The Craft of Research

Week 1: Introduction to Research Problems

Outline

- Course overview
- Research review
- Upcoming
- Reminders

Purpose of Craft of Research

- Broad approach to your summer research

- Cover fundamental principles in research

- Prepare you for each milestone you will encounter

- Increase your comfort and awareness in research writing, reading, and presentations

- Provide resources and tools to successfully accomplish your goals this summer

What are your expectations for this course?

What is Research?
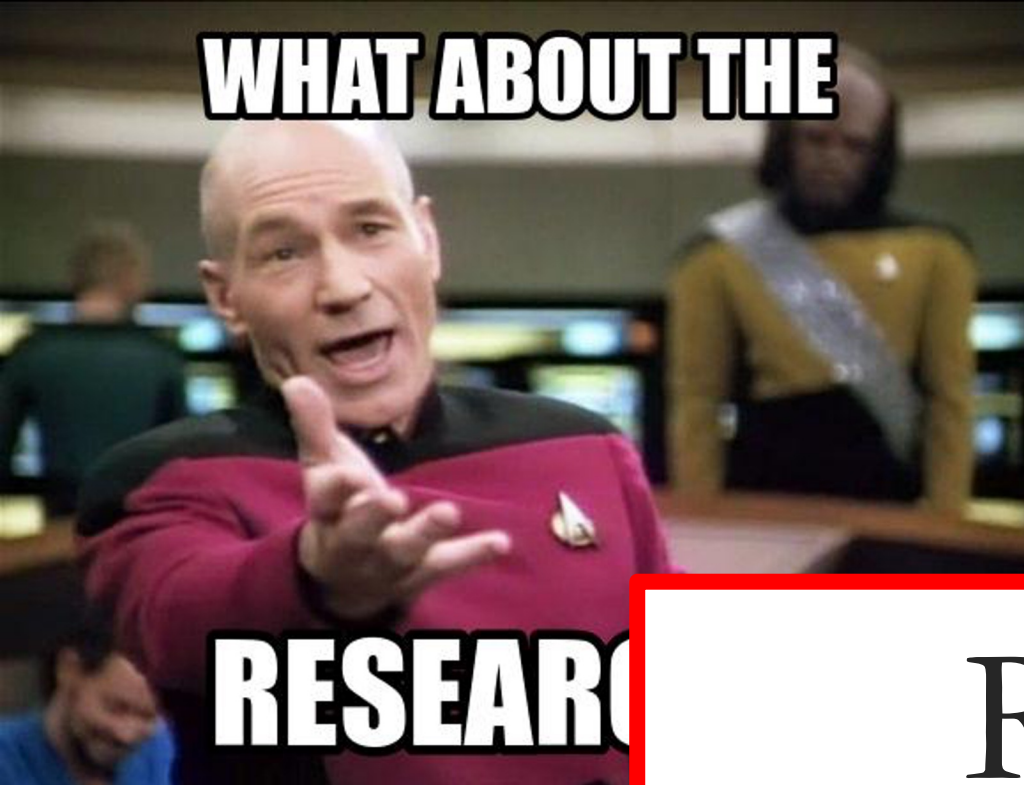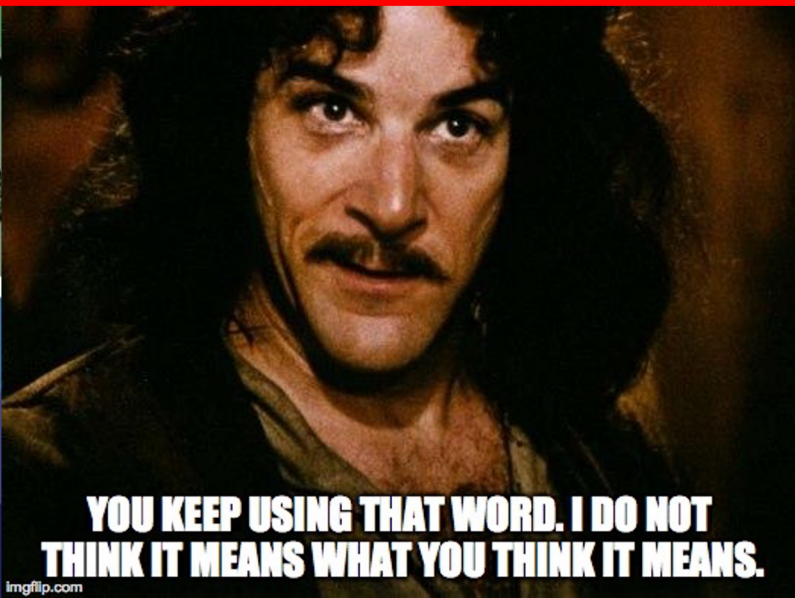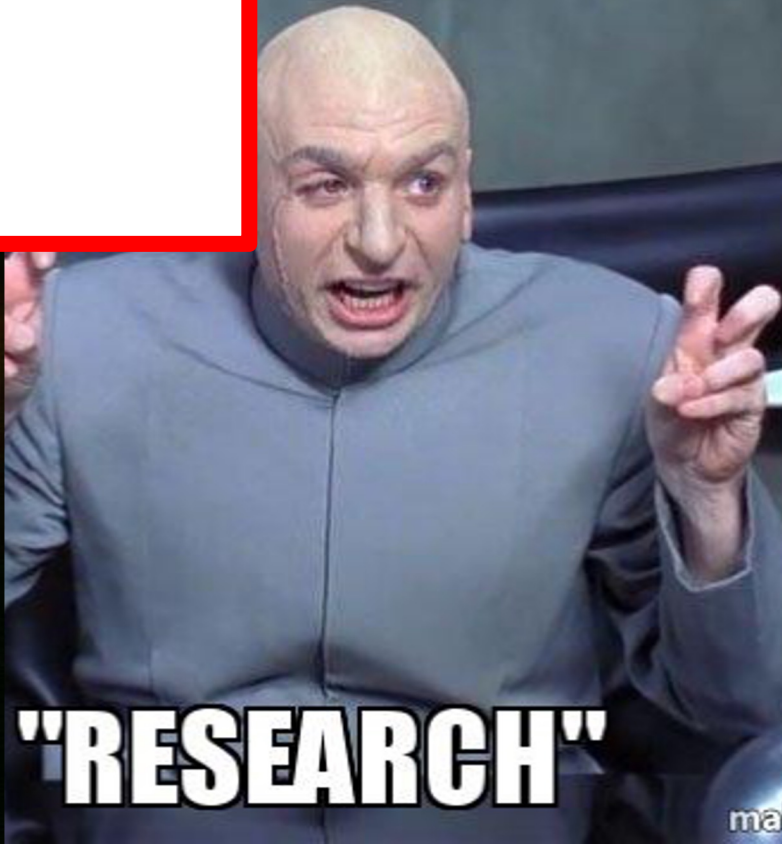
Definitions
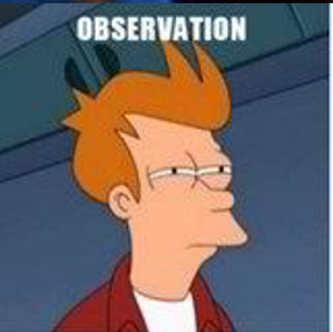
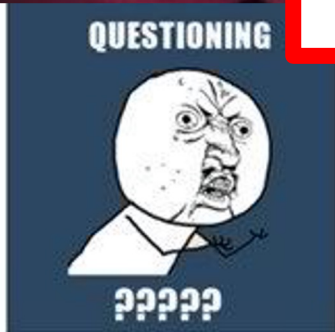"A *systematic* investigation, including research development, testing, and evaluation designed to develop or contribute to *generalizable* knowledge."

