



# *Research: Start to Finish Writing NASA Proposals*

- ◆ Basics
- ◆ NASA's Structure and Research & Analysis Programs
- ◆ Parts of NASA proposals: NSPIRES, NOIs, & Proposal Formats
- ◆ Proposal budgets
- ◆ Reviewing NASA proposals: From External Reviews to Review Panel
- ◆ References
- ◆ Q&A



## *Basics: Funding Your Research Career*

- ♦ All non-industry, PhD-level research scientists will need to fund their careers with research grants

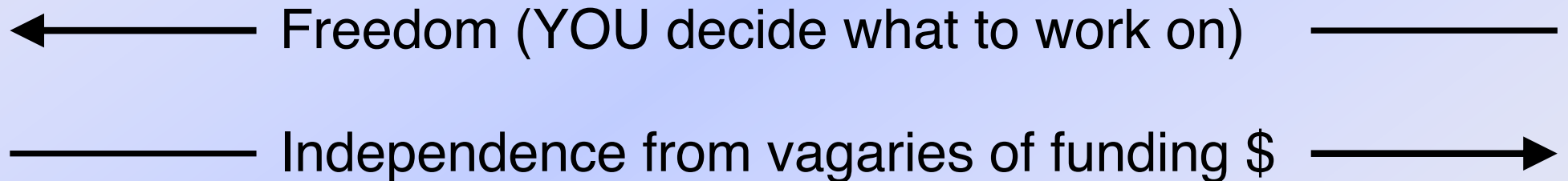
University

Gov't Research Lab.

Industry

Programmatic goals

Profit  
motive



### ***Tips:***

- ♦ During your postdoc (if not as a grad student), you should get experience writing research proposals!

## *Funding Sources*

### Astronomy

- ◆ Federal NASA, NSF
- ◆ State
- ◆ Local ASU?

### Planetary

NASA

ASU?

### Geosciences

NSF, DOE, GSA  
AZEQ, ADOT

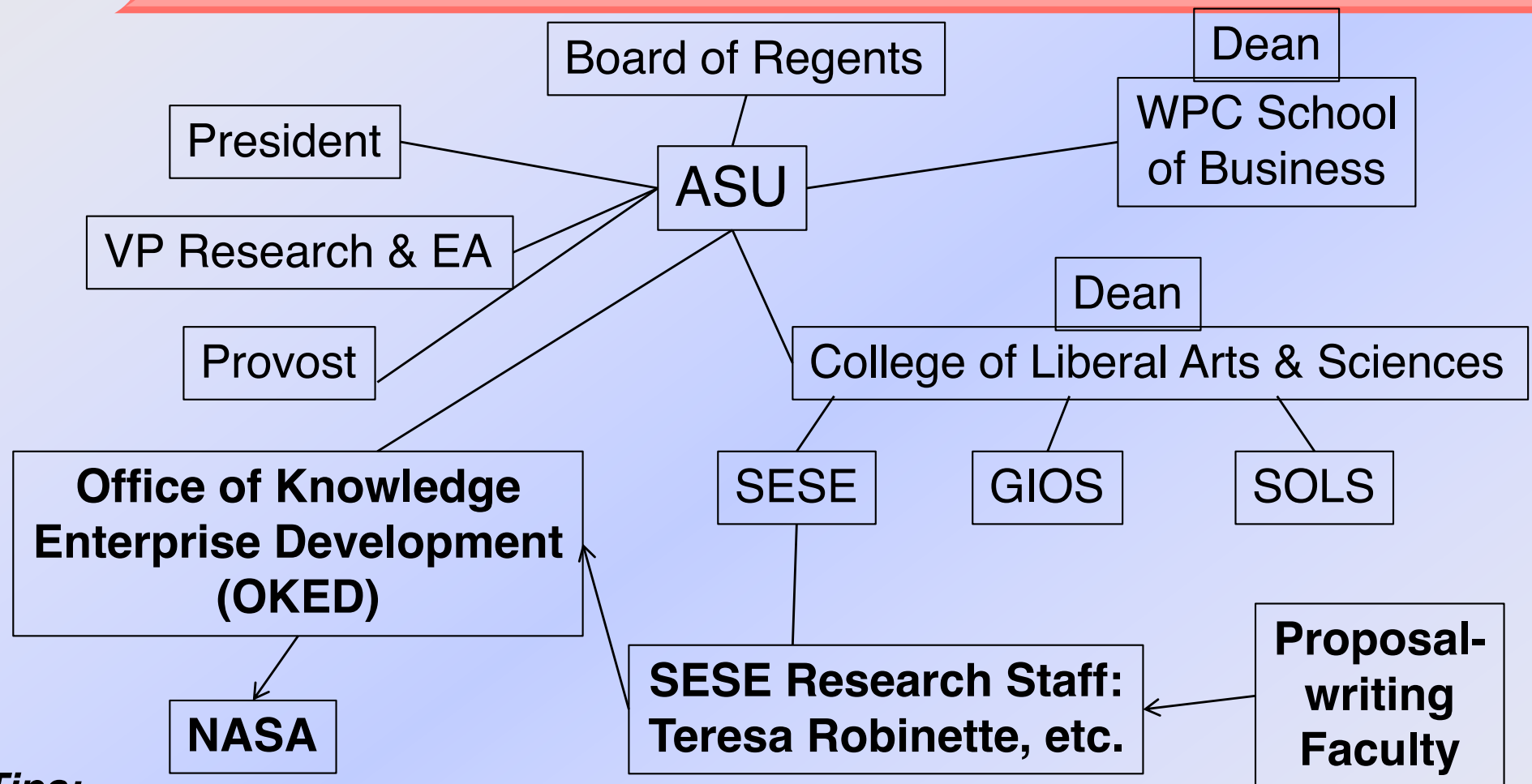
ASU?, City of Tempe?

