Grantsmanship for Clinical Research

Victor Sylvia, Ph.D.
59MDW/ST
August 4, 2021

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The opinions expressed in this presentation are solely those of the author and do not represent an endorsement by or the views of the United States Air Force, the Department of Defense, or the United States Government.
Topics for Discussion

- Planning your Project
- Basics of Grantsmanship
- Specific Aims/Hypotheses/Goals
- Transition Plan
- Common Mistakes/Hints for Success
Planning Your Project

1) Start with an Idea

2) Transition Clinical Need to Viable Research Question

3) Match Question to Funding Call

4) What is the Anticipated Impact?
Planning Your Project

Start with your great idea

↓

Translate it into a project

- What will your outputs be?
- How long will it take?
- What will your approach be?
- What have you done so far?
- How will the outcomes advance DoD program goals and DoD mission?
What are you looking for?

- Funding Source (AF, joint, civilian)
- Appropriate Funding Opportunities (intramural vs extramural)
- Relevant Program Announcements
- Type of Funding to Seek: 6.1, 6.2, or 6.3

### Table 1. DOD RDT&E Budget Activity Codes and Descriptions

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Basic Research</td>
</tr>
<tr>
<td>6.2</td>
<td>Applied Research</td>
</tr>
<tr>
<td>6.3</td>
<td>Advanced Technology Development</td>
</tr>
<tr>
<td>6.4</td>
<td>Advanced Component Development and Prototypes</td>
</tr>
<tr>
<td>6.5</td>
<td>System Development and Demonstration</td>
</tr>
<tr>
<td>6.6</td>
<td>RDT&amp;E Management Support</td>
</tr>
<tr>
<td>6.7</td>
<td>Operational System Development</td>
</tr>
</tbody>
</table>

What is the Anticipated Impact?

• Advance knowledge
• Impact clinical management
• Impact health policy
• Guide future research
  • Pilot study
  • Confirm clinical question
• Meet military requirements
Basics of Grantsmanship
• FOLLOW DIRECTIONS CAREFULLY!
• Meet your deadline; be prepared to submit 2 days prior (don’t forget to route internally)
• If you are going to need letters of support, start working on those TODAY
• Excessive length; sometimes more is not better, it is simply more
Write a Compelling White Paper

• Focus on the outcomes and benefits of your research to the funder
• Describe the problem clearly
• Place your research in context of the state of the art
• Explain why your approach is different
• Provide a concise overview of what you will do
  - Not “We will explore phenomenon x” – too vague
  - Instead, “In Task 1 we will measure x; in Task 2 we will develop y; in Task 3 we will evaluate z…”
A Path to Funding

Warrior Medics – Mission Ready – Patient Focused

**White Paper or Pre-Proposal**

2-3 pages; depends on call; needs overall budget estimate

- Denial

Invitation to Write Full Proposal

- Review

Full Proposal

- Denial

Receive Questions/Comments from Reviewers

- Review

Improved Full Proposal

- Denial

Acceptance of Proposal Letter! Congrats

- Funding Proposal

Request Comments from Reviewers
Funding Opportunities

Synopsis of Current Program Funding Opportunities

- Alcohol and Substance Abuse Disorders
- Amyotrophic Lateral Sclerosis
- Autism
- Breast Cancer
- Defense Medical Research and Development Program
  - Combat Casualty Care Research Program (JPC-6)
- Lung Cancer
- Military Burn
- Neurofibromatosis
- Ovarian Cancer
- Parkinson's
- Peer Reviewed Cancer
- Peer Reviewed Medical
- Tick-Borne Disease
- Tuberous Sclerosis Complex

http://cdmrp.army.mil/funding/default.shtml
Tab 1 – Application Information

Tab 2 – Application Contacts

Tab 3 – Collaborators and Key Personnel

Tab 4 – Conflicts of Interest

Tab 5 – Pre-application Files
   Preproposal Narrative (four page limit)
   Topic Area, Research Idea, Research Strategy, Impact, Relevance to Military Health
   Supporting Documentation: References, List of Abbreviations, Acronyms & Symbols, Biosketches

