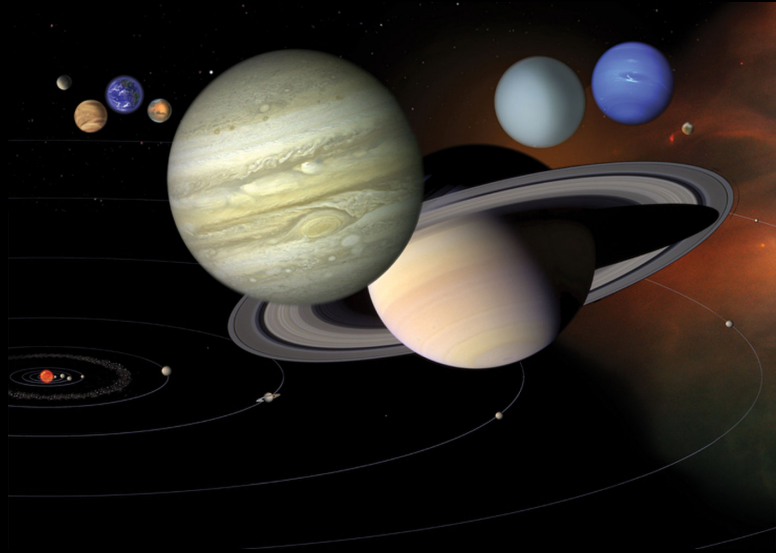
Workshop on Proposal Writing: Using NASA ROSES as an example



Organizer: Christina Richey, Jet Propulsion Laboratory

We appreciate support for this (and other upcoming workshops) from the NASA TWSC Program! Also, thank you to the JPL Foundry for help improving this program!

Jet Propulsion Laboratory
California Institute of Technology

Agenda

1:00 PM: logistics and welcome
1:10: Proposal Lifecyle
1:25: ROSES, NSPIRES, and SARA
1:40: Proposal Writing Guidance and Activity #1
2:15: Story #1: Steve Unwin (Jet Propulsion Lab)
2:30: BREAK
2:40: Peer Review
3:15: Story #2: Rolf Danner (Jet Propulsion Lab)
3:30: Activity #2: Dissecting a Panel Review
3:45: Activity #3: Red Team of proposal
4:10: Story #3:Hannah Jang-Condell (Uni. Of Wyoming)
4:25: Selections and Programmatic Balance
4:35: Activity #4: Values Exercise
4:50: Wrap up & Feedback

Logistics

- Workshop is intended to be interactive
  - You are encouraged to ask questions, voice opinions and share your experiences
  - Get to know your fellow participants; extend your network!

  - please note anything that strikes you (good or not so good) during the workshop
  - complete a short questionnaire at the end of the workshop

Please Answer the Following Questions in 30 Seconds or Less

- Your name?
- Your organization?
- How much proposal experience have you had?
  - **Lots**
  - **Some**
  - **None**
- What types of proposals have you worked on?
  - **Mission**
  - **Instrument**
  - **Science/Technology**

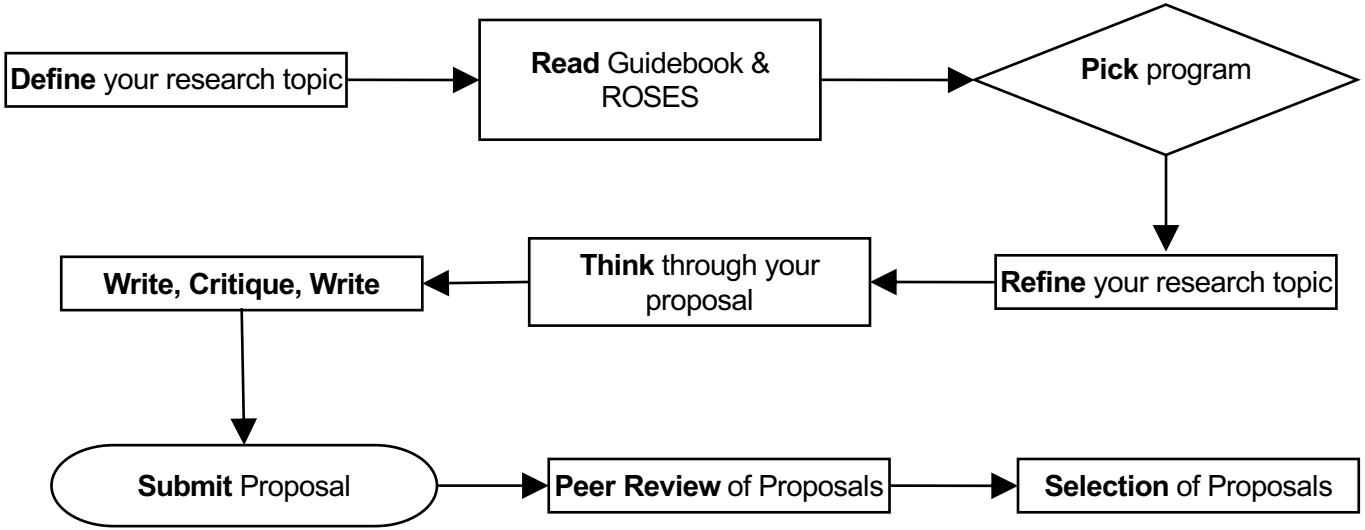
- What was/is your most recent proposal?

Proposal Lifecycle

What does the NASA Science Pot of Money Look Like?

