The Craft of Research

Week 1: Introduction to Research Problems
Instructor: Imtiajul Alam
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.”


“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