



NSF Data on Postdocs

What Do We Know?

What Else Should We Know?

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Division of Science Resources Statistics (SRS)
www.nsf.gov/statistics**



Today's Talk

- A bit of background on the NSF Postdoc / Early Career Scientist & Engineer (S&E) Data Project
- What do we know?
 - NSF data on postdocs
- What else should we know?
 - Winter '09 Pretest Questionnaire



Project - Background

Current Situation: Limited and incomplete statistical data exists on an important component of the S&E research workforce

Proposed Solution: NSF Division of Science Resources Statistics (SRS) is engaged in a Postdoc & Early Career Scientist & Engineer Project



Project Goals

Fill a gap in S&E research workforce data about postdocs and early career scientists & engineers

- Obtain total count of postdocs employed in the U.S.
 - All employment sectors
 - U.S. and non-U.S. citizens
 - U.S. and foreign degreed
- Collect information on postdocs and early career scientists & engineers
 - Employment Characteristics
 - Experiences and quality
 - Pipeline issues and career transitions



What do we know?

Some person level data on some postdocs:

- U.S. degreed doctorates with definite plans for a postdoc
- U.S. degreed doctorates employed in a postdoc position



What more do we know?

Some count data on some postdocs:

- Postdocs and nonfaculty research staff working in academia
- Postdocs working in Federally Funded Research & Development Centers (FFRDCs)
- Postdocs working in NIH intramural programs



Survey of Earned Doctorates (SED)

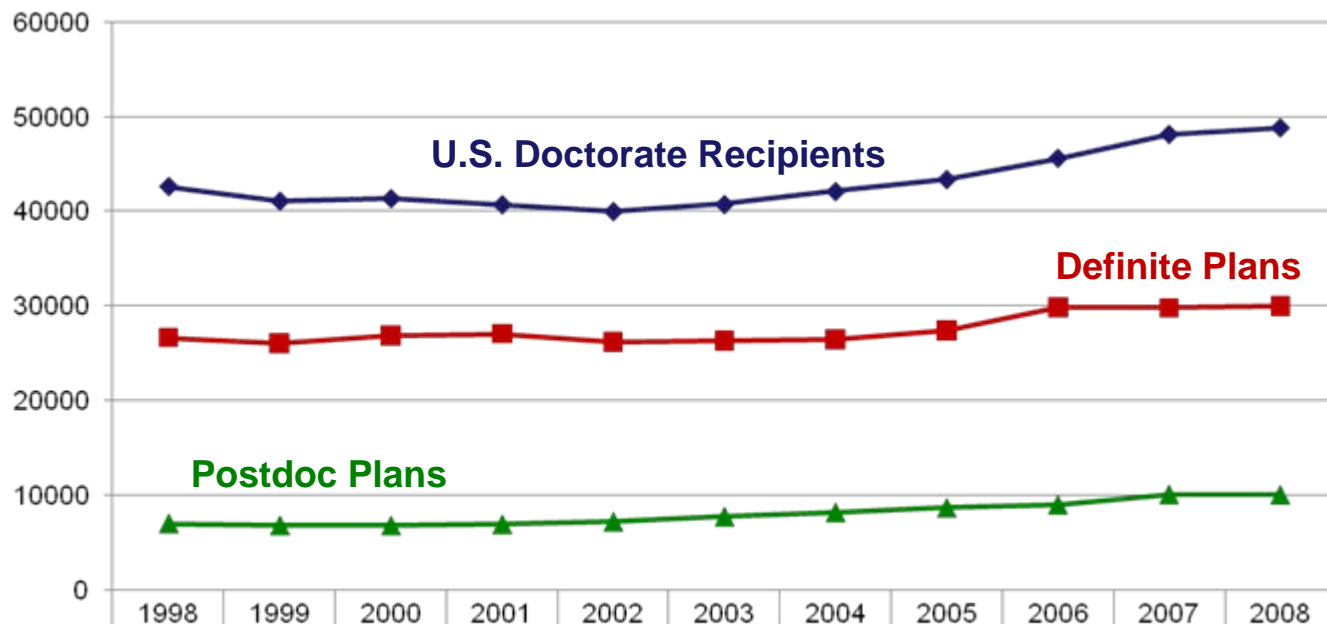
U.S. degreed doctorates with definite plans for a postdoc

- Yearly data collection, since 1957, on **U.S. degreed** doctorates
- Part A – Education
- Part B – Postgraduation Plans
 - Including intent or definite plans to take a postdoc
- Part C – Demographic Information

Survey of Earned Doctorates (SED)

