



BPS

BIOLOGICAL AND
PHYSICAL SCIENCES

Biological and Physical Sciences Advisory Committee (BPAC) 101

Craig E. Kundrot, Ph.D.

Director

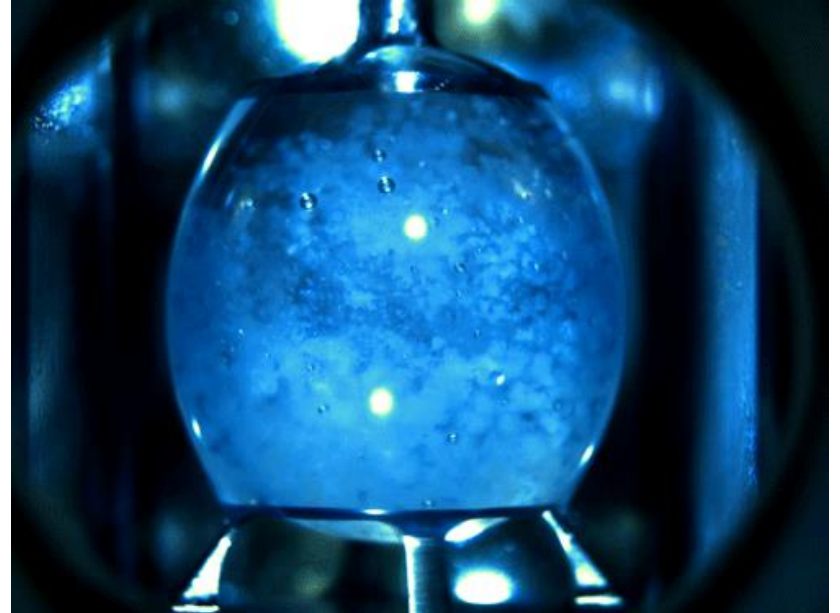
Biological and Physical Sciences Division

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



National Aeronautics and Space Administration

Administrator
Deputy Administrator
Associate Administrator
 Deputy Associate Administrator
 Chief of Staff
 Associate Administrator for Strategic Engagement and Assessments
 Associate Administrator for Space Policy and Partnerships

Advisory Groups
NAC and ASAP

Inspector General

Chief Financial Officer

Chief Information Officer

Senior Climate Advisor

Chief Scientist

Chief Technologist

General Counsel

STEM Engagement

International and Interagency Relations

Legislative and Intergovernmental Affairs

Communications

Small Business Programs

Office of Strategic Engagement and Assessments

Office of Agency Council Staff

Chief Engineer

Chief Safety and Mission Assurance

Chief Health and Medical Officer

Diversity and Equal Opportunity

Mission Support Directorate

Chief Human Capital Officer

Procurement

Strategic Infrastructure

NASA Shared Services Center

Protective Services

Space Operations Directorate

Aeronautics Research Mission Directorate

Exploration System Development Directorate

Space Technology Mission Directorate

Ames Research Center

Armstrong Flight Research Center

Glenn Research Center

Goddard Space Flight Center

NASA Management Office *

Johnson Space Center

Kennedy Space Center

Langley Research Center

Marshall Space Flight Center

Stennis Space Center

Science Mission Directorate

Astrophysics Division

Heliophysics Division

Biological and Physical Sciences Division

Earth Science Division

Planetary Science Division

Jet Propulsion Laboratory**

Reporting Structure		
Administrator	Associate Administrator	Deputy Associate Administrator

Note: Administrator may delegate direct reports to Deputy Administrator at his/her discretion.
 * NMO oversees the Jet Propulsion Laboratory contract.
 ** Programmatic reporting to the Science Mission Directorate Associate Administrator.
 JPL will participate in Agency-level functions, such as APMC.
 JPL is a Federally Funded Research and Development Center (FFRDC).