- ◆ Other: Endowments, Foundations, Societal (Sigma Xi, Regional GSA), Consulting

### ***Tips:***

- ◆ Choose funding source appropriate for size and scope of project
- ◆ Your department (SESE), or ASU office of sponsored projects, or ASU Foundation, will have information on funding opportunities

# ASU Research Infrastructure



## Tips:

- ♦ Where ever you go, familiarize yourself with the *infrastructure* to submit proposals
- ♦ At ASU, postdocs can be Co-Is, but CANNOT PI proposals to NASA or NSF – must be promoted to Faculty Research Associate first!
- ♦ Be sure to get help writing your first proposal from your advisor or SESE Research Staff!!

# *What Constitutes a Good Research Topic?*

## ◆ **Topic is studiable**

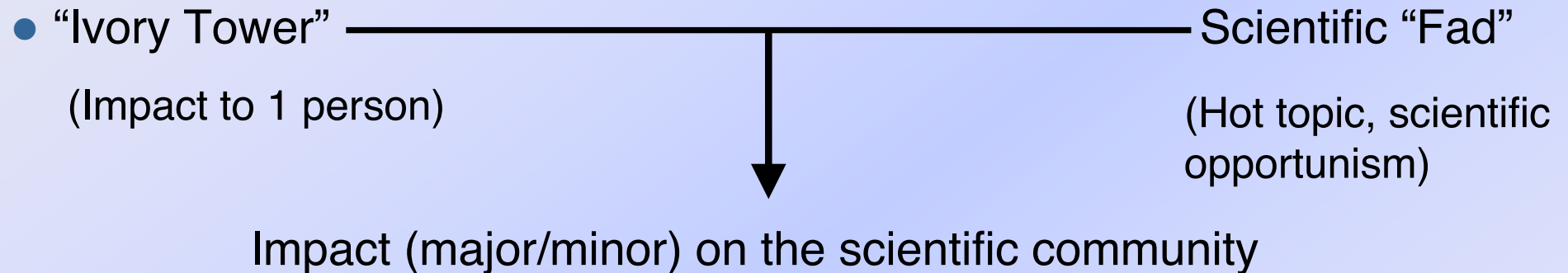
- Scientific methods & analyses can be applied
- Technology & resources exist to study the subject
  - People are trained and are available
  - Geographical (physical) facilities are available to do the research
  - Material & supplies (hardware, software, communication equipment) available
- Funding available
- Security can be maintained (if necessary) for ongoing research
- Research conforms to rules & guidelines of authorizing body

## ◆ **Topic is relevant to modern scientific study**

- Research topic can be related to current problems needing a solution
- Will fill a void in the database of field
- Will provide useful information for future after other research is completed
- Potential to provide more funding to field over extended period

## *What Constitutes a Good Research Topic?*

### ♦ Scientifically significant



### ♦ Should be achievable

- In general – resources, people, materials
- YOU as the researcher

### ♦ Topic should be “supportable” – funding, equipment, etc.



# *Types of Proposals*

## ***Proposals are Solicited or Unsolicited***

### ♦ Solicited Proposals

- Funding agency comes to you and asks for a proposal
- Very rare!

### ♦ Unsolicited Proposals

- Funding agency releases a call for proposals →
- If you are interested, you may apply

**AO, Announcement  
of Opportunity**

## ***Most Proposals provide funding as either Grants or Contracts***

### ♦ Grants

- “Gift” (at least in 1<sup>st</sup> year), but need to show progress to receive next year’s funding via ***Annual Progress Reports***

### ♦ Contracts

- “Deliverables” required at end of project: Report or hardware

## *NASA's Structure*

### ◆ ***NASA has FOUR Mission Directorates***

- Aeronautics Research (Air transportation system)
- Space Technology
- Human Exploration and Operations (ISS, and Beyond)
- Science

### ◆ ***NASA's Science Mission Directorate splits the Cosmos into FOUR Divisions***

- Heliophysics (The Sun)
- Earth Science
- Planetary Science (Everything in SS except above)
- Astrophysics (Everything outside the SS)



## *Funding from NASA*

### ◆ ***Funding can come from NASA Missions***

- Discovery-class (Small, PI-led, Cost cap \$450M: Dawn, MESSENGER, GRAIL, InSIGHT, Psyche)
- New Frontiers-class (Medium, PI-led, Cost cap \$750M: New Horizons, Juno, OSIRIS-REx)
- Flagship-class (Large, Center-led, Cost cap \$Multi B: Cassini, MSL, Europa Clipper)
- Other, Programmatic (LRO-Lunar Exp., MAVEN-Mars Scout)

### ◆ ***NASA's Research & Analysis (R&A) Program: ROSES 2017 AO*** (*AO = Announcement of Opportunity = Annual Call for Proposals*)

- Earth Science: ROSES Appendix A
- Heliophysics: ROSES Appendix B
- Planetary Science: ROSES Appendix C
- Astrophysics: ROSES Appendix D

## *Funding from NASA Missions*

### ◆ ***Funding to the Missions' Science Teams***

- Usually written into initial proposal for mission or instrument
- PIs and Co-Is can receive large block of funding for postdocs, grad students, and staff scientists
- Proposal more complex than typical R&A proposals (many NASA Programmatic requirements)
- Usually done by mid-career or senior scientists w/prior mission experience

### ◆ ***Funding to New Science Team Members (After Launch)***

- Proposal calls prior to start of or during Prime Mission
- Participating Scientists, Guest Investigators, Guest Observers, Interdisciplinary Scientists

### ***Tips:***

- ◆ PS, GI, GO, and IDS programs are great way for early career scientists to break into field!!

