



Center for Innovation and Research  
in Graduate Education

# Improving PhD Quality in the “Small Worlds” of Academic Life

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**Elizabeth Rudd, PhD, Research Scientist**  
**University of Washington**  
[www.cirge.washington.edu](http://www.cirge.washington.edu)

**“Effective systems are composed of thousands of small worlds of laboratories and seminars for which such descriptive terms as craft and apprenticeship are still appropriate.”**

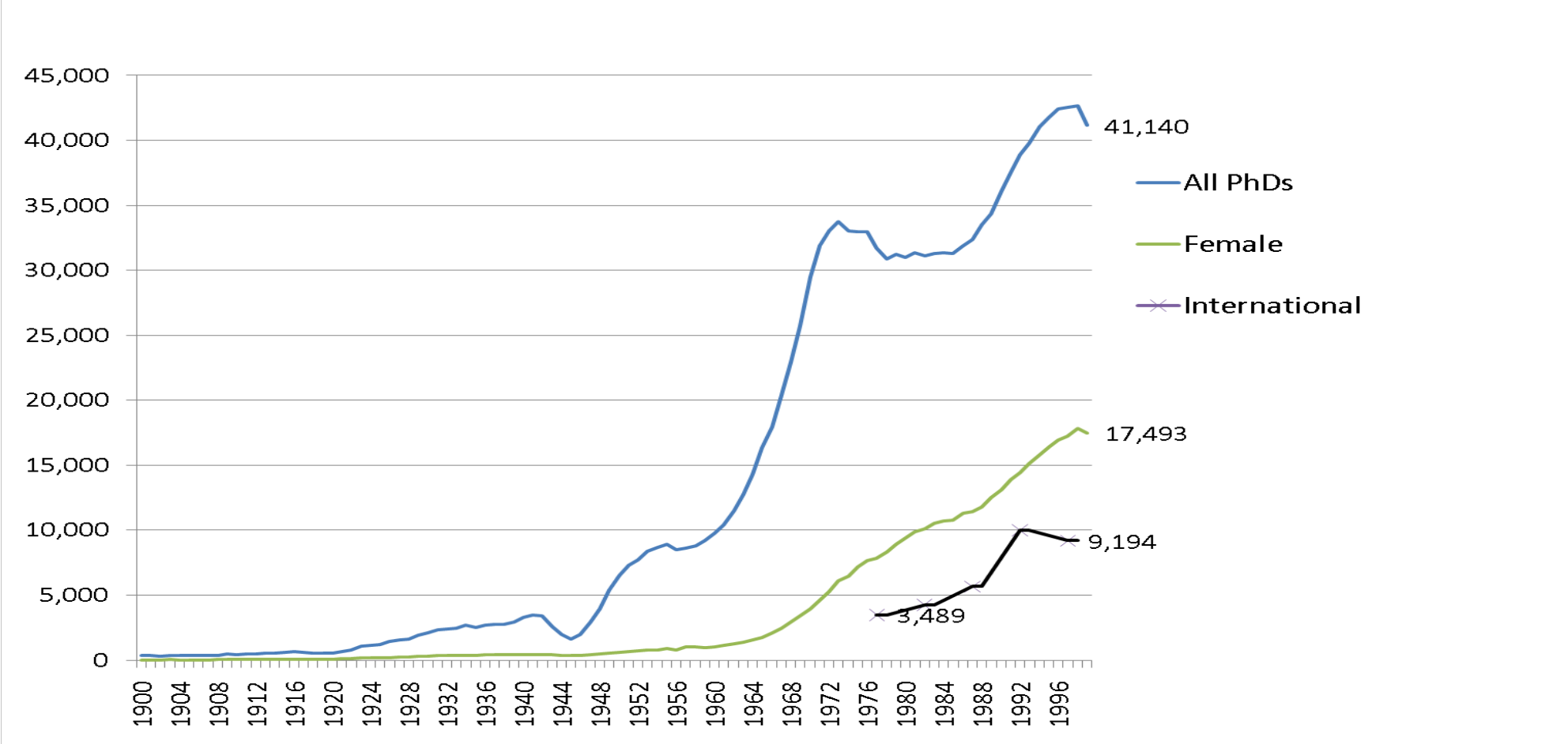
*(Clark, Burton. 1993. The Research Foundations of Graduate Education, p. xx)*

# Overview



- 1. The structure of U.S. PhD programs**
- 2. How to improve the “small worlds” for doctoral study**
  - 1. Findings from research on student experiences*
  - 2. Findings from surveys of graduates several years post-PhD*
  - 3. Findings from studies on the integration of women*

