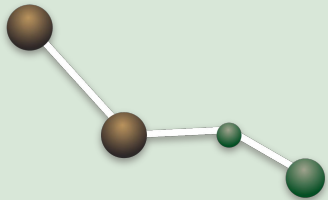


Rowan University
School of Graduate Studies
Graduate Academic Services

Science Communication Workshop Series

Session 1: "Translating" Science
Writing for Public Audiences



Today's Itinerary



1. Introductions
2. Today's Goals
3. Science Communication: What & Why?
4. The "Rhetorical Situation": Staying Focused on the Task at Hand
5. Tips for Writing for Public Audiences
6. Moving Forward

Goals

1. You will learn why learning science communication (or public-facing science writing) skills is significant for you, your graduate education, and your future career.
2. You will understand how to apply principles from the fields of rhetoric, composition, and science communication to tailor how you present your science writing to various relevant public audiences.
3. You will be able to take what tips you learned today forward and begin to “translate” your own complicated scientific genius for public audiences who desperately need your knowledge.

What Is Science Communication?

- Science communication is the practice of delivering scientific information to non-expert and/or public audiences.
- Comes in many forms: published writing, speeches or presentations, applications for grant funding, informal explanations, classroom lessons, and more.
- Even other scientists can be “non-expert” audiences.

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- Your science is important! The public needs to know what you're doing and how it benefits our society; also, they pay taxes.
 - You may be called on to explain your work to various political, governmental, and news agencies.
 - Science communication is essential for teaching. Remember that your students begin as "non-experts," too.
 - Grant money! If a committee can't understand your complex research, they aren't likely to want to fund it.
 - Other scientists can help expand your cross-disciplinary work.
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Why Learn Science Communication ?

Science Communication Brings Audience Members' Faces from

THIS



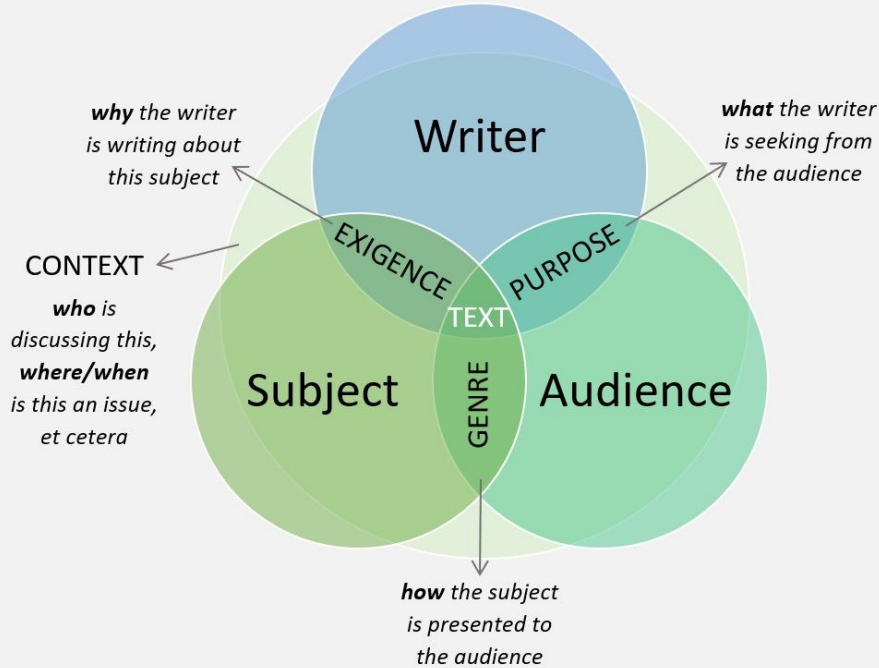
TO

THIS!



A Place to Begin: Rhetoric & Composition

The Rhetorical Situation



- What's most important to consider when writing for a public audience:
 - Your Purpose
 - Your Audience's Understanding
 - Eliminating Barriers Between the Two
- Identifying your "Rhetorical Situation" will help ensure you are writing/communicating your research in the best ways to your target audiences.

Tools for Applying Rhetorical Situation

West Virginia University's Undergraduate Writing Program uses their PACT framework to aid students during their writing processes. We can use it, too!