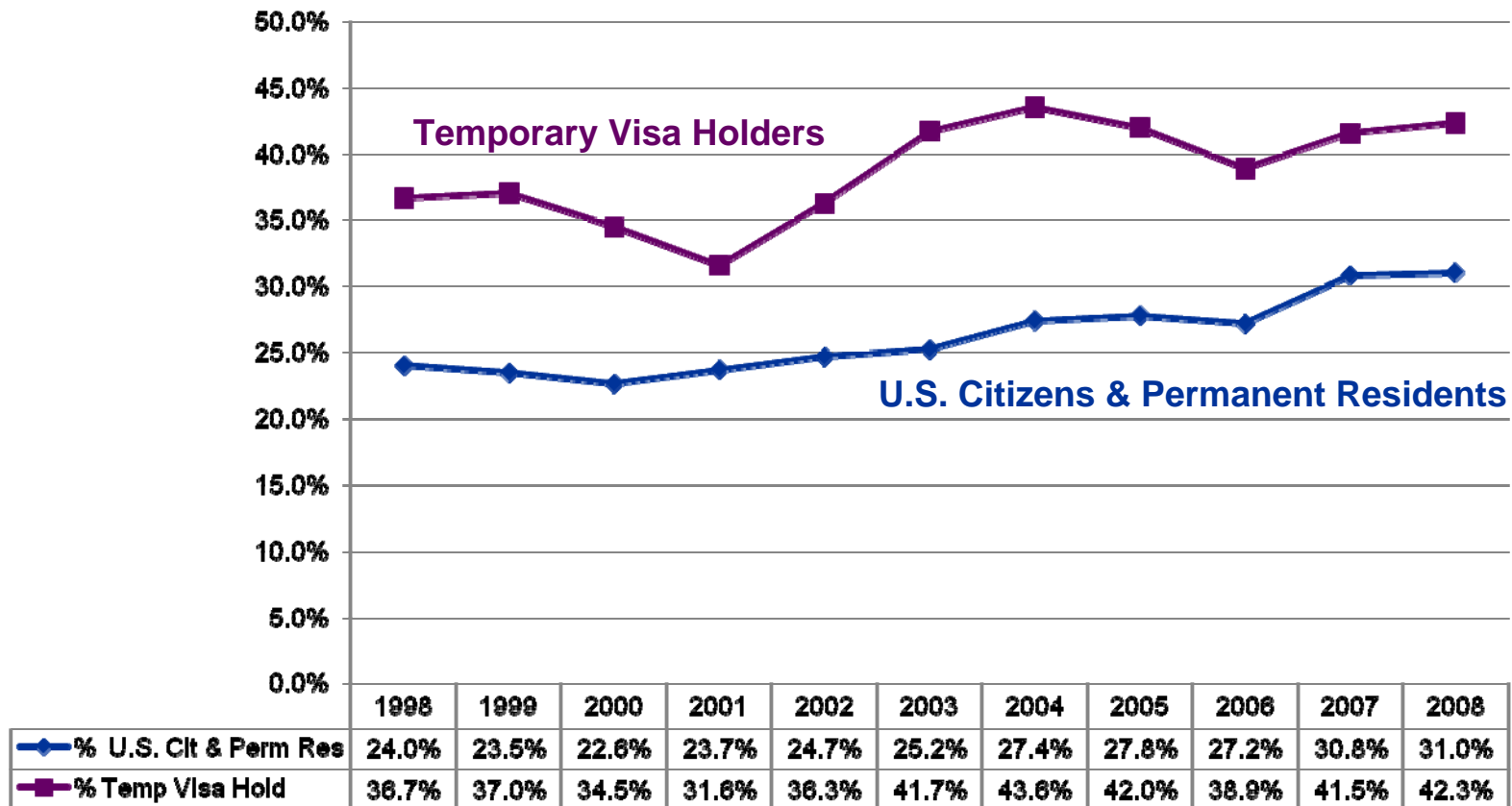
U.S. degreed doctorates, 1998 – 2008

- About 2/3 have definite plans for employment
- Of those, % with Postdoc plans went from **26%** in 1998 to **33%** in 2008

