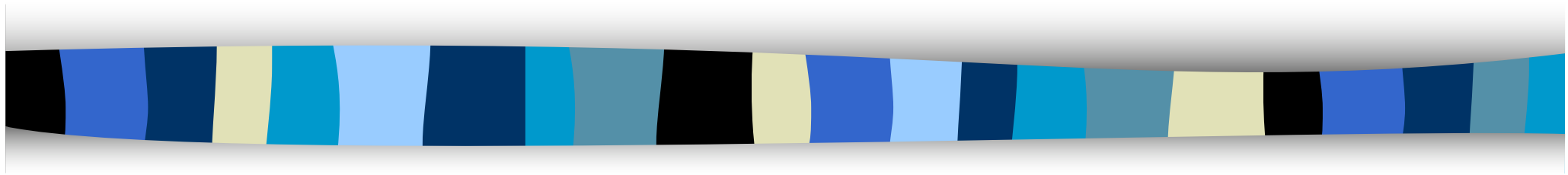


Careers in Government



Gail Dodge
Old Dominion University



Outline

1. Resources
2. Statistics
3. Government Jobs
4. My Experience at NSF



Resources

- American Physical Society (www.aps.org/careers)
 - Careers in Physics
 - Jobs Center
 - Profiles of Jobs and People
 - Advice (Professional Guidebook)
 - Webinars
- American Institute of Physics (www.aip.org)
 - Career Resources (<https://www.aip.org/career-resources>)
 - Lots of employment and salary statistics (<https://www.aip.org/statistics>)
- Society of Physics Students (<https://www.spsnational.org/cup>)
 - **Careers Toolbox** (<https://www.spsnational.org/careerstoolbox>)
- Physics Today Jobs (jobs.physicstoday.org)
- Federal Government Jobs (federalgovernmentjobs.us)

There are many links to other resources at the APS, AIP, and SPS sites.

Careers in Physics

Physics Jobs

Becoming a Physicist

Career Guidance

Tools for Career Advisors

Statistical Data

Email Print Share

[Home](#) | [Careers In Physics](#)

Careers In Physics

APS provides a gateway for physicists, students, and physics enthusiasts to information about physics jobs and careers. Find physics job listings, career advice, upcoming workshops and meetings, and career and job related resources.

Physics Jobs Center

Qualified candidates and excellent jobs—APS's award-winning career center job board posts the best in physics and related fields.

► [Find or Advertise a Physics Job](#)

Future of Physics Days Events



Future of Physics Days events at the APS March and April meetings include career panels, networking opportunities, research awards, and graduate school fairs.

► [More Information](#)

Quick Links

- [Employers](#)
- [Job Seekers](#)
- [Students](#)
- [Career Advice](#)
- [Jobs at APS](#)
- [Committee on Careers & Professional Development \(CCPD\)](#)

Career Guidance

[Insight: Free Physics Slideshows](#)

Slideshows to inform and excite students about careers and opportunities in physics. Easy to download and install.

[Webinars](#)

Physics career webinars offer interactive discussion, career guidance, and advice from fellow physicists.

[Professional Guidebook](#)

Find step by step guidance for discovering which careers align with your interests, talents, and values, and building a successful road towards them.



APS Careers: Professional Guidebook

[Home](#) | [Careers In Physics](#) | [Career Guidance](#) | [Professional Guidebook](#) | [Introduction](#)

Introduction

Why Start Planning Now?

Because What You Don't Know Can Hurt You

In the course of earning their degrees, most physics majors are only exposed to academic mentors. Yet, according to the AIP Statistical Research Center, less than 20% of graduating PhDs will go on to permanent employment in academia.

However, less than 5% of physics graduates at all levels are unemployed. The majority of graduates at all degree levels find employment in the private sector—using their engineering and computer science skills to do analysis, write code, and develop products. Or, in the case of PhDs, doing physics research to develop new processes and products for the market.

So, a well-prepared job seeker will be aware of all of their many options, long before graduation, so that they can build a wide range of skills and experience that will make their job prospects virtually limitless. The time to start is now!

