Confronting Common Assumptions:

Designing Future-Oriented Doctoral Education

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Doctoral Education and the Faculty of the Future
2006-07 CHERI Policy Research Conference
ILP – Cornell University, Ithaca NY
October 8, 2006

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Overview

1. **Common assumptions have shaped our approach to doctoral education and our thinking about successful PhD outcomes.**

2. **Future faculty will need not only to prepare PhD students for multiple careers inside and outside academe and foster professional development, but also**

3. **future faculty will need to prepare themselves and their doctoral students to become world-citizens.**

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Common *(outdated)* Assumptions about US PhDs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.

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Common *(outdated)* Assumptions about US PhDs

4. Everybody can take the best academic job offered.
5. Professors enjoy the highest job satisfaction.

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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, 45% response rate (3,025 responses)

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Common Assumption 1

All students who pursue a PhD want to become professors.

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Career Goal at PhD Completion and % Tenured or Tenure-Track 5+ Years Later

	(1) % Wanted to Be Professor	(2) % Tenured + TT of (1)	(3) %Tenured+T-T of All PhDs	N of All PhDs
Anthropology	**72**	**59**	**49**	***(407)***
Communication	**75**	**78**	**66**	***(319)***
Geography	**65**	**69**	**49**	***(155)***
History	**84**	**72**	**62**	***(789)***
Political Sc.	**76**	**76**	**63**	***(674)***
Sociology	**75**	**74**	**60**	***(521)***

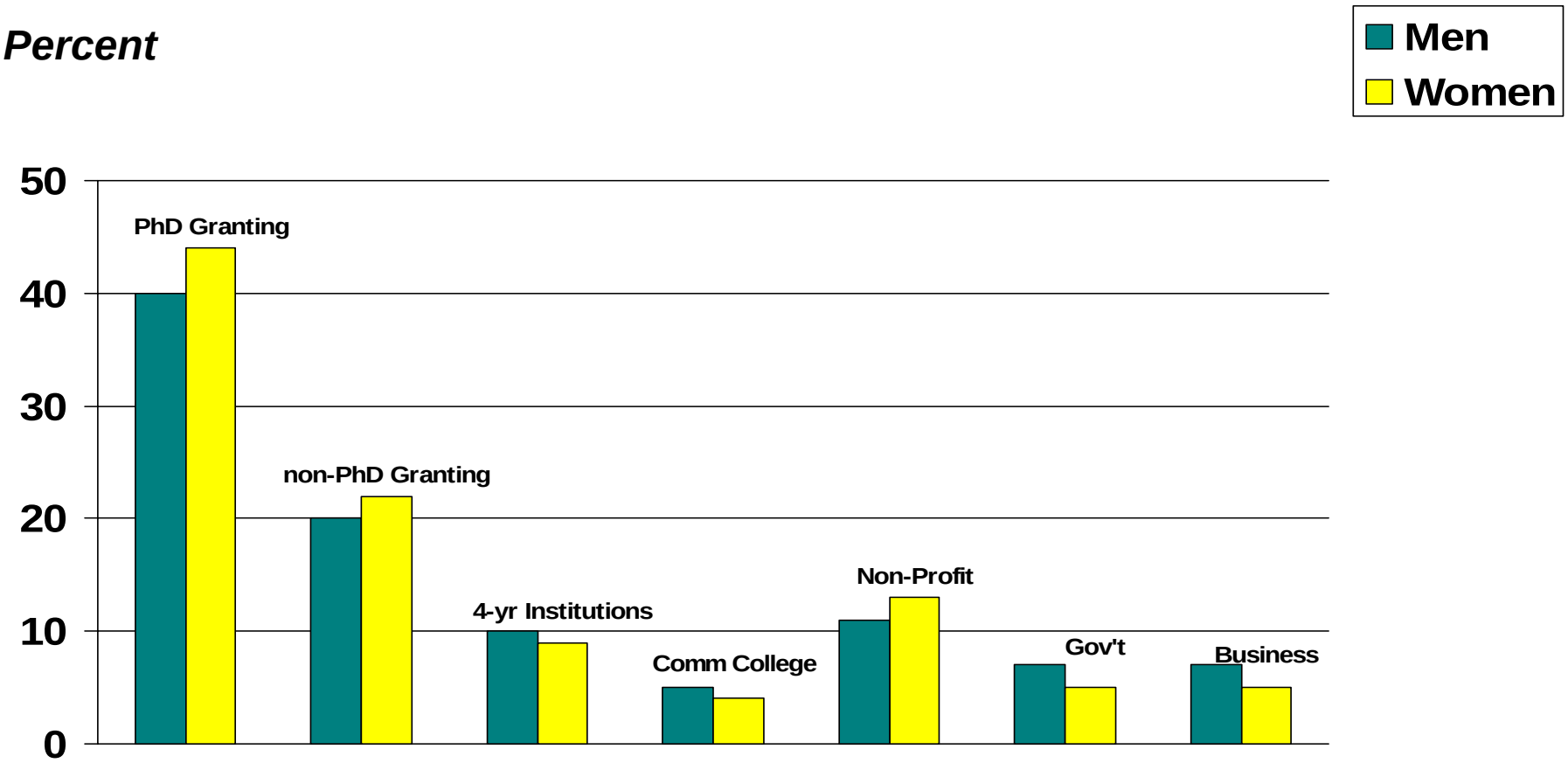
Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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)*

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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



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

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Common Assumption 2

The “best” PhD students do become professors

measures: many publications
short time-to-degree

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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

	Academe			BGN Business/Government/Non-Profits		
	% None	% 1 - 2	% ≥ 3	% None	% 1 - 2	% ≥ 3
Anthropology	34	43	23	37	31	32
Communication	37	40	23	61	14	25
Geography	26	48	26	32	32	36
History	42	38	19	47	37	17
Political Science	45	40	14	46	40	14
Sociology	24	47	30	35	41	24

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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.

These factors did NOT matter for PhDs in biochemistry, electrical engineering, and mathematics. Time-to-degree mattered for computer scientists

(logistic regression analysis).

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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.

