

SUMMER SCIENCE SKILLS WORKSHOP 2026



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260630



Keep in mind
These are life-long skills

A close-up, dimly lit photograph of a person's hands typing on a laptop keyboard. The word "WRITING" is overlaid in a large, white, outlined font across the center of the image. The laptop is dark-colored, and the keyboard keys are visible. The person's hands are positioned over the keyboard, with fingers pressing down on the keys. The background is dark and out of focus.

WRITING

Today's content

- Writing – the big picture
- Writing – AI
- CSU Writing resources
- Writing – the small picture

What is the purpose of writing?

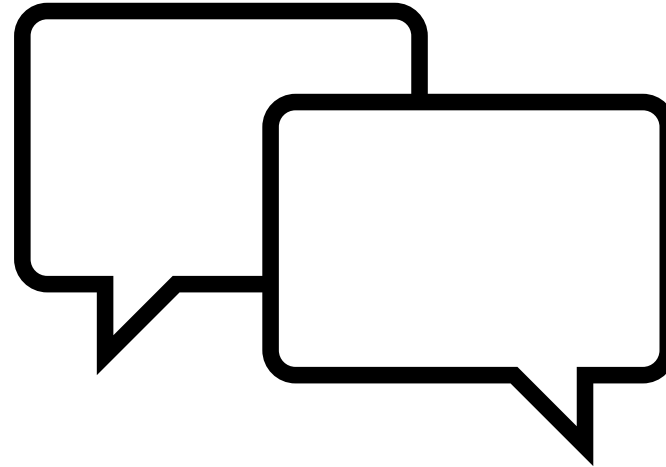
- Switch to Menti



Set your goals:

Writing is the major mechanism of scientific communication

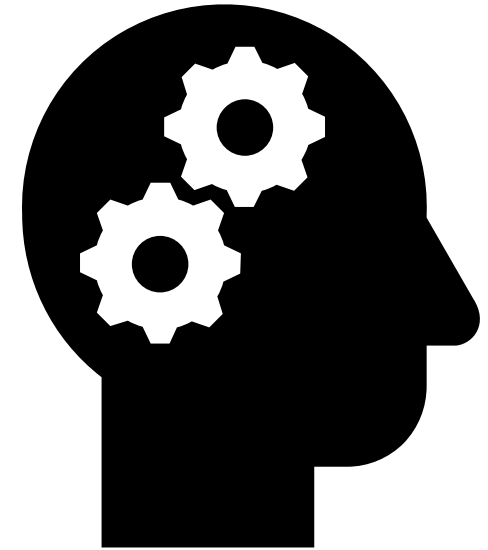
- Inform
 - Your field
 - The public
 - policy
- Convince
- Collaborate and coordinate logistics
- Inspire
- Advance career



Set your goals:

