

*The Journal of Clinical Child and
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Future Directions Forum

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Let Me Help You Get Resources: Strategies for Writing Training Grants

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Overview

- Part I
 - Why training grants?
- Part II
 - Why does narrative structure help us write good grants?
- Part III
 - Two short videos that will change your (grant-writing) life!!
- Part IV
 - Infusing stories into your specific aims!
- Part V
 - Why did we spend all of our time on the specific aims page?!
- Q and A



I Am Just a Messenger

- Online resources go in-depth on many of the issues we will go over today
- Skills for writing
 - <http://www.northwestern.edu/climb/resources/written-communication/index.html>
- Skills for oral communication
 - <http://www.northwestern.edu/climb/resources/oral-communication-skills/index.html>
- Videos on NIH review process
 - <http://public.csr.nih.gov/aboutcsr/contactcsr/pages/contactorvisitcsrpages/nih-grant-review-process-youtube-videos.aspx>
 - <http://public.csr.nih.gov/ReviewerResources/GeneralReviewGuidelines/Pages/default.aspx>



Part I: The power of grants



Why Should You Care About Grants?

- Force you to think about key elements of your work
 - Great for setting up “five-year-plan”
 - Add new “tool” to your toolkit
 - Re-train in a new research area
 - Conduct feasibility research on an innovative treatment program
 - Where do you want your science to go?
 - What studies will get you there?
- Get feedback about your work
- Do you want to start a “research family”?



When to Write a Training Grant

- Idea for a study that bridges 2+ labs?
- Innovative idea that cannot be done in current lab?
- Training grant is a great way to find resources to turn ideas into action!
- Also great practice for later in your career (i.e., worth doing even if grant does not get funded)



After You Submit Your Training Grant Application

- Write a review/conceptual paper based on material from your training grant!
- If your training grant focused on innovative stuff, chances are a journal wants to publish a paper about your stuff!
- Most of this material will be in the “overview/intellectual merit” or “background and significance/innovation” sections of your grant





Part II: Narrative tools help you get grants?!



Narrative Tools Show You Belong In the “Funded Club”

- Successful grant writing is not “trial and error,” a set of trainable skills meant to accomplish five goals:
 1. Demonstrate the research you are proposing is important, feasible, a logical next step, and hopefully innovative/novel
 2. Show your understanding of the field, both the broad topic and the precise niche you are in – including best techniques
 3. Show that you are actually working in the field
 4. Demonstrate your prior research accomplishments are excellent and appropriate for your career stage
 5. Write in a way that is crystal clear with every word serving a purpose – and for multiple types of reviewers



Comics Know Their Audience!

- What a Comic Does
 - Develop an “act” with coherent structure
 - Test “bits” of the act with crowds
 - Refine bits as per crowd reaction
 - Repeat until act is ready for “prime time”



You Should Know Your Audience!

- What You Do for your Reviewers
 - Give reviewers what they are used to seeing
 - Lead reviewers to what they expect to see
 - Write grants how reviewers write grants
 - Write, get feedback, and revise until “ready”
 - Main goal: Turn reviewer into advocate





Your Audience Consists of Reviewers With Different “Tastes”

- Expert: Knows way more about topic than you do
- Non-Expert: Very sharp, knows general area, but not your specific area
- Skilled Scientist: Out-of-area
- Technical Expert: Knows quantitative methods/design
- Non-Scientist: May play key role in funding decisions



Your Audience Loves a Good Story

- Guide/control their thinking
- Consciously consider reviewers and what they are thinking
- Write to please each kind of reviewer and their “tastes”
- Writing standards crucial
 - Paragraph: Meaningful topic sentences
 - Sentences: Logically connected
 - Terms: Use one per concept
 - End of paragraph: “Hint” for next paragraph





First Things First: Specific Aims

- We will go over components of the narrative of the specific aims page, essentially a coherent outline of your proposal
- After narrative setup
 - Specific Aims: Bulleted list of usually 2-3 objectives, with a sentence or two of detail for each.
- Impact statement: Final “wrap-up” that gets into importance of grant and look to the future post-grant
- This page makes or breaks a grant application!!



Focus on Structure of NIH Specific Aims Page

- Other agencies differ in structure/format of this “opening page” of the grant application
- Regardless of funding source, the goal to tell a logical, compelling, accurate story is still the same
- At the end of the day you have to convince the reviewer that the aims of your proposal are more important to address than the proposal aims of 90% of the grant applications that they are reading



Part III: Didn't you say something about videos?



Best 25 Minutes On YouTube!

- Deconstruction of introductory sections of aims page
 - https://www.youtube.com/watch?v=5XFbo_2ldYE
- Specific aims and conclusion or “future directions” section
 - <https://www.youtube.com/watch?v=aum4Nurz4uM>



Part IV:

Are you pumped?!

Then let's talk specific aims!

Your challenge is to identify these components for your research, arrange them logically; this template can help

General context & significance	What is "big picture" for research? Why is it important?
Narrowing context	What is known and accepted in your research area?
Your research contribution	Has your previous work contributed? How?
Complication	What is the problem, roadblock, the unknown?
Long-term goal	What final "big result" will research will help achieve?
Specific goal of this research	What is "specific narrow goal" of this research?
Summary of research—path to hypothesis	How does previous research lead to hypothesis?
Hypothesis	What do you believe to be the answer to the complication?
Qualifications stressed	What makes you the right person to undertake this research?

