

Computer Science Community of Practice

presented by Tanya L. Crenshaw

with Erin Wolf Chambers, Heather Metcalf and Umesh Thakkar

University of Illinois at Urbana-Champaign

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CS473 Final Exam

Fall 2002

Question 1

How to prepare students with the skills they need to complete the degree?

Preparing for the future

“There is today a serious mismatch between the nature and purpose of the doctoral degree and the demands and expectations of the academy. Imagine spending years training an athlete to learn the intricacies of playing football, and then once he finishes playing college ball, assuming because he is a well-trained athlete he can immediately be appointed head coach.

This is essentially what we do in the academy.”

—Alvin Kwiram, University of Washington
from “Time for Reform?”

Question 2

How to prepare students with the skills they need to pursue their careers?

Community of Practice

Reconceptualize learning, taking the emphasis away from “student” and moving towards “apprentice.”

Learning takes place at the relationships between an apprentice and her mentors.

[Lave & Wenger 1991]



Outline

Obtain the skills to complete your degree.

Obtain the skills to achieve your career goals.

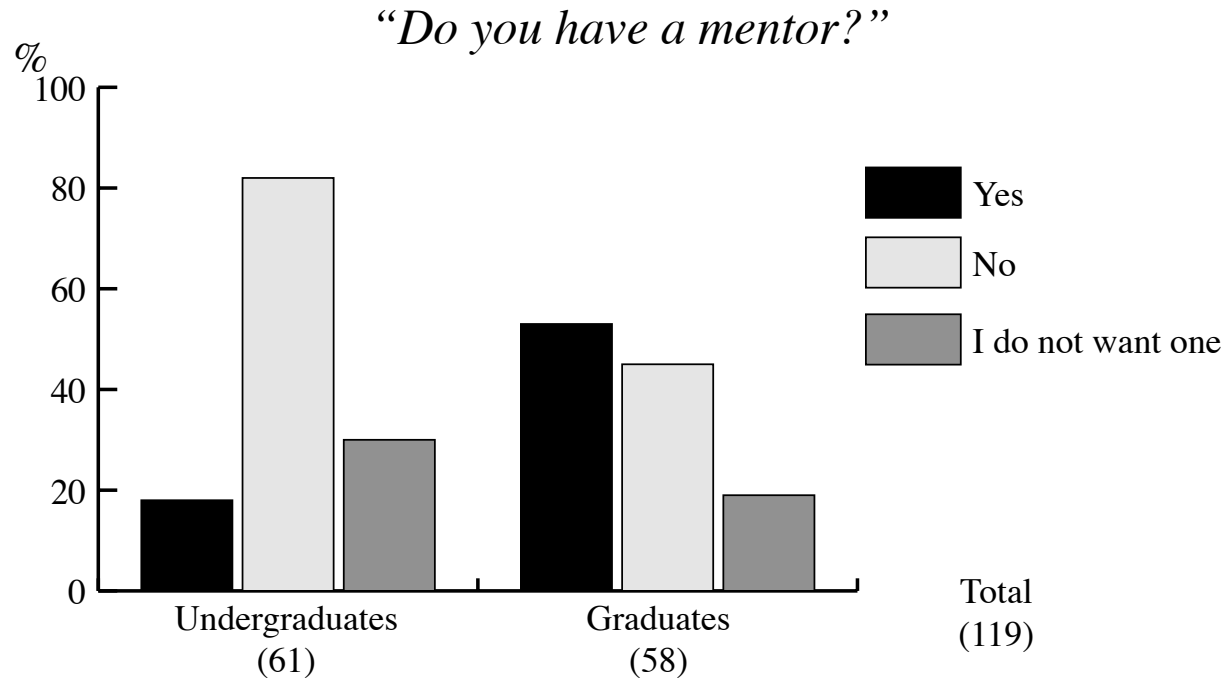
Within a community of practice.

Positive Predictors for Completion

	Engineering	Science and Mathematics
Married	+	+
Has a mentor	+	
Had some research productivity	+	+

[Nettles & Millet 2006]

Mentoring



“The last thing the faculty cares about is chatting about my problems. No one would be interested in mentoring me. People here just care about great research, not about mentoring.”