► [Next Step: Career Planning and Self-Assessment](#)

Next Step

► [Career Planning and Self-Assessment](#)

Guidebook Contents

[Introduction](#)

[Career Planning and Self-Assessment](#)

[Taking a Skills Inventory](#)

[Conducting Informational Interviews](#)

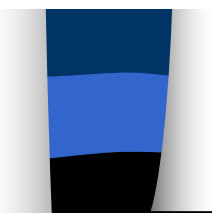
[Networking](#)

[Connecting with Opportunity](#)

[Putting Together an Effective Resume](#)

[Interviewing and Negotiation](#)

[Try, Try Again!](#)



AIP Career Resources (aip.org/career-resources)

Home

Career Resources

AIP Career Resources is committed to supporting the physical science community at all degree and career levels.

[Physics Today Jobs](#)

Search hundreds of new opportunities for advanced-degree holders in the physical science, engineering, and computing disciplines.

[SPS Jobs](#)

Jobs and internships for physics bachelor-degree holders, supported by the Society of Physics Students.

[Careers Toolbox](#)

A site to help young physicists launch their careers successfully.

[Science Policy Fellowships](#)

Learn more about how you can

What opportunity are you looking for?

Considering a physics major?

Deciding what to do after you get your physics bachelors?

Going to grad school?

Going into the workforce?

Job hunting or recruiting?

[Career Advice](#)

[Your questions about job interviews answered, part 2](#)

[Your questions answered about job interviews, part 1](#)

[How to obtain and write references](#)

[Frequently asked questions about networking](#)



[Latest Employment Reports](#)



FOCUS ON
Astronomy Degree Recipients Initial Employment
April 2015



REPORT
Fact Sheet: Connecting Physics Students to Career

[Latest jobs from Physics Today](#)

[Dean, College of Natural Sciences and Mathematics | Cal State University - Fullerton - CSUF](#)

[Staff position in experimental low-energy nuclear physics | Argonne National Laboratory](#)

[Dean of Science and Sustainability | Aquinas College](#)

[Microphotonics and Nanophotonics Postdoctoral Appointee | Sandia National Laboratories](#)

[Multiple Faculty Positions in Lasers, Plasma Physics, and Ultrafast Science | Shanghai Jiao Tong University, Laboratory for Laser Plasmas](#)

[MORE](#)

[AIP Member Society Career Resources](#)

Common Job Titles for Physics Bachelors

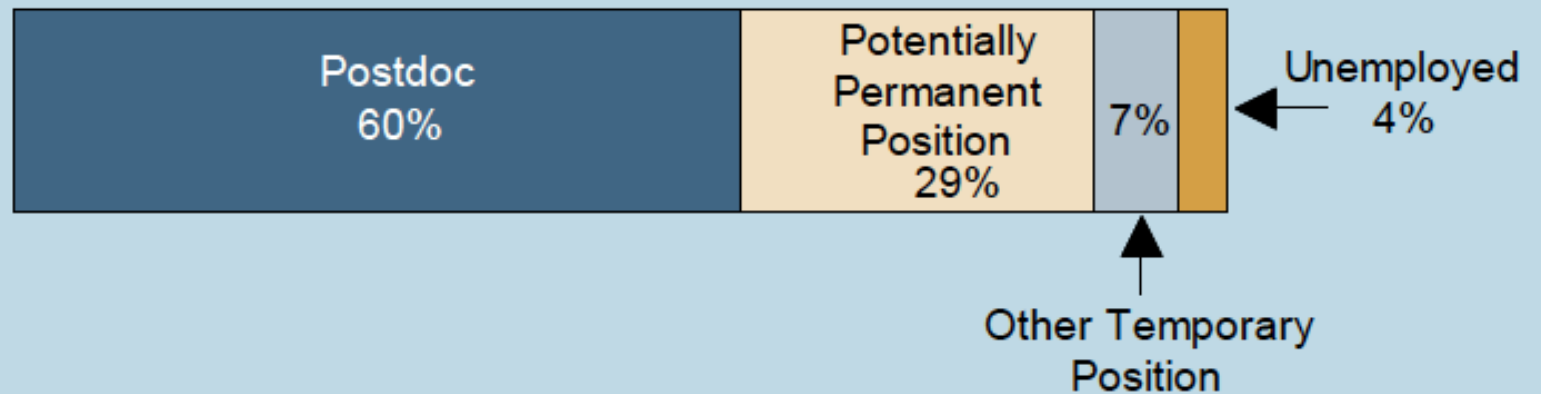
- Systems Engineer
- Electrical Engineer
- Design Engineer
- Mechanical Engineer
- Project Engineer
- Optical Engineer
- Manufacturing Engineer
- Manufacturing Technician
- Laser Engineer
- Associate Engineer
- Application Engineer
- Development Engineer
- Engineering Technician
- Field Engineer
- Process Engineer
- Process Technician
- Product Engineer
- Product Manager
- Research Engineer
- Test Engineer
- General Engineer
- Technical Services Engineer
- Software Engineer
- Programmer
- Web Developer
- IT Consultant
- Systems Analyst
- Technical Support Staff
- Analyst
- High School Physics Teacher
- High School Science Teacher
- Middle School Science Teacher
- Research Assistant
- Research Associate
- Research Technician
- Lab Technician
- Lab Assistant
- Accelerator Operator

