Improving NRSA Fellowship Review

AN UPDATE| SEPTEMBER 18, 2023 | BRUCE REED, CSR; ALISON GAMMIE, NIGMS; ERICKA BOONE, NIH OD

NIH National Institutes of Health
Turning Discovery Into Health

BACKGROUND & GOALS

Community Input to Develop an Improved Framework

- **Persistent concerns from the community that fellowship reviews may disadvantage some applicants who are in fact highly qualified**

- CSR Advisory Council Working Group formed with additional members of the extramural community, and NIH staff

- Blog requesting input: 110 comments from applicants, sponsors, reviewers, and professional societies. Content analysis informed the WG

- Data requested by the WG supported the concerns raised by the external community

Review Matters

Strengthening Fellowship Review

Authors

Bruce Reed
Deputy Director

Lystranne Maynard Smith
Scientific Review Officer

Cibu Thomas
Scientific Review Officer

January 6, 2022

Have you applied for, sponsored, or reviewed NIH fellowship applications? We would like to hear your thoughts on what works, what doesn't, and how the process could be improved.

National Research Service Award (NRSA) Fellowship (F) awards are intended to support training that will enhance pre- and post-doctoral trainees' pot...

anon says: January 19, 2022 at 3:31 pm

The biggest flaw I see with the application process is the heavy weight applied to and penalty for the mentor. If NIH is worried that mentor may not be able to fully support the mentee's project and career development, then perhaps they should assign a mentor who does have a track record to help keep the team accountable and to bounce ideas off of/ask questions. I would envision this happening post-award so that the onus is not on the mentee to find an additional seasoned mentor. The goal of the F as I understand it is to provide avenues for training applicants with a strong potential research career who may not have as direct a path to doing so without the funding. Instead, NIH tends to keep the 10% of PIs with prior funding going by evaluating the mentor so heavily in the F review process. I would also recommend getting rid of the grade criteria. Seems silly that if an applicant has gotten into graduate school that their undergraduate grades would factor in, and at the postdoc level, grades should not matter at all. They have a PhD. Keeping in mind my latter point about diversifying NIH PIs, evaluating grades seems like a great way to maintain the status quo.
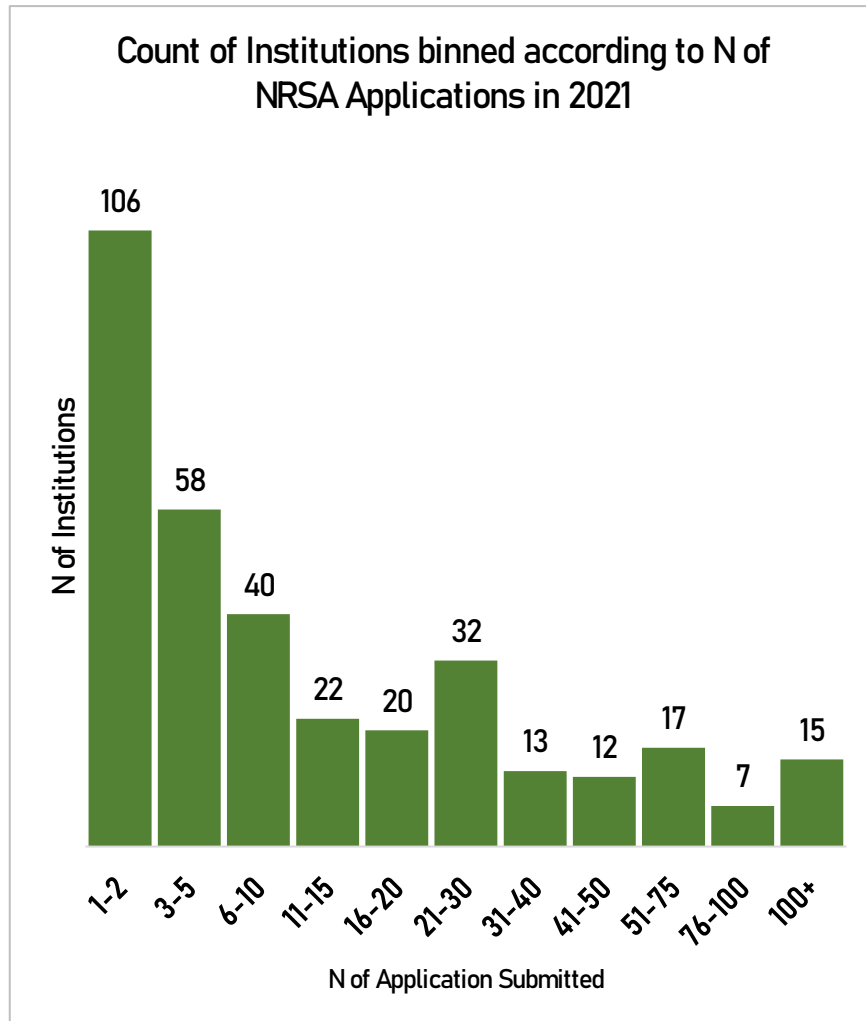
Elizabeth A Heller says: January 19, 2022 at 2:22 pm

