Agenda

Grantwriting Strategies in Clarity

- Structure
- Cohesion
- Coherence

Today's Takeaways

What you'll be able to do afterwards

Write a stronger and more competitive proposal

- Develop concise flow
- Eliminate confusion
- Ensure the comprehension of the lazy reviewer

Next Level Grantsmanship

General Writing Strategies

Resources Cited

1. Hofmann, Angelika. 2014. *Scientific Writing and Communication* (2nd edition). Oxford University Press.
2. Williams, Joseph. 2013. *Style: Lessons in Clarity and Grace* (11th edition). Boston: Pearson.
3. Purdue Online Writing Lab
   - https://owl.english.purdue.edu/owl/
4. Duke Graduate School Scientific Writing Resource
   - https://cgi.duke.edu/web/sciwriting/index.php
5. The English Edition
   - http://www.theenglishedition.com/wordpress/?p=283
6. Jaisri Lingappa, Professor, Department of Public Health, University of Washington

Ben and the Three Reviewers

Me

Reviewer 1

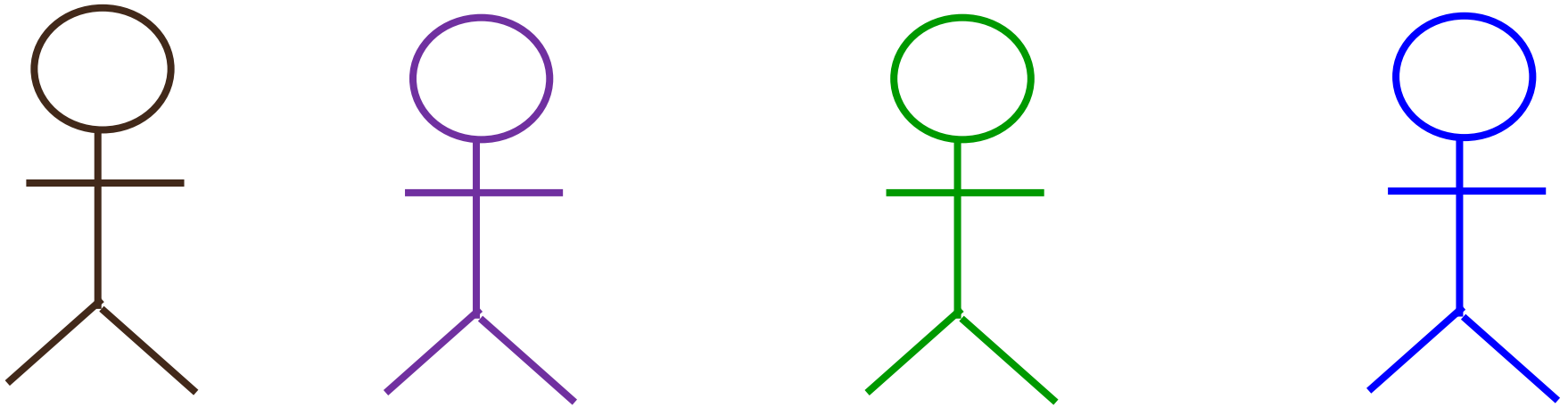
Thoughtful, sincere, highly intelligent

Reviewer 2

Forgot about the review deadline and read all proposals in the last 36 hours. And mine was last

Reviewer 3

Out to get me



Topic is important and addresses a significant need in the community. However, the **objectives and activities are highly confusing** and it uncertain how each of the activities will achieve the desired goal. The outcomes of the work are also poorly defined, and are hardly connected to the activities proposed. As such, it is difficult to recommend funding.

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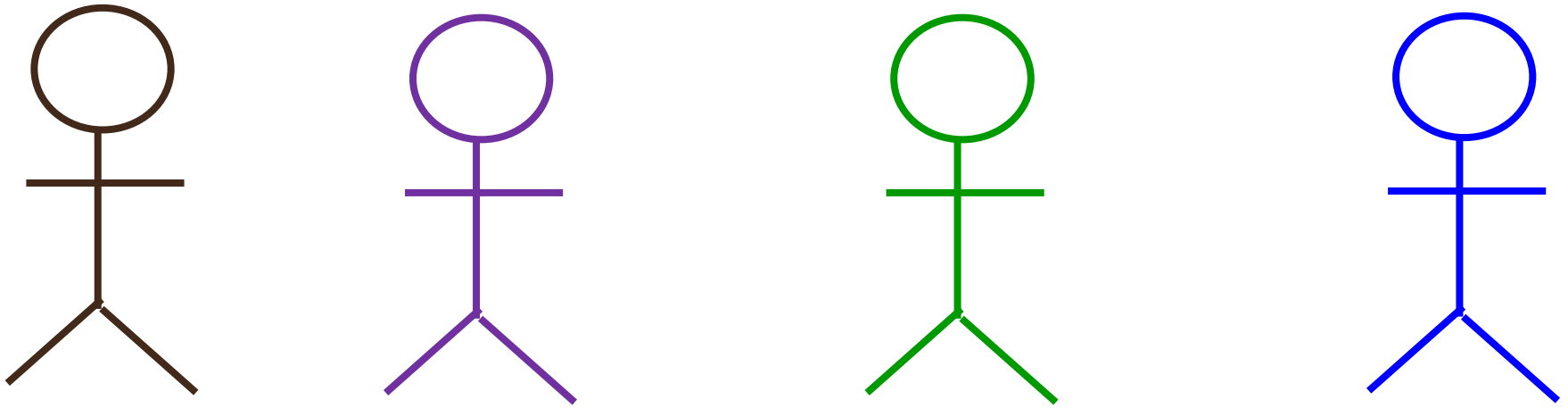

Important topic. **Not sure how this will work**. Can't figure out what they are trying to do.

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Ben and the Three Reviewers

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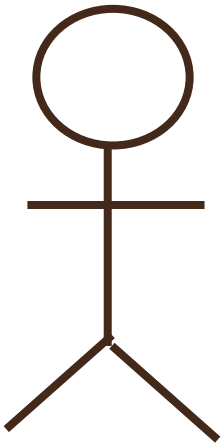

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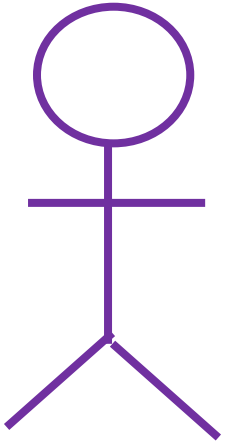

Reviewer 2

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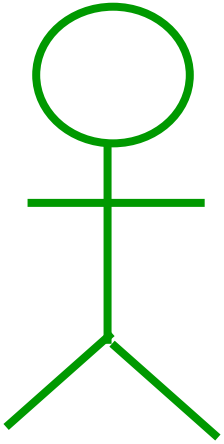

Reviewer 3

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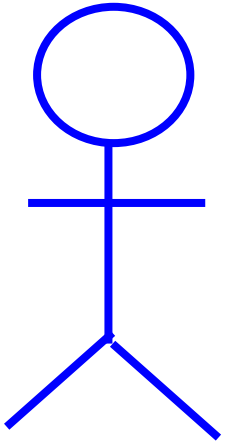

This is…
terrible.