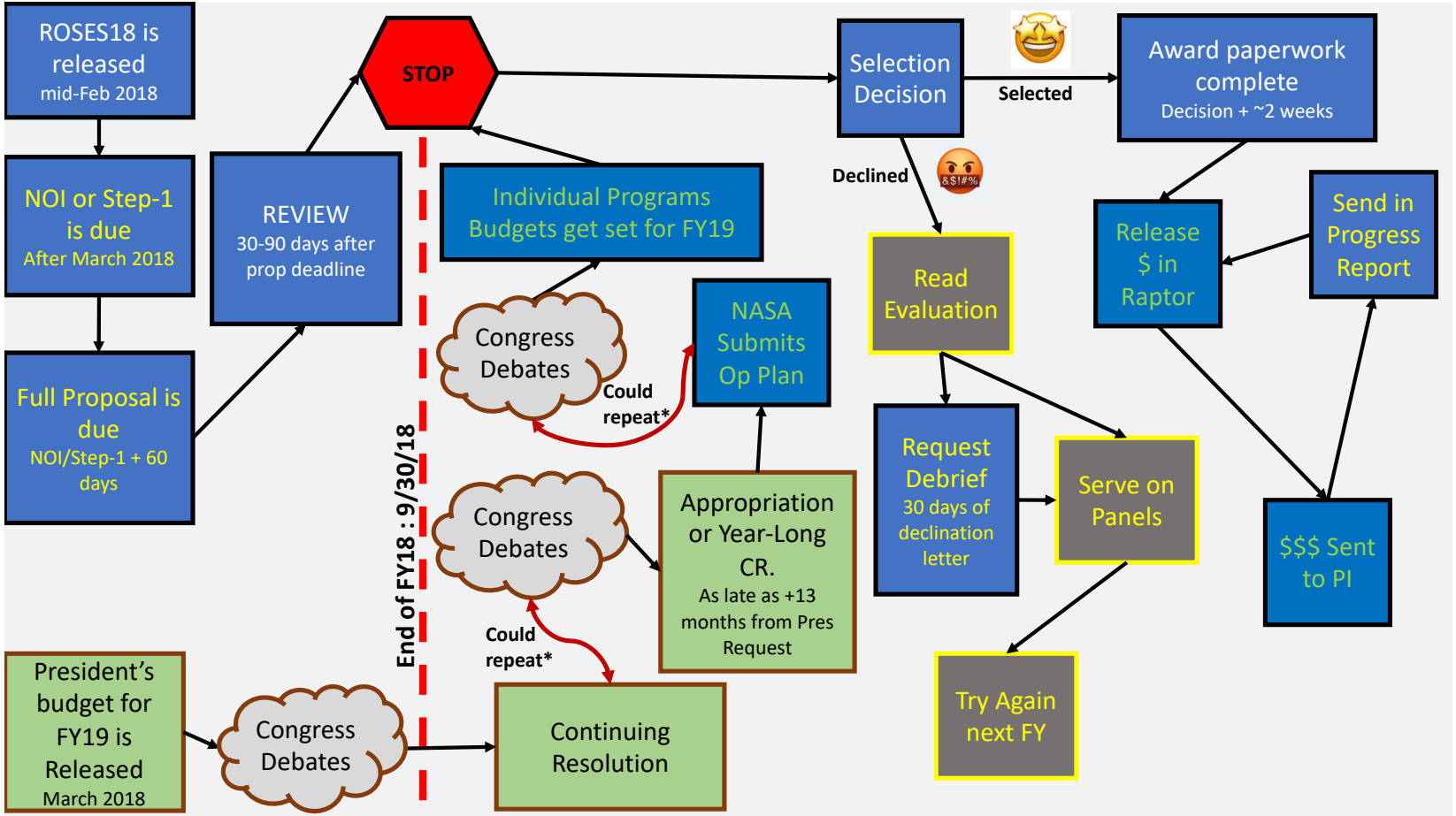
- NASA is the premier funding agency for Earth and Space Science research
  - ~$600M annual R&A budget with >50 R&A programs
  - Each program has anywhere from $1M-$15M available each year
- NASA's science research programs are managed by the Science Mission Directorate (SMD, led by the AA), which has 4 science divisions (led by the DDs)
  - Earth Science, Heliophysics, Astrophysics, and Planetary Science

The Process…ish



How Your Money Gets to You

(FY19 as an example)



ROSES, NSPIRES, and SARA

ROSES: Research Opportunities in Earth and Space Science

All NASA SMD R&A funding is offered through the Research Opportunities in Space and Earth Science (ROSES) NRA*

ROSES is divided into two parts:

1. Summary of Solicitation (SoS): describes the overall opportunity and gives proposal and submission information
2. Appendices: one per division plus cross-division listing all programs

    Each Appendix also has an Overview Section!

    A. Earth Science
    B. Heliophysics
    C. Planetary Science
    D. Astrophysics
    E. Cross-Divisional Programs

Released Mid-February every year, and updated are reported constantly!

NSPIRES: NASA Solicitation & Proposal Integrated Review & Evaluation System
http://nspires.nasaprs.com/

- Website is used for proposal submission to NASA R&A Programs and for review
- Be sure to sign up and get to know this
- Where you can find:
  - ROSES Summary of Solicitation
  - Appendix Overviews
  - Table of deadline
  - THE PROGRAM YOU INTEND TO SUBMIT TO
  - Old solicitations and abstracts of selected proposals from previous years

Guidebook for Proposers: Tell you what's required

- https://www.hq.nasa.gov/office/procurement/nraguidebook/proposer2018.pdf

NSPIRES:
http://nspires.nasaprs.com/

NSPIRES NASA Solicitation and Proposal Integrated Review and Evaluation System

Account Mgmt | Organization Mgmt | Proposals/NOIs | Reviews

NSPIRES Time: Dec 28, 2018 05:51 PM EST

Account Management

- Change Username
- Change Password
- Challenge Question
- Personal Profile
- Address Book
- Affiliations
- Email Subscriptions
- Associations

Account Management Questions?

If you need help with this process, please contact the NSPIRES Help Desk at (202) 479-9376, or by email at nspires-help@nasaprs.com

Click here for more contact information.

Account Management

Use the following options to update your personal account information and preferences.

Change Username
Update your NSPIRES login name.

Change Password
Select a new password for your account.

Challenge Question
Change or update challenge question.

Address Book
Add, change or delete addresses, email addresses and phone numbers.

Personal Profile
Update/edit your personal information

Affiliations
Add, change or delete affiliations.

Email Subscriptions
Subscribe or unsubscribe to NSPIRES/NASA mailing lists

Associations
Subscribe or unsubscribe to NSPIRES/NASA mailing lists

How to get email updates when changes occur! And changes occur throughout the year, so definitely subscribe to the Divisions of importance to you!

NSPIRES:
http://nspires.nasaprs.com/

NSPIRES NASA Solicitation and Proposal Integrated Review and Evaluation System

Home NASA Research Help Login

NSPIRES Time: Dec 28, 2018 05:36 PM EST

NASA Research
- Solicitations

View Solicitations
- Future
- Open
- Closed/Past Selected

NASA Research Announcement

Astrophysics Research and Analysis

Solicitation: NNH18ZDA001N-APRA

Dates

Release	Feb 14, 2018
APRA18 Mandatory NOIs Due	Jan 24, 2019

Due Dates

Announcement Documents

- DUE DATES: Table 2 lists all program elements in due date order (.HTML)
- DUE DATES: Table 3 lists all program elements in appendix order (.HTML)
- ROSES 2018 Summary of Solicitation (links corrected October 5, 2018) (.PDF)
- Complete ROSES 2018 NRA as amended and clarified as of December 20, 2018 (.PDF)
- D.1 Astrophysics Research Program Overview (.PDF)
- D.3 Astrophysics Research and Analysis as amended December 18, 2018 (.PDF)

ROSES SoS

Astrophysics Division Overview

Program Element Information

- Research Opportunities in Space and Earth Sciences 2018 (ROSES–2018)

THE ACTUAL CALL!

