

Postdoctoral Training: Qué es y qué debe ser?

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Outline

- Definition of postdoctoral fellow
- Data about postdocs and careers
- Career building tools:
 - APS Professional Skills Document
 - AAMC Postdoc Compact
 - FASEB Individual Development Plan

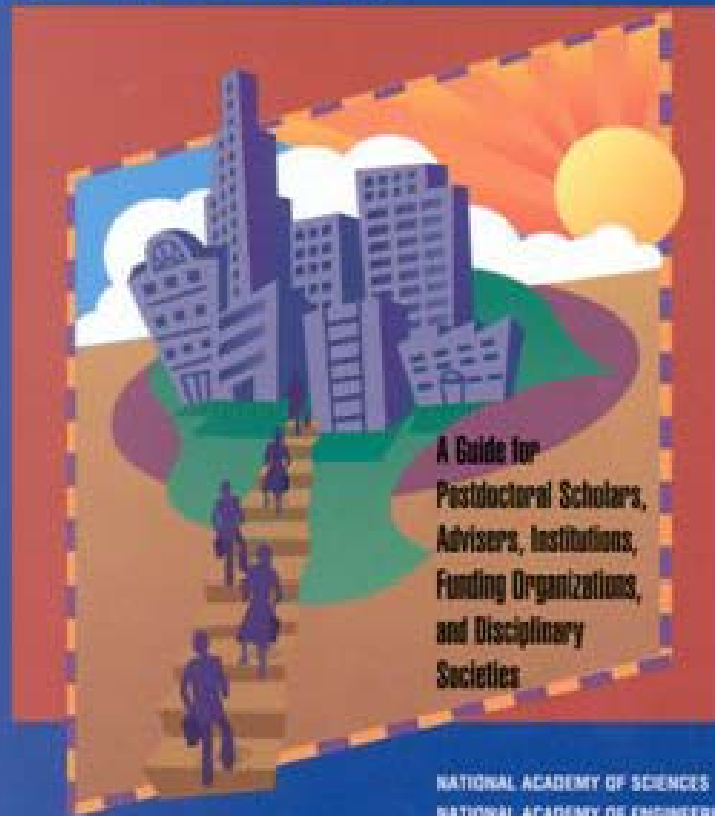
NIH/NSF Definition of Postdoctoral Scholar

An individual who has received a doctoral degree and is engaged in a temporary and defined period of mentored and advanced training to enhance the professional skills and research independence needed to pursue his or her chosen career path.

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ENHANCING THE POSTDOCTORAL EXPERIENCE FOR SCIENTISTS AND ENGINEERS



**A Guide for
Postdoctoral Scholars,
Advisers, Institutions,
Funding Organizations,
and Disciplinary
Societies**

NATIONAL ACADEMY OF SCIENCES
NATIONAL ACADEMY OF ENGINEERING
INSTITUTE OF MEDICINE

NAS Action Points

In order to enhance the postdoctoral experience, advisers, institutions, funding organizations, and disciplinary societies should:

#8 - Provide substantive career guidance to improve postdocs' ability to prepare for regular employment.

