

Confronting Common Assumptions: Designing Future-Oriented Doctoral Education



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Doctoral Education and the Faculty of the Future
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Overview



- 1. Common assumptions have shaped our approach to doctoral education and our thinking about successful PhD outcomes.**
- 2. Future faculty will need to prepare PhD students for multiple careers inside and outside academe.**
- 3. Future faculty will need to prepare themselves and their doctoral students to become world-citizens and intellectual risk-takers.**

The Research Context: CIRGE

A Resource Center of Information on Graduate
Education Research and Practice



1. Research on outcome measures of doctoral education: **3 national career path studies of PhDs**
2. Action/evaluation research of innovative and international doctoral programs: **NSF IGERTs/ German Graduiertenkolleges**
3. Research/monitor international trends in doctoral education: **biannual international CIRGE conference, development of pilot programs on “international” leadership workshops for doctoral students**

Common (*outdated*) Assumptions about US PhDs



- 1. All PhD students want to become professors.**
- 2. The “best” PhD students do become professors.**
- 3. PhD recipients’ academic career paths are linear and smooth.**

Common (*outdated*) Assumptions about US PhDs



- 4. Everybody can take the best academic job offered.**
- 5. Children detract women from the pursuit of an academic career.**
- 6. Professors enjoy the highest job satisfaction.**

Empirical Findings from Three US *PhDs –10+ and 5+ Years Later Studies*



1. **PhDs—Ten Years Later** (*surveyed 1997*)

MELLON FOUNDATION AND NSF FUNDED

61 US universities, 6 disciplines

Survey population: 5,864 response rate: **66%**

Biochemistry - Computer Science - Electrical Engin.

English – Mathematics - Political Science

2. **PhDs in Art History – Over a Decade Later** (*surveyed in 2002*)

GETTY GRANT FOUNDATION FUNDED

54 US universities, all art history PhD programs

survey population: 725 response rate: **70%**

3. **Social Science PhDs- 5+ Year Out** (*surveyed 2005/06*) FORD

FOUNDATION funded

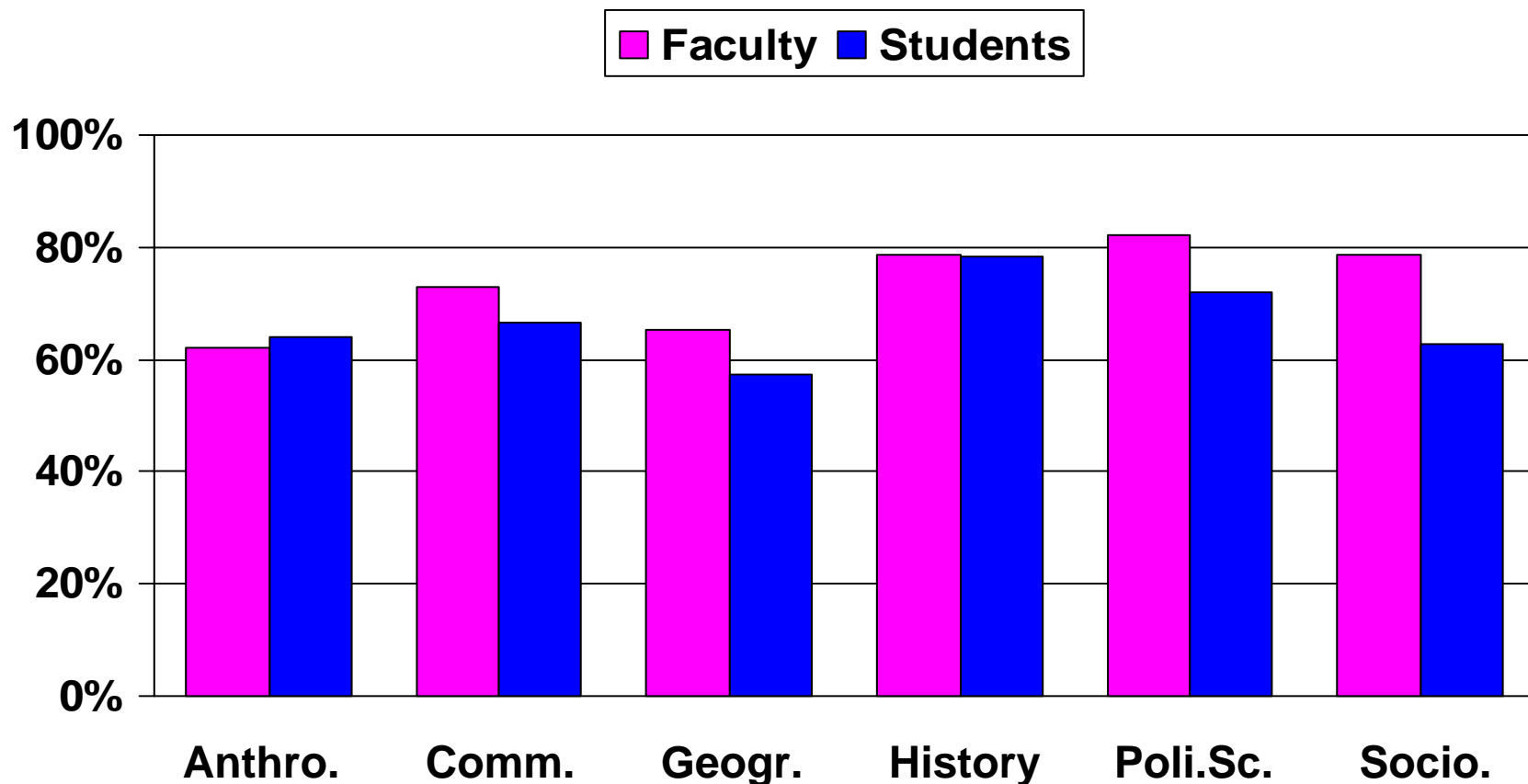
65 universities, 6 disciplines, **50% response rate** (3,025 responses)