-pre-qual graduate student

Mentoring

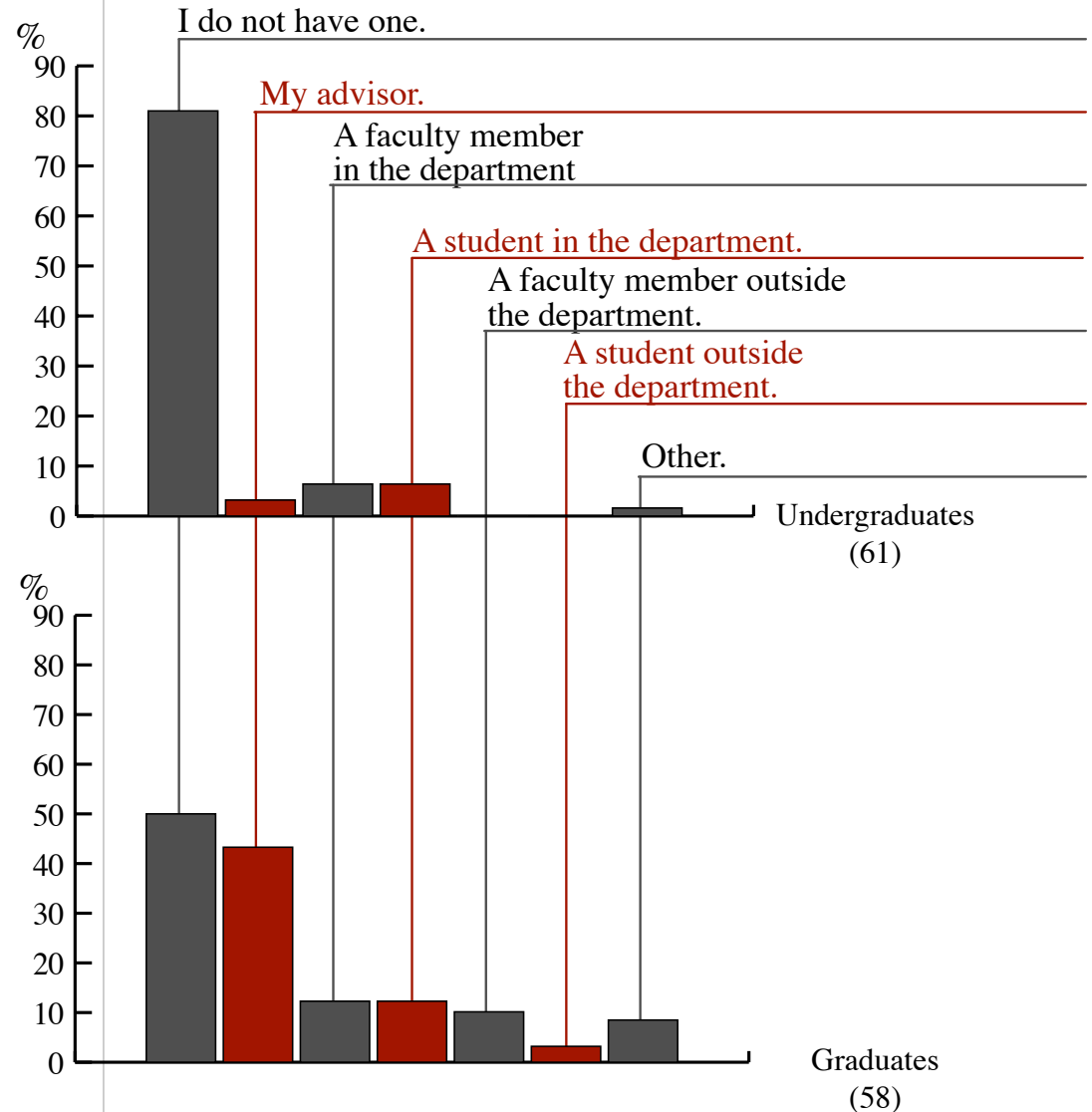
Of the 58 graduates, 31 reported having a mentor.

Only 49% of graduate students with an advisor regarded their advisor as their mentor.

On a scale of 1 to 5, rate the level of support you get from you advisor in terms of guidance with your research.