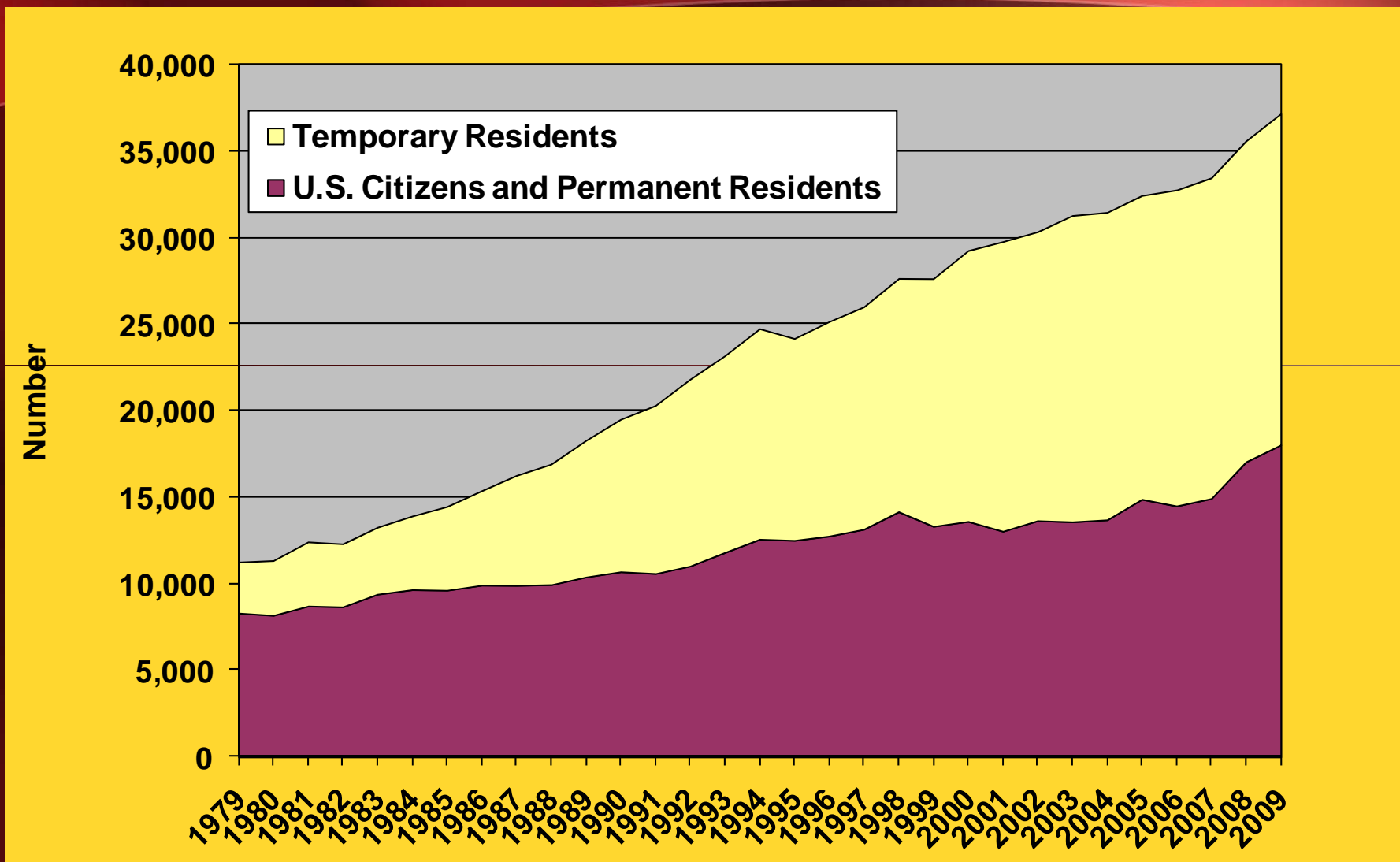
#10 - Take steps to improve the transition of postdocs to regular career positions.