Notices

- NOTICE: Amended December 18, 2018. This amendment: (1) Removes the category of proposals for ground-based observations; (2) Updates points of contact; (3) Inserts a new section, 1.2.1.3, detailing CubeSat proposal guidelines; and (4) Adds a mandatory letter of support for unique sounding rocket or balloon investigation requirements. In addition, some clarifications and corrections of typographical errors have been made. Additions are shown in bold and deleted text is in strikethrough. The due dates have not been changed.
- The description of the specific proposal opportunity on this page is contained in the document 'D.3 Astrophysics Research and Analysis'. The document 'D.1 Astrophysics Research Program Overview' describes research activities within the NASA science division that is managing the specific proposal opportunity on this page and may impose requirements upon proposals submitted to this program element. The document 'Summary of Solicitation' describes the common requirements for all ROSES-2018 proposal opportunities. The documents 'Table 2' and 'Table 3' contain the list of all proposal opportunities and their due dates. All of these documents are kept up to date and incorporate amendments, clarifications, and corrections in a clearly identifiable manner.

OK

NSPIRES:
http://nspires.nasaprs.com/

NSPIRES NASA Solicitation and Proposal Integrated Review and Evaluation System

Home NASA Research Help Login

NSPIRES Time: Dec 28, 2018 05:38 PM EST

NASA Research
- Solicitations

View Solicitations
- Future
- Open
- Closed/Past Selected

NASA Research Announcement

Astrophysics Research and Analysis

Solicitation: NNH17ZDA001N-APRA

Due Dates

Dates

Release	Feb 14, 2017
APRA17 Mandatory NOIs Due	Jan 26, 2018
APRA17 Proposals Due	Mar 19, 2018
Selection	Oct 12, 2018

Announcement Documents

- DUE DATES: Table 2 lists all program elements in due date order (.HTML)
- DUE DATES: Table 3 lists all program elements in appendix order (.HTML)
- Summary of Solicitation corrected April 24, 2017 (.PDF)
- Full ROSES-2017 (Summary plus Appendices A-E) as amended and clarified (.PDF)
- D.1 Astrophysics Research Program Overview (.PDF)
- D.3 Astrophysics Research and Analysis as amended March 14, 2018 (.PDF)

ROSES SoS

Astrophysics Division Overview

THE ACTUAL CALL!

Other Documents

- APRA Questions and Answers as of February 5, 2018 (.PDF)

Selections

- Astrophysics Research and Analysis 2017 Selections

Selections for Closed Programs

Program Element Information

- Research Opportunities in Space and Earth Sciences 2017 (ROSES–2017)

Notices

- NOTICE: Amended on March 14, 2018. This amendment delays due dates in anticipation of power loss to New England as a result of the upcoming storm. The proposal due dates for ROSES-2017 D.3 Astrophysics Research and Analysis and ROSES-2017 D.8 Strategic Astrophysics Technology have been changed to Monday March 19, 2018.
- NOTICE: Amended on January 23, 2018. To account for time lost to the government shut down, this amendment delays by one day the due dates for program elements that were due this week. The APRA mandatory NOI due date is now Friday January 26, 2018.
- NOTICE: Amended on November 16, 2017. This amendment makes four changes: (1) it excludes technology development for missions with funded technology lines and/or that are in or

The Service and Advice for Research and Analysis (SARA) site: https://sara.nasa.gov or https://science.nasa.gov/researchers

This site is specifically for Research & Analysis in SMD at NASA!

- How to guide
- FAQs (including big changes made yearly)
- NSPIRES Helpful Hints
- Grant Statistics
- Contact information for Program Officers
- Ways to review or to recommend reviewers
- Includes contact information for the R&A Lead for SMD, Max Bernstein: sara@nasa.gov

The Service and Advice for Research and Analysis (SARA) site: https://sara.nasa.gov or https://science.nasa.gov/researchers

NASA SCIENCE
SHARE THE SCIENCE

Science Topics | Science News | For Researchers | Learners | Get Involved | About Us

For Researchers

Overview | FAQ | Grant Funding | Letters From SARA | ROSES Blog | NAC Science Committee | Our Team | PI Resources

Introduction

Welcome to the web pages for scientists and engineers who plan to propose or have submitted a proposal to a research solicitation from the Science Mission Directorate. The researcher's section is for scientists and engineers who plan to propose or have submitted a proposal to one of our research solicitations. The section includes various aspects of solicitation, submission, and peer review of proposals to the Science Mission Directorate. Points of contact by program and subject area are provided at the Program Officers List, and some selection statistics are available on our Grant Stats page. Those are our most popular pages within this research section of the web site. Links to other pages can be found in the navigation list to the right of this page.

NEW! If you are looking for the research opportunities for the NASA post doctoral program, or information about the transition of the program from ORAU to USRA please go to http://npp.usra.edu/

NASA Science research and analysis (R&A) is composed of projects being conducted by scientists, engineers, and educators from NASA centers, universities, nonprofits, other Government laboratories, and for profit corporations all across the U.S. NASA Science solicits proposals for projects covering a very wide range of subjects and evaluates submissions by peer review. Learn more about what opportunities exist, what projects

For Researchers

- Subscribe / Contact SARA
- Advisory Committees
- FAQs
- Grant Solicitations
- Announcement of Opportunity
- Grant Stats
- Program Officers List
- How To Guide
- Letters from SARA
- Library and Useful Links
- Fellowship Opportunities
- Volunteer for Review Panels
- Suggest Reviewers for ROSES Science Proposals
- Data & Pubs Rules

Proposal Writing Guidance

Managing Expectations

What will *not* happen:

- You will not write a great piece of literature
- You will not definitively answer the grand question plaguing the community
- Your audience will not review your proposal in a quiet, uninterrupted setting
- Your audience will not be world experts on your topic
- Your audience will not accept your approach without question

What *will* happen:

