Planetary R&A

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Planetary R&A proposal submissions and selections

Trends

• No statistically significant change in the number of Planetary proposals submitted to HQ overall, or by GSFC, relative to the period prior to R&A program restructuring.

• The community average proposal selection rate declined after the change, as did the GSFC proposal selection rate.

• In recent years, the GSFC proposal selection rate has been higher than the community average rate, but this trend began in ROSES 2013 and thus predates the R&A program restructuring.
Planetary R&A budget increased after program restructuring

NASA’s 2015 Budget Estimates (p. PS-3) explains that “[t]he apparent budget increase ... reflects the transferred Mars, Outer Planets, Discovery [Research], and Lunar Science requirements, with no significant change in total budget.” (emphasis added)

Data from http://www.nasa.gov/news/budget
The ROSES solicitation provides program-by-program estimates of the funding available for new awards, and the maximum award duration, but actual awards are often for more than one year but less than the maximum allowed funding period. Actual funding each year is the sum of new available funding and funding for proposals selected in prior years.

- Estimated Total Budget = (budget available for new proposals, one year) \* (maximum allowed funding period)
- R&A Budget = top-line Planetary R&A Budget from previous chart
- First Year Budget = the budget available for new proposals in the year of announcement
Summary:

Goddard’s awarded Planetary R&A research funding is about the same after restructuring as before.

After restructuring, the integrated budgets in GSFC technology and analog research program proposals increased, but a decrease was seen in “other programs.”
The size of an average proposal (in $) has fluctuated from year to year.

The minimum in FY12 coincides with a funding gap for technology research, and such proposals tend to be relatively expensive.
Planetary R&A Technology/Instrument Development Programs

• These programs were consolidated before others (~FY12)

• Spike in the number of proposals submitted in FY13 likely attributable to 1-year gap in programs.

• After FY13, the pre- and post-consolidation statistics are essentially unchanged (number of proposals submitted per year, and selection rate).
Planetary R&A Analog Research Programs

• Post-consolidation results only available for two years (FY16 deadline is in September).

• The total number of winning proposals was about the same pre- and post-consolidation, but in FY15, twice the historical average number of proposals were submitted, and the proposal selection rate declined by the same factor.
Old program elements don’t map 1-to-1 into new program elements, so there is no straightforward way to compare pre- and post-consolidation statistics.
Summary

• Given there was a funding gap in FY 12 due to the restructuring, those funds were “lost” and do not seem to have “come back.”

• It appears to be too early in implementation to assess trends, but the restructuring is more along the line of NASA needs – a good thing. However, grant size and grant length have not been adjusted.

• Technology support for flight programs is a critical ingredient to success for NASA and its communities, yet stable, long-term infrastructure support, the backbone of technology success, is not integrated nor concerned in selections.

• Openness should be key value to all changes within SMD before, during and after decisions are finalized.
Questions from the SSB

1. Please provide a brief overview of the types of planetary science research performed at your Center, noting in particular how they relate to NASA’s Science goals and Decadal Survey priorities;
   GSFC scientists are engaged in all types of planetary science research, including technology and instrument development, laboratory basic research, analog research, theoretical research, and data analysis. All of our funded research investigations are aligned with NASA science goals and support the accomplishment of Decadal Survey priorities. In recent years, we have sought more funding for technology and analog research, and less in other R&A program areas.

2. Your sense of the net impact of the Planetary R&A reorganization on science support and activities within your Center and also on NASA’s strategic direction;
   GSFC is submitting approximately the same number of proposals per year in the post-reorganization era as in the years preceding the change. The community average proposal selection rate declined after the change, as did the GSFC proposal selection rate.
   a. Can you identify specific sub-disciplines that have been impacted negatively or positively through this reorganization?
      GSFC is submitting more analog research proposals, but winning approximately the same number of proposals per year. Since reorganization, GSFC has been seeking more funding for technology development, but it is too soon to tell if we are succeeding in this endeavor, given year-to-year fluctuations.
   b. Are such impacts perceived as long-term?
   c. If the impact is negative, is there a perception that a change in focus or presentation may remedy the issue?

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Questions from the SSB (cont’d)

3. Your sense of any impacts, positive or negative, on the morale of scientists within your programs;
GSFC scientists feel that their time could be spent more efficiently if they were able to win more research funding with fewer proposals. This is a longstanding issue that predates the Planetary Sciences Division’s R&A program reorganization, and it is not unique to the Planetary Sciences Division. On average, a PI writes four or five research proposals to win one, and then the funding typically covers only a small fraction of the PI’s time. Inefficiency has an adverse affect on morale, and adversely affects hiring and retention.

4. Your perspective on how well this reorganization results in a refocusing of NASA resources on priorities for the agency;
   The reorganized programs are better aligned with current agency goals than the pre-consolidation portfolio, enabling better program balance and resource direction.

5. Your thoughts on ways that the implementation of the reorganization may be improved going forward;
We encourage the Planetary Sciences Division to publish data on the funding allocations within its R&A programs across the reorganization boundary. Most, but not all, of the necessary data are available in ROSES appendices.
Questions from the SSB (cont’d)

6. Your thoughts on the transparency of the reorganization with particular reference to items 4 and 5 (above);
   Our response to question 5 directly addresses transparency. With greater transparency, the community would be better prepared to comment on program balance and the positive and negative impacts of reorganization.

7. Any thoughts you might have related to the task of the committee and future directions for NASA research; and

8. Do you see any aspects of the current Planetary Sciences Division R&A funding organization that has a negative effect on interdisciplinary research conducted either within the planetary sciences (to include astrobiology research) or among the planetary sciences and other disciplines, such as astrophysics or life sciences research? Similarly, do you see any positive effects?
   We anticipate positive effects associated with interdisciplinary programs at the Planetary Sciences/Astrophysics boundary. Two ROSES programs are now explicitly cross-disciplinary: Habitable Worlds (basic research on processes and conditions that have potential to affect a planet’s habitability), and the Exoplanets Research Program (detection and characterization of exoplanets and planetary systems through observations, theoretical research, and modeling).