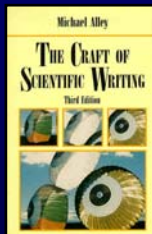
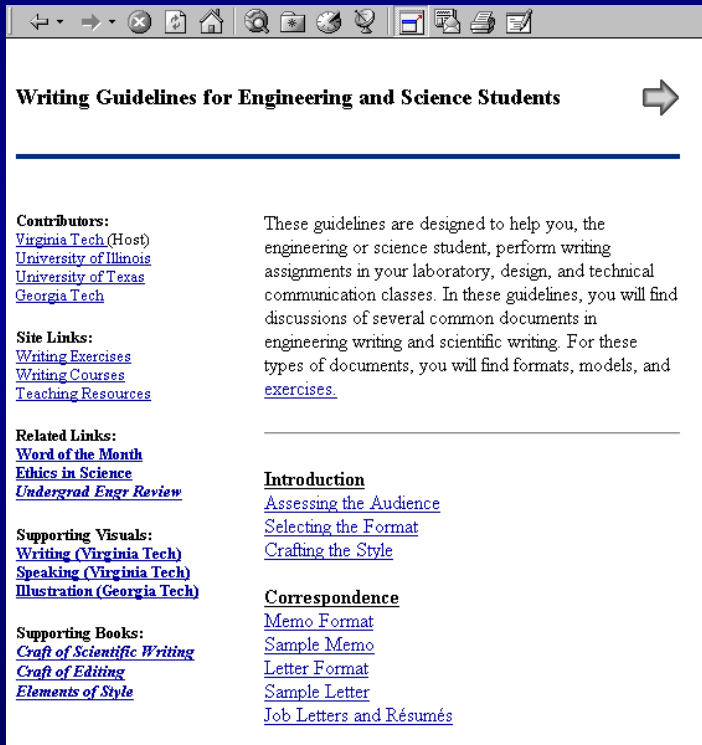


Introduction to Scientific Writing

These slides, which are used in graduate and undergraduate engineering courses at Virginia Tech, come from Chapters 1, 16, and 17 in *The Craft of Scientific Writing* (3rd ed., Springer-Verlag). If you are an instructor and wish to receive a Microsoft PowerPoint 97 version of these slides (with accompanying teaching notes), send an e-mail to Michael Alley at Virginia Tech (alley@vt.edu).



Scientific Writing: An Introduction



Writing Guidelines for Engineering and Science Students →

Contributors:
[Virginia Tech \(Host\)](#)
[University of Illinois](#)
[University of Texas](#)
[Georgia Tech](#)

Site Links:
[Writing Exercises](#)
[Writing Courses](#)
[Teaching Resources](#)

Related Links:
[Word of the Month](#)
[Ethics in Science](#)
[Undergrad Engr Review](#)

Supporting Visuals:
[Writing \(Virginia Tech\)](#)
[Speaking \(Virginia Tech\)](#)
[Illustration \(Georgia Tech\)](#)

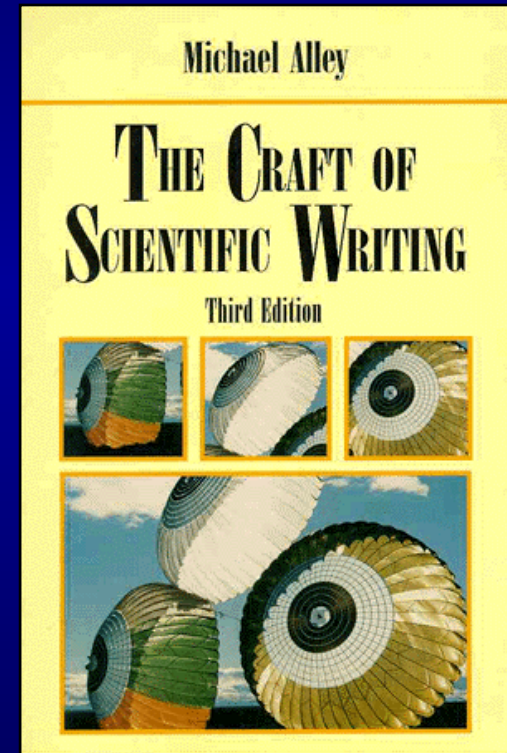
Supporting Books:
[Craft of Scientific Writing](#)
[Craft of Editing](#)
[Elements of Style](#)

These guidelines are designed to help you, the engineering or science student, perform writing assignments in your laboratory, design, and technical communication classes. In these guidelines, you will find discussions of several common documents in engineering writing and scientific writing. For these types of documents, you will find formats, models, and [exercises](#).