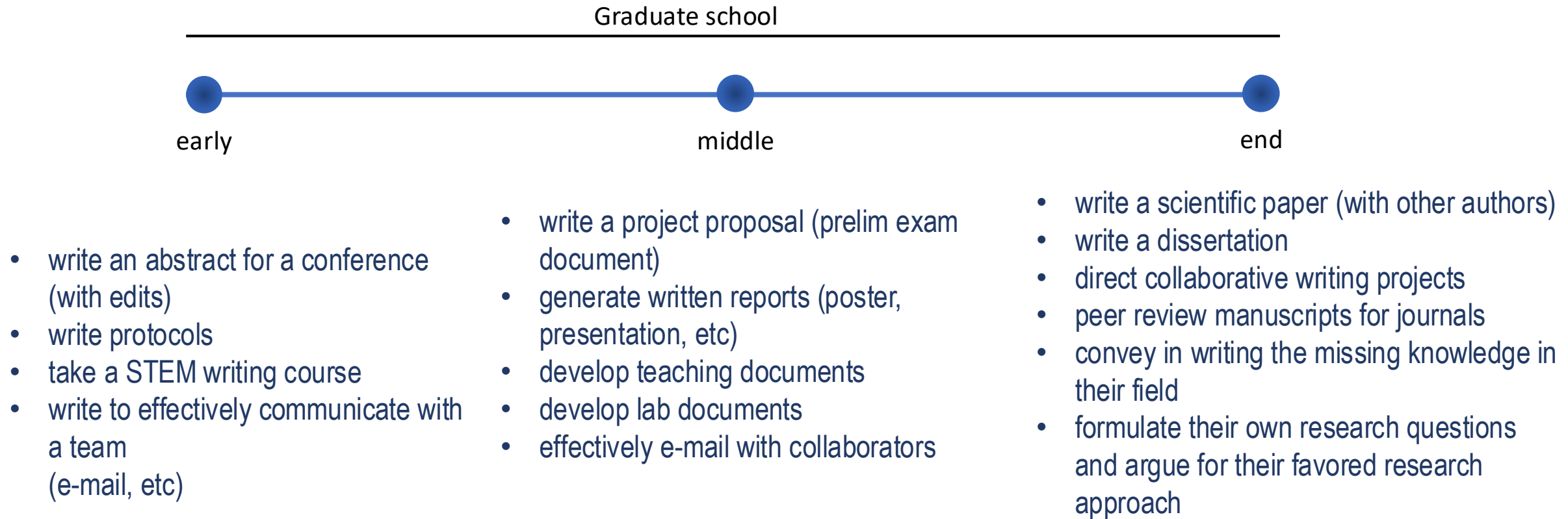
Writing improves mental capacity

- Memory
- Critical Thinking (analysis, evaluation, hypothesis)
- Organization
- Creativity
- Verbal Skills



- Quitadamo IJ, Kurtz MJ. Learning to improve: using writing to increase critical thinking performance in general education biology. CBE Life Sci Educ. 2007 Summer;6(2):140-54. doi: 10.1187/cbe.06-11-0203. PMID: 17548876; PMCID: PMC1885902.
- Zaidi NB, Hwang C, Scott S, Stallard S, Purkiss J, Hortsch M. Climbing Bloom's taxonomy pyramid: Lessons from a graduate histology course. Anat Sci Educ. 2017 Sep;10(5):456-464. doi: 10.1002/ase.1685. Epub 2017 Feb 23. PMID: 28231408.

Writing skills improve over time



What factors promote productive writing sessions?

Factors promoting productive writing

Factors that hinder productive writing

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AI and LLM (Large Language Models) are changing how we write

- Automatically integrated into Word, Google, etc
- On the difference between generative writing v. refinement
- On clarity v. accuracy
- On hallucinations
- On disclosure
 - Cold Spring Harbor Collected Journal Guidelines
 - <https://cshl.libguides.com/aitools/aijournalpolicies>
- In grants
 - Very dangerous

Bietti LM, Bangerter A. Will the widespread use of large language models in scientific writing undermine scientists' critical thinking? PLoS Biol. 2026 Jun 3;24(6):e3003801. doi: 10.1371/journal.pbio.3003801. PMID: 42234608; PMCID: PMC13232846.

BiorXiv statement & arXiv ban

How should I acknowledge the use of generative AI for writing my preprint?

Authors are responsible for the content they submit, including material produced by generative AI and related technologies. As with other computational methodologies, use of these tools should be detailed in manuscripts, and the output must not plagiarize other work or breach copyright. In any case, authors are accountable for the accuracy, integrity, and originality of their work. AI tools and large language models (LLMs) do not meet this requirement and should not be listed as authors on articles.

- Researchers who use hallucinated references to face arXiv ban
 - <https://www.nature.com/articles/d41586-026-01595-5>

When and how to use AI in writing

Considerations:

- Your goal
- Your role: Undergrad v. faculty
- High stakes v. low stakes
- Trust building v. bureaucratic
- Your potential for learning

Examples:

- Suggest an alternative sentence structure
- Summarize what I just wrote
- Work on tone (formality level)
 - Maybe for an e-mail?
- Forms and bureaucracy
- English as a second language

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CSU has great resources for writing

- <https://writing.colostate.edu/>

University Writing Center

Get Feedback on Your Writing. The Colorado State University Writing Center is dedicated to providing advice and help in every stage of the writing process. Its goal is to engage the community in discussion about writing by providing face-to-face and online consultations, classroom presentations, and outreach to faculty members, staff, and students.