Source: AIP SRC

Where do physics Ph.D.s go?

Initial Employment of Physics PhDs, Classes of 2009 & 2010.

N=1,239



Data only include U.S.-educated physics PhDs who remained in the U.S. after earning their degrees.

<http://www.aip.org/statistics>

Where do physics Ph.D.s go?

**Types of Positions Accepted by Employment Sector,
Classes of 2009 & 2010.**

	Postdoc %	Potentially Permanent %	Other Temporary %	Overall %
Academic*	73	23	82	58
Private sector	1	57	9	19
Government	22	16	6	19
Other	4	4	3	4
N	740	365	89	1,194

Data only include U.S.-educated physics PhDs who remained in the U.S. after earning their degrees.

*Includes university affiliated research institutes.

<http://www.aip.org/statistics>

Starting salaries (AIP)

Physics PhDs Starting Salaries, Classes of 2009 & 2010.

Potentially Permanent Positions

Private Sector
(N=91)

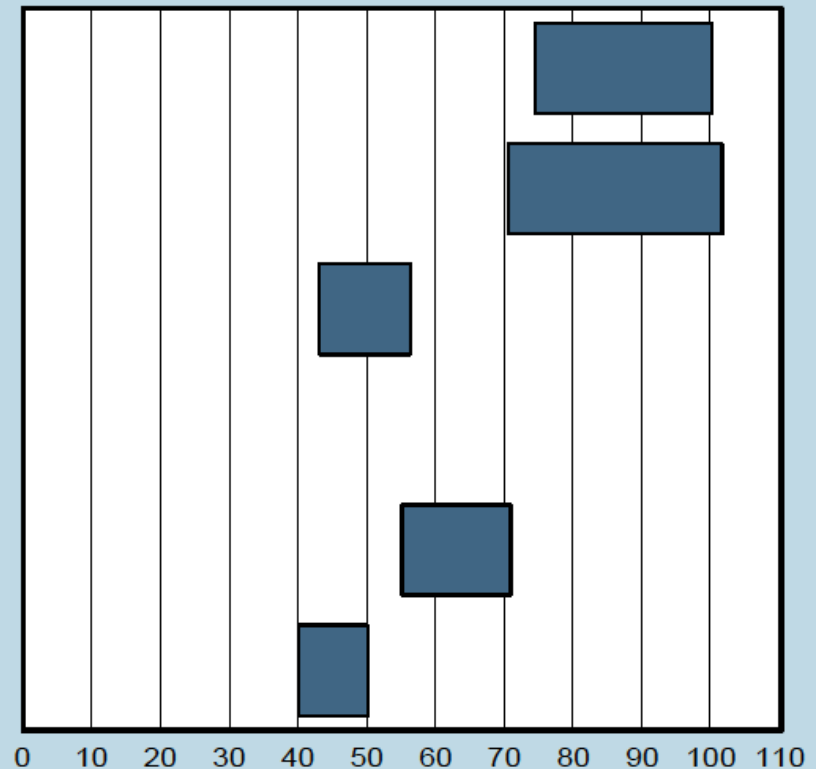
Government Lab
(N=25)

