



Where to begin?

- Funding sources
 - ⇒ Federal – NIH, USDA, NSF, DOD, and others
 - ⇒ State – ARP, ATP
 - ⇒ Private – commercial companies, private foundations, private gifts
 - ⇒ Grants vs. Gifts vs. Contracts all have different issues to consider e.g. IP, publishing, indirect costs, freedom to change the plan and/or manipulate the budget, etc. MOAs vs. no formal contract.



Getting Started

- What do I want to do?
- What can I do?
- What can't I do
 - ⇒ collaborators?
- Who will fund this?
 - ⇒ monitor RFAs, set up searches, sign up for e-mail alerts providing new RFAs on a weekly basis.

The Basics

- You need a novel, exciting idea
- Do your best to develop hypothesis driven experiments with appropriate controls
- Sometimes experiments may involve simple observation for discovery

Anatomy of a Grant Proposal

- Routing page (internal document, first grant I didn't do this)
- Cover letter/page
- Abstract/project summary
- CVs
- Resources and facilities
- Work plan
- Human Subjects
- Animal Subjects
 - ⇒ AUPs, IBCs
- Bibliography
- Budget and budget justification
- Appendix

Anatomy of the Work Plan

- Specific Aims
- Justification
 - ⇒ Very important-you are going to solve world hunger
- Preliminary Studies
 - ⇒ Very important-you have to demonstrate you can do the work and already have data to support your hypothesis/ideas (some grants, R21, don't require)
- Experimental Plan
 - ⇒ Materials and methods, describe experiments
 - Throughout this section reconfirm you can do the work
 - ⇒ Expected outcome
 - What do you expect to demonstrate and reemphasize why this is important
 - ⇒ Potential pitfalls
 - Be honest and don't blow smoke. Humility is important as well as solutions. Identify the problems then provide potential solutions
 - ⇒ General work effort and final comments
 - Who will do what, when, where, and provide a time line


Keys to Success

- Tell a good story that has a beginning a middle and an end! Think BEST SELLER!!
- As much as possible write so someone who has taken high school biology can understand
- When your grant gets trashed, don't get mad or frustrated
 - ⇒ Write your first response, tell them what idiots they are, print, read, then throw it in the trash and forget it.
 - ⇒ Read the reviews carefully and resubmit
 - Respond to every concern, be confident in your response but with humility and respect. Thank the reviewers for their time.



Keys to Success

- Submit and resubmit and resubmit
 - ⇒ Keep a bottle of champagne ready but buy a good one as you may have to keep it a while
 - ⇒ If you get 1 in 5 grants funded you will be a super-star
- Try to always keep 1-2 grants under review as it takes a long time for the process i.e. 6-8 months before you get your reviews back and 1 year before you ever receive any \$.
- Leverage – always try to identify and utilize this



Why do this? its just too difficult and stressful !!

- Your writing the new text books
- In fact you might solve world hunger
- You might get rich!!
 - ⇒ Academia vs. Commercial employer, potential IP and royalties
- The feeling of success and self-fulfillment is incredible
- You get to do what you want/love and be in control of your own life/destiny
- You get to drink the champagne!!

Reviewer Concerns

Do I understand, Can I review this ?
humility is important.

OK to get help, just keep
confidential.

OK to say I can't do this.

Is the idea novel ?

Does the idea excite me ?

Do I have a conflict of interest?

Reviewer Concerns (cont.)

- Is it clear what the author wants to do and easy to understand
- Are the methods up-to-date
- Does the hypothesis/reasoning make sense
- Does the PI have the ability to do this work/have preliminary data
!!!!!!!!!!!!



Reviewer Concerns (cont.)

- What is the risk vs. benefit
 - ⇒ If experiment one fails does this trash the whole grant ?
- Is the research new, innovative, will have a significant impact. (Sheep hemophilia model example)
- Does the grant fit with the program? (USDA BRAG example)



Author Concerns

- Mirror image of Reviewer concerns !!!
- Have someone who knows nothing about what you are doing read the grant/paper and see if they understand it.
- For grants, resubmission, Pay extremely close attention to the reviewer comments

Author Concerns

- Go underground if you can and find out more information i.e. talk to your Program Director to find out what was discussed. What were the comments not written in summary statement.
- HUMILITY – Even though you think it is interesting and great and important does not make in so in reviewers mind. You have to convince them, or move on.

Author Concerns (cont.)

- Take advantage of RFAs
- Independent vs. Multiple PI
 - ⇒ If you can do it/no experience/no pubs/no preliminary data, you better have someone on your grant that can.
- Take advantage of programs for new faculty.
- Don't be afraid to reach out. What is the worst that can happen? (G. Hannon, K Cornetta).