National Science Foundation Graduate Research Fellowship Program

Grace O'Malley, Ph. D. Candidate, Biological Sciences
Teaching assistant for GRFP prep course

Discussion in the face of uncertainty

Due to recent Executive Orders, guidelines and program-specific solicitations are subject to change.

Discussion in the face of uncertainty

Due to recent Executive Orders, guidelines and program-specific solicitations are subject to change.

Today's discussion will focus on general information about the NSF GRFP and tips for persuasive grant writing.

Discussion in the face of uncertainty

Due to recent Executive Orders, guidelines and program-specific solicitations are subject to change.

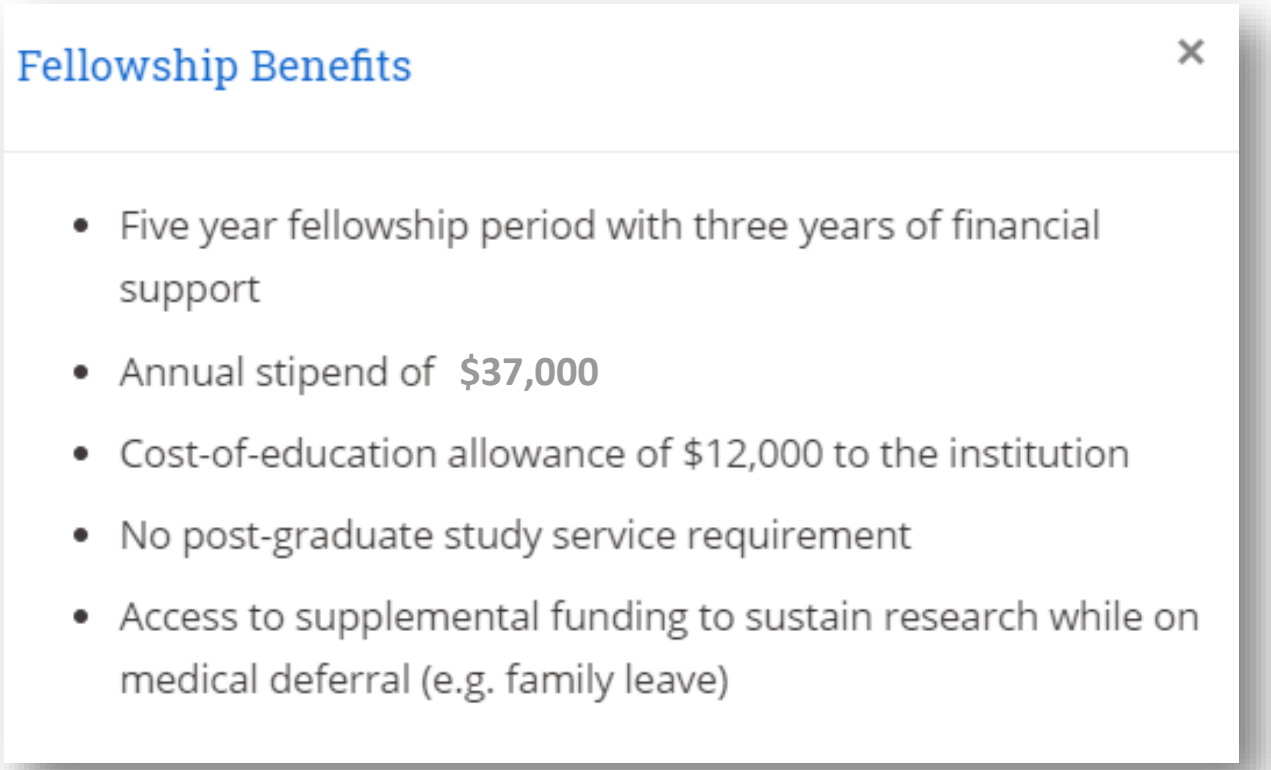
Today's discussion will focus on general information about the NSF GRFP and tips for persuasive grant writing.

Information shared today is relevant regardless of specifics in the solicitation, read future resources carefully.