International PhD Production

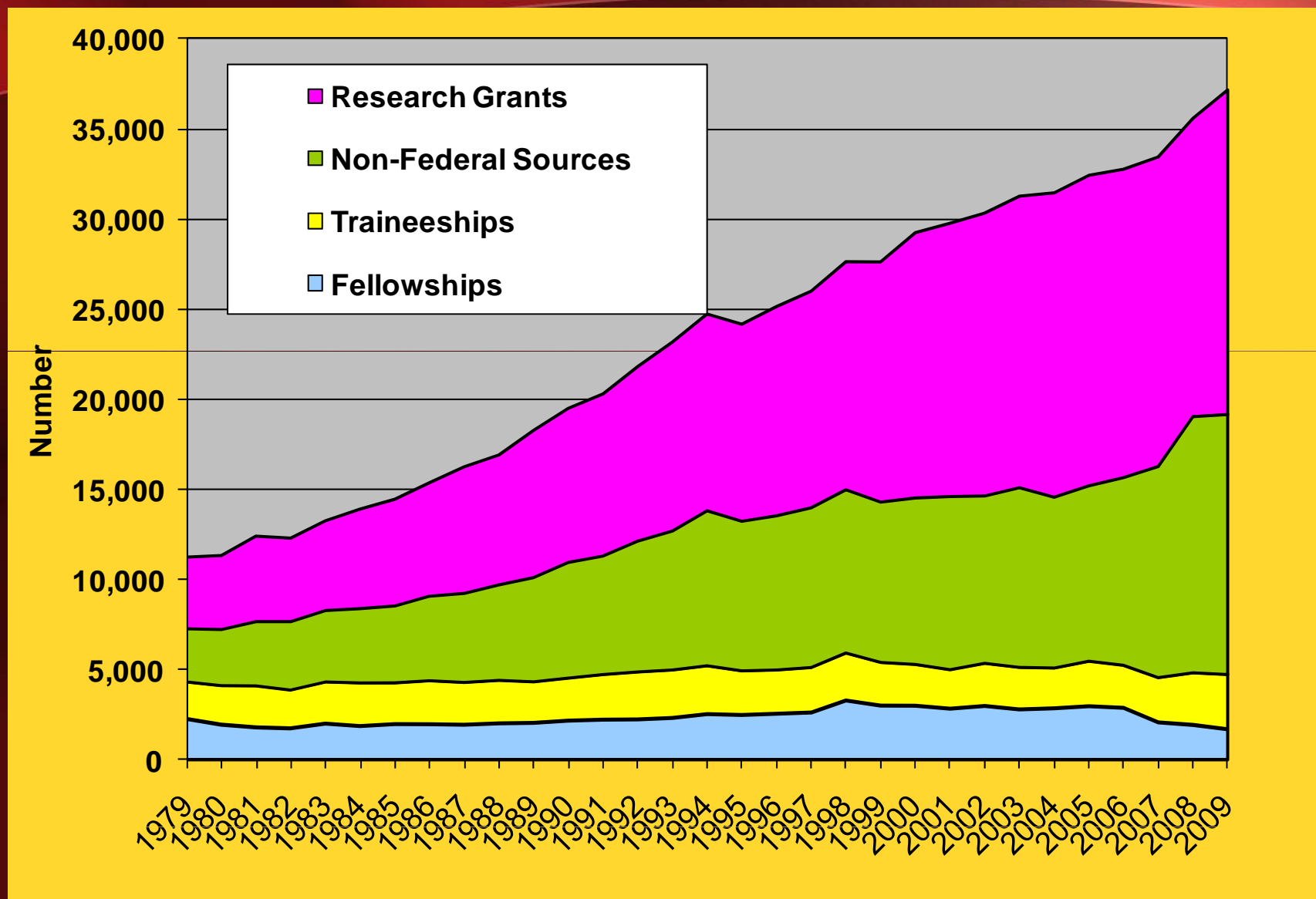
How many?

