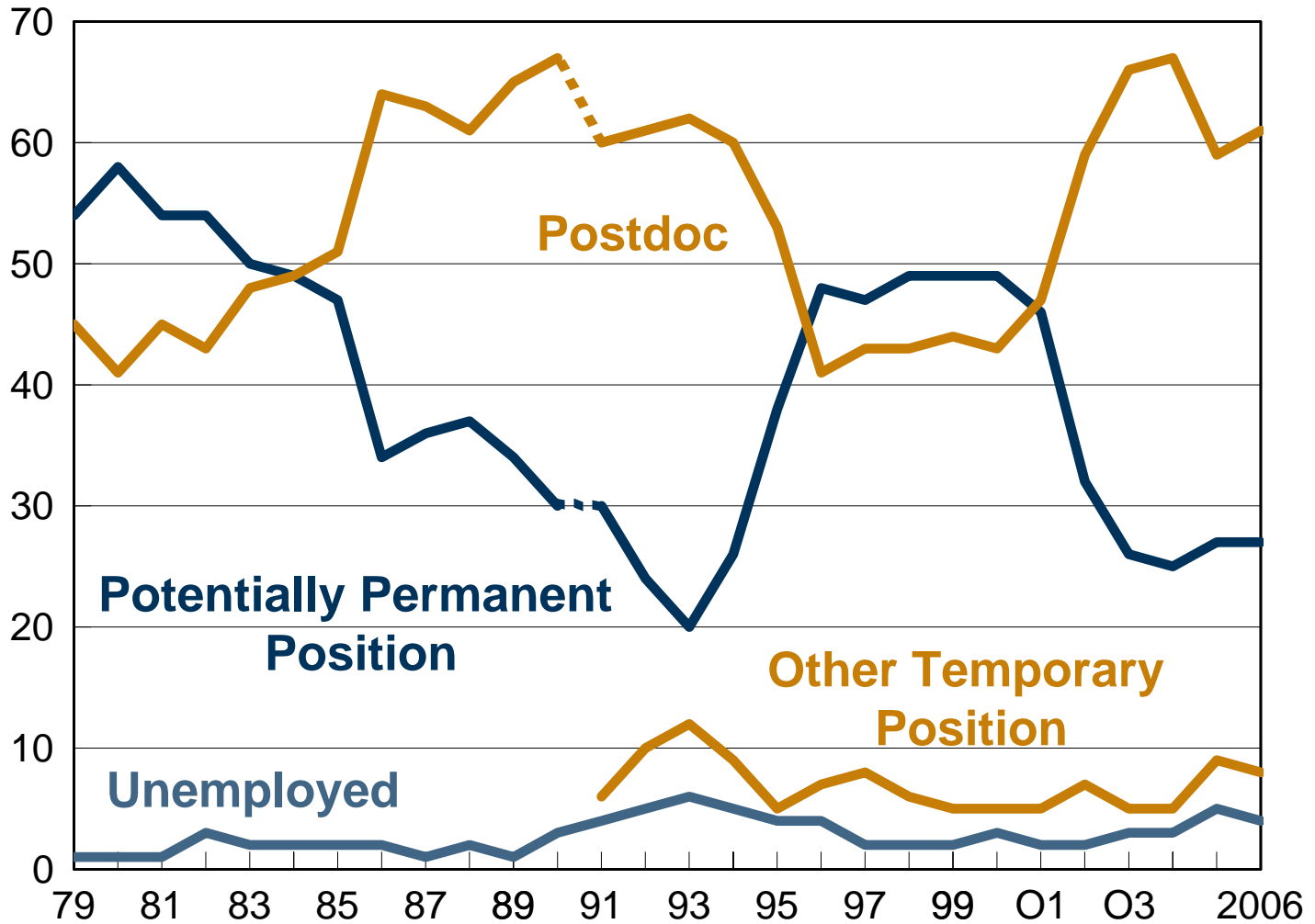


Sources: NSF(1966-1991), AIP (1992-2007)

AIP Statistical Research Center, Enrollments and Degrees Survey.

