



Research Funding: Grantsponsorship from Graduate School through Early Career (or how to get a job as a scientist)

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Thinking about your research career:

- What do you need money for?
- Where will the money come from?

Btw, I'll share the slides after the talk



RESEARCH REQUIRES \$\$

Research

- Space
- Equipment/Supplies/Travel
- People
 - You
 - Grad students
 - Postdocs
 - Technicians

Startup \$

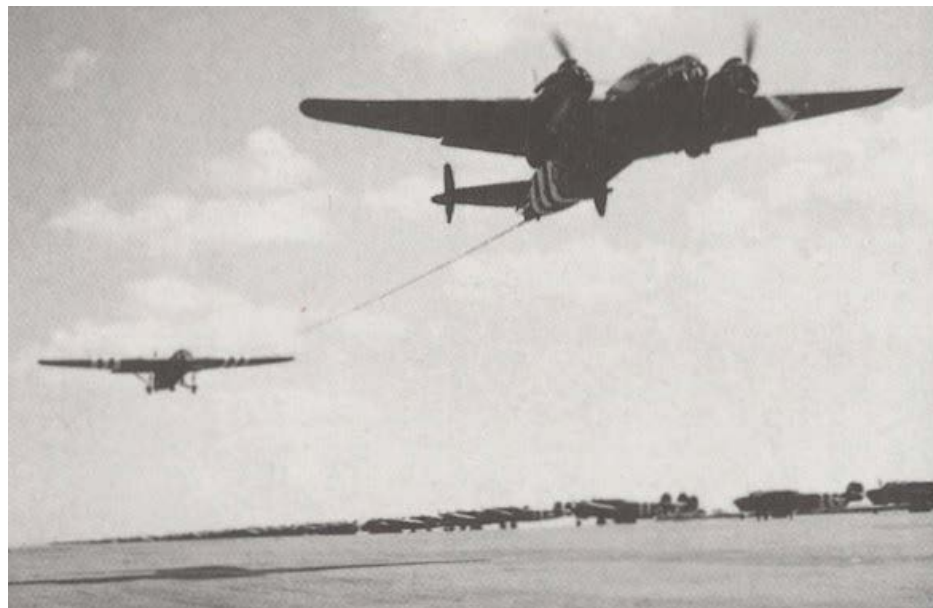
- Space
- Equipment/Supplies/Travel
- People?
 - You
 - Grad student

Grants \$\$

- Equipment/Supplies/Travel
- People
 - You
 - Grad students
 - Postdocs
 - Technicians

