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# Innovative Curricula for Research & Development: Session II

*Universities in a Globalized World:  
roles and responsibilities to shape  
innovative curricula for global  
R&D Careers*



Center for Innovation  
and Research in  
Graduate Education

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# Roles and Responsibilities to Shape Innovative Curricula for Global R&D Careers



- 1. The context: not all countries have structured graduate education**
- 2. Theme-based doctoral programs are ideal for international collaborations and R&D career preparation (examples: US- IGERT, German GK)**
- 3. Structured, non-hierarchical learning environments and workshops are key**
- 4. Central administration/Graduate Schools can facilitate bureaucratic hurdles**
- 5. Funding agencies provide family and child-care support to foster mobility of young researchers**

Source: M. Nerad & M. Heggelund (eds) *Towards a Global PhD? Forces and Forms of Doctoral Education Worldwide* (UW Press 2008)

# The Context



- 1. Many European countries do not educate and train their doctoral candidates within a structured curriculum**
- 2. In many European countries' research training takes place outside the universities in academies and institutes**
- 3. To shape a successful curriculum: Become familiar with the US& EU country doctoral education structure, funding scheme (TA, RA, few fellowships for non-US citizens) multi-professor doctoral (advising) committee**

# Successful Examples

US – NSF funded IGERT programs

German –DFG funded Graduiertenkollegs



- 1. Theme based, research/education grant driven doctoral programs (i.e. bioinformatics, astrobiology, bio-energy, urban ecology)**
- 2. Student funding is tied to the program NOT to the professor**
- 3. Trans-, multi- or interdisciplinary and team-based**
- 4. Access to professionals in the field**
- 5. Professional skill development emphasized**
- 6. Emphasis on the learning environment**
- 7. Foster diversity of students**
- 8. NSF and DFG fund international component**

# **INTERNATIONAL curricula components are successful with small “communities of practice”**



- 1. Preparatory workshops on the different university systems, on goals for the collaboration, expectations (time!, national stereotypes)**
- 2. Workshops in presenting and publishing in English language (for non-native speakers)**
- 3. Annual theme-based workshops on research findings, methods, and new ideas with lots of social contacts over several days at alternate venues**
- 4. Synthesis workshops reflecting on what was learned in the other country, the different research setting (national competitiveness!)**
- 5. If possible, include bi-cultural facilitator**

# **INTERDISCIPLINARY curricula are successful, if they offer:**



- 1. At the beginning offer an epistemology course or journal club(s) that focus on the nature of knowledge, its foundation, and validity. *“how do we know what we know and what do we regard as evidence”***
- 2. Offer team building training early**

**Team building is a planned and structured process that includes listening skills, giving professional feedback, and conflict resolution skills**

# Central University Administrators and Graduate Schools



- 1. Involve Graduate Schools/Deans early on to reduce bureaucratic hurdles:**
  - **Local dissertation requirements: have additional dissertation advisor from other country**
  - **allow for a multi-authored dissertation chapter, allow peer reviewed published articles a part of dissertations**
  - **funding arrangements, different time structure of academic year, health insurance, finishing fast**
- 2. Offer career symposium for doctoral and postdoctoral fellows with panelists who hold global R&D careers (example UW)**

# Consider Family and Children of PhD Candidates and Postdocs



1. Provide support for child-care and/or spousal travel in order to allow PhD candidates and postdocs to travel abroad
2. Encourage student of color to travel abroad, provide save environment (group)
3. Successful examples are **Fogarty HIV research training programs in public health/ epitemology**