43,000 – 89,000 postdocs in the US

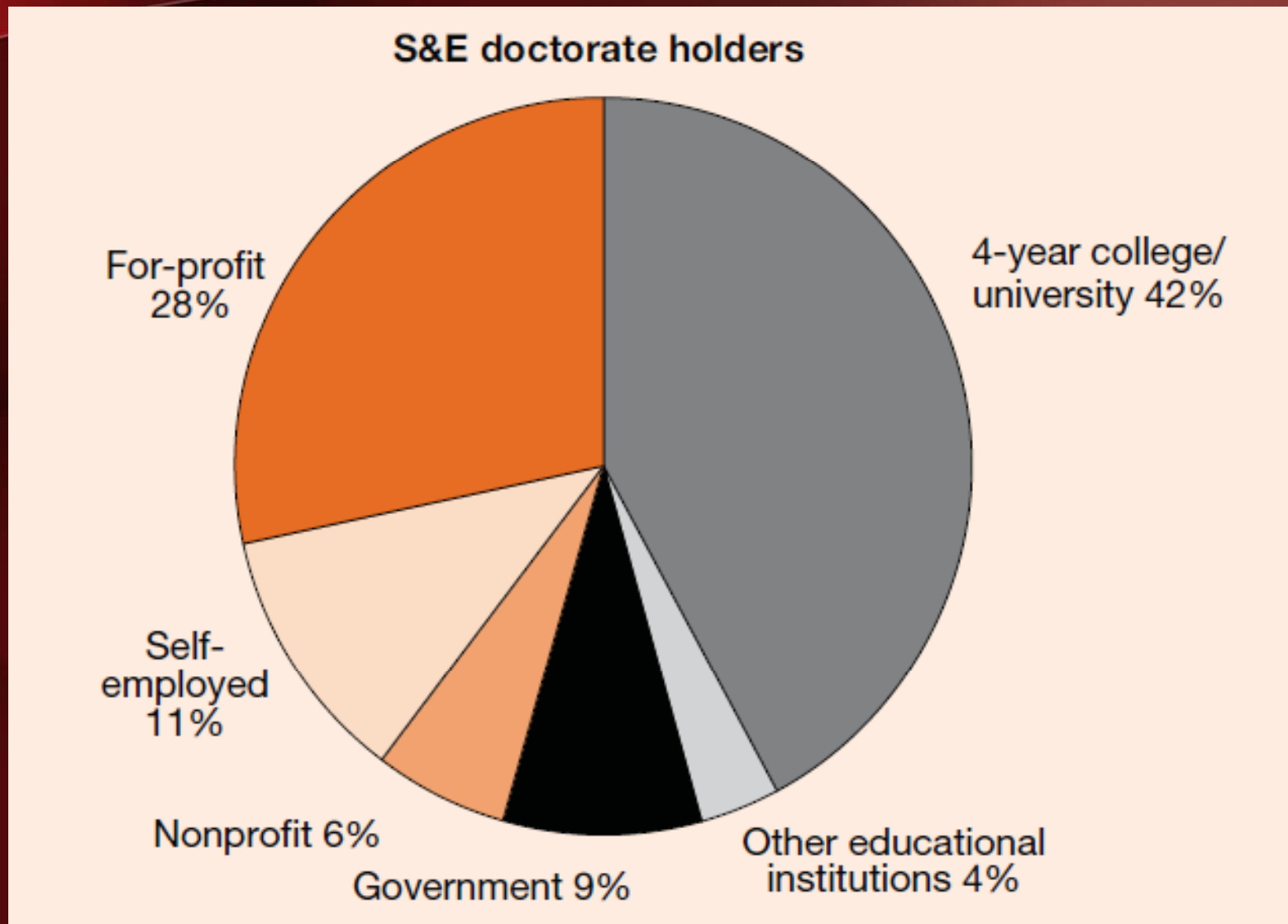
Biological and Medical Sciences Postdocs by Citizenship/Visa Status



