

# Best Practices for CISE REU PIs

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# Research and Mentoring

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# Set Expectations

It's a 9-5 job, but with some self-direction

Deliverables at the end

Professionalism

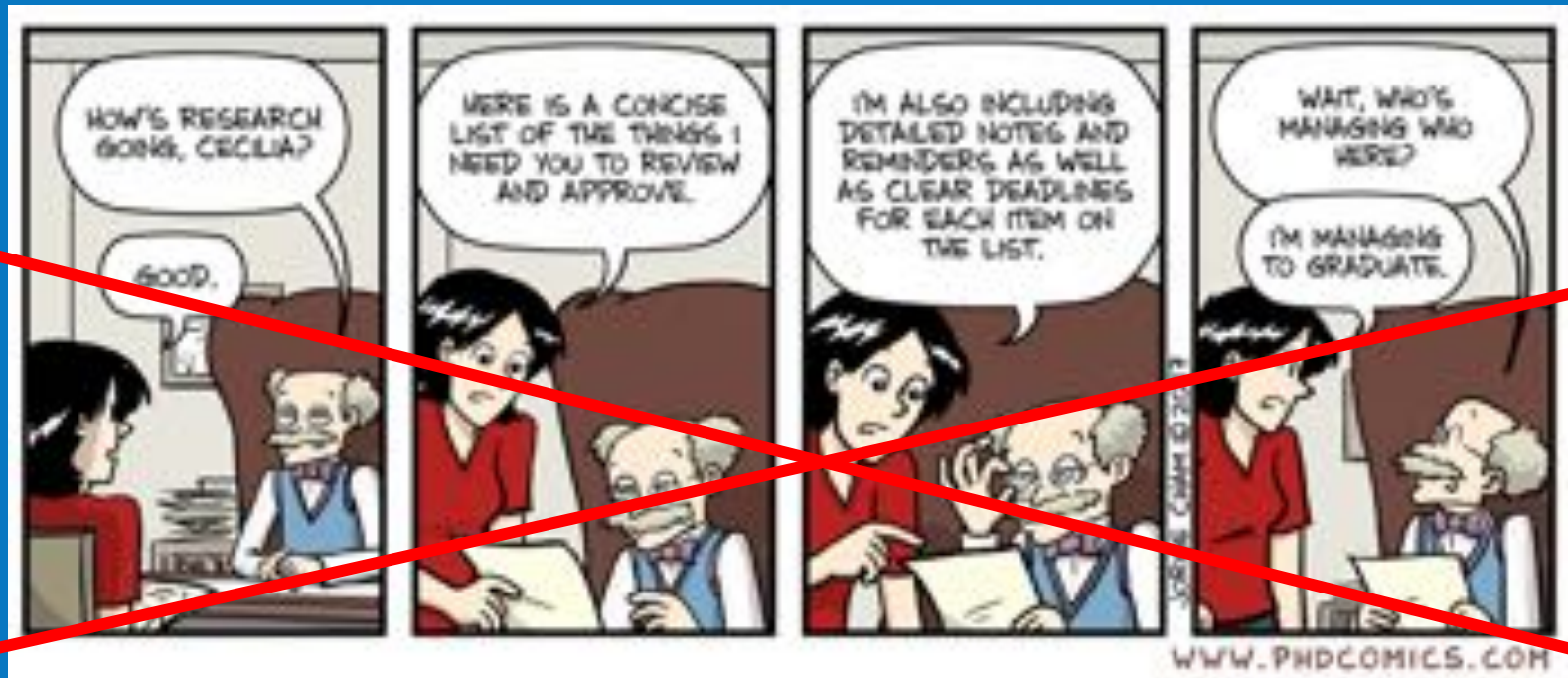
Who's here to help you



# Early Training

## Top Tips

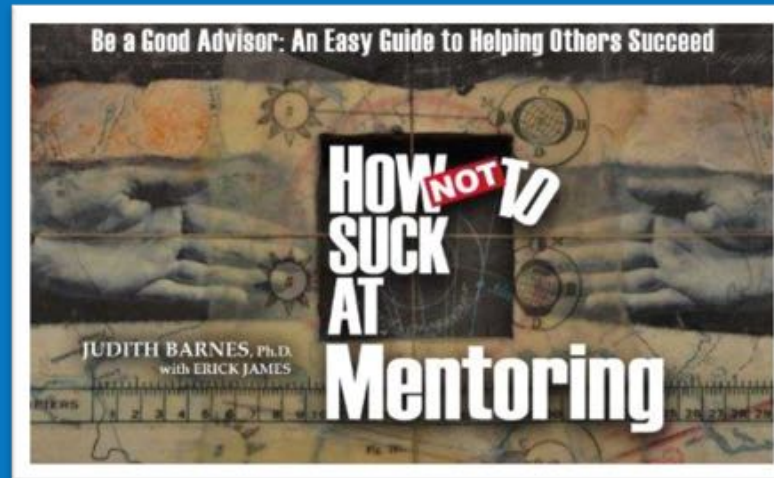
- Don't rely on pre-arrival prep
- Give subject-specific active training in first week
- Team-building helps
- How to have good research conversations



# Mentor Training

## Top Tips

Outline expectations for mentoring  
Give them a schedule



# Mentor Training

## Top Tips

Outline expectations for mentoring

Give them a schedule

Provide mentoring resources

On-going training for grad student mentors





# Working with Mentor Colleagues

## Top Tips

Untenured PI may ask Evaluator to give feedback  
Hallway check-ins during program  
Share student/site outcomes with them

Student is only Asian in lab and never participates in social events...

Student works very hard but still isn't "getting" it ...

You overhear one REU telling the other, "Maybe you should tweak the data to make your professor happy..."

Students sends lots of email, politely asks mentor many questions at every opportunity, and mentor gets irritated...

# Mentor Training

## Top Tips

To be engaging, use case studies.





# Structuring Research

## Top Tips

Mentors develop a daily plan for first week (at least)  
Give students guidance on how to figure things out  
REU students should report progress frequently



# Teams

## Top Tips

Tiered mentoring  
REUs in groups of 2-3  
Team Dynamics Training

## Anatomy of a Research Paper

- Title
- Abstract (4 sentences)
- Introduction (1 page)
- Body
  - The problem (1 page)
  - The approach/solution (2 pages)
  - The results (4 pages)
- Related Work (1-2 pages)
- Conclusions (0.5 page)
  - Summary
  - Discussion
  - Future Work