# PhD Degrees Awarded by U.S. Programs 1900-1999 and by Sex and Citizenship



# Context and Features of U.S. PhD Programs



- **Approximately 400 PhD-granting institutions**
- **2008: 48,802 doctorates awarded**
  - *15, 246 earned by international students (31%)*
  - *22, 496 earned by women (46%)*
- **No central, federal regulatory system**

# Features of U.S. PhD Programs

- **Designed by professors**
- **Embedded in departments that teach both undergraduate and graduate students**
- **Students have 1 main advisor and 2-3 additional professors on committee**
- **Structured**
  - *Required courses*
  - *Clear benchmarks toward completion*
- **Yet allow students autonomy and room for self-directed inquiry**

# Earning a PhD in the United States

Selective  
Admission

Course Work

Earn Master's  
Degree

## Natural Sciences & Engineering

Yr 1 Prelim  
Exam

May be asked  
to exit (often w/  
Master's)

## Social Sciences & Humanities

Yr 3 General  
Exam

Develop  
Dissertation  
Proposal

Dissertation  
Research

PhD

## Natural Sciences & Engineering

Yr 2-4  
General  
Exam

Yr 5-7 Final  
Exam

PhD &  
Post Doc

## Social Sciences & Humanities

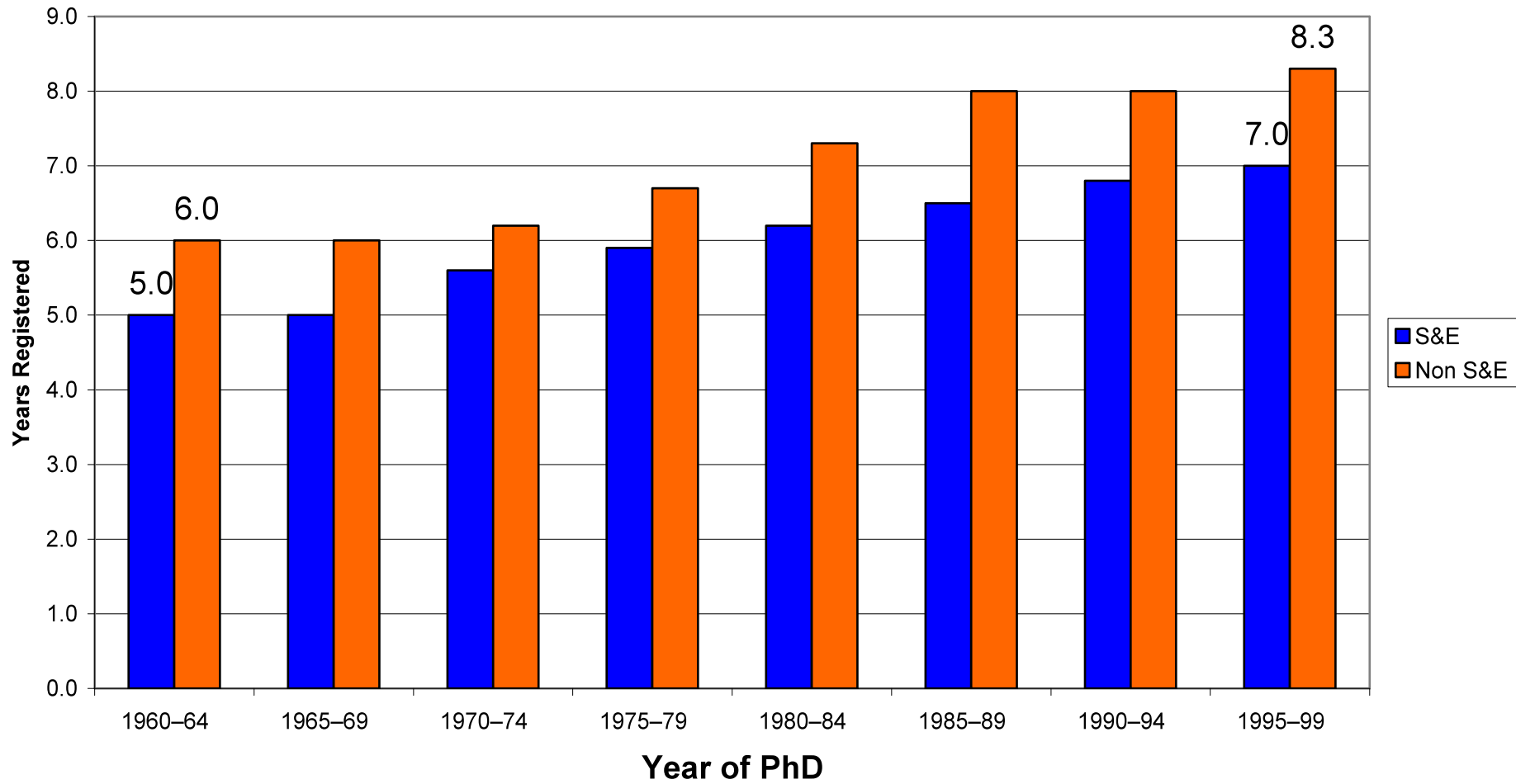
Yr 3-4  
Proposal  
Review

Yr 5-9  
Dissertation  
Defense

PhD

# U.S. Doctorates

## Median Registered Time to Degree 1960-1999

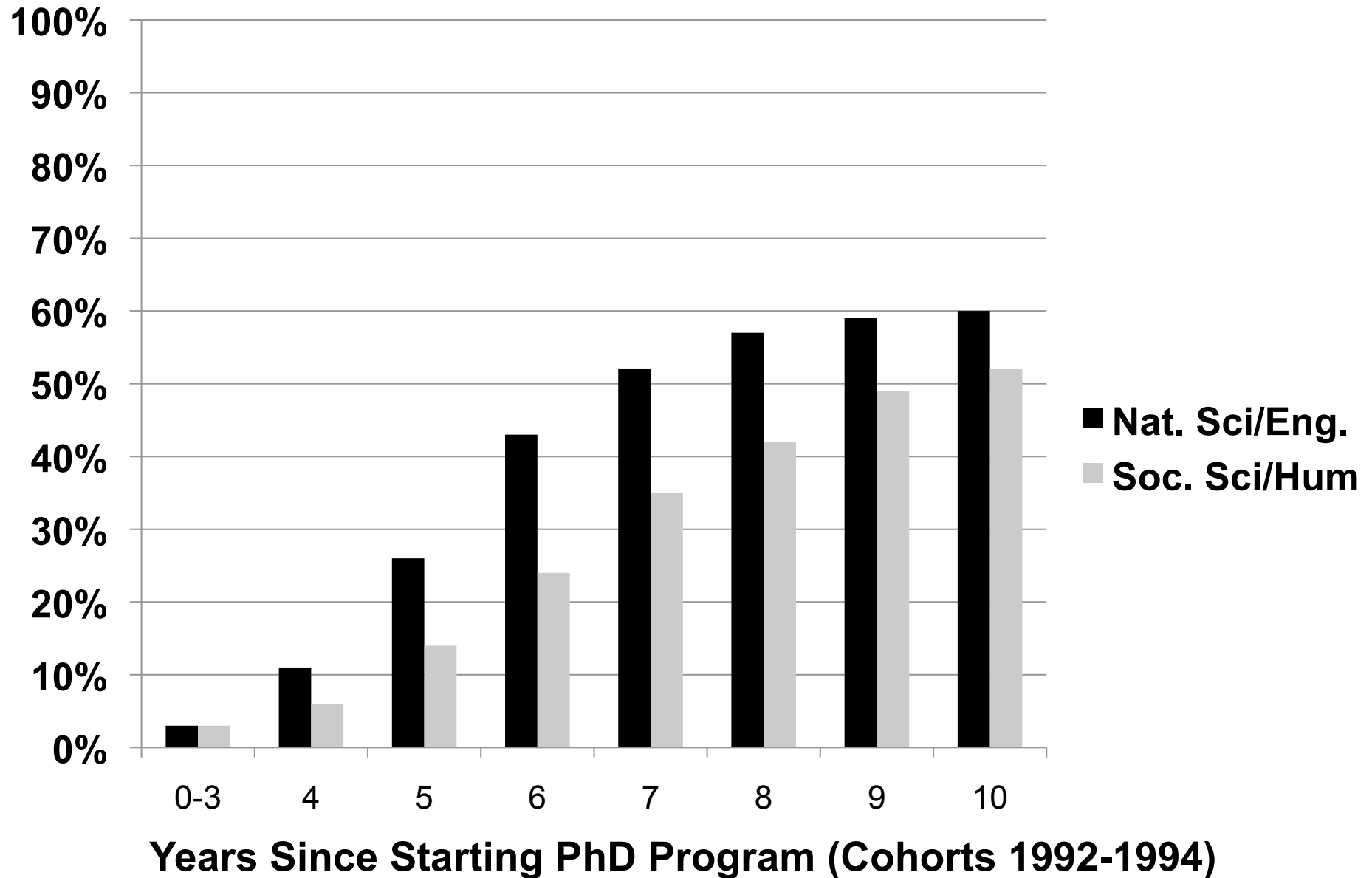


Source: Thurgood, Golladay, and Hill, 2006, *US Doctorates in the 20th Century*

# Completion Rates by Years in Program and Field

Source: Council of Graduate Schools Completion and Attrition Demographic

Data [http://phdcompletion.org/quantitative/book2\\_quant.asp](http://phdcompletion.org/quantitative/book2_quant.asp)



# **Part 2: Making the “Small Worlds” Better for PhD Students**



- 1. Findings from research on student experiences**
- 2. Findings from surveys of graduates several years post-PhD**
- 3. Findings from studies on the integration of women**

