

## Approach Section: *The "Meat" of the Proposal*

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### Purpose of the Approach section:

To describe the research project as proposed to be carried out in the PI's laboratory: a logical flow of experiments designed to complete each Specific Aim

To describe the Preliminary Studies that justify/support the experiments designed for each Specific Aim

To explain the Specific Aims page & convince the Reviewer that the work should and can be done by the PI's research team

The Approach should be well-organized

## Overall Organization of each section – present proposal in an organized manner

Typical Section Headings for an NIH proposal:

### 3. Research Strategy

#### (A) Significance

#### (B) Innovation

#### (C) Experimental Approach

##### C.1 Title of Specific Aim 1 (SA1)

###### C.1.1 Rationale [subheading]

###### C.1.2 Experimental Design [subheading]

###### C.1.3...

##### C.2 Title of SA2

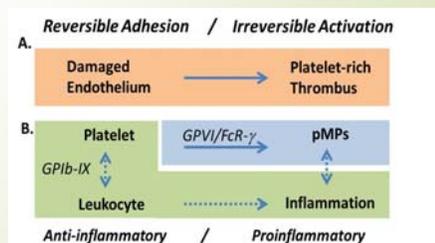
## Variations in the organization

### (C) Experimental Approach

- Use introductory overview to set the stage for Aims that follow. As an example:

This application focuses on a series of events paralleling the platelet paradigm in thrombosis but impacting inflammation (**Fig 1B**). Studies outlined for **SA1** will focus on leukocyte phenotypic changes during the progression of inflammation that are platelet GPIb-IX dependent (**Fig 1B**, green shading). Outlined studies for **SA2** highlight the transition of the platelet to an activated state that coincides with the release of proinflammatory pMPs and exacerbation of inflammation (**Fig 1B**, blue shading). As such, the transition of the platelet from an “unactivated” to “activated” state represents an analogous “switch” or “turning point” in the progression of the inflammatory response. **SA3** will validate the results of **SA1** and **SA2** by focusing on the dysregulated inflammation found in severe human sepsis.

- Can include a figure to show model you are testing. Cartoons or schematic diagrams are very effective.



## Critical Components of the Approach section

- Must include Preliminary Studies – including references to publications from PI's laboratory supporting Experimental Design
  - Preliminary Studies justify the Rationale for proposing a particular Aim
  - Ideally, have at least 1 Figure of preliminary data to support each Specific Aim – Figures are important!
  - Emphasize importance of preliminary data. For example, state: "Building on our intriguing preliminary results, we will do such-and-such..."
  - Preliminary Studies can be in an introductory section of the Approach or embedded to support each Aim

## Critical Components of the Approach (cont.)

- Include *Rationale* (objective) for each specific Aim  
Explain how achieving Aim addresses overall hypothesis of the proposal
- Provide *Experimental Design* for each Aim –  
Describe experiment(s) to be done to achieve Aim
- Include *Methods* – including references to publications from PI's laboratory supporting ability to use or perform necessary, specific techniques
- Include *Time-Line* – for the entire project to show realistic planning and feasibility of all Specific Aims
- Include *Future Studies* or *Future Goals* – what will this project lead to; make sure that this initial investment will pay off in future

## Recommended Content for Each Specific Aim:

- **Rationale – objective or purpose of the Aim**  
Include Preliminary Studies to justify the Rationale
- **Experimental Strategy or Design**
- **Methodology and Analyses to be used to accomplish the Aim**
  - Methods can be incorporated in Strategy/Design
  - Include how data will be collected, analyzed and interpreted – Be sure to include statistical analysis!
- **Expected Outcomes or Results**
  - Describe Benchmarks for success in accomplishing each Aim
- **Potential Problems and Alternative Strategies**
  - Convince Reviewers that PI can anticipate technical difficulties and has alternative approach

## Variations:

- **Experimental Strategy or Design**
  - Aim can have its own hypothesis, related to overall hypothesis
  - Aim can be subdivided into Sub-Aims
  - Preliminary data can show feasibility of approach/technique
- **Potential Pitfalls and Alternative Interpretations**
  - Convince Reviewer that PI knows the field and is open-minded



**Project Timeline** – at the end of the Approach section, to show that have realistic view of what can be accomplished

Here's a Template :

Specific Aims and Sub-Aims	Year 1	Year 2	Year 3	Year 4	Year 5
1.1	█				
1.2	█	█	█		
1.3			█	█	█
1.4				█	█
1.5				█	█
2.1	█	█	█		
2.2	█	█	█		
2.3		█	█	█	
2.4			█	█	█
2.5				█	█
3.1		█	█		
3.2		█	█		
3.3			█	█	█
3.4				█	█

### Most common problems with Experimental Approach:

- Not enough detail on approaches, especially untested ones
- Too much unnecessary experimental details
- Not directly testing hypothesis
- Lack of appropriate controls
- Experiments not directed towards mechanisms
- No discussion of alternative models or hypotheses
- No discussion of potential pitfalls
- No discussion of data interpretation (statistics)
- No timeline included



**Additional Components to include as needed:**

If you need these things and don't properly describe them – a major weakness in the proposal and all your other efforts are wasted.

[Human Subjects](#)

[Vertebrate Animals](#)

[Select Agents](#) (biological hazards)

[Resource Sharing](#)

[Authentication of Key Biological and Chemical Resources](#)

Letters of Collaboration

For examples of Funded Grants and Summary Statements, go to:



<https://www.niaid.nih.gov/grants-contracts/sample-applications>

Summary Statement – critical review of NIH proposal, whether scored or unscored