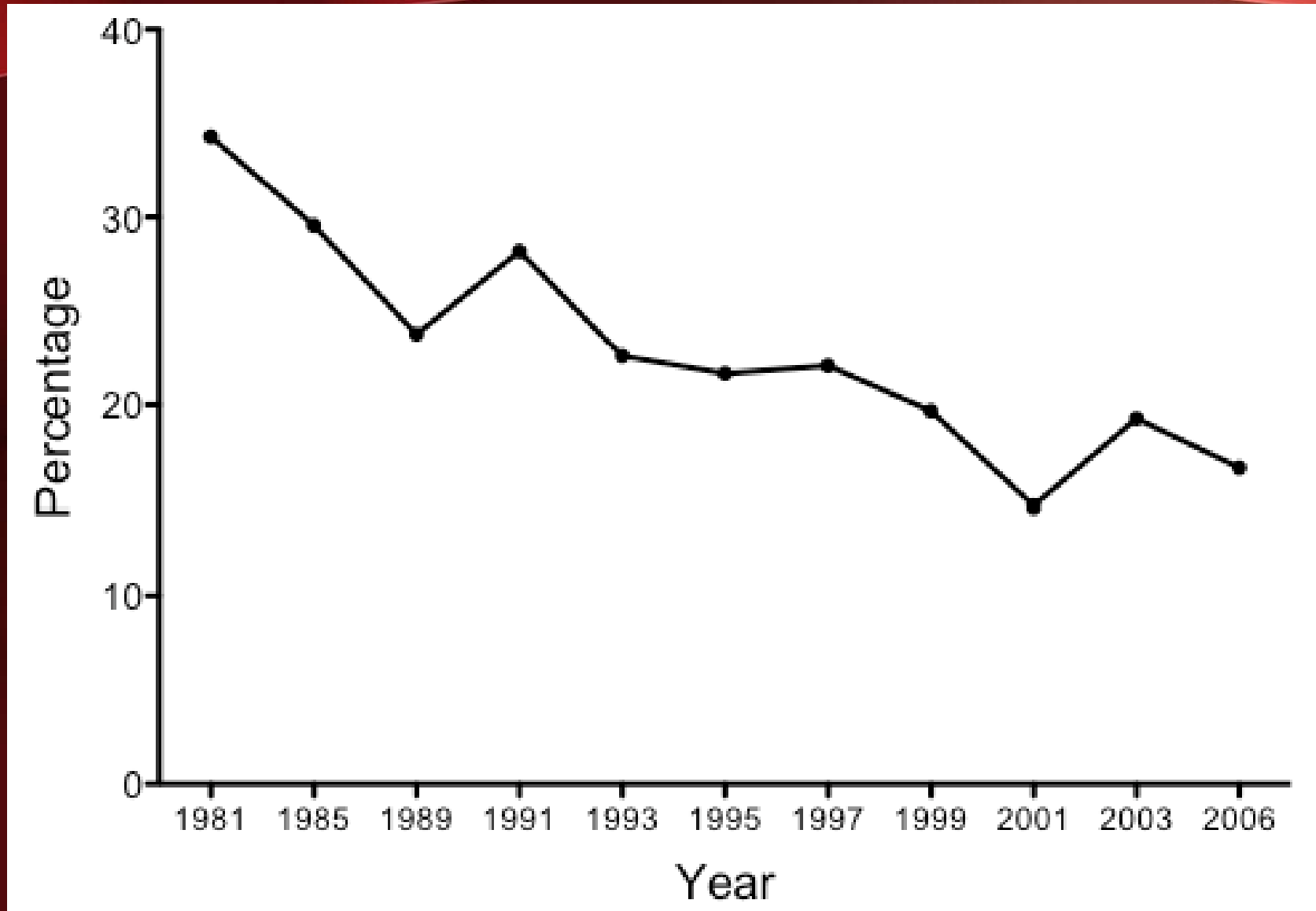
Biological and Medical Sciences Postdocs by Source of Support