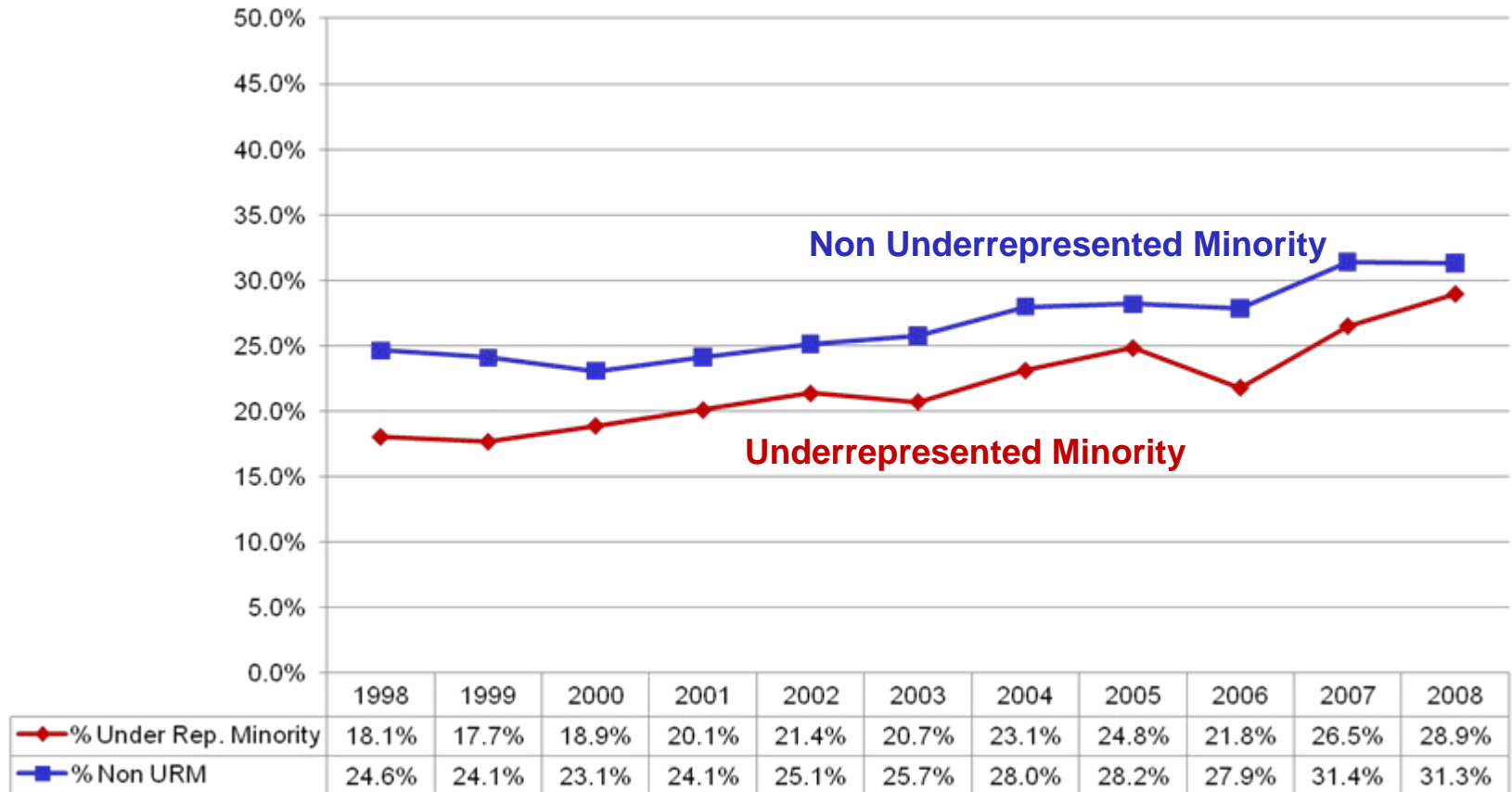


◆ U.S. Doc. Rec.	42638	41097	41366	40738	40025	40758	42118	43381	45615	48112	48802
■ Definite Plans	26643	26007	26866	27047	26136	26294	26419	27416	29813	29781	29939
▲ Postdoc Plans	6983	6774	6764	6893	7167	7701	8148	8633	8974	10050	10008

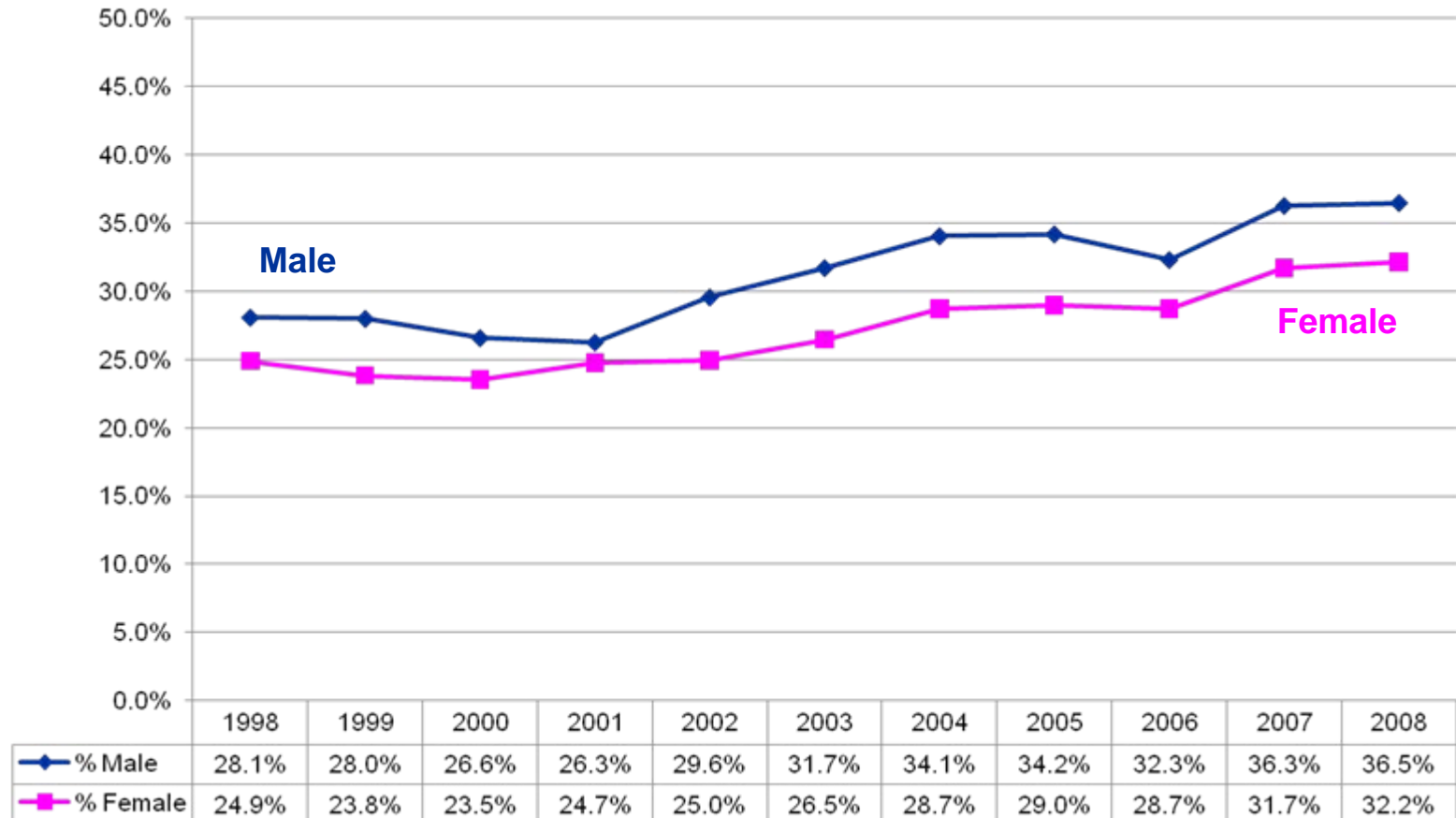
SED - % with Postdoc Plans by Visa Status