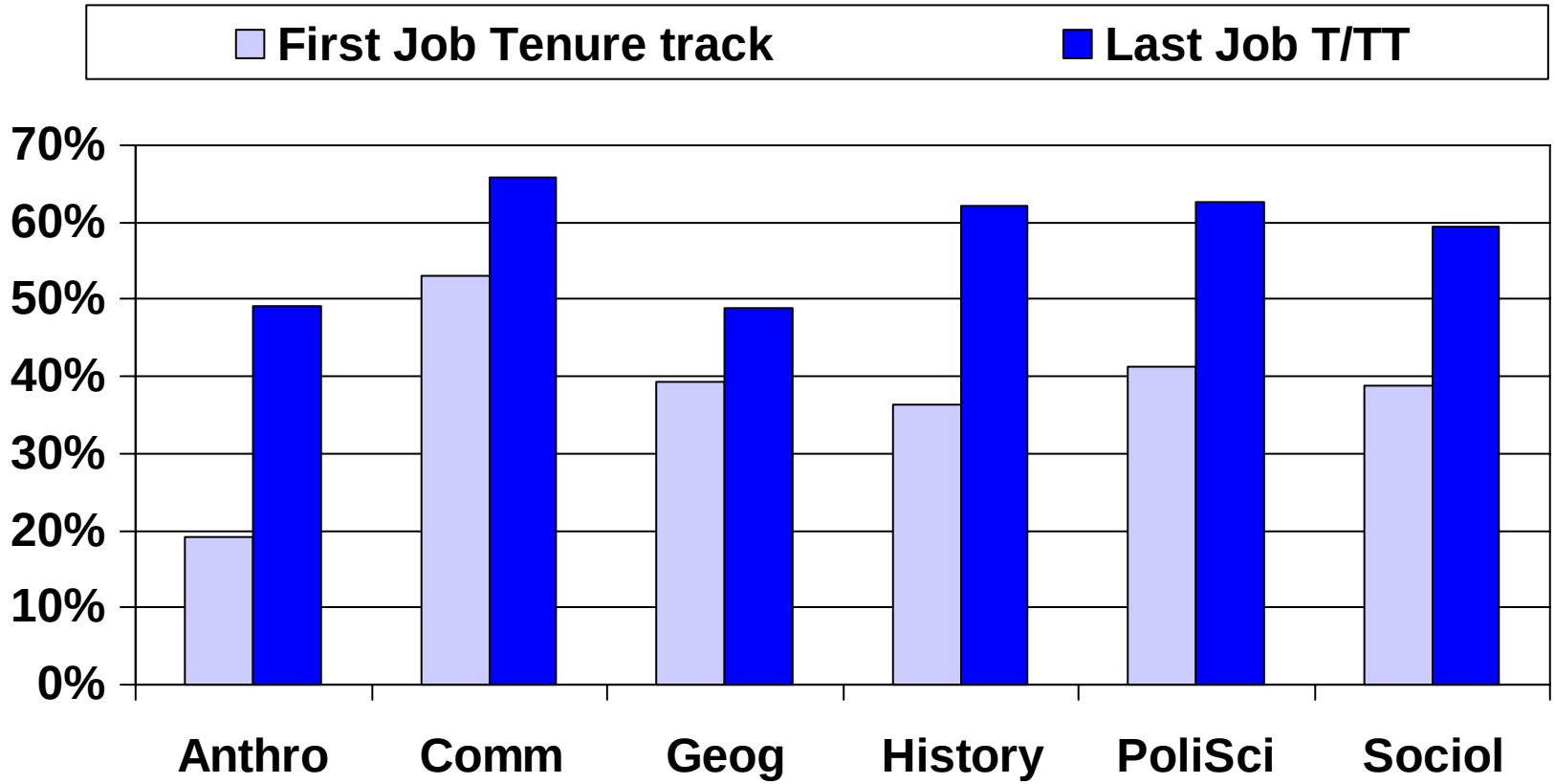
Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Common Assumption 3

PhD recipients' career paths are linear and smooth

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

% Whose First Job was Tenure Track, and % whose Last Job was Tenured/Tenure Track



Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Three Major Trajectories: Political Science (PhD10+Yrs Later)

			Percent of Total
1. Faculty	TT to Ten. (219)	→	42%
2. BGN Employees	Business (29)	6%	13%
	Government (21)	4%	
	Non-Profit (15)	3%	
3. Crossovers	Acad. to BGN (22)	4%	12%
	BGN to Acad. (10)	2%	
	Back and Forth (30)	6%	

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

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Common Assumption 4

Everybody can take the best job offered

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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

Women in Our Survey

Married to PhD/JD/MD: 32%

Men in Our Survey

Married to PhD/JD/MD: 18%

PRELIMINARY RESULTS

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

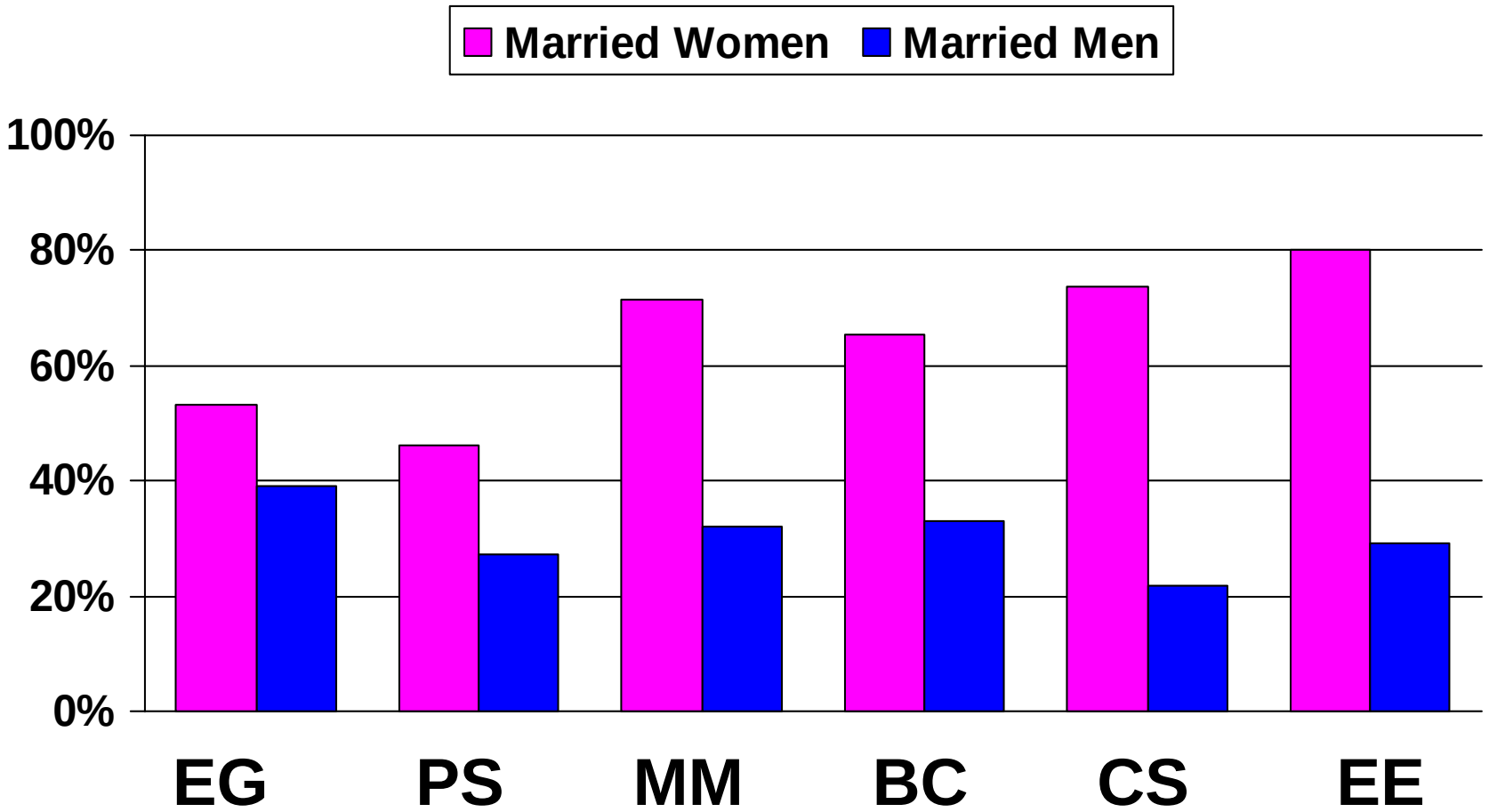
Educational Level of Spouse by Gender and Field

