SRT/RA BREAKOUT REPORT TO PSS
April 19, 2011

RALL’S PROGRAM OFFICER ISSUES

GENERAL IMPRESSIONS OF DECADAL RECOMMENDATIONS

SPECIFIC DS RECOMMENDATIONS

FLAGSHIP DESCOPE PROCESS

INTEGRATING DS RECOMMENDATIONS INTO PSS REPORT ON MISSION-ENABLING ACTIVITIES
RALL’S PROGRAM OFFICER ISSUES

1. In detail, what would the goal or goals be of any revamping of the R&A program?

The goal is to reduce the pressure to write proposals to R&A programs on scientists, improve the efficiency of proposal reviews, and to make it more efficient for program officers to manage their respective programs.
RALL’S PROGRAM OFFICER ISSUES

2. **What approaches would PSS recommend to accomplish this goal (or these goals) if grant size, grant duration and success rate could not be increased?**

Independent of these possibilities, NASA should hire knowledgeable and experienced program support staff for program officers. NASA should increase the number of program officers and perhaps assign any given individual research programs to manage and missions but not both.

In addition, internal controls of program funds should be improved that would not allow financial analysts to modify program budgets without prior approval from program officers and the division director. Program officers waste too much time trying to figure out how much funding they have available to their program against their expectations as managers.
3. Given that the President's FY12 budget proposal included a decreasing PSD budget, should PSD alter its goal of encouraging early career researchers (through NESSF, ECF, etc.) or alter any of its programs?

No. Early career programs generate a small number of new scientists and should be strengthened by lifting restrictions on proposer qualifications, including extending the maximum number of years since PhD and removing the requirement barring a proposer from being in a tenure-track or other permanent position.
SPECIFIC DS RECOMMENDATIONS

DS - the committee recommends that NASA increase the research and analysis budget for planetary science by 5 percent above the total finally approved FY2011 expenditures in the first year of the coming decade, and increase the budget by 1.5 percent above the inflation level for each successive year of the decade.

Declining PSD budget does not allow for the strict implementation of the Decadal recommendation of the 5% increase. However, implementation of the decadal language supporting increased funding for these programs would, at a minimum, call for an FY11 budget level no less than the FY10 level, with no cuts to the R&A programs going forward. It is not clear that the proposed flat budget of $200M for R&A programs going forward meet this criterion.

Additional information should be provided to PSS that demonstrates this to be the case, or the funding should be increased to a level that meets this condition. In determining the FY10 funding level for R&A programs, funds rephased to FY11 should be included.
SPECIFIC DS RECOMMENDATIONS

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The specific decadal recommendation for increased funding for R&A by 5% with subsequent years increasing with inflation plus 1.5% should be revisited from year to year in the context of updated budget prospects for PSD with the intent of implementing that recommendation when the budget environment improves.

Funding for the R&A program should not be diluted by the inclusion of significant new responsibilities. Such new responsibilities added to the R&A program should be accompanied by the additional funds needed to support it.
SPECIFIC DS RECOMMENDATIONS

DS - The committee strongly encourages NASA to find ways (e.g., by merging related research programs and lengthening award periods) to increase average grant sizes and reduce the number of proposals that must be written, submitted, and reviewed by the community.

This recommendation should not be implemented without modeling the effects of such changes, including their potential impact on the workforce. Additional information on individual proposers (e.g., percent funded by grants) would be of value for these models and should be included in NSPIRES. A report on such modeling should be made to the PSS for its assessment.

Any consolidation of programs (e.g., to reduce subject overlap) should be done in a way that preserves net funding to the programs. This should not be an exercise to find “cost savings” in research programs – reallocation of resources across programs is a separate issue to be dealt with in the context of a senior review.*

*DS: NASA should periodically evaluate the strategic alignment and funding level of all its SRA programs to ensure they remain healthy and productive.
SPECIFIC DS RECOMMENDATIONS

DS - A funding line to promote further use of these suborbital observing platforms for planetary observations would complement and reduce the load on the already over-subscribed planetary astronomy program.

Suborbital observing platforms are not user facilities to which non-instrument developers can bring science projects (as they do to IRTF or Ames Vertical Gun). To promote utilization of and support for suborbital observing platforms, with the desire that new user facilities be developed, funding for suborbital observing platforms should be sought within the Technology Development Program.
INTEGRATING DS RECOMMENDATIONS INTO PSS REPORT ON MISSION-ENABLING ACTIVITIES

DS: The committee unequivocally recommends that a substantial program of planetary exploration technology development should be reconstituted and carefully protected against all incursions that would deplete its resources. This program should be consistently funded at approximately 6-8 percent of the total NASA Planetary Science Division budget.

PSS Finding: PSD has a variety of technology-related activities to support near-term and long-term flight projects, including specific instrument-development programs. It has been recognized that support for development has been sporadic and is often inadequate to reach the Technology Readiness Level sufficient for proposing an instrument for flight.

Recommendation: The PSD should establish its own balanced mission-enabling technology program and make available substantial, stable funding through the competed process to develop technology and scientific instruments for flight qualification (TRL ~6). To stimulate technology proposals, the PSD should expand its program of future mission studies to identify early technology drivers for high priority science and common needs for future missions.
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SBAG FINDING #7 – Implementation of the Survey’s recommended technology development program (“the technology program should be targeted towards the planetary missions that NASA intends to fly...”) requires that a significant fraction of this program be dedicated to the development of technology that enables and enhances science return from the frequent Discovery class missions. ...
INTEGRATING DS RECOMMENDATIONS INTO PSS REPORT ON MISSION-ENABLING ACTIVITIES

DS: Establish a single advisory group to provide input on collection, containment, characterization and hazard assessment, and allocation of samples.

DS: Sample return missions flown should explicitly include the cost estimate of the full costs required for initial sample curation.

DS: Well before planetary missions return samples, NASA should establish a well-coordinated and integrated program for development of the next generation of laboratory instruments to be used in sample characterization and analysis.

Recommendation (draft): PSD needs to consider the establishment a well-coordinated and integrated program for development of the next generation of laboratory instruments to be used in sample characterization and analysis. In addition, the NASA’s advisory group for returned samples (CAPTEM) should be involved in the early planning phases of sample return missions to plan for appropriate collection, characterization (including containment and hazard assessment, if required), curation, handling and allocation of returned materials.
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Recommendation (Personal, MVS): “Technology development” should also include information technology. In particular, given the large data volumes returned from missions (e.g., MRO) and planned, making use of improving communication systems, investments need to be made that will enable new means of processing and extracting information from these large volumes. The “eye-brain” combination is no longer sufficient.
INTEGRATING DS RECOMMENDATIONS INTO PSS REPORT ON MISSION-ENABLING ACTIVITIES

NRC Recommendation 1: NASA should ensure that SMD mission-enabling activities are linked to the strategic goals of the agency and of SMD and that they are structured so as to:

- Encompass the range and scope of activities needed to support those strategic goals

PSS Response (draft): There are undoubtedly activities not currently supported by the PSD through the research and analysis programs and supporting activities that are needed to meet the objectives of the Division (e.g., systematic ongoing synoptic monitoring of planetary atmospheres, systematic physical characterization of main belt asteroids, laboratory measurements of reflectance and emission properties of planetary materials and ices over submillimeter wavelengths). These unsupported activities will change and expand with time as new questions arise from new knowledge achieved in the pursuit of these objectives. An open-ended means needs to be developed by which these unsupported activities can be identified and integrated into the portfolio of PSD supported activities.