**Today's Session**

- Brief Overview
- First Impressions
- Structuring the Content
- Examples/Templates
- Formatting
- Cover Letter
- Ideas for Writing

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**Specific Aims Instructions from the NIH**

From the NIH “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 exert on the 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.

Specific Aims are limited to one page.”


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**Example (Web)**

**SPECIFIC AIMS**

Very Basic Layout... Provide introduction describing unmet need and significance. Start broad then narrow down. This is important. Begin with problem statement. Grab interest. Rationale.

**Goals. Central hypothesis: Objective. How you will test this.** "We plan to achieve our objective through the following three Specific Aims...

- **Specific Aim 1:** To Identify...
  - The working hypothesis...
  - We will employ X methods to test Y

- **Specific Aim 2:** To Identify...
  - The working hypothesis...
  - We will employ X methods to test Y

- **Specific Aim 3:** To Identify...
  - The working hypothesis...
  - We will employ X methods to test Y

Following the successful completion of our proposed studies... This will positively impact the field by...

Furthermore, these results have the strong potential to...

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**First Impressions**
First Impressions

- Remember, your application is the *only* interface between you and the reviewers.
- Specific Aims page may be read by unassigned reviewer/non-expert *per se*.
- Typically, all a reviewer knows about you is in the application.
- Edit (Write and Re-Write): Unfortunately, misspellings, grammatical errors, and incorrect references all reflect poorly.

First Impressions - Significance

Point out *significance* of study as related to the mission of the funding agency.

1. Provide a one sentence summary that can connect your given disease or illness to the area of interest as related to translational research.
   - How will this help those who are afflicted?
   - Does it relate to the clinical field?
   - Can and/or will the findings eventually translate to improve health?

First Impressions - Gaps in Knowledge

**FIRST**—Identify *gap(s) in knowledge*.

**THEN**, define both your short and long-term *goals* to overcome gap/create solution

1. Think about your long-term program as a researcher in this field or other areas of interest/how you will evolve your findings.
2. Consider your long-term plan and future studies.

First Impressions - Rationale

Communicate you proposed study’s *rationale*.

1. Explains why do you want to examine this phenomena in this manner.
2. Provides “strategic context.”
3. Defends a specific approach.
4. Considers alternatives to describe the logic for the experimental design.

First Impressions - Feasibility

Briefly discuss *feasibility* (mention preliminary findings but do not overwhelm).

1. Introduce *key* preliminary data
2. These data are to be black and white (not grey).
   - Data are introduced here to confirm/defend the hypothesis.
Structuring the Content

1st Paragraph/Introduction

- Brief introduction to identify the need.
- Begin with the problem statement to introduce the importance of your research question (known and unknown).
- Grab interest in the first sentence.
- Provide significance to the field.
- Discuss the gap in knowledge.
- Discuss the rationale (WHY).

[Link to QB3 Specific Aims guidelines]

2nd Paragraph/Goals, Hypothesis and Objectives

Goals – long-term goal (broad) short-term.

- Goals are “high-level” and strategic.
- Write goals so that they are specific, measurable, and realistic.
- Ex. “Our goal is to understand signal transduction in breast cancer.”
- Long-term goal = career goal

Objectives are how you will test your central hypothesis.

For example, if your central hypothesis is that a certain receptor is key in mediating certain effects on tumor cell proliferation, your objective might be to determine the mechanism by which it occurs.

Specific Aims test the working hypothesis (can also have alternative hypothesis).

- Tasks that you will perform.
- Declarative statements.
- Numbered and one sentence each.
- Related but not necessarily dependent.
### Content – Specific Aims

List and briefly introduce and discuss engaging Specific Aims to test your working hypothesis

1. Aims need to relate to central hypothesis and goals.
2. Write your Specific Aims over and over until they are suited.
   - Make them declarative.
   - Write aims that you are excited about!!!!!!!
   - Logic must be compelling for each aim.
   - Avoid proposing to “collect more data” (reproduction of older data).
   - The answers from the results must be important to the field.

### Content – Summary

Summary

Expected results and impact
Provide one paragraph at the end.

Keep discussion brief and in line with the significance of your study.

Overall impact and possible translation

### Examples/Templates

http://qb3.berkeley.edu/qb3/careerworkshops/Specific_Aims_QB3.02_22_11.pdf

Grant Training Center: NIH Grant Writing Workshop Lincoln, NE 4/30/2012
Formatting

ALWAYS READ/REFER TO SPECIFIC INSTRUCTIONS

Generally….
• 11 point font or larger
• Arial, Helvetica, Palatino Linotype, or Georgia...
• No more than 15 characters (including spaces) per inch
• No more than 6 lines per inch
• 8 1/2” x 11” with at least ½ inch margins on all sides

Cover Letter

You may also include a cover letter.
• You can (and perhaps should) include cover letter that identifies the best-suited study section/suggests an appropriate study section(s).
• You can suggest suitable reviewers, that is, if you have not communicated with them.
• Suggest expertise of reviewers if they do not exist in the particular study section (Ad Hoc Reviewers).
• You can list a person (preferably not plural) who is not quite appropriate (e.g., in your experience, maintains a radically different belief as compared to your observations).

Ideas for Writing

• Schedule a writing time for yourself
• We are creatures of habit
• ‘Loosen’ writing chops
  • Consider a brief creative writing exercise or letter to a friend
• Although you may want to write/finalize the Specific Aims page last, do not put it off until last minute
  • Consider starting it as the initial outline of your proposal
• Discuss overall proposal with trusted colleague and record this discussion for key points/reach a broader audience
• Do not limit your first draft to one page
  • you can trim it latter, replace phrases with more succinct statements and remove redundancies after you have it written
  • Consider the psychology of word choices when revising (ex. loaded words, overstatements, emotional language)
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