# Student-Centered Views of PhD Quality



- **Investigating student experiences to explain attrition, completion, time-to-degree**
- **Surveys of PhD recipients to find out if they use their education in their careers**

# Professional Socialization



- **Doctoral students, when successful, transform from consumers of knowledge to producers of knowledge**
- **This is not just a simple accumulation of knowledge and skills, it is a difficult process of self-identity transformation**

# Academic Integration



- **Active participation in departmental academic activities including professors**
  - *Seminars*
  - *Journal clubs*
  - *Student representatives on department committees*
- **Students treated like junior colleagues**

# Social Integration

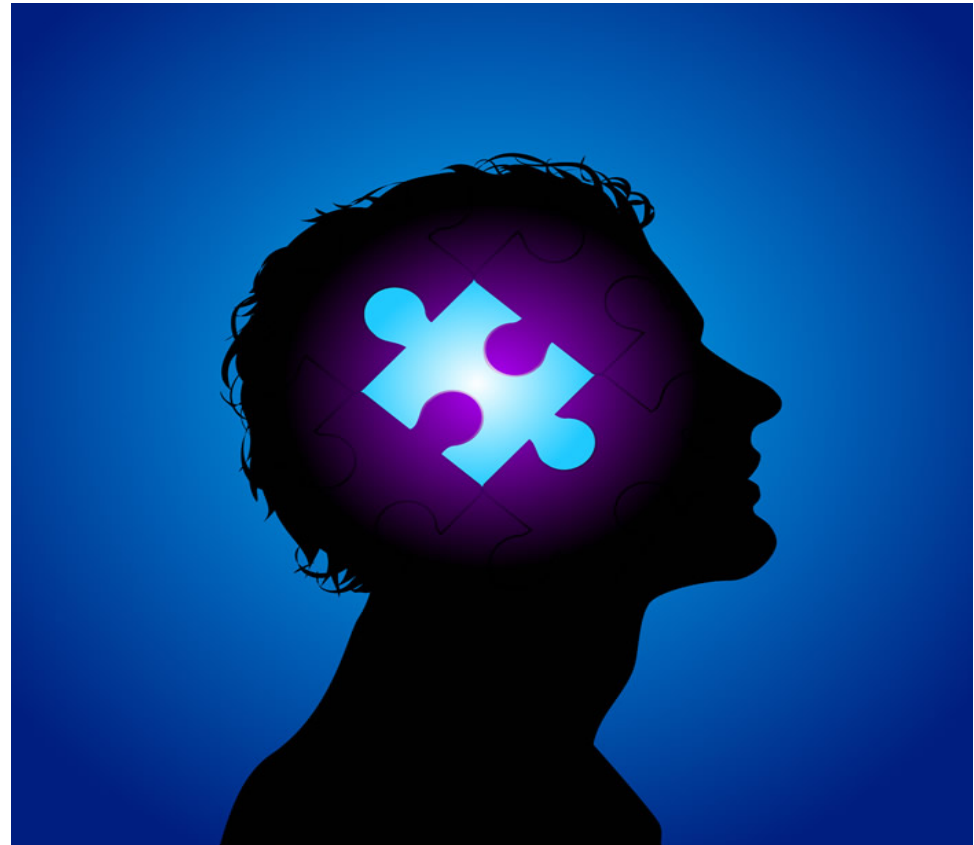


- **Informal social networks are sources of critical information**
- **Graduates who rated their sense of belonging in their department highly also tended to rate the overall program quality as “excellent.”**

