

Fermi Proposer Workshop

Workshop Agenda

2:00-3:30 PM (EST), Tuesday, January 24, 2023.

Welcome, Session Overview, and Goals

Chris Shrader

Mission Overview and News

Judy Racusin (~10 min)

Overview of FSSC Online Services

Don Horner (~10 min)

GI Program Description, Opportunities, General Discussion

Chris Shrader (~20 min)

GI Science Nuggets

1-VG Attendee Contributions (~5-min)

To register please complete [this form](#).

Fermi Guest Investigator Opportunities

Chris Shrader,
Fermi Science support Center,
NASA/GSFC

Fermi GI Program Overview

- **Broad community participation greatly enhances the scientific productivity of the Fermi mission**
 - **This is facilitated through a rigorous Guest Investigator (GI) program**
- **Primarily proposals for grant support**
 - **All science data products and basic analysis tools are publicly available through the FSSC as are proposal preparation and submission details**

Program Overview (con.)

- **Participants can propose:**
 - **Analysis of all public data products**
 - Includes development and dissemination of methodologies, e.g., algorithms, SW tools
 - **Correlated observations relevant to Fermi**
 - Includes opportunities for joint observation programs w/partner observatories; NRAO, NOIRlab, VERITAS, TESS and INTEGRAL
 - Proposers with separate access to other observatories can propose correlative programs
 - **Theoretical investigations relevant to Fermi**

Program Overview (con.)

- **2-stage review process**
 - The first stage is the *science review*
 - Dual-anonymous peer-evaluation process
 - Budget proposals are solicited from successful first stage proposers
 - Internal review by NASA
- **Support for ~35 research programs**
 - Our goal is for ~\$75k average grants, although
 - Also 1+/-1 new Large Projects @ ~\$125k per year
 - Large projects are 1–3-year duration requiring annual reporting

A Good Proposal Should Include:

- Research plan: *clearly stated objectives, plausible strategy, scientific impact*
- For theory/correlative: *relevance to Fermi* needs to be clearly conveyed
- Implementation plan
 - Is the level of effort reasonable?
 - Well defined & achievable goals?
- **Also:** please review and adhere to formatting guidelines, page limits, anonymization

Recent History: Cycle 13-15 Summary

- ~100 proposals received, ~35 selected per cycle
- ~35% approval rate represents an improvement *wrt* past cycles
 - Cycles 5-10 average was 22%
- Recent Fermi selection rate is ~consistent with the average for NASA GO programs

Joint Observation Programs

- The Fermi project has organized partnerships with several other observatories to establish joint program opportunities
- This includes NRAO, NOIRlab, INTEGRAL, VERITAS and TESS.
- It is **STRONGLY** recommended that prospective proposers carefully review the appropriate MOU(s) on our website.

Allotted Joint-Program Quotas

NRAO:	450-600 hrs on GBT, VLA & VLBA
NOIRlab:	3-5% for various telescopes
VERITAS:	120 hrs
INTEGRAL:	250 ksec
TESS:	1,000 2-minute cadence and 50 20-second cadence target slots

Joint Program Statistics

These joint-program opportunities have generally been under subscribed, often significantly.

Cycle-14 Requested (proposals/obs time) / (time available)

NRAO: (7/310) / (450-600 hrs on GBT, VLA & VLBA)

NOIRlab: (8/380) / (3-5% for various telescopes)

VERITAS: (1/120) / (120 hrs)

INTEGRAL:(1/250) / (250 ksec)

TESS: (1/33) / (33 hrs)

Awarded: (proposals/obs. time)

NOIRlab: 2 / 250 hrs

NRAO: 4 / 160 (3 VLA/VLBA, 1 GBT)