Eliminate grades in assessment. They are not predictive of research success and have already been used to admit the candidate to graduate school.
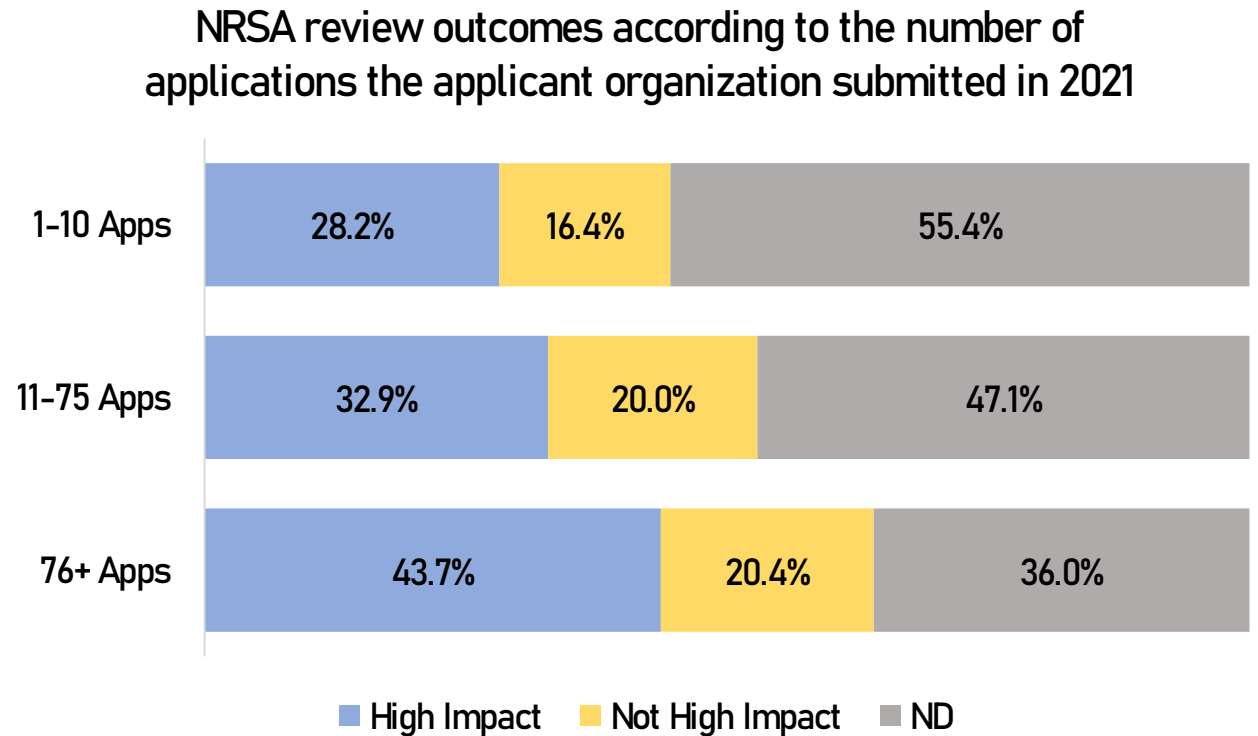
Zoe McElligott says: January 19, 2022 at 2:09 pm

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Submissions are highly concentrated in a few institutions

Count of Institutions binned according to N of NRSA Applications in 2021

N of Institutions (y-axis)

Values: 106, 58, 40, 22, 20, 32, 13, 12, 17, 7, 15

N of Application Submitted (x-axis): 1-2, 3-5, 6-10, 11-15, 16-20, 21-30, 31-40, 41-50, 51-75, 76-100, 100+

Applications from schools that submit more applications do better review in review

NRSA review outcomes according to the number of applications the applicant organization submitted in 2021

