To: Jim Green, Jonathan Rall, Janet Luhmann & Planetary Science Subcommittee  
From: NASA Mars Exploration Program Analysis Group (MEPAG)

From Nov 8-22, MEPAG leadership solicited questions, comments, and concerns from the MEPAG community regarding the plan presented at the November Planetary Science Subcommittee meeting to reorganize the Planetary Science Division’s Research and Analysis Program. Wide-ranging and thoughtful responses have been received from individual MEPAG members, as well as formal letters summarizing questions posed by the members of the Astrogeology Science Center, the Geologic Mapping Subcommittee (GEMS), and the Planetary Cartography and Geologic Mapping Working Group (PCGMWG).

Here, we summarize the responses that we received. We have organized these responses into a set of key concerns that were consistently expressed. For brevity, within each key concern we provide only a handful of direct quotations from the community responses to illustrate specific questions within a key point, as well as the depth of concern that has been expressed. (A full listing of responses, including the letters, is included separately.)

At the highest level and across all responses we received, the response from the community is that not enough information has been presented about the proposed PSD R&A reorganization. In particular, it is unclear:

- How the reorganization will achieve the stated goals (slide 43 in the PSS presentation);
- How the present R&A structure will be mapped into the new structure;
- What the budget implications will be, both for whole research areas and for individual proposers;
- How the program will be transitioned into the new structure, so that proposers can re-plan their proposal strategies and understand any impacts on current grants;
- How the proposal review process will be impacted, and perhaps adjusted, due to the smaller number of calls.

The MEPAG community strongly recommends that NASA PSD leadership seek and consider more community input, and make a concerted effort to provide the information needed to answer the many questions raised by the community.
Questions, Comments, and Concerns expressed by the MEPAG community

I. The community is very dissatisfied at the overall lack of information presented, especially when paired with the apparent proposed timeframe of the reorganization (i.e., for ROSES14). There is a general consensus that far more information and community input is needed before full implementation.

- Further details on this reorganization are needed before the community can endorse the plan.
- Abruptly changing everything at once is fraught with peril and is the sort of thing that’s easily botched on the first attempt.
- Given this level of preparation a full rewrite of ROSES 2014 seems out of the question. As a matter of urgency Jim should decide what parts of ROSES will be affected next year.
- Has NASA obtained approval from OMB and the relevant Congressional committees to undertake this reorganization? If not, what is the expected time table for obtaining approval?
- When will ROSES2014 be released?

II. It is very unclear how the existing programs will be restructured into the new framework. People are very concerned about which areas of research might now become excluded from support (either explicitly or due to a bias-against). For example, important cross-cutting lines of research may be rated lower just due to a lack of “fit” to the very small number of programs. Additionally, it is unclear how this will affect the expected (and carefully constructed) balance across the R&A programs, or impact the more narrowly-focused Data Analysis Programs.

In particular, concern was expressed about how these research areas are to be supported within the new framework:
- planetary geologic mapping
- basic laboratory studies of planetary simulant and analog materials
- “mission-enabling activities”, including the Data Analysis Programs
- integrated/cross-disciplinary Mars studies

- How will the reorganization affect the balance of PSD’s portfolio? Will the current balance be maintained for now? How often will the balance be revisited and what process will be used?
- There seems to be a huge focus on exobiology/life – this is specifically called out in 3/5 core programs, yet is the one thing we still have yet to find in the solar system.
- A fundamental tenet in the NRC report and 2011 PSS report is that all of the PSD’s efforts must be “mission enabling activities.” Since this reorganization is largely in response to these reports, will each program and/or proposal have to justify how it enables mission activities?
• What current R&A elements will remain outside of the new consolidated programs?
• What is the plan for what the PSS termed “recruiting and training the next generation” of planetary scientists? Will these activities be contained within the R&A programs or a new program?
• What is the plan for what the PSS termed “supporting infrastructure activities” such as the PDS, sample curation, Arecibo, LPI, Planetary Cartography, the RPIF, and many laboratories? Currently most of these “activities” are housed within a scientifically related R&A program. Will this continue to be the case or will all infrastructure be overseen by some new program?
• The integrated nature of the Mars program, including rovers and landers, leads proposals to use a broad variety of data types, often from multiple missions, to help address the questions. As a result, proposals for Mars research often have a fundamentally different character than those for other parts of the solar system.
• Any proposed restructuring must not be so generic as to preclude meaningful targeted investments (such as software development) with broad community impact.
• With this reorganization into processes and themes, the direct study of a planetary body would always "win" because it is most immediately responsive to the process-oriented theme. I am in favor of a reorganization, but I suggest there be a 6th core theme "Cross-cutting planetary science techniques".