NSF GRFP purpose:

The purpose of the NSF Graduate Research Fellowship Program (GRFP) is to help ensure the quality, vitality, and strength of the scientific and engineering workforce of the United States. NSF actively encourages the submission of applications from the full spectrum of talent that the US has to offer.

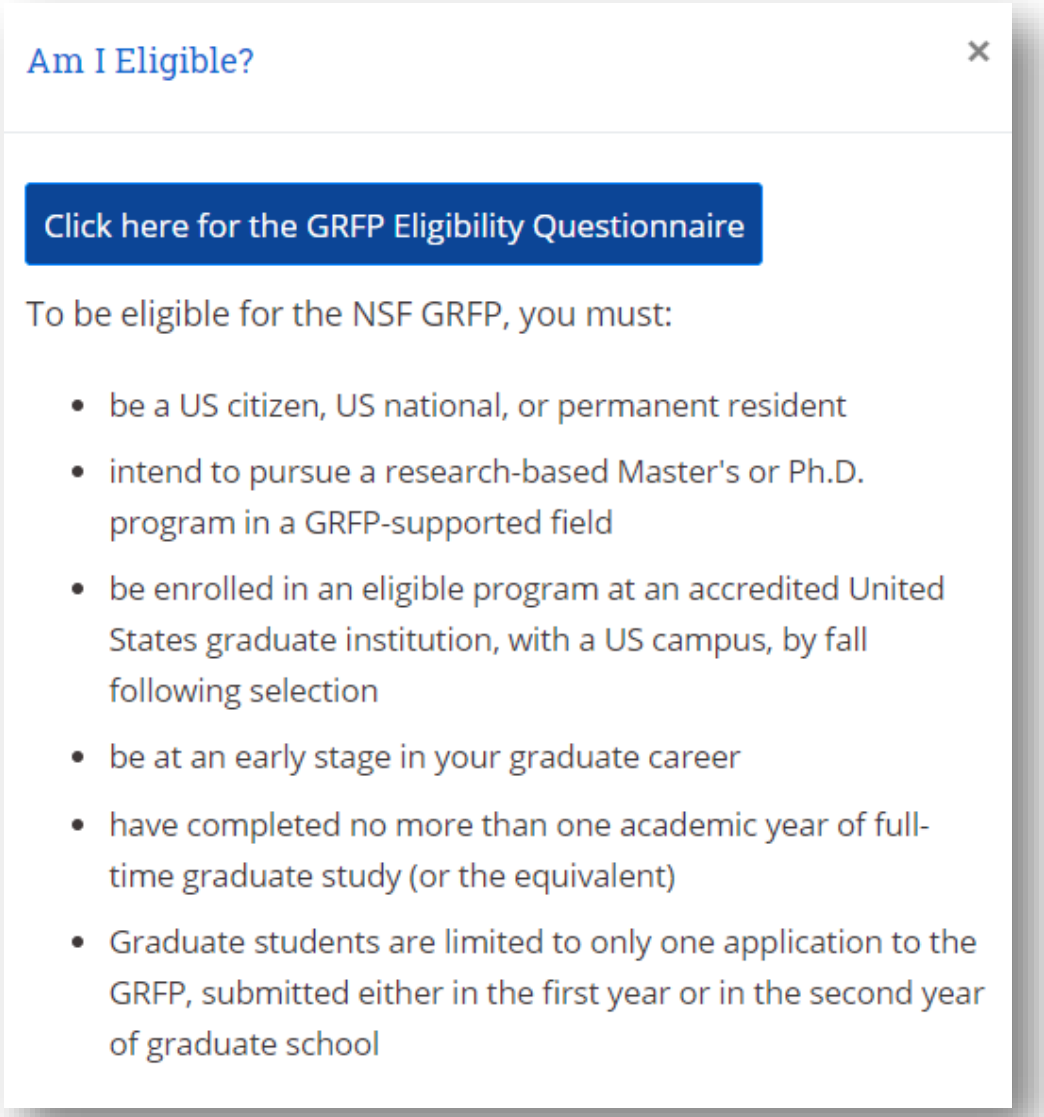
NSF GRFP key facts and details (as of 2024):



Other benefits:

- You can take this with you - <u>it is yours!</u>
- Applying is an excellent way to build your own research ideas
- Connection with other NSF projects such as federal training programs & partnerships

NSF GRFP key facts and details:



Am I Eligible?