INTEGRAL: 1/250ksec

VERITAS: 0/0

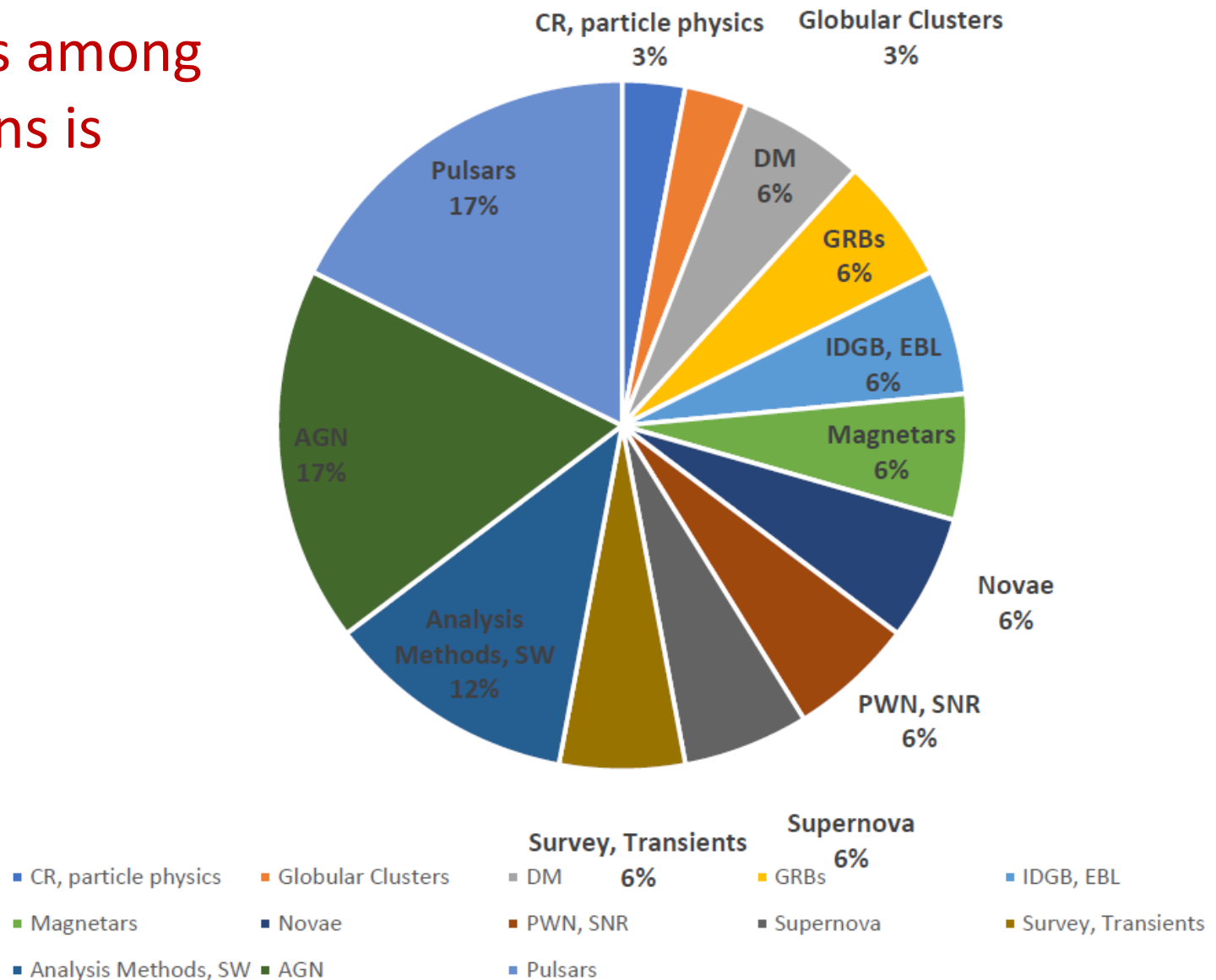
TESS: 0/0

Important: Prospective proposers should contact the partner observatory helpdesks with technical questions. A **one-page appendix** will be evaluated for technical/programmatic considerations by the partner observatories. Scheduling of observations is to be negotiated with observatory staffs by approved PIs (i.e., **not with NASA**).

The program is **topically diverse**: The distribution of topical categories among Cycle-15 selections is depicted here:

Programmatic breakdown:
 The range of supported activities is also diverse - LAT data analysis (44%), GBM data analysis (9%), Correlated MW observation (32%, Theory (15%))

Topical Breakdown
 (Cycle-15 Selected Proposals)



Proposal Evaluation Process

- Following the model of all NASA GI/GO programs each proposal is evaluated by a NASA-convened, anonymous peer-review panel.
- The agency strives for fairness and equity in this process. Effort is made to optimize the collective expertise pool for participation.
- Initiated in Cycle 14 and continuing henceforth Fermi has employed a **dual-anonymous peer review process**.

What is Dual-Anonymous Peer Review?