- You will write a focused, no frills document
- You will answer a focused, well-posed question of limited scope
- Your audience will quickly review your proposal amid the chaos of their own life
- Your audience will be colleagues from similar fields
- Your audience will be skeptical and critical

Managing Expectations

Typical Technical Report Body

1. Introduction
   - Background—what led to research
   - Current state of knowledge—literature review
2. Technical Approach and Methodology
   - What was done and how
   - Research or analysis methods used
3. Results and Discussion
   - Narrative of results
   - Interpretation of results based on facts and theory
   - Discussion of competing theories
4. Conclusion
   - Impact to state of knowledge
   - Expected significance

Typical Proposal Body

1. Objectives, Expected Significance
   - Objectives
   - Expected significance
2. Technical Approach and Methodology
3. Impact to State of Knowledge
4. Relevance to Objectives in Call
5. Work Plan
   - Key milestones
   - Management structure
   - Contributions of PI, other personnel
   - Facilities
   - Risk management (if applicable)
6. Foreign Participation (if applicable)
7. Data Sharing (if applicable)

Know What Your Getting Into…

- Have a vision of work you would like to do
  - Target your work/proposal to the appropriate call—***be responsive***
  - Don't find a call and figure out what to propose—just to get funding
- Proposal writing is a long-term process
  - ***Your reputation*** is made by how well you deliver on every proposal you write and win (or lose)
- Proposal writing involves more than *writing*
  - ***Serve*** on committees (be a reviewer!)
  - ***Chair*** special sessions at meetings
  - ***Publish*** papers
  - ***Work*** with program managers
  - ***Participate*** in and/or convene relevant workshops (and then follow up with a report that can be cited)

Know Your Work's Place in the Grander Scheme…

- ***Read*** the *Call for Proposals* carefully
- ***Understand*** the *programmatic relevance* of your idea
  - What NASA missions will the proposed work make cheaper, better, or possible at all?
- Use National Academy reports, conference reviews, NASA Strategic Plans, Roadmaps for ***guidance***
- ***Ask*** colleagues, supervisor, scientists, Directorate program scientists and technologists for help

Organize Your Work!

- Organization is key!
- Follow the Guidebook for Proposers Tables and Instructions
- Use the SARA website: https://science.nasa.gov/researchers/sara/faqs/
- Provide clear signposts throughout the proposal

Generic Outline vs Official Compliance Outline

1. Title
2. Abstract
3. Introduction
4. Problem Statement and Objectives
5. Science Background and Rationale
6. Technical Approach
7. Expected Outcome/Benefits
8. Education and Public Outreach
9. Management Plan
10. Cost Plan
11. Personnel
12. Facilities
13. Appendices

- NASA ROSES Table 1
- Use this as a checklist for ensuring you have all complaint materials needed to submit your ROSES-2018 proposal.
- Need a hard copy? Check the ROSES Summary of Solicitation (SoS) each year
  - https://nspires.nasaprs.com/external/viewrepositorydocument/cmdocumentid=611943/solicitationId=%7BE2CB9318-72CB-C51A-6962-013E762AE713%7D/viewSolicitationDocument=1/ROSES2018SoSlinksFixed100418.pdf

Title

- Develop an eye-catching title that is descriptive and has key words first

TITLE CONTEST

A Novel Approach to Mapping Atmospheric Ozone

A Low-Cost Laser Occultation Sensor for Precisely Mapping Global Atmospheric Ozone

Precise Mapping of Global Atmospheric Ozone: A Low-Cost Laser Occultation Sensor

Which one do you think is a good title?

Title

- Develop an eye-catching title that is descriptive and has key words first
  - Titles are often cut off so they fit into a smaller amount of space

TITLE CONTEST

A Novel Approach to Mapping Atmospheric Ozone

A Low-Cost Laser Occultation Sensor for Precisely ~~Mapping Global Atmospheric Ozone~~

Precise Mapping of Global Atmospheric Ozone: ~~A Low-Cost Laser Occultation Sensor~~

Which one do you think is a good title?

Abstract

- Always required
- Will be the first thing read
- ***May be the only thing read*** (particularly by the final selector)
- Should succinctly frame and distill the proposal
    - State the problem
    - Summarize the solution
    - Summarize the benefits
    - Show how the work relates to the call
    - Give the time frame
    - Mention the team and qualifications
- Write it expansively, then cut it down
- ***Remember Step-1 -> Step-2 edits***

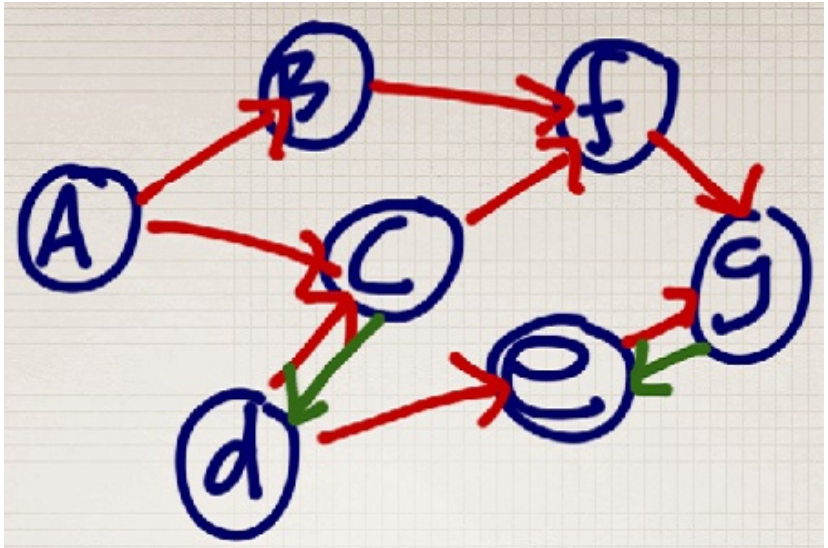
Introduction

- Shape it as an extended abstract, a guide and roadmap to the rest of the proposal
- Emphasize clarity, readability, absence of jargon
- Demonstrate your grasp of the field
  - Offer a short, well-researched overview of relevant science and technology, as well as current practice…***state of the art***
  - Cite key references
    - With luck, your referee will be among your citations
- Include 1–2 figures showing state of the art and ***how you will advance it***
  - When reviewer is arguing on your behalf, he/she can jump to a compelling figure

Problem Statement and Objective

Clearly define the problem and continuously reference back to it, ***box this in!***

- Every proposed action should be ***traceable*** to the stated objective!