Introduction
[Assessing the Audience](#)
[Selecting the Format](#)
[Crafting the Style](#)

Correspondence
[Memo Format](#)
[Sample Memo](#)
[Letter Format](#)
[Sample Letter](#)
[Job Letters and Résumés](#)

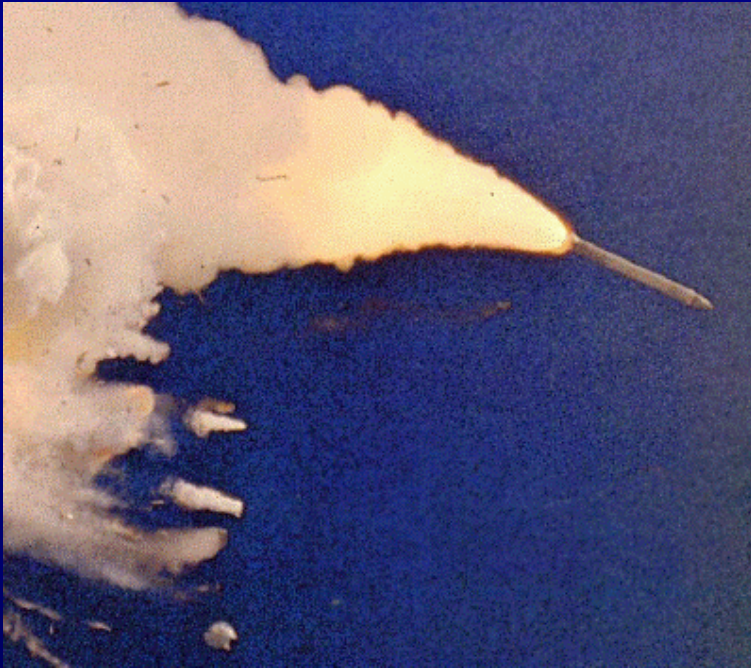
Writing Guidelines for Students
<http://www.me.vt.edu/writing/>



The Craft of Scientific Writing
3rd edition (Springer-Verlag, 1996)

This presentation discusses the importance of scientific writing and introduces key principles

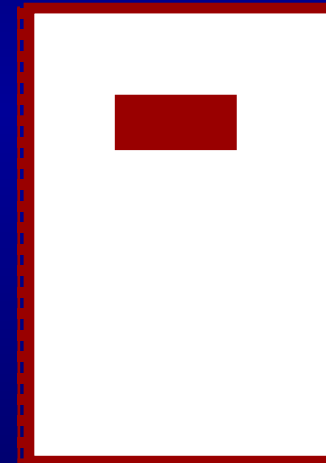
Importance of Scientific Writing



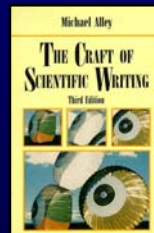
Key Principles

audience

purpose



occasion



How well you communicate affects your career



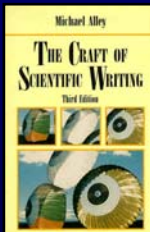
Survey (Richard M. Davis)
Successful engineers spent 25% of work week writing



Survey (Wisconsin)
Professional engineers found writing their most useful subject



Survey (Virginia Tech)
Recruiters claim that engineers need more work on their writing



How well you communicate affects the well-being of others

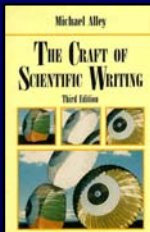


**Space Shuttle Challenger
(January 28, 1986)**

Explosion was caused by failure of O-rings in the solid rocket boosters

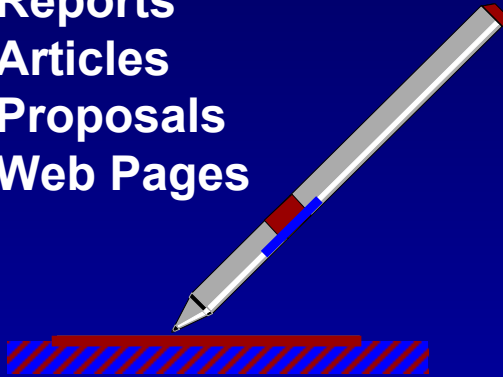
Engineers knew of O-ring problems well before fatal launch