Writing@CSU Guides, Links, and Other Resources for Writers

Access Hundreds of Writing Guides, Textbooks, and Related Sites. View an extensive collection of guides for writers as well as links for writers and open-access textbooks.



CSU Writes

Get Started on a Writing Project. CSU Writes is designed for professional researchers and academic writers who are interested in boosting their productivity as they develop a sustainable writing practice. While select offerings are open to all writers on campus, CSU Writes primarily serves faculty, postdoctoral fellows, and graduate students who write for publication, submission, and/or degree completion.



WAC Clearinghouse Resources for Writers

View Resources on the WAC Clearinghouse. The WAC Clearinghouse offers writing guides, writing links, and open-access textbooks.



The CSU Writing Center



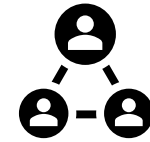
**in person
consultation**



**online
consultation**



**classroom
presentations**



**resources &
curriculum**

CSU WRITES - Events

- <https://csuwrites.colostate.edu/>

Workshops Courses, & Events	Retreats	Grant Support	Productivity Support
Rotating workshops and special courses and events address the 5 areas academic writers encounter their greatest challenges: Space, Time, Energy / Momentum, Academic Style, and Collaboration.	Writers who attend retreats access a writing community here at CSU and tend to produce much more writing than they would on their own.	CSU Writes partners with resident experts to provide low-stakes grant writing support and feedback, including drop-in writing sessions, workshops, and retreats, with special emphasis on NSF Career projects.	Regular drop-in writing sessions for all CSU research writers.
GRAD Workshops	GRAD Retreats	GRANT Writes	show up & write.
FAC Workshops	FAC Retreats		Dedicated writing accountability groups for faculty and grad students.
Write to Publish			GRAD DATA Cohort
Special Events			FAC WARP

CSU WRITES – Show Up & Write

- <https://csuwrites.colostate.edu/show-up-and-write/>
- [Show Up & Write Guide](#)
- ~ 20 sessions a week
 - In person, virtual teams, or teams chat
 - Sprint Write
 - 2 hr blocks



SHOW UP & WRITE.

DROP-IN WRITING SESSIONS

No prep. No pressure. Just progress.

WHY SHOW UP & WRITE?

Showing up to write is the first step in completing your writing projects.

Take advantage of regular quiet, focused writing sessions in the company of other writers from across campus to keep your projects ever-moving forward!