University & 4-Year College
(N=38)

Postdocs

Government Lab
(N=95)

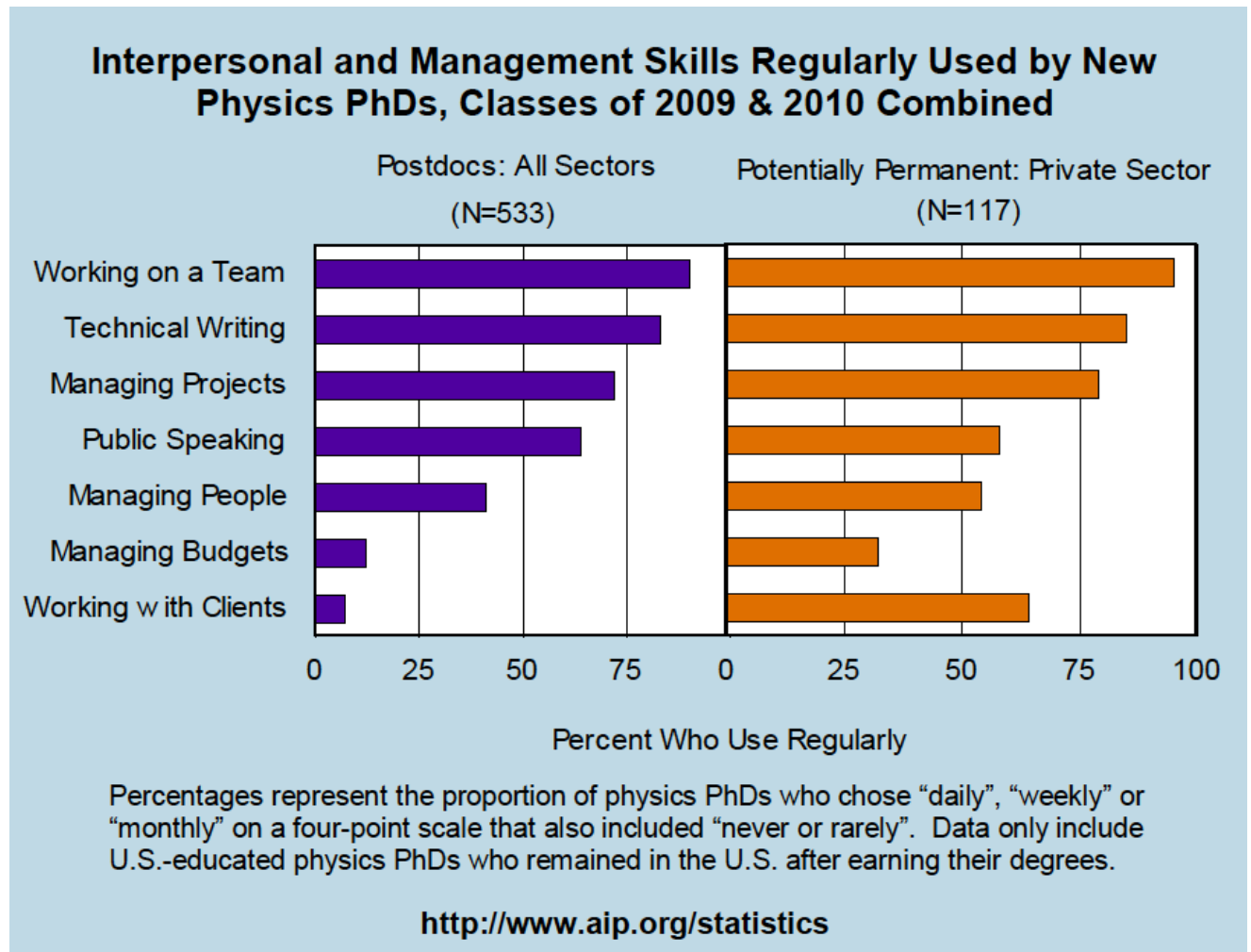
University & UARI
(N=371)