## *Funding from NASA R&A Program: Examples*

### ◆ Astrophysics

- Astrophysics Data Analysis, Astrophysics Research & Analysis, Astrophysics Theory, Kepler Guest Investigator, Swift Guest Observer

### ◆ Planetary Science

- Solar System Workings, Habitable Worlds, Emerging Worlds, Lunar Data Analysis, Mars Data Analysis, Cassini Data Analysis & Participating Scientists, Maturation of Instruments for SS Exploration

### ◆ Earth Science

- Land Cover/Land Use Change, Ocean Biology & Geochemistry, Biodiversity, Cryospheric Science, Interdisciplinary Research in Earth Science, Science of Terra and Aqua

### ***Tips:***

- ◆ Always read the AOs of the programs in your discipline to find the correct program(s) for your research!

	PDART	CDAPS	DDAP	LDAP	MDAP	SSW
<b>Science Investigation</b>	No "does not accept proposals in which the main focus is hypothesis-based science"	Yes	Yes	Yes	Yes	YES
<b>Laboratory Studies</b>	Yes "may be performed to validate any generated products"	Yes "greatly increase the use of, or significantly facilitate the interpretation of, data from the mission"	Minor "not intended to support investigations whose primary emphasis is ... laboratory measurements"	Minor "provided that the observations or measurements are essential to the success of the work proposed" and "does not exceed 20% of the proposal's total effort"	Minor	YES
<b>Field Work</b>	No	Yes "greatly increase the use of, or significantly facilitate the interpretation of, data from the mission"	No	Minor "provided that the observations or measurements are essential to the success of the work proposed" and "does not exceed 20% of the proposal's total effort"	Minor	YES
<b>Comparative Planetology</b>	Yes "may be performed to validate any generated products"	Yes As long as all Cassini Data	Yes As long as all Discovery mission data	No	No	YES "If the proposal analyzes data within the scope of more than one of the [DAPs] in order to perform comparative studies across the Solar System, but is not appropriate to any one [DAP]"
<b>Data Products</b>	Yes	Yes must include a science investigation	Yes must include a science investigation	Yes must include a science investigation	Yes must include a science investigation	YES must include a science investigation
<b>Modeling</b>	Minor "may be performed to validate any generated products"	Yes "greatly increase the use of, or significantly facilitate the interpretation of, data from the mission"	Minor "not intended to support investigations whose primary emphasis is ... the development of numerical models"	Minor	Minor "Improved atmospheric models..." and "Improved models for the Mars gravity field and global topography and planetary figure."	YES
<b>Mission Data Analysis</b>	No "PDART does not support scientific investigations whose primary emphasis is data analysis"	Yes Cassini-Huygens "Proposals to work with Cassini data and also use ground-based or other data are acceptable, provided that the success of the proposal, as written, is dependent upon the Cassini data."	Yes NEAR Lunar Prospector Stardust Genesis Deep Impact MESSENGER Dawn EPOXI Startdust-NExT	Yes LCROSS M3 LRO GRAIL ARTEMIS LADEE non-US Lunar missions "data analyses that require the use of older mission data sets are allowable in the context of enhancing the analysis and understanding of the data from the missions listed above."	Yes MPF MGS MO MERs MEX MRO PHX MSL	YES "Although this program encourages the utilization of data from planetary missions ... it does not accept proposals eligible for funding by the Data Analysis Programs"

# *NASA R&A Proposals*

## **Key Points:**

- ◆ Scope, length, and amount of funding quite variable
  - DAPs are 3-year length, SSW can run up to 4 years
  - Facility proposals run 5 years; some research (geologic mapping) run longer than 3 years, so have to split work between two proposals
  - Most full time soft money scientists ideally fund themselves from 3-4 concurrent proposals, each covering 25% to 33% of their salaries. Better than smaller fractions from many projects!
  - A typical 3-yr, R&A grant covering 1/4 to 1/3 of your salary, with 'normal' ops, travel, and publications costs averages ~\$80K-\$100K, with no subcontracts (including overhead) or major equipment required
- ◆ **Tips:** Starting your career, if you can get funding from mission work, you should!
  - This business is very opportunistic!



## *Who Can Be Funded On Proposals?*

### ***The Principal Investigator, PI, leads a proposal effort***

- ◆ The PI assembles the team to conduct proposed tasks
  - Co-Investigators participate in the work & receive funding
  - Collaborators contribute expertise to the proposal, but do not receive funding. Can be at same institution or different institution
  - Staff contribute specific expertise and can receive funding
  - Postdocs and Graduate Students are scientists in training, and can receive funding
  - Contractors can provide a specific product or service for a fee

### ◆ ***TIPS***

- Choose your funded Co-Is carefully – don't let the proposal get more expensive than it needs to be!
- If a Co-I is too expensive, can compensate with a lower %FTE (Full Time Equivalent)



## *NASA NOIs & Step-1 Proposals*

### ***The first step in submission of a proposal is submission of an NOI or Step-1 Proposal***

#### ◆ NOI = Notice of Intent (to propose)

- ≤1 page summary of proposal
- No budget or list of Co-Is required, but sent by ASU!
- Submitted electronically via NASA's NSPIRES website (see next)
- NASA uses NOIs to determine expertise required for Review Panel

#### ◆ Step-1 Proposal

- NASA Program Officers use these for new programs, to determine if proposal within scope of program
- Proposals are either Encouraged or Discouraged to proceed to full regular proposal (Step-2 proposal)
- No budget required, but list or funded Co-Is required!

# NSPIRES Homepage



NASA Solicitation and Proposal Integrated Review and Evaluation System

Home NASA Research Help Login



[NSPIRES Time: Nov 16, 2014 12:42PM EST]

**ATTENTION** organizations wishing to register in NSPIRES: Please see the Site News on the right hand side of this page for important information.

## NSPIRES Home

- ▶ Solicitations
- ▶ Getting Started
- ▶ NSPIRES Help
- ▶ Getting an Account

## 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](mailto:nspires-help@nasaprs.com).



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.

#### 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.

#### ▶ 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.

## Member Login:

Username:

Password:

Login

▶ [Forgot Your Password?](#)

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## Site News

### Organization registration in NSPIRES

We are experiencing a problem with registration.