	High Impact	Not High Impact	ND
1–10 Apps	28.2%	16.4%	55.4%
11–75 Apps	32.9%	20.0%	47.1%
76+ Apps	43.7%	20.4%	36.0%

■ High Impact   ■ Not High Impact   ■ ND

Summary of WG Findings

- Multiple sources raised concerns about
  - Bias that favors that well-known scientists and highly reputed labs/institutions
  - The information used to judge applicants
  - An application that is burdensome to fellowship candidates and reviewers

- The data show that fellowship applications are concentrated in a small number of institutions.
  - This suggests that the knowledge and resources that support writing a competitive F application are very unevenly distributed.

- Applications from those (highly resourced) schools do better.

- Applications with senior sponsors fare better in review than those with sponsors in earlier career stages.

- **NIH is potentially leaving out highly promising young scientists because of a process that too heavily favors elite institutions, senior, well-known scientist sponsors, and an overly narrow emphasis on traditional markers of early academic success.**

The new review framework was developed with input across NIH and approved at multiple levels of leadership

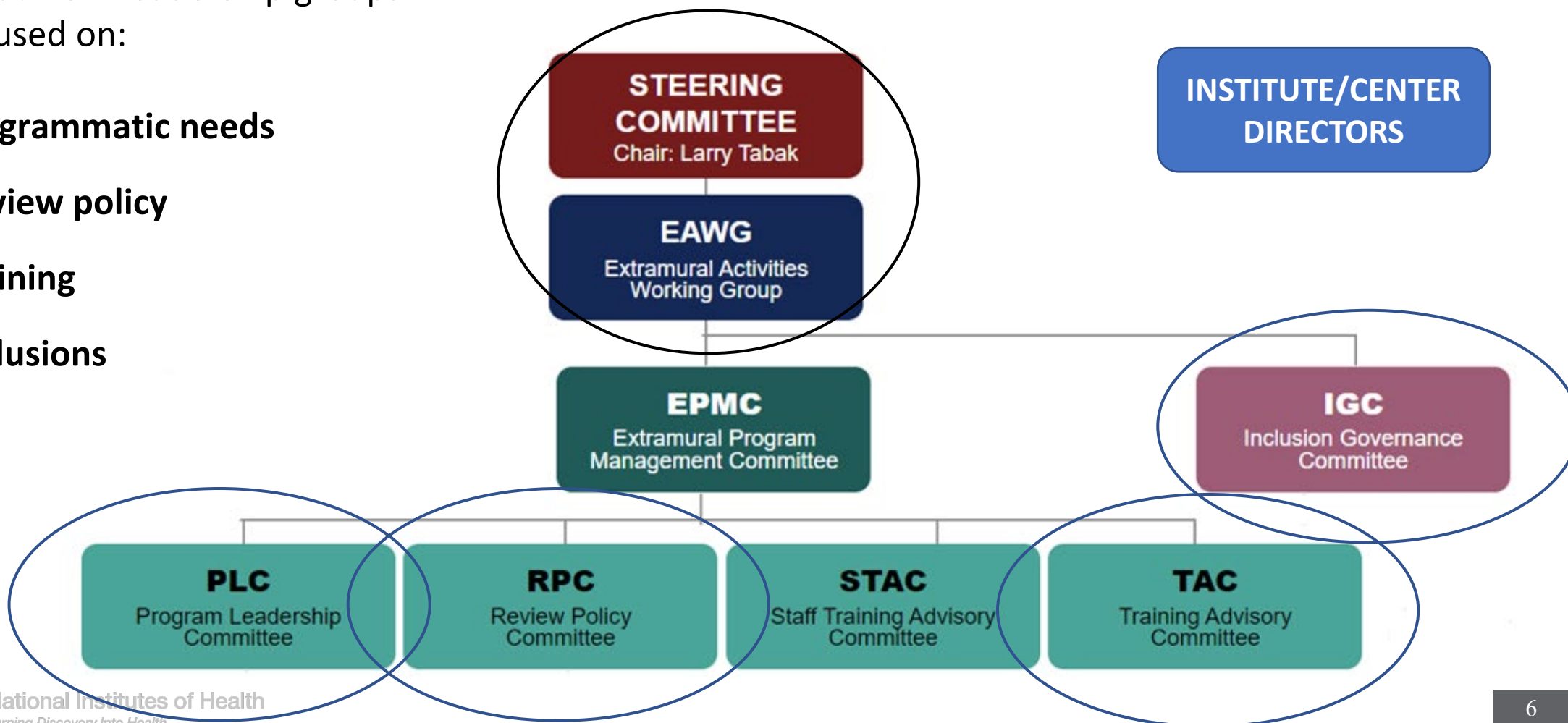Input from leadership groups focused on:

Programmatic needs

Review policy

Training

Inclusions

Followed by approvals

Objectives of the changes

1. Better focus reviewer attention on key assessments relevant to training

2. Define criteria to give less advantaged applicants a better chance, without disadvantaging others

3. Reduce bias in review by reducing inappropriate consideration of sponsor and institutional reputation

4. Align the application with the review criteria, request information relevant to the revised criteria

5. Clarify instructions and shorten the application

6. Implement change to give more equal access to candidates across a broad range of organizations and research environments

Revised Peer Review Framework

3 review criteria areas instead of 5

1. The scientific potential and preparedness of the fellowship candidate
2. The scientific project or *research training* project
3. The training plan and training resources
➢ "Sponsor" and "Institutional Environment" are eliminated as distinct criteria

Redefined review criteria

- The revised "applicant" (candidate) criterion encompasses a wider range of indicators of scientific potential and preparedness
- Evaluations of the sponsor and institutional environment are framed in terms of their contributions to the applicant's scientific training

A revised fellowship application

1. Shorter, more structured, better aligned with the new review criteria
2. Less emphasis on sponsor track record, more emphasis on training plan and preparedness
3. Eliminates requirement to submit grades

Changes to the fellowship application

1. **Eliminate grades (request courses completed)**
2. **Revise the Applicant Section**
   - Better assess the candidate's scientific thinking,
   - Broaden consideration of qualifications
3. **Revise the Sponsors, Collaborators and Consultants section**
   - Place greater emphasis on sponsor's training/mentorship approach, the plan for this student and fit to trainee's goals/needs
4. **Revise letters of reference**
   - Address targeted, trainee-specific questions in word-limited fields
   - Intended to discourage boilerplate and to make it easier for reviewers to evaluate
5. **No significant changes to the current Research Training Project Plan Section**
   - Specific Aims, Research Strategy, Responsible Conduct of Research - unchanged
6. **Allow an <u>optional</u> statement of special circumstances**
   - Situations that might have hindered their progress such as harassment, the COVID-19 pandemic, or other personal or professional circumstances.

RFI issued to obtain public feedback

- Publication was accompanied by coordinated NIH outreach — blogs, NIH Guide Notice, Federal Register Notice

- Additional outreach targeting schools that submit few Fs, MSIs
  - Direct emails to ~500 leaders at educational institutions
  - Social media
  - Informal outreach by CSR staff

147 individuals commented

10 scientific societies

7 universities

Request for Information (RFI) on Recommendations for Improving NRSA Fellowship Review

Notice Number:

NOT-OD-23-110

Key Dates

Release Date:

April 24, 2023

Content Analysis of the RFI

- Predominant views:
  - Restructuring the criteria was a good plan and would result in more fair review
  - Favored the proposed restructuring of the application

- Some comments suggested a need to clarify the review criteria, specifically
  - Some aspects of the proposed Fellowship Candidate criterion
  - The distinction between criterion 2 (Science and Scientific Resources) and criterion 3 (Training Plan and Training Resources)

- Multiple comments requested additional guidance about what information should be provided in the various application sections

- **The implementation group will make revisions to address these concerns**

Content analysis report: https://public.csr.nih.gov/sites/default/files/2023-09/NRSA_RFI_Analysis_Sept_2023.pdf

Improving NRSA Review Implementation Executive Committee

Co-Chairs

Bruce Reed
CSR

Ericka Boone
OER

Alison Gammie
NIGMS

Members

Michelle Bulls
OER

Megan Columbus
OER

John Connaughton
NIDDK

Aaron Czaplicki
OER
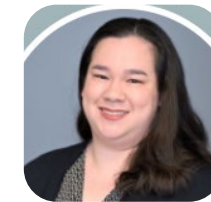
Kasima Garst
OER

Kenneth Gibbs
NIGMS

Kristin Kramer
CSR

Lystranne Maynard-Smith
CSR

Miriam Mintzer
CSR

Lynn Morin
OER

Duane Price
CSR

Laurie Roman
OER

Melissa Stick
NIDCD

Cibu Thomas
CSR

Project Manager

Aditi Jain
CSR

Review Policy Officer

Stephanie Constant
OER

Revising Fellowship Review Implementation Committee Structure

Trans-NIH implementation committee with multidimensional domain expertise in peer review, reviewer training, staff training, eRA systems, communications, and policy

