National Science Foundation
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NSF-ICF
Science Management Office Update

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University of New Hampshire

Ice Core Working Group (Virtual) Meeting

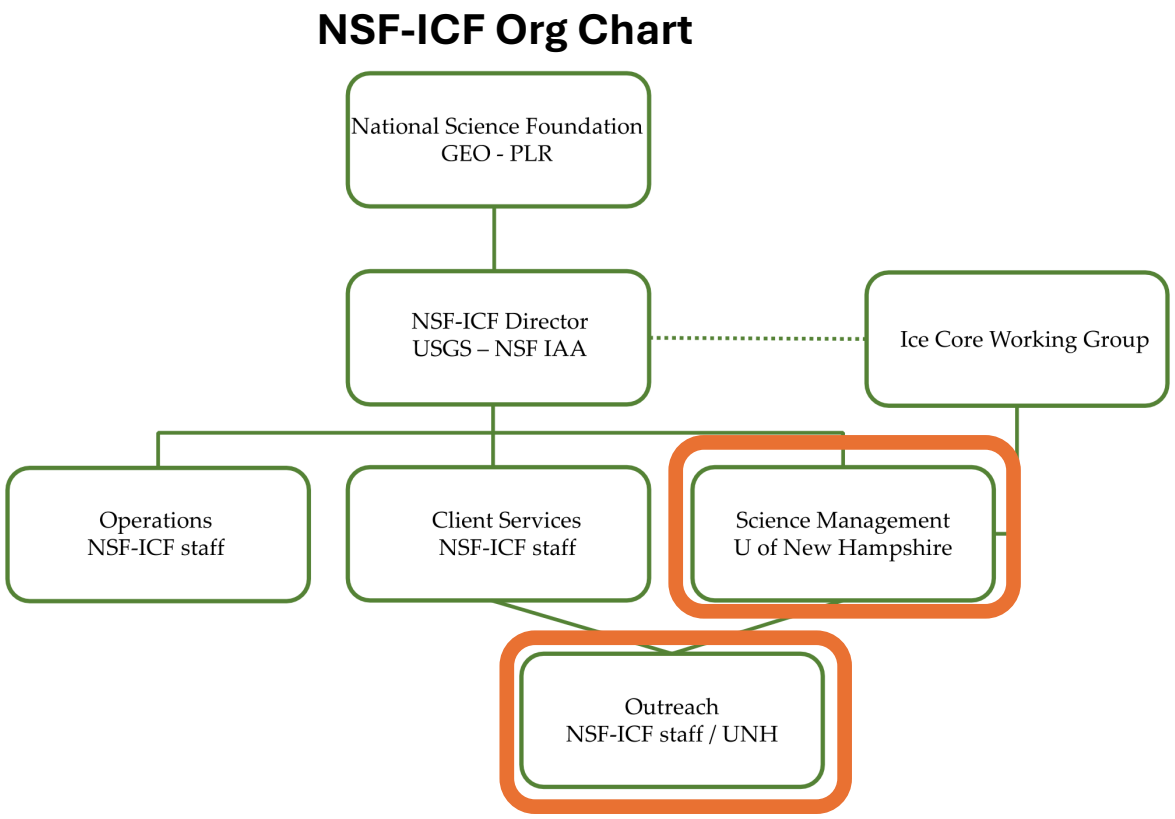
April 8, 2025

Talk Outline

- NSF, NSF-ICF, and SMO
- Science Management Office – Major Tasks
- Sample Allocations
- Letters for Proposals
- Sample Allocation Committee Reminders
- Beacon/Mullins Valley Cores
- Proprietary Cores at NSF-ICF
- (if there is time) Virtual Repository of Ice at Other Locations

NSF, NSF-ICF, and SMO

Interagency Agreement between NSF and USGS to operate NSF-ICF. SMO (UNH) operates as a subaward to USGS.