Click here for the GRFP Eligibility Questionnaire

To be eligible for the NSF GRFP, you must:

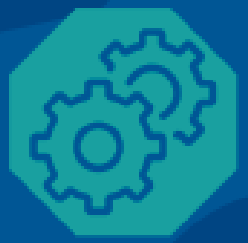
- be a US citizen, US national, or permanent resident
- intend to pursue a research-based Master's or Ph.D. program in a GRFP-supported field
- be enrolled in an eligible program at an accredited United States graduate institution, with a US campus, by fall following selection
- be at an early stage in your graduate career
- have completed no more than one academic year of full-time graduate study (or the equivalent)
- Graduate students are limited to only one application to the GRFP, submitted either in the first year or in the second year of graduate school

Note: these are screenshots from the website before information was archived. Hopefully, these resources will be reposted

ELIGIBLE MAJOR FIELDS OF STUDY

CHEMISTRY

COMPUTER AND INFORMATION SCIENCES & ENGINEERING



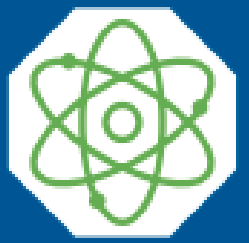
ENGINEERING

GEOSCIENCES

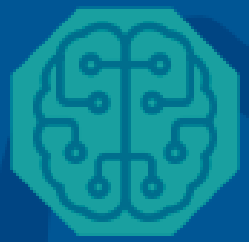
LIFE SCIENCES

MATERIALS RESEARCH

MATHEMATICAL SCIENCES



PHYSICS & ASTRONOMY



PSYCHOLOGY

SOCIAL SCIENCES

STEM EDUCATION & LEARNING RESEARCH

Application components:

ALL APPLICATIONS MUST INCLUDE:

- **TRANSCRIPTS**
  Transcripts are **REQUIRED** for all degree-granting programs listed.

- **STATEMENTS**
  GRFP applicants are required to provide two statements: a Personal Statement and Graduate Research Plan Statement

- **REFERENCE LETTERS**
  Two letters are required. Three letters are recommended.

Graduate Research Fellowship Program (GRFP)

nsfgrfp.org

GRFP essays:

- **Personal, Relevant Background, & Future Goals Statement** (3 pages)
- **Graduate Research Plan Statement** (2 pages)

Both statements must address NSF's review criteria of **Intellectual Merit** and **Broader Impacts**

> "Intellectual Merit and Broader Impacts must be addressed individually under separate headings in both statements"

What are "Intellectual Merit" and "Broader Impacts"?

Intellectual Merit

"…the potential to **advance knowledge**"

Broader Impact

"… the potential to **benefit society** and contribute to the achievement of specific, desired societal outcomes"

Note: these currently are in direct conflict with various executive orders, changes are possible

Storytelling in Science:

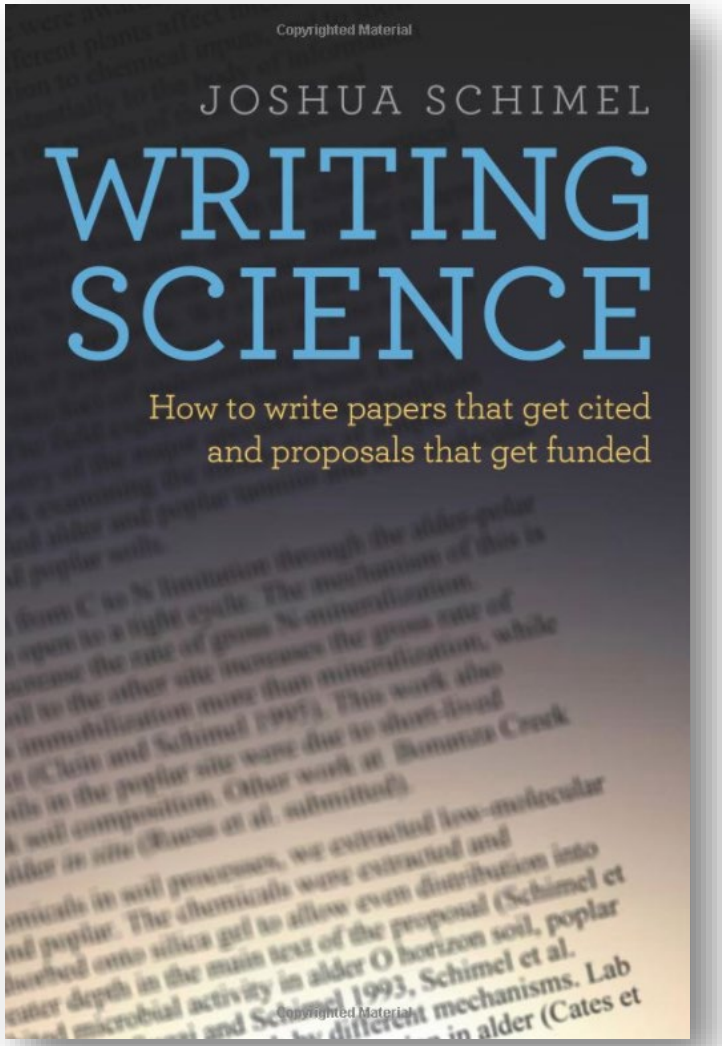
"Our proposals are funded because we make our ideas clear, compelling, and convincing to reviewers." - J. Schimel

The author's job: **make the reader's job easy.**

So - how do we do that?

Writing, and lots of rewriting/editing!

Writing - especially good writing - takes *time.* But you have to start somewhere.



Available as e-book from VT library!

Storytelling in Science:

From Schimel: How to make a story a "success"

S: Simple - Ideas that "stick" tend to be simple. A simple idea finds the core of the problem.

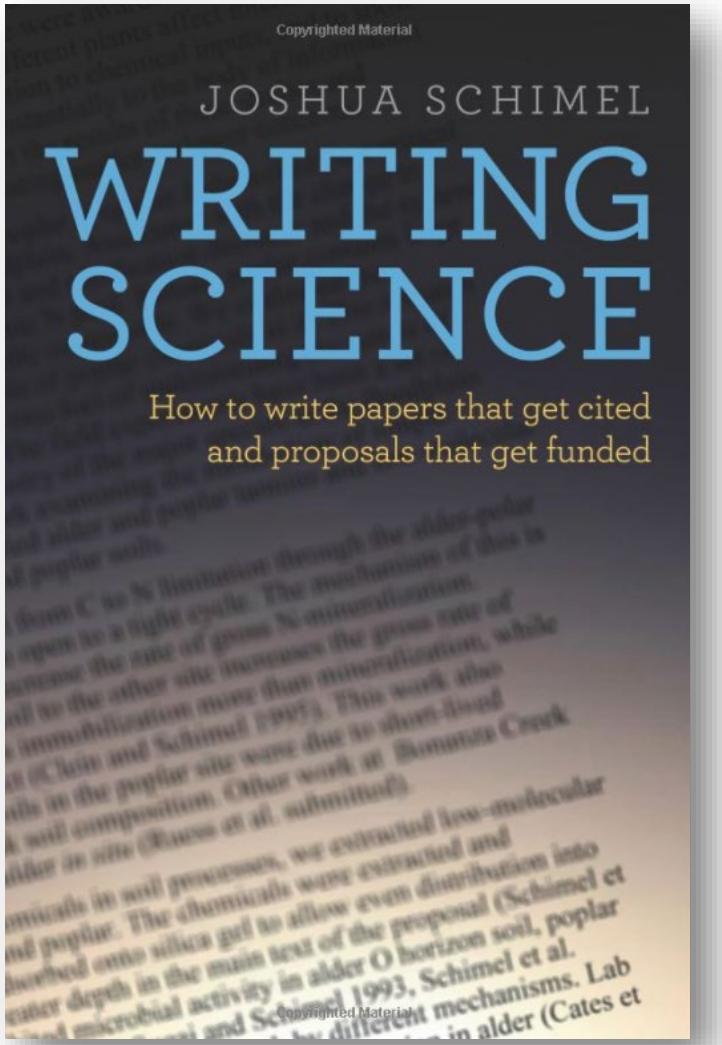
U: Unexpected - What are the new, unexpected elements you're study. Create curiosity, rather than "showing off" knowledge.