# Thank you!



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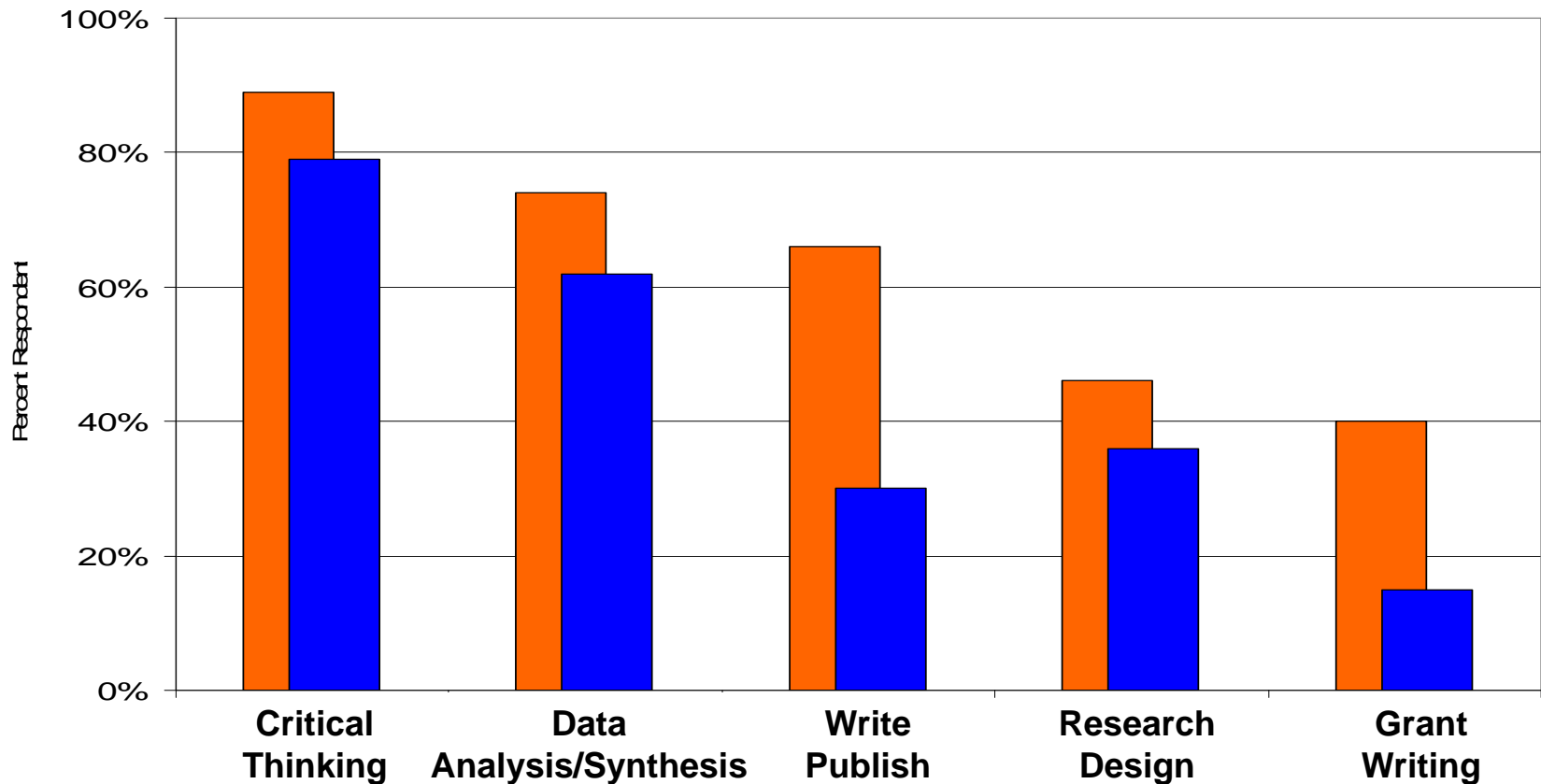