Slides adapted from "How to Write a Great Research Paper" by Joe Turner

## Writing Tips: Abstract

Support for Activity-Based  
Computing Op

Jakob E. Sundaram, Jonathan Ben  
Crisco for Portland State  
Abstract 36, 8200  
[Sundaram, jps-2004]

Write me last!

**ABSTRACT**  
Research has shown that computers are increasingly used in  
supporting the management of parallel activities and inter-  
dependencies, and that activities themselves are activity and compo-  
nent oriented. This paper presents a novel approach  
to activity-oriented computing paradigms with techniques for  
building modular, parallel and multi-work activities. We  
present the design and implementation of an activity-oriented  
framework for the Windows XP operating system. This includes  
replacing the Windows Taskbar with an Activity Bar, sup-  
port for handling Windows applications, a component man-  
agement, and support for parallel activities across different  
computers. We report on evaluation of this Windows XP  
framework which is based on a single method approach  
where distributed state of use and configurations are maintained  
by the Windows XP framework. The framework is designed  
to be useful in many ways.

Background & Gab

What we did ~ Innovation

Contributions

Method

Results

## Tip #4: Practice

- Ways to practice your talks
  1. By yourself "out loud" / Videotaped (better)
  2. In front of your mom, roommate, friend
  3. For a few people from your lab / dept
  4. For your advisor / whole lab
  5. By yourself, "in your head"

Do NOT try these first

# On-going Training

## Top Tips

Research skill seminars

Bring in "experts" from dept or beyond

Join other REU-like groups on campus (caveat!)



# Post REU Research

## Top Tips

Encourage it, but be practical

Collaborations with faculty at home institution

Course credit at home institution

Tools to encourage communication with research team

Travel to conferences



3 tips to share; 3 top questions  
5 minutes to write; 5 minutes to stick 'n' browse