Writing a Proposal and Grant

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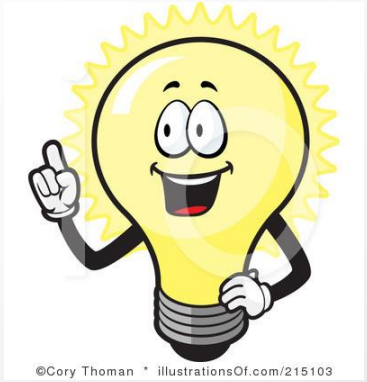
How to get started

- What type of a grant?
  - Exploratory, pilot study
  - Full grant
  - Basic science, clinical , translational?
  - Mentored or independent grant
- Do you have the expertise, track record in the field?
- Who is your team?
  - Mentor, collaborator, consultant
  - One or more institutions

How to get started

- What is the funding agency?
- Do you have the institutional environment to support the proposed studies?
- Assess feasibility
  - Size and access to patient population
  - Reagents, equipment, animals, etc.
- Do you have the type of support that you as the investigator needs?
  - Support of your mentor, division/department
  - Your future at the institutions
  - Future of the institution

How to get started
Have an idea?



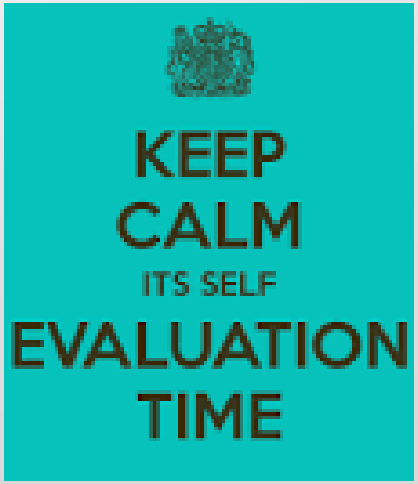
- Read
- Think
- Read more
- Think more
- Write down ideas
- Talk to a colleague about it (helps to articulate the thought)

Have an idea?

- Think about the big picture
- Next, narrow down to specific questions
- Think
- Read more
- Search the literature
  - What supports your idea?
  - What goes against it?
  - Has this been done?

Be your own critique

- Is your idea and proposal really novel? If not, is there a novel component?
- Are you asking a new question?
- How will this impact the field?
- Narrow down to specific questions
- Think
- Read more



Find an independent critique to read your outline

- More readers are the better
- Ask your mentor, colleague, other scientists to read your research summary specific aims page
  - Is it understandable?
  - Are they convinced (after reading it) that you propose something novel and worth doing?
  - Did they get the same points that you are trying to make?
  - Were you clear in explaining why, what and how?

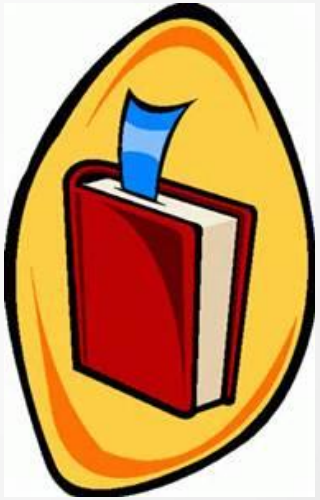
Find an independent critique to read your outline

- Don’t get hurt on the critiques!
- It is not personal
- What does not kill your proposal will only make it better

Don’t forget the time factor!

- It always takes longer than you think!
- Unexpected priorities always come up even if you have planned time for writing!

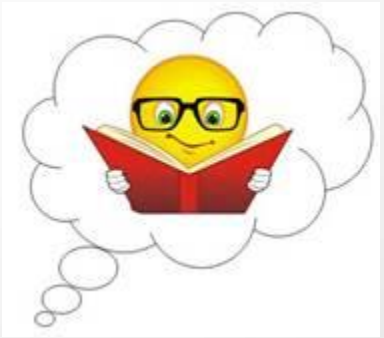
Sections of a Grant Proposal



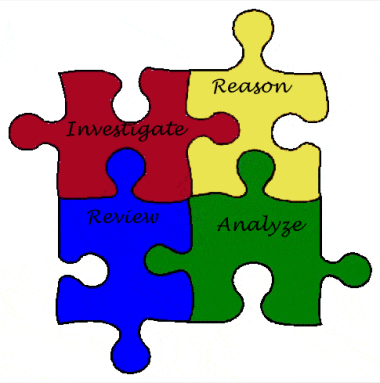
- Specific Aims
- Background Introduction
- Preliminary Results
- Proposed Experiments
- Literature Cited

Specific Aims

- This is a brief summary of the grant
- Describe:
  - What is the problem/question?
  - Why would anyone care?
  - What is your hypothesis/question?
  - How will you answer/approach your hypothesis questions?
  - What will your research reveal?
  - How does it add to the current state-of-the-art?