Initial employment of physics PhD's, 1979-2006

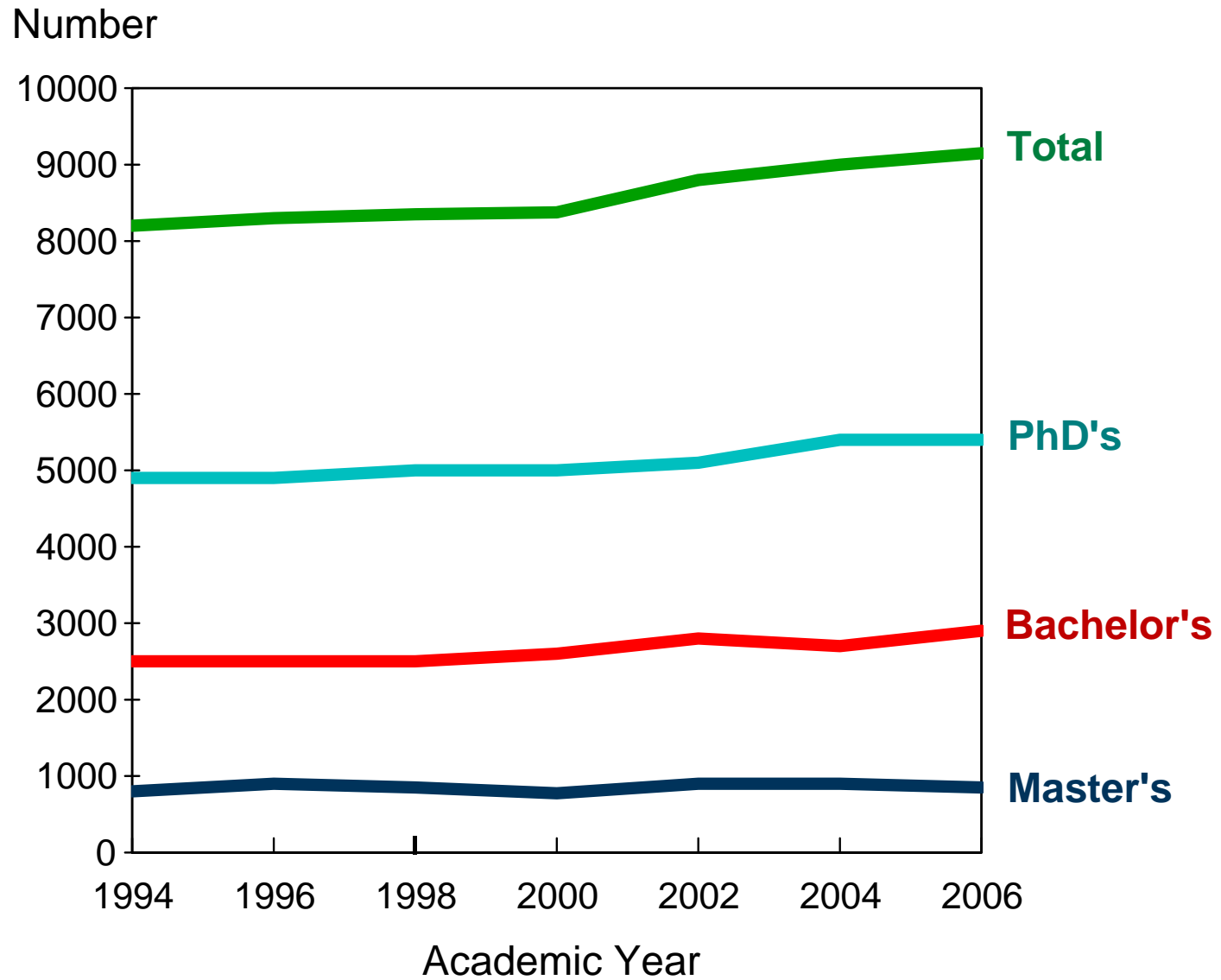
Percent



Academic Year

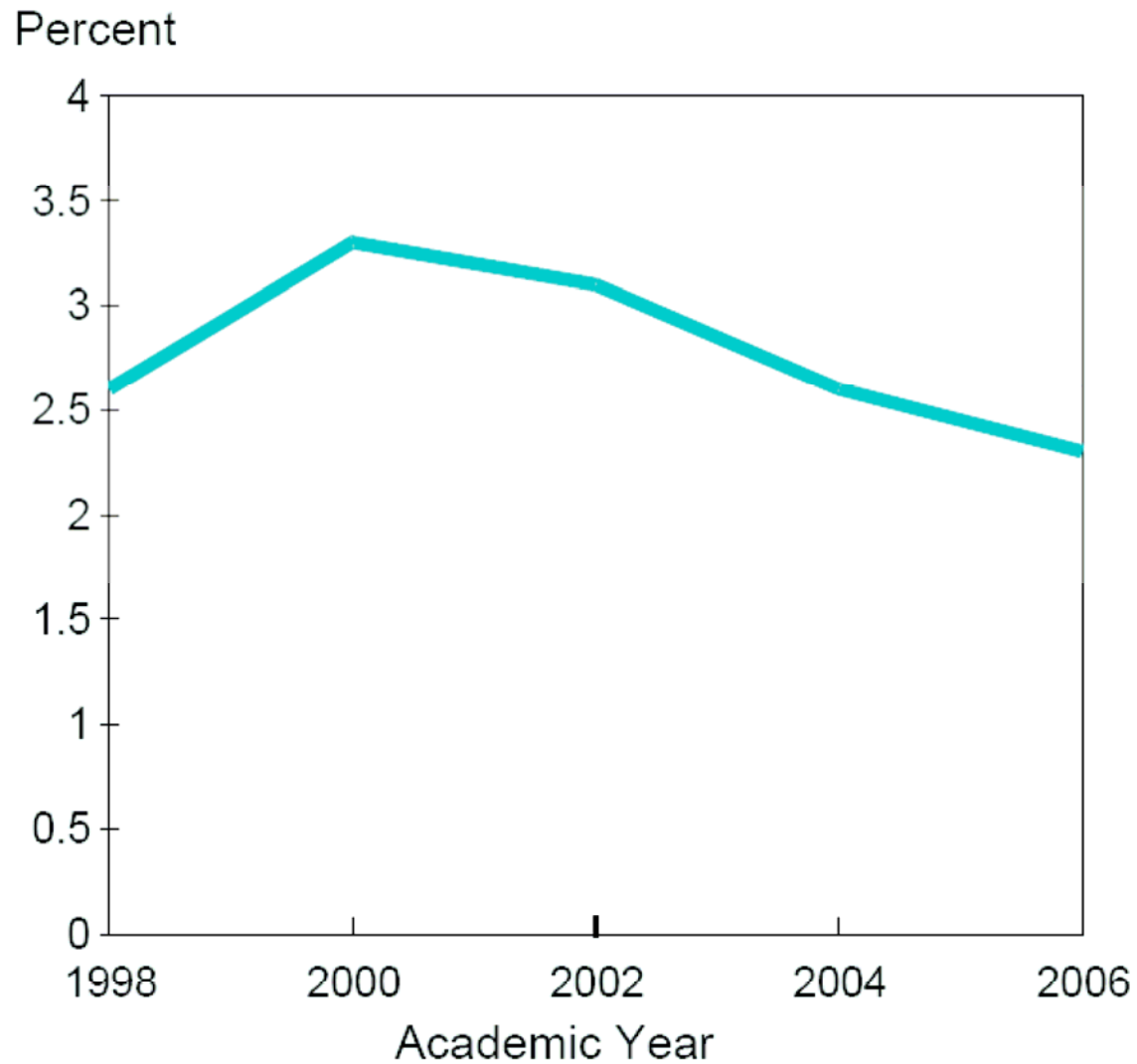
Data for 2005 and 2006 are Preliminary