Science Background and Rationale

- Cite sponsor strategic plan or similar document, if possible
- Address their issues directly and concisely
- Show easy familiarity with issues
- Don’t write a dissertation or science paper

Technical Approach

- Usually the bulk of the proposal
- Continuously point back to Objectives
- Provide clear and logical sequence of activities, with visuals
- Use descriptive and frequent subheads
- Condense key facts into figures and tables
- Highlight critical challenges and risks

General Guidance for Background and Technical Approach

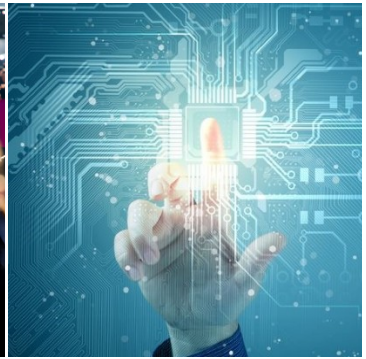
- Thoroughly review and cite the relevant literature
- Avoid full pages of text
- Accentuate the positive
  - Avoid creating the rabbit hole for reviewers to fall down
- Be clear and explicit.
  - Highlight your strengths and explain how you intend to mitigate your weaknesses
- Define acronyms and unfamiliar technical terms on first use
  - Have someone not in your field help with finding these
- **RUN SPELL-CEHCK**
  - Proof-read to avoid irritating your reviewer

Captions are read before detailed text. Use graphics and figures effectively for impact.

AAS Poster: Thursday Session (9-10 AM): 459.10.
Visuals and Captions for Proposals
Rolf Danner (JPL Proposal Office) & Christina Richey

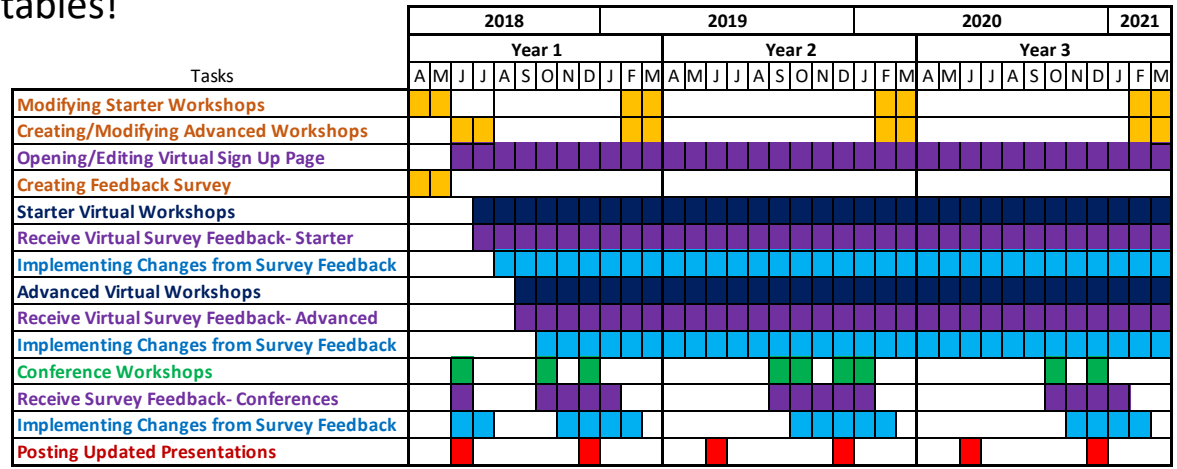
Expected Outcome/Benefits

- Relate directly to sponsor mission and directly back to the call as needed!
- Address multiple levels (local, national, strategic)
- Address several categories (scientific, societal, technological, commercial)



Personnel and Management Plan

- Justify yourself as PI and defend your selection of Co-Investigators
  - A role for every team member
  - A team member for every role
- Demonstrate excellence; don't just claim it
- Define clear roles and responsibilities, qualifications of key personnel
  - use tables!



Time and Costs

- Can you do the job on the schedule?
  - Reviewers will be skeptical!
- Can you do the job for the budget?
  - Program Officers will be skeptical!
- Prove it!
  - Provide SPECIFIC intermediate milestones
    - Offer substantial, incremental improvements, e.g.,
      - 8× better detector in three 2× steps every 6 months
      - Measurement of hundreds of galaxies leading to catalog of thousands of galaxies
      - 30 K improvement in detector operating temperature
      - 4×4 focal plane array in 1 year; 16×16 in 3 years
  - Cite record of on-time, on-budget achievement

Types of Tasks	2018	2019	2020	2021
	Program Year 1	Program Year 2	Program Year 3	
Creating/Major Modifications Workshops	0.10 FTE	0.05 FTE	0.05 FTE	
Opening/Editing Virtual Sign Up Page	0.05 FTE	0.01 FTE	0.01 FTE	
Implementing Changes from Survey Feedback	0.05 FTE	0.10 FTE	0.10 FTE	
Starter Virtual Workshops	0.08 FTE	0.09 FTE	0.09 FTE	
Advanced Virtual Workshops	0.06 FTE	0.09 FTE	0.09 FTE	
Conference Workshops	0.05 FTE	0.05 FTE	0.05 FTE	
Posting Updated Presentations	0.01 FTE	0.01 FTE	0.01 FTE	
Total FTE per Program Year	**0.40 FTE**	**0.40 FTE**	**0.40 FTE**	

More on Budgets

- Have a clear budget
  - include detailed budgets for co-I and narrative summary and justification

- Transparency
  - don’t try to sneak things into the budget

- Justify all travel
  - travel? Page charges in Year 1?

- Be sure to justify why this program and, should multiple funding outlets be involved, be exquisitely clear on which part will be funded by each source.
  - Be sure to justify why multiple funding sources are needed

Facilities and Appendices

- Follow Guidebook Instructions
- Keep to the focus of the proposal and don’t try to sneak in new scientific information here
- Do not include Appendices not requested by the solicitation!
- Don’t expect the majority of panelists to read this section.

Overall Proposal Development Advice

- Read the NRA: Are you responsive?
- ***Read the NRA again***
- Demonstrate excellence; don't claim it
- ***Go back and really read the NRA***
- You need a reviewer to champion your proposal
  - Make it easier for them by providing concise material up front
- Examine the selection criteria and directly address them up front
  - A reviewer should be able to lift sentences from your introduction that could go into their review
- Proposals lose because of single sentences or paragraphs
  - What did you say or forget to say that could hurt you?
  - https://www.lohfeldconsulting.com/news-knowledge/100-words-to-avoid-in-proposals/
  - Get folks to review your work before submitting and use their feedback

Proposal Writing: Mistakes

What do you see as some of the biggest mistakes in proposal writing?