Executive Committee

NOFO/424

eRA/Business Systems

Reviewer Orientation & Staff Training

Targeted Outreach & Communications

Subcommittee domains

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                    │ Executive Committee │
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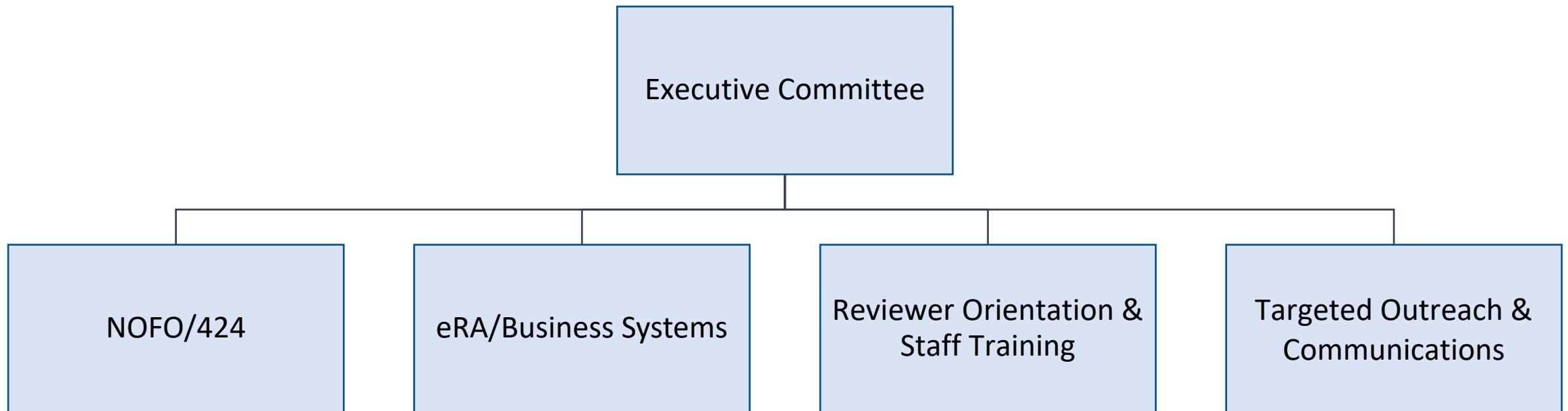
NOFO/424	eRA/Business Systems	Targeted Outreach & Communications	Reviewer Orientation & NIH Staff Training

- Targeted revision of review criteria, relevant NOFO language
- Align review criteria changes, SF424 language and instructions
- Assemble materials for submission **Office of Management and Budget** for final clearance

- Ensure launch readiness and availability of revised NOFOs
  - Develop & implement updated application wireframes
  - Execute forms and template changes for impacted activity codes
  - Ensure timely end-to-end user testing
- Update IAR templates

