# Overcoming Insufficient Academic Preparation: Perceived and Real

CRA-WP IDEALS Workshop

Minneapolis, MN

April 11-13, 2024

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# Link to captions

http://bit.ly/3Q1wRV7

# Session Outline

- Academic Preparedness: Context and Perspectives
  - Poll: Perceived PhD Preparedness
- Assessing Preparedness
- Imposter Syndrome
- Insufficient Preparation
- Doubters
- Break/Report Out: Crowd-sourced Solutions
- Q&A
- Closing Thoughts

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# Overview: Academic Preparedness

# Academic Preparation: Contexts

PhD preparedness must consider …

- Cognition: coursework, research, communication, …

  but also

- Emotion: motivation, persistence, self-efficacy, …

- Environment: finances, support systems, time, …

# How prepared to you feel for PhD COURSEWORK?

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# How prepared to you feel for PhD RESEARCH?

# Preparation Timeliness

Thesis Defense

Thesis Proposal

Qualifiers
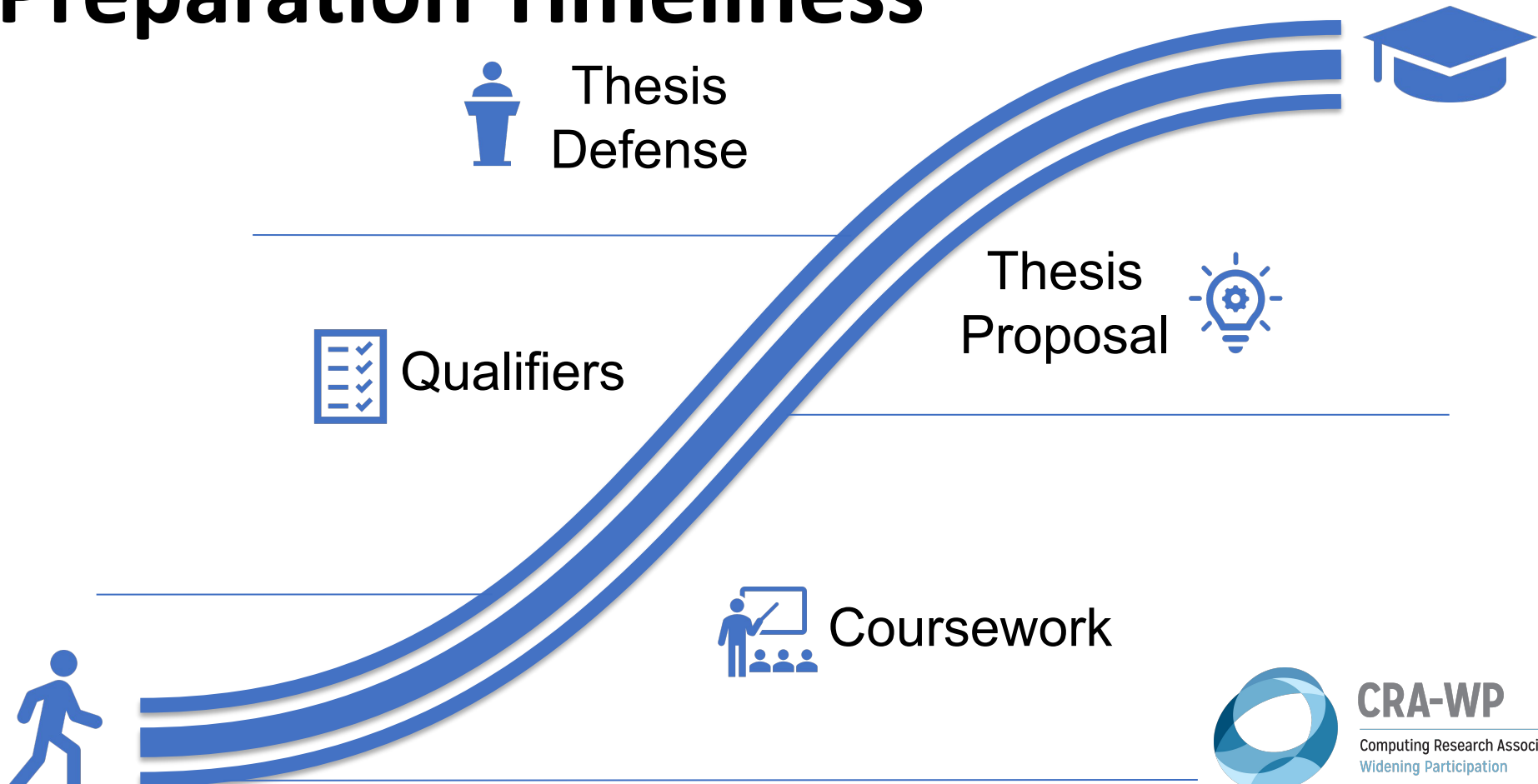
Coursework

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# Assess Preparedness by evaluating necessary proficiencies