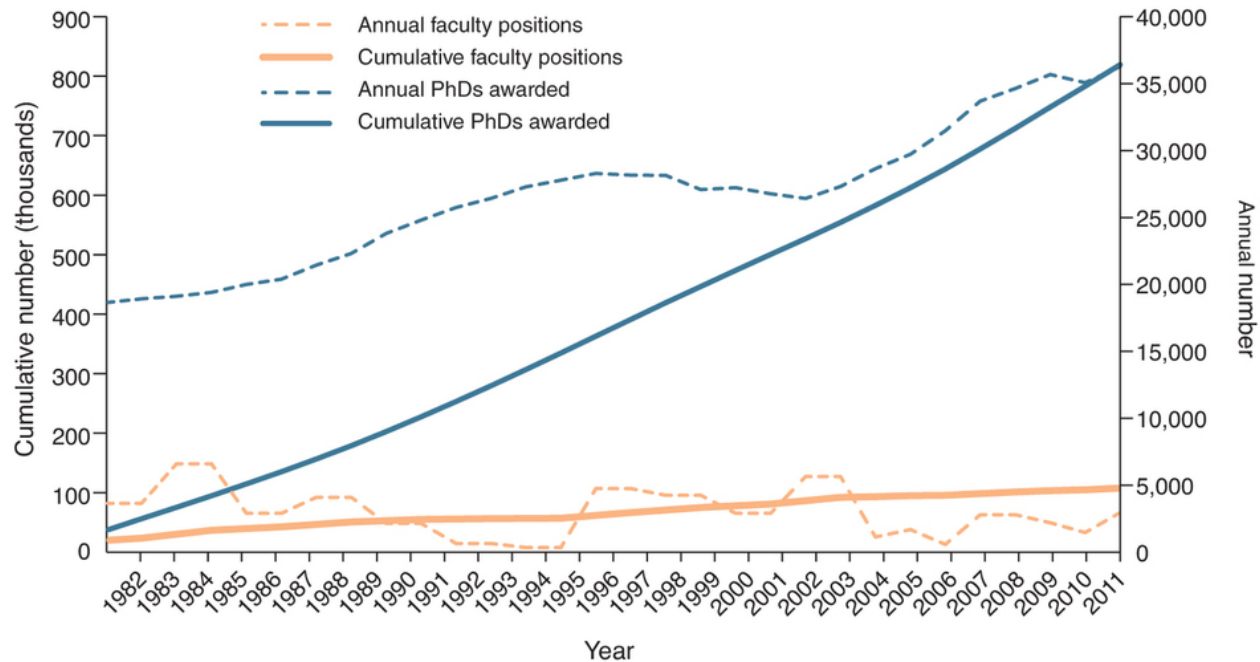


Why call it “Startup”?





Bleak slide #1 of 2



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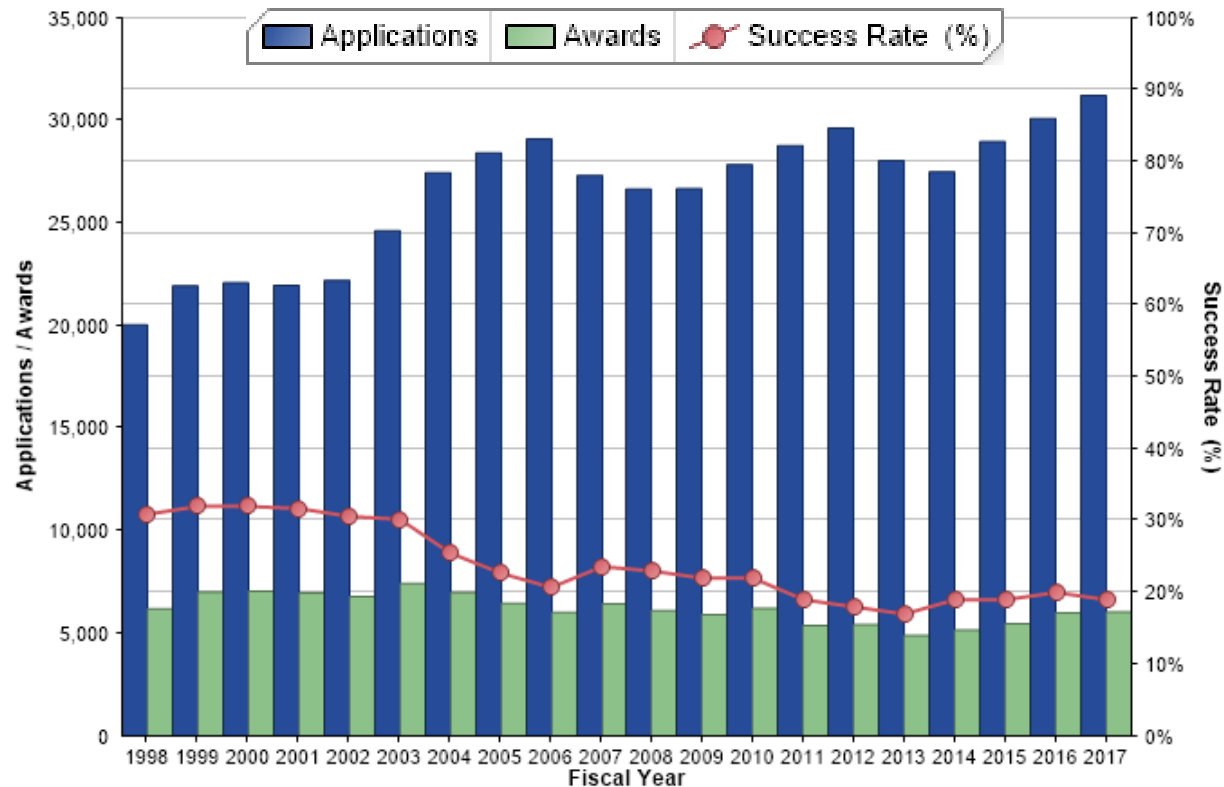
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Bleak slide #2 of 2

NIH: https://report.nih.gov/success_rates/Success_ByIC.cfm



<https://report.nih.gov/NIHDatabook/Charts/Default.aspx?showm=Y&chartId=126&catId=13>



“I’m screwed.”

