Writing a compelling NASA proposal

James Lyons
Assoc Res Professor
SESE

SESE
March 14 2017

"Your proposal is written with clarity and conviction. Send it up to legal for obfuscation."

According to Dr. Francis Collins, Director of the NIH, "So many worthwhile research ideas get put into the unfunded category in reviews because the proposals are not written clearly and don't present the importance of the research forcefully enough."

Writing a NASA R&A proposal

1. When to write a proposal
2. NASA proposal opportunities
3. How to write a compelling NASA proposal
4. The fate of your proposal

nspires.nasaprs.com – set up an account!

ROSES Research Opportunities in Space & Earth Sciences

GUIDEBOOK FOR PROPOSERS RESPONDING TO A NASA FUNDING ANNOUNCEMENT

"Spare a dollar for some lab consumables, buddy?"

When to write a proposal

When you need funds (salary, support)

When you publish or are about to publish in a high profile journal

When a discovery/new direction occurs in a field

When you make a discovery/have an idea that keeps you up at night (for many nights)

https://nspires.nasaprs.com/external/

Search

NSPIRES NASA Solicitation and Proposal Integrated Review and Evaluation System

Help Desk

If you need help or have any questions regarding the NSPIRES website, please contact the NSPIRES Help Desk at (202) 479-9376 Monday through Friday, 8:00 AM to 6:00 PM EST/EDT, or by email at nspires-help@nasaprs.com.

NASA Web Sites
Click for Links

NASA Research Opportunities

Supporting research in science and technology is an important part of NASA's overall mission. NASA solicits this research through the release of various research announcements in a wide range of science and technology disciplines. NASA uses a peer review process to evaluate and select research proposals submitted in response to these research announcements. Researchers can help NASA achieve national research objectives by submitting research proposals and conducting awarded research. This site facilitates the search for NASA research opportunities.

NASA Research

Solicitations

Search for and view open, closed, past, and future NASA research announcements. The full text of the solicitation announcements can be viewed and downloaded.

Solicitations and selected proposals for years prior to NSPIRES implementation, January 1, 2005, were posted manually; therefore, some postings for years 2000-2004 may not be as complete as those posted through the NSPIRES system from 2005 to the present.

Getting Started

To submit a research proposal to NASA, individuals and the organizations with which they are affiliated must be registered in NSPIRES. Individuals may register at any time.

Organizations are required to have a valid registration with the System for Award Management (SAM) before they can register in NSPIRES. See Registration Information for more details on user and organization registration.

Research.gov

Research.gov is a partnership of federal research-oriented grant making agencies. Research.gov is led by the National Science Foundation.

WARNING:

This is a U.S. Government computer. By accessing and using the computer system, you are consenting to the use of system monitoring. Unauthorized use of, or access to, this computer system may subject you to disciplinary action and criminal prosecution.

OMB Approval Number 2700-0092
Expires 4/30/19

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

HEADQUARTERS

SCIENCE MISSION DIRECTORATE

RESEARCH OPPORTUNITIES IN SPACE AND EARTH SCIENCES – 2017

(ROSES-2017)

NASA RESEARCH ANNOUNCEMENT (NRA)

SOLICITING BASIC AND APPLIED RESEARCH PROPOSALS

NNH17ZDA001N

CATALOG OF FEDERAL DOMESTIC ASSISTANCE (CFDA) NUMBER: 43.001

ISSUED: FEBRUARY 14, 2017

FULL (STEP-2) PROPOSALS DUE

STARTING NO EARLIER THAN MAY 15, 2017

THROUGH NO LATER THAN JUNE 1, 2018

RESEARCH OPPORTUNITIES IN SPACE AND EARTH SCIENCES (ROSES)–2017

LIST OF PROGRAM ELEMENTS (APPENDICES)

APPENDIX A. EARTH SCIENCE RESEARCH PROGRAM

APPENDIX C. PLANETARY SCIENCE RESEARCH PROGRAM

ROSES 2017
TABLE 2: SOLICITED RESEARCH PROGRAMS (In Order of Proposal Due Dates) [1]

APPENDIX	PROGRAM	NOI/Step 1 DUE DATE [2]	PROPOSAL DUE DATE
A.28	Earth Surface and Interior	03/31/2017	05/15/2017
D.2	Astrophysics Data Analysis	03/28/2017	05/16/2017
B.4	Heliophysics Guest Investigators - Open	03/16/2017 (Step-1)	05/18/2017 (Step-2)
A.23	Fire Impacts on Regional to Global Scales: Emissions, Chemistry, Transport, and Models	N/A	05/19/2017
A.43	Making Earth System Data Records for Use in Research Environments	04/21/2017	05/22/2017
E.3	Exoplanets Research Program	03/30/2017 (Step-1)	05/25/2017 (Step-2)
A.20	Atmospheric Composition: Laboratory Research	N/A	05/26/2017
C.2	Emerging Worlds [4]	03/30/2017 (Step-1)	06/01/2017 (Step-2)
A.2	Land-Cover/Land-Use Change	04/03/2017 (NOI)	06/08/2017

C.2 EMERGING WORLDS

NOTICE: This program element continues to use a two-step proposal submission process described in Section 2 of C.1 The Planetary Science Division Research Program Overview.