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%

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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



Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Common Assumption 5

Faculty enjoy the highest job satisfaction

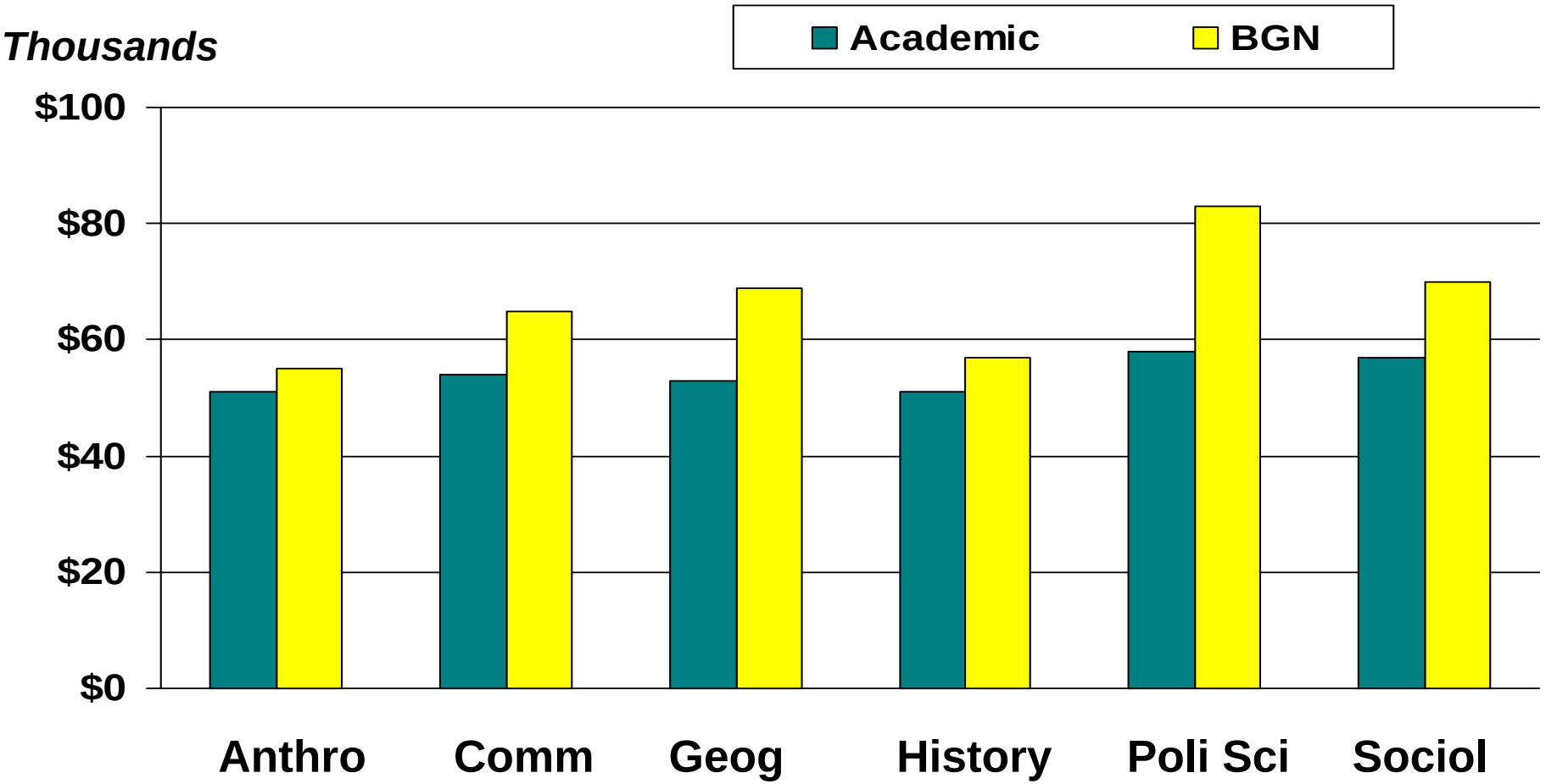
Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Satisfaction with Current Job (Social Sciences)

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

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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



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

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

% 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 Professors	4	26%	*851*
BNG researcher	5	24%	*430*
Administrators	6	22%	*54*
Temporary academic staff	7	18%	*131*

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Faculty will need to prepare PhDs for the Future

The context:

Globalization
and the knowledge economy

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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