People

National Science Foundation, NSF

- Kelly Brunt, Program Director

NSF-Ice Core Facility (NSF-ICF), USGS

- Lindsay Powers, Technical Director
- *Curt La Bombard, Curator
- *Richard Nunn, Assistant Curator
- *Theo Carr, Science Technician

Science Management Office (SMO), UNH

- Joe Souney, SMO Director
- Mark Twickler (a couple hrs/wk)

*Full time NSF-ICF employees

Science Management Office (SMO)

MAJOR TASKS

- Primary contact point for scientific community interested in using the facility and ice core archive.
- Requests for samples or use of the facility are submitted to the SMO from interested parties.
- Investigators submitting a proposal to any funding agency are required to contact the SMO prior to submitting the proposal if samples from the public archive are being requested and/or if the proposal requires any use of the facility, such as for a core processing line or core storage.
- If samples from the NSF-ICF archive are requested in the proposal, sample availability is checked, and if samples are available without overly depleting the archive, a “Facility Letter” is provided for the proposal. If the proposal is funded, the SMO sends the sample request to the SAC (bcc NSF) for review. The SAC, not the SMO, has the authority to approve sample requests from the NSF-ICF archive.
- Provides updates to the unified NSF-ICF and SMO website (https://icecores.org).
- Bi-weekly meetings with NSF-ICF Technical Director (Dr. Lindsay Powers), bi-weekly meetings with NSF-ICF Curator (Curt LaBombard), and monthly meetings with NSF and NSF-ICF Technical Director.
- Quarterly reporting of SMO activities to USGS and NSF.

Sample Allocations (5/2024 – present)

Science (9)

- Vostok5G (1)
- GISP2D (2)
- GISP2D basal silty ice (2)
- GISP2E (1)
- GISP2C (1)
- South Cascades Glacier 2 (SOCAS2) (1)
- WDC06A (1)

** Also have 2-3 sample inquiries that may go to the SAC soon.

Classroom activities (3)

- Crete74 (2), Newall Glacier (1)

Public outreach (1)

- Crete74

Art/film/photography (3)

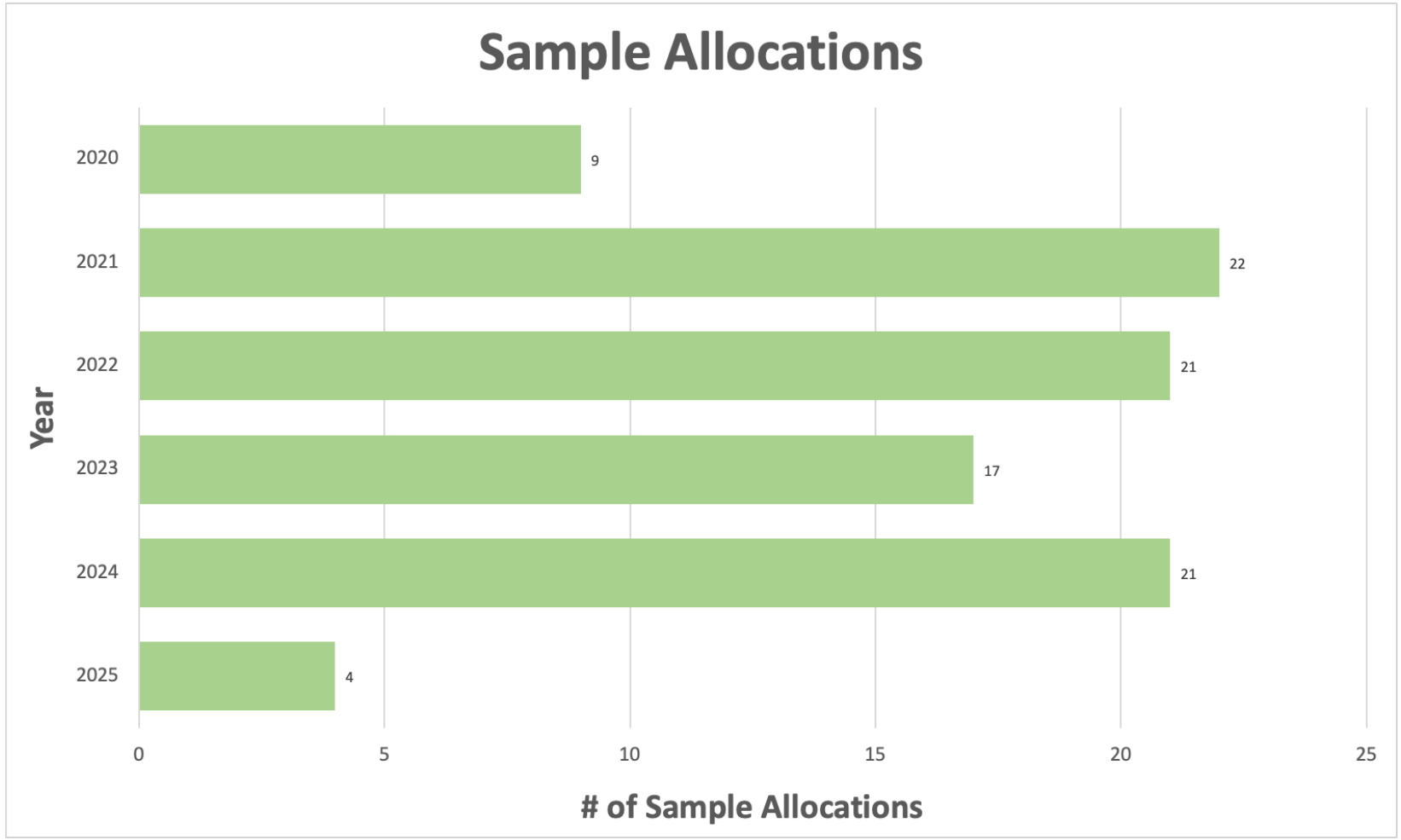
- McCall Glacier (non-destructive) (1)
- Crete74 (2)