Common Assumption 1



**All students who pursue a PhD
want to become professors.**

PhDs' Views on Faculty Expectations for their Students and PhDs' Career Goals at Start of PhD



Faculty encouraged academic career/ **students** wanted to be professors

Career Goal at PhD Completion and % Tenured or Tenure-Track 6+ Years Later



	(1) % Wanted to Be Professor	(2) % Tenured + TT of (1)	(3) % Tenured+T-T of All PhDs	N of All PhDs
Anthropology	67	59	49	<i>(432)</i>
Communication	70	78	66	<i>(343)</i>
Geography	61	69	49	<i>(164)</i>
History	79	72	62	<i>(839)</i>
Political Sc.	73	76	62	<i>(701)</i>
Sociology	71	74	59	<i>(546)</i>

Career Goal at PhD Completion and Tenured 10-14 Years Later



	(1) % Wanted to Be Professor	(2) % Tenured of (1)	(3) % Tenured of All PhDs	N of All PhDs
Bio-Chemistry	32	34	19	(605)
Computer Sc.	46	61	34	(282)
Electrical Engin.	19	67	22	(328)
English	81	64	55	(767)
Mathematics	54	73	54	(522)
Political Sc.	72	66	53	(455)

Employment at Time of Survey (2005/2006) 5+ Years after PhD (SS5)