- “Advisor” gave an average rating of 3.65.
- “Advisor-as-Mentor” gave an average rating of 4.24.

“Who is your mentor?
(check all that apply)”



Mentoring

Why don't you consider your advisor your mentor?

"My advisor is only in her early thirties. It's not like she's 60 with lots of experiences. When I think of a mentor, I think of some old guy who can pull strings for you to get a job."

-pre-qual graduate student

"[A mentor should be] someone who is on my side who has some influence."

-post-qual graduate student

"[Regarding my advisor helping me network], I haven't seen any evidence that he has, so I assume that he hasn't. I guess that the typical thing that I see is when you go to a conference and you take your student and you start introducing your student to everyone, and that has never happened [to me]...That one conference that I went to, he wasn't there. I listened to people's talks, but I couldn't make any connections."

-post-prelim graduate student

Mentoring

Where to look for mentors:

- Advanced graduate students
- Advisor
- Committee
- College of Engineering
- MentorNet
- Blog-o-sphere

Research Productivity

Research Productivity

- presented a research paper at a national conference,
- published a journal article,
- published a chapter in an edited book,
- published a book.

Writer's Workshop

- <http://jerry.cs.uiuc.edu/~plop/plop98/workshops.html>

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Future Plans: PhD

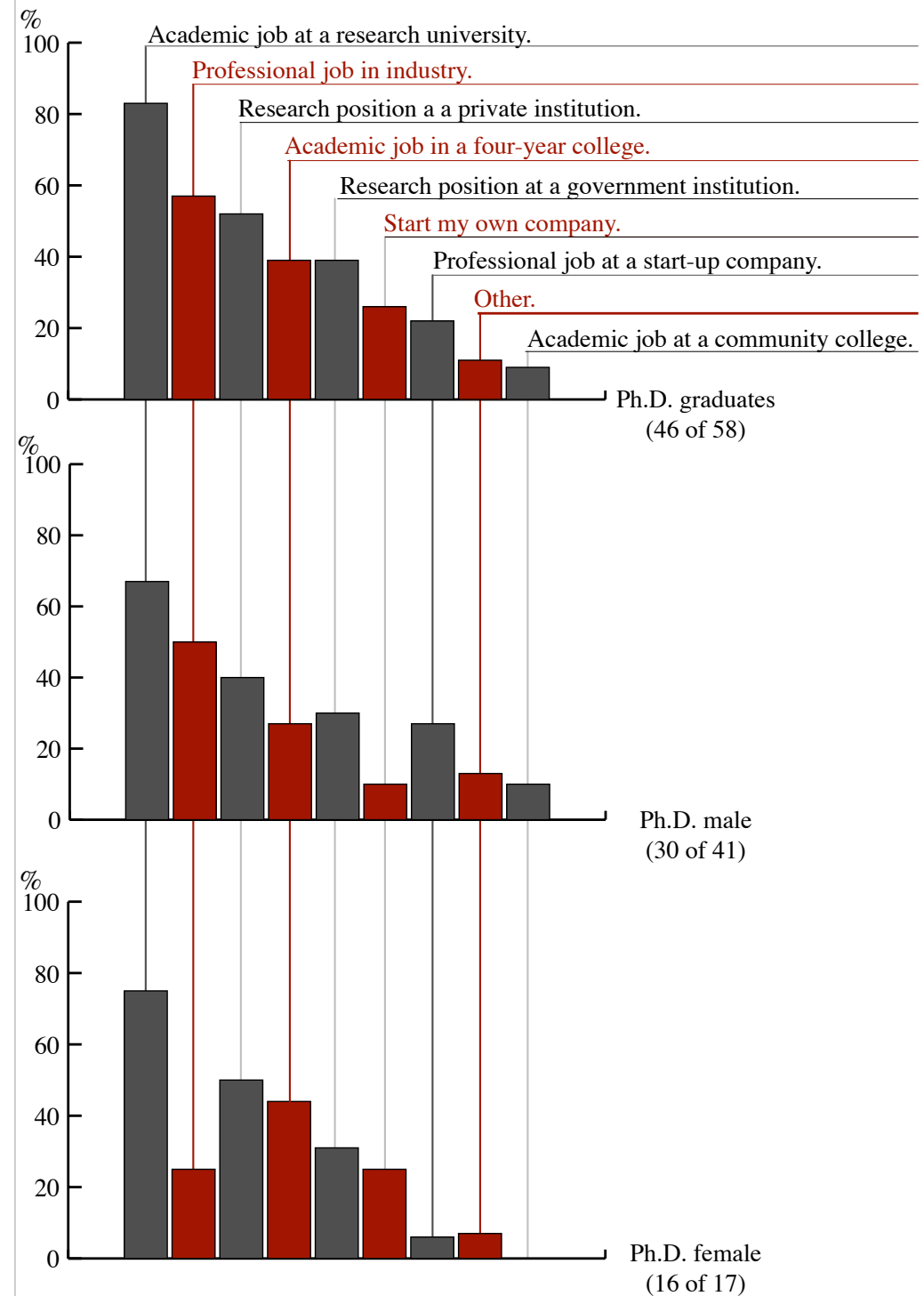
“...the prevailing sentiment is that doctoral students are being prepared for careers in academia and anything else is second best.”