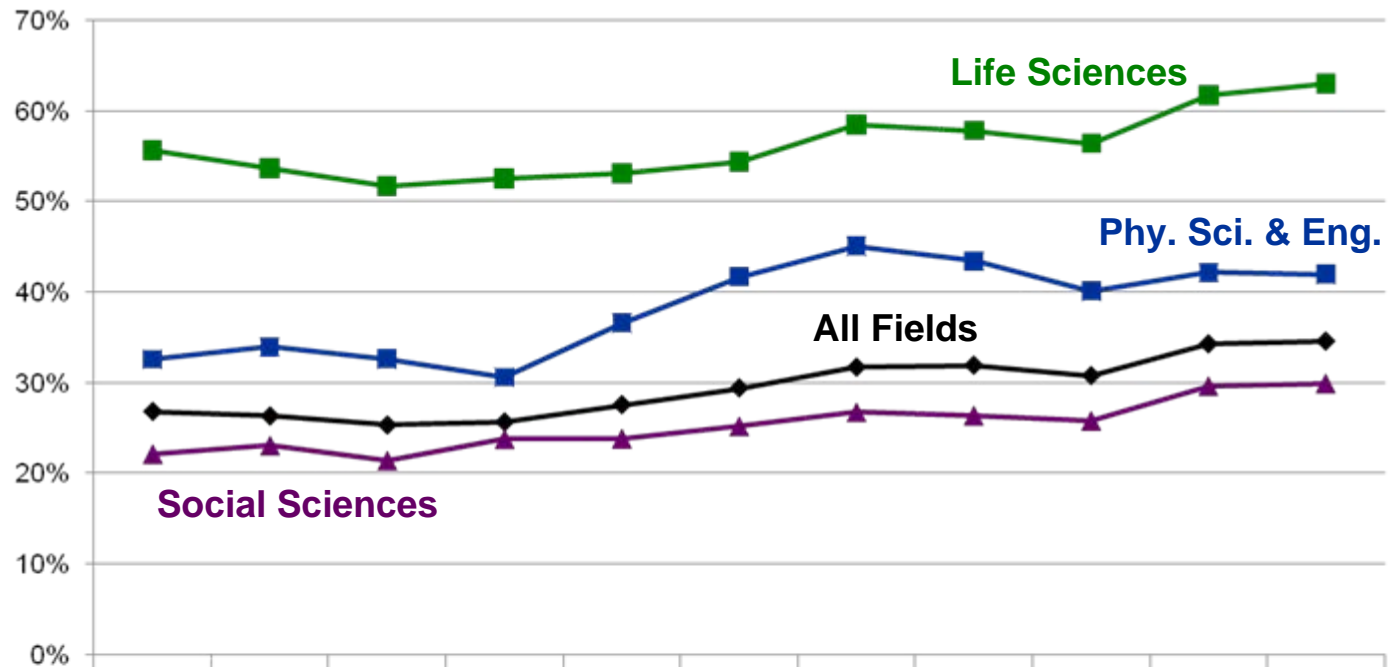
SED - % with Postdoc Plans by Minority Status



SED - % with Postdoc Plans by Sex

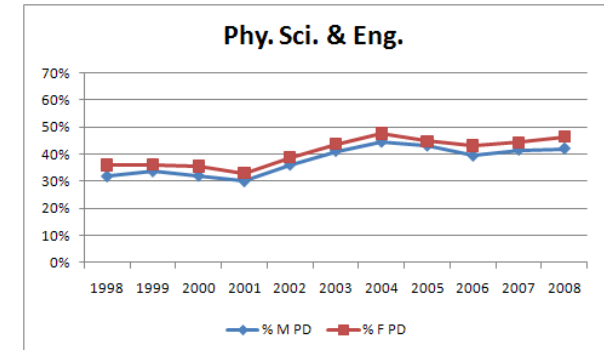
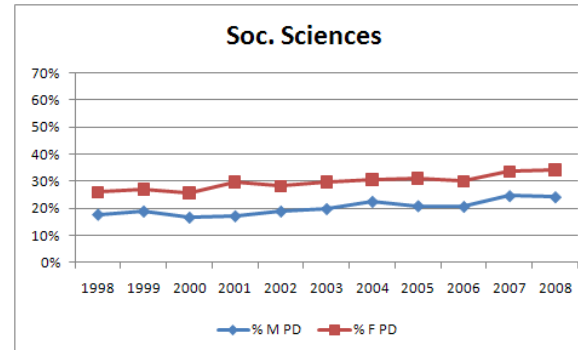
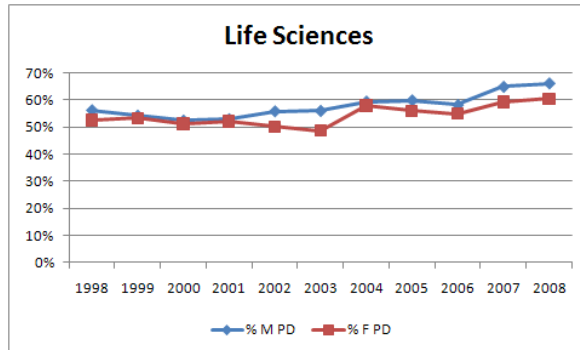


SED – % with Postdoc Plans by Broad fields



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
All Fields	27%	26%	25%	26%	28%	29%	32%	32%	31%	34%	35%
Life Sciences	56%	54%	52%	52%	53%	54%	58%	58%	56%	62%	63%
Social Sciences	22%	23%	21%	24%	24%	25%	27%	26%	26%	30%	30%
Other Sci & Eng	33%	34%	33%	31%	37%	42%	45%	43%	40%	42%	42%

SED – % with Postdoc Plans by Broad fields by Sex



- In Life Sciences, % of male with plans for a PD is higher than % female, but that % is reversed in the two other broad fields
- Number of females is higher than males in Life & Social Sciences
- In all fields, the % with definite postdoc plans is increasing over time



Survey of Doctorate Recipients (SDR)

Panel study of **U.S. degreed** doctorates age 76 or less residing in U.S.