DEDICATED SPACE & TIME FOR FOCUSED WRITING

BUILD MOMENTUM ON YOUR WRITING PROJECTS

DEVELOP A REGULAR WRITING PRACTICE

BENEFIT FROM LOW-STAKES ACCOUNTABILITY FROM OTHER WRITERS

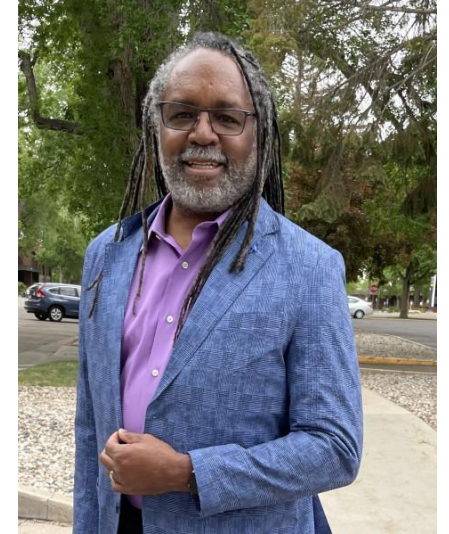
 CSU WRITES
COLORADO STATE UNIVERSITY

 CSU WRITES
10 YEAR ANNIVERSARY

 COLORADO STATE UNIVERSITY
VICE PRESIDENT FOR RESEARCH

CSU WRITES – Accountability Groups

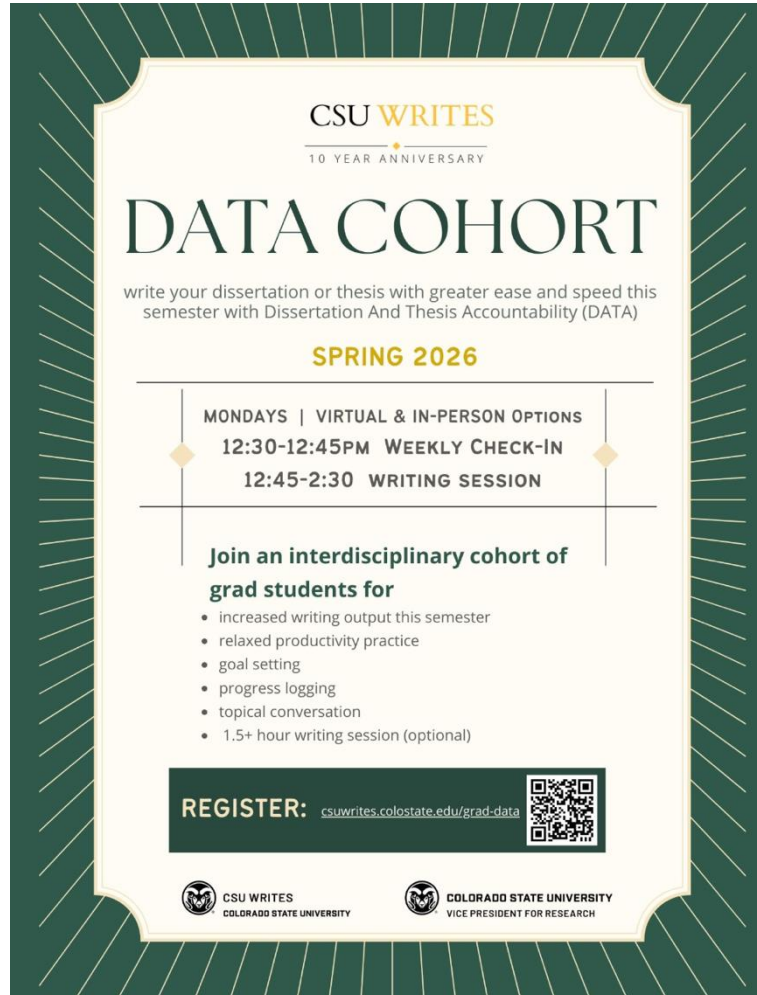
- ~ 3 – 4 people
- 10 - 15 minutes a week
- Report on last week
- Set your weekly writing goals
- Set your calendar



My accountability group –
Cher Li (Economics) & Ray Black
(Ethnic studies)

Grad-focused cohorts

- [CSU Grad Writes](#)



CSU WRITES
10 YEAR ANNIVERSARY

DATA COHORT

write your dissertation or thesis with greater ease and speed this semester with Dissertation And Thesis Accountability (DATA)

SPRING 2026

MONDAYS | VIRTUAL & IN-PERSON OPTIONS
12:30-12:45PM WEEKLY CHECK-IN
12:45-2:30 WRITING SESSION

Join an interdisciplinary cohort of grad students for

- increased writing output this semester
- relaxed productivity practice
- goal setting
- progress logging
- topical conversation
- 1.5+ hour writing session (optional)

REGISTER: csuwrites.colostate.edu/grad-data



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CSU WRITES
10 YEAR ANNIVERSARY
SPRING 2026

WRITE TO PUBLISH

DOC & GRAD WRITES
12-WEEK NON-CREDIT CERTIFICATE COURSE

MONDAYS 3-3:50PM (ZOOM)

Turn an abstract, a conference or course paper into a publishable article this semester

FEB 9 Introduction to Write to Publish
FEB 16 Writing for Publication
FEB 23 WRITING LAB: Consultations
MAR 2 Reverse Outlines, Titles, and Abstracts
MAR 9 WRITING LAB: Consultations
MAR 23 ORCHID, Open Access, Copyright
MAR 30 WRITING LAB: Consultations
APR 6 Literature Reviews: Types and Tips
APR 13 WRITING LAB: Consultations
APR 20 Openings, Conclusions, & "Sticking the Landing"
APR 27 WRITING LAB: Consultations
MAY 4 Submitting, Responding to Readers, & Post-Publication Promotion

