

# Specific Aims: The Gospel According to Russell and Morrison

Adapted from The Grant Application  
Writer's Workbook  
NIH Version

- Stephen W. Russell and David C. Morrison, The Grant Application Writer's Workbook: Guide to a Successful Proposal, PHS SF 424 Version (04/2006), available at [http://www.grantcentral.com/workbook\\_nih\\_sf424.html](http://www.grantcentral.com/workbook_nih_sf424.html) for \$75.

# Before Writing Aims, You Should Have.....

- Research and published something related
- Searched literature and grant databases on topic
- Discussed possible aims with colleagues
- Know what to include in aims and how to write it (today's presentation)

# Functions of the Aims Section

- Drives the content of the other sections
- Addresses the needs of the majority of reviewers --- i.e., the ones that haven't been assigned to read and comment on the full proposal

# Paragraph 1: Introduction

- Convey the importance of your area of interest for medicine/ medical care/public health/health policy
  - Our research focuses on the impact of stress and coping on the pathogenesis of infectious disease
- Current state of knowledge in your area of interest
  - Our preliminary research on the course of HIV disease has shown the coping styles are associated with immune responses (specific cytokines) that are known to suppress HIV viral replication and slow the onset of bad clinical outcomes
  - Interventions designed to enhance coping with stress have been designed and tested successfully on small samples of HIV patients

# Paragraph 1 Continued

- Important gaps in knowledge that your research will address
  - Randomized clinical trials with larger samples of HIV patients and longer term follow-up are needed to determine the impact of stress and coping interventions on immunological and clinical outcomes

## Paragraph 2: “What, Why, Who” paragraph

- Broad long-term goal of your research that includes filling the gap in paragraph 1 as a step
  - The overall goal of our research program is to determine the physiologic and biological pathways through which psychological states affect immunologic and clinical outcomes

# Paragraph 2 Continued

- Objective of this grant application --- to fill the gap in knowledge noted in paragraph 1
  - Our proposed experimental studies of HIV progression test the comparative impact of alternative interventions to improve coping with stress on specific immune markers that are known to block the entry of HIV into targeted lymphocytes

# Paragraph 2 Continued

- The central hypothesis that when tested will help to fill the gap
  - Interventions to promote mindful meditation will promote effective coping with stressors, increase the production of protective cytokines, and reduce the production of harmful inflammatory cytokines as compared with controls and other interventions

# Paragraph 2 Continued

- The origins of that hypothesis in literature and preliminary studies
  - Associations between coping and immune parameters in observational studies of HIV positive patients in Rome and Baltimore
  - Longitudinal studies of cancer progression in Toronto and California linking interventions to survivorship

# Paragraph 2 Continued

- The rationale of your research--- the next steps in the progression of knowledge that will be possible if the current gap in knowledge is filled
  - If hypothesis is confirmed, will pave the way for effective psychological interventions in HIV and possibly other diseases in clinical settings

# Paragraph 2 Continued

- Why you in your research setting are well-positioned to do the needed work
  - Our group was first to report specific links between coping and HIV immune markers
  - The Principal Investigators include a senior scientist in virology institute that pioneered immunologic assays proposed and a psychologist who developed and validated the measures of coping
  - The PIs have established access to patients in the medical schools which houses the virology institute

## Paragraph 3: Specific Aims paragraph for hypothesis-driven research

- Each aim should indicate why the specific research aim is being proposed and what working hypothesis guides the work
  - Aim 1: To develop and validate new assays for Mip-1a, Mip-1b, IL6 and IL10 cytokine production as stimulated by p24 and other antigens (this step enhances the sensitivity and specificity of our assays prior to initiating an intervention trial)
  - Aim 2: To determine the comparative effectiveness of three psychological interventions in relation to immunologic and clinical outcomes over time (we hypothesize that mindful meditation will have greater impact than cognitive and psychotherapeutic interventions and that each intervention will show more beneficial changes than the control groups)

## Paragraph 4: Expected outcomes

- Why the proposed research is innovative
  - The proposed research is the first to measure, in a randomized clinical trial, the impact of psychological interventions on disease progression through tracking important new immunologic parameters of known biological significance.
- Expected outcomes (payoffs) from pursuing each specific aim
  - If successful, this study will provide clues for further exploration of psychological, biologic, and immunologic links in trajectories of disease progression in HIV disease

# Paragraph 4: Expected Outcomes

- General impact of expected outcome on field
  - Establish standards for evidence-based tests of PNI hypotheses connecting psychological states to disease outcomes