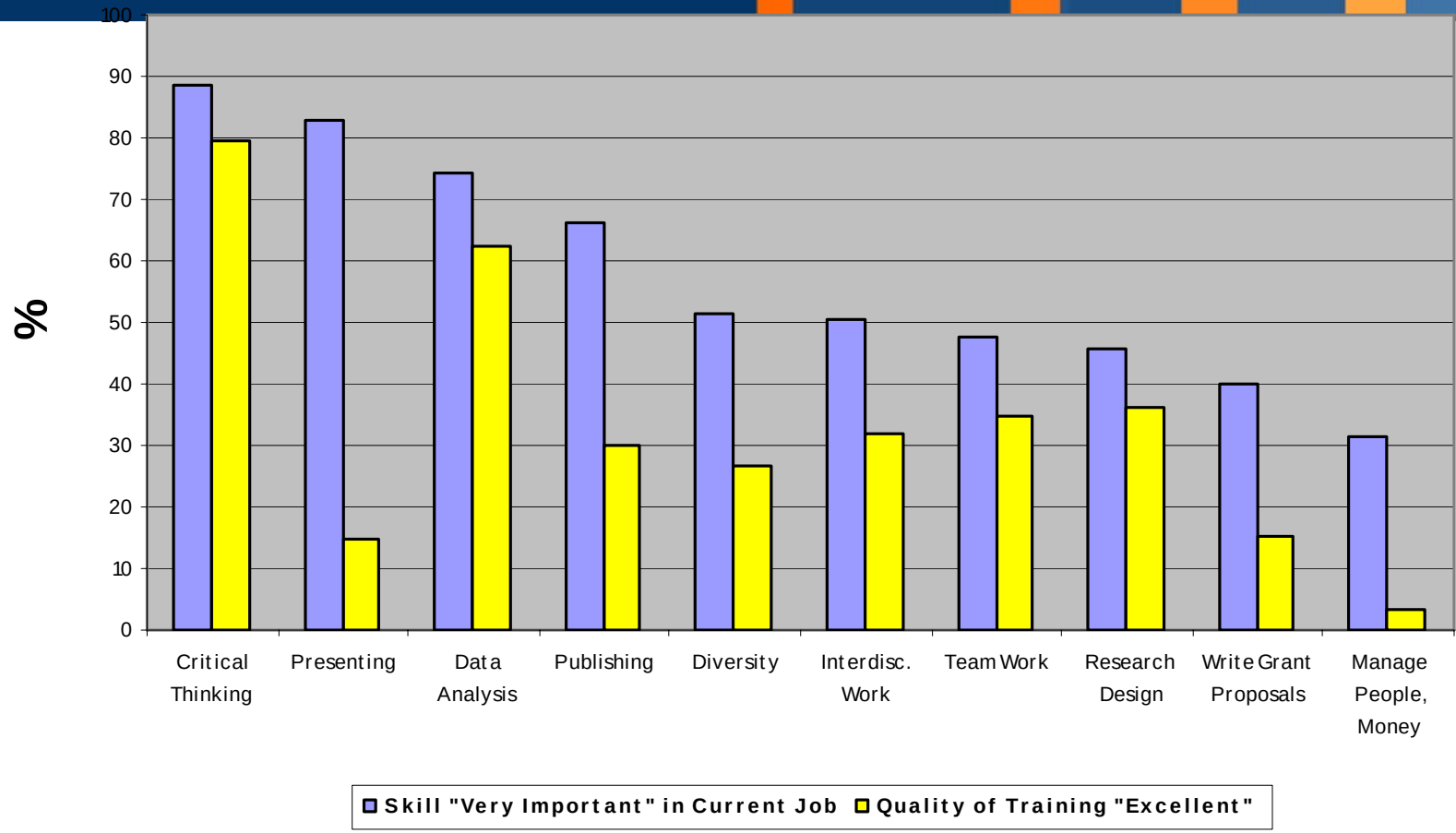
Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Top 5 Recommendations to PhD Programs: Open-ended questions (by Social Science PhDs)

1. Be more supportive of non-academic careers (344)
2. Emphasize more the training of teaching (317)
3. Provide more guidance and mentoring (299)
4. Emphasize more writing, publishing, presenting (295)
5. Provide more job information and career counseling (221)

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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



Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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.**
8. **It re-introduces foreign language requirement.**
9. **It prepares for leadership.**
10. **It prepares PhDs for world citizenship, becoming leaders who both think globally and act locally and act globally and think locally.**

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Thank you!

CIRGE website

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

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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**

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

CIRGE International Workshop Series

Forces and Forms of Change in Doctoral Education Worldwide

Context: globalization of doctoral education

9/2005 Workshop I: University of Washington, Seattle - innovations

3/2007 Workshop II: University of Melbourne, Australia- cross national quality evaluation

2009 Workshop III: Germany- implementation

Goal: Create an international network of experts (14 countries, 6 continents, 35 participants) that

- **Synthesizes and promotes research on globalization of doctoral education**
- **Provides up-to-date information on innovations in doctoral education worldwide**
- **Inform policy actors about trends in doctoral education worldwide**

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Forces and Forms of Change in Doctoral Education Worldwide:

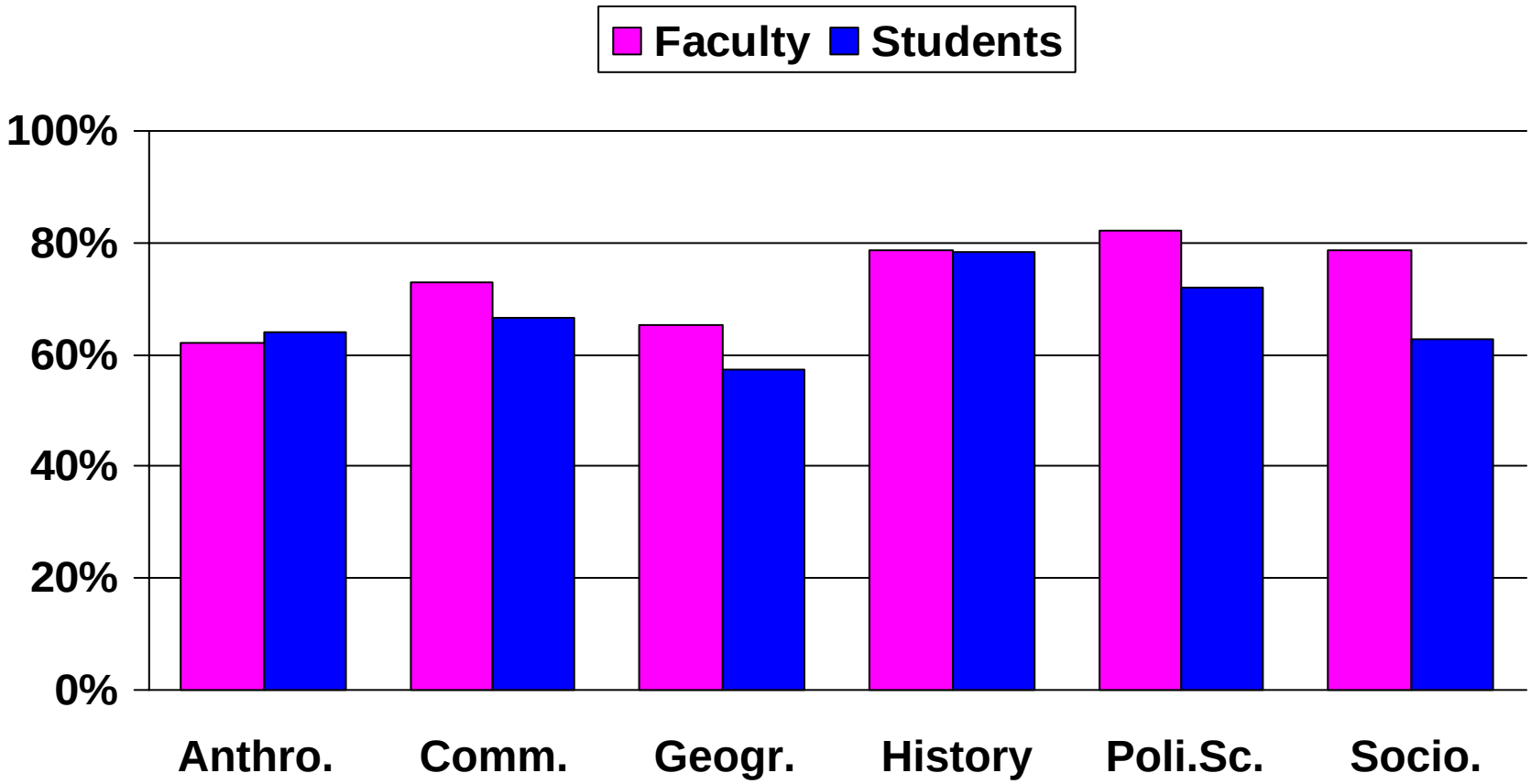
CIRGE International Workshops

Existing international Task Forces:

- **Meta-forces: inquires into the impact of globalization on labor markets**
- **National/international: investigates the tensions between national infrastructure building and international comparability**
- **What is a PhD?: examines the qualification standards of PhDs**
- **Research and data: collects data and investigates the viability of international comparisons**
- **Evaluation: works towards a framework of international quality assurance/assessments**

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

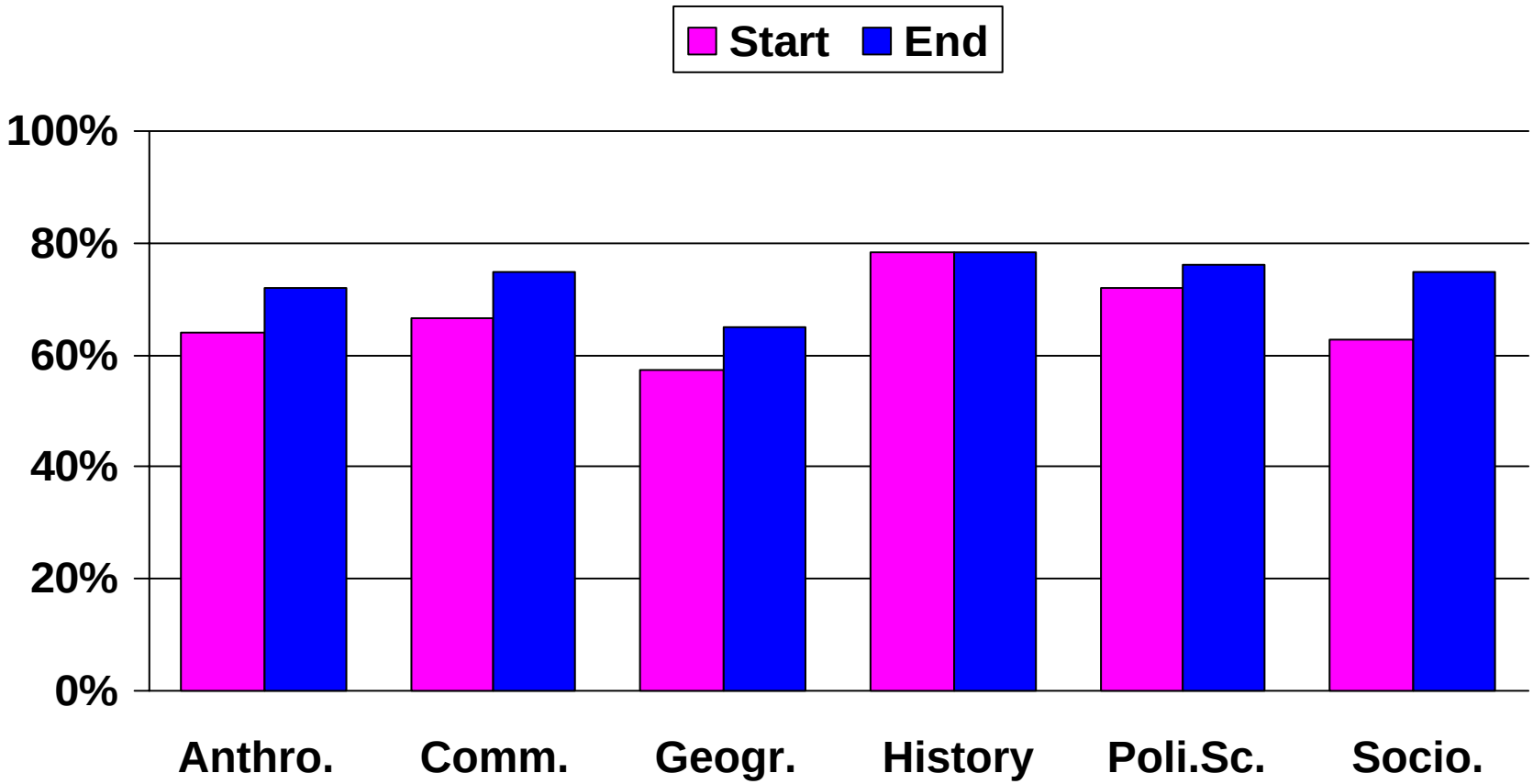
PhDs' Views on Faculty Expectations for their Students and PhDs' Career Goals at Start of PhD