NASA Centers who perform or support BPS work

You are here

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)**

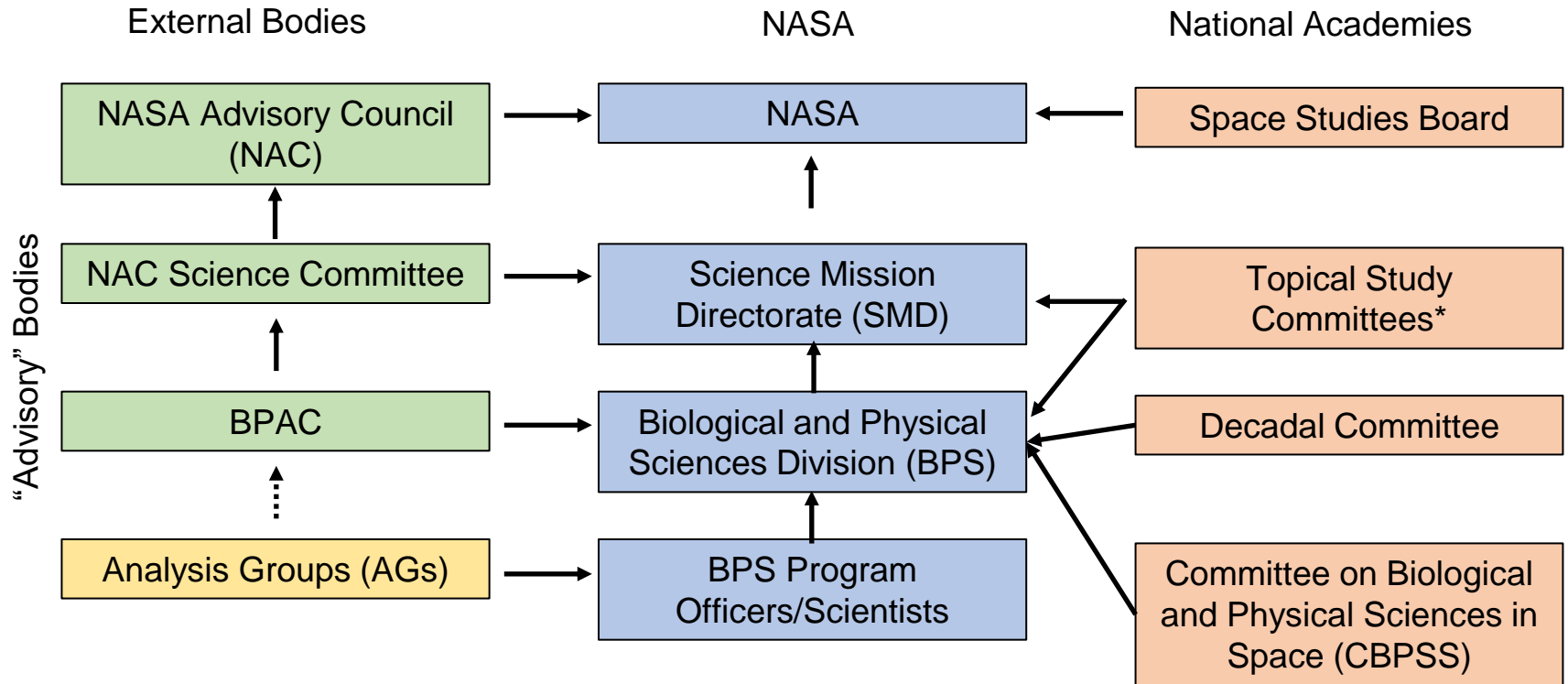
The BPAC Charter

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



*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.

