

Effective writing for scholarship and fellowships*

**Working title: 10 simple rules for persuasive and strong scientific writing*



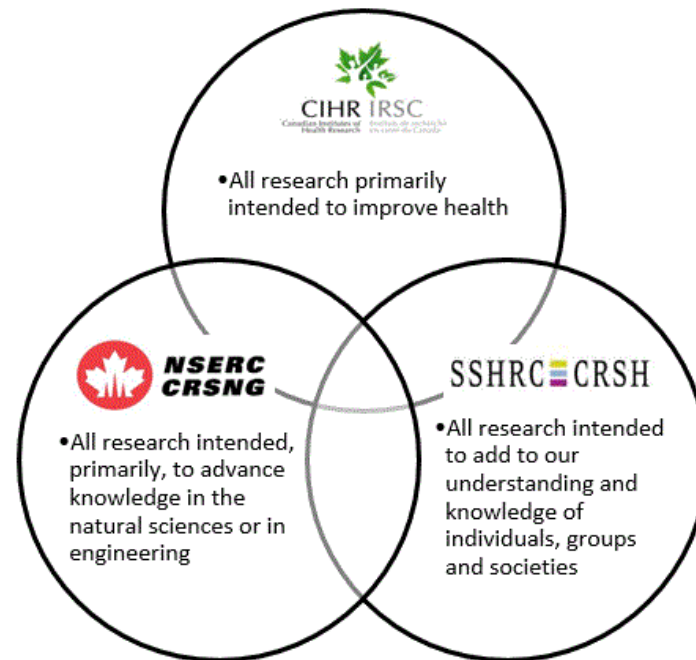
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August 21, 2023

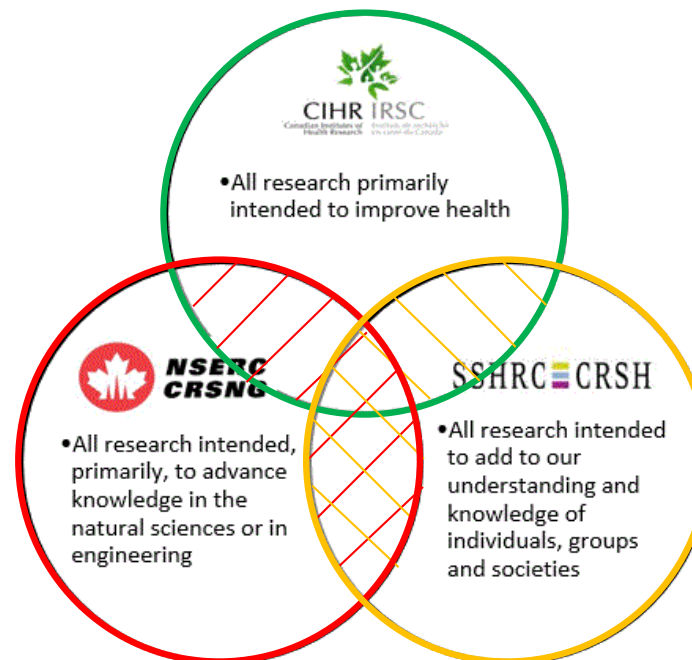
Preface for today's discussion



Canadian Tricouncil: major source of scholarships and fellowships for graduate students and postdocs

<https://www.mcgill.ca/research/research/researchran-welcometri-agency-administration>

Preface for today's discussion



CIHR: some overlap with NSERC and SSHRC agency themes OK

NSERC, SSHRC: avoid overlap with other funding agency themes

Canadian Tricouncil: major source of scholarships and fellowships for graduate students and postdocs

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Preface for today's discussion

CGS-M: Master's award for one year, same application style across all agencies
\$17,500 across **CIHR**, **NSERC**, **SSHRC**; same application across all agencies

PGS-D: Doctoral award; applications vary by agency
\$21K **CIHR** (three years), \$21K **NSERC** (three years), \$20K **SSHRC** (one to four years)

CGS-D: Doctoral award for three years (part of same application as PGS-D)
\$35K **CIHR**, \$35K **NSERC** [not part of **SSHRC** application]

Vanier: Doctoral award for three years (distinct from PGS-D); significant leadership component
\$50K **CIHR**, \$50K **NSERC**, \$50K **SSHRC**

Postdoc: Many distinct postdoctoral funding avenues, varying significantly by funding agency

