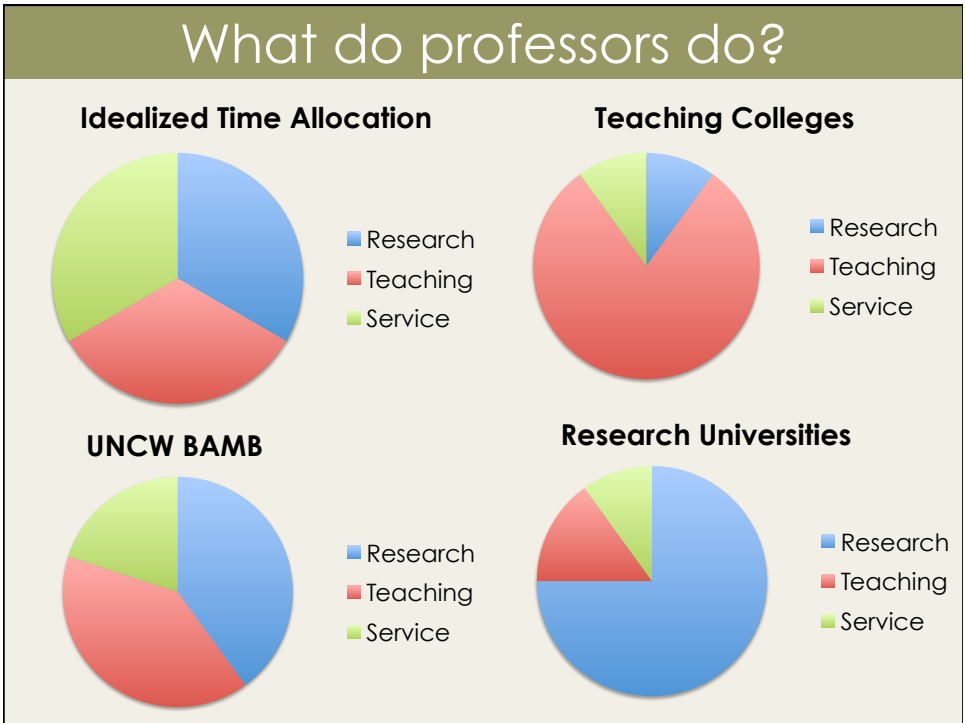


Business of Science

Honors 120

Road Map

- What do Professors Do?
- Research as a Business
- Tricks to find, read, and summarize primary literature



Service

What kind of service do faculty do?

Service Exmaples

Departmental

- Undergraduate Assessment
- Long Range Planning
- Advancement

College & University

- Reappointment, Promotion, and Tenure (RPT)
- University Curriculum Committee
- Advisory Board, Center for the Support of Undergraduate Research and Fellowships ([CSURF](#))

Professional

- Review proposals and papers (peer-review)
- Professional Society Leadership

Community

- Advisory Board, [Cape Fear Museum of Science and History](#)
- Advisory Board, [Cape Fear River Watch](#)
- Board of Directors, [Cape Fear Economic Development Council](#)

Teaching

Classroom

- Large lectures
- Seminars
- Laboratories

Mentorship

- Directed Independent Studies
- Honors Theses
- Graduate Theses

Informal Teaching

- Advising
- Letters of Recommendation & Support

Research

What is research?

Research

"Systematic inquiry to describe, explain, predict, and control observed phenomenon"

http://www.personal.psu.edu/users/w/x/wxh139/research_talk.htm

Dictionary

1. to search or investigate exhaustively
2. studious inquiry or examination; especially : investigation or experimentation aimed at the **discovery** and **interpretation** of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws
3. the collecting of information about a particular subject

Merriam-Webster Collegiate Dictionary, tenth edition

Discovery of New Information

Topic → Problem → Background Information → Question/hypothesis
 → Research Design → Analysis Procedures
 → Implement Research → Interpret Results

Scientific Method

Research as a Business

Who decides what to investigate?

- Investigator vs. organization

Funding

- Federal Funds – our tax dollars at work
 - National Science Foundation ([NSF](#))
 - National Institute of Health ([NIH](#))
 - National Oceanic and Atmospheric Administration ([NOAA](#))
 - Environmental Protection Agency ([EPA](#))
 - Defense Advanced Research Projects Agency ([DARPA](#))
- Foundations/Societies
 - Sigma Xi – [Grants in Aid of Research](#)
- [CSURF](#) – Supply, Travel, and Time

Dissemination

- Presentations/Posters @ meetings
- Publications

Publication Types

**What types of
sources are there?**

Publication Types

Primary Source

- Written by scientists who conducted the science
- Includes details of how the study was conducted
- Referred to as “peer-reviewed”
- Journal papers (online vs. paper)

Secondary

- A summary, interpretation, or evaluation of primary literature
- Textbook, monograph, review papers, edited volumes

Tertiary Sources

- Work based on secondary sources
- Trade/business journals, magazines

Grey Literature

- Govt. Documents, Conference proceedings, oral presentations, technical reports, working papers.

http://library.fgcu.edu/RSD/Instruction/handouts/handout-primary_secondary.pdf

Primary Literature

Reading and Summarizing Primary Literature

Standard Research Paper Outline

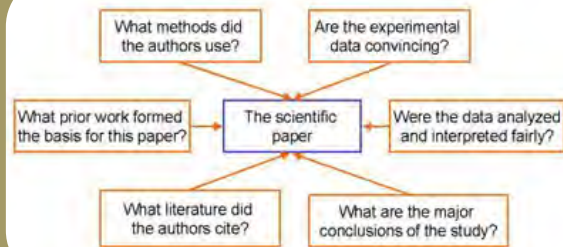
Title
Abstract
Introduction
Methods
Results
Discussion
Acknowledgements
Literature Cited

Figures and Tables
used as needed

What information do you expect to find in each section?

Where will you tend to find the most important information?

Questions to Consider



http://biology.kenyon.edu/Bio_InfoLit/how/index.html

Paper Summary

- Title & Authors (institutions)
 - Who funded the science?
- Identify the main question or issue. Why is it important?
- What were the materials & methods? Where was the research done?
- What were the key results?
- How do the results contribute to our knowledge (the question/issue)?
- 3-5 main points?
- Science papers are persuasive essays. Do you believe results support the conclusions?

UNCW Biology and Marine Biology Faculty



Learning More about Faculty Research

- BAMB Research Active Faculty
www.uncw.edu/bio
- Personal Web pages
- Google Scholar
- ISI Web of Knowledge
- ISI Web of Science

Summary/Review

- What do professors do?
- Distinguish between types of sources/publications
- Where should you look in a paper for the most important information?
- What information belongs in a summary of a research paper?
- How do you learn more about faculty and their research?

Next Week

- Read Courchesne et al. 2012 (posted)
- Prepare summary
- Meet in Dr. Frampton's laboratory
 - Dobo 110