# Cognitive Maps

**Many students do not see how requirements build toward the dissertation.**

**Students who do see this are more likely to finish and finish more quickly.**



# Implications for Improving PhD Quality in the Small Worlds



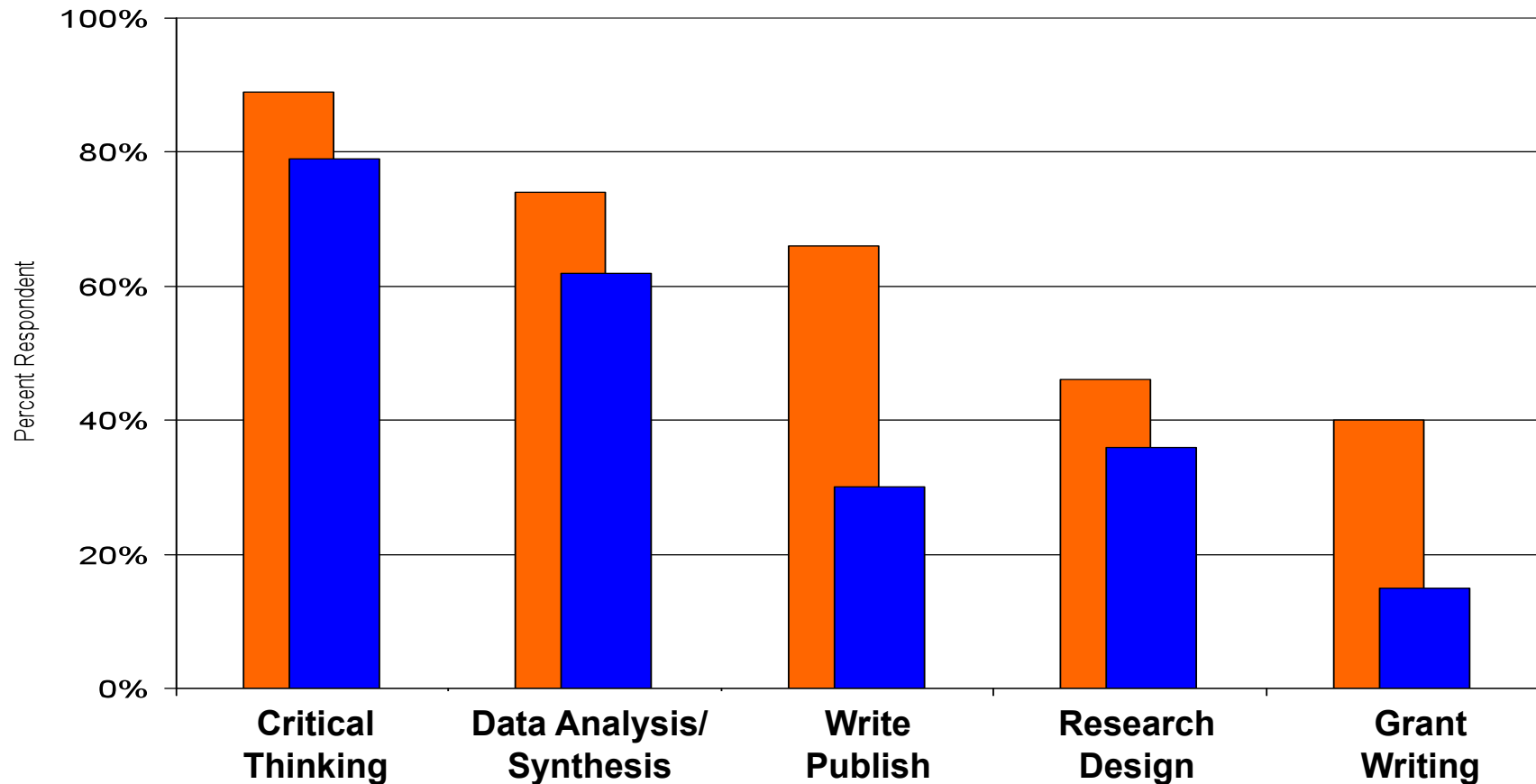
- **Make sure to involve PhD students actively in both academic and social life of the department**
- **Treat them like junior colleagues**
- **Make transparent the reasons for requirements as steps toward becoming an independent researcher**