Grantspersonship = Career Success

- Ability to get grants = **better** job prospects
- Ability to get grants **requires** writing winning proposals



winning proposals...

1. Plan



2. Collect preliminary data



3. Find opportunities that fit



4. Read proposals



5. Write proposals



6. Submit proposals

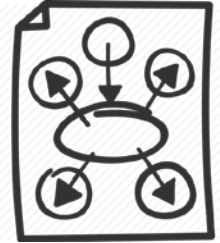


7. Write more proposals





Strategic Planning

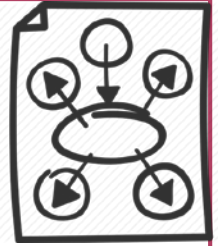


- Follow **federal/national research trends** – find connections to your own research interests
 - https://www.nsf.gov/news/special_reports/big_ideas/
 - <https://www.nih.gov/research-training/medical-research-initiatives>
- Start **small and build** on past experiences
- Remember: **funding takes time**... submission to research funding can take 6-16 months!





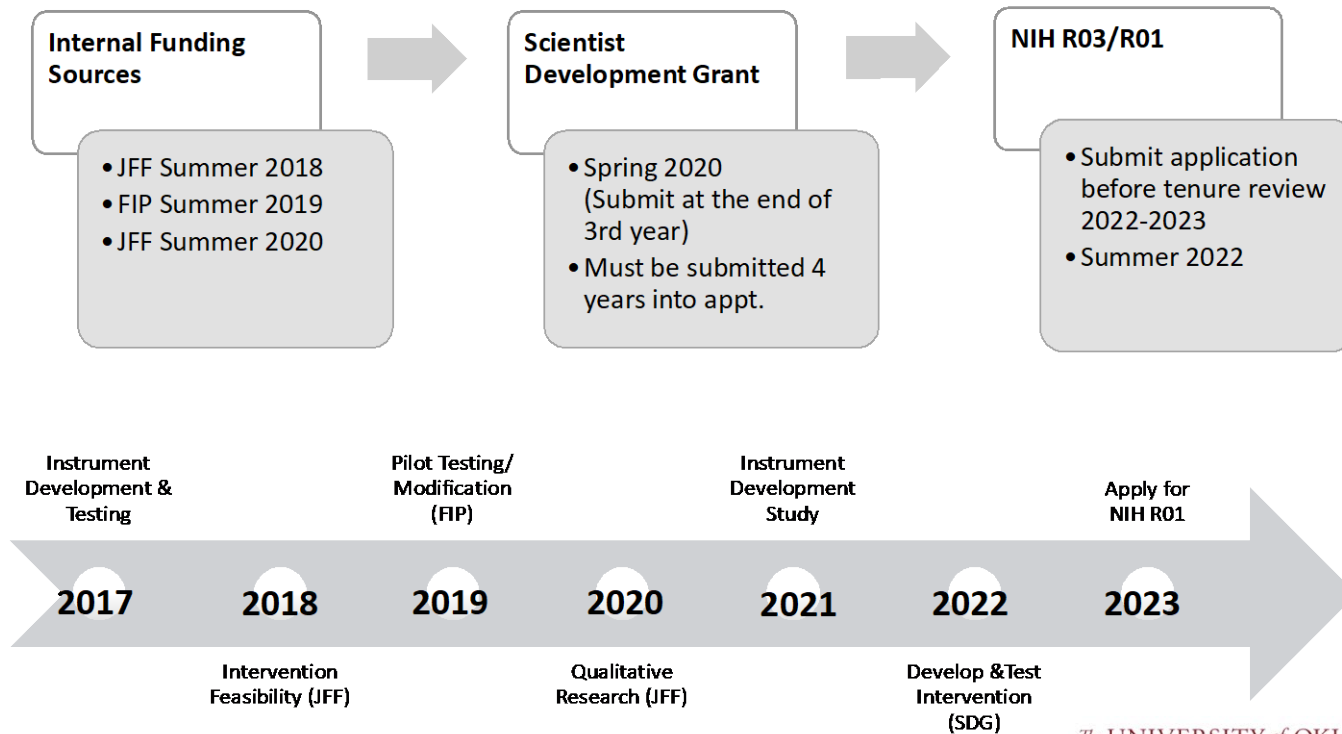
Strategic Planning: example



Include funding possibilities in your research planning and design

5-year Funding Plan

Stream of Research: Ecological influences on ...
Goal: Develop and test a multicomponent, theory-based