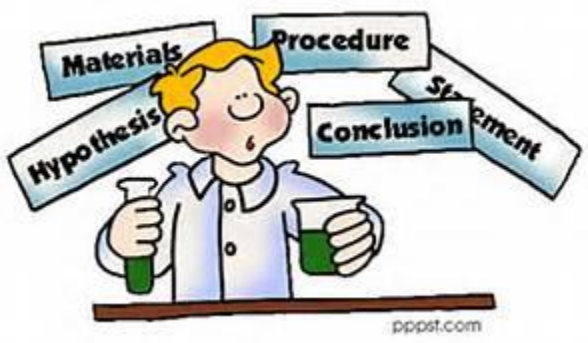


Background Introduction

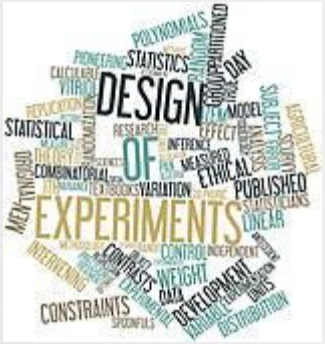


- Be short, focused
- Build your story
- Highlight what is known
- What is not known, what are the questions
- How will your proposal answer these questions
- Provide a diagram
- Describe your hypothesis

Significance



- Why is your research important
- How will your results advance science/medicine



Preliminary Results

- If you have preliminary data
  - Show feasibility
  - Show that **you** can do it
  - Show data (only) that supports your story
  - Limit unrelated data – that would just disrupt

Experimental Plan

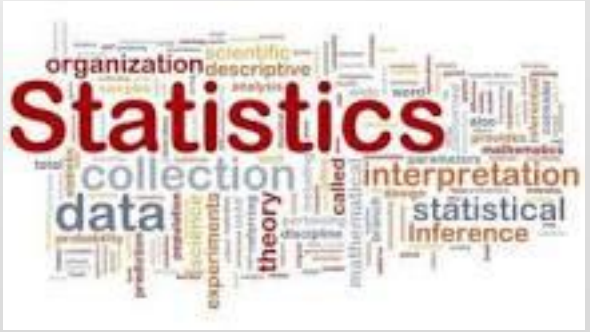
- Provide plans for specific experiments
- Discuss alternate approaches and potential pitfalls
- Describe anticipated results and show how those will or will not support your hypothesis

Experimental Plan

- Rationale
- Preliminary data
- Specific experiments
- Anticipated results
- Potential pitfalls and alternate approaches

Statistical analysis

- Always include!
- Type of analysis to be used
- Sample size calculation



Human subjects and animals

- Important element
- Room to expand experimental description

Submit application

Proof read before hitting the Submit button!

- Feels good!
- ……but it may not be over…..

Review process

- Study section or review panel of experts
- What will be critiqued
  - Significance
  - Novelty
  - Hypothesis
  - Feasibility
  - Approach
  - Investigator
  - Research environment

CONGRATULATIONS!

Review process

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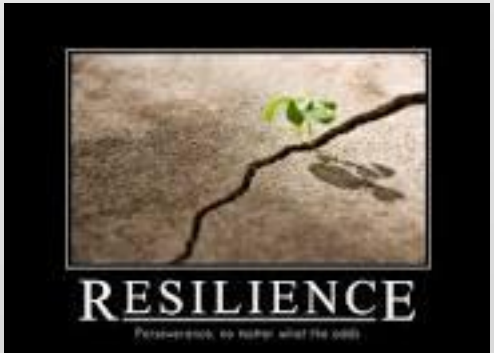
  - Approach
  - Investigator
  - Research environment

Start the revision!
Don’t stop!

- Read the review
- Let it sink in – don’t get upset
- Seek advise of an experienced colleague in interpretation of the critiques
- Go though point-by-point
- Incorporate changes to all critics in the revised application




GOOD LUCK!