Biological and Physical Sciences Advisory Committee (BPAC) 101

Craig E. Kundrot, Ph.D.
Director
Biological and Physical Sciences Division
Science Mission Directorate
Welcome to the BPAC!

- We are delighted to have you on this team, on behalf of NASA Science and the Biological and Physical Sciences Division!
- This presentation is meant to help give you background and context to the purpose of the committee and how it fits into the bigger NASA organization.
- An acronym list is the backup for reference.

Thanks to Mamta Nagaraja and Mike Robinson
What is the BPAC?

The Biological and Physical Sciences Advisory Committee (BPAC) is an advisory committee chartered under the Federal Advisory Committee Act (FACA).

FACA committees are established to provide information and advice on a broad range of issues affecting federal policies and programs.

FACA committees should (per the GSA):

- Provide advice that is relevant, objective, and open to the public
- Act promptly to complete their work
- Comply with reasonable cost controls and record keeping requirements (this one is mostly on the Executive Secretary)
The BPAC Charter

The full BPAC Charter can be found [here](#).

The most important part of the charter:

Objectives and Scope of Activities: The BPAC shall draw on the expertise of its members to provide advice and make recommendations to the Director, Biological and Physical Sciences Division, Science Mission Directorate, NASA Headquarters (hereinafter, “Director, Biological and Physical Sciences Division”) on biological and physical science programs, policies, plans, and priorities. The BPAC’s recommendations and analysis can be used to inform decisions on the programmatic scope and priorities, as well as the implementation of biological and physical science programs. In addition, the BPAC will provide a regular forum for broad discussion of biological and physical science and the role of biological and physical science within and outside of NASA.
The BPAC: Context

External Bodies

- NASA Advisory Council (NAC)
- NAC Science Committee
- BPAC
- Analysis Groups (AGs)

“Advisory” Bodies

- NASA
  - Science Mission Directorate (SMD)
  - Biological and Physical Sciences Division (BPS)
  - BPS Program Officers/Scientists

NASA

National Academies

- Space Studies Board
- Topical Study Committees*
- Decadal Committee
- Committee on Biological and Physical Sciences in Space (CBPSS)

*Topical Study Committees: These can be either standing committees, such as CBPSS or narrow-focused committees established for a single topical report.
BPAC Personnel

• BPS Division Director: Dr. Craig E. Kundrot
• BPAC Executive Secretary: Dr. Mike Robinson
• BPAC Chair: Dr. Jamie Foster

• BPAC Members
  – Dr. Ken Davidian
  – Will Davis
  – Dan Dumbacher
  – Dr. Simon Gilroy
  – Mary Guenther
  – Dr. Nathan Lundblad
  – Dr. Maren Mossman
  – Dr. Jim Pawelczyk
  – Dr. Aleksandra Radlinska
  – Dr. Ali Rangwala
  – Dr. Kate Rubins
  – Dr. Dan Tagle
  – Dr. Mark Weislogel
The Role of the BPAC: Practicalities

- BPS does not restrict in any way what the BPAC wants to discuss. However, BPS does try to highlight where we want/need advice.
- It is important to remember that the BPAC makes recommendations and provides advice. The inputs of the BPAC are highly valued, and we look forward to receiving them. As a note, BPS is not legally obligated to follow or respond to the recommendations and advice provided.
  - Requests for information: There are times when the BPAC requests presentations and/or information. Such requests should be made with a goal in mind -- will the information lead to a recommendation? What might that be? Is it a useful/actionable recommendation?
  - NASA may not be able to share some information due to Federal law or regulations.
- The BPAC is not an oversight body.
  - FACA committees cannot direct Agency activity, including that of individual Agency employees
How the BPAC Operates -- A Timeline

• BPAC will meet ~3 times a year.