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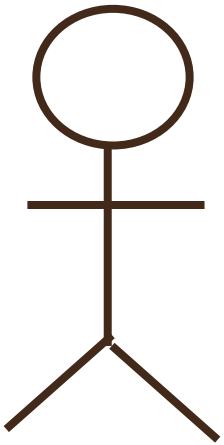
Actual Me



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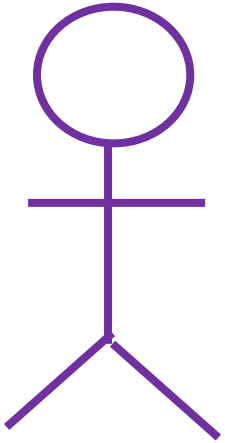

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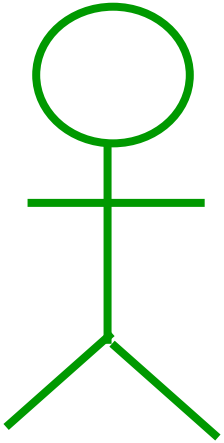

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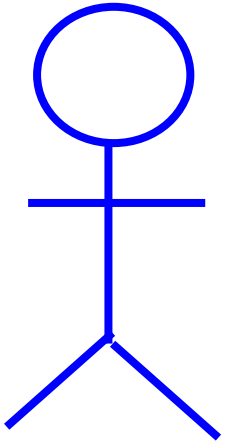

"Jeez, clueless much? Best. Reviewers. Ever."

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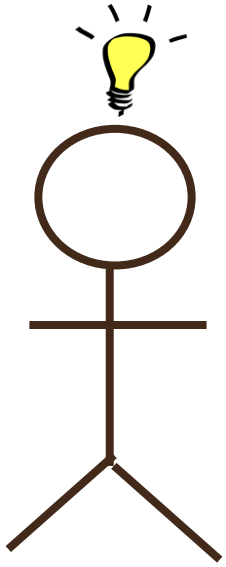
Enlightened Me



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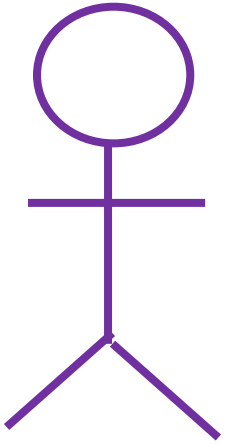

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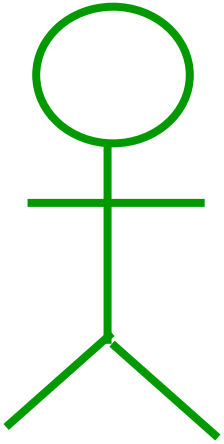

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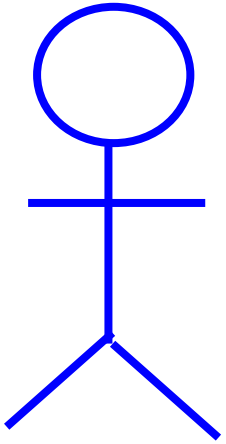

"Hmmm…something about the writing is not clear"

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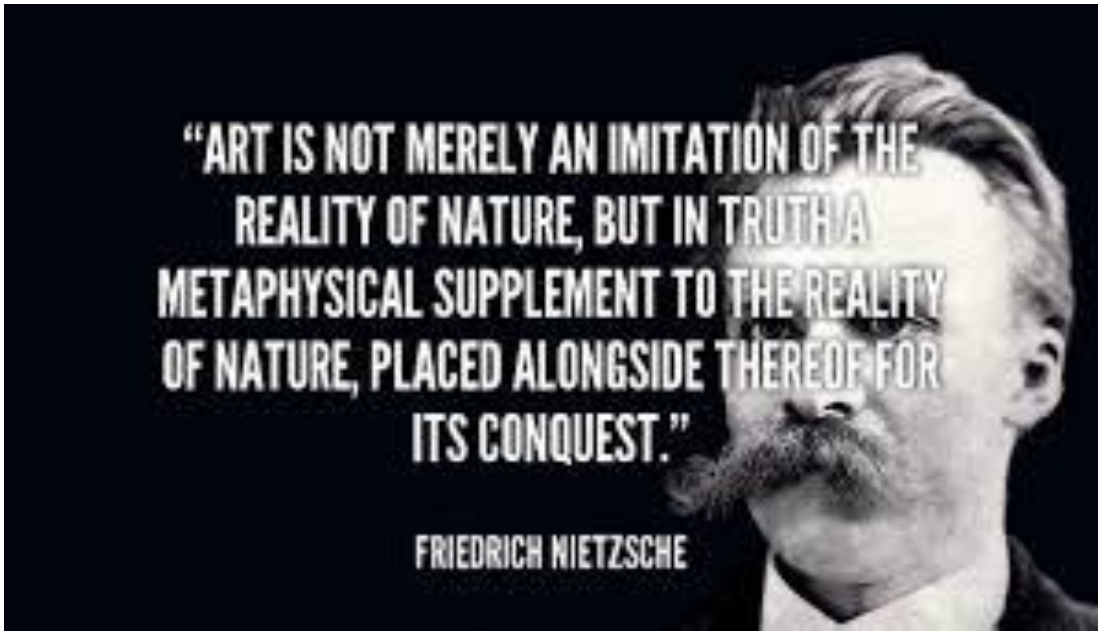
Clarity

"Writing is thinking. To write well is to think clearly. That's why it's so hard."

David McCullough

Why People Write Unclearly

- You don’t know what to say
- The subject is confusing
- Assume that complexity signals deep thought and high intelligence



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Tips to Improve Clarity

Sentence Structure

- The **location of words** within a sentence is important for the reader's interpretation
  - As an author, you need to decide what is important and what is less important before you start writing
  - Key words that raise themes or represent important points should be placed at the end of the sentence (stress position)

Mosquitos often carry parasites

Topic
Stress

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Tips to Improve Clarity

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Will be talking about parasites….

Topic

Stress

Parasites are often carried by mosquitos

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Mosquitos often carry parasites

Topic
Stress

Parasites are often carried by mosquitos

Will be talking about mosquitos….

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Tips to Improve Clarity

Sentence Structure

- Word **placement** and word **choice** have an impact on how the reader interprets the information
- Example: Trying to make the case for why Cross Fit is a great exercise program

Although taking a Cross Fit class can burn calories and improve cardiovascular health, there is a chance for injury.

Although there is a chance for injury, taking a Cross Fit class can burn calories and improve cardiovascular health.

Although there is a chance for shattered bones or even death, taking a Cross Fit class can burn calories and improve cardiovascular health.