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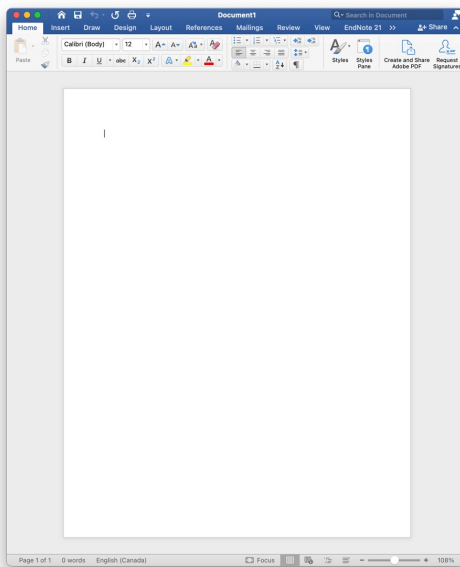
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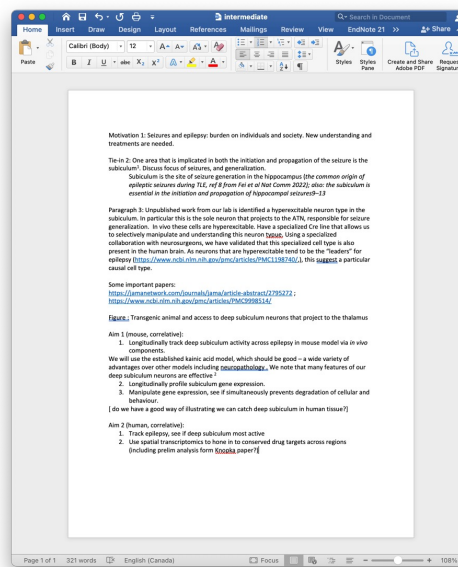
Postdoc: Many distinct postdoctoral funding avenues, varying significantly by funding agency

Today's discussion will be loosely styled around writing CGS-M/PGS-D applications for CIHR and NSERC, but concepts and strategies will be general across all proposals. **Questions welcome across all areas!**

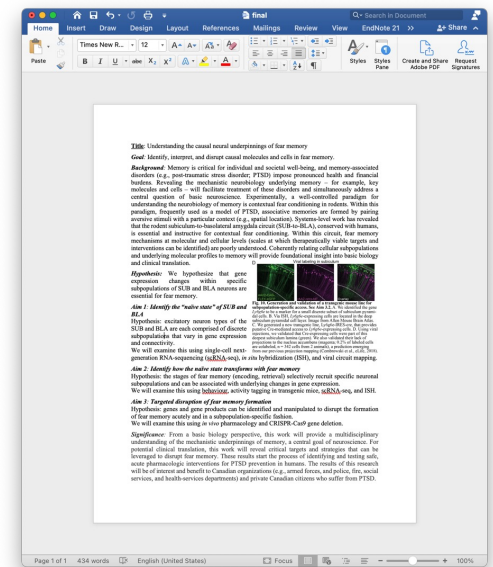
The arc of today's discussion



1. Getting started

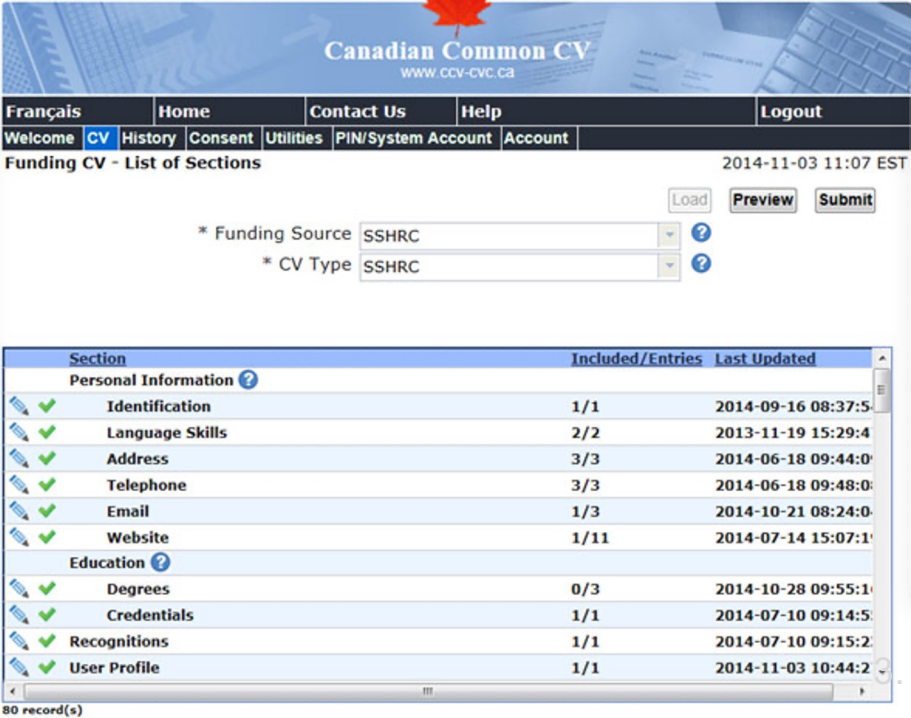


2. The rough draft and polishing



3. Final draft: bells and whistles

The arc of today's discussion



The screenshot shows the Canadian Common CV website interface. At the top, there is a navigation bar with links for Français, Home, Contact Us, Help, and Logout. Below this is a secondary navigation bar with links for Welcome, CV, History, Consent, Utilities, PIN/System Account, Account, and another Logout. The main content area is titled "Funding CV - List of Sections" and includes a date stamp "2014-11-03 11:07 EST". There are two dropdown menus for "Funding Source" and "CV Type", both set to "SSHRC". A table lists various sections with their completion status and last updated dates.

