**NIH Specific Aims**

*The Specific Aims document is required for all NIH applications unless otherwise specified in the program solicitation. It is limited to 1 page. Consider this document a focused snapshot of the project you will further describe in the Research Strategy. This document may be the first item read by reviewers, and it is considered the most important document by some. The required content for this document is as follows:*

*State concisely the goals of the proposed research and summarize the expected outcome(s), including the impact that the results of the proposed research will have on the research field(s) involved. List succinctly the specific objectives of the research proposed (e.g., to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice, address a critical barrier to progress in the field, or develop new technology).*

*While there is no standard template for this document, the directions above provide a general organizational structure:*

1. *The long-term goals of your research and the anticipated outcomes*
2. *List of Specific Aims (i.e., objectives) you will carry out during the project*
3. *The impact research results will have on the research field(s) involved*

*As you are developing this document, here are some writing tips for you to consider and some example language to review[[1]](#footnote-1):*

* **Background Information/Overview:** What is the state of the field at this time for your research?
  + A brief statement about where the research stands and the problem that still needs to be addressed can help set up your goal in an obvious way to the reader. This can also help point to the significance of your research and application.
  + Have you generated preliminary results? One sentence summarizing this information can appropriately establish your expertise in the proposed area of research.
* **Significance:** Why is the research important to science, society, and health care? What is the problem that needs to be addressed? (I.e., Why should the reviewers care about your research, and why should NIH fund it?)
* **Goal(s):** What is the overarching goal of your research?
  + Goals are typically broad, big picture statements about your research. A goal statement tends to be future-focused and intangible. For example, *“Our goal is to understand signal transduction in breast cancer.”*
* **Hypothesis:** What is the question that your research will test?
  + *“Think of your hypothesis as the glue that holds your application together. The*

*results of your experiments and research will ultimately determine whether your*

*hypothesis is good science”*

* **Specific Aims (i.e., Objectives):** What are the measurable actions you will take to test your hypothesis?
  + While a goal is a broad overview of what you want to achieve, the objectives should be clear, concise statements of *what you will do* to achieve your goal.
  + Objectives should be SMART (specific, measurable, attainable, relevant, and time-bound). For NIH R15 applications, 2-3 Specific Aims are a good target.
    - For example, *“1. Determine solution structures for all M. tuberculosis thioredoxins. Determine 4 NMR structures: TrxA and TrxB in both redox states (thiol/disulfide), and compare to our TrxC structures. Establish how structure changes upon disulfide reduction, how structure may tune thiol/disulfide redox potential, and characterize changes that occur during interactions with thioredoxin reductase (TrxR)”*
  + **Note:** Be cautious of Specific Aims that rely on each other to be successful. It is suggested that *“if the aim[s] follow each other so that Aim 2 follows Aim 1 and Aim 3 follows Aim 2, you must tell the reviewers what you intend to do if you get an unexpected result with Aim 1. Convince them that there is a future to your proposal.”*
    - A better option, if it works with your research, is to provide Specific Aims that are interconnected, but not interdependent.
    - For example:
      * *“Specific Aim 1: Test the hypothesis that plasma microparticles detected in pregnant women will reveal physiologic events during gestation and preeclampsia.*
      * *Specific Aim 2: Test the hypothesis that proteomics performed on microparticles over gestation and on subsets of microparticles from normal and preeclamptic women will reveal key differences in protein expression patterns associated with preeclampsia.”*
  + **Note:** Individual NIH Institutes, Centers (ICs), offices, or study sections may have additional suggestions for crafting the Specific Aims document.
* **Approach:** How will you achieve your Specific Aims? Briefly mentioning the methods to be used, especially if novel, will help prepare the reader for the Research Strategy.
* **Overall Impact:** How will your project, if successful, change or improve scientific knowledge (intellectual merit) in your field or impact society (broader impact)? Tie this to a specific disease or health issue.
  + To help frame your research for the reader, it may be helpful to review the goals, objectives, mission, and/or research priorities of the NIH IC/study section you are submitting your grant to as a starting point.
  + For R15s, undergraduate/graduate research experiences count as a broader impact (hands-on experiences, helping them develop skills that will make them competitive for graduate school and/or the STEM workforce, etc.). While your research is the focus of this grant, addressing this in the Specific Aims will prepare the reviewer to read and understand how you will engage undergraduates/graduates in research at a PUI.

1. Norins, L., & Matheson, S. (2014). NIH R15 Grant Application Mentor: An Educational How-to Manual, (2nd edition). Bonita Springs, FL: Principal Investigators Association [↑](#footnote-ref-1)