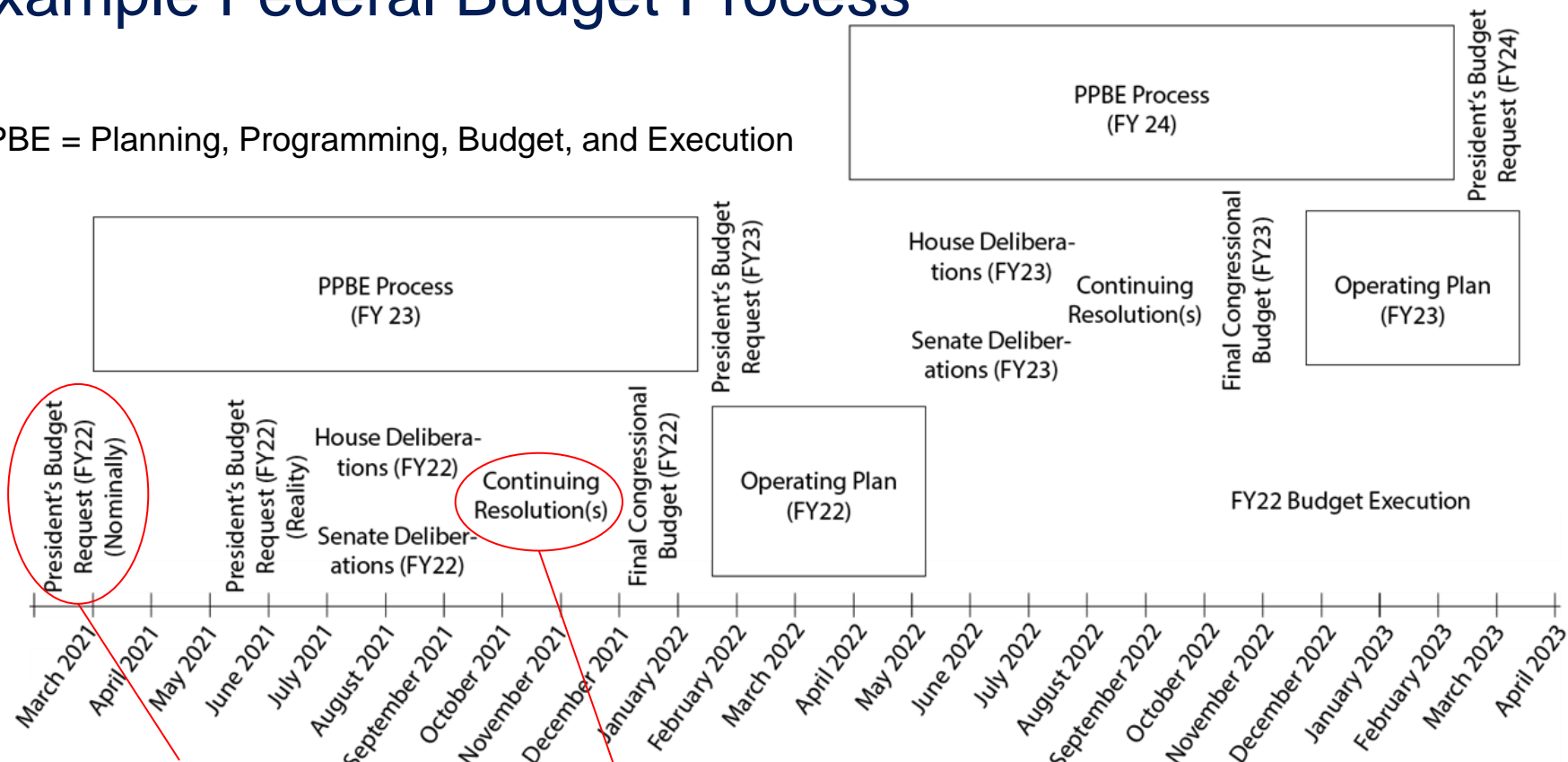
Recusal (more on conflicts)