Section	Included/Entries	Last Updated
Personal Information		
Identification	1/1	2014-09-16 08:37:5
Language Skills	2/2	2013-11-19 15:29:4
Address	3/3	2014-06-18 09:44:0
Telephone	3/3	2014-06-18 09:48:0
Email	1/3	2014-10-21 08:24:0
Website	1/11	2014-07-14 15:07:1
Education		
Degrees	0/3	2014-10-28 09:55:1
Credentials	1/1	2014-07-10 09:14:5
Recognitions	1/1	2014-07-10 09:15:2
User Profile	1/1	2014-11-03 10:44:2

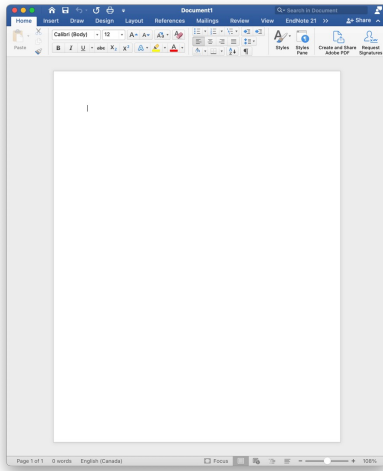
80 record(s)

1. Getting started

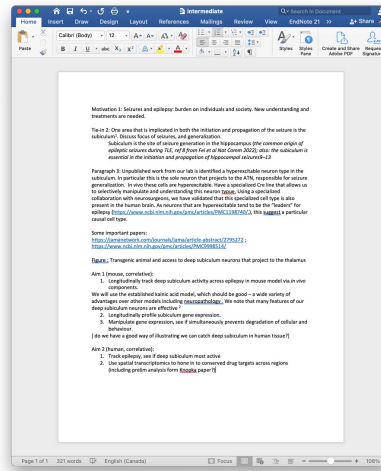
Final draft: bells and whistles

...and a bonus CCV section!

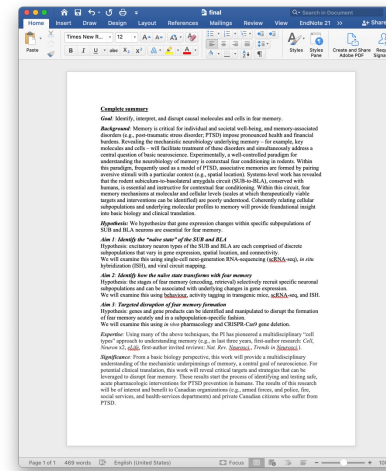
Getting started



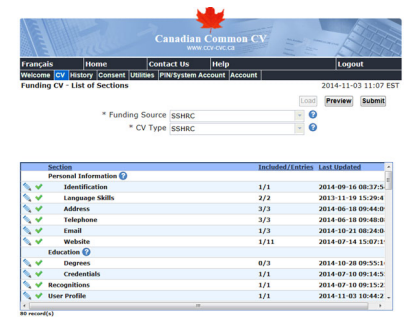
Rough draft



Final draft



Biography



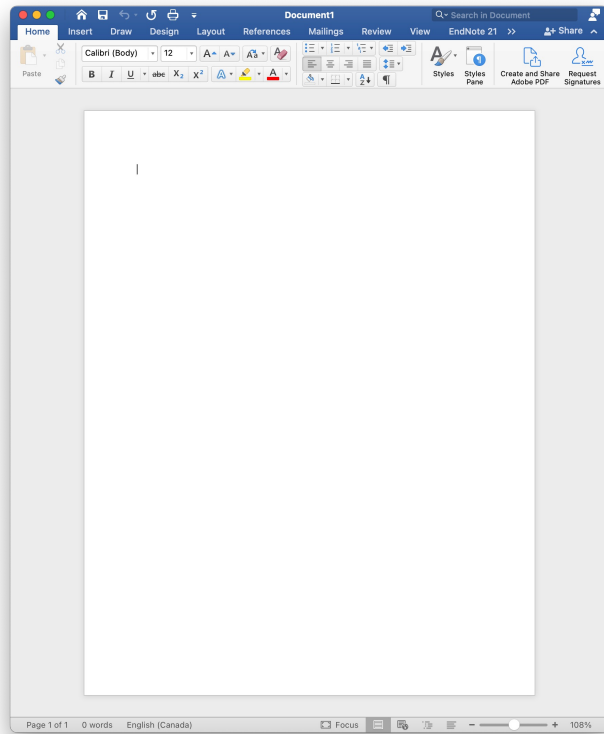
Note that some grant applications have other specialized components (leadership statements, personal statements). These are personal and hard to codify, and will be outside of the scope of today's meeting on general principles. Nonetheless, as always, use the same principles discussed here today.