**Coursework proficiencies:**

foundational knowledge and skill sets

**Research proficiencies:**

understanding, synthesizing and critical analysis of scholarly articles

identifying compelling, open scientific and engineering problems

conceiving feasible, innovative solutions

designing and developing appropriate experimental frameworks to test solutions

collecting and analyzing experimental results

**Technical communication proficiencies:**

writing technical reports and scholarly articles

creating and delivering effective technical presentations

classroom/seminar teaching

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# Academic Preparation: Perceptions

| Reality | Your View | Other's View | |
|---------|-----------|--------------|---|
| Prepared | Prepared | Prepared | ✔ |
| Prepared | Prepared | Underprepared | Doubters |
| Underprepared | Prepared | Prepared | Insufficient Preparation (Unrecognized) |
| Underprepared | Prepared | Underprepared | |
| Prepared | Underprepared | Prepared | Imposter Syndrome |
| Prepared | Underprepared | Underprepared | |
| Underprepared | Underprepared | Prepared | Insufficient Preparation (Recognized) |
| Underprepared | Underprepared | Underprepared | |

# Don't Swim Upstream!

An objective assessment is critical to ...

identify strengths that might become focal areas

to remediate weaknesses that will minimize friction and stress

# Imposter Syndrome

# What is it?

The imposter syndrome is a psychological term referring to a pattern of behavior where people doubt their accomplishments and have a persistent, often internalized fear of being exposed as a fraud.

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# What does the research say?

- 70% of people experience it at some point in their career.

- Affects women and people of color more, particularly if they are a underrepresented in their profession.

- Affects graduate students quite often.

- Affects successful people.

# What do you do about it?

- Recognizing it in yourself

- Expressing self-doubt in a safe environment where encouragement can be found

- Don't be paralyzed by self-doubt
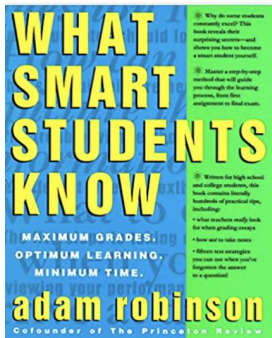
- Lean on previous success and triumphs

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# Insufficient Preparation Metacognition

Metacognition-"thinking about thinking"

## Learning is a process that can be improved and tweaked

# Insufficient Preparation Persistence

Persistence-Give yourself the time you need to learn

Learning takes time.
Expertise takes more.

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# Insufficient Preparation
# Academic classes

- Find guidance – instructor, TAs, classmates, advisors
- Identify resources and create a plan
- Prepare ahead of time
  - TA in the prerequisite
  - Audit the prerequisite
  - If course was captured, review the captured course



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# Academic classes

- Find guidance – instructor, TAs, classmates, advisors
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Discipline is the key!

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# Our Insufficient Preparation Non-academic skills for research

- Building artifacts needed for research

  - It is ok to learn as you do

  - Find online classes or primers

- Strategies to improve communication

  - **Reading**: Being active in reading groups and write summaries of papers; Have a method of recalling what you read

  - **Writing**: Practice and objective evaluation


Udemy


Michael Alley
The Craft of Scientific Writing
Fourth Edition
Springer
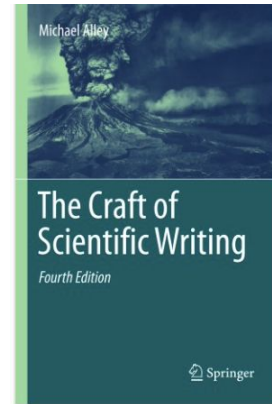

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# ~~Ops~~ Doubters

# Doubters
# Options

- Ignoring

- Point it out (in a thoughtful, non-judgemental way)

- Making a point of speaking up where there are opportunities to "shine"

- Offer help to other people who may be struggling

- Visit office-hours showing complete work and asking for pointers to more advanced material

- Document it in course/TA evaluations

# Doubters
# Strategies

- Speak up and show initiative:
  getting the spotlight is not a bad thing

- Know your strengths and look for opportunities to make them known

- Be well prepared for meetings and presentations

- If you find "gold stars" and awards silly …
  … it may be helpful to think of them as part of being well-dressed for the occasion

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# Breakout: Personal Experiences and Strategies

# Break Out: 5 Minutes

For each scenario below, decide whether each student is **suffering from imposter syndrome**, **academically underprepared** or **dealing with doubters**. Use your own experiences to come up with actions for each scenario.