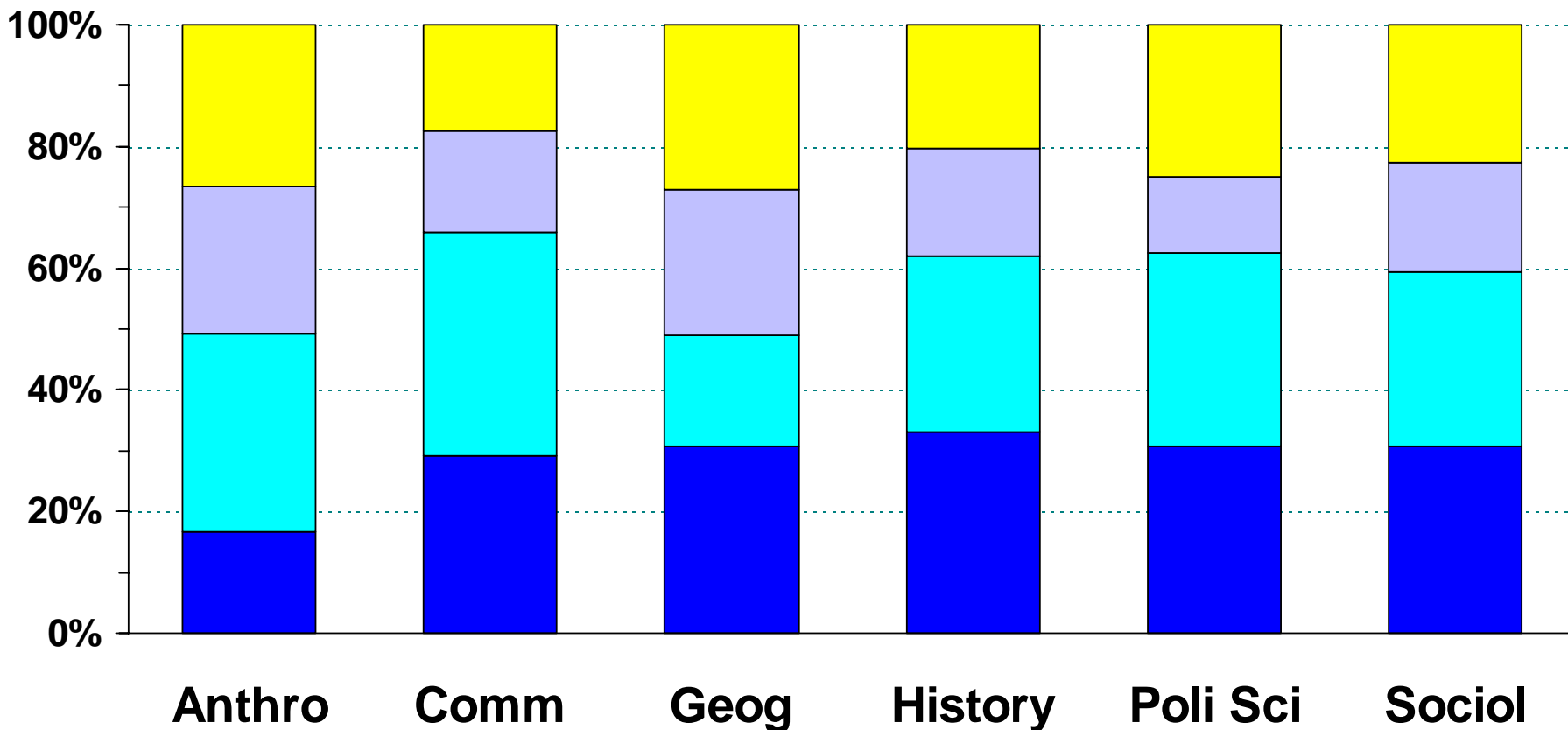


Tenured

Tenure Track

Acad. Other

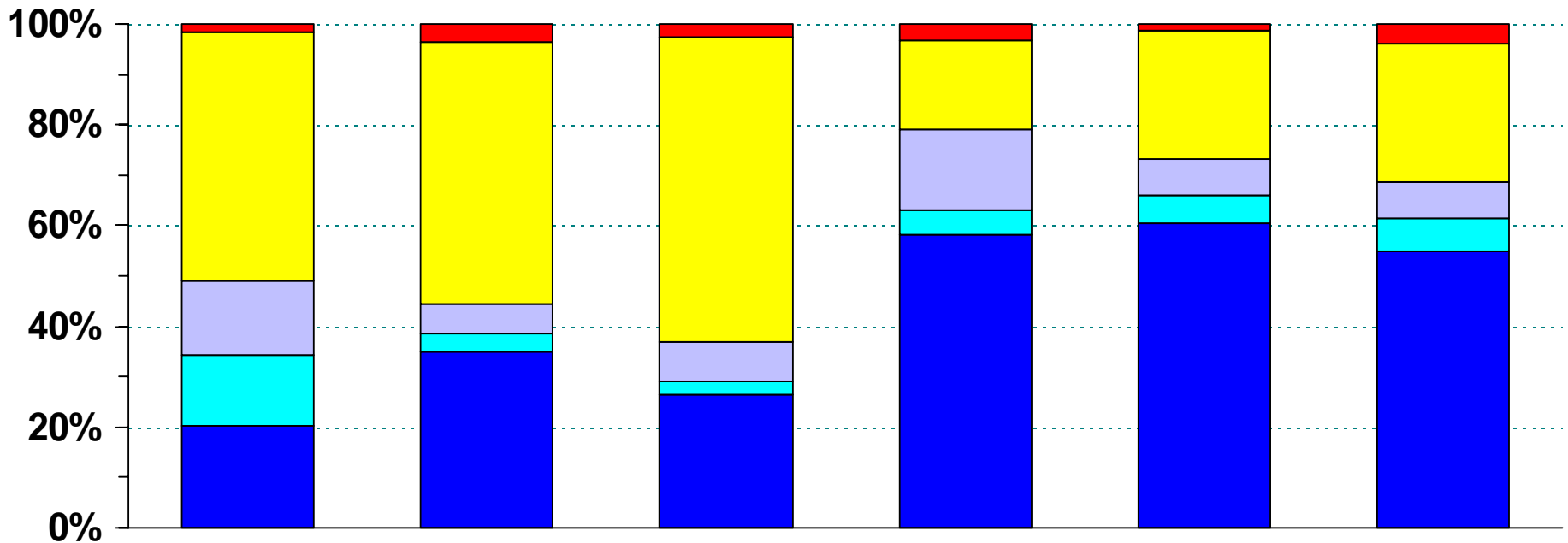
BGN



Employment at Survey, 1996/97 10+ Years after PhD



■ Tenured
 ■ Tenure Track
 ■ NTT/Acad.Other
 ■ BGN *
 ■ Both Sectors



Biochem.

Comp.
Sci.

Elec.
Eng.