Typical Annual Salaries in Thousands of Dollars

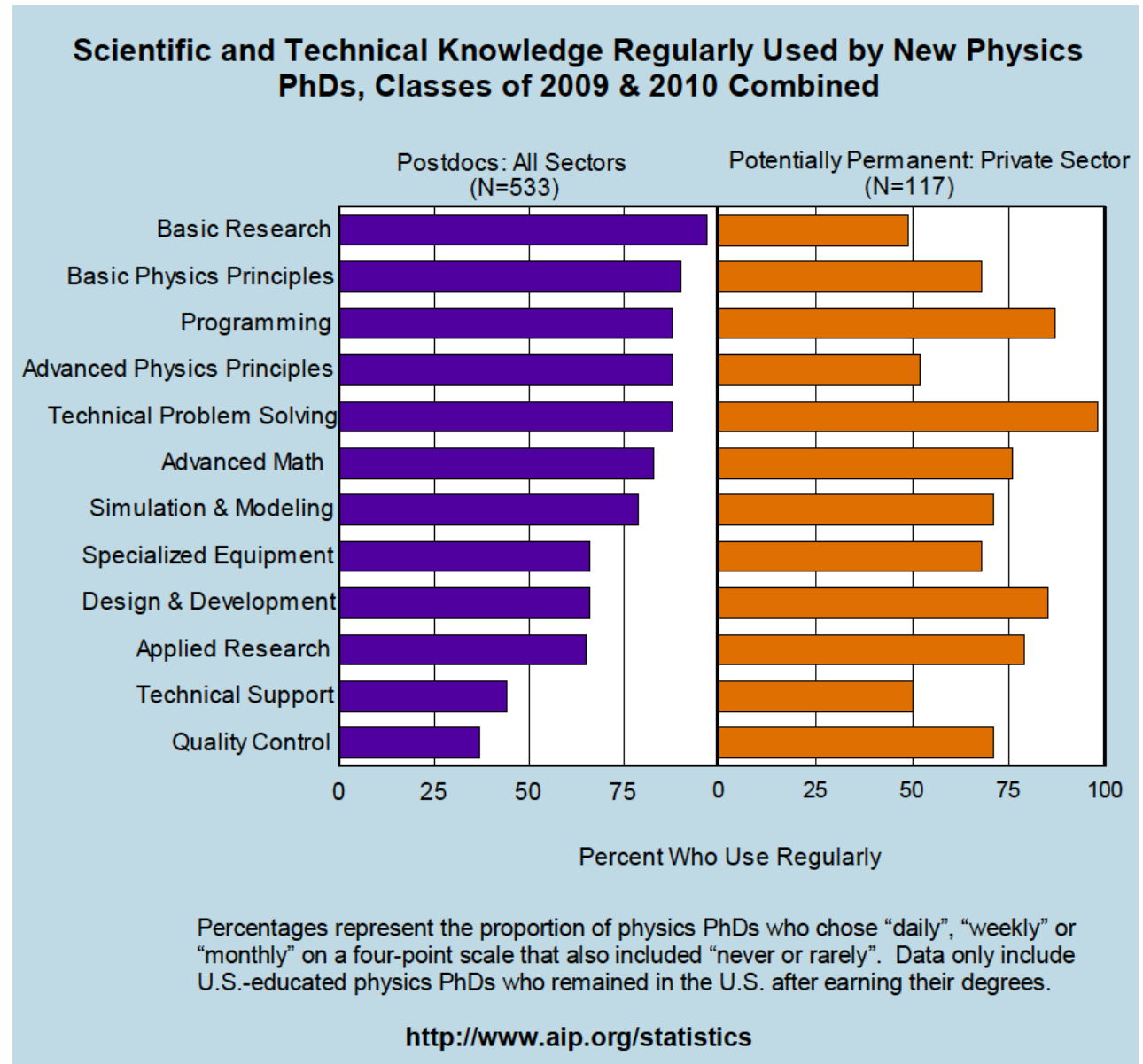
Data only include U.S.-educated PhDs who remained in the U.S. after earning their degrees. Typical salaries are the middle 50%, i.e. between the 25th and 75th percentiles. Government Lab includes Federally Funded Research and Development Centers, e.g. Los Alamos National Laboratory. UARI is University Affiliated Research Institute. The data for PhDs holding potentially permanent positions in academia include salaries based on 9-10 and 11-12 month commitments. "N" represents the number of individuals the salary data is based on.