Scenarios:

1) Susan is a new graduate student at Acme University.  Her first semester includes a Machine Learning class.  She is super excited until she sees that students are required to use Python machine learning libraries.  She has never programmed in Python and doesn't understand how to retrieve and get dependencies.  She does not feel she is a good programmer and worries that she will not be able to complete the assignments.  What should she do?

2) Thomas is a fourth year PhD student that started writing his first journal article.  When he submits his first draft to his advisor, he receives personal, negative feedback that he is a terrible writer and this article is embarrassing.  What should he do?

3) Michelle, a master's student, is taking a graduate course in computer architecture.  The class is assigned a group homework where students should work in pairs on a VHDL assignment.  Michelle is unable to find a partner for the homework assignment by the end of the class.  What should she do?
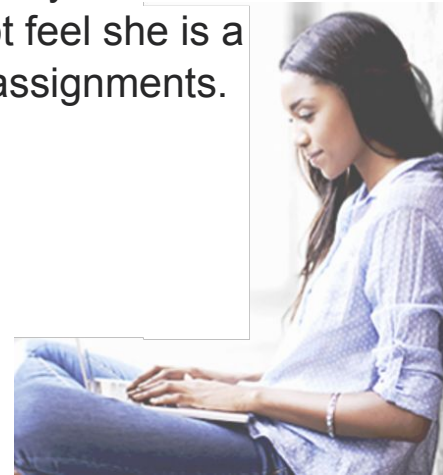
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# Scenario 1

Susan is a new graduate student at Acme University. Her first semester includes a Machine Learning class. She is super excited until she sees that students are required to use Python machine learning libraries. She has never programmed in Python and doesn't understand how to retrieve and get dependencies. She does not feel she is a good programmer and worries that she will not be able to complete the assignments. What should she do?

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# Scenario 2

Thomas is a fourth year PhD student that started writing his first journal article. When he submits his first draft to his advisor, he receives personal, negative feedback that he is a terrible writer and this article is embarrassing. What should he do?

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# Scenario 3

Michelle, a master's student, is taking a graduate course in computer architecture. The class is assigned a group homework where students should work in pairs on a VHDL assignment. Michelle is unable to find a partner for the homework assignment by the end of the class. What should she do?

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# Wrap Up

- Seek help when you need it
- Assemble a supportive peer group
- Focus on all the great things you will do with your graduate degree

# Questions?

**Resources**:

What Smart Students Know: 978-0517880852

The Craft of Scientific Writing:
https://link.springer.com/book/10.1007/978-1-4419-8288-9
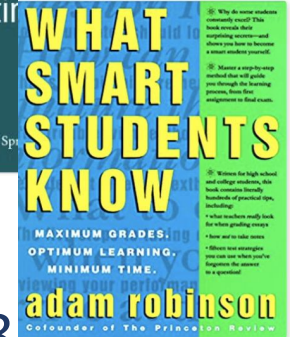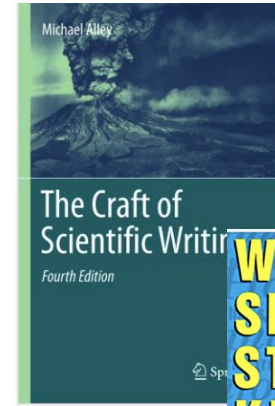
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# Talk Plan

- 0:00: Opening Introductions
  - Speaker Introductions (MA/DA)
  - Session Outline (DA)
  - Preparedness Background (DA)
  - Preparedness poll (DA)
- 0:10: Core Topics
  - Swimming Upstream (DA)
  - Imposter Syndrome (MA)
  - Insufficient Preparation (MA)
  - Doubters (MA)
- 0:35: Breakout/report out: their own solutions (MA)
- 0:43: Q&A (Transition to questions/slide with resources) (MA)
- 0:48: closing thoughts



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