Getting started

Rough draft

Final draft

Biography

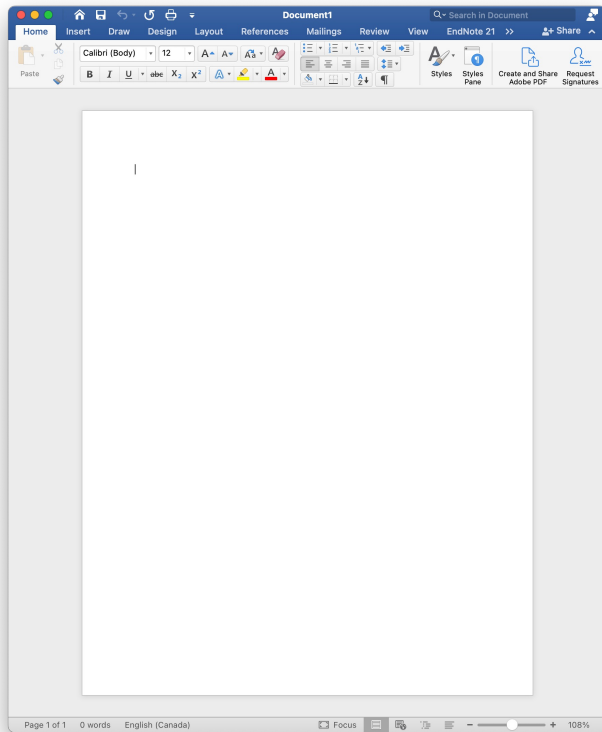


Getting started

Rough draft

Final draft

Biography



How much time and attention did you spend on [Simpsons] scripts?

All of my time and all of my attention. It's the only way I know how to write, darn it. But I do have a trick that makes things easier for me. **Since writing is very hard and rewriting is comparatively easy and rather fun**, I always write my scripts all the way through as fast as I can, the first day, if possible, putting in bad jokes and pattern dialogue ... Then the next day, when I get up, the script's been written. It's lousy, but it's a script. **The hard part is done.**

- John Swartzwelder
Writer, "The Simpsons"

Most important getting started point: aim for a complete rough draft, not polished subpieces.

1. Write your proposal from the middle out

Write down all of the sections for your proposal (typically: background, aims, hypothesis, methods, expected outcomes, impact), but approach these from the middle out:

- Identify your core question (to yourself, not necessarily on paper)
- Identify your aims first - what are you looking to do that will address your core question? Ensure that your aims **are not** interrelated (i.e., they can be executed independently of one another) but **are** complementary/synergistic (i.e., success in all aims becomes more than the sum of individual parts)
- Write methods and expected outcomes next; respectively, how will you do your aims and what will you likely find?
 - This is a great place to establish and centre yourself as a scientist in the proposal (we'll get to this more later)
 - Identify caveats and mitigation strategies if required by the application, but do so in a constructive way that strengthens your application)

1. Write your proposal from the middle out

- Write background next, ensuring that it (a) leads naturally into your aims, (b) gives any technical background needed to interpret your methods and (c) sets up the knowledge gap and importance of your expected outcomes
- Write your impact according to both short- and long-term features of your work, consistently making “call backs” to the knowledge gaps and importance that you set up in your background (the “martini glass” or “hourglass” method of writing – we’ll get to more on this later)

2. Know your audience

Approach proposal writing from the perspective of the reviewer - who are they, what they know, and what they care about. Most scholarship/fellowship apps are reviewed by people in science, but far outside of your specific field.