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Tips to Improve Clarity

Sentence Structure

- Avoid **interruptions** between subject and verb

Subject → Verb

Character → Action

Person or thing → Doing something

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Tips to Improve Clarity

Sentence Structure

- Avoid **interruptions** between subject and verb

- **Nominalizations** are often used in grantwriting but it can lead towards confusion
    - Nouns that are created from verbs or adjectives, usually by adding -tion, -ence, -ment, -cy, etc.
        1. Interference-----interfere
        2. Argument--------argue
        3. Reduction-------reduce

Subject → Long string of nominalizations → Verb

Character → Long string of nominalizations → Action

Person or thing → Long string of nominalizations → Doing something

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(1, 2, 3, 6)

Tips to Improve Clarity

Sentence Structure

Nominalizations Examples:

- Non scientific:

  The **discussion** of the group was about how to surprise the girl with the birthday without her knowing

- Scientific:

  Reduction of viral loads was caused due to antiretroviral drug treatment

(1, 2, 3, 6)

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Tips to Improve Clarity

Sentence Structure

- Avoid **interruptions** between subject and verb
  - Adding excessive information between your subject and verb will confuse the reader

Angela, a Colorado athlete who lives in Boulder, which has over 37 miles of biking and running trails, 8 different sporting goods stores and 12 fitness centers, runs 18 miles a week

Angela runs 18 miles a week

Short Activity

Sentence Structure Reflection

Take five minutes to review your writing to see how you could improve

Does anyone want to share changes they were able to make in their writing?

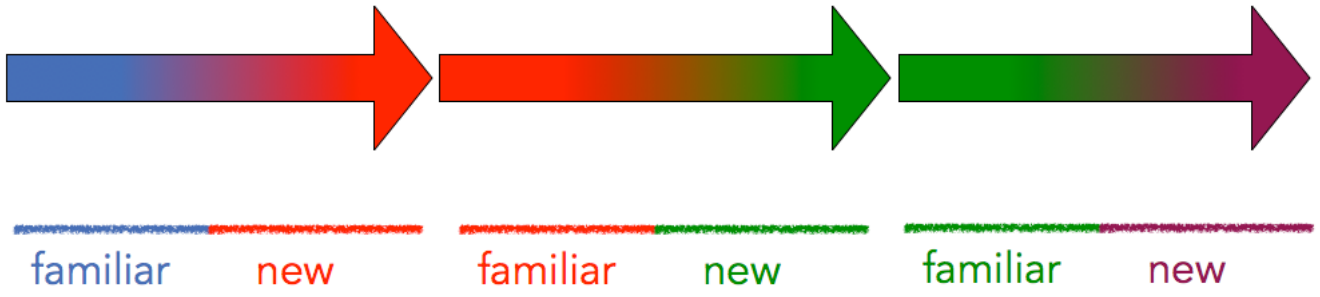
Does anyone notice something in your writing you hadn't noticed before?

Tips to Improve Clarity

Cohesion

- **Cohesion** refers to a sense of flow, the ‘glue’ that holds your sentences together
  - Prioritize familiarity

- **Cohesion Strategy #1**:
  - Each sentence should start with the familiar and progress to the new and more complex



(1, 4, 5, 6)

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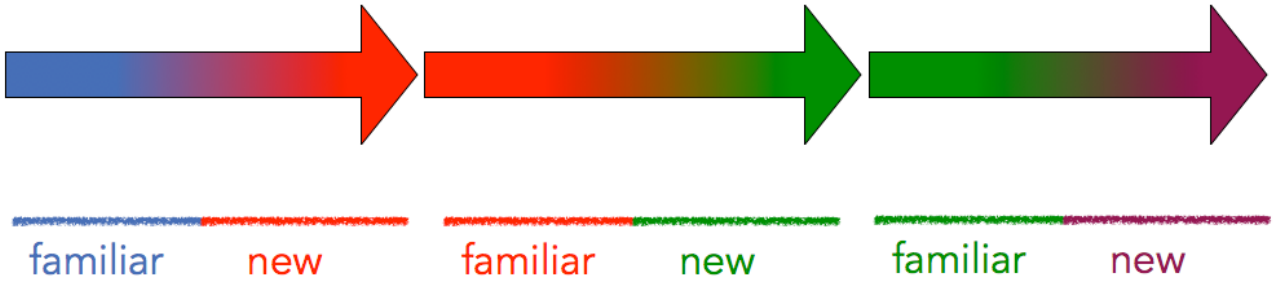
Tips to Improve Clarity

Cohesion

Some astonishing questions about the nature of the universe have been raised by scientists studying black holes. The collapse of a dead star into a point perhaps no larger than a marble creates a black hole. The fabric of space around so much matter compressed into so little volume can then change in puzzling ways.



(1, 4, 5, 6)

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Tips to Improve Clarity

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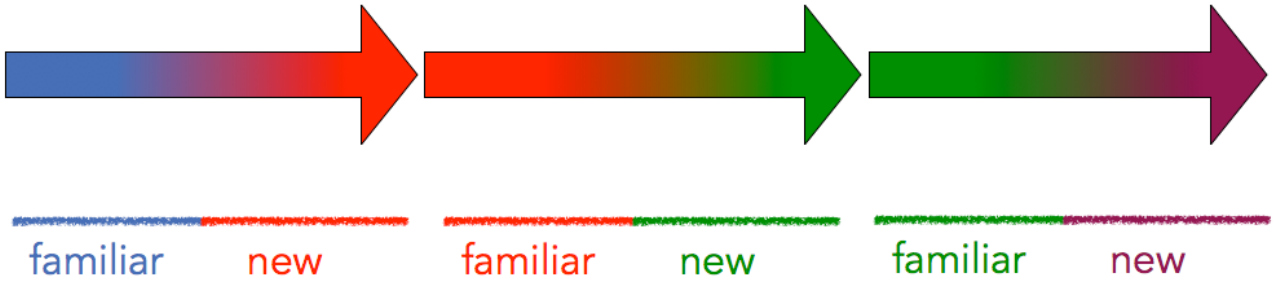

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Tips to Improve Clarity

Cohesion

- **Cohesion Strategy #2**:
  - Write the paragraph from the point of view of the familiar information

Depression in the elderly is thought to affect more than 6.5 million of the 35 million Americans who are 65 years and older. It is considered to be a disorder that is commonly underdiagnosed, undertreated, and mismanaged. Depression in the elderly has also been closely associated with dependency and disability that present in both emotional and physical symptoms. Major depression tends to be higher in persons over 65 who live in a long-term care facility.

(1, 4, 5, 6)

Tips to Improve Clarity

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(1, 4, 5, 6)

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Tips to Improve Clarity

Coherence

- **Coherence** refers to the sense of the whole
  - Sentences should lead logically from one to the next
  - All sentences should be relevant to one another
- **Coherence Strategy #1**: Use consistent order

The Great Lakes are a series of interconnected freshwater lakes located in North America and include Lake Superior, Michigan, Huron, Erie, and Ontario. Lake Superior is the second largest lake in the world. Lake Michigan is the largest lake within one country. Interestingly, Lake Huron….Whereas Lake Erie…..Finally, Lake Ontario…. Together, these lakes make up the largest body of fresh water on Earth.