Faculty encouraged academic career/ students wanted to be professors

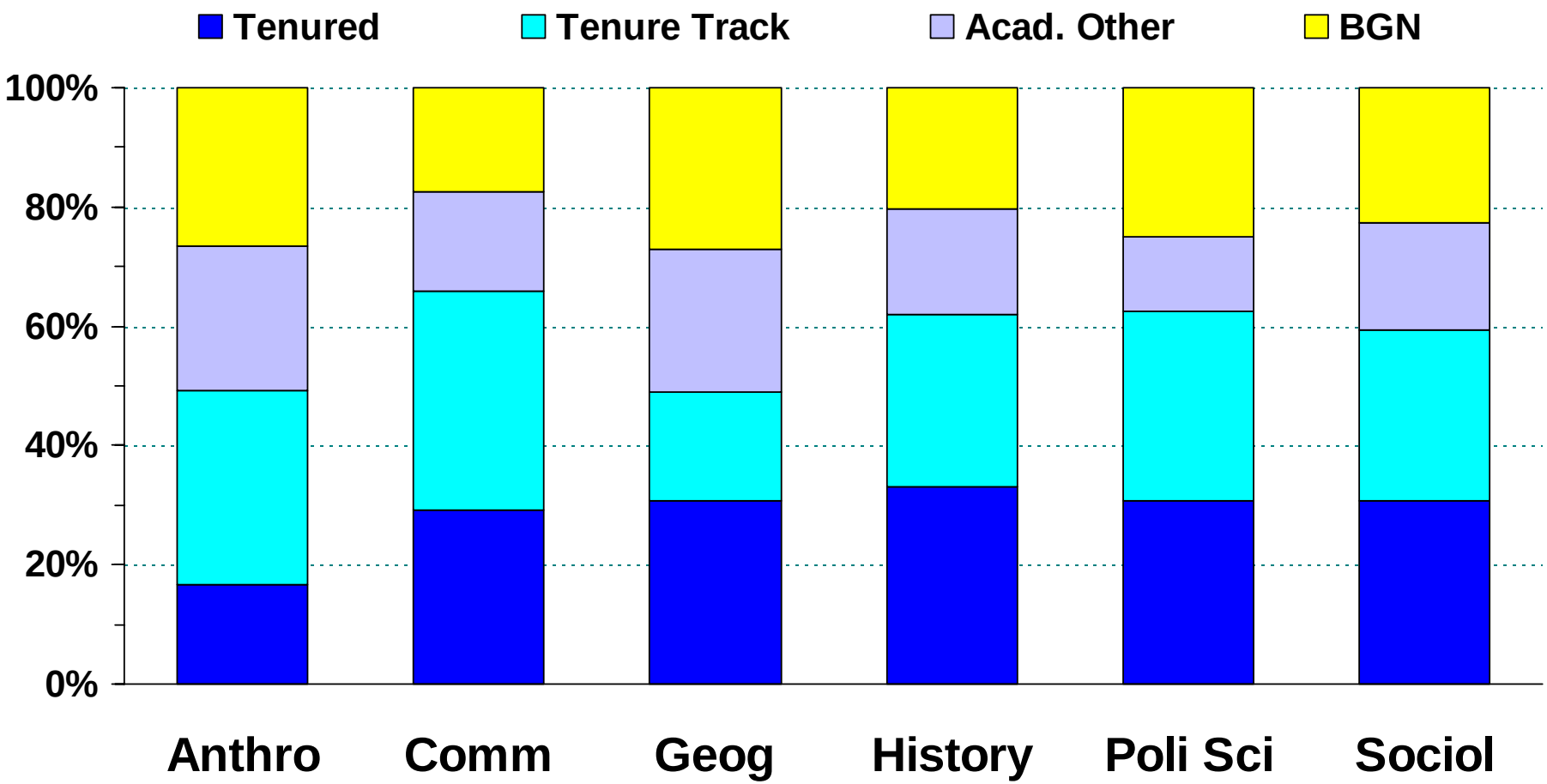
Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

PhDs' Career Goals at Start and Completion of PhD



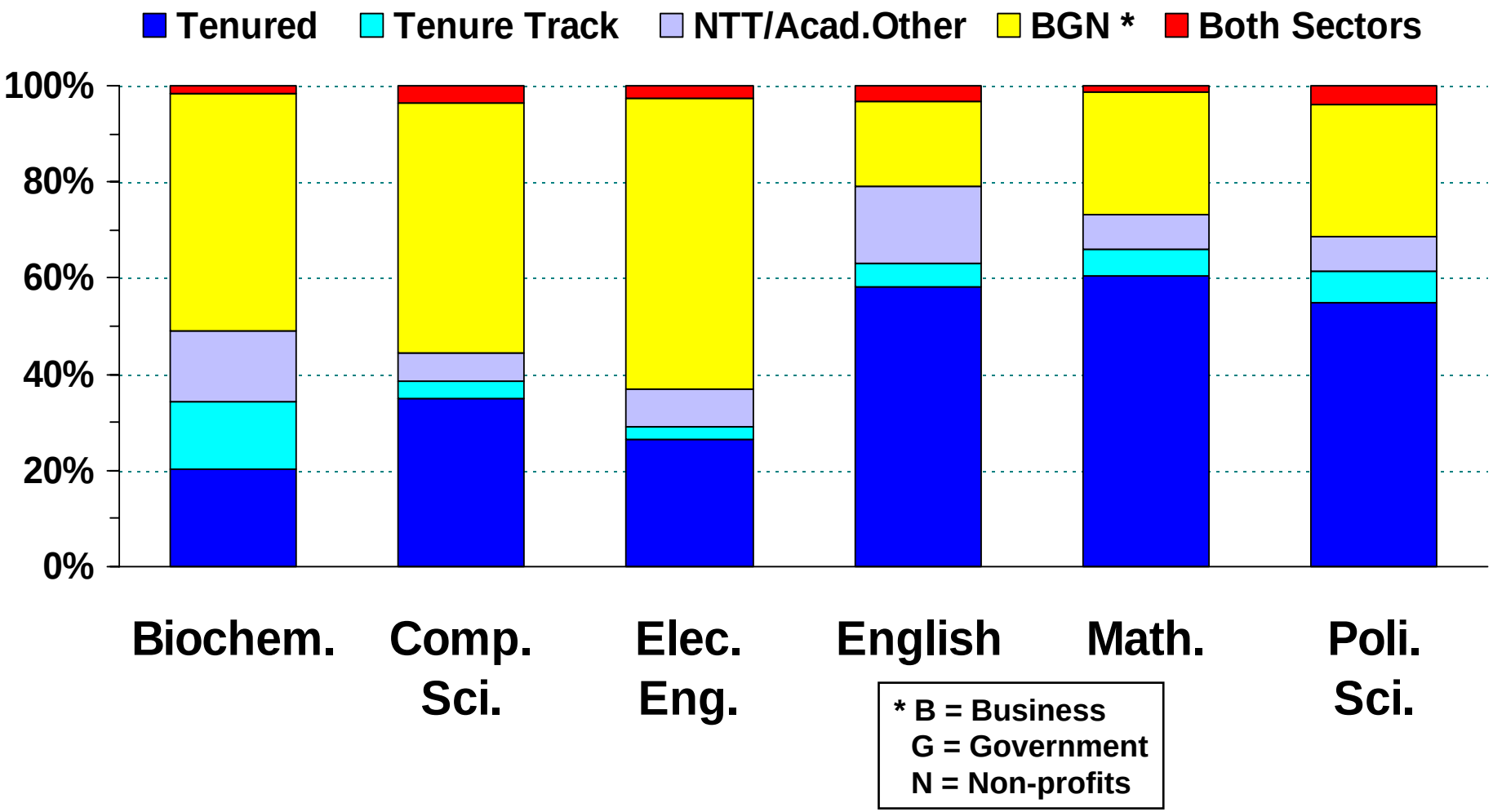
Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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



Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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



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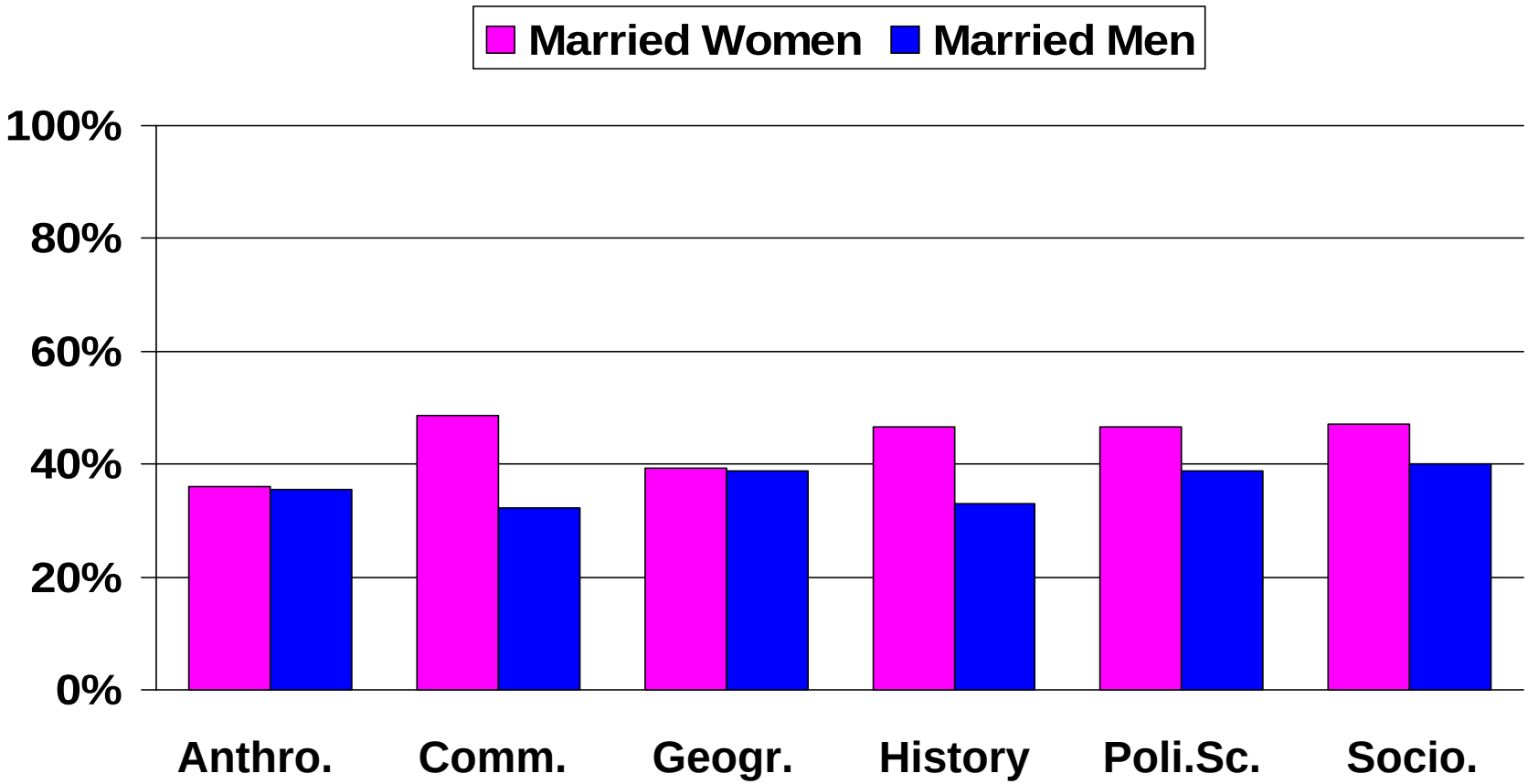
% Who Said "Good Opportunities for My Spouse" was Very Important in First Job Choice



Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Common Assumption 5

Children detract women from the pursuit of a faculty career

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Who Influenced the Career Path?