Purpose: What exactly do I want to happen?

Audience: Who is reading, listening, or viewing?

Conventions: What is expected in this context?

Trouble: What could get in the way of my goals?

How to Use PACT as a Guide

Example Scenario: You've made a groundbreaking discovery when researching a particular medication's effects on the body and feel compelled to let the world know what you've found. You want to write a public-facing article about the topic to be (hopefully) picked up by a news source like the *New York Times*.

What is your ***purpose***?:

- Sharing complex science with the public & making it understandable.

Who is your ***audience***?:

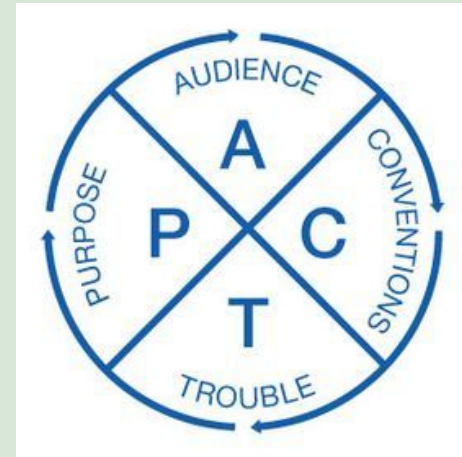
- The general public (engaged readers; mostly adults).

What ***conventions*** should you stick to?

- The typical genre conventions of a news article, *not* those of a scientific journal article.

What ***trouble spots*** could make things difficult?

- You may not "translate" the science into public-facing writing well. Audiences could become bored or confused.



“Translating” Your Science for the Public

Whether you’re writing a public-facing piece from scratch or reworking an academic article for public consumption, *The Craft of Science Communication* by Harmon & Gross (2010) gives you six essential suggestions, or tips, for ensuring that your work is received well by public audiences.



Tip 1

Build a Solid Structure

Tip 2

Creative Title &
Headline

Tip 3

Bond with Your
Readers

Tip 4

Conclude with
Meaning

Tip 5

Ditch the Jargon

Tip 6

Don't Forget the
Visuals

Tip 1: Build a Solid Structure

ACADEMIC SCIENCE ARTICLE STRUCTURE

- Title/Abstract
- Introduction/Research Problem
- Methodology
- Results
- Discussion
- Conclusion
- References

Academic science articles are mainly for other experts in your field; they contain information to help other scientists replicate your work, not just to comprehend it. Public audiences do not value chunks of this format.

PUBLIC-FACING SCIENCE ARTICLE STRUCTURE

- Title/Abstract
- Context
- Problem
- Solution
- Wider Implications
(recommended)

This format allows public audiences to know enough about your topic to understand what problem you're looking to solve, what your solutions are for that problem, and why it matters to them and other people.

Tip 2: Use Creative Titles & Headlines

Remember that a public audience typically does not understand or appreciate fully the esoteric scientific knowledge you possess. You have to bring them into your world by enticing them with interesting titles and headings!

ACADEMIC SCIENCE ARTICLE

Title

“The Plasma Structures and Networks of Channels as Components of The Sequential Mechanism of Lightning Initiation Within Thunder Clouds”

Abstract

The dissertation describes in detail the experimental studies of the initiation of unusual plasma formations (UPFs) in the electric field of an artificially charged aerosol cloud. These experiments, together with the latest data from the study of intracloud discharges, make it possible to construct a sequential mechanism for initiating lightning inside a thundercloud, as well as a model of compact intracloud discharges (CID/NBE).

PUBLIC-FACING SCIENCE ARTICLE

Title

“How to Make Lightning in a Pretty Huge Bottle”

Headline

Scientists have discovered how to manipulate plasma and electricity within thunder clouds to make lightning snap, crackle, and pop.

Tip 3: Bond With Your Readers

Whether they are a grant committee, the readers of a local newspaper, or an AP Biology class, your audience members are real people. Introduce them to your research by connecting your work with real world facts, by telling a story, or by choosing to use a key metaphor to help them understand your science.