Sample Allocations

- South Cascades Glacier 2 (SOCAS2) (Washington)
  - After recent sampling (Dr. Sophia Wensman, DRI; NSF award #2326535):
    - As anticipated, no archive remains from 0-47 meters and 154 to bottom (~158 meters).
    - A little less than a half-round remains from 47-154 meters. 7.6 cm diameter core.

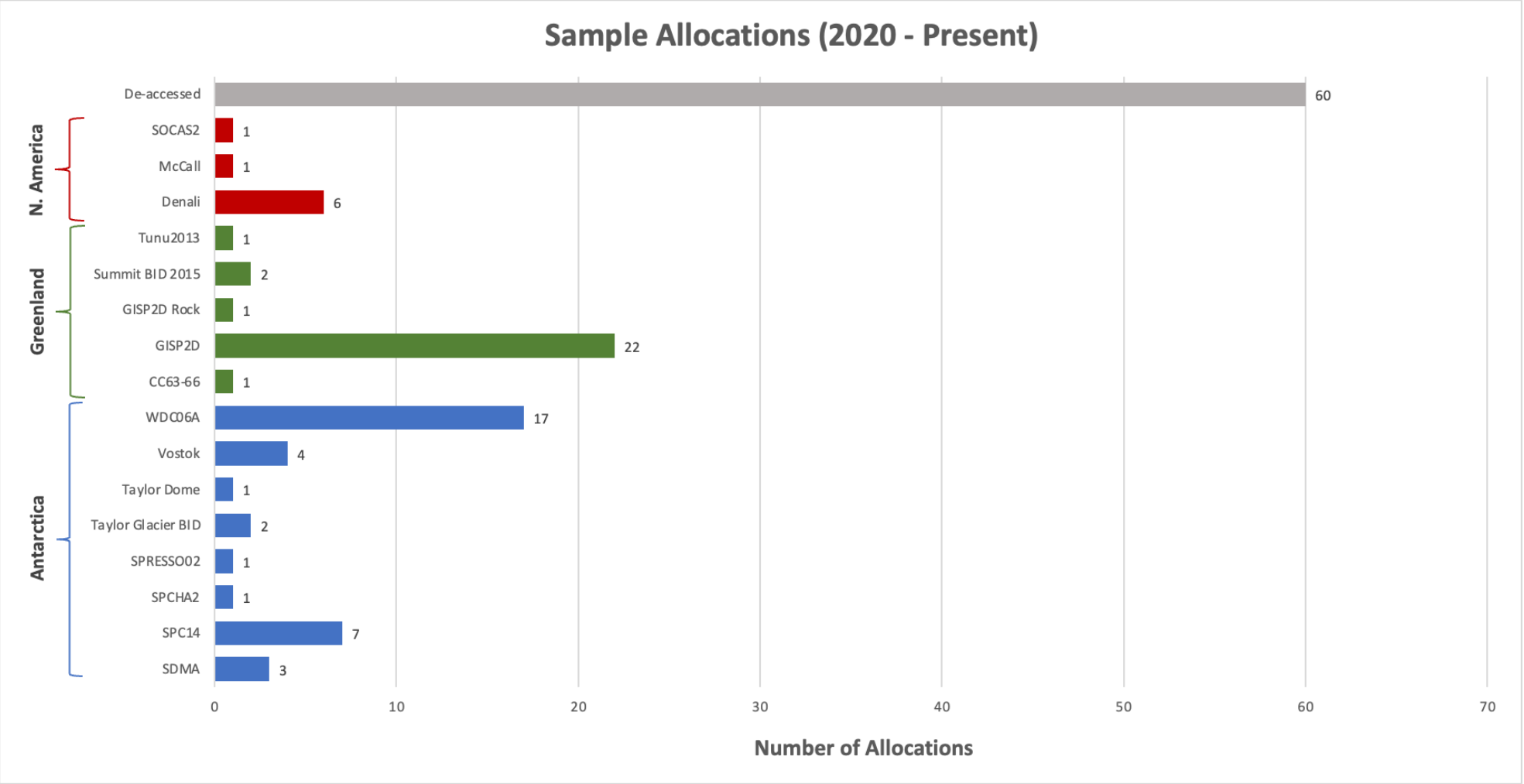
- Fremont Glacier (Wyoming)
  - Dr. Wendell Walters (Univ. South Carolina) received NSF funding (#2441725; AGS) for a continuous section of the core for measuring oxygen and nitrogen stable isotopes of nitrate.
    - Currently developing an ice core melter system and working with de-accessed core.
    - Once methods are established/validated, a request to the SAC for the Fremont ice will be forthcoming.
    - After Wendell's sampling, the core remaining will be minimal.