- Targeted outreach at multiple points from NOFO & SF424 changes to guide notice release and final implementation
- Develop core messaging for internal and external audiences (reviewers, applicants, SROs, program staff)
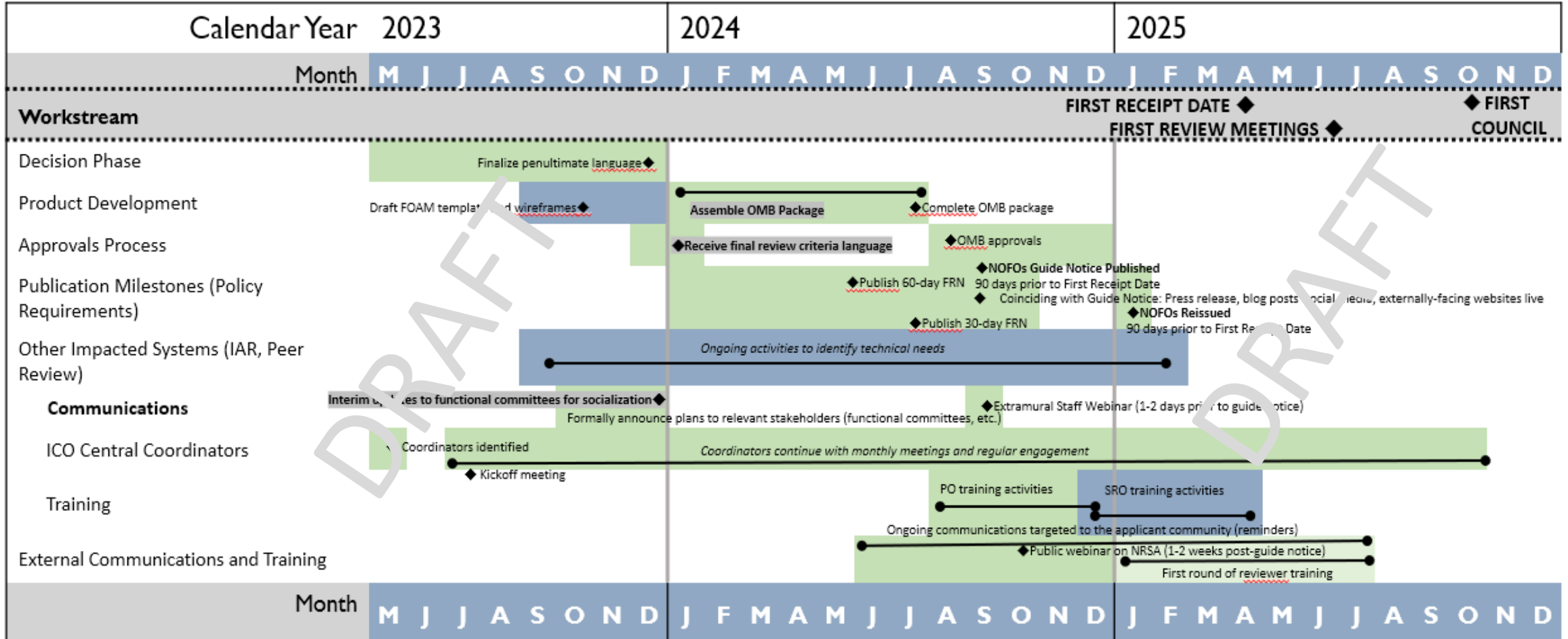- Coordinate and execute staff and public webinars, guide notices, and trainings

- Develop stakeholder-specific training & resource materials
- Coordinate and execute stakeholder-specific training opportunities

Implementation milestones being developed

Action items on critical path

Workstream	2023	2024	2025

FIRST RECEIPT DATE ◆
FIRST REVIEW MEETINGS ◆
◆ **FIRST COUNCIL**

- **Decision Phase** — Finalize penultimate language ◆
- **Product Development** — Draft FOAM template and wireframes ◆; Assemble OMB Package; ◆ Complete OMB package
- **Approvals Process** — ◆ Receive final review criteria language; ◆ OMB approvals
- **Publication Milestones (Policy Requirements)** — ◆ NOFOs Guide Notice Published; ◆ Publish 60-day FRN 90 days prior to First Receipt Date; ◆ Coinciding with Guide Notice: Press release, blog posts, social media, externally-facing websites live; ◆ NOFOs Reissued 90 days prior to First Receipt Date; ◆ Publish 30-day FRN
- **Other Impacted Systems (IAR, Peer Review)** — Ongoing activities to identify technical needs
- **Communications** — Interim updates to functional committees for socialization ◆; ◆ Extramural Staff Webinar (1-2 days prior to guide notice); Formally announce plans to relevant stakeholders (functional committees, etc.)
- **ICO Central Coordinators** — Coordinators identified; Coordinators continue with monthly meetings and regular engagement; ◆ Kickoff meeting
- **Training** — PO training activities; SRO training activities
- **External Communications and Training** — Ongoing communications targeted to the applicant community (reminders); ◆ Public webinar on NRSA (1-2 weeks post-guide notice); First round of reviewer training

Next Steps

October/November:
- Presentation to major NIH stakeholder committees (e.g. Review Policy, Program Leadership, Training Activities)
- Issue NIH guide notice announcing changes
- Staff webinar providing overview of changes and timeline for implementation

Over the next year:
- Refining application instructions and getting approval from the Office of Management and Budget
- Implementing required system changes
- Developing resources and training for NIH staff, reviewers, and applicants

Late 2024/early 2025:
- Updating funding opportunities
- Public webinars providing an early overview of changes

We anticipate that the first NRSA submissions under the revised framework will occur in 2025.

A tremendous amount of training and outreach to applicants, reviewers, and NIH staff will occur first!

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