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

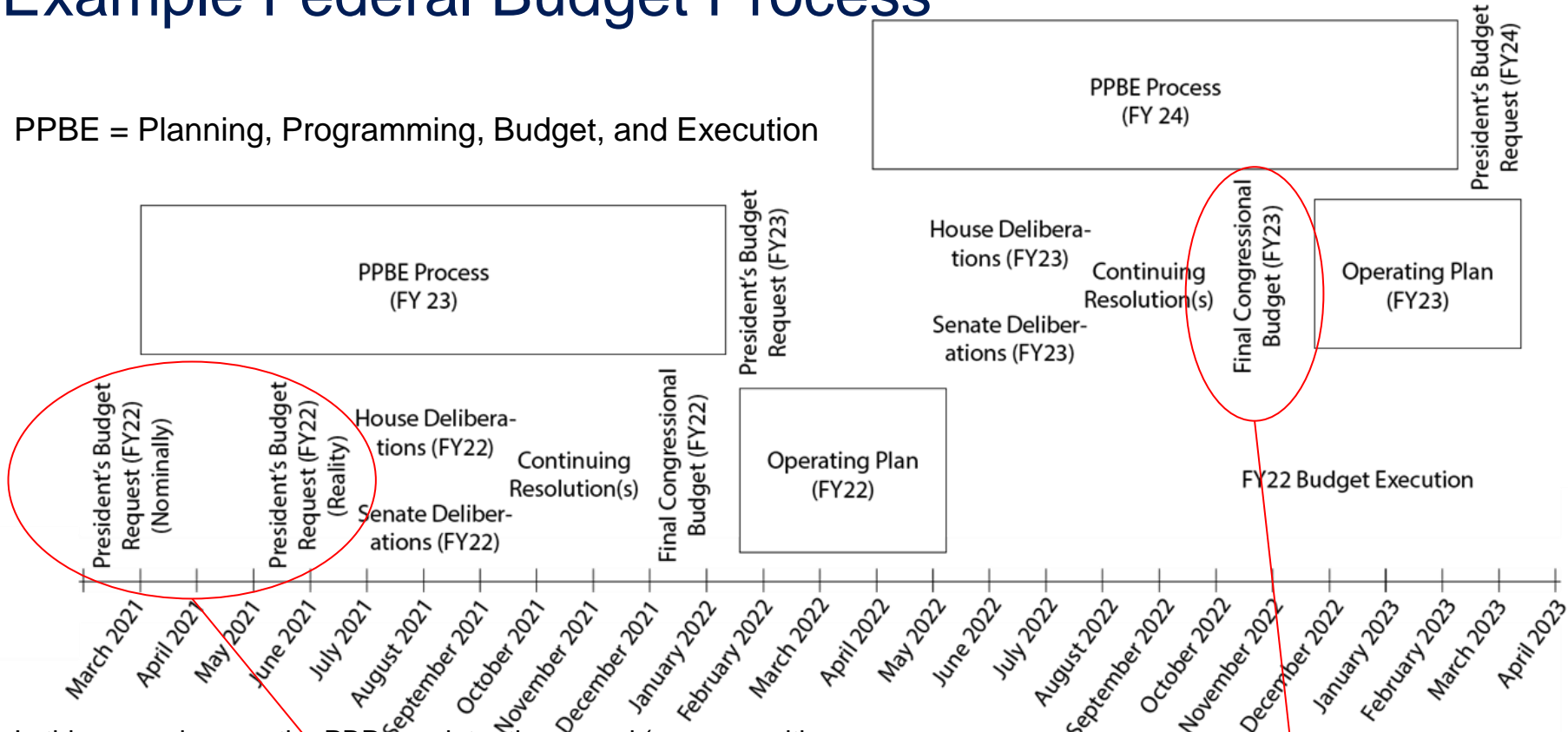


The President makes a budget request for the year; the Agency has to plan to that budget

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.