(1, 5, 6)

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(1, 5, 6)

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Tips to Improve Clarity

Coherence

- **Coherence Strategy #2**: Use key terms to create continuity
  - Key terms are used to identify your important ideas that you want to highlight in your sentence, paragraph, and document
- Key terms should be clearly defined and identical throughout your writing
- Example**:** Cystic Fibrosis study

> In this aim, we will evaluate the use of exercise therapy in improving overall lung function in Cystic Fibrosis patients. Pulmonary function will be measured by…

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Tips to Improve Clarity

Coherence

- **Coherence Strategy #2**: Use key terms to create continuity
  - Key terms are used to identify your important ideas that you want to highlight in your sentence, paragraph, and document
- If you need to switch from a category to a specific term, or vice versa, be sure to link them

Foodborne illnesses may be caused by food contaminated with bacteria. One such organism, *Salmonella*, causes more than 20,000 hospitalizations each year.

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Tips to Improve Clarity

Coherence

- **Coherence Strategy #3**: Use transitions to establish order

Chronological

- *First, then, finally*

Coordinate

- *First, second, third*
- *Also, another, in addition*

Logical

- Example and generalization
- Premise and conclusion
- *For example, therefore, for this purpose*

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Another Short Activity

Cohesion and Coherence Reflection

Take another five minutes to review your writing to see how you could improve

Does anyone want to share changes they were able to make in their writing?

Notice anything else in your writing you hadn't noticed before?

Summary

- It is difficult to judge the clarity of your own writing
- “Good” thinking does not necessarily translate into good writing
- Though nuanced, pay attention to your word location and your word choice in each sentence
- Prioritize cohesion and coherence to improve overall clarity
- Practice internal review to assess clarity

Appendix:
Strategies for Grant Components

Preparing your Proposal

Suggestions Prior to Writing

- Start with an **idea**
  - Why is it innovative or critically important?
  - Build a rough sketch it will be translated into a program or project
    - Engage partners
    - Begin to define your goals, objectives, activities

- Find a **funder**
  - Research potential funders, do your homework
  - Your proposed program/project has to align with a funder's mission, priorities, etc.
    - Be prepared to adjust your original idea to better align with the funder in order to improve your chances of getting funded
  - Engage with Program Officers to better assess how your proposal fits with the funder

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Grant Components

Common Sections Found in Federal and Foundation Grants

Abstract/Executive Summary
Specific Aims/Goals and Objectives
Background/Introduction/Statement of Need
Significance/Impact
Innovation
Approach/Strategy/Methodology
References
Budget and Budget Justification
Personnel/Biographical Sketches

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Grant Component Strategies

Abstract/Executive Summary

- First page the reviewer reads
  - Should be **perfect**
- Abstract reflects the overarching summary of everything you propose to do
  - Only start writing this when you have a solid plan in place
  - **Prioritize!**

- Brief Background
- Problem (the unknown)
- Objective/Goal
- General Strategy
- Expected Outcomes
- Significance/Impact

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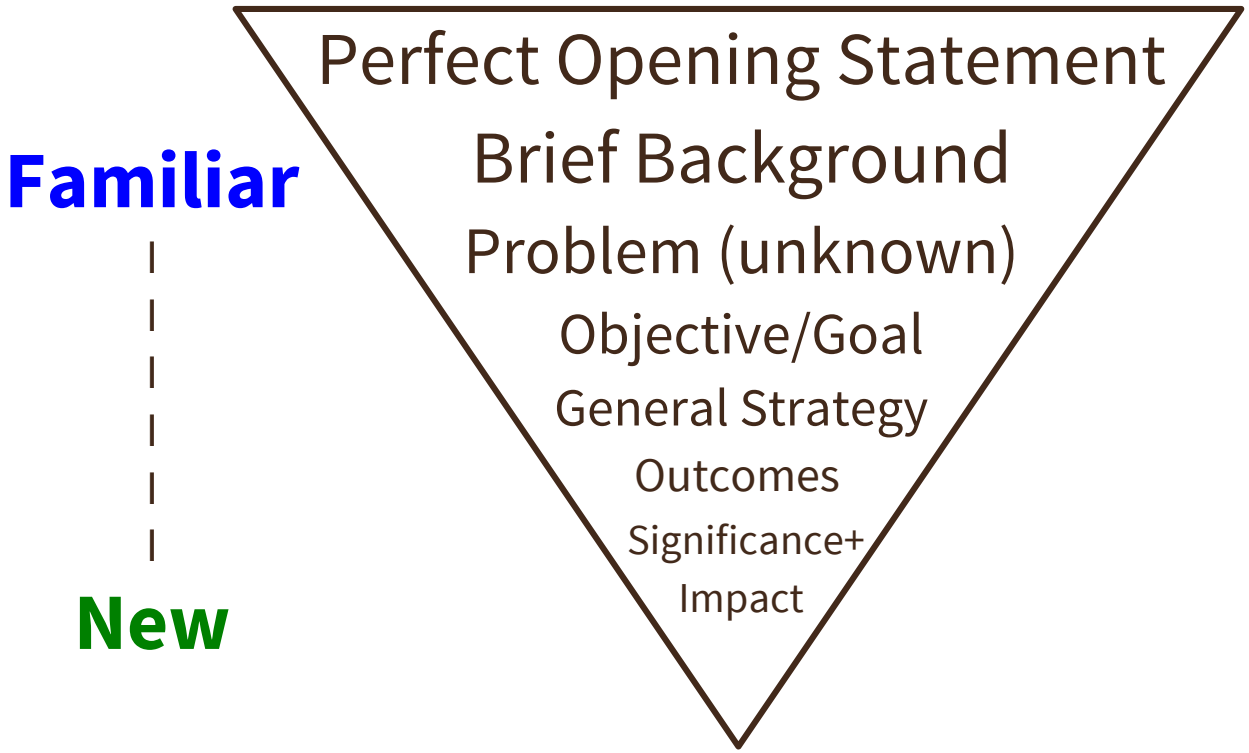
Grant Component Strategies