Engineers failed to communicate seriousness of problem

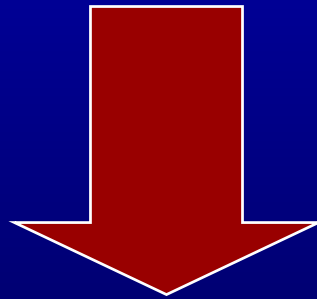


Scientists and engineers are called upon to communicate in many different situations

Reports
Articles
Proposals
Web Pages



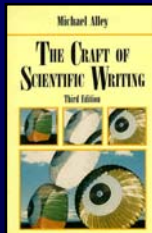
Conferences
Lectures
Meetings
Posters



specific
technical
audiences

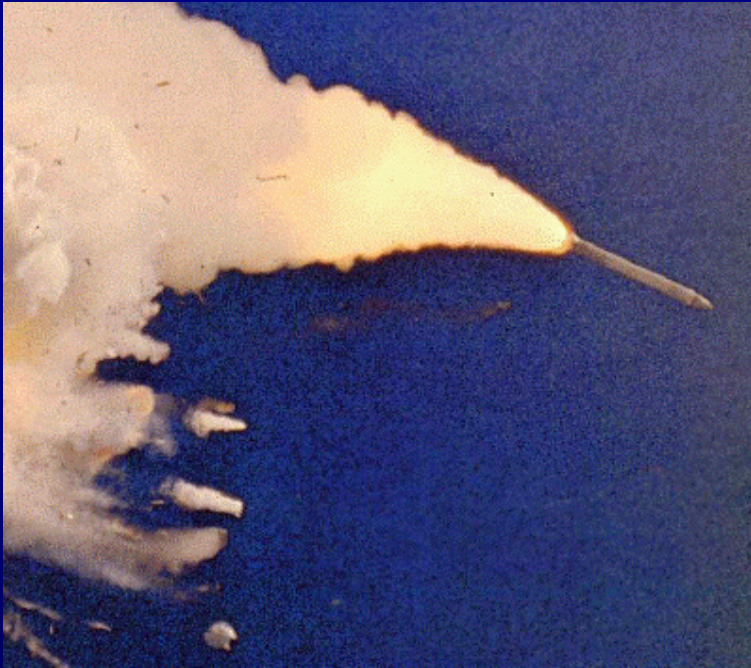
general
technical
audiences

non-technical
audiences



This presentation discusses the importance of scientific writing and introduces key principles