What skills do new Ph.D.s use?



G. Anderson and P. Mulvey, “Recent Physics Doctorates: Skills Used and Satisfaction with Employment,” *AIP Focus On*, March 2013

What knowledge do new Ph.D.s use?

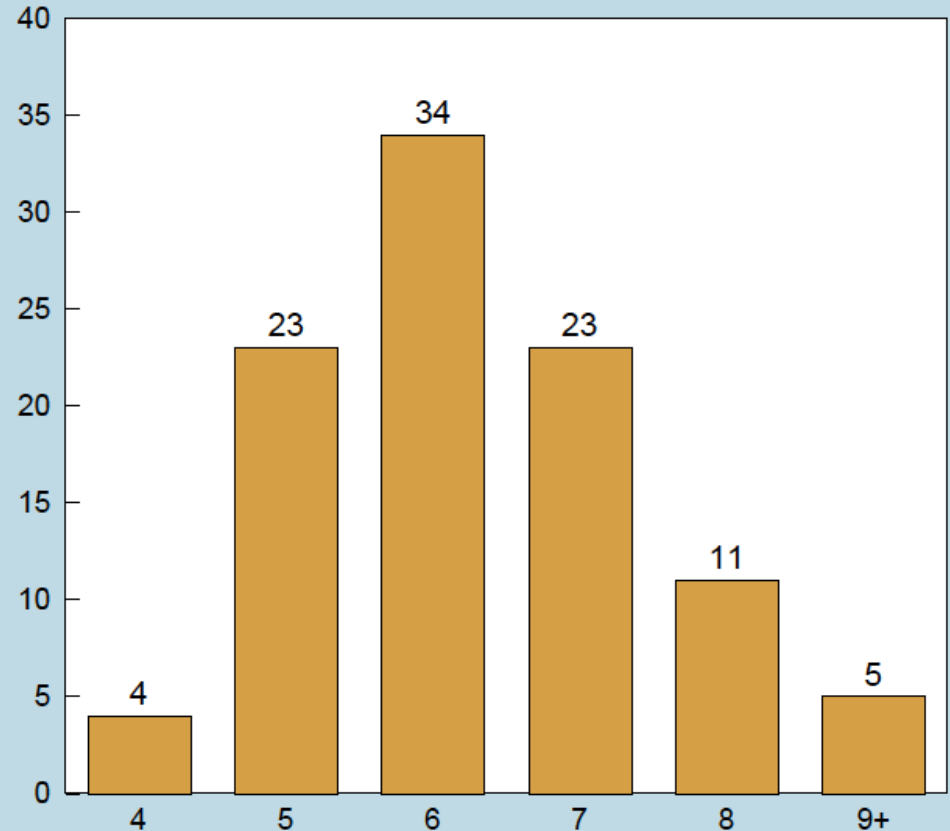


G. Anderson and P. Mulvey, “Recent Physics Doctorates: Skills Used and Satisfaction with Employment,” *AIP Focus On*, March 2013

Duration of Ph.D. in physics (AIP)

**Years of Physics Graduate Study to Receive a PhD,
Classes of 2007 & 2008 Combined.**

Percent



Years of Graduate Study

Note: This graph depicts the number of full-time equivalent years of physics graduate study completed in the US. Includes US citizens only.