- https://www.hhs.gov/ohrp/regulations-and-policy/regulations/45-cfr-46/index.html#46.102

"We do research whenever we *gather information* to answer a question that *solves a problem*."

Benefits of Research

- Helps you understand what you read
  - Critically consume information
- Discovery of how…
  - New knowledge depends on what questions you do and don't ask
  - Research shapes the questions you ask and how you answer them
  - Knowledge we rely on depends on the quality of the research
- Research writing to remember more accurately, understand better, and evaluate more objectively

Who is Involved?

Researchers

- Professional scientists/researchers
- Faculty and educators
- Post-docs
- Graduate students
- Undergraduate students

Who Pays

- Government
- Corporate institutions
- Foundations/non-profits
- Universities

Why do we Create and Consume Research?

Researchers

- I've found new and interesting information
- I've found a solution to an important practical problem
- I've found an answer to an important question

Consumers

- Entertain me
- Help me solve my practical problem
- Help me understand something better

Activity 1: Understanding Your Readers

1. **Who will read your report?**
   - Academic professionals?
   - Well-informed general readers?
   - General readers who know little about the topic?

2. **What do my readers expect me to do?**
   - Entertain them?
   - Provide factual knowledge?
   - Help them understand something better?
   - Help them do something to solve a practical problem in the world?

Activity 1: Understanding Your Readers

3. How much can I expect them to know already?

- What do they know about my specific topic?

- Do they recognize the problem?

- Will I need to convince them the problem matters?

4. How will readers respond to the solution and or answer in my claim?

- Will it contradict what they already believe? How?

- Will they make standard arguments against my solution?

- Will they want to the steps that led me to the solution?

Any Questions?

Reminders