The Research Project: Planning, Managing and Funding

Denise Perry Simmons, Ph.D.

Asst. Vice President, UNT Research Development
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Professional Development Goals

What are they and are you preparing to be competitive?
The Research Project

PLANNING
The Birth of an Idea

What Do Dreams Know of Boundaries?

Amelia Earhart
BE PREPARED
How is THE IDEA born?

• The mentor’s research
• Ideas from the mentor’s research
• Ideas from others research that relates to mentor’s research
• Reading and discussion – a moment of brilliance
• Experiments and mistakes
The Research Project: THE IDEA

I’ve got it!
Now what?
Questions to ask of THE IDEA

- Research Environment
  - Investigators
    - Who can assist – mentors/collaborators?
    - What knowledge base is required?
    - What skill sets are required?
  - Resources and facilities
    - What instruments, equipment are required?
    - What space is available?
    - Is there assistance in finding grants and writing?
Questions to ask of THE IDEA

- Novel and/or Innovative
  
  - Review funding sites for awarded grants (e.g. [http://projectreporter.nih.gov/reporter.cfm](http://projectreporter.nih.gov/reporter.cfm))
  
  - Understand and keep current in the literature.
    - Will the findings FILL a gap?
    - Will the findings SHIFT a paradigm?
Questions to ask of THE IDEA

- Impact

- What are the issues related to the idea?
- Where are the deficiencies?
- How will your work advance the field?
Questions to ask of THE IDEA

- Competitive for Funding?
  - Review funding websites.
    - Does your research align with any of the missions?
  - Search in the literature for concepts that need answers.
  - Ask your mentor to sign-up for COS - PIVOT
Write the IDEA as a Concept Statement

- Used to discuss your idea with Program Directors
- Used to inform others of your research
- Used to develop your proposal
Concept Statement: One Page

- **PARAGRAPH ONE:**
  - THE ISSUE
  - YOUR HYPOTHESIS or QUESTION (WHICH SHOULD ADDRESS THE ISSUE)
  - CONTRIBUTION AND SIGNIFICANCE/IMPACT OF THE HYPOTHESIS IF PROVEN
  - FEW SENTENCES ON METHODS/APPROACH

- **PARAGRAPH TWO ENTITLED SPECIFIC AIMS.** (see slide 14)
  - LIST AIMS AS BELOW AND NO MORE THAN 3:
    1.
    2.
    3.

- **FIGURE:** VENN/FLOW (explains concept and outcomes; slides 17-21)

*If human subjects being used then inclusion/exclusion criteria table
Concept Statement: Specific Aims

- Generally, the Specific Aims section should begin with a brief narrative describing the long-term goals of the project and the hypothesis guiding the research. This is followed by a numbered list of the Aims.

- **State the *hypothesis clearly ( or Question).*** Make sure it is understandable, *testable* and adequately supported by citations in the Background and by data in the Preliminary Results Sections (if applicable). Be sure to explain how results to be obtained will be used to test an hypothesis.

- Show that the objectives are attainable within the stated time frame.
Concept Statement: Specific Aims

- *Be as brief and specific as possible.* Each aim should consist of only one sentence. Use brief paragraph under each aim if need detail. Successful apps: 2-4 specific aims.

- Do not bite off more than you can chew: small, focused project better received than diffuse, multifaceted project.
Aims/Tasks Language

- Manage
- Develop
- Control
- Design
- Optimize

ACTION VERBS
Concept Statement: Specific Aims

- Be certain that all aims are related but **NOT** dependent. Outside review for clarity and cohesiveness.