Tab 6 – Submit Preproposal
Example of a Successful Grant

Common Mistakes to Avoid

- Keeping Reviewer Attention
- Failure to connect research to outcomes of interest to DoD
- Long, wordy academic introduction
- Vague plan
- Unclear outcomes and deliverables

Get to the exciting stuff here! Strong, Unique Intro

Concise background that provides context

Reviewer's Attention Level

- First Paragraph
- Generic Intro
- Long, scholarly background
- Zzzzzzz
- Get to the exciting stuff here!

• Keeping Reviewer Attention
• Failure to connect research to outcomes of interest to DoD
• Long, wordy academic introduction
• Vague plan
• Unclear outcomes and deliverables
Grant Grading 101

Reviewer 1\textsuperscript{st} Impression

- Did the Applicant Follow Directions?
- Are Specific Aims and Objectives Clear?
- Is the Technical Approach Feasible?

Causes for Rejection

- Missed Deadline
- Sections Missing
- Page Limit Exceeded
Specific Aims/ Hypotheses/ Goals
Do’s and Don’ts of Specific Aims

• Well-designed Aims
  More than one possible outcome is acceptable
  Success is not dependent on any single outcome

• Unacceptable Aims
  Only one possible outcome is interesting
  Success of a subsequent aim is dependent on outcome of previous aim

• Fatally flawed Aims
  Descriptive, unfocused, obvious, naïve, or uninterpretable
**Hypothesis**

A statement of possible conceptual or mechanistic explanation for a set of findings (observations, results; yours or others’).

- Have an overarching or **central hypothesis**.
- Must make logical, scientific sense, at least to those in the field.
- Must have solid foundation in observations, whether empirical or theoretical.

**What It Is Not**

- Mere opinion, hunch, speculation
- An notion that makes sense only to you and your friends
- Just an idea you feel like checking out
- An idea that innumerable people have considered, think is true, but no one has ever subjected it to any rigorous, objective inquiry
Overall Goal

General statements descriptive of what you plan to achieve with this work.

- Be conservative.
- Avoid lofty statements and goals generally understood to be for the whole of mankind, e.g., “our goal is to cure cancer,” “the overall goal of this work is to develop a fool-proof test for breast cancer,” “we expect these studies to result in the best treatment modalities,” and the like.

Long-term Goal

Greater or other goals that you could achieve if you continued the work.

- Include what you think you could achieve if stayed the path with sustained funding and other requisite resources.
Writing the Research Plan

Research Plan, Research Approach, Research Strategy:

Detailed description of the strategies and approaches to accomplish the proposed work.

What does it tell?

- The **how** of the proposed work
- The **why** of the proposed work
How do I write an effective Research Plan?

• Clearly describe the experimental approaches and techniques.

• Omit details that are truisms and commonly accepted norms.

• Provide only the directly relevant details.

• Omit extraneous details.

• Do not omit any procedural detail that would strengthen your proposal.
Responding to Reviewers

• Reviewers typically assess concepts, strategies, approaches, techniques.

• Reviewers do not have the responsibility to improve your writing.

• Comply with general suggestions if they improve your proposal.

• Do not shift the burden of finding and correcting your writing mistakes to reviewers.
Responding to Reviewers

• Carefully and calmly assess each critique.

• Do not rush to compose a response.

• Never compose angry responses, even if the critique appears irrelevant or unjustified.