• A rough timeline:
  – Meeting - 6 months: Schedule the BPAC meeting
  – Meeting - 2 months: Set a preliminary agenda; requests sent to the BPAC for additional topics
  – Meeting - 6 weeks: Final agenda; notice posted in Federal Register; Logistics
  – ~Meeting - 1 week: Send any presentation slides (e.g., from the AGs) to the BPAC for review prior to the meeting
  – Meeting: Publicly-accessible meeting held
  – Meeting +90 days: Minutes, findings, etc. must be made public. Ideally, we do this faster so that there's time before the next BPAC meeting to respond.
BPAC Meeting Requirements

- All meetings must be available to the public; generally this is accomplished through video conferencing.
- The Committee must stick to the agenda. It’s ok to get a little behind, but you cannot be early (e.g. a presentation may start no earlier than the time listed on the agenda).
- Questions/comments during the regular meeting are from BPAC members only; questions from the general public are only allowed in the public comment period.
- There should be a public comment period as part of each meeting.
- Any potential finding must be substantively discussed during the public meeting.
- NASA/BPS wants to hear from all of the BPAC members.
- The Executive Secretary (a Civil Servant representative of BPS) or a Civil Servant delegate must be present at all times.
Following the BPAC Meeting

- A professional notetaker (from outside BPS) attends each meeting and provides notes to the Executive Secretary, who distributes the notes to all speakers for verification of their accuracy. Revisions may be sent back to the notetaker and the final version is read and approved by the Executive Secretary and the BPAC Chair.

- Details of findings (wording, etc.) get sorted out by the BPAC. As a FACA committee, all findings require consensus of the group. The final findings are signed by the Executive Secretary and the BPAC Chair.

- BPAC members should Cc the Executive Secretary on any correspondence regarding official BPAC business.
  - Why: If there is a FOIA request, the Executive Secretary will have all records and be able to respond quickly.
  - Caveat: If there is an issue on which you feel that having the Executive Secretary included would preclude frank and open discussion, please include an alternative civil servant, like the BPS Division Director, on the correspondence. Make sure that they know that those records need to be preserved.
Findings versus Recommendations

• Findings: Observations made by the BPAC that do not require a response. e.g., “The BPAC commends NASA on the successful upgrade to the Cold Atom Laboratory.”

• Recommendations: Advise a course of action for BPS and should receive an official NASA response.
  – Recommendations should be: Concise, Clear, and Actionable.
  – The best recommendations have clear and specific advice on a well-defined topic. Overly broad recommendations are open to interpretation and can be difficult to implement.
  – Having too many recommendations can also be problematic: There is often limited bandwidth to respond to findings, so it’s most efficient use of BPAC time to clearly prioritize.

• Findings and recommendations can serve to provide direction to BPS or to provide support for new directions BPS may want to take.
Legal Restrictions (on NASA)

• No Civil Servant can lobby Congress for their own Agency or ask others to do so: you will never hear one of us say “If you want more money for X, you need to go talk to your Congressperson.” We cannot say that.

• BPS cannot redistribute funding allocated by Congress without explicit approval from the White House Office of Management and Budget (OMB) and Congress. Moving money between budget wedges is extremely challenging and may not be allowed!

• We cannot take advice from any non-FACA group.
Legal Restrictions (on the BPAC)

- Disclosures and conflicts: To be on the BPAC, you have to file financial disclosures and obtain a ruling from NASA lawyers on any potential conflicts of interest. You also have to take ethics training. These must be done annually for one to continue on the BPAC.

- The Hatch Act: While serving as a member of the BPAC, you have to follow the same laws as regular civil servants. This includes the Hatch Act, which forbids the use of government position for the support of a specific candidate/proposition (e.g., you cannot say “As a member of the BPAC, I think you should all vote for Senator Nagaraja and for Proposition D”).

  - This does not extend to issue advocacy (e.g., you can say “The BPAC thinks climate change is a problem and we should do something about it”). This restriction only applies while you are carrying out the duties of the BPAC; it does not apply outside of that.
Recusal (more on conflicts)

BPAC members cannot provide advice on issues for which they have (or might be perceived as having) a conflict. Examples:

- BPAC Member A is the PI for the Hypothetical Explorer (HEx) mission. Member A should recuse themselves from any specific discussion of issues surrounding HEx and should not contribute to any findings on it.
- Research & Analysis (R&A): The BPAC starts talking about the funding balance between specific R&A programs. The Executive Secretary puts an immediate stop to it because (nearly) all of the BPAC members apply to one or more of those programs. As they are now effectively in a position to advocate for a source of funding for themselves, the BPAC members need to recuse themselves.
- Summary: if you might benefit personally/professionally from a given topic, you should recuse yourself. If in doubt, ask the Executive Secretary who will reach out to NASA’s legal counsel.
Example Federal Budget Process

PPBE = Planning, Programming, Budget, and Execution

The President makes a budget request for the year; the Agency has to plan to that budget.