Crispin Taylor
[Golde & Walker 2005]

“...a vast majority of those with a doctorate in science will not remain in the academe. Perhaps not more than 10 percent will be faculty at elite universities and around 40 to 50 percent in any academic institution.”

Yehuda Elkana
[Golde & Walker 2005]

“What kind of job would you like to get after graduating? (check all that apply)”



Future Plans

Would you want to work at a school like UIUC?

“I think being a professor at a big state school is a very difficult thing. If I'm going to be a professor, I don't think I could hack it here. I don't think I could do what a lot of professors here do. I don't want to work 90 hours a week.”

– pre-qual graduate student

“I don't envy the life of assistant professors at this school; working 100 hours a week when you're 35.”

–pre-qual graduate student

Job Search & Negotiation

Graduate College has regular workshops on time management, networking skills, job search, and offer negotiation strategies. Keep on the look-out for Mary Beth Wade and Greg Lambeth.

Event Calendar

<http://webtools.uiuc.edu/calendar/Calendar?callId=116>

Skills for Career Success

Teaching

Management & Personnel Skills

Grant and Proposal Writing

Leadership

Regulatory & Compliance Issues

Alvin Kwiram
[Golde & Walker 2005]

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Teaching

EOL 585, College Teaching and Academic Careers

Co-taught by Michael Loui and others.

History of the PhD, how to write a teaching statement, syllabus, plan a course.

CTEN, College Teaching Effectiveness Network

Work-life balance, writing a syllabus, active learning.

Upcoming event: Teaching and Technology.

web: <https://netfiles.uiuc.edu/ro/www/CollegeTeachingEffectivenessNetwork/>

ACM SIGCSE, Computer Science Education

Topics for introductory CS courses, diversity in the classroom, robotics curricula.

Upcoming event: SIGCSE 2008 Portland, Oregon.

web: <http://sigcse.org/>

Grant & Proposal Writing

Exercise 1: Ask your advisor to see the grant proposal by which you are paid.

Bibliography

Crenshaw, T. L., Chambers, E. W., Metcalf, H., and Thakkar, U. 2007. Recruitment, preparation, retention: A case study of computing culture at the University of Illinois at Urbana-Champaign. University of Illinois Technical Report, UIUCDCS-R-2007-2811 (available on arxiv.org).

Lave, J. and Wenger, E. 1991. *Situated Learning: Legitimate Peripheral Participation*. Cambridge University Press, New York, New York.

Golde, C. M. and Walker, G. E. 2005. *Envisioning the Future of Doctoral Education: Preparing Stewards of the Discipline*. Jossey-Bass, San Francisco, CA.

Nettles, M. T. and Millett, C. M. 2006. *Three Magic Letters: Getting to the Ph.D.* Johns Hopkins University Press.

Simple Things

Exercise 2: Name the research topics of three people at UIUC, **not** in your area.

Go to the FE and meet someone new.

Help with the prospective student visit.

Ask a first-year out to dinner with your research group.

Have a conversation with a committee member about a distinguished lecture.

Go to lunch with a faculty member.

thank you

feedback, questions, and critiques welcome!
tcrensa@uiuc.edu