What are ways you can avoid these mistakes?

-Make sure you have someone edit your work

-Have others review your work, scientifically

-Start as a co-I or student member and learn from others!

-Serve on panels for experience

These are two different people, with different agendas!

Activity 1: Self-Edit of Proposal

Top 10 Proposal Writing Mistakes

1. You think you know what the reviewer wants
2. You haven’t proof-read the entire document
3. You don’t think its necessary to have someone else review the proposal before submitting
4. You think your reputation speaks for itself
5. You think the best references are your own
6. You think you don’t need to reread the NRA
7. You haven’t gone through your checklist to ensure everything is there
8. You think you don’t need to state the obvious
9. You think reviewers will read your whole proposal
10. You think you are finished

10b. You think these are the only mistakes that can be made…

Peer Review

The Basics

Every Proposal has two Audiences

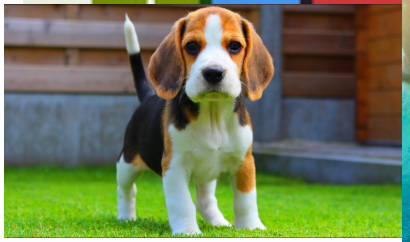
1. ***Program Officer, Manager, Point of Contact***
   - Ensures that the work will further the Program's objectives and verifying that funds/time/etc. will be used properly
   - Relies on you writing a ***COMPLIANT*** proposal

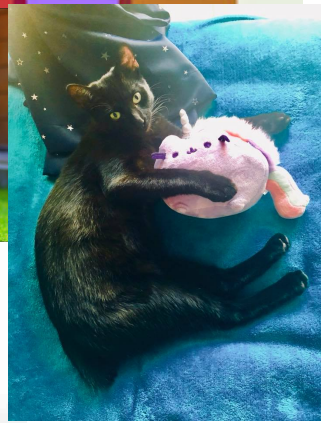
2. **Review Panel**
   - Ensures that the work is of high scientific quality

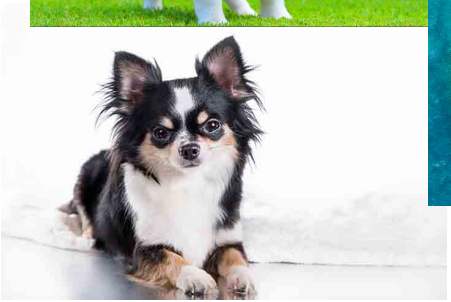
Your job is to make it as easy as possible for these two audiences to select your proposal

In General…

- The Program Officer/Coordinator chooses panel members from science community
  - Not necessarily from your direct field of science
- Conflicts of interest are avoided
- Internal & External Reviewers may/may not be used
- Proposals are given a score/assessment, based on strengths & weaknesses of set criteria
- During peer review, Program Officer/Coordinator ensures all evaluations are fair & unbiased
- Large panels may be split into sub-panels
  - Plenary sessions may be used to ensure consistency
  - Dog Show Rule: Proposals are not to be compared to each other by review panel



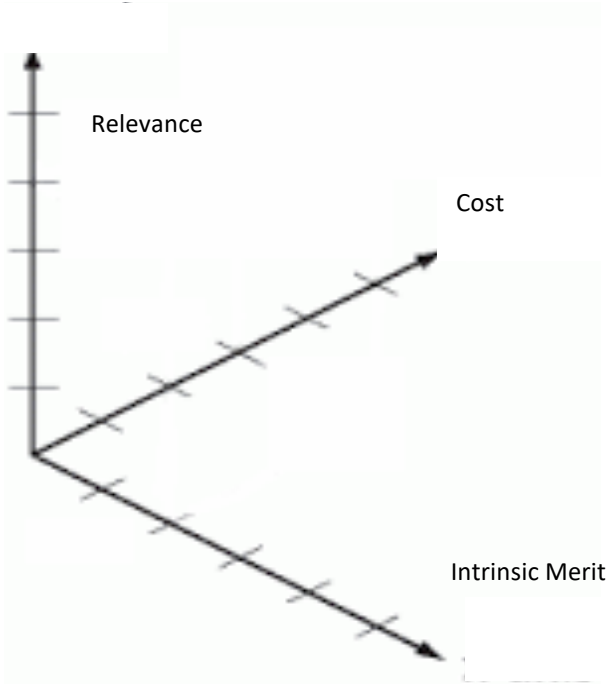




Peer Review for NASA ROSES
The Evaluation Criteria

- Criteria are assessed ***independently*** of one another, and a low rating in any one is cause for non-selection:

1. **Intrinsic Merit**
2. **Relevance**
3. **Costs**



Peer Review
Intrinsic Merit

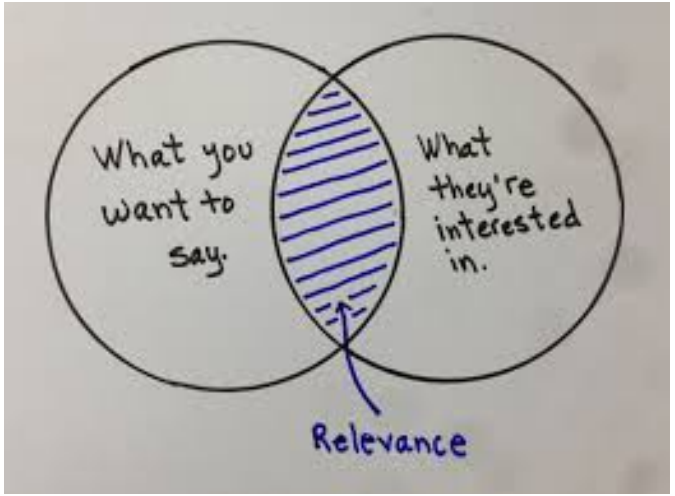
1. The scientific quality of the proposed project, including, but not limited to, the scientific rationale and the expected significance and/or impact of the proposed work.
2. Overall technical quality of the proposed work, including, but not limited to, the quality of the management plan and project timeline for carrying out the work and the effectiveness and resilience of the proposed experimental designs, methods, techniques, and approaches for achieving the proposed goals and/or objectives.
3. The qualifications, capabilities, and related experience of personnel demonstrated by the proposal (e.g., publications, delivered products, and other measures of productivity and/or expertise) that would affect the likelihood of achieving the objectives.
4. Facilities, instruments, equipment and other resources or support systems presented in the proposal that would affect the likelihood of achieving the proposed objectives.