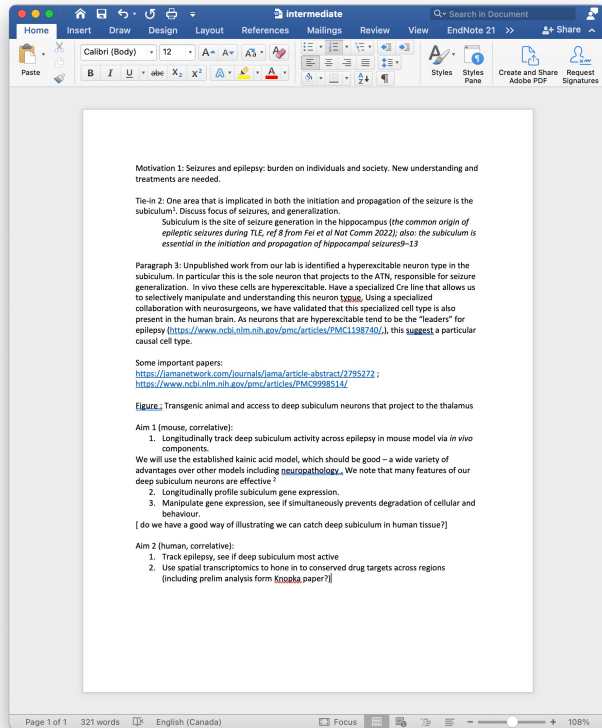
- Assume reviewers have only a cursory knowledge of your subject (operationally: they are a “third year undergrad”, having completed two years of general undergrad but know nothing about your field beyond this)
- **Do not use jargon** - any jargon-like words that the prototypical second year undergrad would not know, either (1) do not include, (2) come up with a more intuitive proxy word, or (3) define
- **Do not use acronyms** unless they are general use (at the level of “DNA”)
- If the app has a reviewer scoring rubric, use this as an effective outline for your application, and make sure you hit all the points clearly and consistently as you put your app together. Avoid/remove any content that does not set up and/or hit points on the rubric.

Getting started

Rough draft

Final draft

Biography

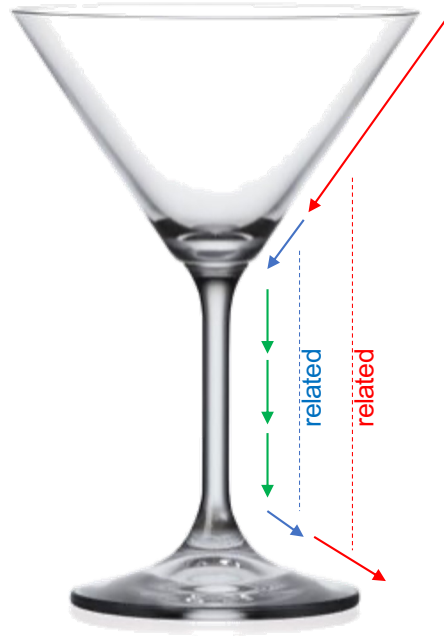


“I didn't have time to write a short letter, so I wrote a long one instead.”

-Mark Twain

3. Write your proposal like a martini glass

As your proposal is being refined from the initial complete draft, it should have the rhetorical structure of a martini glass (or hourglass).



1. Introduction and background

2. Specific Knowledge gap and hypothesis

3. Aims and methods (and caveats/mitigation strategies*)

4. Expected results

5. Impact

**there may not be space for briefer scholarship/fellowship applications*

3. Write your proposal like a martini glass

- Your background is the top of the martini glass, which goes from big picture to small picture. The opening sentence should be something of broad interest to all of your reviewers, and each sentence moves progressively finer until you arrive at the specific knowledge gap that your work will address
- Your knowledge gap and hypothesis are the neck of the martini glass, marking the transition from a narrowing background to a methods and impact
- Your aims, methods and outcomes are the stem of the glass, proceeding linearly from start to finish (aim 1 will do X, using methods for X, with expected outcomes for X ; aim 2 will do Y, etc)
- Your impact section effectively is the expanding base of the martini glass. It works in reverse order to your background - moving smaller picture to bigger picture - presenting how your work informs all of the knowledge gaps you identified in your background. Think about this impact section as the prospective equivalent of your (retrospective) background section.

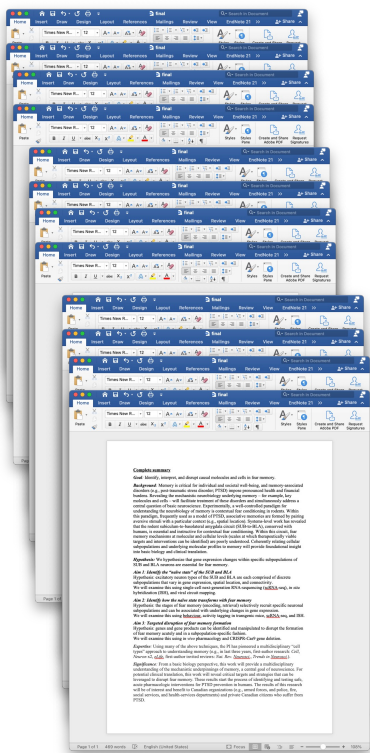
Getting started

Rough draft

Final draft

Biography

4. Make your reviewer's job easy



Reviewers are almost always professors who are running labs, writing grants, teaching and doing other things at the same time that reviews are due.