- Biennial survey, first conducted in 1972
- Part A – Current Employment
 - Including holding a postdoc position
- Part B – Past Employment
- Part C – Other Work-Related Experiences
- Part D – Education

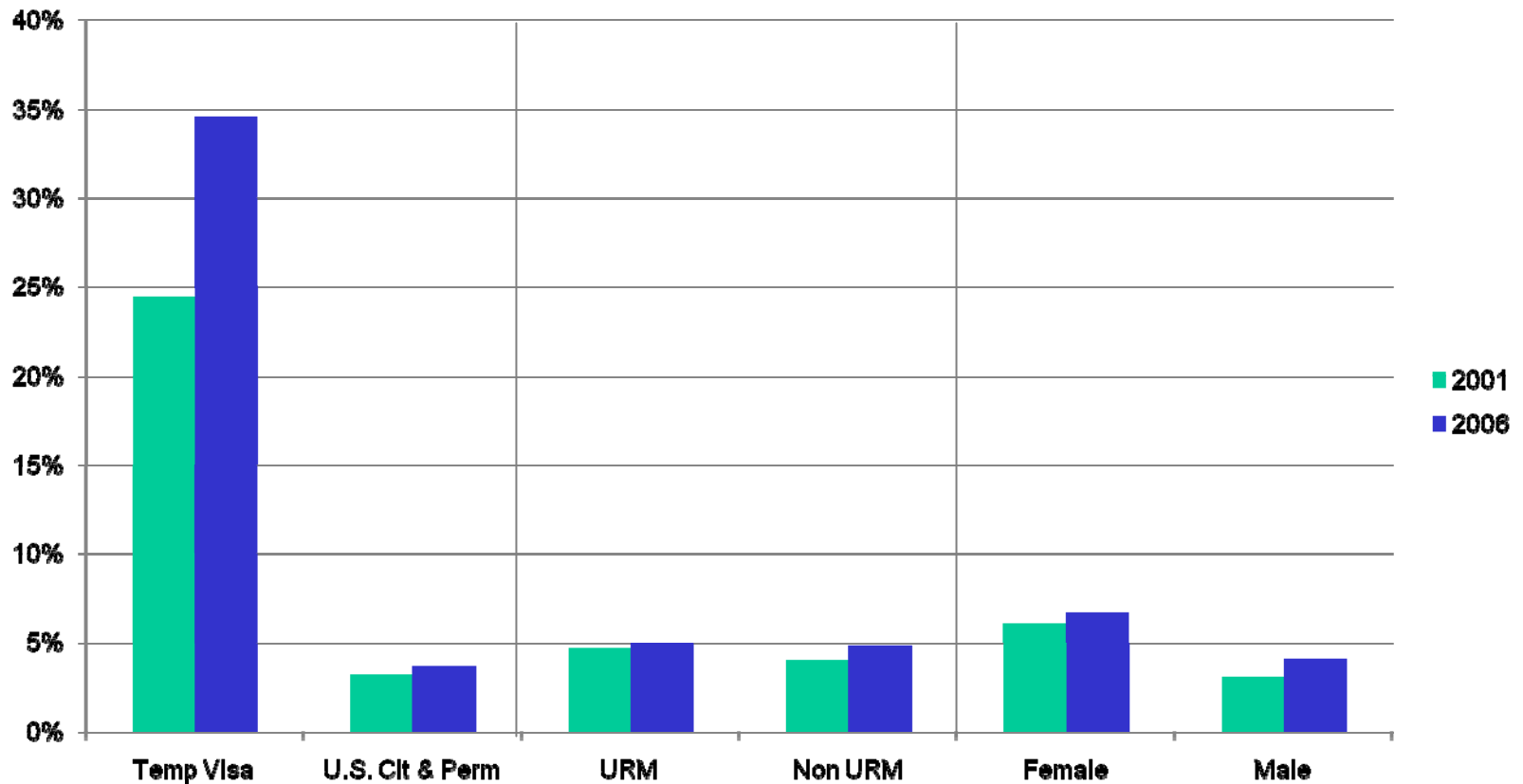


SDR – Employed as Postdoc

- U.S. degreed doctorates employed in U.S
- In 2006, almost 5% are employed as a postdoc

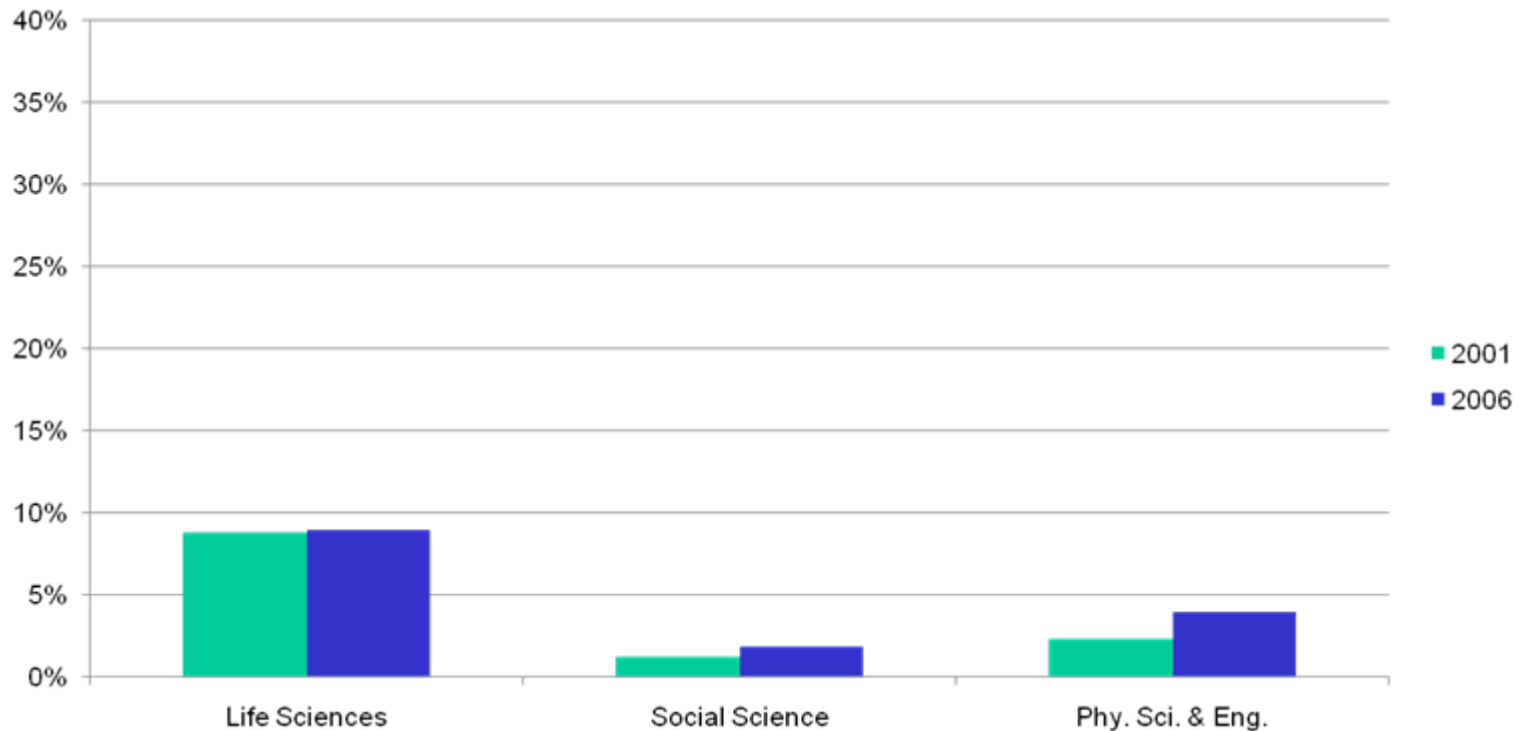
	2001	2006
Total employed	574,890	621,630
As a postdoc	21,870	29,890
% employed as a postdoc	3.8%	4.8%