C: Concrete (or "example") - Link your idea to something concrete, e.g., your study system!

C: Credible - Ground your proposal in previous work & cite appropriately. Avoid over-stating the significance or reach of your proposed work.

E: Emotional (or "excitement") - Inspire curiosity in your proposed research. Why should reviewers care? Get them excited about your question.

S: Stories - Build your overall story with linked, structured components. Think of your themes as characters, and bring them together into a connected, clear story.

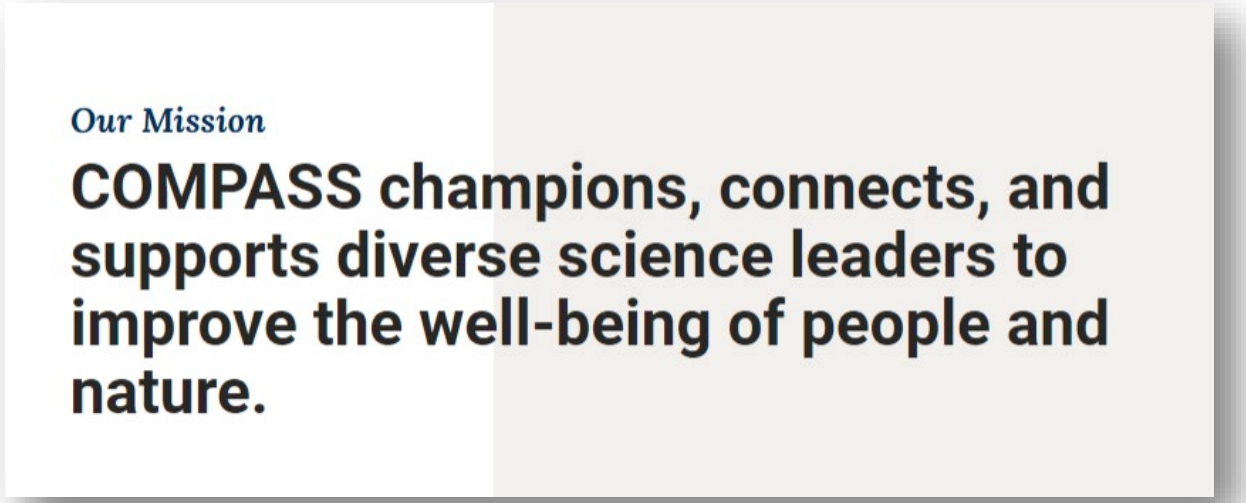


Available as e-book from VT library!

Storytelling and The Message Box:

COMPASS

www.compasssciicomm.org



What is The Message Box?

- A tool for effective science communication
- Based on research that shows human brains generally can only absorb 3-5 pieces of information at a time
- Lots of exciting details; but limited space and reviewer bandwidth. Important to identify critical information/themes!