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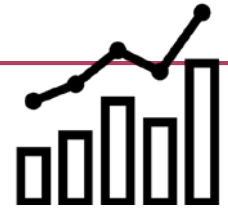
Collect Preliminary data: research data



- Pre/Postdoctoral Data
 - Provides **proof of concept**
 - Provides **evidence of your capabilities**
- Work carefully through scientific questions and hypothesis development
 - Describe the **gap in knowledge** based on lit review
- For a research proposal:
 - Focus on most **pertinent previous research** – don't just cite everything!
 - Hypothesis development is a story: **how does the scientific premise lead to your hypothesis?**



Collect Preliminary data: non-conventional “data”



- What makes you **uniquely capable** of completing your goal(s)?
 - Make it a story
- Who do you have in your **network** to seek advice/support/team membership?
 - Collaborators
 - Mentors/Sponsors



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Find Opportunities that fit: need/description



Step 1: Ask yourself: **What do I need?**

- **Why** do I need it?
- **Who** will benefit?
- **What** is already available to me?



Find Opportunities that fit: eligibility



Step 2: Who is your tribe?

- Research Area
 - Basic research: National Science Foundation (NSF)
 - Directories: http://www.nsf.gov/about/research_areas.jsp
 - Health Research: National Institutes of Health (NIH)
 - Institutes: <https://www.nih.gov/institutes-nih/list-nih-institutes-centers-offices>
 - <https://projectreporter.nih.gov/reporter.cfm>
- Other
 - Professional Societies/Organizations
 - Fellowships & Travel Grants
 - Underrepresented groups



Find opportunities that fit: searching



Step 3: Look for funding opportunities

1. Dissertation Awards
 2. Postdoctoral Fellowships
 3. Independence/Career Awards
- Federal Agencies:
 - NIH Fellowships: <https://researchtraining.nih.gov/programs/fellowships>
 - NIH Early Career: <https://researchtraining.nih.gov/career/early-career>
 - NSF Postdoc: https://www.nsf.gov/funding/education.jsp?fund_type=3
 - Other (Google search)
 - Scripps List for Postdocs: http://education.scripps.edu/postdoctoral/funding_your_research/fellowship_opportunities.html
 - <http://www.grantforward.com>



Find opportunities that fit: read carefully



Step 4: Reading the Funding Opportunity or Program Announcement

1. First, pay attention to:

- Eligibility
- Description

2. If you are a fit, then pay attention to:

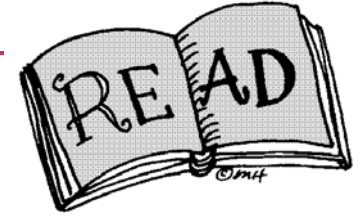
- Due Date(s)
- Review Criteria
- Program Officer / Scientific Program Contact

• Examples

- <https://researchtraining.nih.gov/programs/fellowships/F31>
- <https://researchtraining.nih.gov/programs/career-development/K99-R00>



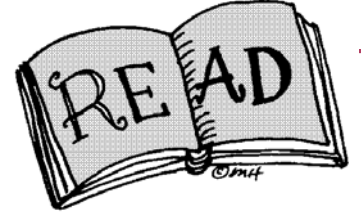
Read Proposals



- Ask/beg your advisor (preferably get awarded proposals)!
- Find similar/local awardees and ask if they'll share
 - <https://www.nsf.gov/awardsearch/simpleSearch.jsp>
 - <https://projectreporter.nih.gov/reporter.cfm>
- Google search
- Your friendly* Research Development Office



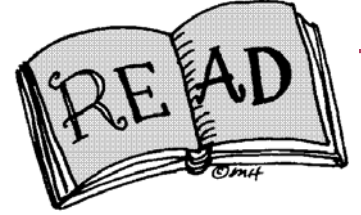
Read Proposals



What are some things that might differentiate a proposal from a research article?



Read Proposals

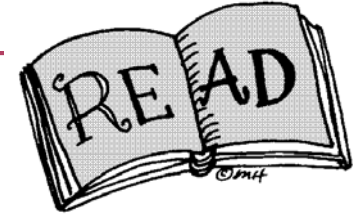


When reading proposals, look for:

- How do they **introduce** the proposal?
- How is the proposal **formatted**?
- Can you **understand** the science?
- Does the research **strategy make sense**?