# CIRGE National Surveys of Graduates Several Years Post-PhD



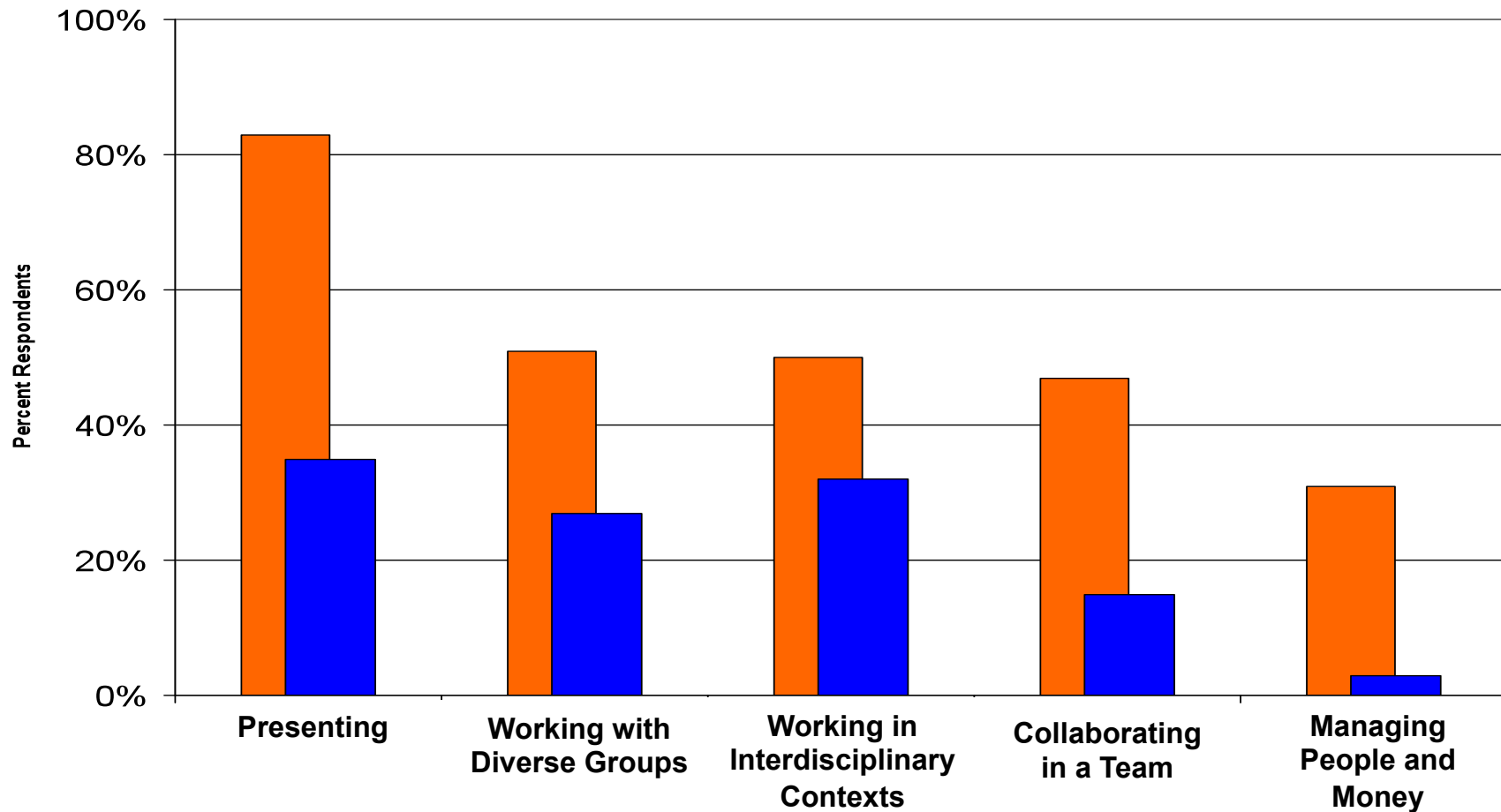
- **PhD's—Ten Years Later**
  - *biochemistry, computer science, electrical engineering, English, mathematics, political science (n=3,667, response rate = 63%)*
- **Art History PhDs—Over a Decade Later**
  - *(n=508, response rate = 68%)*
- **Social Science PhDs—5+ Years Out**
  - *anthropology, communication, geography, history, political science, sociology (n=3,025; response rate = 45%)*

# Importance of Skill at Current Job versus Quality of Training in this Skill During PhD Studies



Center for Innovation and Research in Graduate Education (CIRGE), College of Education,  
University of Washington, Seattle, 6-25-2008

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# **Advice to Departments From CIRGE Retrospective Evaluations (Surveys)**



- 1. Inform students about and accept many types of jobs, academic (not only professor at research university)**
- 2. Prepare better for teaching**
- 3. Provide more know-how on publishing and presenting**
- 4. Prepare for interdisciplinary work**