Abstract/Executive Summary



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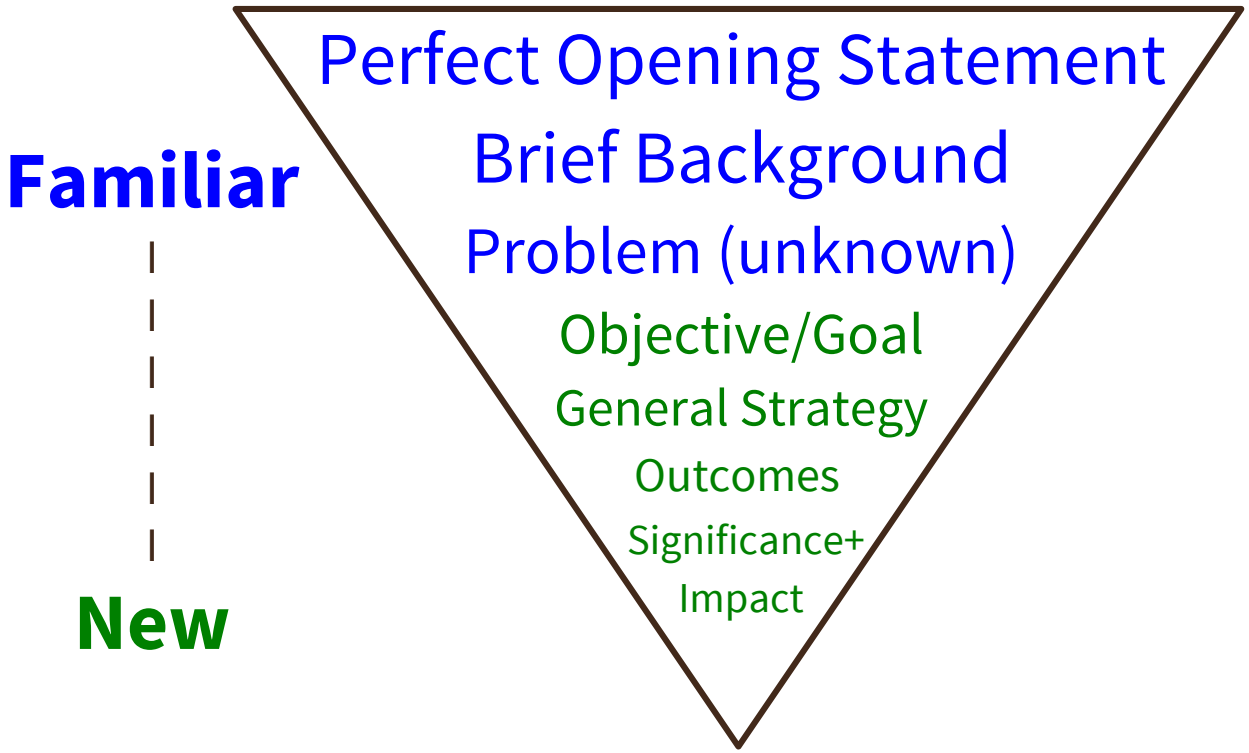
Grant Component Strategies

Abstract/Executive Summary



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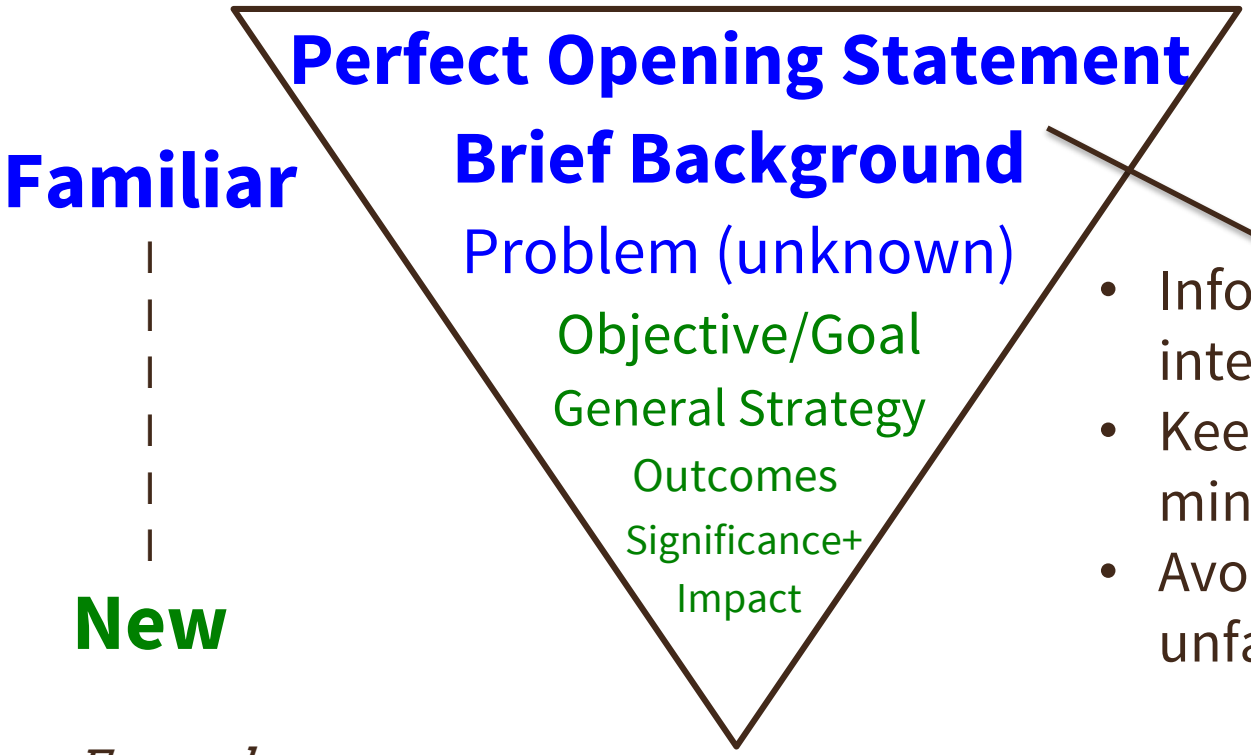
Grant Component Strategies

Abstract/Executive Summary



- Informative, short, interesting, and engaging
- Keep non-specialists in mind
- Avoid abbreviations, unfamiliar terms, citations

Example:

Emphysema is a major public health concern

Emphysema is a major subset of chronic obstructive lung disease, predicted to reach epidemic proportions by 2020

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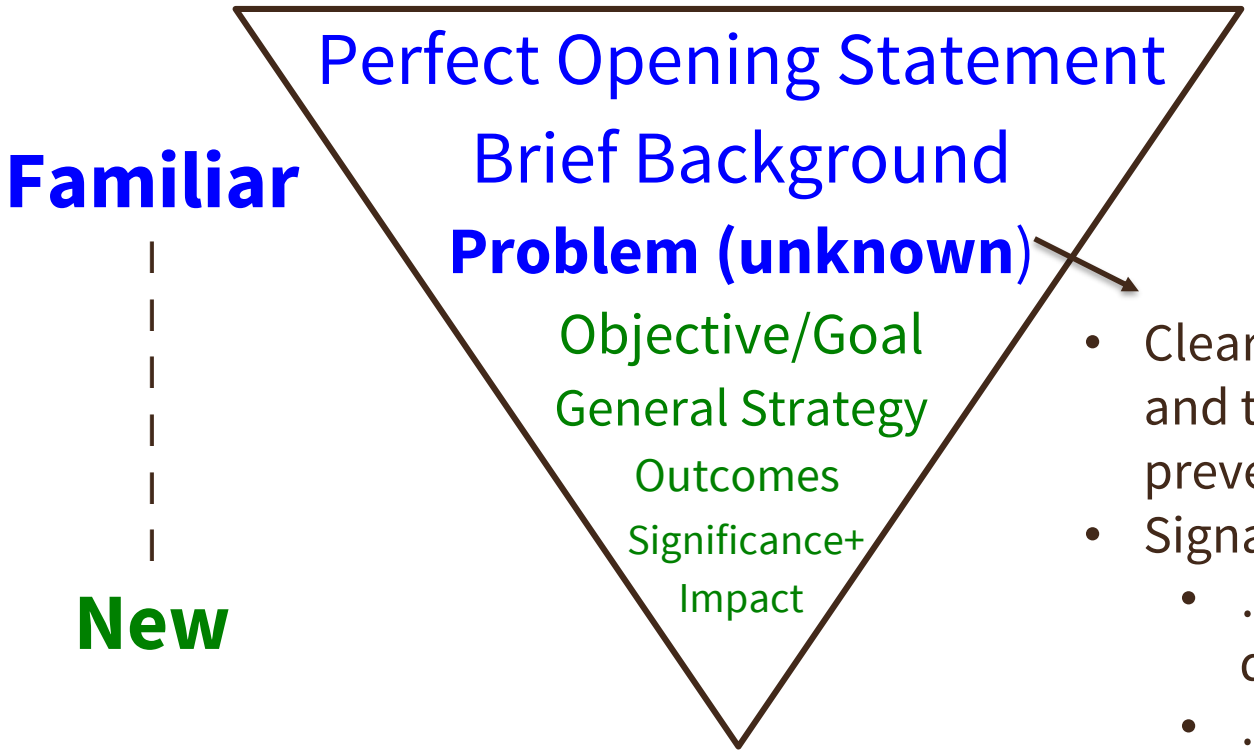
Grant Component Strategies

