

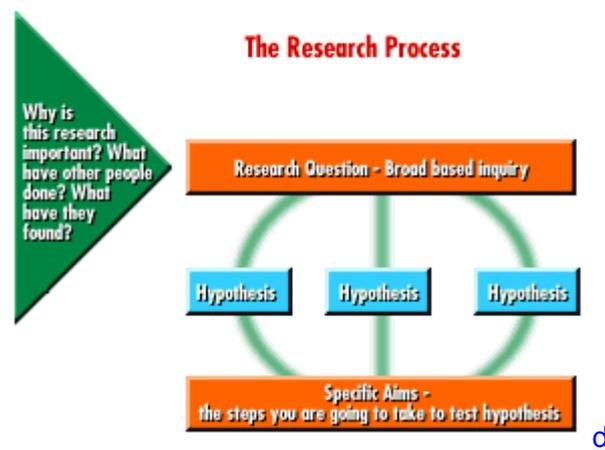
The Relationship Between the Research Question, Hypotheses, Specific Aims, and Long-Term Goals of the Project

Before you begin writing a grant proposal, take some time to map out your research strategy. A good first step is to formulate a research question.

A *Research Question* is a statement that identifies the phenomenon to be studied. For example, “What resources are helpful to new and minority drug abuse researchers?”

To develop a **strong research question** from your ideas, you should ask yourself these things:

- Do I know the field and its literature well?
- What are the important research questions in my field?
- What areas need further exploration?
- Could my study fill a gap? Lead to greater understanding?
- Has a great deal of research already been conducted in this topic area?
- Has this study been done before? If so, is there room for improvement?
- Is the timing right for this question to be answered? Is it a hot topic, or is it becoming obsolete?
- Would funding sources be interested?
- If you are proposing a service program, is the target community interested?
- Most importantly, will my study have a significant impact on the field?



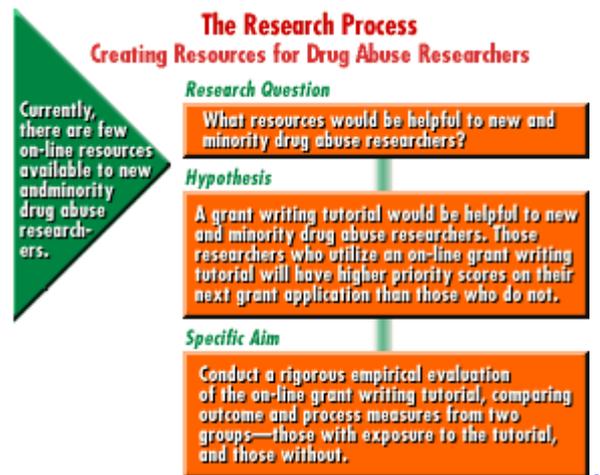
A *strong research idea* should pass the “so what” test. Think about the potential impact of the research you are proposing. **What is the benefit of answering your research question?** Who will it help (and how)? If you cannot make a definitive statement about the purpose of your research, it is unlikely to be funded.

A research focus should be narrow, not broad-based. For example, “What can be done to prevent substance abuse?” is too large a question to answer. It would be better to begin with a more focused question such as “What is the relationship between specific early childhood experiences and subsequent substance-abusing behaviors?”

Write your research question here...



Submit



A **well-thought-out and focused research question** leads directly into your hypotheses. What **predictions** would you make about the phenomenon you are examining? This will be the foundation of your application.

Hypotheses are more specific predictions about the nature and direction of the relationship between two variables. For example, “Those researchers who utilize an online grant writing tutorial will have higher priority scores on their next grant application than those who do not.”

Strong hypotheses:

- Give insight into a research question;
- Are testable and measurable by the proposed experiments;
- Spring logically from the experience of the staff;

Normally, no more than three primary hypotheses should be proposed for a research study. A proposal that is hypothesis-driven is more likely to be funded than a “fishing expedition” or a primarily descriptive study.

Make sure you:

- Provide a **rationale for your hypotheses**—where did they come from, and why are they strong?
- Provide alternative possibilities for the hypotheses that could be tested—why did you choose the ones you did over others?

If you have good hypotheses, they will lead into your **Specific Aims**. *Specific aims are the steps you are going to take to test your hypotheses* and what you want to accomplish in the course of the grant period. Make sure:

- Your **objectives** are measurable and highly focused;
- Each hypothesis is matched with a specific aim.
- The aims are feasible, given the **time and money** you are requesting in the grant.

An example of a specific aim would be “Conduct a rigorous empirical evaluation of the online grant writing tutorial, comparing outcome and process measures from two groups—those with exposure to the tutorial and those without.”



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Long-Term Goals:

- Why are you doing this research?
- What are the long-term implications?
- What will happen after the grant?
- What other avenues are open to explore?
- What is the ultimate application or use of the research?

These questions all relate to the long-term goal of your research, which should be an important undercurrent of the proposal. Again, they should be a logical extension of the research question, hypotheses, and specific aims.

It is also helpful to have a long-term plan for your own career development. Where would you like to see your career go in the next 5 years? How does the research you are proposing relate to that plan?

Now Write It Up...

Once you've thought through the key elements of your research questions, hypotheses, specific aims, and research design, you have the ingredients for a concept paper. This is an important tool to help you to organize your thoughts, as well as to promote, disseminate, or get feedback on your ideas. A concept paper is a succinct description of your research plan (3 to 5 pages) and can be particularly useful when trying to recruit collaborators or solicit letters of support. It is also useful to send a copy of the concept paper to a NIDA Program Official in the branch or office that covers your topic area.