Example Federal Budget Process

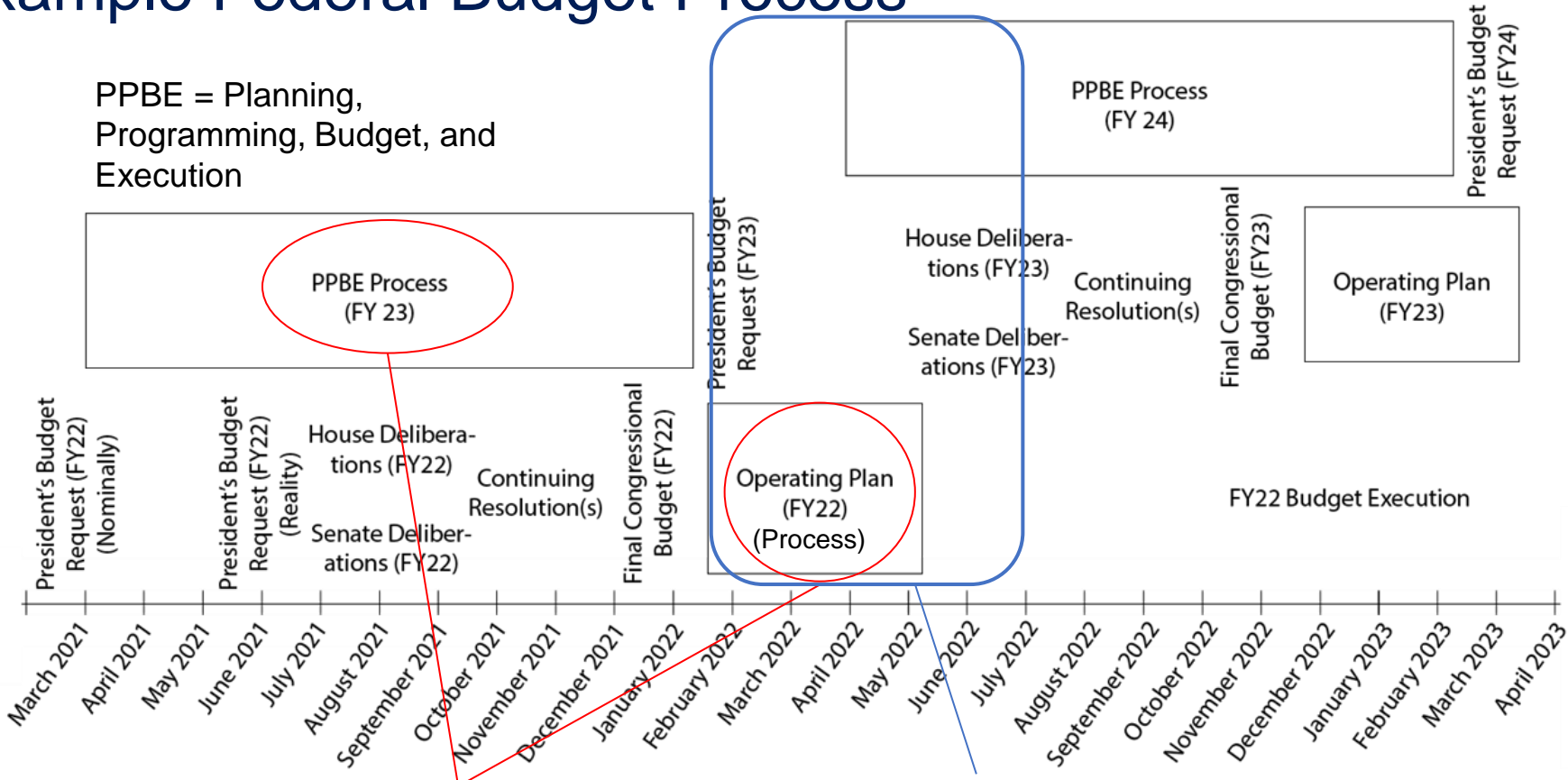
PPBE = Planning, Programming, Budget, and Execution



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

Example Federal Budget Process



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

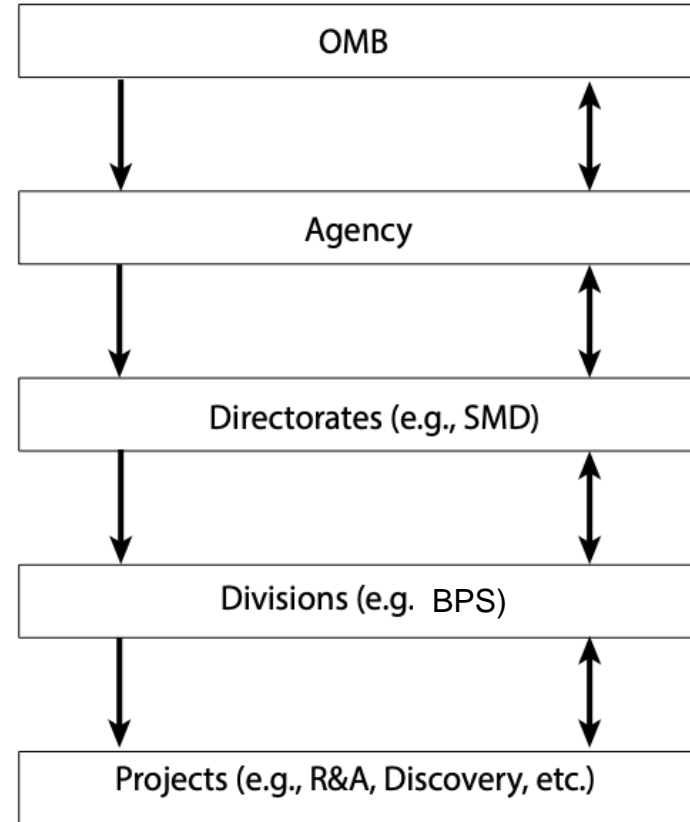
The Agencies (at all levels) prepare a budget request that is in-guide with the guidance.