Read Proposals



Contrasting Perspectives

Scholarly Writing



Grant Writing

Focuses on researcher's agenda

Explains existing work

Empirical and objective

Few length constraints

**Uses specialized terminology
or "jargon"**

Focuses on sponsor's priorities

Describes work you want to do

Persuasive and compelling

Strict length constraints

**Uses accessible language and
is written for a broad audience**



Write proposals: due dates & proposal timing



- Prepare early... ideally a **year** ahead.
- Watch for **cycles** and plan accordingly.
- Proposals require **multiple documents and signatures.**



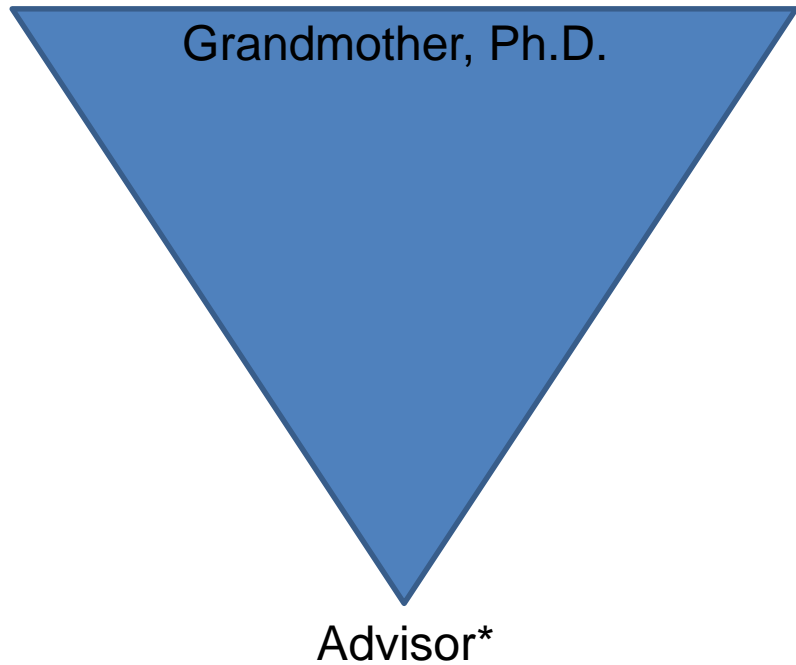
Writing proposals: remember your audience



- Agency
 - Program Officer
- **Reviewers**
 - Primary Reviewers
 - Secondary Reviewers
 - Non-scientific Reviewers...



Writing proposals: the proposal writing pyramid



Introduction



The Strategy or Details

*don't assume the primary reviewer knows the acronyms & jargon



Writing proposals: drafts & support



- Use your **peers** (you have to learn to ask for peer review)
- Use your **advisor/supervisor** (you have to learn to talk to mentors)



Write proposals: summary/specific aims page



- Check that your proposal fits what the agency is looking for

Email it to the Program Officer/Scientific Contact

- Send your summary/Specific Aims page
- Ask if the proposal is **relevant to their program** goals
- Ask if you can call them with further questions



Write proposals: writing tips



Your goal: **make your proposal one that a reviewer wants to read**. There are a lot of good proposals; you want yours to stand apart.

- Each section should have a **introductory paragraph that hooks the reviewer**. It should be interesting and compelling. Leave the details for later paragraphs.
- Each paragraph should have a **stand-alone topic sentence**. The gist of the proposal should be revealed by stripping all but the first sentence of each paragraph.
- Be **brief and clear**. Lead your reviewer through the proposal.

Writing

- Use clear, **simple declarative sentences**. Avoid commas and semicolons.
- Avoid the use of clichés and empty generalities: be objective.
- **Avoid weak qualifying words** (if, try, hope, might, could/should, may, or whether). Use “expect” instead.
- Watch for similarly spelled words with different meanings (affect vs effect).



Submission: where to?