▶ [Continue Reading](#)

### NRA/CAN Proposer's Guidebook

Available online

▶ [Continue Reading](#)

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Curator: NASA Research and Education Support Services  
NASA Official: [Roger L. Sachse](#)  
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## Tips:

- ◆ New postdocs should register w/NSPIRES if you plan to be involved w/proposal writing or reviewing



# NSPIRES PI's Homepage



**ATTENTION** organizations wishing to register in NSPIRES: Please see the Site News on the right hand side of this page for important information.

## NSPIRES Home

- ▶ Solicitations
- ▶ Selected Proposals

## Getting Started

- ▶ What is NSPIRES?
- ▶ Getting an Account
- ▶ Using NSPIRES



## Welcome to NSPIRES Dr. David Williams

### Reminders/Notifications [ update ]

- No Reminders or Notifications at this time.

### NSPIRES Options

#### ▶ [Account Management](#)

View and update your account.

#### ▶ [Proposals/NOIs](#)

Create and edit your proposals, and view proposal status.

#### ▶ [Reviews](#)

Create and submit proposal reviews (for current peer reviewers only).

#### ▶ [Organization Management](#)

View and update your organization's information.

- [Register a New Organization](#)

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## Tips:

- ◆ Explore your NSPIRES account to locate solicitations, links to create NOIs and proposals, and review assignments

# NSPIRES Page: Create Proposal or NOI

**NSPIRES**  
*NASA Solicitation and Proposal Integrated Review and Evaluation System*

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Account Mgmt Organization Mgmt Proposals/NOIs Reviews

NSPIRES Time: Nov 16, 2014 12:45PM EST

**ATTENTION** organizations wishing to register in NSPIRES: Please see the Site News on the right hand side of this page for important information.

**Proposals/NOIs**

- Unsubmitted Proposals/NOIs
- Submitted Proposals/NOIs

**Proposals: Unsubmitted Proposals/NOIs**

Click on the proposal's title for detailed proposal information. Any additional options for each category will appear in the right columns.

**Unsubmitted Proposals** [Create Proposal](#)

<a href="#">Proposal Title</a>	<a href="#">Solicitation</a>	<a href="#">Acronym</a>	<a href="#">Organization</a>	<a href="#">PI</a>	<a href="#">Due Date</a>	<a href="#">Status</a>
You currently have no proposals						

**Unsubmitted NOIs** [Create NOI](#)


<a href="#">Proposal Title</a>	<a href="#">Solicitation</a>	<a href="#">Acronym</a>	<a href="#">Organization</a>	<a href="#">PI</a>	<a href="#">Due Date</a>	<a href="#">Status</a>
You currently have no NOIs						

**Proposal Questions?**


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

**Proposal Retention Policy**

Please make sure you have read and are aware of the [NSPIRES Proposal Retention Policy](#) before you create a proposal.



Curator: NASA Research and Education Support Services  
NASA Official: [Roger L. Sachse](#)  
[NASA Web Privacy Policy and Important Notices](#)  
[Website Comments / Technical Issues](#)



## Tips:

- ◆ Explore your NSPIRES account to locate solicitations, links to create NOIs and proposals, and review assignments

GLG 791

Proposals – 18

## *Parts of a NASA R&A Proposal*

- ◆ NASA proposals are submitted as PDFs via the **NSPIRES website** (NASA Solicitation & Proposal Integrated Review & Evaluation System)
  - NSPIRES pages
  - Table of Contents (pages as needed)
  - **Scientific/Technical/Management Section (15 single-spaced pages)**
  - References (pages as needed)
  - Data Management Plan
  - PI's CV (2 pages) and Co-I's CVs (1 page each)
  - PI's list of Current & Pending funded research projects (pages as needed)
  - Co-I's Current & Pending (pages as needed)
  - Facilities and Equipment list (pages as needed)
  - Budget Justification and Table of Work Efforts (pages as needed)
  - Detailed Budget (pages as needed)





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### Proposals/NOIs

▶ Unsubmitted Proposals/NOIs

▶ Submitted Proposals/NOIs

### View Proposal

▶ Proposal Information

### Cover Page Elements

▶ Proposal Summary

▶ Business Data

▶ Budget

▶ Program Specific Data

▶ Proposal Team

## View Proposal

**Title:** **Geologic Mapping of Arsia and Pavonis Montes, Mars**

**Solicitation Announcement:** [NNH09ZDA001N-MDAP: Mars Data Analysis](#)

**Proposal No.:** 09-MDAP09-0020  
**PI:** Dr. David Williams  
**Submittal Type:** Electronic Submissions Only  
**Proposal Due:** 08/21/2009, 11:59PM EDT  
**Status:** Selected

**Submitting Organization:** ARIZONA STATE UNIVERSITY  
660 S MILL AVE STE 312,  
TEMPE, AZ 85281-3670  
DUNS #: 943360412-  
CAGE: 4B293

**Applicant Identifier:**

### Proposal Cover Page

Element	Updated	Status *
<a href="#">Proposal Summary</a>	Last updated: 07/17/2009, Dr. David Allen Williams	✓
<a href="#">Business Data</a>	Last updated: 07/17/2009, Dr. David Allen Williams	✓
<a href="#">Budget</a>	Last updated: 08/13/2009, Dr. David Allen Williams	✓
<a href="#">Program Specific Data</a>	Last updated: 07/17/2009, Dr. David Allen. Williams	✓
<a href="#">Proposal Team</a>	Last updated: 08/19/2009, Dr. David Allen Williams	✓

\* Status denotes if the minimum requirements have been met for each element. It is the responsibility of the PI/organization to determine if each element is completed for submission.

### Proposal Attachments

\* At least one document of this type is required for submission.  
(1) Only one of this document type can be attached to a Proposal/NOI.  
(M) Multiple files for this document type can be attached to a Proposal/NOI.