Employment Sector S&E PhDs



Tenure-Track Faculty Positions



NSF Survey of Doctorate Recipients

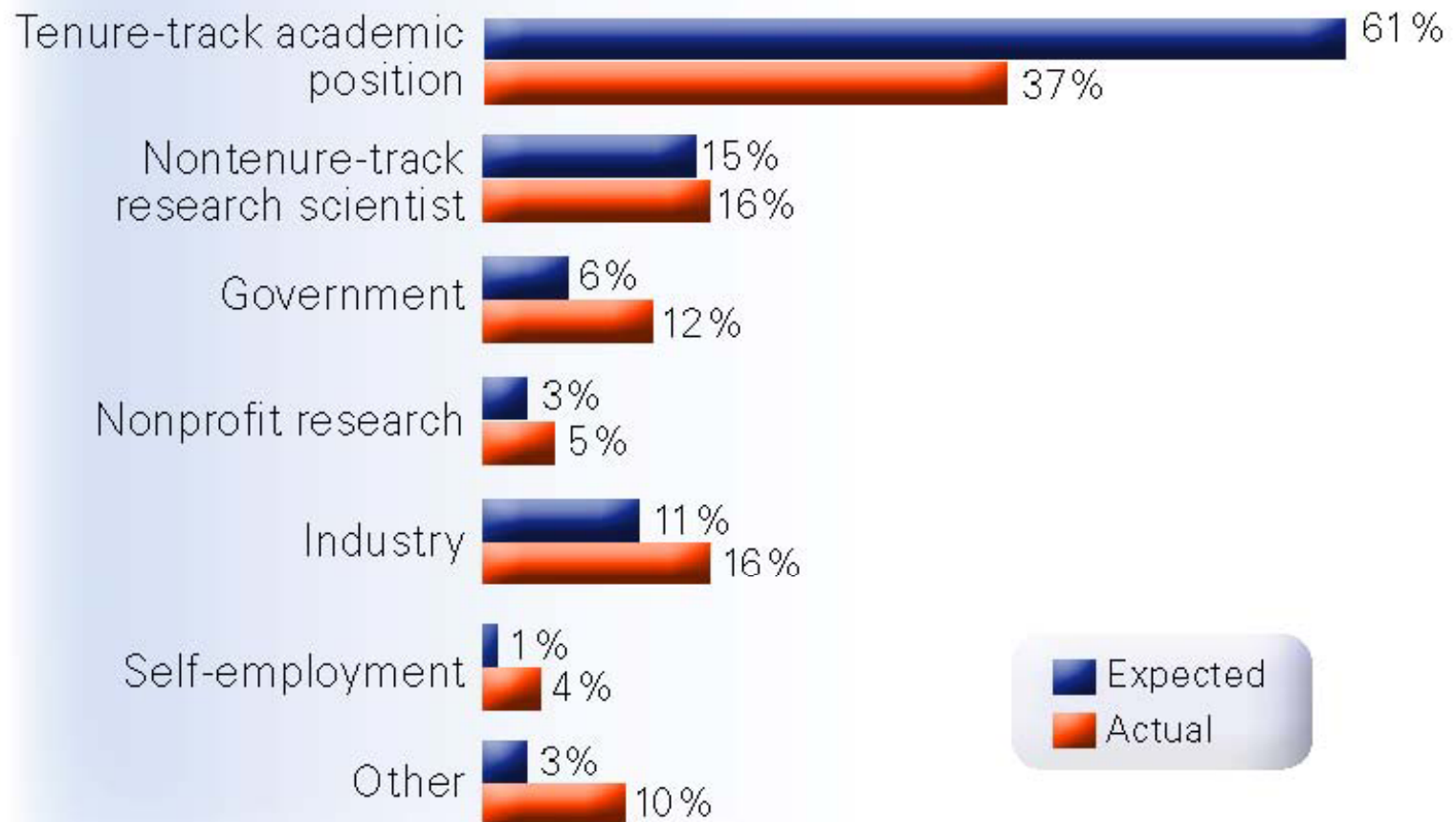
Age at Time of First Major Award

Pharma Job Losses 2010

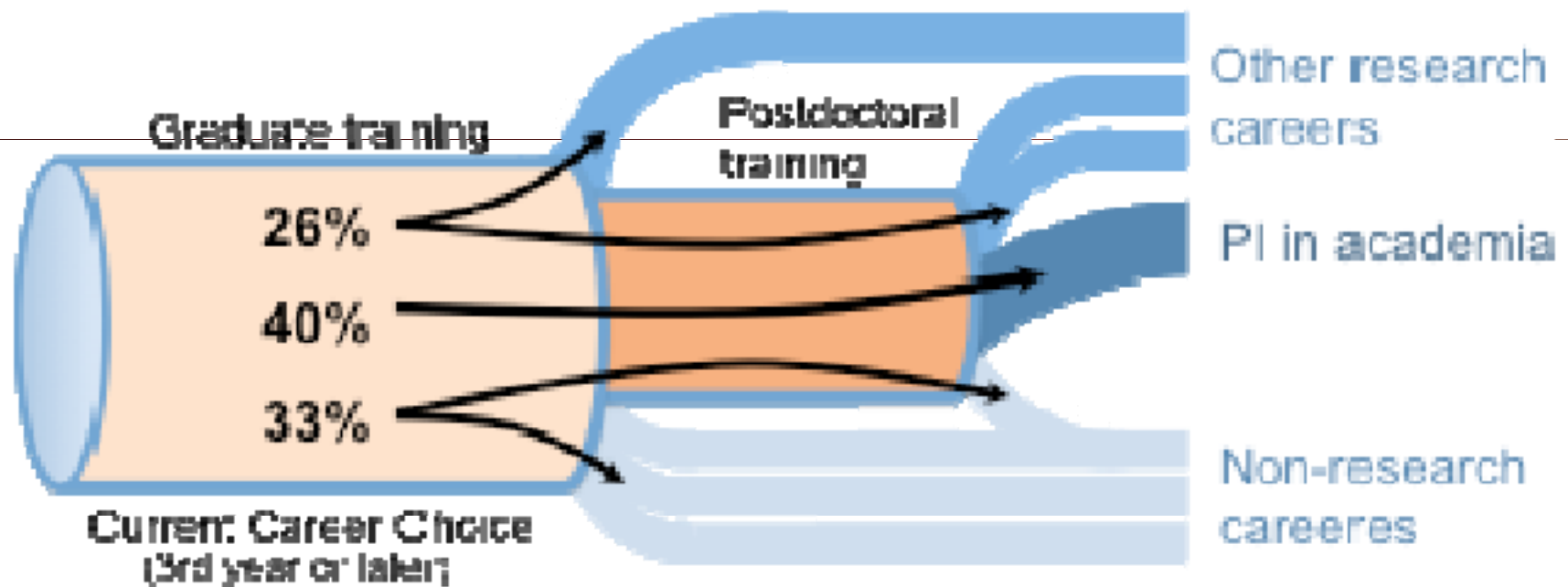
- Astra-Zeneca - 8550 positions
- Pfizer - 8480 positions
- GlaxoSmithKline - 5200 positions
- Roche - 4800 positions
- Bayer - 4500 positions
- Abbott Labs - 3000 positions
- Sanofi-Aventis - 2500 positions

Career Disconnect

Type of Position Expected vs. Actually Obtained (Former Postdocs)



Branching Career Pipeline



Career building tools:

APS/ACDP Professional Skills
Document

AAMC Postdoc Compact

FASEB Individual Development Plan

Professional Skills

- Core Science Knowledge
- Lab Skills
- Analytical Skills
- Teaching Skills
- Communication Skills
- Management Skills
- Career Development Skills
- Professional Ethics

NPA Core Competencies

- Scientific Knowledge
- Research Skills
- Communication Skills
- Professionalism
- Leadership and Management
- Responsible Conduct of Research

Compact Between Postdocs and Mentors

- Core Tenets

 - institutional commitment

 - quality postdoctoral training

 - importance of mentoring

 - foster breadth and flexibility in careers

- Commitments of Postdoctoral Scholars

- Commitments of Mentors

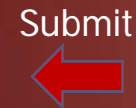
Individual Development Plan

1. Self-assessment

Consider your skills, interests, and values.



Your own IDP



2. Career exploration

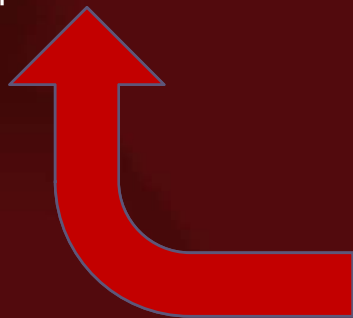
Learn about career options for PhD-level scientists, and compare your skills, interests, and values to each option.

3. Set goals

Make a concrete plan for how you will improve your skills, build your network, and get the experience you need to prepare for your desired career path.

4. Share your plan with mentors

Recruit mentors to help with various parts of your plan.