- In dual-anonymous peer review, the reviewers do not have explicit knowledge of the identities of the proposing team during the scientific evaluation of the proposal.
- The primary intent of dual-anonymous peer review is to eliminate “the team” as a topic during the scientific evaluation of a proposal.
- This creates a shift in the review-panel discussions, away from the individuals, and towards a discussion of the scientific merit of a proposal.
- The goal is to **eliminate or at least minimize Conscious and Subconscious Bias** in the selection process.

Cycle 16 Timeline

- Schedule: Feb. 16, 2023, proposal due date
 - ~late April 2023: virtual peer-review meeting
 - ~late May/early June 2023: Stage-I selections
 - July/August stage-II awards
- We hope to again select 30-40 programs
- No significant policy changes *wrt* Cycle 15

Additional Information

- Again, for all proposal preparation details please visit the FSSC Web site, in particular the “Proposals” page:
 - <https://fermi.gsfc.nasa.gov/ssc/>
- Also, feel free to make use of our helpdesk with any Fermi-related questions
- **Good luck with your Fermi proposals!**

Extra Slides

Dual Anonymous Proposal Preparation

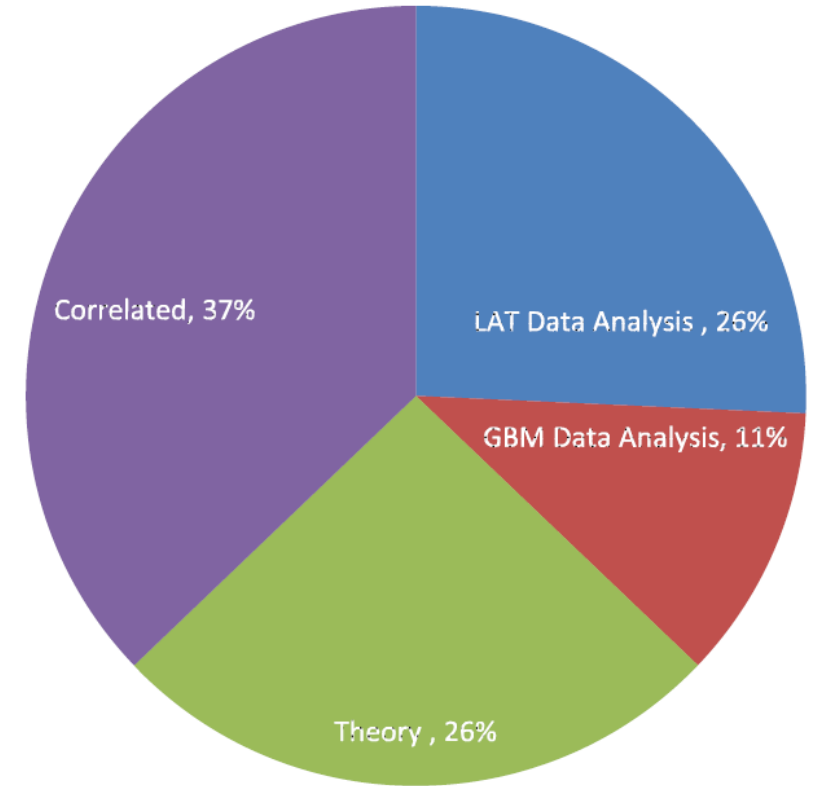
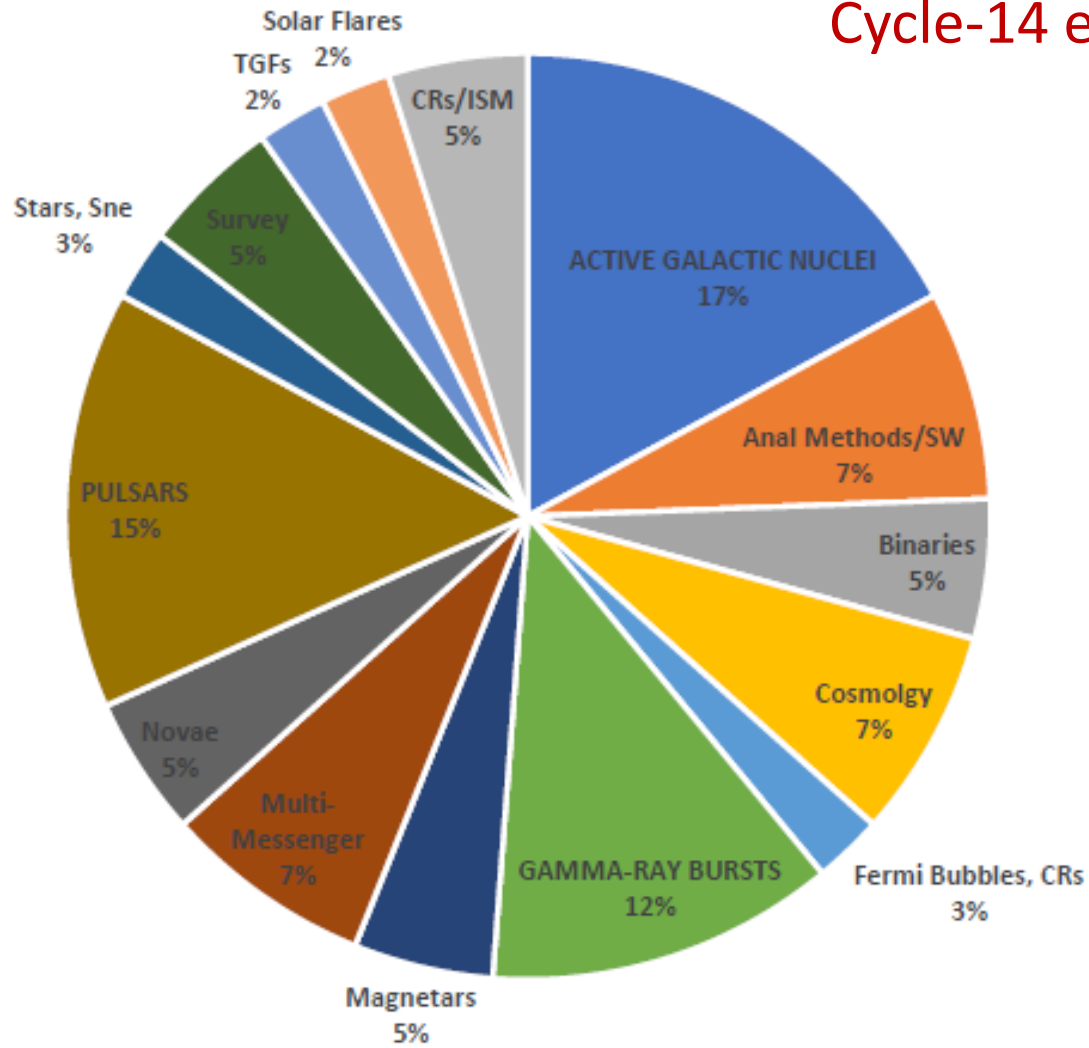
- Stage-I proposal submission done as before via ARK/RPS
 - Include PI/co-I info but names are hidden from reviewers
 - Numerical references, no “first person” attributions
 - Panelists may not speculate PI, co-I identities
 - Include “team identity and expertise” page
 - Cite access to specific facilities as private communications or arrangements
- Relaxes certain types of panelist conflicts of interest
- **After** deliberation and grading names will be revealed
 - A proposal can then be disqualified, but not re-scored

