

RESEARCH APPROACH OUTLINE

(Based on *The Grant Application Writer's Workbook* by Russell and Morrison)

AIM 1: BOLD AIM

INTRODUCTION = Conceptual overview of the importance of this aim

- One sentence to justify why the work under this aim needs to be performed
- “The *objective of this aim* is to...” (solve the problem/answer the question that this aim will address)
- “To attain this objective, I will test the *working hypothesis* that...” (verbatim from the Specific Aims document)
- “I will test my working hypothesis by using the *approach of...*”
- “The *rationale* for this aim” (what will become possible after the research proposed in this aim is completed and that is not possible now)
- “When the proposed studies have been completed, it is my *expectation* that...” (overall outcome(s) and positive impact of this aim)

JUSTIFICATION & FEASIBILITY = Lead reviewers to the conclusion that you are highly capable of accomplishing what will be proposed

- Review of relevant literature
 - Critical analysis
 - Use the literature to point out relevant gaps
- Preliminary Studies
 - Establish that the proposed work is feasible in your hands
 - Refer reviewers to the relevant data / figures and then lead them through it and give the conclusion.

RESEARCH DESIGN = Provide meaningful detail, not routine methodological details

- Approach to be used
- Overview of method(s) to be used
- Essential reagents needed
- Critical equipment required
- Number of subjects / animals
- Statistical analysis needed
- Controls
- Replicates that will be needed
- How results will be interpreted
- Time required to complete the studies

EXPECTED OUTCOMES = Highlight the return on investment

- Summarize the expected outcomes
- Convey how they collectively achieve the aim's objective

POTENTIAL PROBLEMS & ALTERNATIVE STRATEGIES = Anticipate and then eliminate concerns

- Nature of the perceived problem
- Reason(s) why you don't think the problem is likely to arise
- What alternative approach(es) / strategy(ies) you would employ should the problem be encountered
- EXAMPLE: My *working hypothesis* for this aim is... Although my preliminary data (see Figure X) solidly supports the hypothesis for this aim, and are complemented by recent published work (REFERENCE), there is a remote possibility that it could be invalidated when objectively tested. In that unlikely event, I would turn to ...as the next most likely explanation.

AIM 2 (same for AIM 3, if applicable):

INTRODUCTION

JUSTIFICATION & FEASIBILITY

RESEARCH DESIGN

EXPECTED OUTCOMES

POTENTIAL PROBLEMS & ALTERNATIVE STRATEGIES

TIMELINE – Indicate when you plan to submit your R01!

FUTURE DIRECTIONS

- Briefly summarize expected conclusions of this proposal and give a vision of the future (your next steps after the conclusion of this proposal)