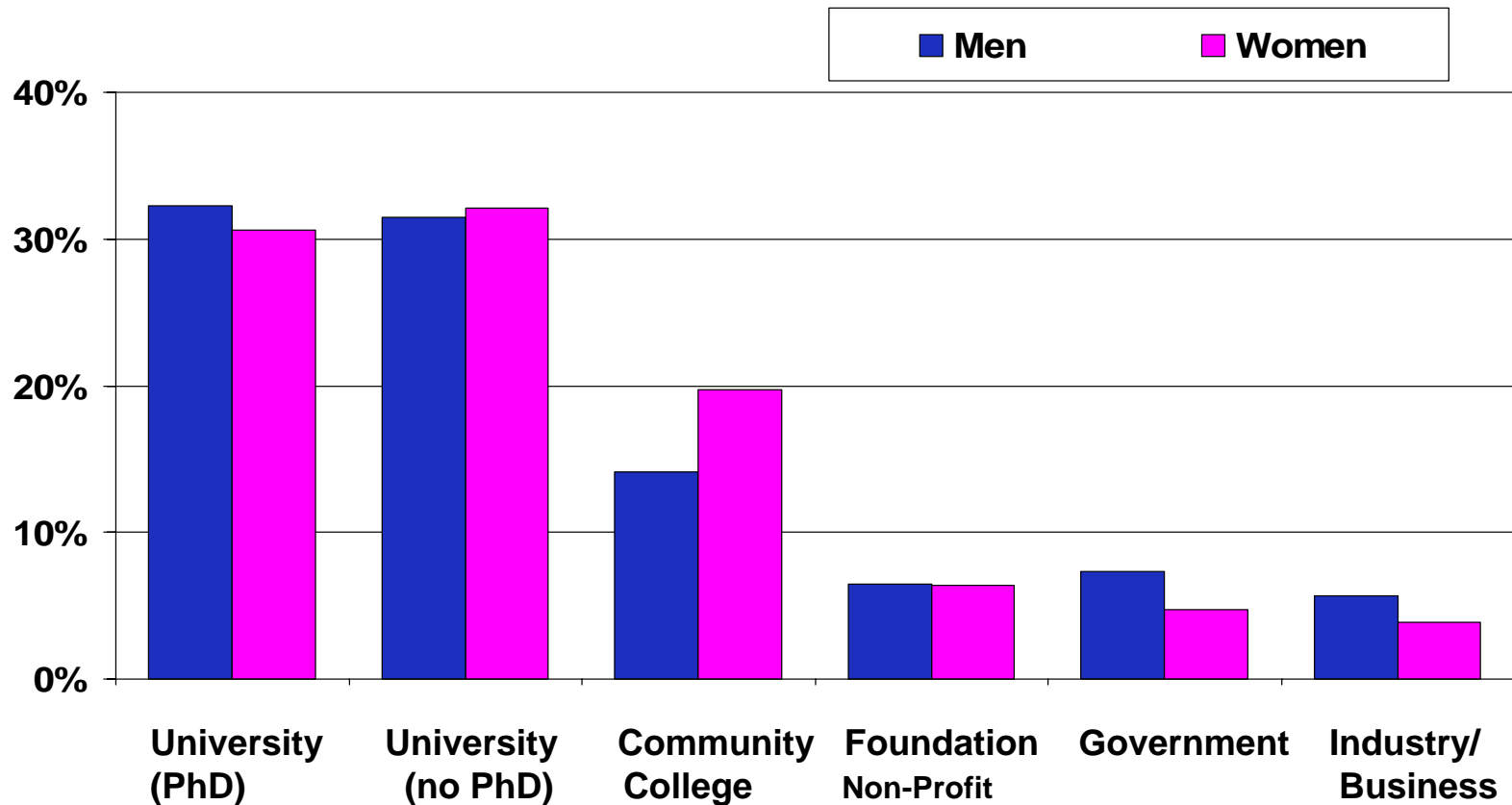
English

Math.

Poli.
Sci.

* B = Business
 G = Government
 N = Non-profits

Selected Employer at Time of Survey (2005/2006) **Social Science**



Excluded: Not in the Workforce (55=2.1%)

Common Assumption 2



**The “best” PhD students do
become professors**

**measures: many publications
short time-to-degree**

Publications at PhD Completion by Last Employment Sector (**Social Sciences**)



	Academe			BGN*		
	% None	% 1 - 2	% ≥ 3	% None	% 1 - 2	% ≥ 3
Anthropology	34	43	23	37	31	32
Communication						
Geography	26	48	26	32	32	36
History	42	38	19	47	37	17
Political Science	45	40	14	46	40	14
Sociology						

Common Assumption 2

The “best” become professors (*PhD10*)

Short time-to-doctoral degree and number of publications only mattered significantly for **English** and **political science PhDs**.
(from PhD10)

These factors did NOT matter for PhDs in **biochemistry**, **electrical engineering**, and **mathematics**. Time-to-degree mattered for computer scientists
(logistic regression analysis).

Common Assumptions the “best” (*PhD10*)



What mattered most is the **RANK** of PhD-granting program.

However in fields with an **attractive job market outside academia -- computer science and electrical engineering -- RANK** did NOT matter significantly.