Abstract/Executive Summary



- Clearly identify the problem and the unknowns that prevent its solution
- Signals for the reader:
  - …has not been determined
  - …is unclear
  - The question remains
  - Whether…

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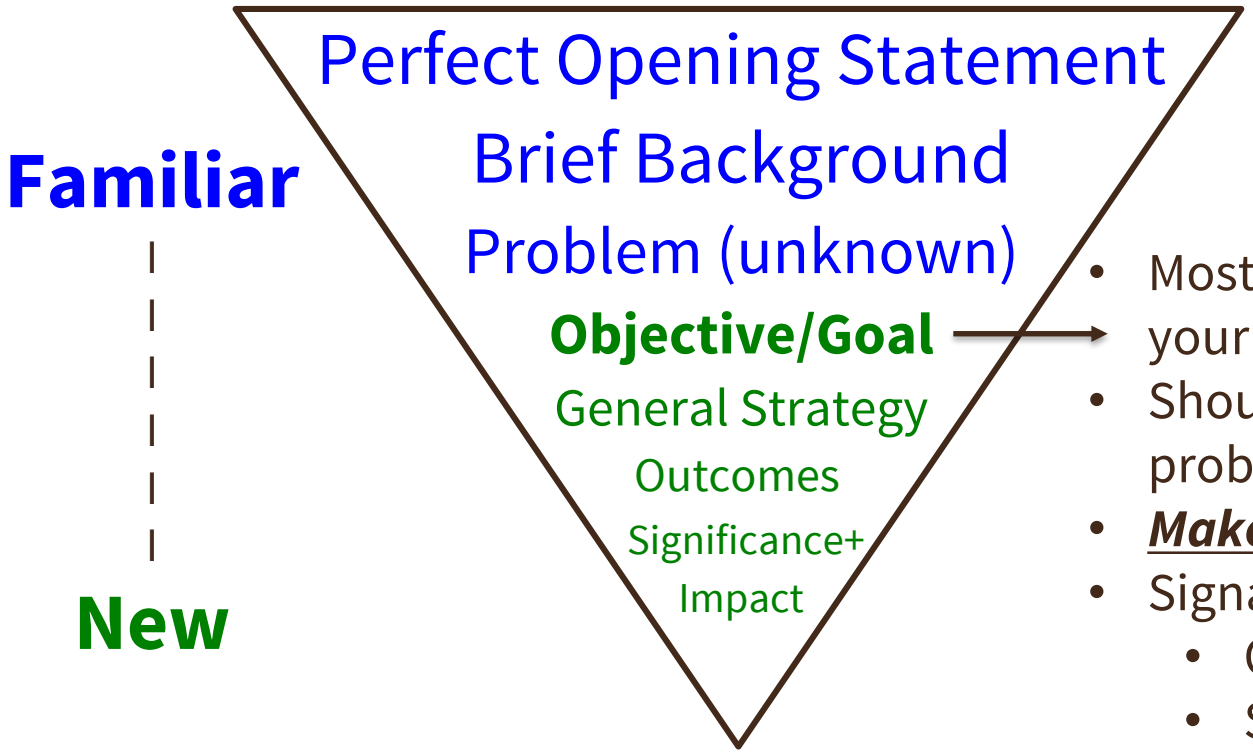
Grant Component Strategies

Abstract/Executive Summary



- Most important statement of your proposal
- Should clearly flow from the problem/unknown
- ***Make it obvious to your reader***
- Signals for the reader:
  - Our objective/goal is…
  - Specifically, we will…
  - We propose to…
  - We will examine the hypothesis that…

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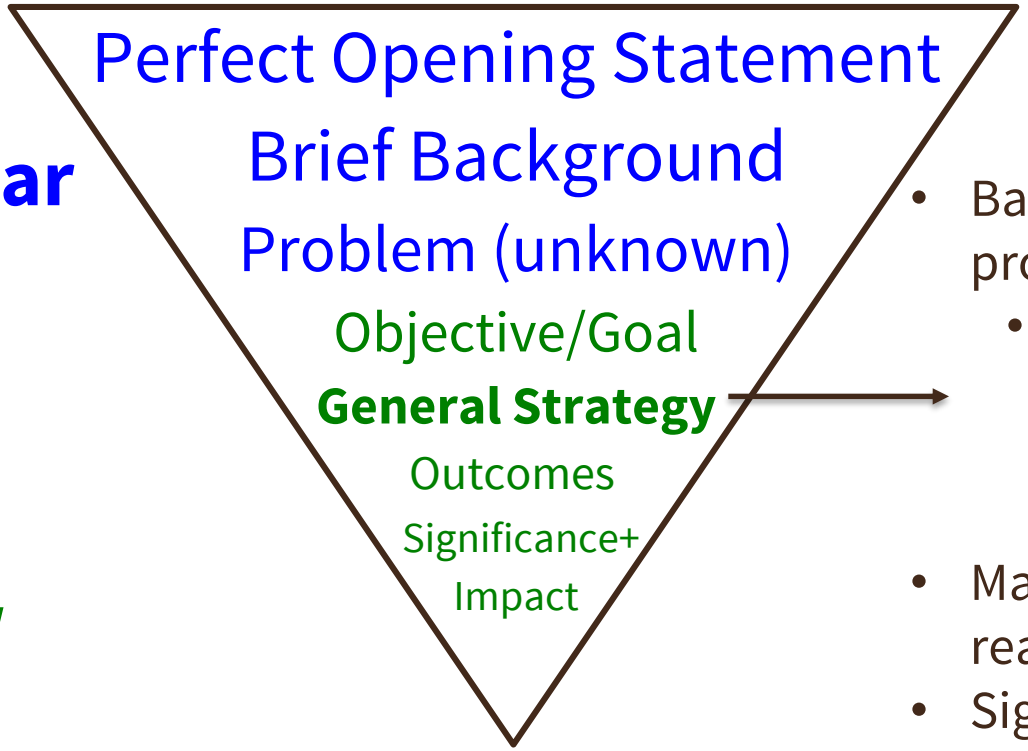
Grant Component Strategies