SDR – % with Postdoc Employment by Visa, Minority & Sex

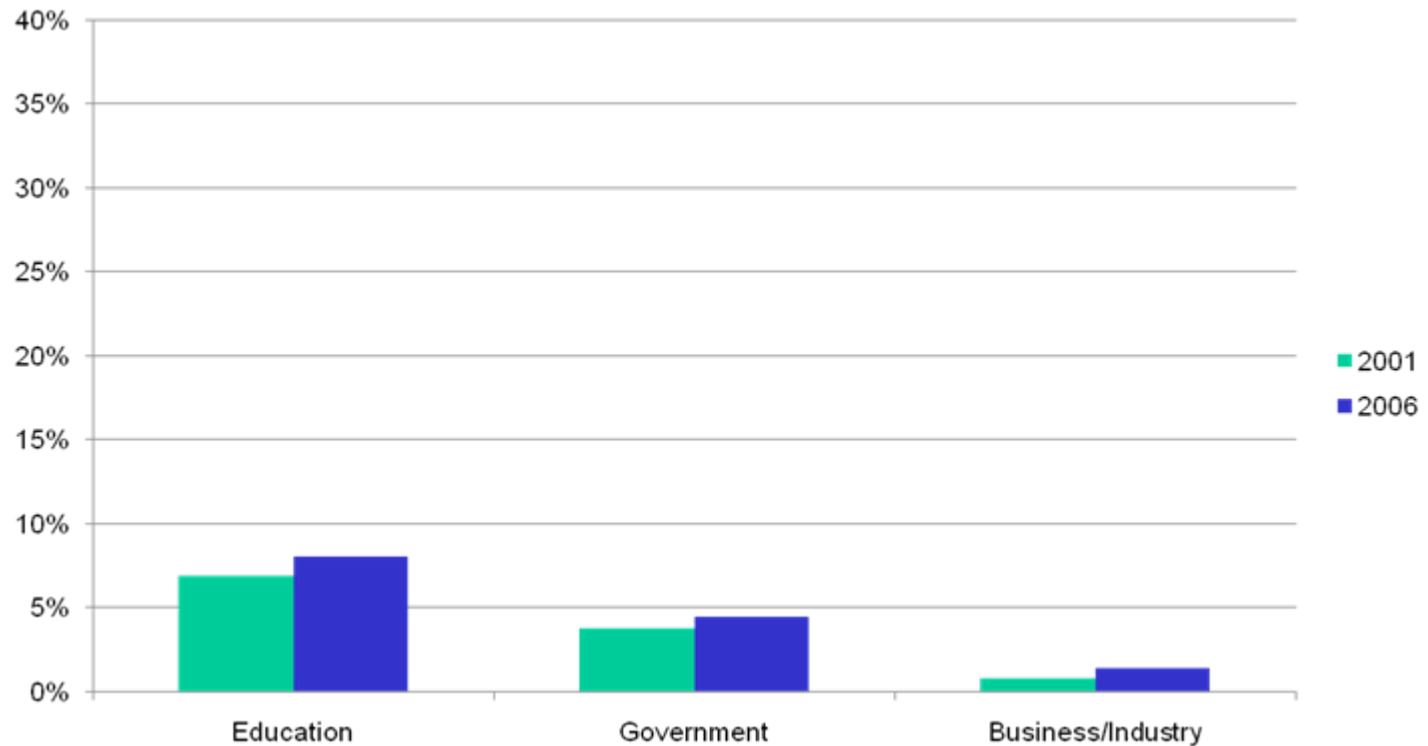




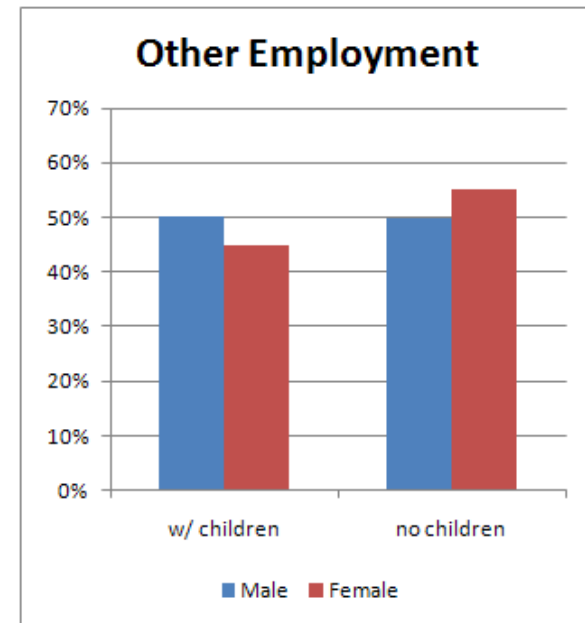
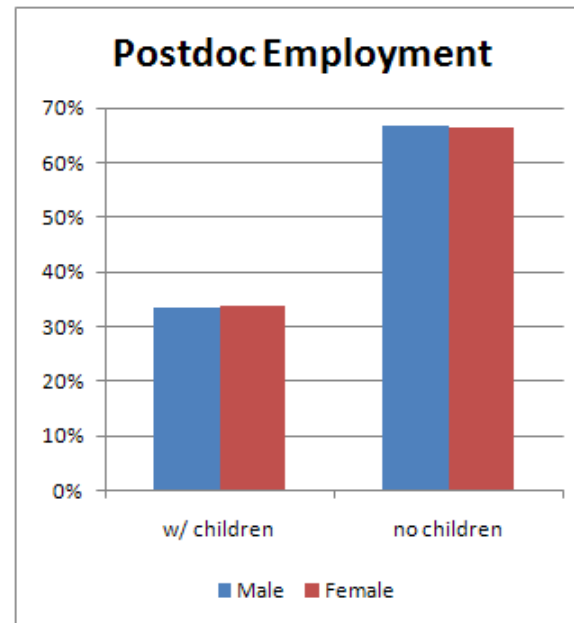
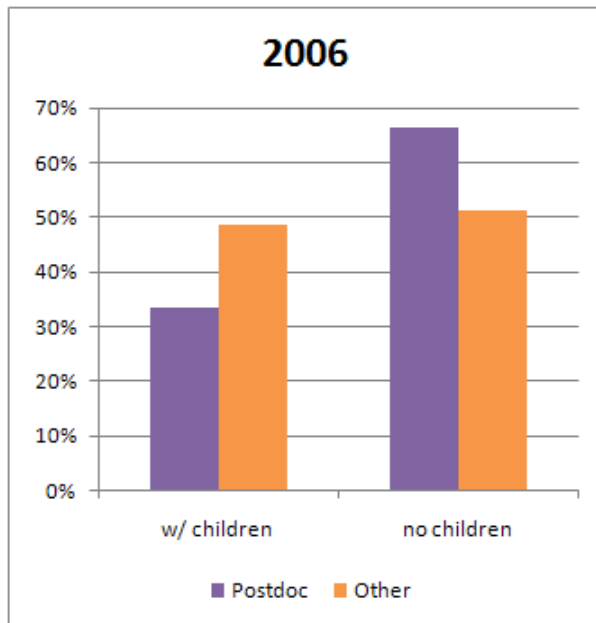
SDR – % with Postdoc Employment by Field of Degree



