

# Scientific Writing: An Intellectual Journey

## Course Mechanics

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**Office hours:** During Class time on  
off-weeks and by appointment

## SciComm Schedule

- **Meeting dates vary!** Mark your calendars.
- **YOU MUST ATTEND EACH MEETING, AND ARRIVE ON TIME.**
- Six Meetings seven parts of a research paper:
  - **Introduction** Meeting 1
  - **Methods** Meeting 2
  - **Tables and Figures** Meeting 4
  - **Results** Meeting 3
  - **Discussion/Conclusion** Meeting 5
  - **Title and Abstract** Meeting 6

## What are Off-Weeks?

- Off-weeks are weeks when SciCom does NOT meet.
- **Each new section of your long-term project is due during class time on the off-week.**
  1. Bring a **hard copy** of each new section to my office and
  2. Send an **electronic copy** to a peer assigned by me.
- **Feedback** from me and from your peers is due at the very **next class meeting (on-week)**.

## Class Methods

- **In-class exercises**
  - Brief oral presentations
  - Brief writing exercises
  - **Out-of-class exercises**
    - Writing exercises that put biweekly course content to work
    - Peer feedback
- **Long-term projects**
  - One of six choices
  - Produced in increments corresponding to the topic of each meeting and subject to revision.

## Grading

- **In-class exercises = 20 potential points**
- **Out-of-class exercises = 30 potential points**
- **Long-term project = 50 potential points**
  
- + Thoroughly superior work. A model of good scientific writing (rarely used).
- √+ Good work. Requires only minor improvements in any of the following areas: organization of ideas, economy of expression, diction (word choice), grammar, punctuation, spelling.
- √ Acceptable work. Requires moderate revision.
- √- Acceptable but rough work. Requires substantial revision in all areas.
- - Unacceptable work (rarely used).

## Rewrites

- **ONE** rewrite allowed for each assignment.
  
- Rewrites must be turned in by **ONE week after** assignment is returned.
  
- **HIGHER grade** of the two is recorded.

## *Please...*

- **IDENTIFY YOUR SECTION (A, B, or E) ON EACH EMAIL AND HARD COPY.**
- **Indicate** in the upper right hand corner of every hard copy document you turn in:
  - **Name**
  - **Section**
  - **Exercise**
  - **Date**
- **DOUBLE SPACE ALL WORK DOUBLE SPACE ALL WORK**
- **I will NOT accept single spaced documents**
- **Save all hard copies with my handwritten comments** - I may ask for it all at the end of the term.

What's an Introduction?

## What's an Introduction?

- A method to **familiarize and orient**.
- The content of an introduction **depends on:**
  - **Its purpose, and**
  - **The audience.**
- Today's in class exercise demonstrates how content changes depending on the audience.

## What's the Purpose of an Introduction in Scientific Writing?

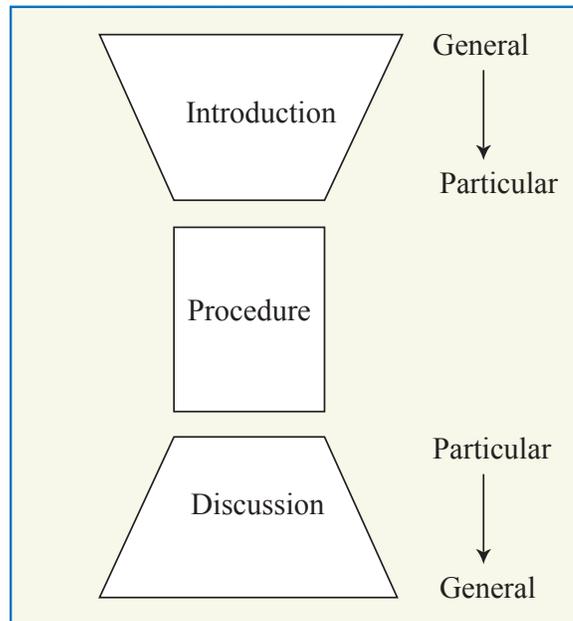
- Provide the **context** of your work (create your research space, define gap in knowledge).
- State your **focus (hypothesis, question)**.
- Provide **justification** for your work (how your work can answer the question).

## Context, Focus, Justification

- **Context:** Orient your reader to the published literature related to the study you are presenting.
- **Focus:** What question are you addressing? What is your hypothesis. Define your research space, stake out territory.
- **Justification:** Show how your work fits into and extends previous work.
- *This sets up the direction you'll take in the Discussion Section.*

## Macrostructure of a Research Article

- Hourglass diagram of Hill *et al.*
- **Introduction** provides general field or context.
- **Methods** follows a particularized path.
- **Discussion** moves from specific findings to wider implications.



Overall Organization of the Research Paper (Hill, et. al., 1982.)

Image by MIT OCW.

### What are Some Common Pitfalls of an Introduction Section?

- Including **unnecessary background** or being repetitive.
- **Exaggerating** (or understating) the importance of your work.
- Using **lackluster** openers and **weak** follow-through in the body of your introduction.
- Including **new results** in the introduction section.
- **Improper tense** (Introduction is largely present tense).

## Other Models for Introductions

- Problem/Solution.
- Stake out territory, stake out niche, occupy niche.
- All models share a direct approach. Don't hide your main point or save it until the end of the paper.

## An Example from the *NEJM*

Murphy, Timothy F. "New Strains of Bacteria and Exacerbations of Chronic Obstructive Pulmonary Disease." *New England Journal of Medicine* 347 (August 15, 2002): 465-471.

## Today's In-Class Exercises

- Copy the brief biographical sketch you created on the discussion board into a text document.
- Use your text editor to write two more brief biographical sketches (about 100 words each) for a foreign relative and a potential summer employer. Print this document and turn it in to me before you leave today.

## Today's Out-of-Class Exercises

- **Paraphrase in plain language** (suitable for a high school senior) the **introduction** to the NEJM article by Brian Druker.
- Four students will prepare an **oral presentation** on this article for our next class meeting:
  - Summarize the article
  - Identify content, justification, and focus
  - Identify pitfalls
  - Prepare two to three open-ended questions for group discussion
- Write the **introduction to your long-term project** and provide copies of your draft to me (hard copy) and to an assigned peer reviewer by the next off-week.

## Peer Review in 7.02 SciComm

### Step 1

By the end of class meeting time on the off week, post your long-term project component to the SciComm discussion board:

- Topics are listed for each long-term project component.
- Post your draft as a file attached to a reply to the topic. Note: Your reply must contain some text in order for you to attach a file.
- If you write your draft in StarOffice, save it in Word or RTF format.

## Peer Review in 7.02 SciComm

### Step 2

By the time of your next SciComm class meeting, you will need to download a peer's draft and post your response as an attached file or reply:

- The peer to whom you should respond will change for each long-term project component and will be indicated under that component's topic.
- Your feedback should be based upon the goals and pitfalls for that component described in SciComm lecture.
- Use Word's track changes feature or other means to respond to your peer's draft.