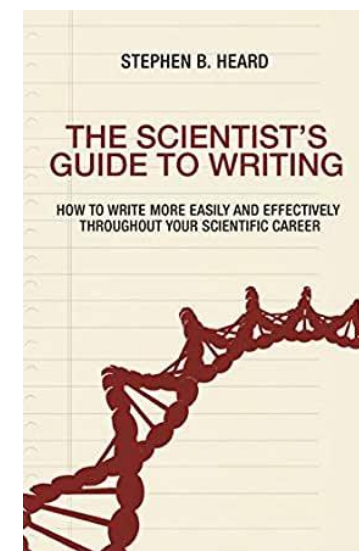
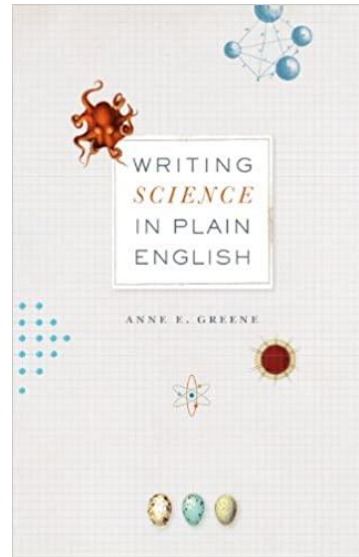
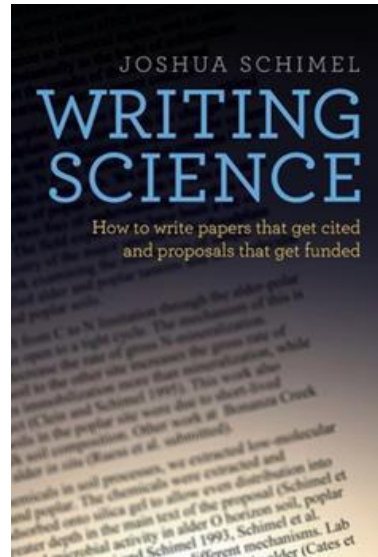
Register
csuwrites.colostate.edu/write-to-publish/



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Science-focused writing resources



- [Writing Science: How to write papers that get cited and proposals that get funded](#), by Joshua Schimel
 - Available on ebooks online for CSU people: <https://ebookcentral.proquest.com/lib/csu/detail.action?docID=845932>
- [Writing Science In Plain English](#), by Anne E. Greene
- [The Scientist's Guide to Writing: How to Write More Easily and Effectively throughout Your Scientific Career](#), by Stephen Heard

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- Writing – the big picture
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 - Graduating out of three common pitfalls



Erin Osborne Nishimura
Writing Workshop 2023
July 17, 2023

Graduating out of 3 common writing pitfalls

“The truth is that most US academic prose is appalling—pompous, abstruse, claustral, inflated, euphuistic, pleonastic, solecistic, sesquipedalian, Heliogabaline, occluded, obscure, jargon-ridden, empty: resplendently dead.”

-- David Foster Wallace

What factors contribute to high quality scientific writing?

- Switch to menti

The three pitfalls

- Failing to consider your audience
- Too fancy
- Unclear – words, sentences, paragraph

Imagine your audience

- Will they read or skim?
 - Do they know your field?
 - What do you want them to take away?
-
- The trust walk approach



Use adverbs and other cues to guide the reader through the twists and turns

- . *additionally*
- . *alternatively*
- . *as a result*
- . *as predicted*
- . *consequently*
- . *conversely*
- . *finally*
- . *for example*
- . *for instance*
- . *furthermore*
- . *hence*
- . *however*
- . *in addition*
- . *in conclusion*
- . *in fact*
- . *in summary*
- . *instead*
- . *likewise*
- . *moreover*
- . *nevertheless*
- . *next*
- . *on the other hand*
- . *of these*
- . *predictably*
- . *rather*
- . *similarly*
- . *since*
- . *still*
- . *subsequently*
- . *surprisingly*
- . *then*
- . *thereby*
- . *therefore*
- . *thus*
- . *typically*
- . *yet*

Use constrained vocabulary and repetition to guide your reader

Where are the adverbs and other “cues”?

