

# Winning Proposal Development

PI Perspectives

COMPUTER SCIENCE@SIUE

# Best Advice

- Write your proposal from the reviewers perspective!
  - Volunteer to be an reviewer
    - Gives you an inside look at how your proposal will be evaluated once it is out of your hands
    - Interact with peers in your research community
    - Interact with program directors
  - Get your 2 page NSF bio to a director!

# Making your idea “fund-able”

- Make sure the goals of your proposal fits the goals in the program solicitation!!!!
  - Your goals must fit within the theme of the program.
  - Have a section in your proposal showing how your proposal meets the goals of the program.

# Make your idea “fund-able”

## Meeting the Criteria of the GSE Research Program

The proposal meets the first three of the four research goals stated in the program solicitation.

“to discover and describe how experiences and interactions in informal and formal educational settings inhibit or encourage interest and performance of students based on gender” (GSE Program Solicitation)

Does participation in a robotics program impact a girl’s *perception* of her expectation of success in STEM activities? A person’s perception of self-achievement in an area is a key component to understanding the choices she makes when deciding what areas to study, careers to pursue, and the strength of commitment to accomplishing her goals. Further, in applying a model of expectancy-value theory, the study seeks to understand how such perceptions change and whether those changes impact a girl’s preferences for STEM careers. By applying the expectancy-value theory this study will provide the most comprehensive view of the many factors involved in a student’s experience and how they affects self-perception.



# Proposal Development

- Don't be afraid to contact the Program Director
  - They are there to help find interesting research to fund.
  - Email, phone
  - They are busy, so be persistent but not “stalk-y”
- Preliminary proposal
  - If optional, they can still give you valuable feedback and help to get started early in refining your ideas.

# Specific Goals

- The first section of the proposal should end with the very specific goals of your project.

Our specific research questions are: What is the utility of the psychological components of the expectancy-value theoretical framework [16] for understanding the role of gender differences in STEM-related choices? In addition, does the gender make-up of the team (all girls vs. mixed sex) and the motivation for participating in the program (curricular vs. extracurricular) also impact the perceptions, expectations, and choices of the female team members? More specifically with respect to a girl's involvement in the robotics program, what impact does involvement have:

- on her perceptions of: a) her socializer's beliefs, expectations, and attitudes about STEM areas; b) gender roles; and c) STEM activity stereotypes?
- on her long term goals in STEM areas?
- on self-perceived abilities in STEM areas?
- on her expectations of success in STEM areas?
- and on her STEM-related short term and long term academic and career choices?

# Methods

- Detail is very important
  - Reviewers should have a sense that the project is well thought-out.
- Time-line
  - Not required, but very helpful to give reviewers the sense that the project is well planned.

# Experience & Capabilities of Key Personnel

- Gear this toward the specific project
  - What does each person bring to the table and do they have the ability to conduct their part of the project.
  - Give the reviewers the sense that the team has the necessary skill set to carry out the project.

# Budget

- Be sure you write in sufficient time release to do the work.
  - Reviewers will use this to color their judgment of your proposal

# Broader Impact

- Do not be gratuitous
  - The broader impact needs to fit with what is being proposed.

# Project Summary

- It is the first thing reviewers read, so write it last!
  - It sets the reviewers expectations
    - The important first impression
  - It will be the public face of your work
  - Have your peers read it to see if they understand what your project is going to accomplish.

# Multidisciplinary Teams

- Takes extra time
  - Make sure the proposal flows
    - It is a single proposal, not separate pieces of work

# Persistence

- Read the reviews
  - Write down questions about the reviews
- Call the Program Director
  - Soon after the review
- Use the feedback for improvement
  - Chances go way up on re-submissions!