Figure 1. FTE Physics Faculty



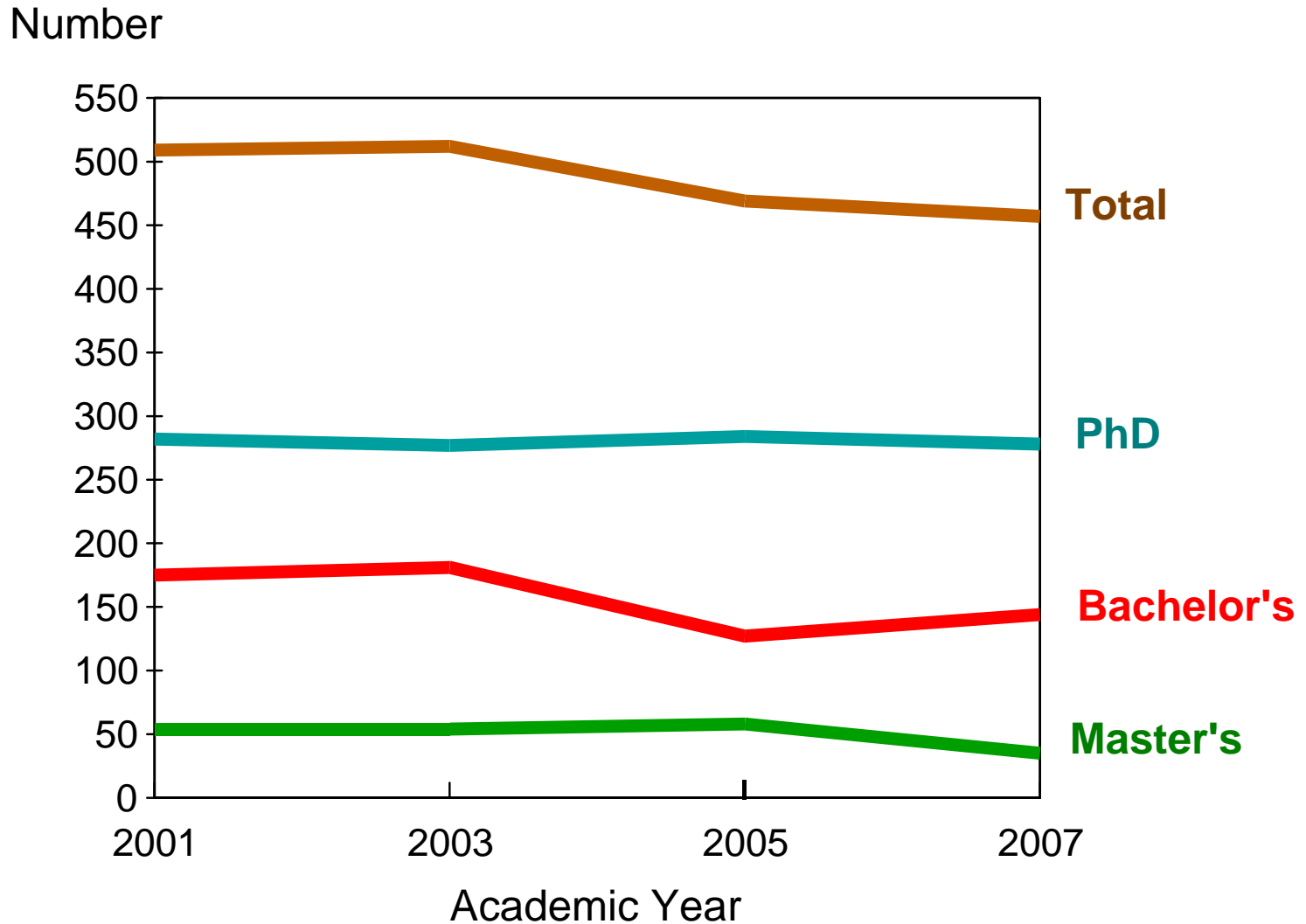
Source: AIP Statistical Research Center, Academic Workforce Report.

Retirement Rates for Physics Faculty.



Source: AIP Statistical Research Center, Academic Workforce Report.

Figure 5. Number of Recruitments for Tenured and Tenure-Track Faculty Members.



Source: AIP Statistical Research Center, Academic Workforce Report.