If Congress does not pass a budget, we typically operate on a Continuing Resolution, following the previous year’s appropriation. In the absence of a budget or a CR, the government shuts down.
In this example year, the PBR was later than usual (common with a new administration). It highlights a key point – the process is not always smooth and anomalies happen. Congress can pass a budget at any time in the year; when this will happen can be unpredictable.
These are the two parts of the process where NASA actually has work to do. Observe that NASA can be actively working on three different year’s budgets at the same time.
The PPBE Process

The Office of Management and Budget (OMB) sends budget guidelines for the next fiscal year (starting ~1.5 years later) to all Agencies/Departments.

The Agencies (at all levels) prepare a budget request that is in-guide with the guidance.

They also prepare overguide requests -- requests for additional funds with an associated justification.

Overguide requests from projects have to be approved all the way up the chain.

PPBE Starts with OMB sending budget guidance to the Agency: This then flows down

Budget plans are made conforming to Guidance; over-guides requesting additional funds can also be made.

OMB

Agency

Directorates (e.g., SMD)

Divisions (e.g., BPS)

Projects (e.g., R&A, Discovery, etc.)
Appropriations Process

• The President presents a budget request to Congress. Congress deliberates and passes new authorizations and appropriations.

• In lieu of passing a budget, Congress can put the government on a Continuing Resolution (in absence of either a CR or a budget, the government shuts down).

• When Congress passes a budget bill and the President signs it, the Agency has a budget.

• Note that the language in the bill matters. Usually, the bill will say things like “NASA shall spend no less than $451.3M on Discovery”. That language precludes moving any money out of that wedge of the pie.

  – Typically accompanied by report elaborating Congress's intent

• In recent years, nearly every “wedge” of the pie has been specified.

• Much like the PPBE process, NASA now develops an operating plan, explaining how it will use the appropriated funds to meet congressional direction. A case may be made for moving funds from one wedge to another -- but to do so requires a strong justification.
A Continuing Resolution basically says that the government should continue what it is currently doing. This means that:

- The appropriation is the same as was in the previous year’s budget.
- No new programs\(^1\) can start.
- No existing programs can stop (or spend more/less money)
- Anomalies can be addressed through an existing process

When a budget passes, it can be a bit of a shock, as the new budget may be significantly different from the previous year, but the government has been spending according to the previous budget. Example: the new budget says “NASA should stop running Program X”. But, under the CR, NASA has already spent funding on Program X, which cannot be unspent. This becomes a factor in developing an operating plan for the year.

---

1: “Programs” refers to things called out in the last budget, e.g., the Discovery Program.
Useful Links

• https://science.nasa.gov/biological-physical

• https://science.nasa.gov/researchers/nac/science-advisory-committees/bpac

• Reporting requirements are changing soon; details are still coming, but for context:
  
Thank you!

• Thank you for being part of the BPAC!
• We look forward to growing the biological and physical sciences communities in spaceflight research.
• Please email Craig or Mike with any questions you have before, during, and in between BPAC gatherings.

NASA astronaut Dr. Kate Rubins loads engineered heart tissue samples into a science freezer for preservation and later analysis.
Backup Slides
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG</td>
<td>Analysis or Assessment Groups</td>
<td>NPMP</td>
<td>NASA Postdoctoral Management Program</td>
</tr>
<tr>
<td>CAPS</td>
<td>Committee on Astrobiology and Planetary Sciences</td>
<td>PAC</td>
<td>Planetary Science Advisory Committee</td>
</tr>
<tr>
<td>CR</td>
<td>Continuing Resolution</td>
<td>OMB</td>
<td>Office of Management and Budget</td>
</tr>
<tr>
<td>FACCA</td>
<td>Federal Advisory Committee Act</td>
<td>BPAC</td>
<td>Biological and Physical Science Advisory Committee</td>
</tr>
<tr>
<td>FOIA</td>
<td>Freedom of Information Action</td>
<td>PBR</td>
<td>President’s Budget Request</td>
</tr>
<tr>
<td>GSA</td>
<td>General Services Administration</td>
<td>PPBE</td>
<td>Planning, Programming, Budget, and Execution</td>
</tr>
<tr>
<td>IPA</td>
<td>Intergovernmental Personnel Act</td>
<td>SMD</td>
<td>Science Mission Directorate</td>
</tr>
</tbody>
</table>