Additional criteria may be found in specific call
Look for language "will be judged/reviewed upon"

Peer Review
Relevance

(judged against the text of the NRA)

1. How effective is the proposal's claim of relevance? Assuming everything works, would the results be relevant to the program?
2. Criterion is a little complicated for most reviewers.
3. The panel evaluates how well the proposal justifies its relevance to NASA & the program
4. The panel's judgment of the relevance of the proposed work, independent from the stated justification, can also be communicated to the Discipline Scientist
5. Importance varies by program — sometimes it's really binary.



Peer Review
Cost

This Does NOT Mean Total $$$

1. Are the resources requested (FTEs, travel $, supplies, etc.) appropriate for the proposed research program? Are the amounts of resources requested realistic given the panelists experiences as researchers? Is the budget clearly described and justified, including all major sub-contracts or sub-awards?
2. "Cost reasonableness" is not really "bang for buck" (you do NOT see salaries or overhead)
3. Reviewers do not evaluate the "bottom line"

The Score

Summary Evaluation	Basis for Summary Evaluation	Relationship of Summary Evaluation to Potential for Selection
Excellent	A thorough, and compelling proposal of exceptional merit that fully responds to the objectives of the FA as documented by numerous or significant strengths and with no major weaknesses.	Top priority for selection in the absence of any issues of funding availability, suspension or debarment, past performance or programmatic priorities.
Very Good	A competent proposal of high merit that fully responds to the objectives of the FA, whose strengths fully out-balance any weaknesses and none of those weaknesses constitute fatal flaws.	Second priority for selection in the absence of any issues of funding availability, suspension or debarment, past performance or programmatic priorities.
Good	A competent proposal that represents a credible response to the FA, whose strengths and weaknesses essentially balance each other.	May be selected as funds permit based on programmatic priorities.
Fair	A proposal that provides a nominal response to the FA but whose weaknesses outweigh any strengths.	Not selectable regardless of the availability of funds or programmatic priorities.
Poor	A seriously flawed proposal having one or more major weaknesses that constitute fatal flaws.	Not selectable regardless of the availability of funds or programmatic priorities.

- Criteria are assessed and the review panel will assign a score to the proposal based off definition from the NRA Guidebook for Proposers.
- **Scores may be assign for IM, Relevance, Cost, and/or Overall.**

Activity 2: Dissecting a Panel Review

Other Issues

- Read the Call carefully to ensure you cover all criteria
- Crying Baby on an Airplane Rule
  - Assume your reviewer is highly distracted when reading your document
- Things that upset reviewers
  - Typos
  - Full pages of dense text
  - Lack of clarity and specificity
  - Lack of organization
  - Lack of relevance to the call
  - Your abstract/summary is old and not on the actual topic of the proposal

Activity 3: Review of Proposal

Peer Review
Intrinsic Merit

1. The scientific quality of the proposed project, including, but not limited to, the scientific rationale and the expected significance and/or impact of the proposed work.
2. Overall technical quality of the proposed work, including, but not limited to, the quality of the management plan and project timeline for carrying out the work and the effectiveness and resilience of the proposed experimental designs, methods, techniques, and approaches for achieving the proposed goals and/or objectives.
3. The qualifications, capabilities, and related experience of personnel demonstrated by the proposal (e.g., publications, delivered products, and other measures of productivity and/or expertise) that would affect the likelihood of achieving the objectives.
4. Facilities, instruments, equipment and other resources or support systems presented in the proposal that would affect the likelihood of achieving the proposed objectives.

Red Team Critiques

What to focus on when critiquing:

1. What Worked
2. What Didn’t Work
3. What Might Work Better
4. Line Edits

What to focus on when receiving critiques:

1. Crave Criticism
2. Don’t Take it Personally
3. Many Versions of True
4. Write Down the Important Bits
5. Don’t Waste the Chance to Learn by Defending

Serving on Panels = Greater Understanding of Peer Review

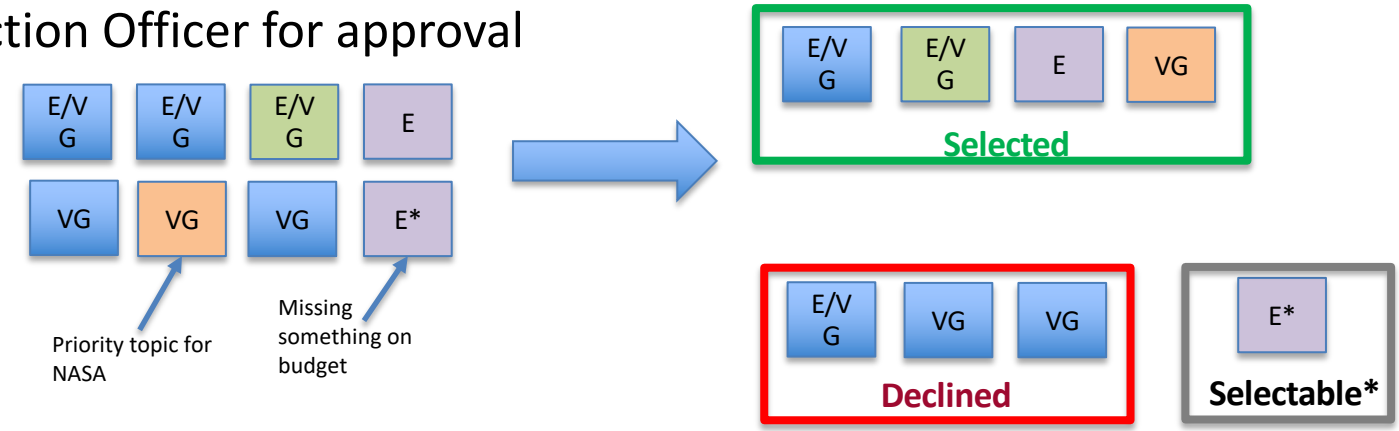
- Volunteer for Review Panels for NASA ROSES http://science.nasa.gov/researchers/volunteer-review-panels/
  - Please respond as soon as possible
  - If you can't travel, let us know that you would be willing to be a virtual panelist
  - Offer to serve as an external if needed
- Participating in a review, whether in person, virtually, as an external reviewer, or executive secretary is confidential

Selections & Programmatic Balance

After the Peer Review: What does the Program Officer Do?