Abstract/Executive Summary

Familiar

New



- Balance the information provided
  - Inspire confidence that you can do the work but don't confuse the reader with too many details
- Make sure your approach is realistic
- Signals for the reader:
  - We will achieve this by…
  - Specifically, we will…
  - Our general strategy is to…

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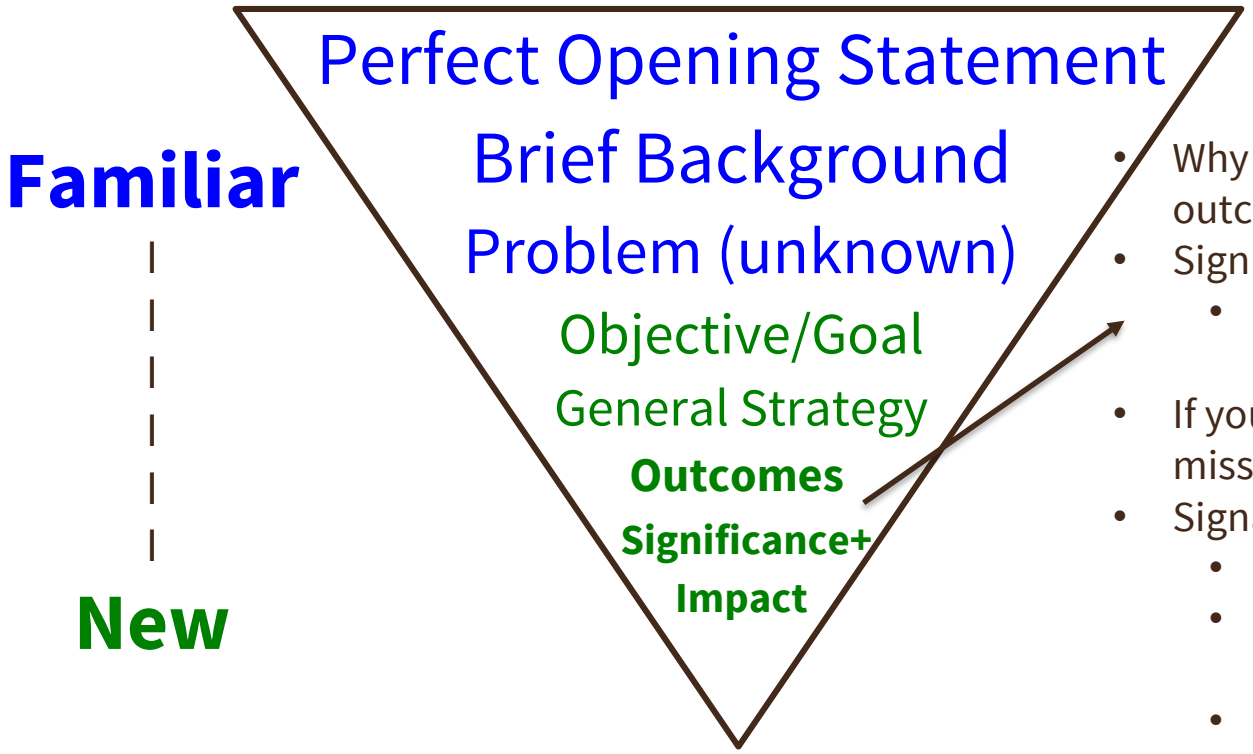
Grant Component Strategies

Abstract/Executive Summary



- Why are your proposal and outcomes important?
- Significance should be broad
  - For the community, the field, society at large
- If you can, connect to the funder's mission
- Signals for the reader:
  - …is important for…
  - These outcomes may play a role in…
  - X can be used to…ultimately resulting in…
  - …will provide insights into..
  - This study/program is important because…

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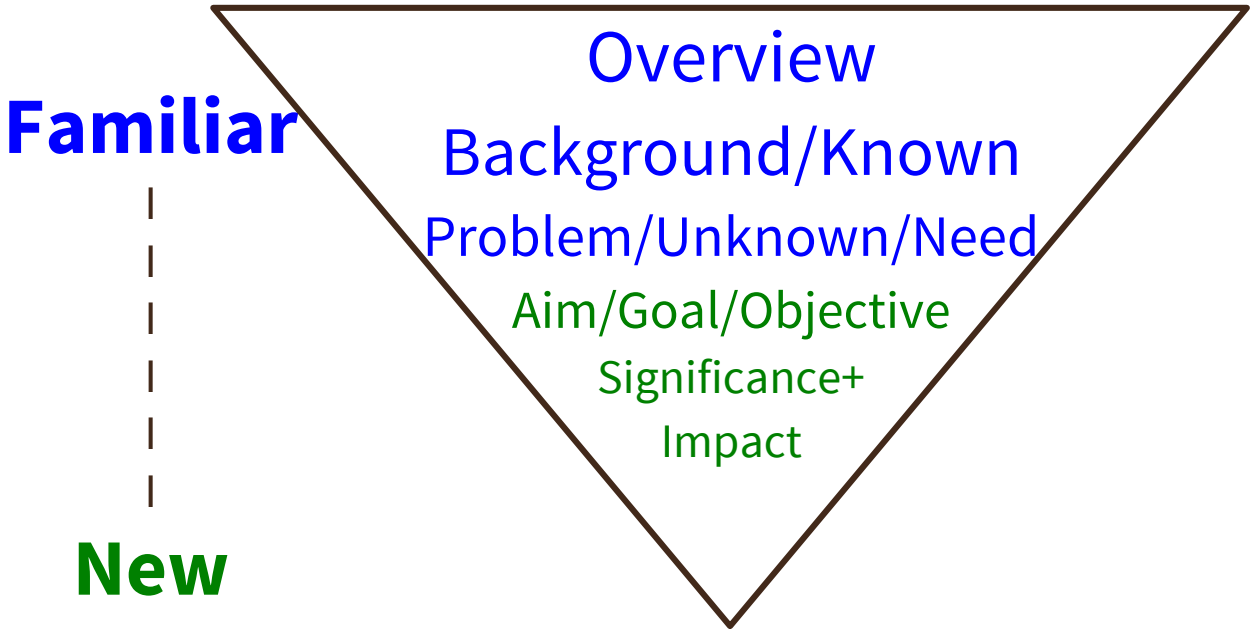
Grant Component Strategies

Background/Introduction/Statement of Need

- Establishes the focus and rationale for the whole proposal
- Makes clear to the funder that you understand the need and can solve the problem or a component of the problem
- Supported by **evidence**



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Grant Component Strategies

Background/Introduction/Statement of Need

- Appeal to the **“Lazy Reviewer”**
- Know what to emphasize
  - What is the necessary information to include to fully demonstrate the problem or need?
  - Remember that you are the expert and likely know “too much”
  - If there’s lots of information, use subsections
- Guide the reviewer from your problem to your proposed solution
  - Deep dive on the most relevant information
  - Don’t expect the reviewer to make the connections themselves
  - Don’t expect the reviewer to give you the benefit of the doubt that you made the connection