1. Introduction

Research in the area of "Emerging Worlds" aims to answer the fundamental science question of how the Solar System formed and evolved. It helps to advance the strategic science goal to "explore and observe the objects in the Solar System to understand how they formed and evolve" through basic research that supports planetary exploration, aids in the development of missions, and provides context for the interpretation of all Solar System observations that are relevant to its formation and evolution. Major interdisciplinary efforts to solve key questions are particularly valued.
A wide range of investigations will be covered, including, but not limited to, theoretical studies, analytical and numerical modeling, sample-based studies of extraterrestrial materials, laboratory studies, and synthesis of previous work.

2. Scope of Program

The Emerging Worlds program solicits research proposals to conduct scientific investigations related to understanding (1.1) the formation of our Solar System; and/or (1.2) the early evolution of our Solar System.

2.1 Formation of our Solar System

For the purposes of this solicitation, the "formation of our Solar System" is considered to

2.4 Demonstration of relevance

All proposals must demonstrate how they will advance our understanding of the origin or early evolution of the Solar System, as defined in Sections 2.1 and 2.2. To be

relevant to Emerging Worlds, the primary focus of the proposal must be to advance this understanding.

Proposals to this program element do not require a separate or explicit statement of relevance. As stated in program element C.1, Section 3.5, all proposals, including those submitted to this program element, will be evaluated for relevance to the solicitation. Consequently, proposers are strongly encouraged to address the question of relevance in the Scientific/Technical/Management portion of the proposal.

3. Programmatic Information

3.1 Exclusions

Proposers are advised to read each of the calls referenced below prior to submitting proposals and to contact the appropriate Points of Contact with any questions.

5. Summary of Key Information

Expected program budget for first year of new awards	~$4.6M
Number of new awards pending adequate proposals of merit	~30, see Section 3.3
Maximum duration of awards	4 years; shorter-term proposals (1-3 years) are typical; fourth year must be well justified.
Due date for Step-1 proposals	See Tables 2 and 3 in the *Summary of Solicitation* of this NRA.
Due date for Step-2 proposals	See Tables 2 and 3 in the *Summary of Solicitation* of this NRA.
Planning date for start of investigation	~6 months after Step-2 proposal due date
Page limit for the central Science/Technical/Management section of proposal	15 pp; see also Table 1 of ROSES and the *NASA Guidebook for Proposers.*


"Never, ever, think outside the box."
© The New Yorker

Organizing your proposal

Scientific/Technical/Management section (15 pp):

1. Introduction – *executive summary*
   - 1.1 Objectives and Expected Significance
   - 1.2 Relevance to the NASA program
2. Overview of problem - *set the stage here!!*
3. Progress in last funding cycle
4. Approach and Methodology – *details of what you are proposing to do*
5. Perceived impact – *tell them why it's important*
6. Work plan – *who will do what*

Not part of the 15 pp: References
Facilities
CV's, budget stuff, letters. etc.

Tips for writing a compelling proposal

https://doresearch.stanford.edu/research-scholarship/about-proposals/successful-proposal-writing#how-to-write-a-compelling-grant-proposal

Stick with the format

Organize your application to effortlessly guide reviewers through it.

This creates an efficient evaluation process and saves reviewers from hunting for critical information (and minimizes cranky reviewer syndrome)

Tips - 2

Plan ahead

Think about the budget and how it is related to your research plan.
Everything in the budget must be justified by the work proposed.
Don't propose more work than can be done during the project period.

Make no assumptions

Include enough background information.
A cover letter can help the sponsor assign your application to the correct sub-panel.

Tips - 3

Organize your thinking

Create an outline following the suggested proposal format.
Write one sentence summarizing each main point in the outline.

Make the case

Make the case for why the sponsor should fund your research.
Tell reviewers why testing your hypothesis is worth their money,
why you are the person to do it, and how your institution can give you
the support you'll need to get it done.

Tips - 4

Keep it simple

Make one point in each paragraph. This is key for readability.
Keep sentences to 20 words or less.
Use the active, rather than passive, voice.

Be succinct

Use a clear and concise writing style for the non-expert.
Make your points as directly as possible.
Use basic English, avoiding jargon or excessive language.
Spell out all acronyms on first reference.
Be consistent with terms, references, and writing style.

For an extra edge

Focus on ‘big’ problems – know what these are for your field/program

Try bold, new approaches – but justify them thoroughly

Put together a team that hasn’t worked together before. Interdisciplinarity is (usually) a good thing.

Write well! Make it a story, and make it interesting to read

"Agreed. We fund only those proposals we can understand."

The fate of your proposal

All proposals go to the NASA program manager(s) for the relevant program .

NASA will put out a request for panel members. *Postdocs – volunteer for panels!*

Eventually….., the panel meets. It breaks up into subpanels of ~10 members each reviewing ~10-20 proposals in 4 days.
Your proposal is reviewed and ranked for the program managers.
A summary panel review of your proposal is written and vetted.

The program manager makes recommendations to the selecting officer.

Your are notified if ‘selectable’, and eventually….if selected, or not.