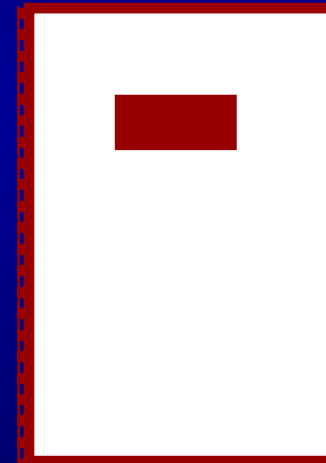
Importance of Scientific Writing



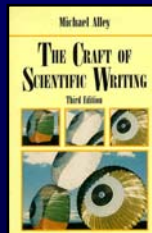
Key Principles

audience

purpose

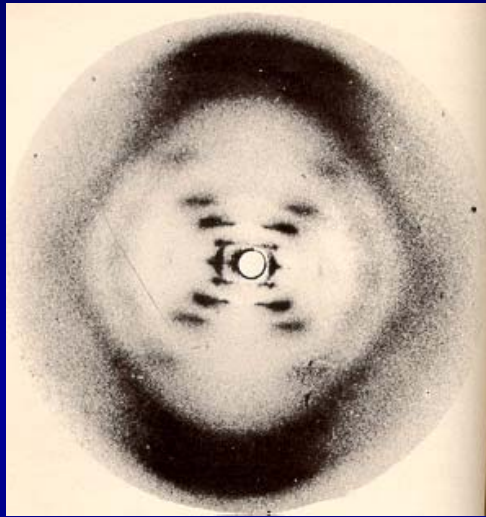


occasion



Scientific writing differs from other kinds of writing

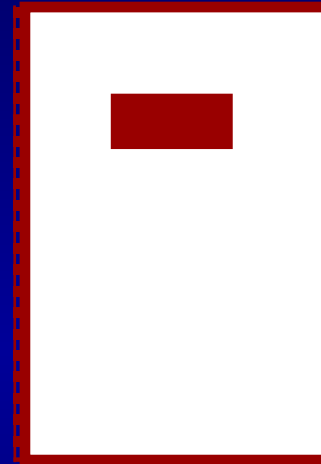
Subject Matter



Writing Constraints

audience

purpose



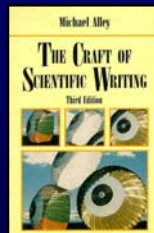
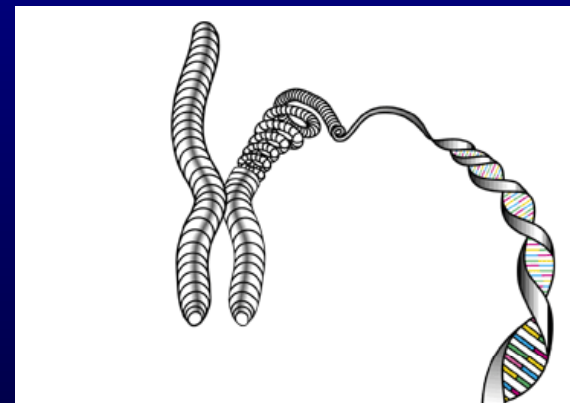
occasion

Purpose of Writing

To inform

To persuade

Writing Style



You should begin the writing process by analyzing your constraints

Audience

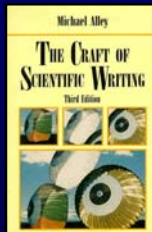
Who they are
What they know
Why they will read
How they will read

Occasion

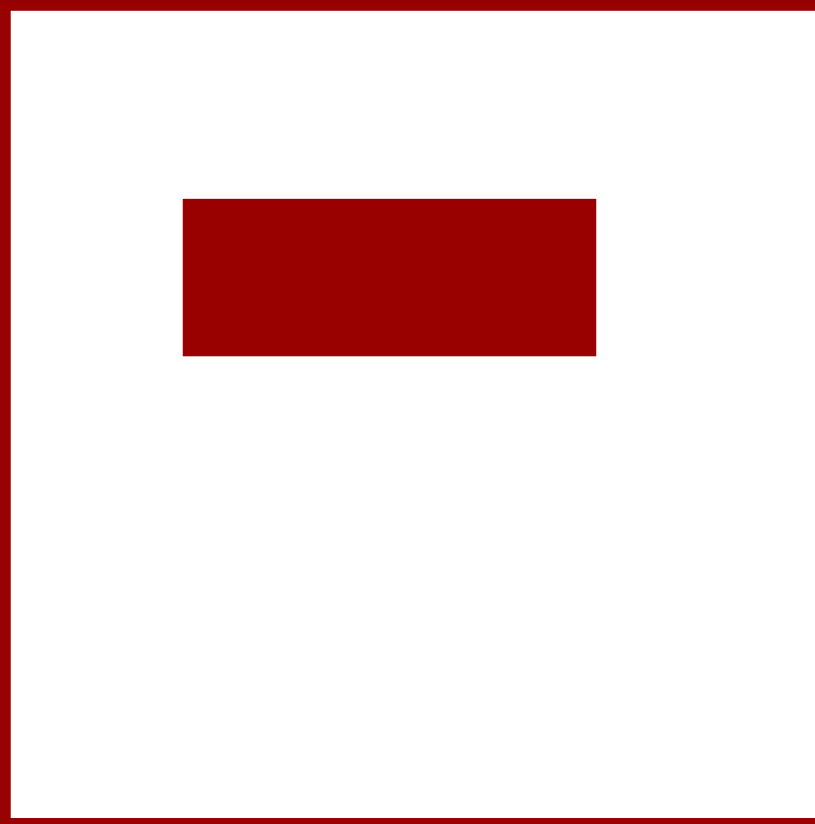
Format
Formality
Politics and ethics
Process and deadline