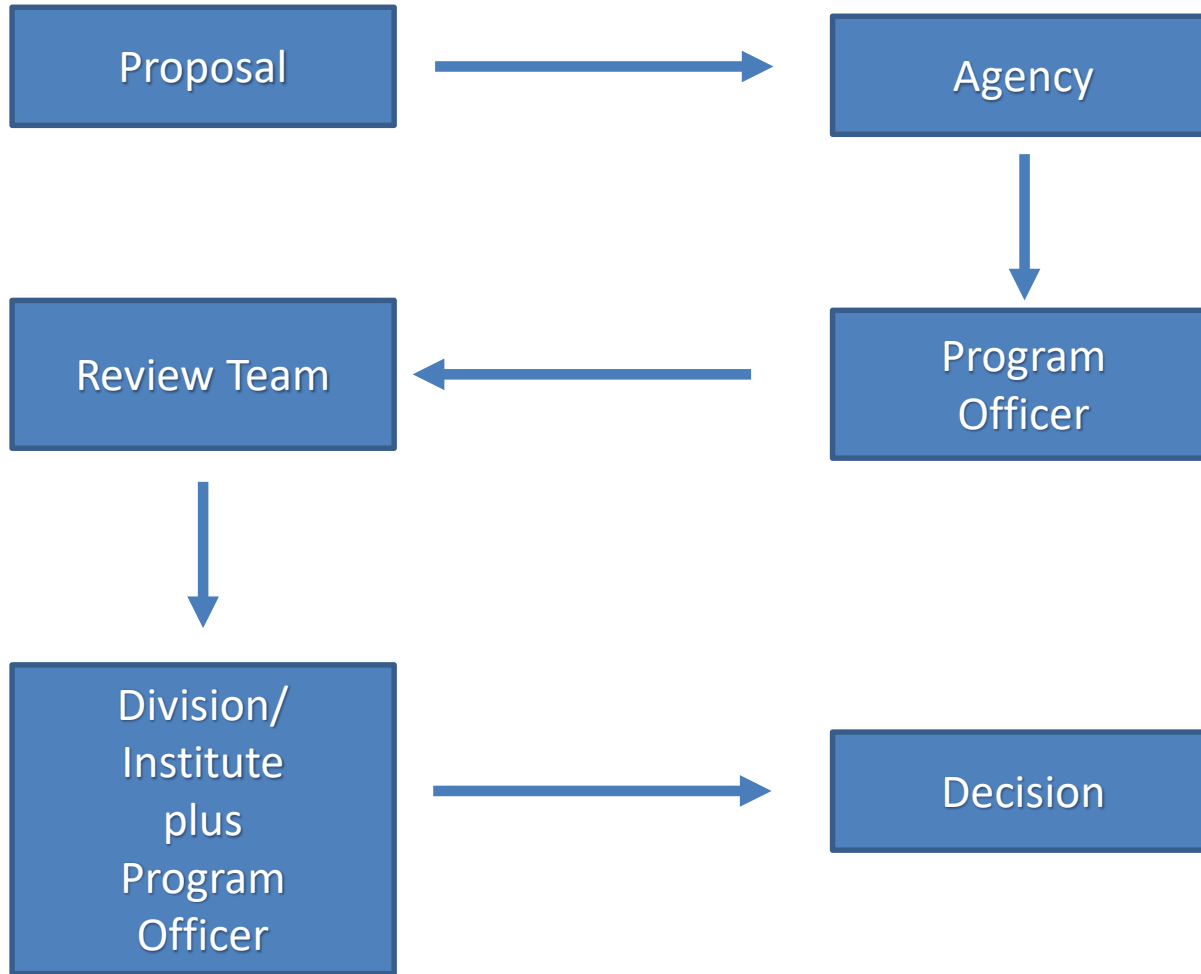
Two scenarios (usually depends on the size of the award):

1. You **submit to OU**'s Office of Research Services (ORS/ORAs) and ORS/ORAs submits for you
2. You submit **directly to the agency** (NSF GRFP, many foundations)

Look in the proposal guidelines. Regardless, check with ORS/ORAs.



Submission: review process





Extra #1: Making yourself known

- Scholar publications / Conference Presentations
- Web presence: You might be Googled!
 - Facebook.com
 - Social Networks: LinkedIn.com, Academia.edu & ResearchGate.net



Academia.edu
share research





Extra #2: ORCID.org

ORCID

Connecting Research
and Researchers



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Extra #3: Team Science

Team Science Toolkit

- <https://www.teamsciencetoolkit.cancer.gov/Public/Home.aspx>



The end...Questions?

...feel free to email me if you have further questions:

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