SDR – % with Postdoc Employment by Employment Sector



SDR – % with Children by Employment by Sex (2006)



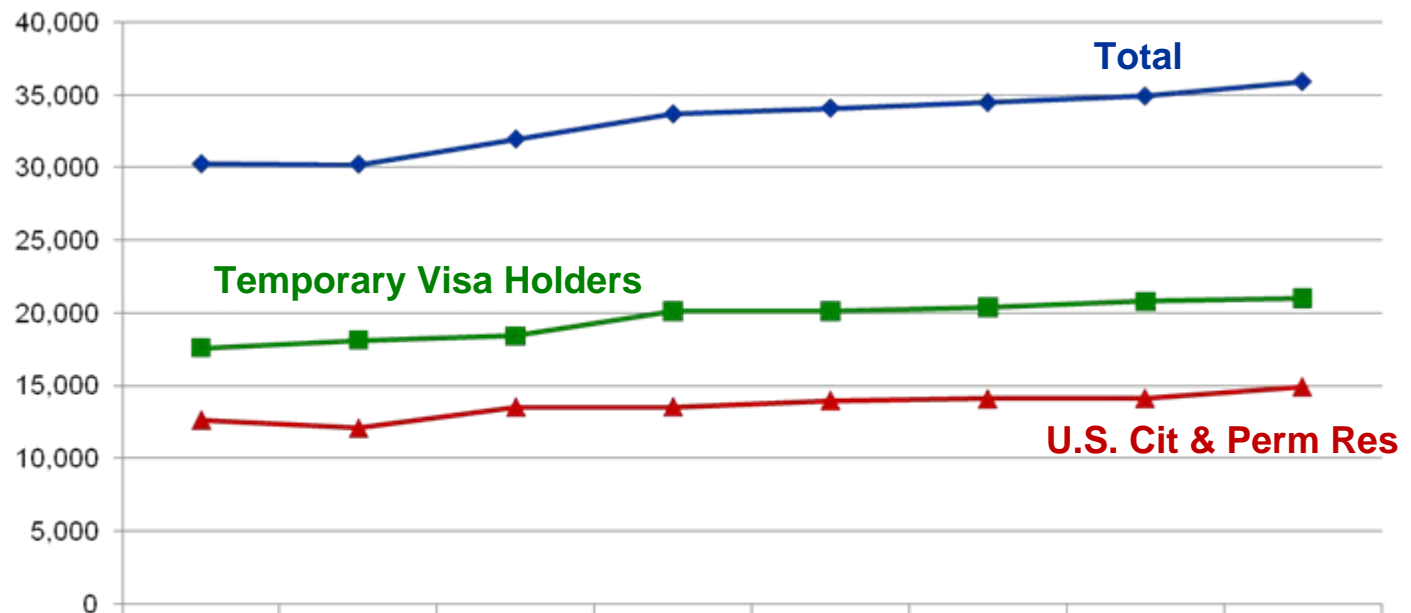


GSS - Survey of Graduate Students & Postdoctorates in Science, Engineering & Health