Purpose

To inform
To persuade



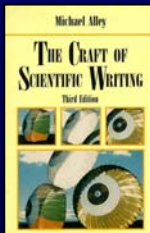
Three aspects of writing affect the way that readers assess your documents



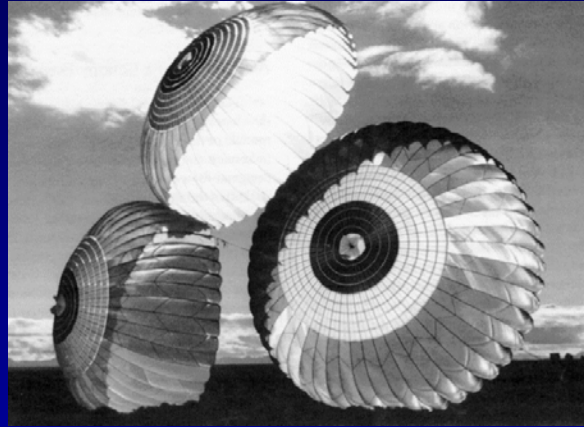
Content

Style

Form



Style is the way you communicate the content to the audience

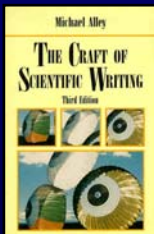
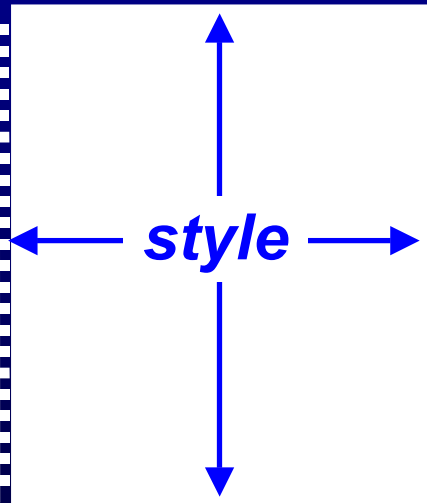


Illustration

words
wordswords
wordswordswords
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wordswordswords