- Program Officer integrates findings of panel with programmatic and budgetary considerations
  - Program balance is an important factor
  - Budgets and time commitments are reviewed

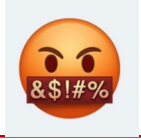
- Program Officer formulates list of recommended selections and submits to Selection Officer for approval



Suggestions:
When you are Selected

- Serve on a review panel
- Stay in touch with the Program Officer regarding funding receipt
- Submit your Progress Report on time
- Plan far ahead if you have a critical deadline for receipt of funds
- Invite the Program Officer to your talk/poster
- Send Program Officer copies of papers that came from funding!

Suggestions: When You are not Selected



- If you simply must fire off an email to the Program Officer questioning their intelligence and integrity and that of the review panel, write it and email it to yourself
- Remember that R&A programs are very competitive and you often have to submit multiple times
- After you receive your review, arrange a debrief with the Program Officer to answer any questions
- Contest the review if you feel that major mistakes were made
- Always use the comments from the Review Panel to improve your proposal before proposing again
- Agree/Volunteer to serve on Review Panels
- Check for other funding opportunities.

Discussion: Combatting the Spiral of Negativity

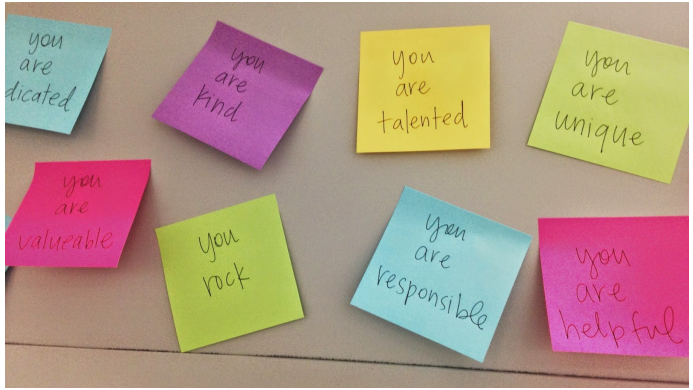
Combatting Negative Thoughts Within Yourself:

1. Talk about the issue with someone you trust
2. Ask your friends what they think of you
3. Use your own words to influence how you think
4. Build alliances
5. Own your accomplishments
6. Re-orient yourself around your VALUES

Combatting Negative Thoughts Within Others:

1. Encourage people
2. Discourage hostility and bickering
3. As a leader, show your own uncertainties & demonstrate your own learning process
4. Reward and encourage people in your group for mentoring others
5. Don’t make it personal when someone’s work needs improvement.

Activity 4: Values Exercise & Give/Take a Compliment



Wrapping Up

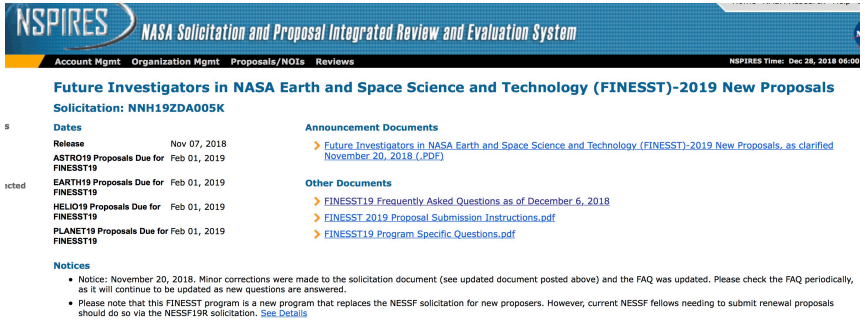
If You Remember Nothing Else, Remember This

- The opportunities are available: find them, learn them, make them yours
- Follow the Guidebook for Proposers and read the NRA for the program
- Your job is to make it as easy as possible for your two audiences to select your proposal
- Think before writing, critique before submitting
- Peer review levels the playing field – use it to your advantage
- It is never too early to start gaining proposal experience
- Networking really is a critical part of career: get your name out there in positive ways!

Career Development Programs

Future Investigators in NASA Earth and Space Science and Technology (FINESST)

- Replaces the NESSF Program
- Meant to fund Graduate Students for up to $45k/year for up to 3 years



NSPIRES NASA Solicitation and Proposal Integrated Review and Evaluation System

Account Mgmt Organization Mgmt Proposals/NOIs Reviews NSPIRES Time: Dec 28, 2018 06:00

Future Investigators in NASA Earth and Space Science and Technology (FINESST)-2019 New Proposals

Solicitation: NNH19ZDA005K

Dates

Release	Nov 07, 2018
ASTRO19 Proposals Due for FINESST19	Feb 01, 2019
EARTH19 Proposals Due for FINESST19	Feb 01, 2019
HELIO19 Proposals Due for FINESST19	Feb 01, 2019
PLANET19 Proposals Due for FINESST19	Feb 01, 2019

Announcement Documents

- Future Investigators in NASA Earth and Space Science and Technology (FINESST)-2019 New Proposals, as clarified November 20, 2018 (.PDF)

Other Documents

- FINESST19 Frequently Asked Questions as of December 6, 2018
- FINESST 2019 Proposal Submission Instructions.pdf
- FINESST19 Program Specific Questions.pdf

Notices

- Notice: November 20, 2018. Minor corrections were made to the solicitation document (see updated document posted above) and the FAQ was updated. Please check the FAQ periodically, as it will continue to be updated as new questions are answered.
- Please note that this FINESST program is a new program that replaces the NESSF solicitation for new proposers. However, current NESSF fellows needing to submit renewal proposals should do so via the NESSF19R solicitation. See Details

NASA Postdoctoral Program (http://npp.usra.edu)

- Provides NASA Centers with the responsibility to identify candidate postdoctoral opportunities that meet one or more of the following objectives:
  a. conduct cutting edge scientific research consistent with NASA's and SMD's strategic objectives
  b. recruit the finest early career scientists for short-term, focused research opportunities
  c. infuse new skills into, and revitalize, both new and existing research groups

THANK YOU: Steve Unwin, Rolf Danner, Hannah Jang-Condell, Paul Propster (and everyone at The Foundry), Rob Hannah, and the fine folks at NASA who support this workshop through the TWSC Program!

Also, thank you to each of you for taking this workshop today! Remember your homework!