- Focus on aims where you have good supporting preliminary data (if applicable) and scientific expertise.
Concept Statement: Venn and Flow
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Concept Statement: Venn and Flow

Central Concept

- Concept 1
- Concept 2
- Concept 3
Concept Statement: Venn and Flow

Central Concept

Concept 1

Concept 2

Concept 3
Concept Statement: Venn and Flow

Central Concept

Concept 1

Concept 2

Expt Design

Expt Design

Concept 3
The Research Project

ACTIVITY
The Research Project

Issue
Fundable (Innovation, Intellectual Merit and Impact)
Approaches
Collaboration
Types of Agencies
The Research Project

MANAGING
BE PREPARED
Managing The Idea: Three Stages

1. Early Graduate Student: through the second year of graduate school – early concept and feasibility, the Committee

2. Doctoral Candidate: successful candidacy exam

3. Dissertation: final years of dissertation research
Managing: Stages - “To Do”

- Develop a plan with your mentor.
- Develop timeline, milestones and deliverables.
Managing The Idea: Stages - Checklist

- Exhaustive literature review (Who’s Who?)
- Hypothesis
- Experimental Design
- Pilot – feasibility
- Presentations in lab
- Concept Statement
- Committee Selection
- Candidacy

- Grant applications
- Experiments
- Conferences
- Internships
- Publications
- Society Memberships
Field Awareness Test: Concept Statement

✓ Current state of the art
✓ Top ten researchers
✓ Location and what top ten doing NOW
✓ Source of funding for top ten
✓ Key research issues discussed by top ten
✓ Type and source of grant opportunities
Five Fundamental Building Blocks

1. What is the proposal about?

2. How will the researcher do it?

3. Can the researcher do it?

4. Is the research worth doing?
Managing: Stage – The Cycle

Grant Applications

Experiments

FUNDING

Publications
The Research Project

FUNDING
BE PREPARED
Funding: Categories

- Individual research grants
- Dissertation research support programs
- Research fellowships
- Internship awards and fellowships
- Travel grants for research
Funding: Three Stages

1. **Early Graduate Student Fellowships** are those where applications would be submitted as a senior undergraduate through the second year of graduate school.

2. **Doctoral Student Fellowships** fund students who have attained doctoral candidacy.

3. **Dissertation Fellowships** are intended for students in their final years of dissertation research.
Locating Funding: Alphabet Soup
Funding Resources

- AHA
- COS
- DOE
- DOD
- NEA
- NEH
- NIH
- NIST
- NSF
- PHARMA
- PRIVATE
- UNT
BE PREPARED
TOOLS: APPLYING FOR INTERNSHIP AWARDS, FELLOWSHIPS AND TRAINING GRANTS

- Current CV
- Referees
- Current summary statement of research interests (Concept Statement/White Paper)
- Current historical summary statement of academic and research activities as well as aspirations – short term and long term
Funding Links: AHA

American Heart Association

- [www.americanheart.org/research](http://www.americanheart.org/research)
- Programs: [http://www.americanheart.org/presenter.jhtml?identifier=9713](http://www.americanheart.org/presenter.jhtml?identifier=9713)

Email Address for Program or Technical Questions:
- apply@heart.org (enter the name of your funding component in subject line)
Funding Links: Dept. Education

- Jacob K. Javits Fellowship Program
  http://www2.ed.gov/programs/jakobjavits/index.html

Doctoral and Master of Fine Arts level in arts, humanities and social sciences
Funding Links: NIH

- NIH Institutes and Centers: http://www.nih.gov/icd/
- NIH Fellowships: http://grants.nih.gov/training/extramural.htm
- NIH Administrative Fellowship: http://www.jobs.nih.gov/afp/default.htm
Funding Links: NSF

- NSF Funding: http://www.nsf.gov/


- NSF Graduate Student Research Fellowship: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6201
Funding Links: DOD

- DOD Funding: http://opd.tamu.edu/the-craft-of-writing-workbook/toolkit-for-department-of-defense-funding.html

Funding Links: Other

- National Defense Graduate Fellowship: http://ndseg.asee.org/

- UTMD Anderson: http://sciencepark.mdanderson.org/outreach/students/undergrad/
*GRANT WRITING: Two Important Tips

1. Read the Announcement.

2. Write to the Agency’s Mission.

* Not developed in this Workshop. Check the Graduate School Schedule.
BE PREPARED
BECAUSE PMO

Good Luck is where preparation meets opportunity.