• Logically, scientifically – but ever so politely – rebut those items that merit rebuttals.
Transition Strategy

Warrior Medics – Mission Ready – Patient Focused

• Must have a clear impact on medical mission/operations
  • Improve operations/capabilities with in-garrison care, readiness, training/education, or deployed medical ops
• Proposal must clearly define:
  • The end state if project is funded and successfully completed
  • Impact/change(s) to standard of care and potential results
  • Cost/benefit analysis & report to managers to make fielding decisions
• Need strong transition strategy for positive results: include as deliverable(s) for next step, study, policy, etc..
• Include an end user statement from a decision making authority that they will use/implement if successful
• Include statement from company(ies) who are/may be the FDA sponsor to provide support and transition
Transition Strategy

Warrior Medics – Mission Ready – Patient Focused

• Include a regulatory pathway if applicable: consult with 59 MDW FDA SME (TBD) for help/support

• Collaborative proposals are viewed as less risky and more likely to be supported, especially joint-services
  • Contact 59 MDW Office of Research and Technology Applications (ORTA) to establish agreements:
    CRADA: Cooperative Research and Development Agreements
    MTA: Material Transfer Agreement
    ELA: Enterprise License Agreement
    NDA: Non-Disclosure Agreement
    JOA: Joint Operating Agreement
    MOU/MOA: Memorandums Of Understanding/Agreement
  • Contact 59 MDW ORTA for support with intellectual property (IP) identification, protection, licensing, patents, filing
## Transition Strategy - Scoring Criteria

### Warrior Medics – Mission Ready – Patient Focused

<table>
<thead>
<tr>
<th>Prioritization</th>
<th>Score</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>4</td>
<td>Results will be immediately applied to operational mission by combat medic</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Acknowledgement from central board or procuring agency decision maker that the results will be used to procure items or issue a procurement recommendation</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Results will transition to a service specific function for several organizations/clinics</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Results will be published and briefed at conferences</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>No transition strategy, unlikely to result in any change to military equipment sets, policies, or procedures</td>
</tr>
</tbody>
</table>

*Must also demonstrate how results will be shared with other services, DHA, and anyone else who can benefit from the knowledge*
CDMRP Proposal Example

https://cdmrp.army.mil/funding/prgdefault
Application Process Overview

CDMRP Application Process Overview

Step 1
- Review Program Announcement/Broad Agency Announcement
- Register/Update eBRAP Account
- Verify/Update SAM Registration
- Submit Preapplication in eBRAP
  - Preproposal
  - Letter of Intent
  - Receive Invitation to Submit Full Proposal Application
  - Submit Full Application to Grants.gov
    - BO
  - BO

Step 2
- Submit Full Application to Grants.gov
  - BO

Step 3
- Verify Application in eBRAP
  - PI

BO: Business Official from applicant organization
PI: Principal Investigator from applicant organization
eBRAP: electronic Biomedical Research Application Portal
SAM: System of Award Management
I. OVERVIEW OF THE FUNDING OPPORTUNITY

Intramural Funding Opportunity Announcement and Application Instructions for the Department of Defense

Defense Health Program

Congressionally Directed Medical Research Programs

Clinical Research Intramural Initiative

Investigator-Initiated Research Award

Funding Opportunity Number: DHA19CRIIIIRA

SUBMISSION AND REVIEW DATES AND TIMES

- Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), April 22, 2019
- Invitation to Submit an Application: June 07, 2019
- Application Submission Deadline: 11:59 p.m. ET, August 7, 2019
- End of Application Verification/Approval Period: 5:00 p.m. ET, August 14, 2019
- Peer Review: October 2019
- Programmatic Review: November 2019
# Grantsmanship for Clinical Research