Example of Anonymization

- *In Rogers et al. (2014), we concluded that the best explanation for the dynamics of the shockwave and the spectra from both the forward-shocked ISM and the reverse-shocked ejecta is that a Type Ia supernova exploded into a preexisting wind-blown cavity. This object is the only known example of such a phenomenon, and it thus provides a unique opportunity to illuminate the nature of Type Ia supernovae and the progenitors. If our model from Rogers et al. (2014) is correct, then the single-degenerate channel for SNe Ia production must exist. We propose here for a second epoch of observations which we will compare with our first epoch obtained in 2007 to measure the proper motion of the shock wave.*
- Here is the same text, again re-worked following the anonymizing guidelines:
- *Prior work [12] concluded that the best explanation for the dynamics of the shockwave and the spectra from both the forward-shocked ISM and the reverse-shocked ejecta is that a Type Ia supernova exploded into a preexisting wind-blown cavity. This object is the only known example of such a phenomenon, and it thus provides a unique opportunity to illuminate the nature of Type Ia supernovae and the progenitors. If the model from [12] is correct, then the single-degenerate channel for SNe Ia production must exist. We propose here for a second epoch of observations which we will compare with a first epoch obtained in 2007 to measure the proper motion of the shock wave.*

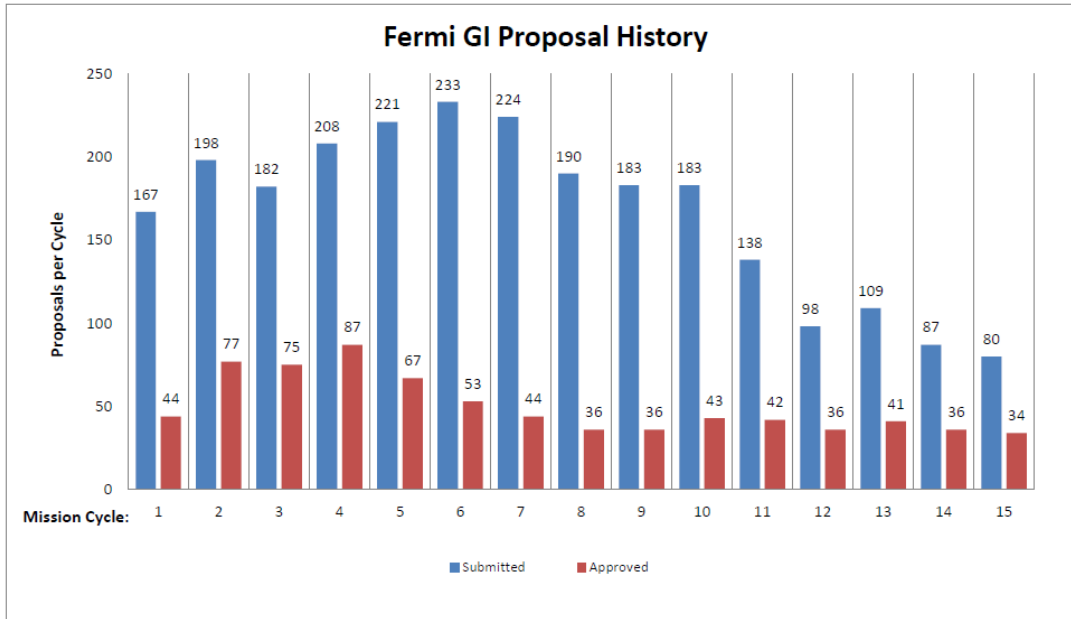
Topical, Proposal Type Distribution

Cycle-14 example



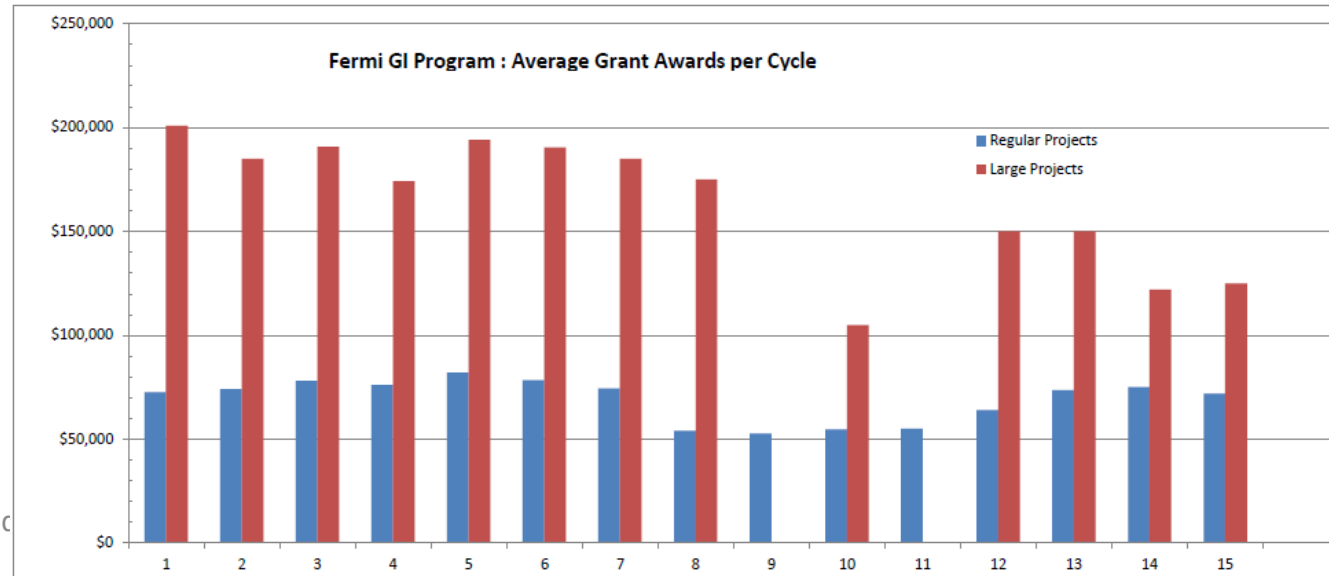
- ACTIVE GALACTIC NUCLEI
- ANAL METHODS/SW
- BINARIES
- COSMOLGY
- FERMI BUBBLES, CRs
- GAMMA-RAY BURSTS
- MAGNETARS
- MULTI-MESSENGER
- NOVAE
- PULSARS
- STARS, SNE
- SURVEY
- TGFs
- SOLAR FLARES
- CRs/ISM