In recent years, many biological fields have identified **biomolecular condensates** associated with diverse cellular processes. **For example**, multiple **biomolecular condensates within nuclei** have been identified **such as** the nucleolus associated with ribosome assembly, Cajal bodies involved in RNA processing, and nuclear speckles ascribed to enhance gene expression (Politz et al., 2006; Yao et al., 2019; Liao and Regev, 2020; Alexander et al., 2021; Courchaine et al., 2021). **In contrast**, biomolecular condensates **within the cytoplasm** are associated with **other** roles. **Of these**, the P-bodies are sites of RNA metabolism, stress granules sequester mRNA, germ granules mediate germline gene expression, and Balbiani bodies attach cytoplasmic components together (Kedersha et al., 2005; Brangwynne et al., 2009; Voronina et al., 2011; Kroschwald et al., 2015; Boke et al., 2016; Protter and Parker, 2016). **Beyond these** well-studied examples, **novel** biomolecular condensates with **additional** putative functions are rapidly emerging (see Section 3).

Can someone follow the logic and structure of your paragraph?
What if they only read the beginning and end of each sentence?
What if they didn't know any of the nouns?

Pitfall #2: Too fancy (aka Erudition)

We try to avoid erudition because...

- The science is complicated enough
- The goal is to have the reader understand



A history of erudition in the sciences

- 1066 –The Battle of Hastings. The Norman French defeated the English army
- Normans took control of English institutions – religious affairs, scholarly affairs, business
- Normans spoke Latin, French, and Greek rooted language
- Common people spoke Anglo Saxon
- Modern English has roots in both languages and the Latin/French roots are typically associated with academic institutions



How to avoid erudition

- Focus on the reader's experience
- Brevity - use (shorter) Anglo-Saxon words over Norman words.
Shorten sentences
- Clarity
- Tell a story in every sentence.

Shorten your words – try for Anglo Saxon-derived words

French/Latin/Greek	Anglo Saxon
implement	use
adhere	stick
develop	make
retain	keep
terminate	end
ascertain	find
facilitate	help
endeavor	try
transmit	send
initiate	start
alteration	change
subsequent	next

... but don't get too carried away with overly casual wording

Too casual
contractions (don't, isn't, they're)
Starting sentences with "Also, ..." or "So, ... "
Finishing sentences with "etc"
"a lot" / "a little bit"
"got"
verb + prep ("went by", "look at", "find out", "cut out")

Get rid of wordy phrases -- they slow down the reader

Too wordy	shorter
in this study we assessed	we assessed
conduct an investigation of	investigate
were responsible for	caused
played the role of	were
in order to	to
for the following reasons	because
during the course of / during the process of	during
a majority (most of the)	most
undertaken an examination of	study
various lines of evidence	evidence
the analysis presented in this paper	our analysis
in the absence of	without

Pitfall #3: Clarity

- Improving clarity – words, sentences, paragraphs

Words - On the importance of a constrained vocabulary

- Each field is different
- Words mean very specific things
- Some words imply specific numerical results or that certain experiments have been done
- Avoid synonyms to avoid confusion
- Stay faithful to the results
 - “associated” versus “causes”
 - “required for” instead of “binds” or “activates”

Sentences - Tell a story in every sentence: Keep the hero and the action close together at the beginning

- Subject of a sentence – the main noun and its associated clauses
- Predicate of a sentence – the main verb and its associated clauses
- Hero of the sentence – who is the subject of this sentence?
- Action - what is happening in this sentence?
- Also – shorten sentences!

Example

- The misfolding of α -syn has also been speculated to cause immune activation and chronic inflammation as the gut-associated lymphoid tissue (GALT) becomes activated in the presence of the misfolded proteins.
- Scientists speculate that misfolded α -synuclein stimulates immune activation and chronic inflammation because ...

Paragraphs

- Test – just read the 1st and last sentence of each paragraph
- Does your proposal still make sense?

One last thing - Learn to touch type

- Typingclub.com
- Don't look at your fingers, you need to edit as you type
- Integrate formatting in as you go: *italics*, **bold**
- Add references as you go