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



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.**

Continuing Resolutions

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 programs¹ 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:**
- <https://www.whitehouse.gov/wp-content/uploads/2022/01/010422-NSPM-33-Implementation-Guidance.pdf>



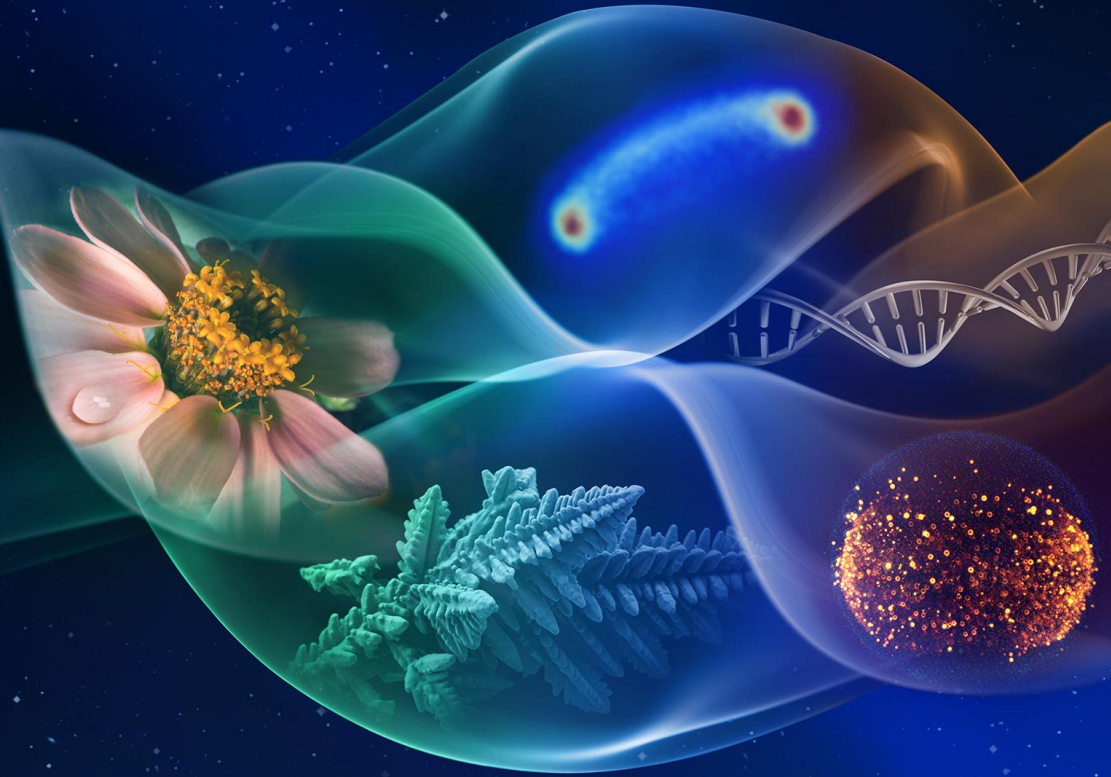
Thank you!