Type	File Name	Date Uploaded
Proposal Document * (1)	MDAP2009_TM_Prop_Final.pdf	08/13/2009

### Complete Proposal

▶ 09-MDAP09-0020.pdf

### PI Selection Information Package ( 05/17/2010 )

#### Type

Notification Letter

Panel Evaluation

OK

Print



## *Writing the Proposal*

- ◆ Writing the Scientific/Technical/Management Section is the most time-consuming part of the process. ~15 pages long. Typical sub-sections:
  - Introduction and/or Statement of Objectives of Proposal
  - Approach & Methodology
    - Background (Previous work, similar ongoing work, etc.)
    - Description of Tasks
  - Statement of Data Availability
  - Data Management Plan (New in 2014)
  - Statement of Perceived Impact on community
  - Statement of Relevance to Program Objectives
  - Work Plan, Management, and Schedule (table)
- ◆ See example proposal!

## *Tips on Proposal Writing*

- ◆ Writing proposals is learned from experience, and the best way to learn what to do and what NOT to do is to serve on a NASA Review Panel and experience it for yourself!
- ◆ These opportunities come when you start submitting proposals. In the meantime, some **TIPS**:
  - Start working on research BEFORE you begin writing proposal, if you can
    - establish some credibility – you know the topic well!
  - In each task, include proof-of-concept examples that demonstrate you know how to do what you propose to do
  - Use figures appropriately; “Picture worth a thousand words!”
  - Strengthen your proposals through a good publication record
    - PhD students should have 3-4 lead-authored publications from dissertation research (Get papers in review before you graduate!!)
    - Postdocs should strive for 2 lead-authored AND 2 co-authored publications every year of your postdoc – PUBLISH! PUBLISH! PUBLISH!

# *Proposal Budgets*

## **Two Cost categories:**

### ◆ Direct costs (DC)

- Salaries of researchers in terms of %FTE, employee-related expenses (ERE: health & retirement benefits)
- Operations: Research materials, hardware, software, laboratory equipment, field work expenses, publication costs, etc.
- Tuition for Graduate Students (does not contribute to IDC)
- Domestic & international travel expenses (Conference registration, air fares, mileage, lodging, rental cars, taxi/shuttle/train, per diem for food)
- Subcontracts: All of the above, but for funded colleagues at other institutions

### ◆ Indirect costs (IDC, or overhead – tax on proposals to pay for infrastructure at institution: Buildings, AC, lights, admin assist)

- Varies widely: ASU – 54.5%; JPL – ~150%
- Varies also for on-campus vs. off-campus research

# Sample Budget

## Key Points:

- ◆ Most Direct costs are in salaries
- ◆ Include money to present results at one conference/year
- ◆ Money for 1 new computer in 1<sup>st</sup> year -- \$3-3.5K
- ◆ Money for one publication per year
- ◆ Two subcontracts
  - ~45% of whole proposal
  - Beware double overhead – ASU charges IDC on first \$20K of subcontracts

## Proposal Budget

ASU PORTION	\$, FY '10	\$, FY '11	\$, FY '12	\$, FY '13
PI Salary* (Williams)	18.75%	18.75%	18.75%	18.75%
@ \$62,500/current FY09	12,188	12,675	13,182	13,709
Technology Support Analyst* (Bradbury)	10%	10%	10%	10%
@ \$51,376/current FY09	5,343	5,557	5,779	6,010
<b>Total Salaries</b>	<b>17,531</b>	<b>18,232</b>	<b>18,961</b>	<b>19,720</b>
<b>Employee Related Expenses (ERE)</b>				
Williams (28.5%)	3,473	3,636	3,782	3,933
Bradbury (34.5%)	1,817	1,935	2,013	2,093
<b>Total ERE</b>	<b>5,290</b>	<b>5,572</b>	<b>5,795</b>	<b>6,027</b>
<b>Total ASU Salary &amp; Fringes</b>	<b>22,821</b>	<b>23,804</b>	<b>24,756</b>	<b>25,746</b>
<b>Travel</b>				
PI: Present results at one conference (Fall AGU, San Francisco or GSA)				
Includes airfare, per diem, lodging, Registration, airport taxi	2,000	2,000	2,000	2,000
PI and Co-I: Attend annual Planetary Mapper's Meeting (Required by PG&G)				
Includes airfare, per diem, shared lodging, airport taxi	1,500	1,500	1,500	1,500
<b>Total ASU travel</b>	<b>3,500</b>	<b>3,500</b>	<b>3,500</b>	<b>3,500</b>
<b>Operations</b>				
Mapping Supplies	1,000	1,000	1,000	1,000
Journal Publication Costs				
JGR/Icarus (1 paper/year + color figure)	1,500	1,500	1,500	1,500
Computer for digital generation of the geological maps	3,000	0	0	0
Computer Software & Maintenance	1,000	1,000	1,000	1,000
<b>Total operations</b>	<b>6,500</b>	<b>3,500</b>	<b>3,500</b>	<b>3,500</b>
<b>INTERAGENCY TRANSFER: Co-I Bleacher, NASA Goddard SFC</b>				
Co-I Salary + Fringe (Bleacher)	12.6%	12.6%	12.6%	12.6%
	10,950	19,686	20,567	31,107
SED-Other Direct Support	2,314	1,831	1,924	1,338
<b>BLEACHER TOTAL</b>	<b>13,265</b>	<b>21,517</b>	<b>22,490</b>	<b>32,445</b>
<b>SUBAWARD: Co-I Garry, Smithsonian Institution</b>				
Co-I Salary* (Garry)	25%	25%	25%	25%
	22,384	23,055	23,747	24,459
Garry Fringes + Overhead (27.4%)	6,133	6,317	6,507	6,702
<b>Co-I Travel: Present results at one conference (LPSC, Fall AGU, San Francisco or GSA)</b>	<b>2,000</b>	<b>2,000</b>	<b>2,000</b>	<b>2,000</b>
<b>GARRY SUBCONTRACT TOTAL</b>	<b>30,517</b>	<b>31,372</b>	<b>32,254</b>	<b>33,161</b>
<b>Total Subawards</b>	<b>43,782</b>	<b>52,889</b>	<b>54,744</b>	<b>65,606</b>
<b>TOTAL DIRECT COSTS</b>	<b>76,602</b>	<b>83,693</b>	<b>86,501</b>	<b>98,352</b>
<b>MODIFIED DIRECT TOTAL COSTS**</b>	<b>57,821</b>	<b>30,804</b>	<b>31,756</b>	<b>32,746</b>
<b>TOTAL INDIRECT COSTS (F&amp;A, 52.5%)</b>	<b>30,356</b>	<b>16,172</b>	<b>16,672</b>	<b>17,192</b>
<b>GRAND TOTAL</b>	<b>106,958</b>	<b>99,865</b>	<b>103,172</b>	<b>115,544</b>