Language

Structure

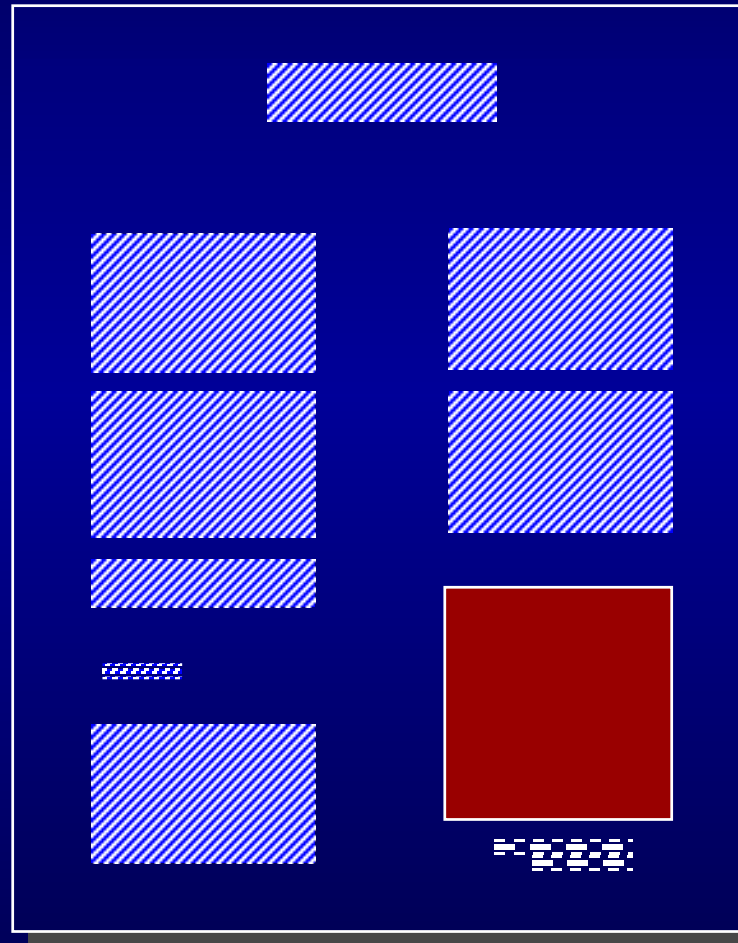


Form embodies the format and mechanics of the writing

format

typography

layout



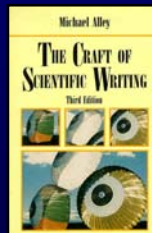
mechanics

grammar

usage

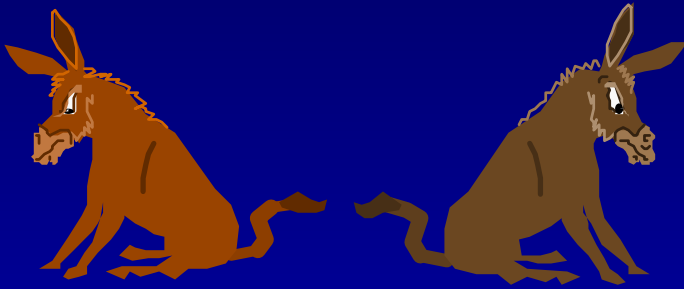
punctuation

spelling

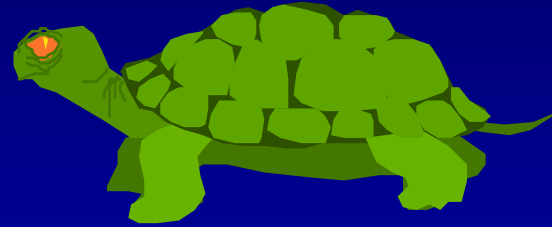


We can split the writing process into stages

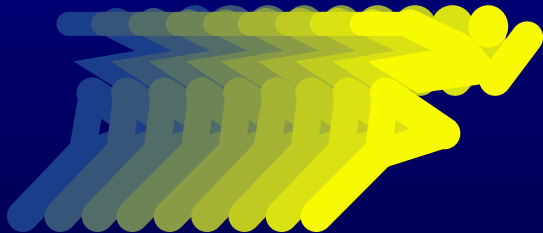
Getting in the Mood



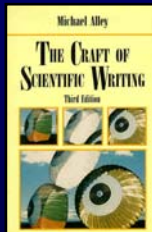
Writing the First Draft



Revising, Revising, Revising



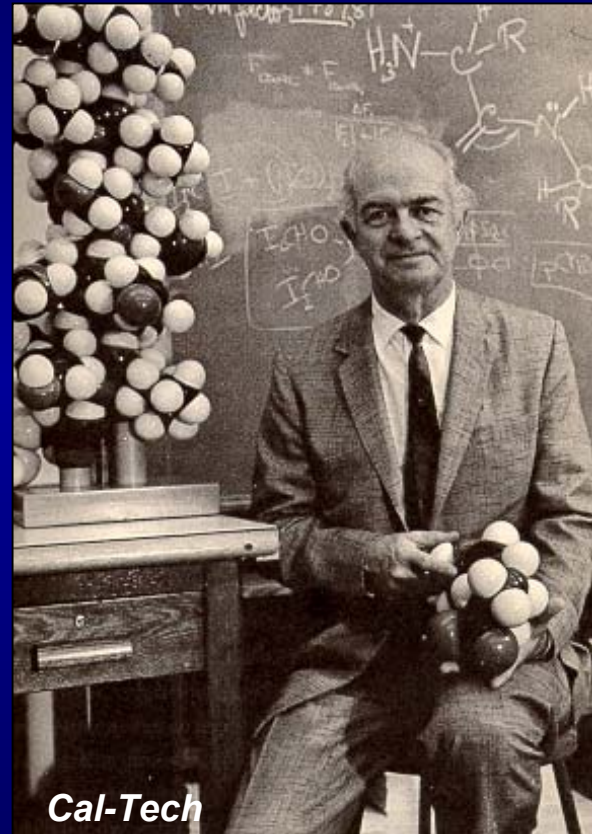
Finishing



An excellent way to improve your writing is to choose good models



Maria Goeppert Mayer



Linus Pauling