- **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



Abbreviations and Acronyms

AG	Analysis or Assessment Groups	NPMP	NASA Postdoctoral Management Program
CAPS	Committee on Astrobiology and Planetary Sciences	PAC	Planetary Science Advisory Committee
CR	Continuing Resolution	OMB	Office of Management and Budget
FACA	Federal Advisory Committee Act	BPAC	Biological and Physical Science Advisory Committee
FOIA	Freedom of Information Action	PBR	President's Budget Request
GSA	General Services Administration	PPBE	Planning, Programming, Budget, and Execution
IPA	Intergovernmental Personnel Act	SMD	Science Mission Directorate

Biological and Physical Sciences Organizational Chart

Level 1	(c) Contractor
Level 2	(d) Detailee
Level 3	(m) Matrixed
No Level	* Acting + Part-time support

BIOLOGICAL AND PHYSICAL SCIENCES DIVISION
 Craig Kundrot – Director
 Diane Malarik – Deputy Director
 Ralph Beaty (m) – Financial Analyst
 Brad Carpenter – Research & Analysis Lead

OFFICE OF THE CHIEF HEALTH AND MEDICAL OFFICER:
 Victor Schneider – Program Executive

HUMAN EXPLORATION & OPERATIONS MISSION DIRECTORATE:
 Victor Schneider – Program Executive

SMD POLICY BRANCH:
 Shea Kearns (m) – Policy Analyst
 Jason Callahan (m) – Policy Analyst Support

OFFICE OF INTERNATIONAL AND INTERAGENCY RELATIONS:
 Gib Kirkham – Science Division Director
 Krista Mangiardi – Detailee

ISS PAYLOAD OFFICE (JSC/OZ):
 Ryan Prouty – OZ Division Chief
 Kevin Hames – Manager, Natural Sciences Client Support Office

OFFICE OF THE CHIEF SCIENTIST:
 Kate Calvin – NASA Chief Scientist
 Mamta Nagaraja – Assoc. Chief Scientist for Exploration and Applied Research

ADMIN BRANCH:
 Paulette Woods (m) – Program Support Specialist
 Lina Carrington (m) – Program Support Backup

OFFICE OF LEGISLATIVE AFFAIRS:
 Andy Rowe (m) – OLA Liaison to BPS

EXPLORATION & PARTNERSHIPS:
 Kevin Sato (d) – Program Scientist for Exploration
 Lisa Carnell – Program Scientist for Translational Research
 Douglas Gruendel – BPS Partnerships Program Executive

PROGRAM SUPPORT TEAM:
 Joseph Burg (c) – Program Support Lead
 Aadel Ragaban (c) – Technical Lead
 Kaley Williams (c) – Transformation Subject Matter Expert
 Haley Faunterloy (c) – Executive Officer
 Jason Levine (c) – Schedule, Risk, & Data Manager
 Erin McEvoy (c) – Support Staff
 Bea Underwood (c) – Program Support Specialist

COMMUNICATIONS TEAM:
 Gamble Gilbertson+ (c) – Communications Lead
 Julie Lele+ (c) – Communications Strategist
 Rhiannon Roberts (c) – Communications Producer
 Bryana Quintana (c) – Social Media Producer

SPACE BIOLOGY:
 Mary Walsh – Program Manager
 John Howard – Deputy Program Manager
 Sharmila Bhattacharya – Program Scientist
 Vacant – Deputy Program Scientist
 Anthony Hickey (c) – Support Scientist

PHYSICAL SCIENCES:
 DeVon Griffin – Program Manager
 Hans Hansen – Deputy Program Manager
 Francis Chiamonte – Program Scientist, Fluids, Combustion, Materials
 Bradley Carpenter – Program Scientist, Soft Matter
 Mike Robinson – Program Scientist, Fundamental Physics

ARC:
 Amy Gresser – Portfolio Manager
 Jon Galazka – Portfolio Scientist

KSC:
 Bryan Onate – Portfolio Manager
 Howard Levine – Portfolio Scientist

GRC:
 Kelly Bailey – Portfolio Manager
 David Urban – Portfolio Scientist

JPL:
 John Callas – Portfolio Manager
 Nan Yu – Portfolio Scientist

MSFC:
 Shawn Reagan – Portfolio Manager
 Mike Sansoucie – Portfolio Scientist