## CIRGE website

<http://www.cirge.washington.edu>

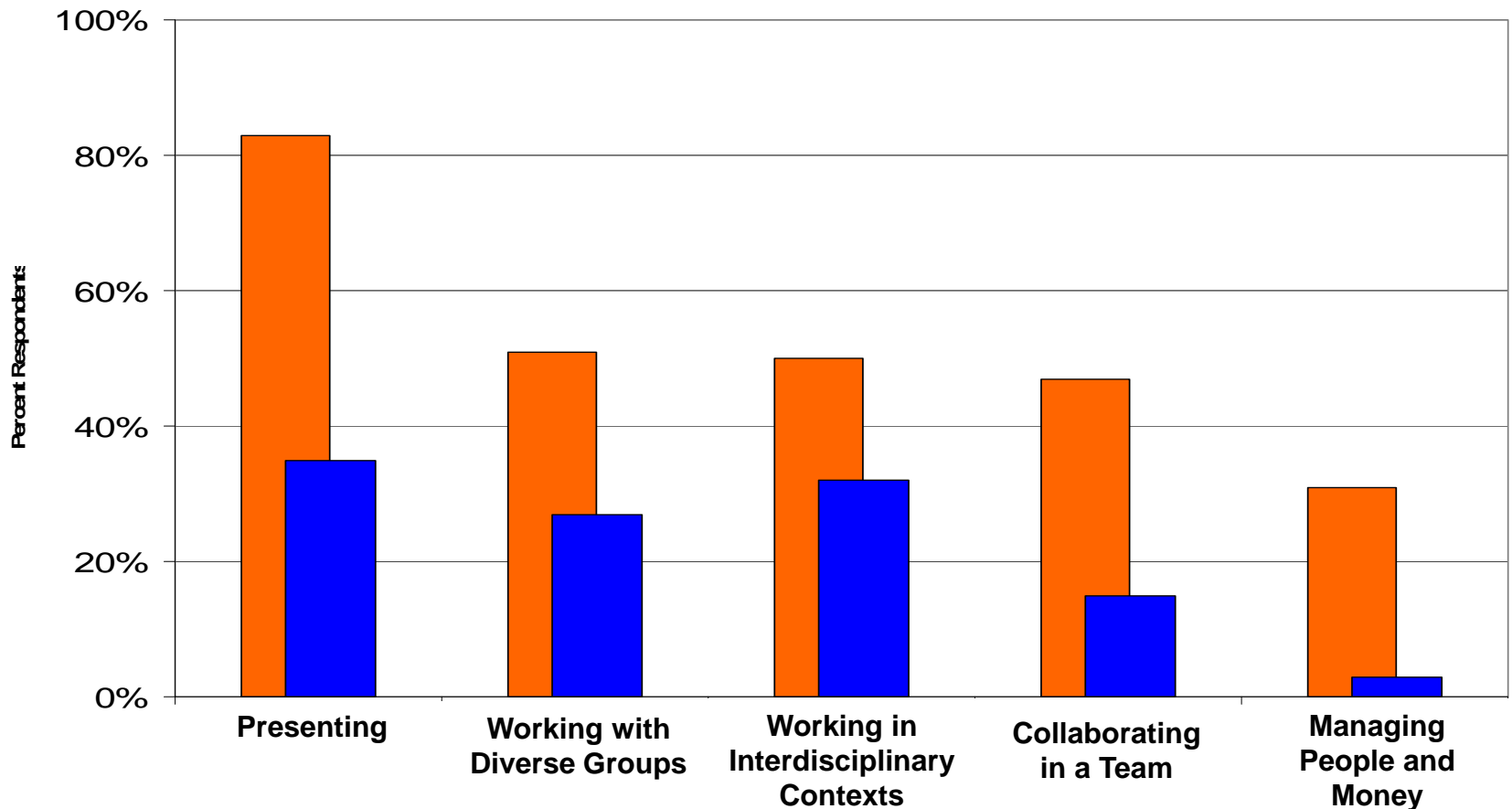
# Importance of Skill at Current Job **versus** Excellent Quality of Training in this Skill During PhD Studies

CIRGE



Source: CIRGE, "Social Science PhDs -5 Years Out", December 2007.

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