Common Assumption 3

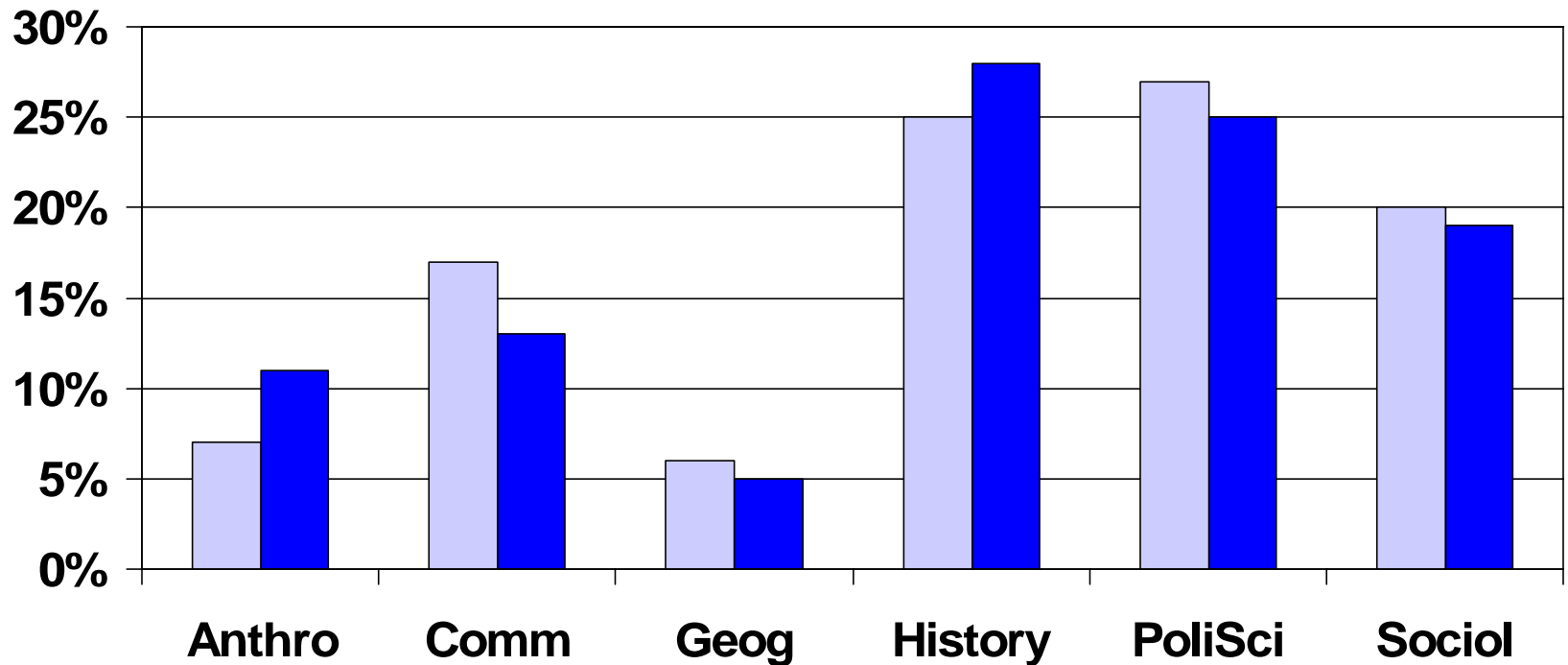


**PhD recipients' career paths
are linear and smooth**

% Whose First Job was Tenure Track, and % Ever Tenured/Tenure Track, by Field

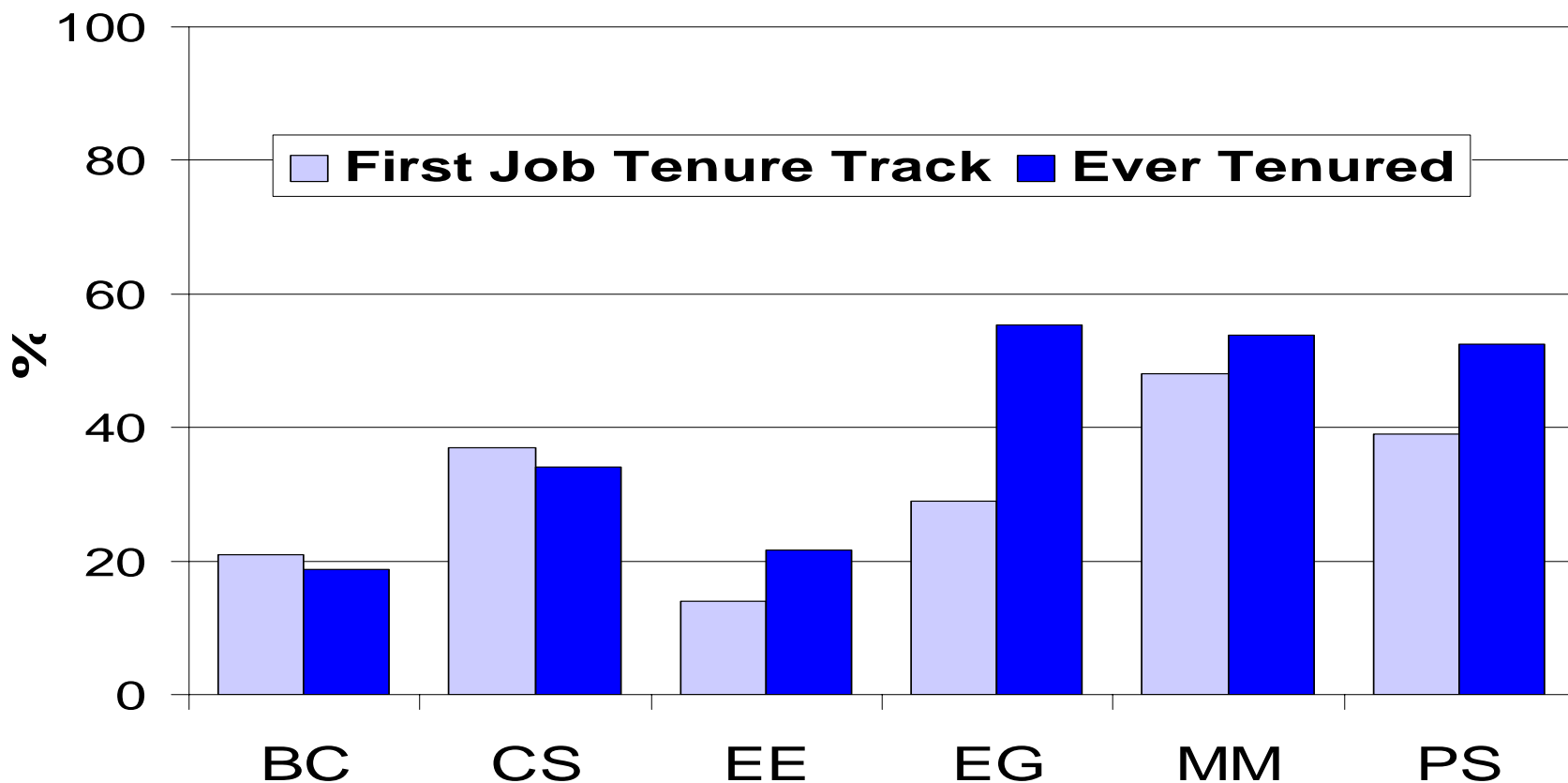


■ First Job Tenure track ■ Ever Tenured/Tenure Track



PRELIMINARY RESULTS

% PhDs First Job Assistant Professor and Ever Tenured



Three Major Trajectories: Political Science



**Percent
of Total**

1. Faculty

TT to Ten. (219)



42%

2. BGN Employees

Business (29)

6%

Government (21)

4%

13%

Non-Profit (15)

3%

3. Crossovers

Acad. to BGN (22)

4%

BGN to Acad. (10)

2%

12%

Back and Forth (30)

6%

Trajectory 1: Under 2yrs. BGN.

Trajectory 2: Under 1yr. Acad.

Trajectory 3: Over 2yrs. BGN and over 1yr. Acad.

Common Assumption 4



**Everybody can take the best
job offered**

Educational Level of Spouse At Time of Survey by Gender (all social science fields)