<http://www.aip.org/statistics>

New Physics Master's (AIP)

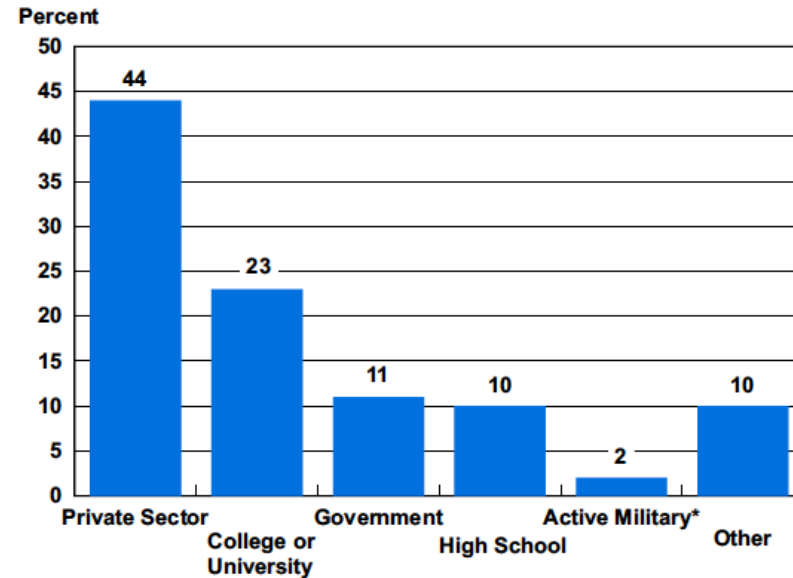
AIP
American Institute
of Physics

PHYSICS TRENDS

STATISTICAL RESEARCH CENTER www.aip.org/statistics

Where New Physics Master's Work

One Year After Degree
Classes of 2009, 2010 and 2011 Combined



The master's represented in this figure are individuals who, upon receiving their master's degrees entered or continued in the workforce.

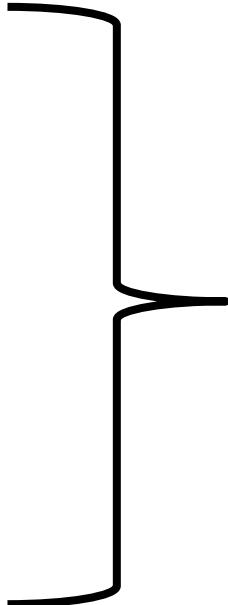
*Figure excludes master's receiving their degrees from military academies.

Spring 2015



Government Jobs

- Government Labs – see laboratory talk
- Funding Agencies
- Policy
 - Congressional staffer
 - AAAS fellow
 - OSTP
 - OMB
- Think tanks
- Government contractor - consulting



Most of these opportunities would be for mid-career scientists.



My Path to NSF

- Member of a **program panel**
- Member of the **committee of visitors**
- Member of the **Nuclear Science Advisory Committee**, which gives advice to NSF and DOE about nuclear physics funding priorities

Finally I was a...

- **Visiting Scientist at NSF** – two year appointment as a program manager in nuclear physics



What does a program manager do?

- Responsible for receiving and acting on proposals for research funding:
 - Send for review
 - Convene panel to rank proposals
 - Decide who should be funded and how much; must be approved by division director; consider portfolio balance and look to the future
 - Oversight of grants awarded
- Give advice to faculty; help grant PIs solve problems
- Manage other funding proposals, such as CAREER and MRI
- Coordinate activities with other funding agencies
- Pay attention to national issues affecting the field
- Respond to requests for information, attend conferences, talk to the community
- Produce highlights; represent the program to management
- Up to 20% of time on your own research.



Who are the people working at NSF?

- Most of the people I worked with were Ph.D. scientists, either temporary like me or permanent.
- In general: dedicated, smart, trying to fund the best science possible with very limited resources
- Also admin, finance, contractors...



In General

- A career in government can be very rewarding – you can make a difference
- Your career path can move in many directions
- You can do science, policy, administration ...

Keep your options open and make sure you check out the available online resources.



Thank you!

Please contact me if you have questions:
gdodge@odu.edu