Sample Allocations



94 sample allocations over last ~5.5 years

Sample Allocations



Letters for Proposals (5/2024 – present)

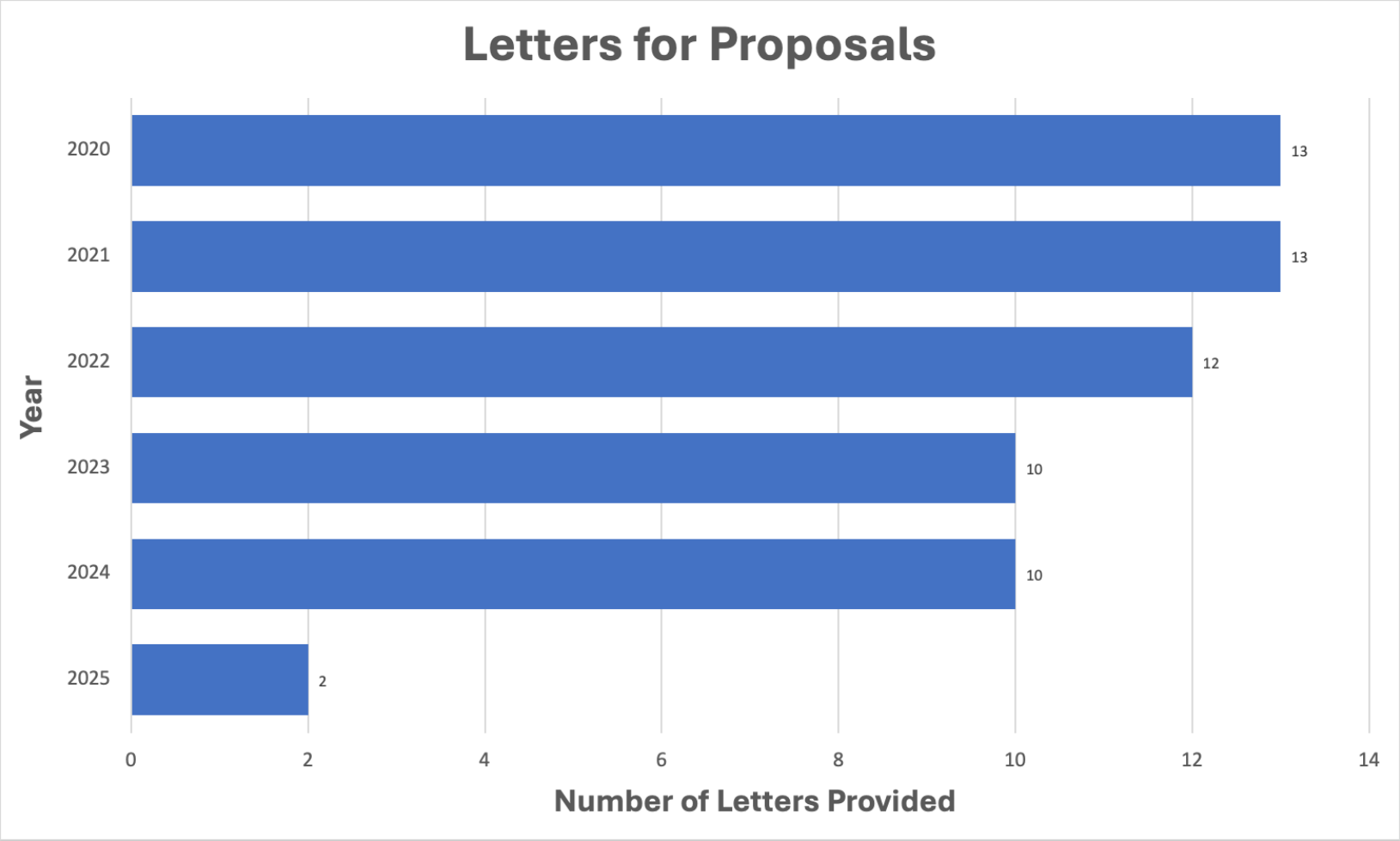
11 letters provided for NSF proposals

- 6 proposals requesting samples from the public archive (i.e., from cores listed at https://icecores.org/inventory)
- 3 proposals requesting to archive newly drilled ice cores
- 2 proposal requesting to use hyperspectral imaging (HSI) equipment