4. Make your reviewer's job easy

Reviewers may have a dozen (or more) proposals to review, and may read them at the last second (operationally: think of your reviewer on a red-eye flight, getting to your proposal only after reviewing all other proposals).

- Simpler is better. If you can turn a paragraph into a sentence, do it. If you can turn a sentence into a word, do it. If you can delete a word (or sentence, or paragraph), do it. Embracing the “kill-your-darlings” philosophy of writing is a critically important part of being a clear writer
- Identify your narrative arc, and include the minimum amount of content needed to convey it. Anything that is not central to this arc, remove.
- Every proposal needs to be about one core question. If it reads as having more than one question, try to do away with more peripheral questions (preferred) or couch different questions as complementary perspectives within one broader catch-all question (less preferred)

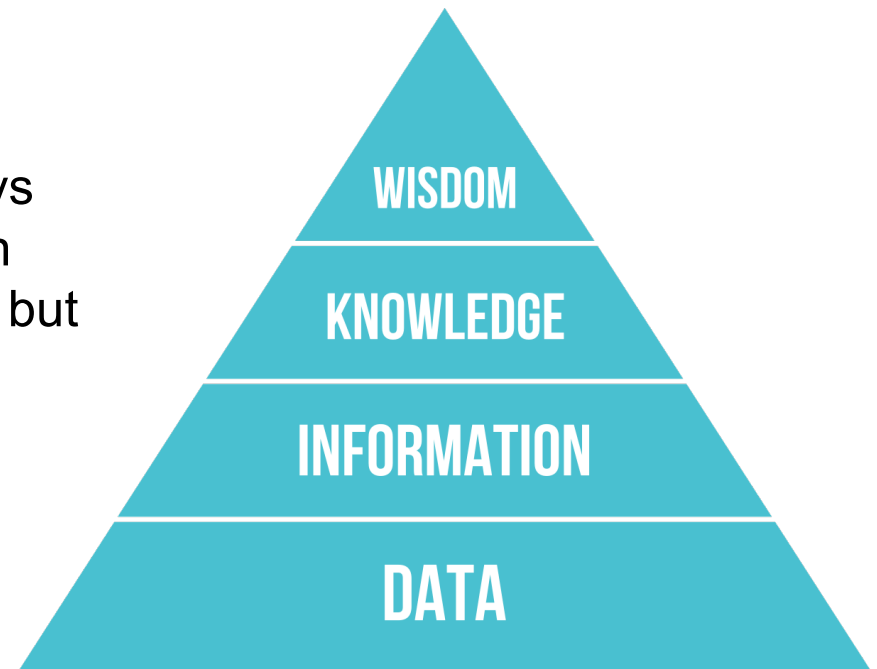
5. Get your reviewer motivated and excited

Seek to get the reader to walk away with the answers to: *Why this specific research?*; *Why now?*; and *Why you?*. Answering these questions clearly and concisely is at the heart of getting readers interested about your proposal.

- Ensure that your title is exciting - this is the first impression they'll have of your work, so a strong title conveying broad interest is essential
- Ensure that your app is written broadly enough - at least at the start of the introduction - to get all potential reviewers excited, rather than just reviewers in your domain. Do not assume a reviewer is inherently interested in your specific area of research, and always emphasize the importance and utility of your work in a broader context

5. Get your reviewer motivated and excited

- When explaining your research, always aim as high as reasonably possible on the DIKW pyramid. You'll collect data, but the *data is never the end goal* - it is a bridge to generate information and knowledge (and eventually wisdom)



5. Get your reviewer motivated and excited

- Avoid words that can read as unmotivated (examples: “characterize”, “explore”), and replace with words that are specific and/or actionable
- Avoid justifying research goals because they are “unresolved” or “poorly understood”. Having a research aim be unresolved/poorly understood is of course **necessary**, but by itself is not a **sufficient** reason to do research. As such, tell the reader why your specific goals are not just unresolved, but also important - said another way, there are many things that one could choose to research, why is this particular inquiry important?
- Tell your reader why your work is urgent - why is this particular inquiry needed now? This can be motivated by, for example: health needs (e.g., the number of people with disorder/disease X is increasing), technology (e.g., recently, methodology X now allows this line of inquiry), or recent findings (e.g., we recently published on X, motivating this proposed research).

5. Get your reviewer motivated and excited

- Tell your reader why your laboratory is an excellent environment to do your research (examples could include: domain knowledge, specialized techniques, previous publications).
- Tell your reader why you are the ideal scientist for the job (deserves it's own point – see next slide!)

6. Establish that you are dynamite

You are a fantastic scientist. Let the reader know this in oblique-but-powerful ways. Doing this establishes feasibility for the your proposed research in general, and also establishes that you are the right person to lead this work.