## *Submitting your Proposal*

### ***Proposals are submitted by sponsoring institution, not by PI***

- ◆ Once proposal is ready, upload to NSPIRES website
  - PI creates a webpage for proposal on NSPIRES site
  - Sections for Proposal Summary (4000 characters), Business Data (Sponsoring org, start-end dates, environmental impact, point of contact), Budget, Program Specific Data, and Proposal Team (PI, Co-Is, Collaborators, Staff, Students)
  - Budget pages here MUST match budget page within proposal!! NASA goes by these budgets when awarding money
  - Upload proposal document as a PDF to site
- ◆ PI “Releases Proposal to Sponsoring Org”
  - They review the proposal PDF according to their guidelines, either ask for changes, or release it to NASA
  - Sponsoring org usually requires 2-5 days to review proposal!



**ATTENTION** organizations wishing to register in NSPIRES: Please see the Site News on the right hand side of this page for important information.

## Proposals/NOIs

▶ Unsubmitted Proposals/NOIs

▶ Submitted Proposals/NOIs

## View Proposal

▶ Proposal Information

## Cover Page Elements

▶ Proposal Summary

▶ Business Data

▶ Budget

▶ Program Specific Data

▶ Proposal Team

## View Proposal

**Title:** **Geologic Mapping of Arsia and Pavonis Montes, Mars**

**Solicitation Announcement:** [NNH09ZDA001N-MDAP: Mars Data Analysis](#)

**Proposal No.:** 09-MDAP09-0020  
**PI:** Dr. David Williams  
**Submittal Type:** Electronic Submissions Only  
**Proposal Due:** 08/21/2009, 11:59PM EDT  
**Status:** Selected

**Submitting Organization:** ARIZONA STATE UNIVERSITY  
660 S MILL AVE STE 312,  
TEMPE, AZ 85281-3670  
DUNS #: 943360412-  
CAGE: 4B293

**Applicant Identifier:**

### Proposal Cover Page

Element	Updated	Status *
<a href="#">Proposal Summary</a>	Last updated: 07/17/2009, Dr. David Allen Williams	✓
<a href="#">Business Data</a>	Last updated: 07/17/2009, Dr. David Allen Williams	✓
<a href="#">Budget</a>	Last updated: 08/13/2009, Dr. David Allen Williams	✓
<a href="#">Program Specific Data</a>	Last updated: 07/17/2009, Dr. David Allen. Williams	✓
<a href="#">Proposal Team</a>	Last updated: 08/19/2009, Dr. David Allen Williams	✓

\* Status denotes if the minimum requirements have been met for each element. It is the responsibility of the PI/organization to determine if each element is completed for submission.

### Proposal Attachments

- \* At least one document of this type is required for submission.  
(1) Only one of this document type can be attached to a Proposal/NOI.  
(M) Multiple files for this document type can be attached to a Proposal/NOI.

Type	File Name	Date Uploaded
Proposal Document * (1)	MDAP2009_TM_Prop_Final.pdf	08/13/2009

### Complete Proposal

▶ 09-MDAP09-0020.pdf

### PI Selection Information Package ( 05/17/2010 )

#### Type

Notification Letter

Panel Evaluation

OK

Print



## *How NASA Proposals Are Evaluated*

**All NASA proposals are evaluated by a Review Panel within 3-6 months after submission**

◆ Review Panels are composed of the NASA Program Officer and a group of scientists with expertise in subject & no *conflicts of interest* (not at same institution or on a competing proposal)

- Panel divided into Groups (e.g., Geology, Geophysics, Remote Sensing, etc.) of ~6-8 reviewers
- Each proposal is reviewed by 2-3 panelists and (ideally) 2-3 external reviewers (community members not on panel)
- Each proposal is assigned a Chief Reviewer & 2 Associate Reviewers, who've (ideally) submitted a review prior to arriving at the panel
- One by one, each proposal is discussed: Chief's review, associates' reviews, external reviews. Then the proposal is scored.
- Chief Reviewer writes the Consensus Review, which will be sent to PI

## *How NASA Proposals Are Scored*

### **Proposals evaluations are scored in a standard format**

- ◆ Reviewers & panelists score each proposal with 3 metrics:
  - Intrinsic Merit: Balance of Major and Minor Strengths and Weaknesses regarding proposed tasks, experience of the PI + team, methodology, etc.
  - Relevance to the NASA Program: Is the proposed work relevant to the goals of the NASA Program (Fully Relevant, Partly Relevant, Not Relevant)
  - Cost Realism/Reasonableness: Does the proposal request appropriate funds (%FTE, operations, travel, etc.) to accomplish the proposed work? (Realistic/Reasonable/Well Justified, Some Issues, Inadequate)
- ◆ Scores:
  - Excellent-5, Excellent/Very Good-4.5, Very Good-4, Very Good/Good-3.5, Good-3, Good/Fair-2.5, Fair-2, Fair/Poor-1.5, Poor-1
- ◆ IM & Cost usually dominates
- ◆ After all proposals are scored, they ordered highest to lowest

## *Intrinsic Merit - Evaluation Criteria*

Summary Evaluation	Basis for Summary Evaluation	Relationship to Potential for Selection
Excellent	A thorough and compelling proposal of exceptional merit that fully responds to the objectives of the NRA 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 or programmatic priorities.
Very Good	A competent proposal of high merit that fully responds to the objectives of the NRA, 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 or programmatic priorities.
Good	A competent proposal that represents a credible response to the NRA, 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 NRA but whose weaknesses outweigh any strengths.	<b>Not selectable</b> regardless of the availability of funds or programmatic priorities.
Poor	A seriously flawed proposal having one or more major weaknesses that constitute fatal flaws.	<b>Not selectable</b> regardless of the availability of funds or programmatic priorities.