# Campus Units Offering Supportive and Complementary Professional Skills Training



- **Graduate Schools**
  - *Workshops:, e.g., relating to supervisors, team work (for RAs); resume writing, public speaking*
  - *Fund interdisciplinary groups of students to work together on something, e.g., a seminar, a lecture series*
- **Career Centers (with graduate school)**
  - *Career fairs and career counseling; alumni contacts*

# Campus Units Offering Supportive and Complementary Professional Skills Training



- **Teaching and Learning Centers**
  - *Teaching workshops*
  - *Assessment of teaching*
  - *Research on teaching methods*
- **Writing Centers**
  - *Coach doctoral students*
  - *Train professors in how to teach writing*

# Student Diversity



- **For example: Gender, race/ethnicity, citizenship, mode of study**
- **Increases importance of attending to processes of academic and social integration**
- **And sometimes it is helpful to address more specific issues as well**

# Women in Doctoral Education: Specific Issues



- **Work/family Conflict**
  - *Everyday life*
  - *Structure of careers*
    - Dual career couples & two-body problem
- **Cultures that tend to exclude women**

# Policy Responses for Women (and Men)

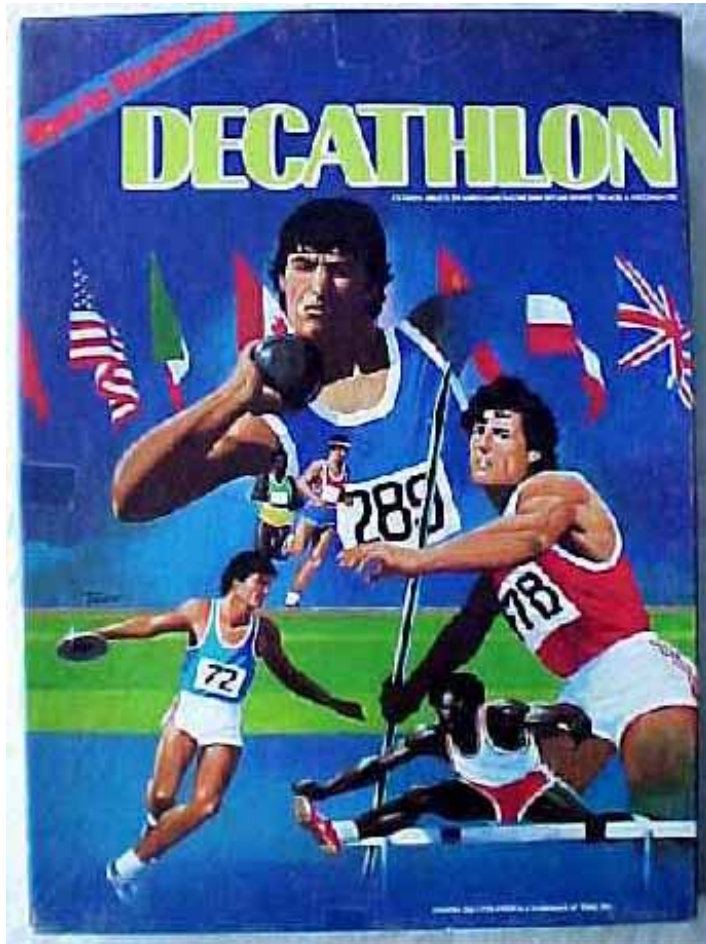


- **Relatively Easy**
  - *Child care subsidy*
  - *Women on search and hiring committees*
- **More Complicated**
  - *Create jobs for partners of recruited faculty*
  - *Family leave policies, including stopping the tenure clock in some cases*
- **U.S. universities are now more open to women**

## **To enhance quality of PhD educational experience:**

- **Regular academic and social activities including professors, postdocs, PhD students**
- **Communicate expectations and reasons for requirements to PhD students early and often**
- **Include PhD students in department committees**
- **Address specific issues of integration related to gender, race/ethnicity, citizenship, etc.**
- **Provide professional skills training (e.g. writing, presenting) and supportive resources (e.g., career counseling)**

# Orienteering & Decathlon



**Doctoral students thrive when they get the resources, training, and coaching they need to find their way, handle competition, and complete the event eager to move on to the next round of competition.**

# Discussion Points

- **What do your departments and PhD supervisors do to integrate and socialize new PhD students (candidates)? Is this effective? How do you know? Is any particular group left out more often?**
- **What kinds of professional skills training and supportive resources (e.g., career counseling) would be most important for particular disciplines? How can you involve professors and departments in developing these resources?**
- **How can universities and graduate schools change academic career structures and department cultures that tend to exclude women?**