Women in Our Survey

Married to PhD/JD/MD: **34%**

Men in Our Survey

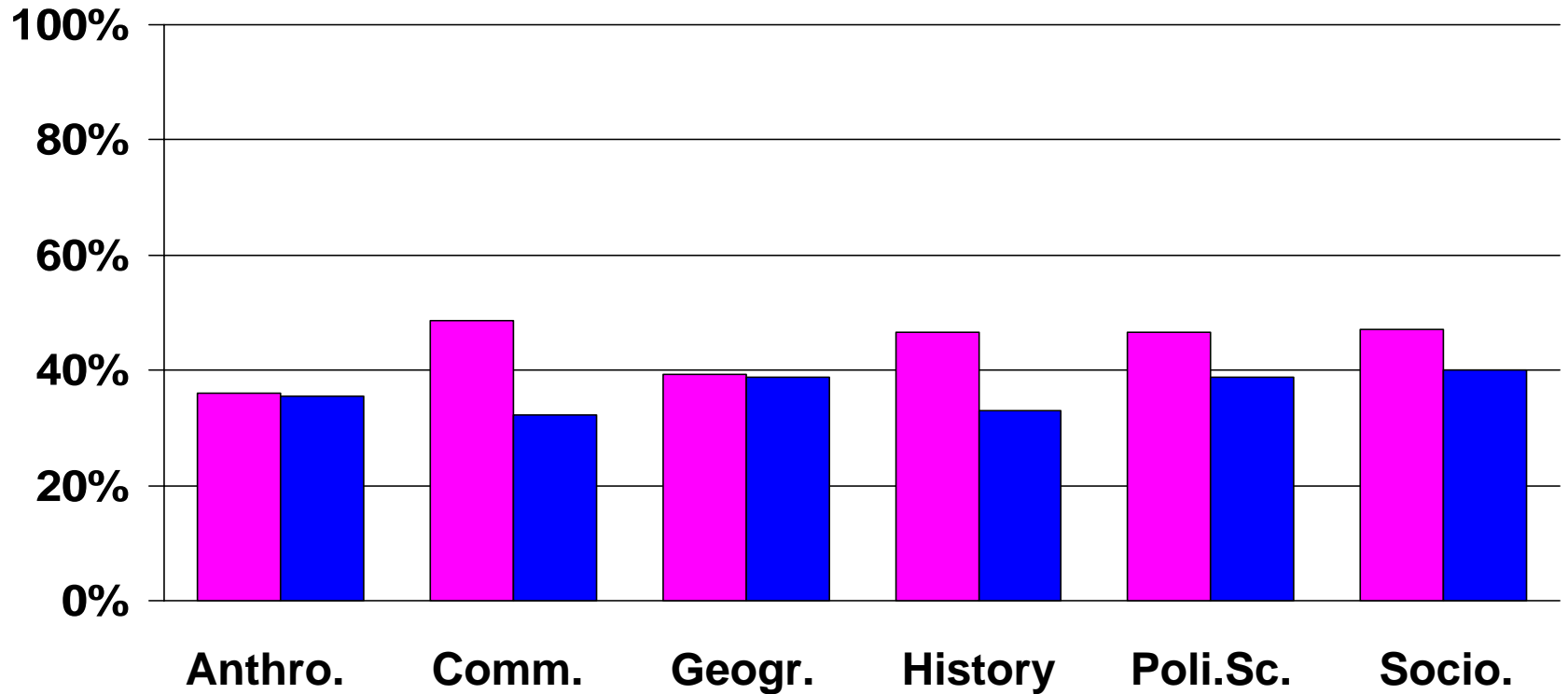
Married to PhD/JD/MD: **19%**

PRELIMINARY RESULTS

% Who Said “Good Opportunities for My Spouse” was Very Important in First Job Choice



Married Women Married Men



Educational Level of Spouse by Gender and Field



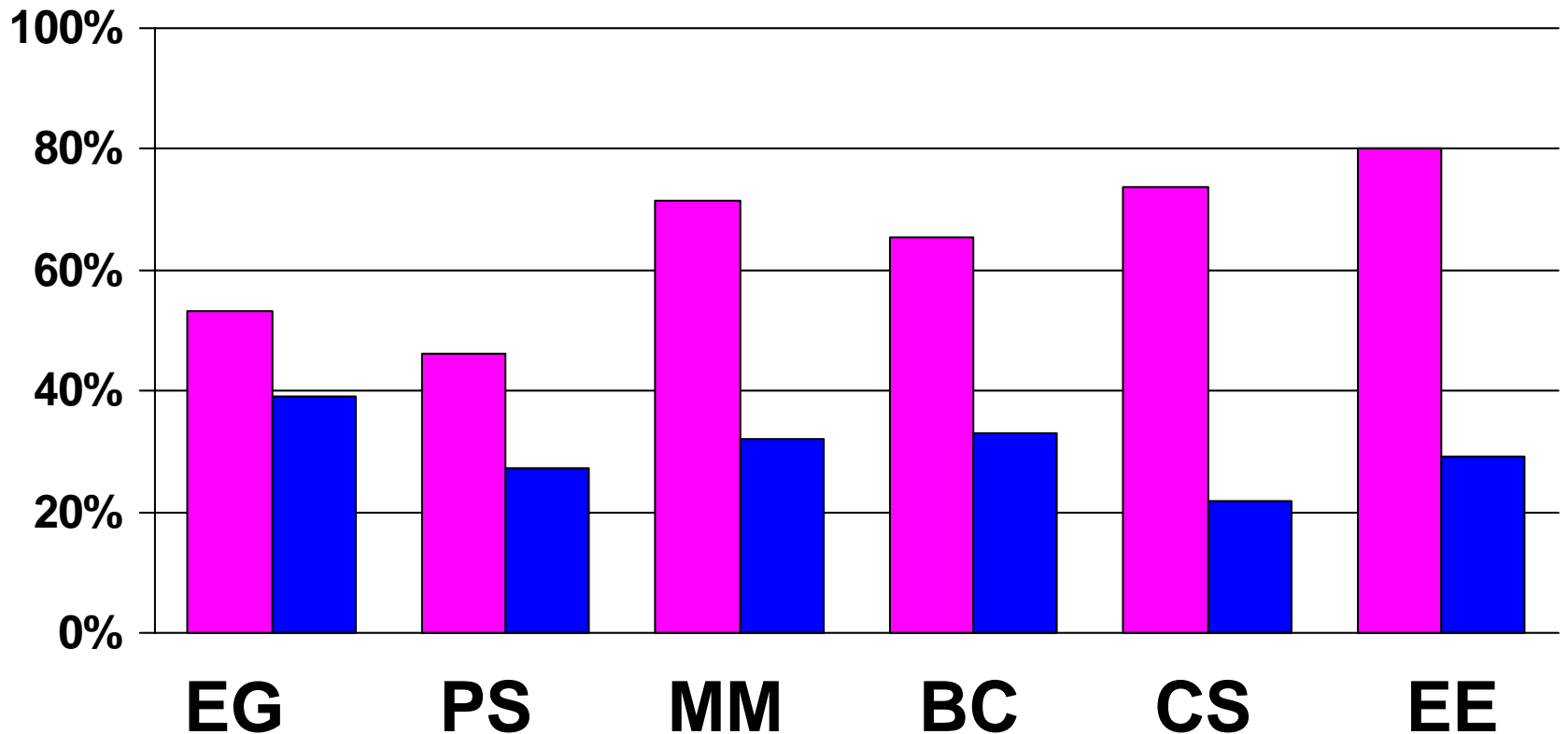
AT PhD completion married **women/ men**
BIOCHEMISTS had spouses with PhD/JD/MD
(1997): **75% / 24%**