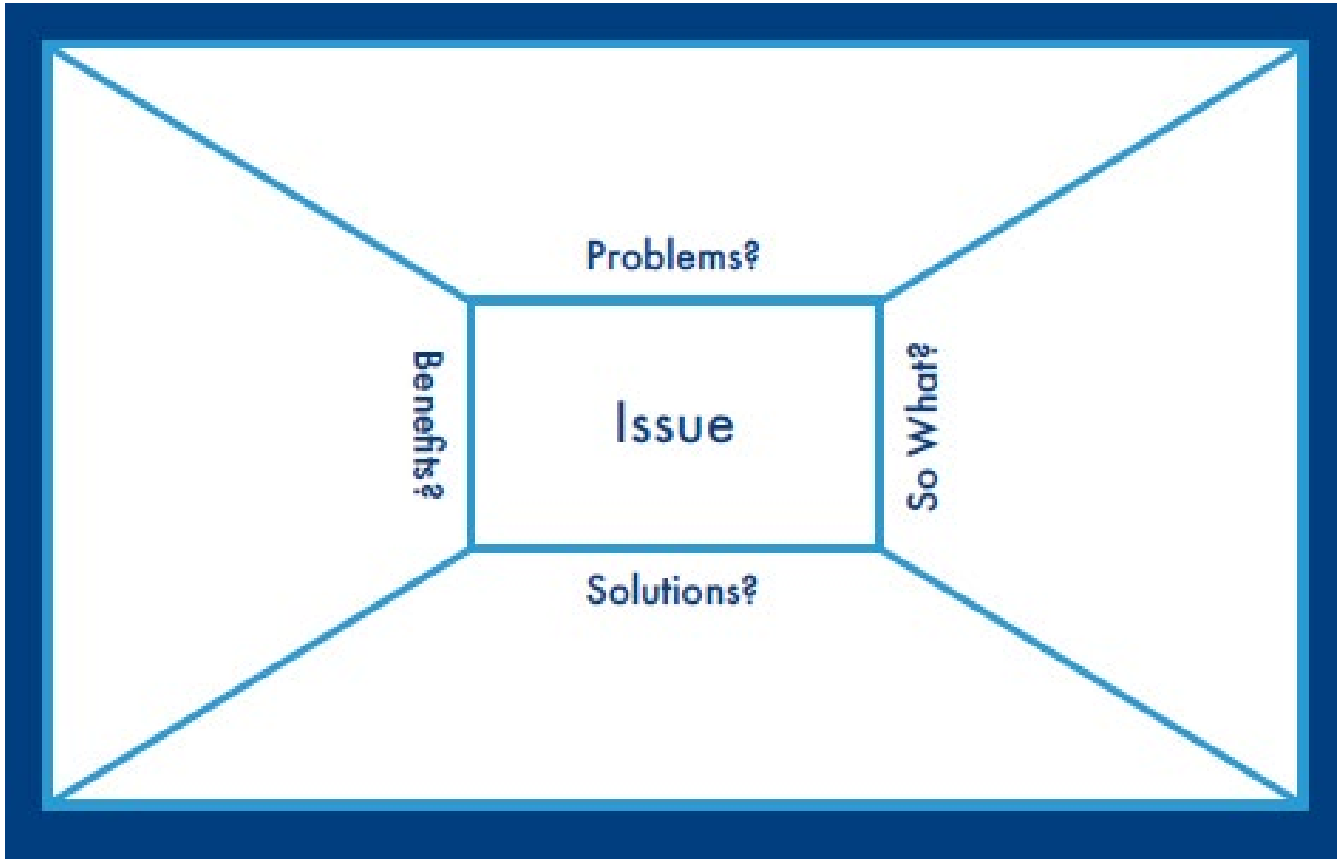
The question that drives The Message Box:

“So what?”

Storytelling and The Message Box:

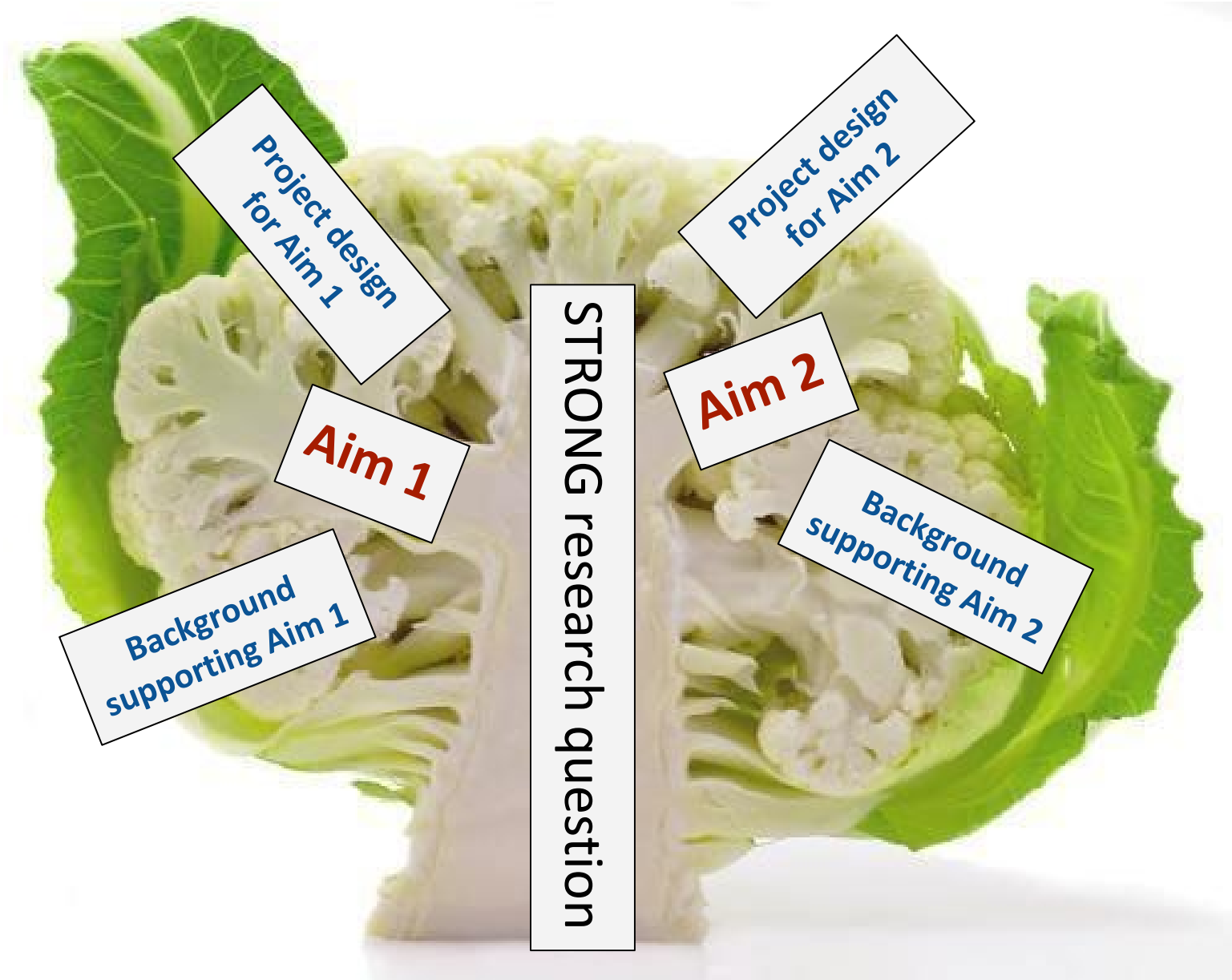
The Message Box consists of first identifying your audience, then developing your message in 5 key parts:

- **The Issue:** What is the theme or topic of your research proposal and personal statement? This is the "big picture" context.
- **Problems?:** The part of the issue that your work is addressing.
- **So what?:** Why does the issue matter?
- **Solutions?:** How will you address the problem?
- **Benefits?:** What are the benefits of the work? To whom, when, and where?



Cauliflower Method

EVERYTHING should relate to the central question:
What are you going to do?
Pare away anything else.



Common Mistakes to Avoid

- Not following directions or guidelines of solicitation
- Research is not feasible
- Lack of compelling background and rationale
- Questions, hypotheses, and aims are not clear

Additional Grant Writing Tips and Resources

Print out the program solicitation!

Additional Grant Writing Tips and Resources

Print out the program solicitation!

Get lots of feedback from trusted sources

Additional Grant Writing Tips and Resources

Print out the program solicitation!

Get lots of feedback from trusted sources

Hotaling, S. (2020), Simple rules for concise scientific writing.

Additional Grant Writing Tips and Resources

Print out the program solicitation!

Get lots of feedback from trusted sources

Hotaling, S. (2020), Simple rules for concise scientific writing.

Virginia Tech Writing Center - https://lib.vt.edu/study-learn/writing-center.html

Thank you! Questions?