Count data for postdocs in academia, in FFRDCs, and in NIH intramural programs

- Yearly data collections
 - Academia since early 1970s
 - FFRDCs and NIH since 2007

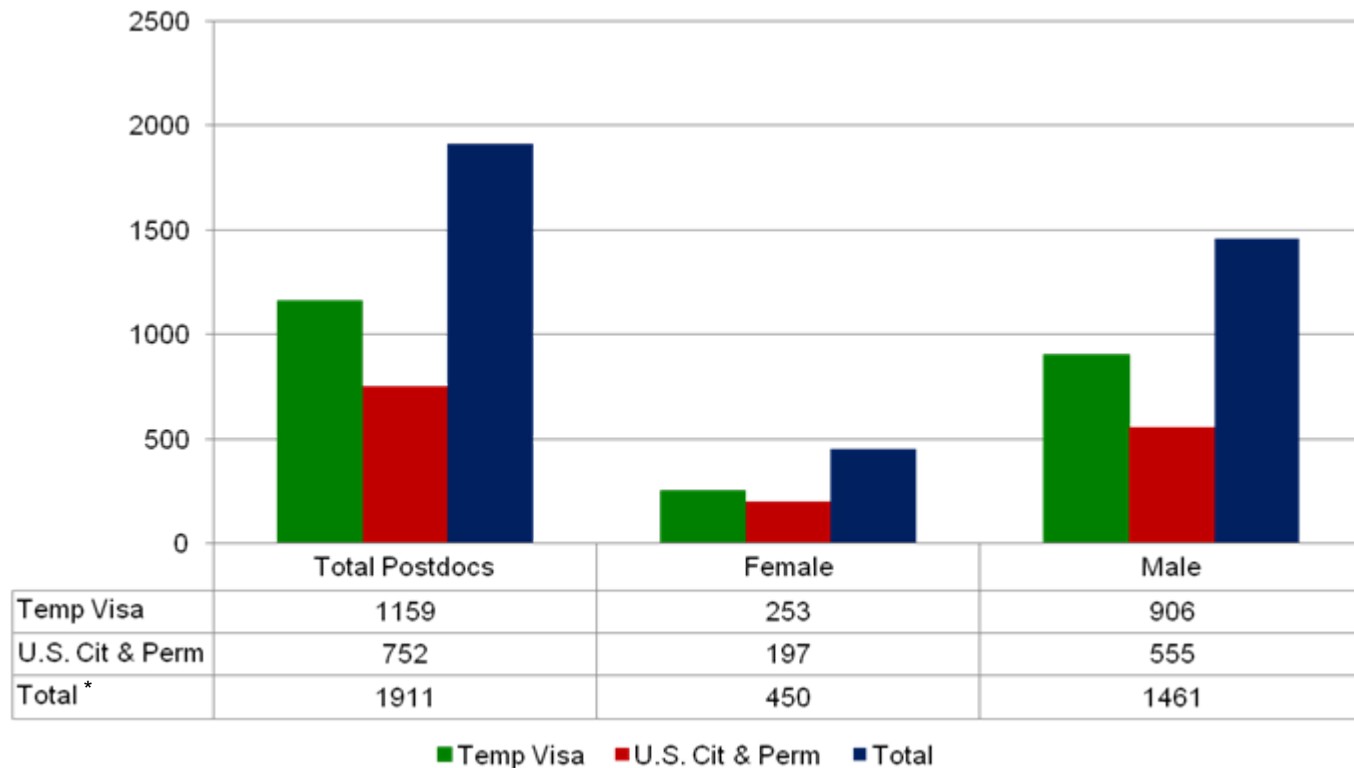
GSS – Postdocs in U.S. Academic Institutions⁺ by Visa Status



	2000	2001	2002	2003	2004	2005	2006	2007*
◆ S&E postdocs	30,224	30,196	31,937	33,666	34,065	34,456	34,895	35,894
■ Temp Visa Hold	17,597	18,123	18,413	20,124	20,096	20,378	20,778	20,991
▲ U.S. Cit & Perm Res	12,627	12,073	13,524	13,542	13,969	14,078	14,117	14,903

⁺ Includes U.S. Medical Schools

GSS - Postdocs in Federally Funded Research & Development Centers (2007)



* Missing data by sex for one FFRDC. Total Postdocs = 2,235 in 2007.



GSS - Postdocs in NIH Intramural Research (2007)

<u>Total</u>	3,367
Temporary Visa Holders	2,053
U.S. Citizens & Perm. Res.	1,314

- Postdocs working on NIH Intramural Research outnumber postdocs working in *FFRDCs



What should we know?

- Total number of postdocs and early career scientists in the U.S.
 - Missing Non-U.S. Degreed, Non-U.S. Citizens, and PhD-equivalent professional degrees
- Why are they doing a postdoc or something else?
- What are they doing, research, training, other?
- Who are they by age, sex, national origin, field, etc?
- Where are they?



What else should we know?

- What is the quality and experience of the work?
 - Amount of training and guidance
 - Opportunities to conduct independent research or author publications
- Are there any pipeline issues?
- What are the career transitions?
 - Longitudinal information on career aspirations, career progression, and career outcomes



Pretest Questionnaire

- Educational Background
- Employment
 - First position after earning PhD
 - Current position
 - Future plans
- Demographics



Pretest Questionnaire - more

- Current position
 - Professional activities
 - Employer demographics
 - Compensation
 - Decision to take
 - Evaluation of
 - Professional vs. Personal life balance
 - Mentoring
 - Funding



Next Steps

- Lights, camera, action!
- Build on the knowledge we have gained so far in the PDP
- Develop a sampling frame
- Refine the postdoc questionnaire
- Keep listening!



What else would
YOU
like to know?



Thank you!

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