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And

But

Therefore



A Specific Aims Example: Part I

Anxiety disorders among emerging adults present a dangerous and costly national problem. Among emerging adults, anxiety disorders often result in chronic, avoidance behavior and poor physical health outcomes. Those experiencing social anxiety comprise a particularly at-risk group, because they are typically characterized as risk-avoidant of social relationships. In fact, recent work from our research team and others reveals a subtype of social anxiety that expresses *pervasive* avoidance of social relationships, typified by avoidance across multiple social contexts. Those displaying *pervasive* social avoidance may be a key at-risk group. However, two important questions remain: (1) *Can we objectively distinguish pervasive social avoidance from context-specific avoidance?* and (2) *What are the long-term health outcomes of pervasive social avoidance?* Accurately distinguishing these subtypes can lead to targeted treatments. This is important because current evidence-based treatments specifically target reductions in avoidance of specific contexts.

Our long-term goal is to develop personalized treatments for social avoidance that focus on preventing such avoidance in key at-risk groups. In this application, we will test a biobehavioral approach that we expect will objectively distinguish avoidance subtypes. Our central hypothesis is that those who display social avoidance do so to avoid distress in social contexts (e.g., speaking with others at work or parties). This strategy allows those engaging in avoidance strategies to temporarily reduce their distress and enter social contexts. Yet, this comes at the expense of developing a maladaptive regulation strategy and for some this strategy allows for a particularly impairing and insular approach towards social life. We base this hypothesis on our pilot work, and also Mowrer's (1947) two-stage model of fear, which holds that (1) fear acquisition arises through classical conditioning and (2) fear maintenance arises from operant conditioning, consisting of avoidance of feared stimuli and the hindrance of extinction. From this standpoint, those displaying context-specific avoidance may engage in some situations and avoid others (e.g., missing school to avoid an oral presentation but also go to lunch with a friend), whereas those displaying pervasive social avoidance may display avoidance strategies across a host of situations.



A Specific Aims Example: Part II

Qualifications Stressed

To meet our main goal of objectively distinguishing avoidance subtypes, we put together an ideal team that spans use of behavioral, physiological, and immunological modalities. We also have extensive expertise with research involving undergraduates—a key group of emerging adults prone to avoidance and thus our target population. Based on self-report measures of social anxiety and avoidance, our pilot work leveraged sophisticated person-centered analytic models to classify undergraduates into our avoidance subtypes. We will use these analytic models to recruit participants for a laboratory visit consisting of direct measures of resting physiological flexibility (heart rate variability [HRV]) and a social stressor task. Both before and after the social stressor task, participants will complete a battery of social interaction tasks designed to mimic “real life” social contexts that socially anxious individuals typically avoid. Along with this laboratory visit, we will administer longitudinal assessments of the avoidance and inflammatory outcomes associated with avoidance subtypes. We chose these modalities because we expect pervasive social avoidance to co-occur with trait-like propensities for poor flexibility in regulating physiology in response to social situations—a process captured in resting HRV. Among those displaying pervasive social avoidance, the combination of relatively high avoidance in response to social stress and low resting physiological flexibility may signal poor long-term outcomes, including chronic avoidance of social situations and ultimately negative health outcomes, such as greater chronic inflammation.



A Specific Aims Example: Part III

Primary Aims

Aim 1. Determine to what extent avoidance subtypes differ in avoidance following induction of social stress. Relative to individuals displaying context-specific social avoidance, individuals displaying pervasive social avoidance will evidence greater avoidance strategies following social stress.

Aim 2. Investigate the extent to which avoidance subtypes differ in physiological processes. Relative to individuals displaying context-specific social avoidance, individuals displaying pervasive social avoidance will display lower resting physiological flexibility.

Aim 3. Examine to what extent avoidance subtypes differ in long-term avoidance and inflammatory outcomes. Relative to context-specific social avoidance, pervasive social avoidance will pose risk for an elevated and chronic course of avoidance, as well as a course of greater chronic inflammation.

Future Directions

The pervasive social avoidance subtype might help to explain why untreated social anxiety during adolescence poses unique risk for poor outcomes in adulthood. We expect our efforts to distinguish avoidance subtypes to result in targeted methods for treating pervasive social avoidance and prevent long-term impairments.



Reading Some More Specific Aims Pages



Part V:
**So....grants are big,
why did we spend an hour
talking about one page?!**



Stretch Your Specific Aims Page!

- Always write your specific aims page FIRST!
- Pragmatics: Need it before you speak with funding agency staff
- More important: If written coherently, your grant should be an expanded version of your aims page
- If aims page tells a good story, so will your grant!





An Important Final Thought



Never Forget Your Role in Science

- Scientists = Research consistent with our interests
- Funding = Research that meets the priorities of an entity (e.g., NIH, NSF, IES, private foundations) and benefits the collective good
- Funding priorities change, even when our own interests might not
- We should try to contribute to the collective good
 - But, sometimes our interests counter scientific trends
 - Sometimes our interests comprise “minority views” that are “on to something” that the rest of science has yet to understand or grasp
 - Therefore, we should always seek to strike a balance between the collective good and our own interests



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