## Warrior Medics – Mission Ready – Patient Focused

### Table 1. Full Application Submission Guidelines

<table>
<thead>
<tr>
<th>Application Package Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Download application package components for DHA19CRIIIIRA from eBRAP (<a href="https://ebrap.org">https://ebrap.org</a>).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Full Application Package Components</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tab 1 – Summary:</strong> Provide a summary of the application information</td>
</tr>
<tr>
<td><strong>Tab 2 – Application Contacts:</strong> This tab will be pre-populated by eBRAP: add Resource Manager/Comptroller or equivalent Business Official.</td>
</tr>
<tr>
<td><strong>Tab 3 – Full Application Files:</strong> Upload files under each Application Component in eBRAP. Descriptions of each required file can be found under Full Application Submission Components:</td>
</tr>
<tr>
<td>- Attachments</td>
</tr>
<tr>
<td>- Key Personnel</td>
</tr>
<tr>
<td>- Budget</td>
</tr>
<tr>
<td>- Performance Sites</td>
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<tr>
<td><strong>Tab 4 – Application and Budget Data:</strong> Review and edit proposed project start date, proposed end date, and budget data pre-populated from the Budget Form.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Application Package Submission</th>
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</thead>
<tbody>
<tr>
<td><strong>Submit package components to eBRAP</strong> (<a href="https://ebrap.org">https://ebrap.org</a>).</td>
</tr>
<tr>
<td><strong>Tab 5 – Submit/Request Approval of Full Application:</strong> After all components are uploaded, and prior to the full application submission deadline, enter your password in the space provided next to “Enter Your Password Here” and press the “Submit Full Application” button. eBRAP will validate files against the Funding Opportunity Announcement requirements and discrepancies will be noted. If no discrepancies are noted, press the “Confirm Submission” button to complete the application submission. eBRAP will notify your Business Official or equivalent by email to log onto eBRAP to review and approve the submission.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Application Verification/Approval Period</th>
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</thead>
<tbody>
<tr>
<td>After eBRAP has processed the full application, the organizational Business Official or equivalent and PI will receive an email notification of this status and will be able to view and modify application components in eBRAP. During the application verification/approval period, the full application package, with the exception of the Project Narrative and Budget Form, may be modified. Only the Business Official or equivalent can modify the application components during the verification/approval period. However, if the Business Official or equivalent selects the “Return to PI” button, the PI can update the application BUT must then resubmit the application for Business Official approval. Your Business Official or equivalent should log into eBRAP to review and to approve prior to the application verification/approval deadline.</td>
</tr>
</tbody>
</table>
### Generic Forms for Application Submission

<table>
<thead>
<tr>
<th>Form</th>
<th>MS Office</th>
<th>PDF</th>
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</thead>
<tbody>
<tr>
<td>CDMRP Biographical Sketch</td>
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<tr>
<td>Quad Chart Template</td>
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<tr>
<td>Award Chart</td>
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<tr>
<td>FY19 INDIVID IDE Documentation Form</td>
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<tr>
<td>Pre-application Budget Summary Form</td>
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<tr>
<td>Collaborating DoD Military Facility Budget Form</td>
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<tr>
<td>DoD Military Budget Form</td>
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<tr>
<td>Common Blinding Mistakes and How to Avoid Them</td>
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<tr>
<td>SOW (Statement of Work) Generic Format</td>
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<tr>
<td>SOW for Basic Research (Training Section optional)</td>
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<td></td>
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<tr>
<td>SOW for Clinical Research (Including Trials, Special Populations)</td>
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<tr>
<td>SOW for Advanced Tech Development Research</td>
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<tr>
<td>SOW for Collaborative PI projects</td>
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</tbody>
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### Regulatory Information and Forms

<table>
<thead>
<tr>
<th>Document</th>
<th>MS Office</th>
<th>PDF</th>
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<tbody>
<tr>
<td>Safety &amp; Environmental Resources</td>
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<tr>
<td>Environmental Compliance Assurance</td>
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</tr>
<tr>
<td>Animal Use Guidance and Documents</td>
<td></td>
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</tr>
<tr>
<td>Appendix for Research Involving Animals (Abbreviated Version)</td>
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<td></td>
</tr>
<tr>
<td>Appendix for Research Involving Animals (Full Version)</td>
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<td></td>
</tr>
<tr>
<td>Guidance for Submission of Changes to Animal Care and Use Protocols</td>
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<td>Adverse or Regulatory Events Requiring Reporting to ACRO</td>
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<tr>
<td>Human Resources FAQs</td>
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<tr>
<td>Human Research Protection Office Overview</td>
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<td>DoD Unique Information for Investigators</td>
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<tr>
<td>Guidance on HRPO Reviewer Requirements for Research Involving the Secondary Use of Data/Specimens</td>
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<td>Human Subject Resource Document</td>
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<td>Human Research Protocol Submission Form</td>
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<tr>
<td>Research Involving the Use of Data/Specimens</td>
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<tr>
<td>Army Policy for Use of Human Cadavers</td>
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<tr>
<td>Cadaver Use Submission Form and Checklist</td>
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[https://ebrap.org/eBRAP/public/Program.htm](https://ebrap.org/eBRAP/public/Program.htm)
The following steps are required to complete submission of a Full Application