- If you have successfully published using a method before, cite the paper (and if you are using numeric citations, **bold and underline** the citation to remind the reader that you are referring to your own work).

Citing others work

work²⁵, which produces seizures ~15 minutes after initial administration²⁵. Seizures will be graded according to a standard behavioural scale²⁶, which ranges from immobility (stage 1) to severe tonic-clonic seizures (stage 6). Here, and in all Aims involving the kainic acid model, maximum seizure stage reached will be used as a regressor to identify whether seizure severity predicts outcome variables. *Patch-clamp electrophysiology*: Brain sections will be taken from mice in an acute progressive stage of epilepsy (1 hour after kainic acid), as well as a chronic stage mimicking clinical manifestations of epilepsy (1 week after kainic acid). Results will be compared to control mice receiving vehicle (i.e. saline). Whole-cell somatic patch-clamp electrophysiology from *ex vivo* brain slice preparation will be performed, as we have previously done²⁷⁻³⁰. In brief, mouse brain slices will be sectioned from the subiculum.

Citing your or your lab's work

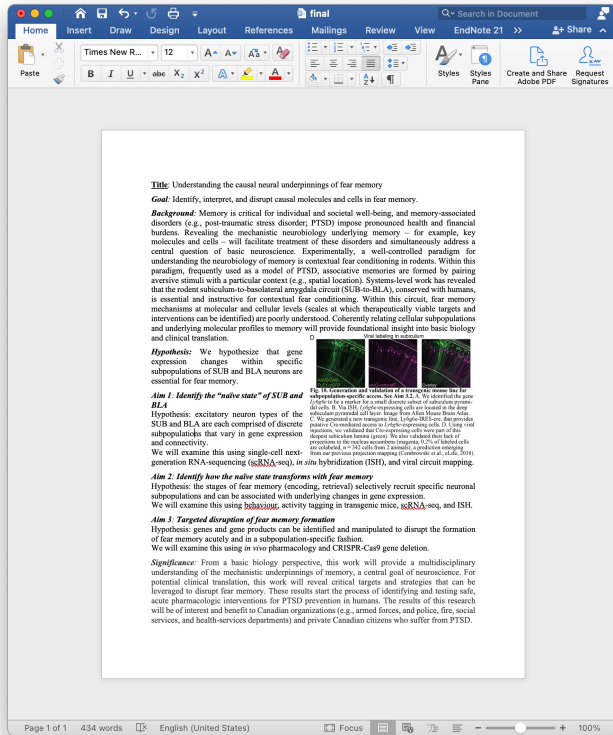
- If you have acquired preliminary data, note this in your proposal.
- If you have carryover from any scholastic or extracurricular work relevant to the proposal, also note this as a means of feasibility.

Getting started

Rough draft

Final draft

Biography



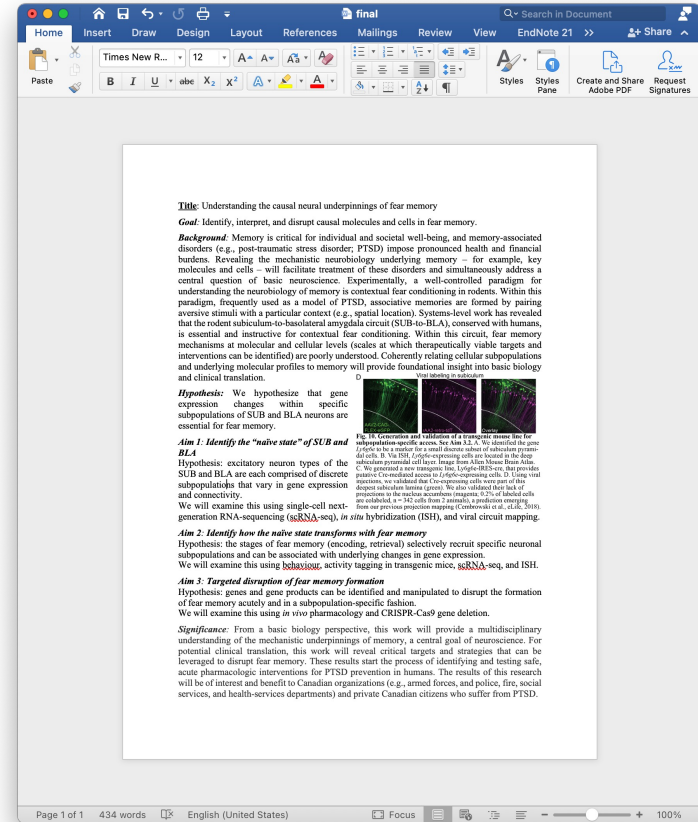
“The secret to editing your work is simple: you need to become its reader instead of its writer.”