AT PhD completion married **women/ men**
MATHEMATICIANS had spouses with
PhD/JD/MD (1997): **84% / 25%**

% "Good Opportunities for My Partner" Very Important in First Job Choice



Married Women Married Men



Common Assumption 5



Children detract women from the pursuit of a faculty career

Who Influenced the Career Path?

Art History



	Women	Men
Partner	44%	26%
Children	38%	13%
Taking Care of Relatives	13%	4%

Ever Tenured by Family Trajectories and Gender: *Art History*



	Women	Men
Single w/o Children	53%	54%
Stable Relationship w/o Children	52%	76%
Stable Relationship w/ Children	38%	81%

Common Assumption 6



Faculty enjoy the highest job satisfaction

% Very Satisfied in Job at Time of Survey (*All Fields/PhD10*)

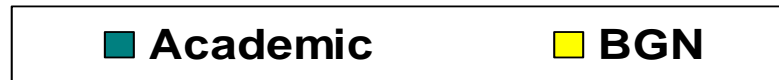


	Rank	%	N
BNG manager/executive	1	40%	243
Academic administrator	2	39%	54
Acad. researcher	3	28%	54
Tenured academic staff	4	26%	851
BNG researcher	5	24%	430
Administrators	6	22%	54
Temporary academic staff	7	18%	131

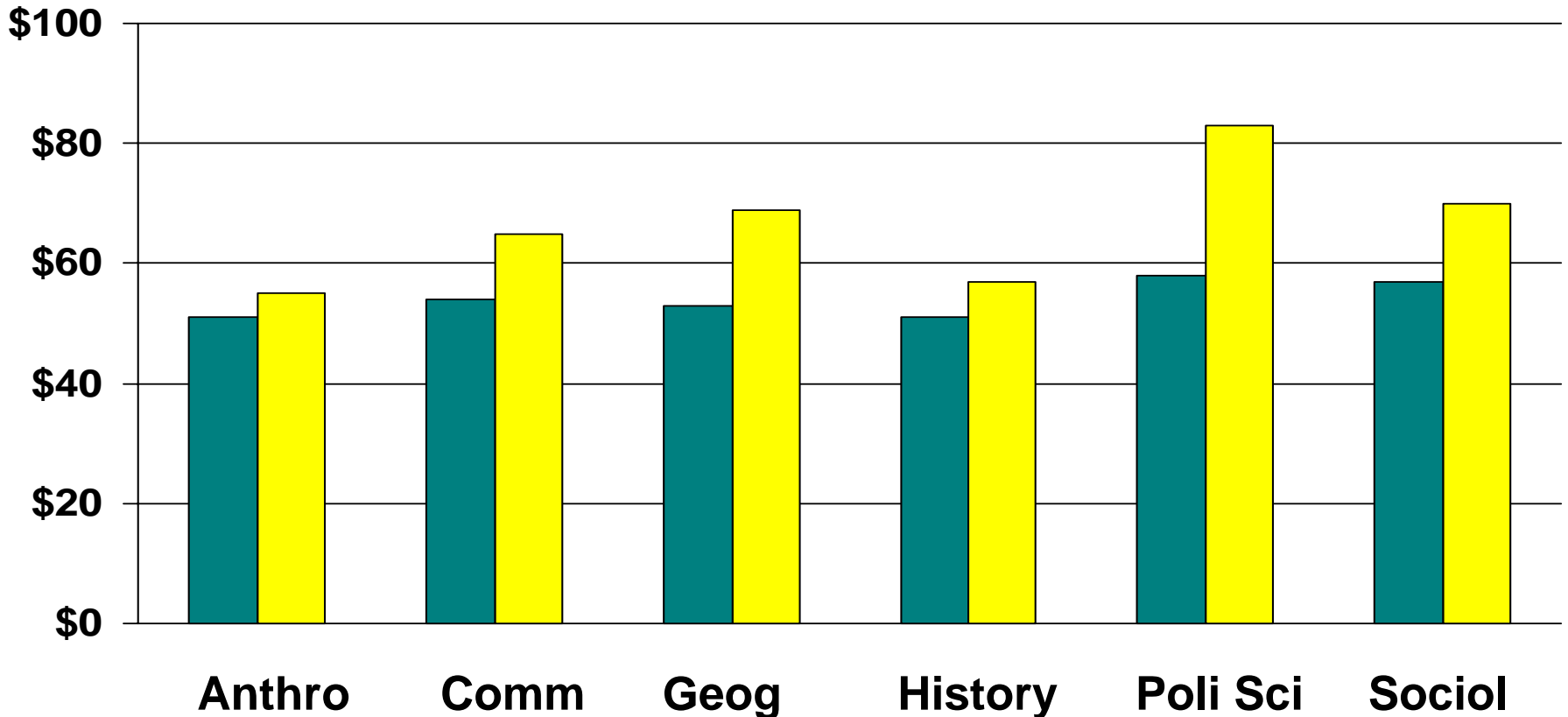
Satisfaction with Current Job (Social Sciences)

Major Field	Rank	Mean Satisfaction (1=very dissatisfied to 4=very satisfied)
Academic Ladder	1	3.20
Academic Other	5	3.12
Foundation/Social (non) Profit	4	3.17
Government	1	3.20
Industry	3	3.18

Median Salary at Time of Survey (2005/2006) among Full-time and Self-employed PhDs: **Social Sciences**



Thousands



Excluded: Not in the workforce, part time, working outside US.