## *Relevance - Evaluation Criteria*

**Assume that everything works as proposed.** By definition, any proposal relevant to this program element is relevant to NASA.

To be relevant to this program element, the proposal must not only be responsive to the goals and objectives listed in the solicitation, but it also must not be responsive to another program element

Proposals must contain a statement of the relevance of the proposed investigation to NASA.

Use a three-level scale:

**3- Fully Relevant:** A clear, detailed argument for relevance **is presented in the proposal** and is **accepted** by the panel.

**2- Partly Relevant:** The relevance argument presented by the proposal is not completely clear or detailed and does not completely convince the panel.

**1- Not Relevant:** There is a weak, or non-existent, relevance argument presented or the panel is completely unconvinced by the presented argument.



## *Cost - Evaluation Criteria*

### Questions to consider:

- ♦ Are the resources requested (FTEs, travel and supply costs, etc.) reasonable for the scale and type of work proposed?
- ♦ Are the amounts of resources requested realistic given your experience?
- ♦ Is the budget clearly described **and justified**, including all major personnel, all major sub-contracts or sub-awards (Check table of FTE)?

**“Cost reasonableness” is not “bang for buck.” It is not up to the panel to decide that a proposal costs too much of the available funds — that’s NASA’s job.**

Use a three-level scale:

**3- RRWJ:** “The proposal budget was reasonable, realistic, and well--justified.”

**2- Some Issues:** The budget has some minor (fixable, does not require contact with proposer) problems or minor points that are unclear.

**1- Inadequate:** The budget has major problems (e.g. no justification for some or all of the work effort).

## Which NASA Proposals Are Funded?

**Program Officer used Review Panel scores to fund the best proposals each year**

- ◆ Review Panel uses scored proposal in their Group to determine the “waterline” (WL)
  - Proposals above WL can be funded if there are enough funds
  - Proposals below WL will not be funded
  - If more money may come available later in the FY, fundable proposals can be listed as “Selectable”

PI Name	Proposal #	IM	Rel	CR	OA
Kirk	5	5	Y	4.5	5
Spock	2	4.5	Y	4.5	4.5
Sisko	8	5	Y	5	4.5
Picard	6	4	Y	4	4
Janeway	1	5	Y	3	4
Archer	13	4	Y	3	3.5
Kira	11	3	Y	4	3.5
T'Pol	3	3.5	Y	3.5	3.5
Dax	14	3	Y	3	3
Chakotay	17	3.5	Y	2.5	3
Bashir	15	3	Y	2	2.5
O'Brien	7	2.5	Y	2.5	2.5
Paris	18	3.5	Y	1.5	2.5
Kim	10	2	Y	2	2
Odo	16	2	Y	2	2
Tuvok	4	1	Y	1	1
Reed	12	1	N	0.5	1
Phlox	9	4.5	N	4	1



## *Notification of Proposal Reviews*

- ◆ Soon after Review Panel (ideally within 120 days after submission), NASA notifies PI of results by email
  - Selected: Proposal will be funded immediately (**fully or partially**)
  - Selectable: Proposal MAY BE funded before end of Federal FY if more money comes available
  - Not Selected: Proposal will not be funded this year
- ◆ Notification letter comes with Consensus Review, both downloadable from NSPIRES

### ***TIPS:***

- ◆ Often it takes about 9 months - 1 year from submission to receipt of funding
- ◆ Most 1<sup>st</sup>-time proposals are rejected. BE PERSISTENT!!
- ◆ If not selected, ALWAYS review Panel comments, and revise proposal for submission next year

# Dave Williams' Proposal History: 2003-2015

Proposal Title (Program)	%FTE	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Global Geologic Map of Io (PGG)	25	3.5 (VG/G)													
Global Geologic Map of Io (OPR)	25		VG												
Io Map E/PO (E/PO)	0		G	VG											
Geologic Map Olympus Mons (PGG)	25				4.0 (VG)	3.5 (VG/G)	3.0 (G)								
Geologic Map Olympus Mons (MDAP)	25						4.0 (VG)								
Geologic Map Tharsis Mons (PGG)	18.75				3.5 (VG/G)	4.0 (VG)	3.0 (G)	3.5 (VG/G)							
Geologic Map Tharsis Mons (MDAP)	18.75						3.5 (VG/G)	4.5 (E/VG)							
Tharsis Shields (MROPS06)	33				3.0 (G)										
Mapping Land Sites (LROPS07)	33					3.0 (G)									
Geologic Map of Io Phase 2 (OPR)	25					VG/G									
NH Io Data (JDAP)	25						G/F								
NH Io Data (OPR)	25						VG/G	G	F	G/F	VG/G				
NH Io Data (PGG)	25								VG/G	VG/G	G/F				
Titan Mapping (CDAP/CDAPS)	25						F/P	G	3.5 (VG/G)	DAP:VG, PS:G	DAP:VG/G, PS:VG/G	DAP: G, PS: G			
Titan Mapping (OPR)	25						G/F			G	VG/G	G			
Identify Volcanism (DAVPS09)	25							VG							
Io Adaptive Optics NSF (PI de Pater)	6.25														
Io Adaptive Optics (PAST: PI de Pater)	6.25								VG						
Erosion by Lava (PGG)	25								G	VG					
Io Modeling (PGG12: PI de Pater)	6.25				NS										
Erosion by Lava (PGG: PI Hamilton)	10 (FY15-16)														
OM Mapping Phase 2 (MDAP12)	25										G	G			
TREx (SSERV1 12: PI Jim Bell)	5														
Topo Imager (ICEE 13: PI Jim Bell)	10											E/VG			
Ascræus Mons Mapping (MDAP13)	6.25+S											VG			
Modeling Erosion by Lava on Venus (SSW14)	8.33+S												G/F		
Digitizing RGCPS Archive (PDART14)	4												E		
Mapping Ceres (DACGIP14)	35+S												NS		
MESH Europa Camera (EI14: PI Bell)	Variable												NS		
Pandora (Disc15, Step 1: PI C. Raymond)	N/a													NS	
Mapping Vesta (DDAP15: PI A. Yingst)	17.5														NS
Dawn @ Ceres (Dawn Science Team)	35														NP