Table 15. Background of New Physics Faculty, 2006*

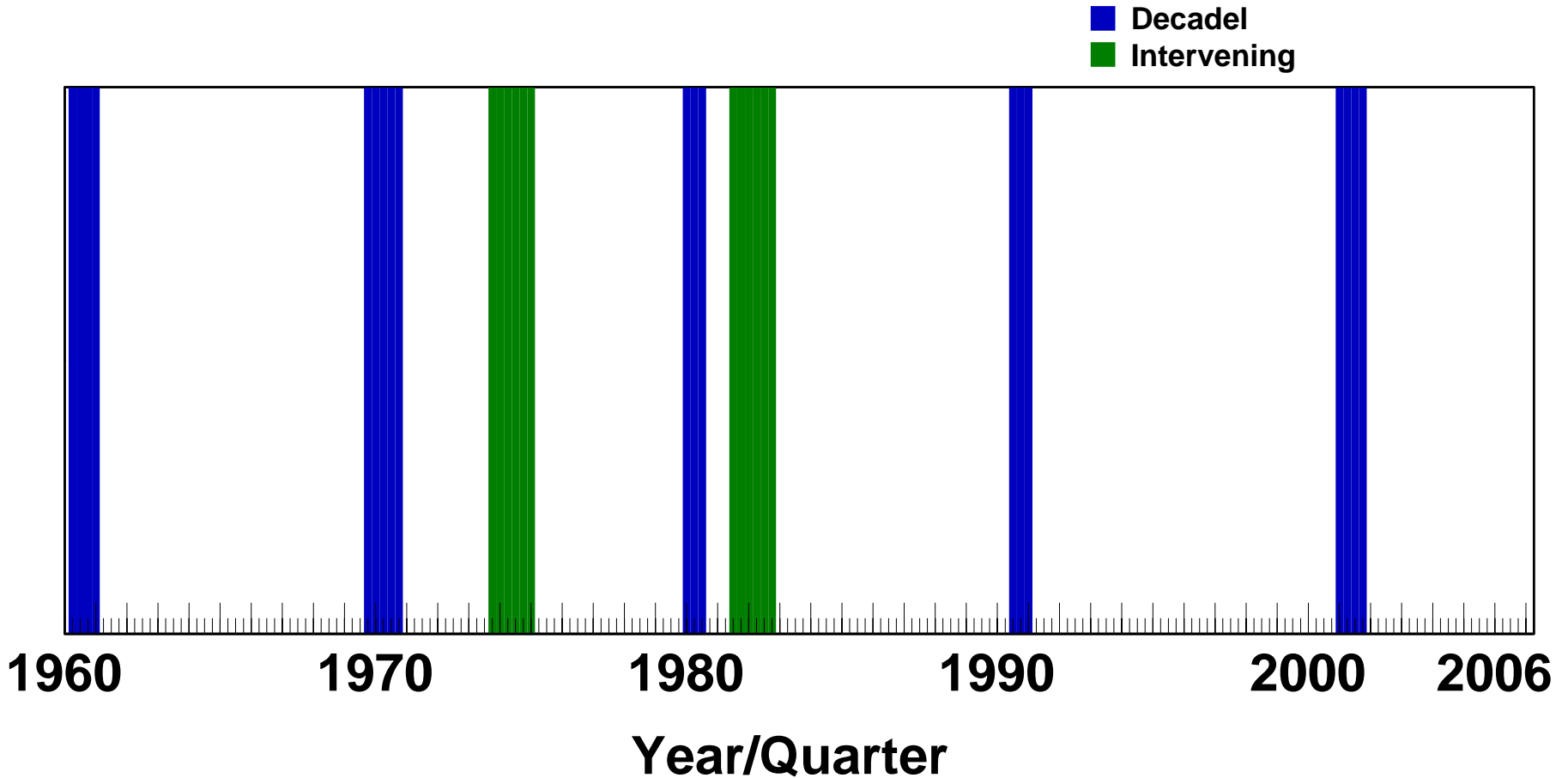
	Type of Department	
	PhD (%)	Bach (%)
Earned PhD in US within last 5 years	31	62
Earned PhD outside US, any year	35	13
Earned PhD in US > 5 years ago		
Previous Employer		
US Academic Institution	27	20
Industry, National Lab, Other	7	5

AIP Statistical Research Center: 2006 AWF Survey

*Includes permanent non-tenured faculty at schools without tenure, and tenured and tenure-track faculty at other schools.

Concluding Remarks

Downturns in the United States Economy



Source: National Bureau of Economic Research, Compiled by AIP Statistical Research Center

What Should Department Do?

Keep track of your own graduates

- **Recruitment of students & parents**
- **Show current students that you care**
- **Powerful info for talks with the Dean**
- **Periodic assessment of curriculum**

Thank You