Restructuring Planetary Science’s Research & Analysis Program

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Presentation to CAPS
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Timeline: Planetary R&A Restructuring

Past


2010: Community R&A survey 2010

2011: Planetary Decadal Survey

2011: Supporting Research and Technology Working Group of the PSS

2011: R&A Discipline Scientists Retreat

2012: Reorganization of Instrument Development Programs

2012: Planetary Workforce Survey

2013: December 3, 2013: Virtual Town Hall on R&A Restructuring

Future

Early January 2014: Draft ROSES 2014 release for comment

Mid-February 2014: ROSES 2014 release

Early to Mid-March 2014: Pre-proposal Briefing
Findings from the NRC report: An Enabling Foundation for NASA’s Earth and Space Science Missions (2010)

• NASA should ensure that SMD mission-enabling activities are linked to the strategic goals of the agency and of SMD.
• NASA’s SMD should develop and implement an approach to actively managing its portfolio of mission-enabling activities.
• NASA should increase the number of scientifically and technically capable program officers so that they can devote an appropriate level of attention to the tasks of actively managing the portfolio of research... [we have addressed this concern, but not through reorganization of the portfolio]
• NASA response was in agreement with these recommendations

“By explicitly tying the ROSES .. to SMD Science Plan research objectives, SMD ensures that sponsored research contribute directly and substantially to Agency goals.”
In Response to the NRC Report

• PSD requested an assessment of the Planetary R&A program by the Planetary Sciences Subcommittee (PSS) as a Response to the NRC report
  – Ron Greeley (chair) formed SR&T Working Group to perform the review

• Charge:
  – Map PSD mission-enabling activities to the PSD strategic science plan
  – Provide recommendations regarding "active portfolio management"

• The SR&T Working Group used the NRC report as a guide for the study, reviewed the various mission-enabling activities of the Division, held discussions with NASA Program Officers, and solicited comments from the planetary science community
Summary of the Supporting Research and Technology Working Group of the PSS (2011)

Co-Chairs: Ron Greeley, Mark Sykes

• “The SR&T Working Group found that the current Planetary Science Division mission- enabling activities can be mapped clearly to the specific scientific objectives contained in the NASA 2010 Science Plan. However, many of the research and analysis programs overlap. Because the workload on the scientific community and NASA Program officers has increased substantially in the last decade with regard to proposal preparation, review, and implementation, the Planetary Science Division should consider consolidating programs to eliminate overlap as a part of the portfolio management strategy.”

• Based on these recommendations PSD started the process to consolidate and reorganize the R&A program in 2012
Government Performance and Results Act/Modernization Act

Agencies are required to:

• Develop five-year strategic plans that must contain a mission statement for the agency as well as long-term, results-oriented goals covering each of its major functions

• Prepare annual performance plans that establish the performance goals for the applicable fiscal year, a brief description of how these goals are to be met, and a description of how these performance goals can be verified

• Prepare annual performance reports that review the agency's success or failure in meeting its targeted performance goals
  – Each year, the PSD develops input for the PSS to consider in its evaluation of NASA’s progress toward performance goals. The PSS performs this evaluation, creates a summary report, and assigns a grade for each goal
  – This provides the basis for the PSD portion of NASA’s Annual Performance Report, which is submitted to Congress
  – PSD’s R&A restructuring *explicitly* uses Agency Science goals as the top level theme for the new program elements
Guiding Principles in the Restructuring

• To make the structure of the R&A program explainable to those outside of NASA.
• To make it easy for those outside of NASA to compute the amount of money spent on grants.
• To reduce the time between proposal submission and award announcement.

• To encourage interdisciplinary research.
• To enable PSD strategic decision making.
• To be more flexible in responding to changing research priorities.
• To reduce overlaps between program elements.
New Core Research Programs Defined

The five new core programs are aligned with PSD’s goals/objectives.

- How did the Sun’s family of planets, satellites, and minor bodies form and evolve? → Emerging Worlds
- How do the chemical and physical processes active in our solar system operate, interact and evolve? → Solar System Workings
- What are the characteristics of the solar system that lead to habitable environments? → Habitable Worlds
- How did life originate and evolve here on Earth and can that guide our search for life elsewhere? → Exobiology
- What are characteristics of planetary objects and environments that pose threats to, or offer potential resources for, humans as we expand our presence into the solar system? → Solar System Observations
Calls from previous ROSES Years

- A very small component of all DAPS
- Planetary Geology & Geophysics

New Programs for ROSES 2014

- Lunar Data Analysis Program
- Planetary Data Archiving, Restoration, and Tools (PDART)
- Planetary Science & Technology from Analog Research (PSTAR)
- Exoplanets
Reorganization at a glance

- ROSES13 has 20 calls; ROSES14 will have 17 calls with 8 that remain the same
- All calls address division science goals supporting NASA’s strategic plan
- Strategic programs are more narrow in scope and address certain strategic needs
- Focused programs are narrow in scope and limited in time. They may be called for only one year or several, but not indefinitely. This provides flexibility the previous program did not have.

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<th>Strategic</th>
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<td>PICASSO</td>
<td>NAI (not solicited in ROSES)</td>
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<td>Planetary Major Equipment</td>
<td>SSERVI (not solicited in ROSES)</td>
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Next Steps

• Virtual Town Hall provided an opportunity for the community to ask questions and indicate concerns relative to implementation

• PSD analysis underway:
  – Optimizing due dates: Evaluating detailed impact of due dates that could effect a break in funding
  – Looking at mitigation strategies: Altering due dates, making more selections from ROSES 13, bridge funding, etc.

• Provide draft of all changed ROSES 14 Calls in early January for community feedback though the NASA advisory structure (AGs -> PSS)
  – PSS review is a “Senior Review”

• Final calls issued throughout the year starting with the initial release of ROSES 14
  – After each panel review of the submitted proposals the panel will also evaluate the total program implementation/execution of the calls – a second “Senior Review”
## V4 TOC for Appendix C. Planetary Science Research Program

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### Focused Research Opportunities

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### Cross-divisional Activities

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Backup
Overall Program Analysis

• All data presented here are for those solicitations that will make up the new core solicitations of Emerging Worlds, Solar System Workings, Habitability, Exobiology, and Planetary Observations.
  – Cosmochemistry (COS), Exobiology & Evolutionary Biology (EXO), Origins of Solar Systems (OSS), Mars Fundamental Research (MFR), Outer Planets Research (OPR), Planetary Atmospheres (PATM), Planetary Astronomy (PAST), Near Earth Object Observations (NEOO), Planetary Geology and Geophysics (PGG), and Lunar Advanced Science and Exploration Research (LASER).
Aggregate Selection Rates

The graph shows the aggregate selection rates from 2004 to 2011, with the success rate decreasing over time. The rates are as follows:

- 2004: 0.49
- 2005: 0.39
- 2006: 0.35
- 2007: 0.38
- 2008: 0.30
- 2009: 0.30
- 2010: 0.26
- 2011: 0.24

The y-axis represents the success rate, ranging from 0.20 to 0.55, while the x-axis represents the solicitation year from 2004 to 2011.