-Zadie Smith

7. Include a figure

A well-done figure can make a proposal rise to the top of applications.

- A figure inherently makes a proposal memorable above all “pure text” proposals, garnering points with reviewers if they are done well
- As scholarship/fellowship apps are quite short, use a brief (one-to-two panel) figure with an equally brief legend to address one key point of your app



7. Include a figure

A well-done figure can make a proposal rise to the top of applications.

- Use this figure to complement one of the following areas of your app:
 - Background: a well-done background figure can visually summarize a large and complex body of work and/or highlight knowledge gaps
 - Aims/methodologies: a well-done aims/methods figure can highlight your approach and synergy between aims/methods
 - If your research has images that are inherently cool and have a broad “wow factor”, great to include
 - Keep written and stylistic content minimal
 - Note: assume this figure is what your reviewer will read first. Figures draw the eye away from text, so ensure that your figure can “stand alone” and be interpreted without reading any of the text in your app

8. Use visual rhetorical nudges

The following are one-off stylistic tips to help the reviewer quickly and easily grasp core points of your proposal.

- Use **bold**, underline, or *italics* (or **all of the above**) to have words/phrases in your app pop out. Employ especially when you have key words or content that might get lost within a paragraph, but use this sparingly to not lose the effect.
- If your proposal has a reviewing rubric, use the above technique to note specific scoring points used in the rubric, so that a reviewer can easily find them when reading your application

9. Review the logic of your writing.

The following are important one-off tips that improve readability of proposals.

- Headers: every section gets a header
- One paragraph=one idea. Avoid paragraphs that do “heavy lifting” beyond this - if present, split into 2+ paragraphs and/or leave other ideas out.
- For every sentence, use two commas max, with the exception of lists. One comma, even better. No commas best.
- Occasional white space (e.g., breaks between sections) is just fine and preferred by most readers

10. Re-read your completed proposal.

One of the biggest challenges of writing (if not the biggest) is getting too “close” to the writing and losing the big picture. To prevent this, after you’ve written your complete proposal, do the following to review with a critical eye and ear.

- Reread your content under each heading, and make sure everything that is written there fits the heading and doesn’t go further. For example: is each paragraph truly just one idea? Is the background section “pure” background, and not making anything known that isn’t available to the general community? Are the aims including background that would better be covered in the background section? Etc.

10. Re-read your completed proposal.

- Read your proposal out loud to yourself. Does it flow well? Are there commas that could be removed? Is there phrasing that is cumbersome? etc. Reading your proposal out loud to yourself helps to externalise potential issues that might not be there when reading on paper
- Have outside eyes on your proposal – have your proposal be read by a peer that is slightly (or largely!) removed from your immediate field. Make sure their read is quick and high-level, as this likely mimics exactly what a reviewer will do with your app. Their feedback will be probably the best proxy one can have to a reviewer of your app, so ensure that any comments they make are reflected in further edits as needed

The CCV

The content of CCV is critical for scholarship/fellowship applications.

- *Make hours known.* If you've done a lot of work in something, make it clear!
- Contextualise awards and other things that may not be obvious to an outside reader.
- Provide benchmarks as possible (1 of X recipients in group/school/province/nation).

The screenshot shows the Canadian Common CV website interface. At the top, there is a navigation menu with links for Français, Home, Contact Us, Help, and Logout. Below the menu, there are tabs for Welcome, CV, History, Consent, Utilities, PIN/System Account, Account, and Logout. The main content area displays 'Funding CV - List of Sections' with a date of 2014-11-03 11:07 EST. There are buttons for Load, Preview, and Submit. Below these are two dropdown menus: '* Funding Source' and '* CV Type', both set to 'SSHRC'. At the bottom, there is a table with columns for Section, Included/Entries, and Last Updated.

Section	Included/Entries	Last Updated
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Identification	1/1	2014-09-16 08:37:5
Language Skills	2/2	2013-11-19 15:29:4
Address	3/3	2014-06-18 09:44:0
Telephone	3/3	2014-06-18 09:48:0
Email	1/3	2014-10-21 08:24:0
Website	1/11	2014-07-14 15:07:1
Education		
Degrees	0/3	2014-10-28 09:55:1
Credentials	1/1	2014-07-10 09:14:5
Recognitions	1/1	2014-07-10 09:15:2
User Profile	1/1	2014-11-03 10:44:2

Things to keep in mind

- Writing can be challenging. Often well-defined goalposts (either time-based or goal-based) help with writing.
- “Slow and low” is the best way to write. A little bit, across days, as you prepare for scholarships and fellowships.
- Writing is a learned skill, acquired continuously over a lifetime.

Getting started

Rough draft

Final draft

Biography

Thank you!

Questions? Comments?

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