**Key:**

- = Selected
- = Selectable
- = Not Selected
- = Selectable, later Not Selected
- = Selectable, later Selected
- = No adjectival score given



Proposal Title (Program)	%FTE	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Global Geologic Map of Io (PGG03)	25	3.5 (VG/G)													
Global Geologic Map of Io (OPR04)			VG												
Io Map E/PO (E/PO-04)	0		G												
Io Map E/PO (E/PO-05)	0			VG											
Geologic Map Olympus Mons (PGG06)	25				4.0 (VG)										
Geologic Map Tharsis Mons (PGG06)	25				3.5 (VG/G)										
Tharsis Shields (MRO-PS06)	33				3.0 (G)										
Mapping Land Sites (LRO-PS07)	33					3.0 (G)									
Geologic Map of Io Phase 2 (OPR07)	25					VG/G									
Geologic Map Tharsis Mons (PGG07)	25					4.0 (VG)									
Geologic Map Olympus Mons (PGG07)	25					3.5 (VG/G)									
Geologic Map Tharsis Mons (PGG08)	25						3.0 (G)								
Geologic Map Olympus Mons (PGG08)	25						3.0 (G)								
NH Io Data (JDAP08)	25						G/F								
Titan Mapping (CDAP08)	25						1/F								
Geologic Map Tharsis Mons (MDAP08)	25						3.5 (VG/G)								
Geologic Map Olympus Mons (MDAP08)	25						4.0 (VG)								
NH Io Data (OPR08)	25						VG-G								
Titan Mapping (OPR08)	25						G/F								
Geologic Map Tharsis Mons (PGG09)	18.75							3.5 (VG/G)							
Titan Mapping (CDAP09)	25							G							
Geologic Map Tharsis Mons (MDAP09)	18.75							4.5 (E/VG)							
Identify Volcanism (DAVPS09)	25							VG							
NH Io Data (OPR09)	25							G							
Io Adaptive Optics NSF (PI de Pater)	6.25														
Erosion by Lava (PGG10)	25								G						
NH Io Data (PGG10)	25								VG/G						
Titan Mapping (CDAP10)	25								3.5 (VG/G)						
Io Adaptive Optics (PAST10: PI de Pater)	6.25								VG						
NH Io Data (OPR10)	25								F						
Io Adaptive Optics (PAST11: PI de Pater)	6.25														
NH Io Data (PGG11)	25									Not Selected					
Erosion by Lava (PGG11)	25									VG/G					
Titan Mapping (CDAPS11)	6.25+S									VG					
NH Io Data (OPR11)	25									DAP:VG, PS:G					
Titan Mapping (OPR11)	25									G/F					
Io Adaptive Optics NSF (PI de Pater)	6.25									G					
Titan Mapping (CDAPS12)	6.25+S														
Io Adaptive Optics (PAST12: PI de Pater)	6.25										VG/G				
Io Modeling (PGG12: PI de Pater)	6.25										G/F				
NH Io Data (PGG12)	25														
Erosion by Lava (PGG; PI Hamilton)	10 (FY15-16)														
OM Mapping Phase 2 (MDAP12)	25										G				
NH Io Data (OPR12)	25										VG/G				
Titan Mapping (OPR12)	25										VG/G				
TREx (SSERVI 12: PI Jim Bell)	5														
Topo Imager (ICEE 13: PI Jim Bell)	10														
Titan Mapping (CDAPS13)	6.25+S											E/VG			
OM Mapping Phase 2 (MDAP13)	25											G			
Ascræus Mons Mapping (MDAP13)	6.25+S											G			
Io Adaptive Optics NSF (PI de Pater)	6.25											VG			
Titan Mapping (OPR13)	6.25+S											G			
Modeling Erosion by Lava on Venus (SSW14)	8.33+S														
Digitizing RGCPS Archive (PDART14)	4													G/F	
Mapping Ceres (DACGIP14)	35+S													G	
MESH Europa Camera (EI14: PI Bell)	Variable													NS	
Pandora (Disc15, Step 1: PI C. Raymond)	N/a														
Mapping Vesta (DDAP15: PI A. Yingst)	17.5														
Dawn @ Ceres (Dawn Science Team)	35														

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- = No adjectival score given
- = No proposal required

**Key:**

- = Selected
- = Selectable
- = Not Selected
- = Selectable, later Not Selected
- = Selectable, later Selected
- = No adjectival score given
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## References

- Friedland, A.J. and Folt, C.L., 2009. *Writing Successful Science Proposals*, 2<sup>nd</sup> Ed., Yale University Press, 224 pp. (4.5 out of 5 stars, Amazon.com)
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- Schimmel, J., 2011. *Writing Science: How to write papers that get cited and proposals that get funded*, 1<sup>st</sup> Ed., Oxford University Press, 240 pp. (5 out of 5 stars, Amazon.com)
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# Q&A