III. It is also very unclear how this reorganization will change the general budgets and selection rates. How will the proposed changes result in an improved situation?
• It is unclear which programs will fall under the new categorization and how this might impact budgets. Is this just a change in naming, or will funds for existing programs be cut and/or combined?
• Can you provide a table that explicitly shows how the funding from the current programs will be distributed across the 5 science themes?
• Will ~7% of the budget be allocated for maturing technology for missions, including data analysis/mining tools as well as flight instruments, as recommended by the PSS in 2011?

IV. Much more information was requested about the submission processes, timelines, and restrictions. In particular, concerns were expressed about the decreased number of opportunities for proposals, how the submission deadlines would be dispersed through the year, and the resultant need for a single proposal/award to cover a larger portion an investigator’s salary.
• Will NASA allow submittals twice per year to each of the 5 core programs so that members of the community will not have to submit 3 to 4 proposals to the same program simultaneously?
• Will due dates be distributed over the year, allowing each researcher to submit the 4-5 times a year for a single area of expertise? Or is the expectation that the number of
proposals submitted will drop to 1-2 per year per investigator - with the size of individual grants increased so a single award will cover 50-100% of an investigator’s salary?

- As part of the reorganization, will the proposal review feedback process be modified, providing more explicit explanation of why a proposal was not funded? This is essential if each investigator is expected to write fewer and larger proposals because the failure of two proposals in a row could easily terminate a scientist’s career.
- If there is a reduction in opportunities to propose, will 5-year grants be awarded despite the difficulty in predicting the outcome of scientific research 5 years into the future?

**V. There are many questions about how the review process will work.** It seems that the smaller number of calls will concentrate proposals within specific research areas into a single call – thus resulting in a larger number of proposals needing review AND fewer available (non-conflicted) experts for review. Additionally, proposals coming from several research areas may be submitted under the same call, complicating evaluation and comparison.

- How can NASA avoid conflict of interest issues during panel reviews, given that EVERYONE is going to be competing for the same dollars in the same core grant program?
- If larger numbers of proposals are submitted to each opportunity, how will the conflict of interest rules be relaxed so a sufficient pool of qualified reviewers can be found?
- Our understanding is that there is only one call and one pool of proposals for each of the five programs and science themes. In this case, we are concerned that it will be extremely difficult to evaluate and rank the proposals due to the extreme diversity of types of research within each call.

**VI. Finally, concerns were expressed about how the R&A programs would be evaluated in the future so as to maintain the desired balance across the PSD portfolio (in scope and budget), to see if the desired improvements in effectiveness are achieved, and to determine and make needed adjustments.**

- How do the proposed changes achieve the desired transparency and improve the situation, especially with respect to the time-spent on proposals (by program officers, reviewers, and proposers) to achieve a reasonable rate of success and coverage of salary for proposers?
- What metrics will demonstrate how the reorganization improves the effectiveness of the PSD’s ability to meet its strategic goals?
- Does the proposed reorganization include a uniform policy and procedure for ensuring healthy turnover in science team membership on flight projects, from Discovery to flagship scale, as recommended by the PSS in 2011?
- What process will be used in the future to balance PDS’s portfolio of R&A versus other “mission enabling” activities? For example, in 2011, the PSS recommended an external “senior review” process to advise on how the portfolio is balanced.
- How will program officers to notify the community regarding R&A activities needed to support the PSD strategic goals but are encountering a shortage of fundable proposals?