<table>
<thead>
<tr>
<th>Step</th>
<th>Full Application Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Contacts</td>
</tr>
<tr>
<td>2</td>
<td>Full App Files</td>
</tr>
<tr>
<td>3</td>
<td>Budget Data (including Congressional District of Applicant)</td>
</tr>
<tr>
<td>4</td>
<td>Submit Full Application</td>
</tr>
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### Required Files

<table>
<thead>
<tr>
<th>File</th>
<th>Page Limit</th>
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<tr>
<td>Project Narrative</td>
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<tr>
<td>Supporting Documentation</td>
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</tr>
<tr>
<td>Technical Abstract</td>
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</tr>
<tr>
<td>Lay Abstract</td>
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<tr>
<td>Statement of Work</td>
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<tr>
<td>Letters of Support</td>
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<tr>
<td>Impact and Military Benefit Statement</td>
<td>1</td>
</tr>
<tr>
<td>Transition Plan and Regulatory Strategy</td>
<td>2</td>
</tr>
<tr>
<td>Key Personnel Form</td>
<td></td>
</tr>
<tr>
<td>PI Biographical Sketch</td>
<td>6</td>
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<tr>
<td>Budget Form</td>
<td></td>
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<tr>
<td>Budget Justification</td>
<td></td>
</tr>
<tr>
<td>Project/Performance Site Location(s) Form</td>
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</tr>
</tbody>
</table>
Program Cycle

Warrior Medics – Mission Ready – Patient Focused

Congressional Appropriation

Stakeholders – Meetings*

Vision Setting

Funding Opportunities Released

Pre-Application Receipt

Programmatic Panel

Pre-Application Screening and Invitation to Submit*

Application Receipt

Peer Review

Programmatic Review

Funding Recommendations

Commanding General Approval

Award Negotiations

Award Management

Research Outcomes

Award Closeout

Research News and Reports

Month 6

Month 12

Month 18

Annual Appropriation, Review, and Award Cycle

To Month 24

To Month 84

*As needed

Awards Management
First Tier: Peer Review

◆ How the evaluation process works
  ❖ Technical merit assessment based on an ideal application
  ❖ Criteria-based evaluation of entire application

◆ Peer reviewers
  ❖ Panels comprised of scientific and consumer reviewers
  ❖ No standing panels
  ❖ Reviewers are recruited based on expertise needed
  ❖ Identities are unknown to applicants; contact between applicants and reviewers are not permitted

Outcome: Summary Statements
Second Tier: Programmatic Review

How the evaluation process works
- Comparison-based
- Strong scientific merit
- Adherence to award mechanism’s intent
- Potential for impact
- Program relevance
- Consideration of portfolio composition

Programmatic reviewers
- Programmatic Panel members comprised of consumers, clinicians, and researchers
- Ad hoc reviewers

Outcome: Funding Recommendations
## TABLE 5-2 CDMRP Overall Scoring Scale

<table>
<thead>
<tr>
<th>Overall Score Range</th>
<th>Category Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0–1.5</td>
<td>Outstanding</td>
</tr>
<tr>
<td>1.6–2.0</td>
<td>Excellent</td>
</tr>
<tr>
<td>2.1–2.5</td>
<td>Good</td>
</tr>
<tr>
<td>2.6–3.5</td>
<td>Fair</td>
</tr>
<tr>
<td>3.6–5.0</td>
<td>Deficient</td>
</tr>
</tbody>
</table>