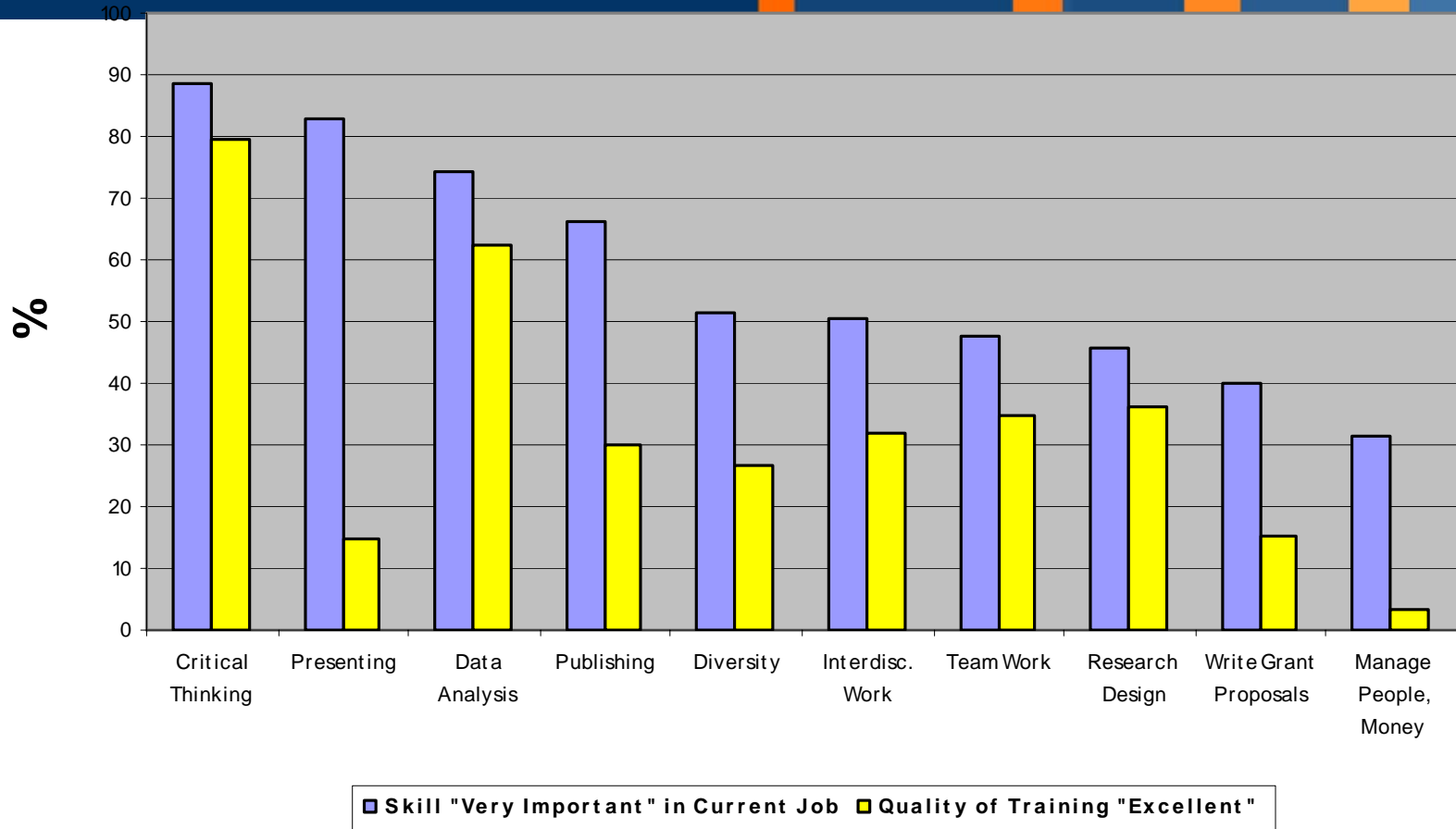
Faculty will need to prepare PhDs for the Future



The context:

**Globalization
and the knowledge economy**

Importance of Skill in Current Job vs. Quality of Training "Excellent"



Characteristics of Doctoral Education for the 21st Century



1. It prepares for a variety of careers (academic and **non-academic**).
2. It prepares PhDs to work in **inter-disciplinary groups** (provides general epistemology course “how do we know what we know, and what do we regard as evidence?”)
3. It integrates **professional skill building**
4. It integrates **team work**

Characteristics of Doctoral Education for the 21st Century



6. It includes **international collaborations** into the doctoral program.
7. It integrates cultural expertise and knowledge of international doctoral students and their need into US curricula.
7. It re-introduces **foreign language** requirement.
8. It prepares for **leadership**.
9. It prepares PhDs for **world citizenship**, becoming leaders who both think globally and act locally and act globally and think locally.

Thank you!



CIRGE website

<http://depts.washington.edu/coe/cirge/index.html>