Skills Assessment



INDIVIDUAL DEVELOPMENT PLAN

Welcome bruce!
Log Off
About
My Account

Overview

Overview Summary

Assessment

Skills Assessment

Interests Assessment

Values Assessment

Assessment Summary

Career Exploration

Consider Career Fit

Read About Careers

Attend Events

Talk to People

Choose a Career Path

Setting Goals

Career Advancement Goals

Skill Goals

Project Goals

Development Plan

Mentoring Team

Plan Summary

Scientific Skills Assessment

Previous Step

Next Step

Quick Tips

Assessment

Summary

Assess your **skills** in these areas on a scale of 1-5 where:

1 = Drastic improvement needed

5 = Highly proficient

Scientific Knowledge

1 = Drastic improvement needed | 5 = Highly proficient

1 2 3 4 5

Broad based knowledge of science

1 2 3 4 5

Critical evaluation of scientific literature

Research Skills

1 = Drastic improvement needed | 5 = Highly proficient

1 2 3 4 5

Experimental design

1 2 3 4 5

Statistical analysis

1 2 3 4 5

Interpretation of data

1 2 3 4 5

Creativity/innovative thinking

1 2 3 4 5

Navigating the peer review process

Communication

1 = Drastic improvement needed | 5 = Highly proficient

1 2 3 4 5

Basic writing and editing

1 2 3 4 5

Writing scientific publications

1 2 3 4 5

Writing grant proposals

Matching Skills and Interests to Careers



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Career Fit

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Quick Tips

Career Path Matches

The table below lists career paths commonly followed by PhD-level scientists. An ideal career fit would be a job that intersects your skills, values, and interests.

Click on the percentages in the right-hand columns to compare how your self-assessments matched with the ratings for each career path (as estimated by career counselors).

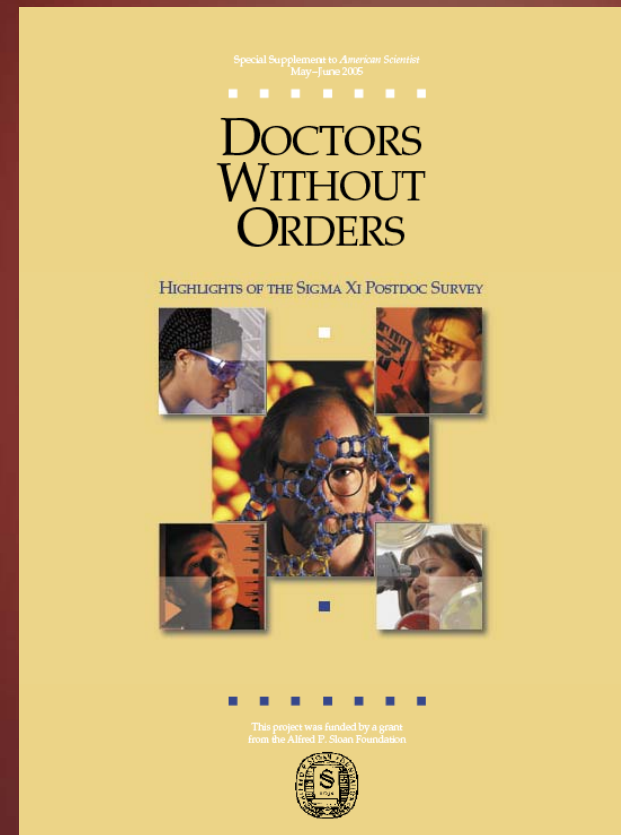
Career Path	Skill Match	Interest Match	Values
Combined research and teaching career: Faculty at a selective liberal arts college, masters-granting university, or doctoral-granting university whose job includes both research and major teaching responsibilities	26%	48%	
Teaching-intensive careers in academia: A primarily teaching faculty position in a research university, liberal arts college, community college	26%	46%	
Principal investigator in a research-intensive institution: Including medical schools, private research institute or government lab or university with minimal teaching responsibilities	26%	43%	
Entrepreneurship: Starting your own business	26%	42%	
Science education for non-scientists: Working in education or public outreach such as at a science museum or scientific society	26%	41%	
Research in biotech/pharma: Conducting discovery or preclinical research, managing research teams or research facilities	26%	40%	<i>Consider Your Values!</i>

Sigma Xi Survey

22,000 postdocs contacted
7600 postdocs surveyed

Postdocs who developed a plan with their advisors:

- More satisfied
- More productive
- Fewer conflicts with PI



Take Home Message

- Trainees are not just workers
- Challenges in scientific careers
- Creating an IDP has benefits for both trainee and mentor