*SOURCE: PCRP, 2014*
MEMORANDUM FOR RECORD
FROM: 59 MDW/STC

SUBJECT: Use of CIP Funds to Support Graduate Health Sciences Education Research

1. Each year, Clinical Investigations & Research Support receives funds from the Air Force Medical Support Agency (AFMSA) to support the USAF Clinical Investigations Program (CIP) primarily at the 59th Medical Wing. To meet the requirement of Department of Defense Instruction 6000.08, Defense Health Program Research & Clinical Investigation Programs (January 22, 2014), the USAF CIP is specifically designed to support Graduate Health Sciences Education (GHSE) and other allied health programs of the Air Force and to promote high professional standing and accreditation of USAF health education programs. USAF CIP funds are used to procure supplies and research specific equipment for use by GHSE students. The following guidelines will be used in the evaluation of research protocols for funding.

   a. The protocol must support GHSE-required scholarly activity.
   b. The protocol must have a USAF Principal Investigator (PI) who is actively engaged in the research. The PI can be a GHSE Fellow/Resident or USAF Staff or GHSE Faculty.
   c. If the PI is a USAF Staff or GHSE Faculty member, there must be a USAF GHSE Fellow(s) or resident(s) as Associate Investigator(s) (AIs) who is/are actively engaged in the research.
   d. Members of other Services may be assigned to the protocol and engaged in the research as AIs, however, there must be evidence that the primary purpose of the protocol is to support the USAF GHSE program.
   e. There must be an approved protocol and a completed budget request included as part of the supporting documentation for the protocol. Contact Dr. Anneke Bush (DSN 554-7295) to discuss funding requirements.
   f. The PI is responsible for communicating with the Clinical Investigations & Research Support staff to discuss funding issues and must report any research compliance issues immediately.
   g. In the event of termination or suspension of the protocol (e.g., for unexpected duty changes, compliance issues, etc.), the PI must notify Clinical Investigations & Research Support immediately so funding can be suspended or terminated as necessary.
   h. CIP funds are current Fiscal Year funds and must be expended before the end of the fiscal year (Sept 30). Clinical Investigations & Research Support staff will work with PIs to ensure resources can be obligated as required. It is the responsibility of the PI to provide all information necessary to acquire research supplies and equipment to the staff in a timely manner to allow for purchase of requirements.

2. All requirements as outlined above must be met before requests for funding will be considered to support GHSE research. The normal funding limit is $30K. However, all requests for funding, regardless of requested amount, are reviewed on a case-by-case basis.

Send approved protocol and completed budget form to:

paul.barnicott.1@us.af.mil
59MDW Research Program Intramural Call for Applications – White Paper

Font Size: 12 point, 10 pitch
Font Type: Times New Roman
Spacing: Single space or no more than six lines of type within a vertical inch (2.54 cm)
Page Size: No larger than 8.5 inches x 11.0 inches (21.59 cm x 27.94 cm)
Margins: At least 0.5 inch (1.27 cm) in all directions

Sections:
- Principal Investigator Information
- Associate Investigator Information
- Location
- Application Title
- Introduction
- Research Hypothesis and Objective(s)
- Research Plan
- Research Timeline
- Research Deliverables and Transition Plan
- Total Budget
Technology Readiness Level (TRL)

TRL1 – Basic principles observed and reported

TRL2 – Technology concept and/or application formulated

TRL3 – Analytical and experimental critical function and/or characteristic proof-of-concept

TRL4 – Component and/or breadboard validation in laboratory environment

TRL5 – Component and/or breadboard validation in a relevant environment

TRL6 – System/subsystem model or prototype demonstration in a relevant environment

TRL7 – System prototype demonstration in an operational environment

TRL8 – Actual system completed and “flight qualified” through test and demonstration