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Grant Component Strategies

Background/Introduction/Statement of Need

- Additional points to consider…
- Be **objective**
  - Present all relevant information, even those that contradict your stance
    - Highlight this "conflict" as part of the problem and how your study/project will address this
- Be **strategic** in your word/sentence order
  - Place problem/unknown statements towards the end of subsections (signal them clearly)
  - Immediately follow these statements with sentences about your aims/goals/objectives and how they will address these unknowns
- Be **logical**
  - Topic sentences and subheadings should make it easy for the reviewer to quickly get the key point

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SMART Objectives

Grant Component Strategies

Approach/Strategy/Methodology

- The "How" of your proposal, often the longest section
- Provides the roadmap that allows you to guide the reviewers to clearly understand how you will achieve your project/problem goals
- Research and program grants often require different components to describe the approach

	Research	Program	
Just one	Overall Goal	Goal	May be ≥1
Multiple/goal	Aim	Objective	May be ≥1
Related to Aim	Approach/Analysis	Activities	Related to objective
Related to Aim	Expected Results	Outcomes	Related to objective
Related to Aim	Alternative Strategies	Evaluation (may be in different section)	Related to objective(s)

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Grant Component Strategies

Approach/Strategy/Methodology

- **Research** Approach
  - Open with a brief overview that repeats your overall goal before going into the specifics of each Aim

Aim 1: Determine whether partially or non-reactive SIV epitope-specific CD8+ T cell (*mismatched*) responses undermine efficacy of full reactive (*matched*) responses in the rhesus macaque SIV model

Objective: To assess how the breadth and ratio of matched and mismatched responses may augment or compromise the efficacy of RhCMV/SIV vaccines, all RM groups will be challenged with highly pathogenic SIVmac239. *I hypothesize that immunization with full-length SIV inserts (Group 1) will afford greater efficacy against SIVmac239 challenge compared to RM immunized with truncated SIV inserts (Group 2) or variant-inclusive inserts (Group 3).*

Methods: All epitope-specific responses identified in Aim #1 will be confirmed and quantified in blood and LN prior to challenge. All RMs will be challenged intrarectally with 300 focus forming units (FFU) of SIVmac239 weekly until infection occurs (historically <10 weeks, **Figure 1**). All groups will be challenged concurrently. Plasma viral loads will be measured weekly by quantitative real-time RT-PCR as described previously (4, 5). Challenges will be discontinued with positive detection >30 copy equivalents per mL of SIV RNA. Challenged macaques will be followed for a minimum of 365 days or until the onset of AIDS.

Data Analysis: RM will be considered controllers if the plasma viral load becomes undetectable within two weeks of the initial positive plasma viral load and maintained below threshold for three additional determinations. Vaccine efficacy analyses will be performed as previously described (4, 5). Briefly, the proportion of RM within the vaccinated groups with controlled SIV infection will be compared to the control group using two-sided Fischer's exact test. Peak and mean plateau phase plasma viral loads of vaccinated RM with progressive infection will be compared to the control group by general linear models with $\log_{10}$ transformed data.

Possible results and interpretations: Based on previous challenge results using RhCMV/SIV vectors, I expect to see at least 50% protection from progressive SIV infection in Group 1 monkeys, as these vectors use identical insert sequences previously used (4, 5). If the breadth of matched responses does indeed influence efficacy, then I expect Group 1 RM to show highest levels of efficacy with lower but equivocal protection in Group 2 and 3 RM as both groups have inserts with equal amount of SIVmac239 sequences (**Figure 2**). However, if the ratio of mismatched/matched responses negatively impacts outcome, then I would expect Group 3 RhCMV vectors to provide the lowest level of protection.

Alternative approaches: It is possible that RhCMV vectors in Group 3 RM will elicit high levels of cross-reactive responses (as determined in Aim 1) and thus there would be no mismatched responses as measured by epitope recognition *ex vivo*. If this is the case, we will compare efficacy results to data generated from functional avidity and viral suppression assays in order to identify immune correlates of effective variant recognition elicited by RhCMV vectors.

Bold your Aim

State your objective or alternately, the rationale for the Aim. Include your hypothesis

Provide enough detail that the reviewer can understand your approach but eliminate unnecessary details (i.e. protocol specifics) when possible*

How will you analyze the data and why?

What do you expect to see? Why is that important?

Be strategic. Highlight pitfalls that you can address. If something comes up unexpected, convey the benefit

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Grant Component Strategies

Approach/Strategy/Methodology

- **Program** Approach
  - Goals and objectives should flow logically from your Statement of Need
  - Activities should flow logically from your objective

- **GOAL**
  - Convey the ultimate intent of the proposed project
  - Possible that goals will be broad, wide intentions, more abstract

All Jefferson County youth will be tobacco free

CDC Employees will have access to healthier foods

Grant Component Strategies

Approach/Strategy/Methodology

- **OBJECTIVES**
  - State the essence of the proposed work in terms of what will be accomplished. It breaks the goal down into specific measurable pieces so that you can then measure the outcomes to determine actual accomplishments
    - Helps set priorities and targets for progress and accountability
  - Use S.M.A.R.T. format

Grant Component Strategies

Approach/Strategy/Methodology

- **OBJECTIVES**
  - S.M.A.R.T. Verbs
    - Achieve
    - Collect
    - Compile
    - Conceptualize
    - Convene
    - Decrease
    - Deliver
    - Develop
    - Eliminate
    - Implement
    - Increase
    - Obtain
    - Produce
    - Publish
    - Recruit
    - Reduce
    - Train

Grant Component Strategies

Approach/Strategy/Methodology

- Examples

Goal:
All Jefferson County youth will be tobacco free

Objectives:

- By August 31, 2018, 100% of health studies teachers in Jefferson County middle schools will be trained in administrating approved tobacco prevention curriculum
- By May 30, 2019, 90% of students in Jefferson County middle schools will complete 12 lessons of approved tobacco prevention curriculum

Goal:
CDC Employees will have access to healthier foods

Objective:

- To modify all vending machines in CDC buildings to include 50% healthy food options by December 31, 2017

Grant Component Strategies

Approach/Strategy/Methodology

- **ACTIVITIES**
  - Exactly how are you going to accomplish your objectives?
    - Who, where, when, for how long, using what facilities/resources?
  - Provide context and rationale for why this approach is being taken
    - Evidence based?
    - Community driven?
    - Experience from your organization?

Grant Component Strategies

Approach/Strategy/Methodology

Goal:
CDC Employees will have access to healthier foods

Objective:

- To modify all vending machines in CDC buildings to include 50% healthy food options by December 31, 2017

Activity	Time frame	Measure of Accomplishment	Person Responsible
Work with vending machine owners at Company X to identify healthy food options	Q1	Meeting held	Program Coordinator
Convene 3 discussion groups of employees to identify healthy food preferences	Q2	Preferences from discussion groups identified and prioritized	Program Coordinator
Company X restocks machines with healthy food options	Q3-Q4	Vending machines stocked with healthy food options	Program Coordinator, Company X

Grant Component Strategies

Approach/Strategy/Methodology

- **ACTIVITIES/EVALUATION**
  - How do you know this is the right approach?
    - Evaluation
      - Formative evaluation: describes how the project/program will be evaluated as it progresses
      - Summative evaluation: describes how will the project be evaluated when it's finished