Other

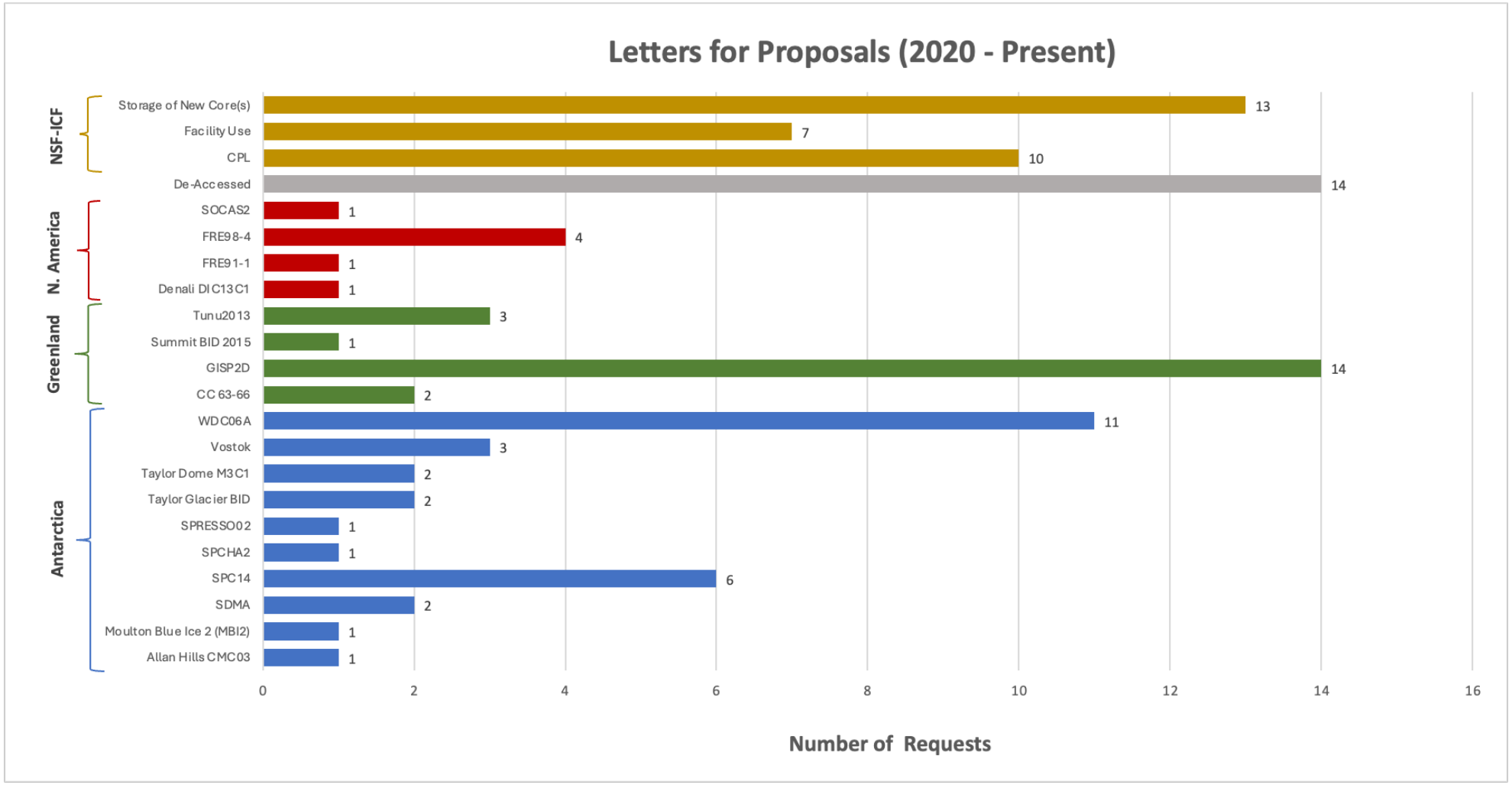
- Worked on 6 sample request inquiries that haven't (yet) reached the submitted proposal stage
- Closed-out 3 sample request inquiries that had inactivity from the PI for over 18 months
- Turned down 1 request to provide a support letter for an NSF MRI proposal
  - SMO and ICF don't provide support letters for other institute's NSF MRI proposal submissions

Letters for Proposals



60 letters over last ~5.5 years

Letters for Proposals



Sample Allocation Committee Reminders

The NSF-ICF Sample Allocation Committee (SAC) was established in 1996 as an ad hoc subcommittee to the Ice Core Working Group (ICWG). During the 2024 ICWG Meeting, it was decided that all members of the ICWG will serve on the SAC. **The SAC will still function as an ad hoc subcommittee to the ICWG, which allows the SAC the flexibility to add non-ICWG members if/when needed.**

If you receive a sample request from the SMO to review, immediately let the SMO and other SAC members know if you have a conflict of interest (e.g., if you are a co-PI or if your lab is somehow involved in the project).

Beacon/Mullins Valley Cores

https://icecores.org/inventory/beacon-and-mullins-valley

The SMO would like the SAC to consider moving the cores to the de-accession list.

Why?

- The cores weren't supposed to go to the NSF-ICF (i.e., mixed ice/sediment cores aren't supposed to be at the facility).
- Most of the cores shouldn't be cut in the exam room because of their high sediment content.
- There has been little interest in the cores from the scientific community.
- There is limited metadata.