TRL9 – Actual system “flight proven” through successful mission operations
<table>
<thead>
<tr>
<th>KRL</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KRL 1</td>
<td>Lowest level of knowledge readiness. Observations begin to suggest that a gap in knowledge could potentially lead to problems or increased knowledge could lead to better results. Examples might include the observation that performance seems to be degraded under certain conditions or that better results are achieved in some applications.</td>
</tr>
<tr>
<td>KRL 2</td>
<td>Invention begins. Initial studies show increased or degraded performance and there is speculation on the conditions that made this possible. Detailed analysis or proof may not exist but correlations begin to show. Examples are limited to preliminary observational data and studies that may not be well formed.</td>
</tr>
<tr>
<td>KRL 3</td>
<td>Active research is initiated. This includes analytical and laboratory studies (IRB and IACUC approval if necessary) to begin validating initial observations of a knowledge gap and suggest methods to close that gap. Review within the organization begins.</td>
</tr>
<tr>
<td>KRL 4</td>
<td>Further studies are initiated and integrated to provide a clearer picture of the solution to the knowledge gap. Initial results are reviewed by peers and published.</td>
</tr>
<tr>
<td>KRL 5</td>
<td>Knowledge produced by ongoing studies increases significantly. The solution begins to take form, additional articles are published in peer-reviewed literature and other researchers may begin their own studies to substantiate results.</td>
</tr>
<tr>
<td>KRL 6</td>
<td>Solutions may start to be implemented in initial form (small test groups, laboratory or simulated operational setting). Data from this implementation is collected with results being documented. These results show that the research is on the right path.</td>
</tr>
<tr>
<td>KRL 7</td>
<td>Solutions continue to be implemented with more and more data being collected. The data shows that the correct solution is being implemented and progress has been made closing the knowledge gap. Data is being gathered in a relevant or operational environment.</td>
</tr>
<tr>
<td>KRL 8</td>
<td>In most cases, this KRL represents the end of true knowledge development. Studies have been completed and solutions have been shown to work. A large quantity of data shows that degraded performance has been improved without harm or that the application of the new knowledge achieves better results. Independent research confirms these findings and application of this knowledge has become the new standard.</td>
</tr>
<tr>
<td>KRL 9</td>
<td>Actual application of the knowledge in its final form and under mission conditions. Examples include approved Clinical Practice Guidelines (CPGs), formal adoption of standards or application of knowledge to affect operations.</td>
</tr>
</tbody>
</table>
Common Mistakes/ Hints for Success
Common Mistakes

Warrior Medics – Mission Ready – Patient Focused

1) Failure to connect research & DoD interests
2) Vague research plans
3) Unclear outcomes and deliverables
4) Not following instructions & recommendations
Common Mistakes

• The reviewers did not find your central scientific question interesting.

• The preliminary data are weak, and call into question the feasibility of the proposal and the validity of your central hypothesis.

• The proverbial house of cards: the overall success of the grant is dependent on the outcome of a key experiment, which has yet to be performed.

• The scope of the project is too ambitious, with multiple hypotheses or rationales that pull the grant in disparate directions.

• The PI and or research team lacks the experience to carry out the proposed work.
Hints for Success

- Follow instructions exactly.
- State purpose and need up front.
- Read successful grants.
- Pay attention to review criteria.
- Assume an uninformed but intelligent reviewer.
- Submit, revise & resubmit.
- Build on previous successes, as these show promise of future success.
Hints for Success

- Provide details how technology/change to a clinical practice will lead to **better outcomes**, not just better test!

- Avoid using weak, passive words like “can”, “may”, “could/should”, etc.
  - Use direct words (i.e. “will” if successful)

- Focus proposal(s) on unique mission aspects or areas
  - Avoid broad-based statements for general purpose use
  - Should be sharp and defined for specific issues & opportunities
  - Address mission deficiencies and/or operational enhancement
  - **NEED A STRONG IMPACT STATEMENT!**

- Collaborate whenever possible (proposals that involve two or more services are usually rated higher)

- Discuss ideas and pre-review (if possible) with JPC, end-users, and other services to gain advocacy and insight
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Questions?