How to Write a Good Research Proposal

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- Dean, College of Engineering, OSU
- Board Director - Autodesk, Motorola Solutions
- Co-Founder – Zyrobotics, Black in Robotics
- Previous
  - Chair, School of Interactive Computing, Georgia Tech
  - NASA Robotics Researcher and Deputy Manager
- Research: Human-Robot Interaction and AI
- Funding Sources: NSF, NASA, AFOSR, Industry, Foundations

Life Balance:

Proposal Writing Lesson Learned

Of course I can do all the work ... with no lab, no students, and no sleep
Katie Siek

Background
• Eckerd College (B.S. 2000)
• Indiana University (MS 2004; PhD 2006)
• CU Boulder (2006-2015, Assistant Prof)
• Indiana University (2006-2015, Associate; 2020 Full & Chair)

Research
• HCI & Pervasive Computing in Health & Wellness
• Undergraduate Research Opportunities

Funding Sources: NSF (CISE, SCH, IIS), NIH (NIBIB), RWJF

Professional Activities: CCC Council, CRA Board, SIGCHI

Life Balance: Dual Career Opp; 2 kids; Running; National Parks

Proposal Writing Lesson Learned
“If it’s a 10% accept rate, I should write 10 proposals to hit one.”
Activity: What will they remember?

Think about a proposal/research idea you are excited about

Think about what 3-5 words you want reviews to remember about your proposal

Give your elevator pitch to someone

Ask what 3-5 words they came away with
Your Prior Work

• Know who you are submitting to
  • Year 1: Systematic Review
  • Year 1: Hit the road doing research

• Innovative, not too incremental

• Show off your skills
Your Prior Work

• Know who you are submitting to
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• Innovative, not too incremental

• Show off your skills
Your Biographical Sketch & Professional Presence

• Products/Publications [show your skills]
  • I don’t have 10 products

• 5 Distinct Examples of Broader Impact
  • “transfer of knowledge”
  • “synergistic”
  • Think of your 3-5 words

• [whispers] Update your website
Research Proposal
RQs/Specific Aims: have to have them
Research Proposal
Methodology Sweet Spot: detailed, but not too detailed

- RQs/Specific Aims
- Methodology
- Product Outcomes/Deliverables
- Access to Resources
- Budgeted Resources
Research Proposal
Link your RQs to your Methods to your Products

- RQs/Specific Aims
- Methodology
- Product Outcomes/Deliverables
- Access to Resources
- Budgeted Resources
Research Proposal
Show you have access to resources and budgeted for others

Pro Tip
Need a letter from your chair?
Draft it for them
THE DOS

• Be bold in your vision (unlike a paper, where you’ve already done the work)
• Repeat, repeat, repeat
• Get it done early - get feedback
• Ask for other proposals related to the agency or proposal call (should come from you and not your chair, dean, research administration, etc.)
• Talk to the program manager (PM) - before and after [even if rejected]
• Know your audience (Reviewers / PM)
  • Figure out what the reviewer thinks about and what PM thinks about
  • For the + outside of research, connect with portfolios (REU sites, Infrastructure grants)
DON’T, DON’T, PLEASE DON’T

• Don’t ramble – use your arguments
• Don’t use a lot of jargon (when do - always define)
• Don’t pack in everything, but the kitchen sink
  • Reviewers will get tired - remember, yours might be the first one they read or the 10th one (and probably while on a plane)
Activity: Who cares? Why?

Think about a proposal/research idea you are excited about

Why should the...

... generalist (in your field)...
... deep domain expert (in your field)...
... Program Manager (portfolio fit/societal impact)...

care?

Talk out your answers with a new friend
Q&A