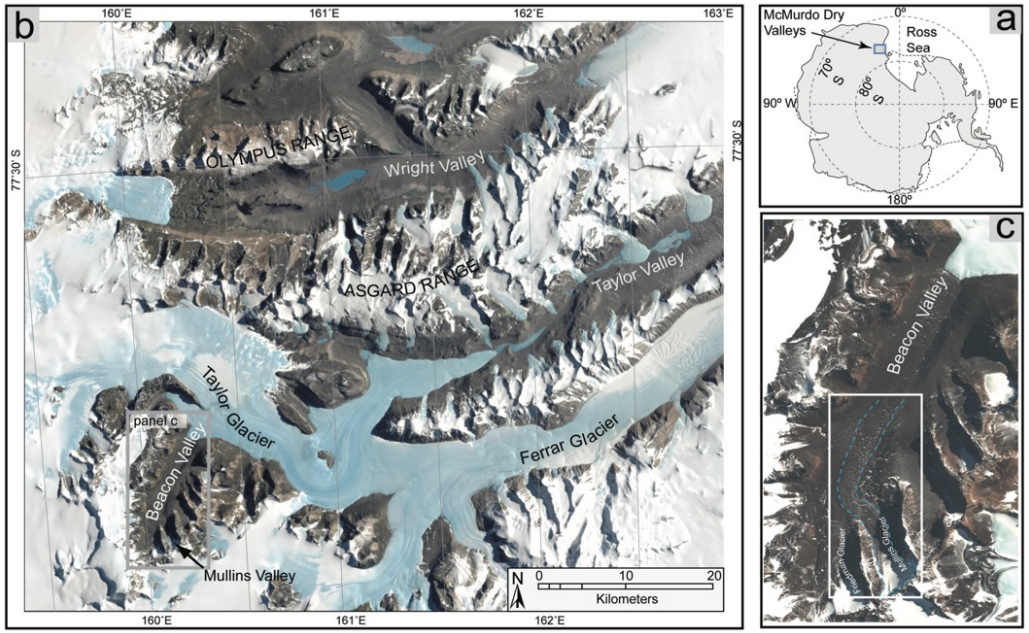
If the cores are de-accessed:

- They will continue to be stored in the freezer (like the other de-accessed cores).
- It allows easier access to the cores (i.e., no NSF funded proposal needed, no SAC approval needed), which may help increase community use of the cores.
- It will make it easier to move the cores to a new locations if/when one is found.

Beacon/Mullins Valley Cores

https://icecores.org/inventory/beacon-and-mullins-valley

Core ID Type	Location	Year Drilled	Event #	Core ⌀	Original PI	# Cores in Inventory	# Meters in Inventory
MCI04-###	Mullins Valley	2004	G-054-M	8.19 cm (3.2 inch)	D. Marchant	18	~44
DC06-### SC06-###	Mullins Valley Kennar Valley	2006	G-054-M	7.6 cm (3 inch)	K. Swanger / D. Marchant	44 2	~118 ~4
MCI-008-###	Beacon Valley Mullins Valley	2008	G-070-M	7.6 cm (3 inch)	M. Bender / D. Marchant	3	~28
MCI-009-###	Beacon Valley	2009	G-070-M	7.6 cm (3 inch)	M. Bender / D. Marchant	3	~58



- ~160 tubes of core, taking up a little less than one rack (one rack ~10-ft long).
- **Please tell your community members about these cores!!!** Go to https://icecores.org/inventory/beacon-and-mullins-valley and download the "**Beacon/Mullins Valley PDF document**" for more information (including pictures) about these cores.

Site map from Mackay and others, 2016 (Supplemental_2).
https://doi.org/10.1016/j.quascirev.2016.03.013

Proprietary Cores at NSF-ICF

- Newly drilled ice cores that arrive at the NSF-ICF are proprietary and not available to other researchers, without permission from the PI, for the duration of the PI's funded proposal.
- When the PI's award funding is over, if the PI chooses to leave the remaining core at the NSF-ICF, the core is no longer proprietary to the PI, and the core becomes a part of the community archive from which anyone can request samples through the SMO.

Examples: (1) COLDEX, (2) PI Eric Saltzman 2024 Summit (Greenland) core

<u>Conditions</u>

- Investigators must contact the SMO during the project planning stage, prior to proposal submission, for possible permission to store new ice cores.
- Only ice cores made of meteoric ice are authorized for storage at the NSF-ICF. No sea ice, permafrost, or sediment cores are permitted in the facility.
- If no other conditions are defined at the proposal stage with the concurrence of the ICF and the SMO, the end date of the investigator's proprietary period will be the end date of the investigator's funded award.
- If the investigator is using the ICF to sample their proprietary core, it is the investigator's responsibility to sample the core within the scope outlined in their funded award.

Questions