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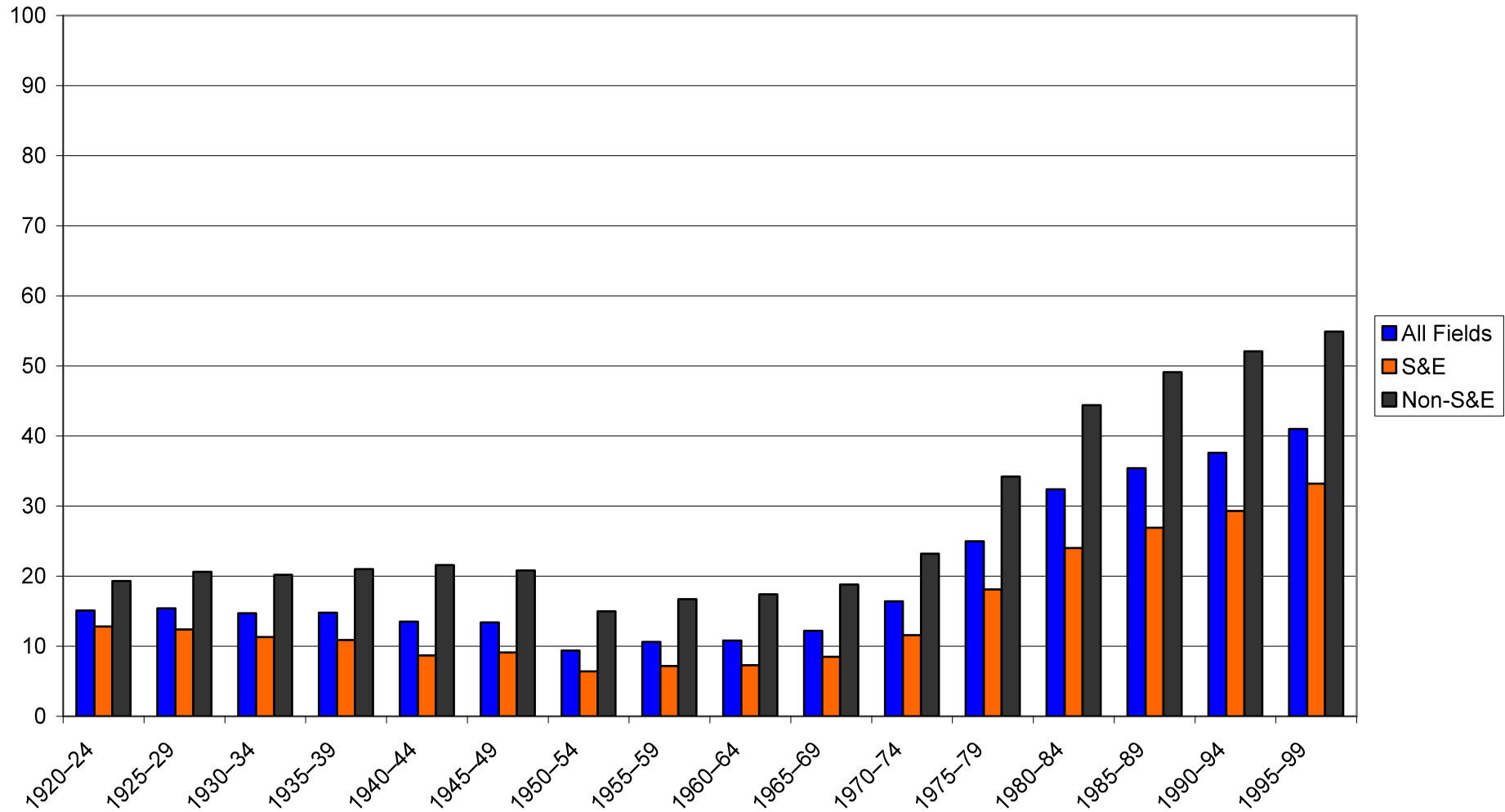


**Thank You**

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# Proportion Women PhDs 1920-1999 in Science & Engineering vs. Other Fields

Source: Thurgood, Golladay, and Hill, 2006, *US Doctorates in the 20th Century*



Elizabeth Rudd, Improving PhD Quality in the “Small Worlds.” EUA Workshop: Building a research environment for doctoral education, Wageningen University, Holland, April 15, 2010