Art History

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

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

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%

Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

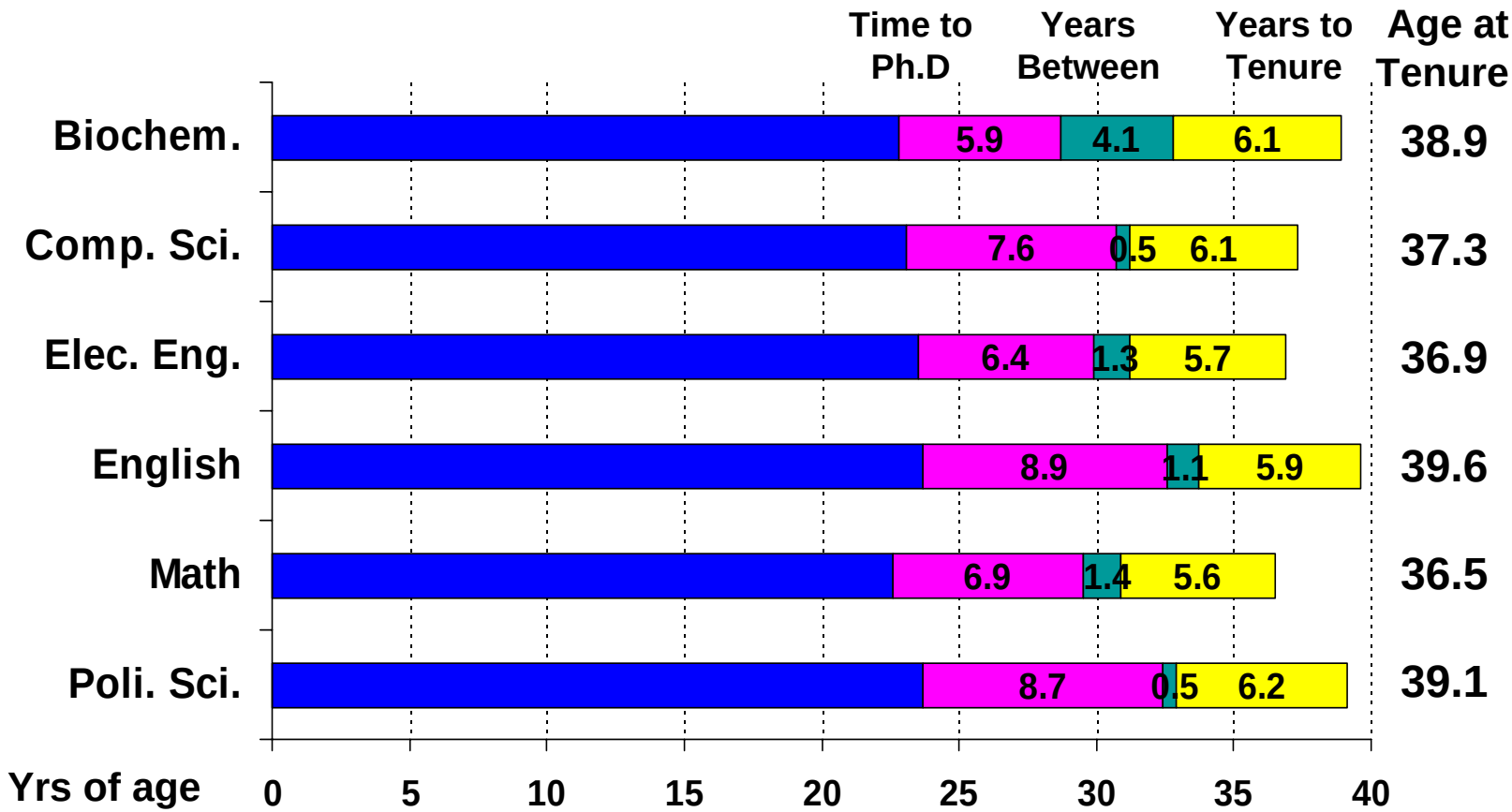
Postdoctoral Appointments

Major Field	Women	Men
Anthropology	13%	15%
Communication	1%	1%
Geography	15%	5%
History	7%	6%
Political Science	8%	5%
Sociology	15%	14%

PRELIMINARY RESULTS

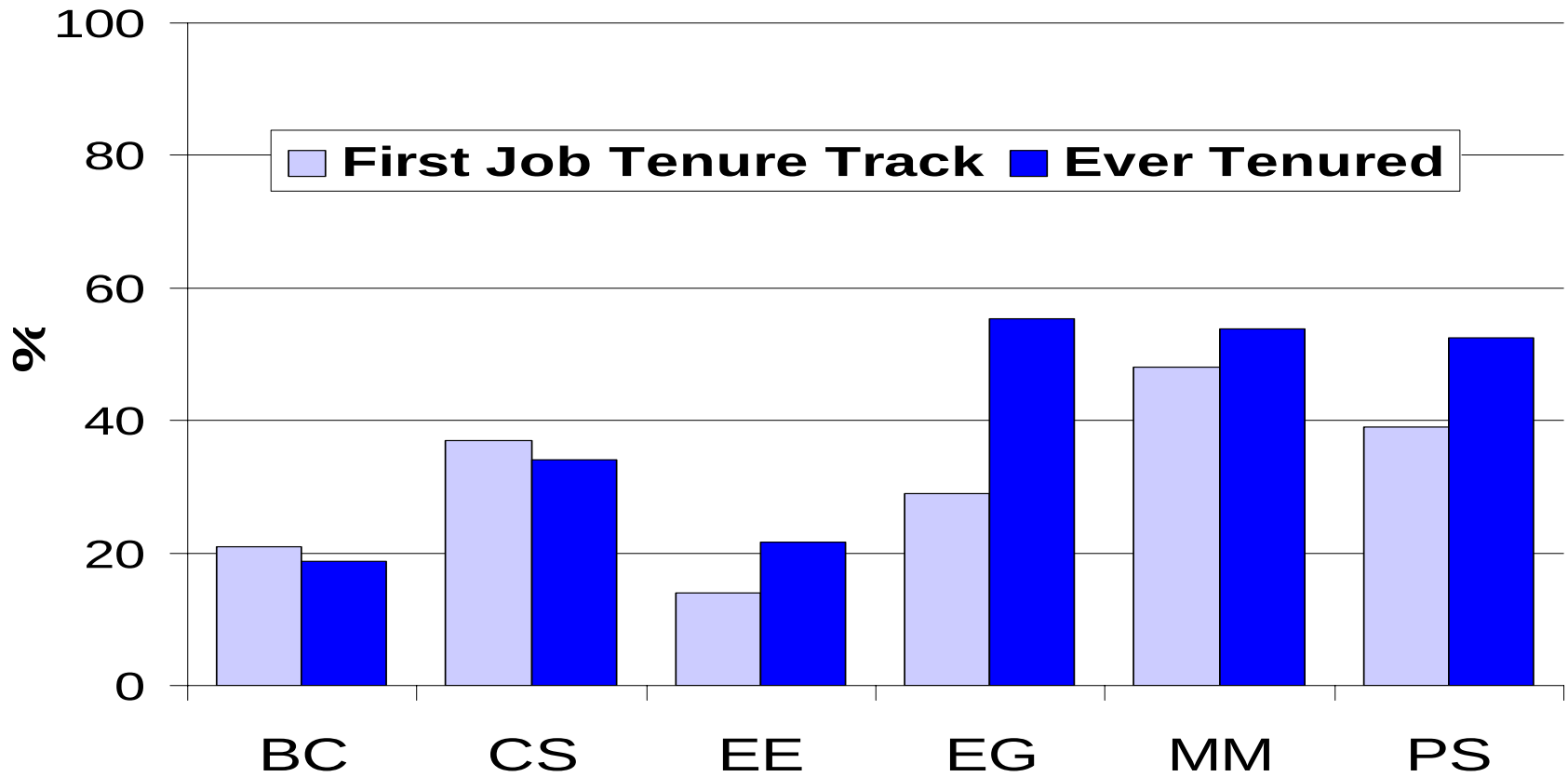
Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

Age at Tenure by Field



Source: CIRGE, University of Washington, Oct. 8-9, 2006, CHERI Policy Conference, Cornell

% PhDs First Job Assistant Professor and %Ever Tenured



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