GI Program History

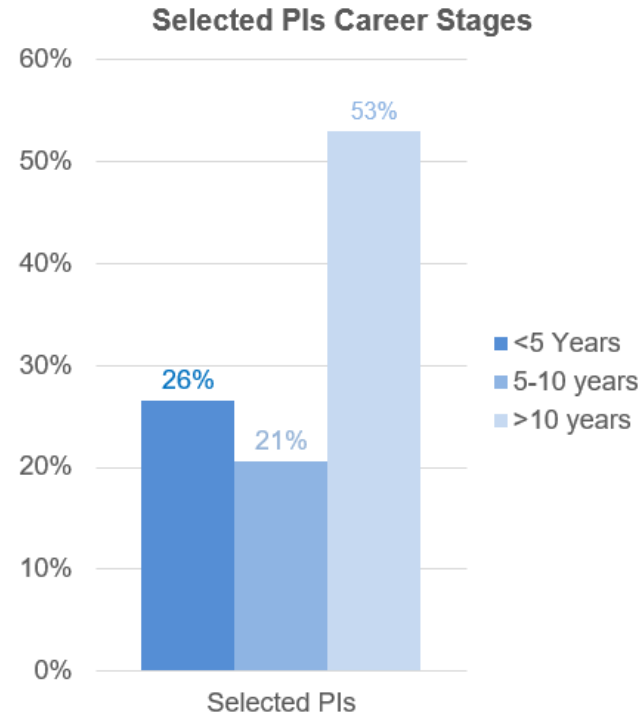
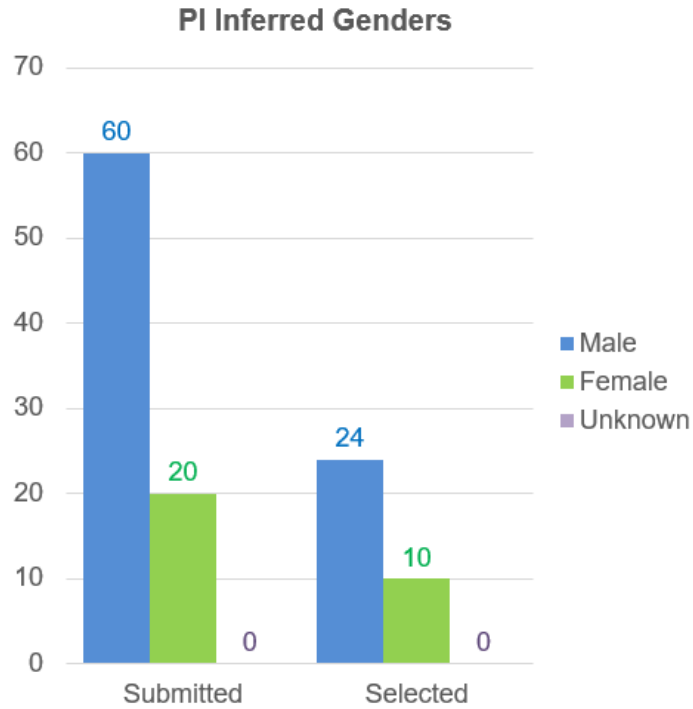


Selection rate ~40%, slightly over recent years, ~factor of 2 improvement over Cy-2-10 average

Grant level flat since Cycle-13.



Diversity, Seniority Balance



Out of 34 selections: 6 first time PIs, 9 early-career PIs