A Good Public-Facing Science Article Intro Will Begin With:

The Hook

- Interesting facts or statistics that lead into the topic at hand.
- A captivating story that highlights the significance of your research topic to your audience.
- A metaphor comparing your work to something easily understood by the audience.

Background Information

- Literature Review Jr.
- What crucial information about your topic is already known by the scientific community and/or the general public?
- Only give just enough information to provide key context and no more; the goal is not to connect with existing scholarship.

New Research (The Problem)

- Explain what issues have arisen that are not explained by the background information you've given.
- What is your research problem? What did you intend to figure out and why?

Tip 4: Conclude With Meaning

Public audiences derive different meaning from scientific research than established scientists, who often value the information personally and academically. They want to know how your research will affect them, their families, their chosen industries, and the world at large. Make sure to provide them with the implications of your research!

Remember “Rhetorical Situation!” Tailor how you deliver the implications of your research to your specific audience.

To a Grant Committee:

- This is why my research will affect your target group profoundly.
- This is why giving your grant money to my research will push your goals forward.
- This is why my research celebrates your cause and honors your commitments to your constituents.

To a Class of Nursing Students:

- This is why respecting the conclusions of my research will benefit patients.
- This is how my work will make your future job easier and safer.
- This is why studying up on my work and work like it will prepare you for your future careers as Registered Nurses.

To Concerned Citizens:

- This is how we solve or prevent the worsening of a current scientific/medical issue.
- This is how listening to my research and implementing its suggestions will help protect or aid your families.
- This is how my research will save you money.

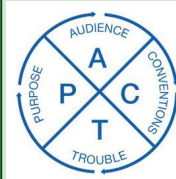
Tip 5: Avoid Complicated Scientific Jargon

When you spend so much time in your subject, it can be difficult to remember that public audiences do not know as much as you know about your topic. Remember to make the language you use easy to understand, avoid overly technical language (jargon), and make your tone flow easily and conversationally.

Academic Science Writing

- **Tone:** formal, academic.
- **Language:** complex, discipline-specific (jargon-y), and often aimed toward other scientists in the field.

Academic science writing is meant to be as precise and as detailed as possible for other established scientists who can understand the terminology being used and the work being done.



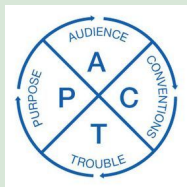
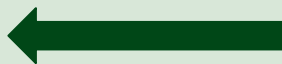
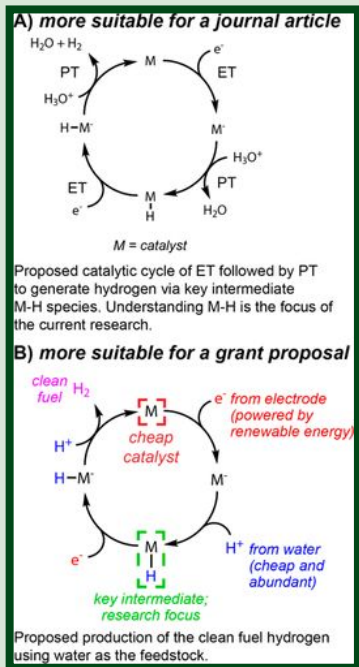
Public-Facing Science Writing

- **Tone:** Relaxed, conversational, but still informative.
- **Language:** Still scientific, but less complex. Jargon is avoided and terms are explained and simplified.

Public-facing work is meant to lessen the intimidation factor for non-experts. Avoid stuffiness in your tone and overly complex language that will scare away your audience.

Tip 6: Don't Forget the Visuals

For scientists, figures and tables are crucial for displaying information. In academic science writing, they often show new information independently of the text. In public-facing science writing, they should be used to back up what you're already saying and should be simplified for easy understanding.



This figure, meant for a science article meant for an academic journal, doesn't explain its imagery in an accessible way to non-scientists. It relies on your preexisting knowledge to render itself legible.

This figure, meant for a grant proposal (or for another public audience) is explained more, uses simpler terminology, and color codes its information to make it easier to understand.

Moving Forward

- 3 Writing Workshops (bi-weekly on Mondays; next workshop 11/4 from 7-9 PM)
 - Section-based workshops.
 - Introductory material
 - Free writing time
 - Feedback available
- Take your draft onward!