

PRINCIPLES OF SCIENTIFIC COMMUNICATION



Amanda Bongers and Donal Macartney
Queen's University

Principles of Scientific Communication (Bongers and Macartney)

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This text was compiled on 06/13/2026

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Introduction

“Science isn’t finished until it’s communicated.”

– Sir Mark Walport

Science will accomplish nothing if scientists cannot communicate their research and findings. We would not have known Darwin’s name if he did not, two decades after collecting and analyzing his data, finally publish his manuscript *On The Origin of Species*.^[1]

Why is writing important in science? It’s not enough to simply have an idea, or discover something. Credit for the finding will go to the person who first published the work. This is what motivated Darwin; more than 20 years after his data collection voyage he received a letter from another naturalist, Alfred Wallace, who had made similar discoveries and was developing a theory of natural selection. Darwin went into a writing frenzy and finished a quarter of a million words within one year.

Scientific writing is different than creative writing, although both can be improved by storytelling. Writing for science requires clarity since the goal is to explain new discoveries or concepts.

“Writing is an art. But when it is writing to inform, it comes close to being a science as well.”

– Robert Gunning, *The Technique of Clear Writing*

Types of Scientific Communication

You will encounter many types of scientific communication during your graduate degree in the Department of Chemistry at Queen’s University. Each has its own purpose, format, and style guide. Most importantly, each has its own audience and **knowing your audience** is the key to effective communication.

Less officially, you often need to communicate your work with people outside the Chemistry Department, Queen’s, and to non-scientists. Do you struggle to explain what you do to your family over the holidays? Communication of science to the general public is a challenge, but also one of the most important forms of scientific communication.

📌 Modes of scientific communication

- Essays
- Scholarship Applications
- Research Reports
- Group Meeting Presentations
- Teaching
- Abstracts
- Poster Presentations
- Oral Presentations
- Scientific Papers
- Research Seminars
- M. Sc. and/or Ph.D. Thesis
- Cover Letters and Resumes
- Research Proposals

Resources

There are countless resources to help students and academics communicate their science. Check the [Resource page](#) for both general and Queen’s specific resources.

1. A. Desmond, *Encyclopædia Britannica*, <https://www.britannica.com/biography/Charles-Darwin>, Accessed August 5, 2020 ↵

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