

Kick-off Webinar & Discussion

THE NEED FOR A SPECIMEN MANAGEMENT PLAN REQUIREMENT

February 7, 2023

Housekeeping

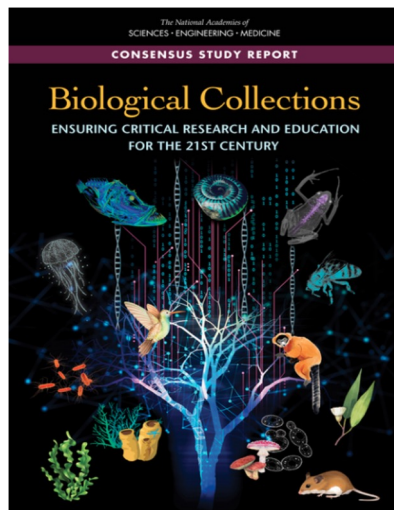
- This program is being **recorded**. The recording will be **available online** after the program.
- You may use the **chat** feature to interact with panelists and attendees and to introduce yourself.
- Contact **AIBS IT Support** via chat if you are experiencing technical difficulties.
- Please use the **Q&A** feature on Zoom to type in your questions for the speakers.
- Questions will be addressed **after** the presentations.

PROGRAM OVERVIEW

- Background & current policy landscape
 - Jyotsna Pandey
- Introduction to BCoN and USCCN
 - Jyotsna Pandey, Dusti Gallagher
- What is a Specimen Management Plan & what are its elements?
 - Breda Zimkus
- Need & benefits to stakeholder communities
 - Andy Bentley
- Case Studies and Examples:
 - Living microbial collections
 - Kyria Boundy-Mills
 - NEON Biorepository Service Example
 - Nico Franz
 - Antarctic Biorepository
 - Kristin O'Brien
- Panel Discussion and Audience Q&A
 - Dori Contreras (Moderator), Kyria Boundy Mills, Barbara Thiers, Kristin O'Brien, Nico Franz, Andy Bentley, Breda Zimkus
- Wrap up: What's next?

Background & Current Policy Landscape

(Jyotsna Pandey, AIBS & Natural Science Collections Alliance)



National Academies' Report on Biological Collections (2020) recommended that NSF should:

“...require a specimen management plan for all research proposals that include collecting or generating specimens that describes how the specimens and associated data will be accessioned into and permanently maintained in an established biological collection.”

CHIPS and Science Act

(Passed August 2022; formerly US Innovation and Competition Act / America COMPETES Act)



“In consultation with other relevant Federal research agencies, and as the Director determines is appropriate, the Director shall require that proposals submitted to the Foundation for funding for research that involves collecting or generating specimens include, as part of the data management plan under section 10344, a description of how the specimens and associated data will be accessioned into and maintained in an established biological collection.”

CHIPS and Science Act

(Passed August 2022; formerly US Innovation and Competition Act / America COMPETES Act)



“In consultation with other relevant Federal research agencies, and as the Director determines is appropriate, the Director shall require that proposals submitted to the Foundation for funding for research that involves collecting or generating specimens include, as part of the data management plan under section 10344, a description of how the specimens and associated data will be accessioned into and maintained in an established biological collection.”

Not mentioned in earlier iterations of the bill

A Draft Proposal

- Joint effort of the Biodiversity Collections Network (BCoN) & the U.S. Culture Collection Network (USCCN)
- Outlines the elements of a Specimen Management Plan (SMP), the need for it, value-added benefits for various stakeholder communities, and a recommendation for moving forward.
- We need your input!

SPECIMEN MANAGEMENT PLAN DRAFT PROPOSAL

Prepared by:
Biodiversity Collections Network (BCoN)
U.S. Culture Collections Network (USCCN)

A Specimen Management Plan

The recently published National Academies of Sciences, Engineering, and Medicine (NASEM) Report on Biological Collections recommends that funding agencies "...require a specimen management plan for all research proposals that include collecting or generating specimens that describes how the specimens and associated data will be accessioned into and permanently maintained in an established biological collection" (NASEM, 2020). This recommendation is also called out as a fundamental research priority in the now enacted CHIPS and Science Act ([P.L. 117-167](#)) that includes a robust reauthorization for the National Science Foundation (NSF). Others in the research community have promoted the idea of a specimen management plan (Colella, et al. 2020; Schilthuizen, et al. 2015) as well as the yet unpublished, NSF funded, Antarctic Biorepository Workshop (<https://sites.google.com/alaska.edu/antarcticbiorepository/home>) report. We endorse these recommendations and suggest that a specimen management plan become a part of all research projects that generate biological collections of any type. In the specific case of the National Science Foundation, we suggest that a Specimen Management Plan (SMP) complement, not duplicate, the currently required Data Management Plan (DMP) by providing detailed information regarding the collection, digitization, curation, and funding for accessioned specimens associated with NSF-sponsored research.

At present, there is only a cursory mention of specimen curation in the required Data Management Plan (DMP) associated with NSF Biological Sciences (BIO) directorate proposals (https://www.nsf.gov/pubs/BIODMP_Guidance.pdf). Although specimens are closely linked with their associated data, as physical objects that differ widely in size, shape and method of preservation, they have very different, more diverse requirements and prerequisites, especially with respect to infrastructure needs. Therefore, the methods and infrastructure for physical specimen preservation should be the subject of a separate plan. The Division of Ocean Sciences in the Geological Sciences Directorate does provide more detailed sample archiving requirements for physical geological samples (<https://www.nsf.gov/pubs/2017/nsf17037/nsf17037.jsp>). Because biological collections are composed of a varied array of living and formerly living organisms, their long term maintenance requires curatorial expertise and knowledge regarding preservation techniques that are specific to the type of organism. Furthermore, because some biological collections are also defined as genetic resources, their stewardship and use is governed by international conventions such as the Nagoya Protocol (<https://www.cbd.int/abs/>). As currently written, an NSF DMP does not require enough information from a proposed project to ensure specimen deposition, digitization, care, and curation. In addition, it does not establish that biological collections will be adequately safeguarded and ethically managed, to make specimens available for future research endeavors.

We advocate that the NSF specimen management plan should also be conceptualized and implemented as an instrument to promote and reinforce the development, maintenance, and



1

The Biodiversity Collections Network (BCoN)



EXTENDED SPECIMEN
NETWORK

- BCoN emerged from a five-year RCN grant from NSF (DBI 1441785)
- Published the Extended Specimen Report (Lendemer et al., 2019).
- Brings together representatives from the wide range of U.S. biological collections to promote the use and expand the accessibility of biodiversity collections and data and extend their impact as critical infrastructure for research and education for the benefit of life on earth.
- Promotes the development of an **Extended Specimen Network** as a unifying goal for biological collections over the next decade.
- bcon.aibs.org

BCon Steering Committee



John Bates
Field Museum



Andrew Bentley
University of Kansas
Biodiversity Institute



Dori Contreras
Perot Museum of Nature
and Science



Elizabeth Ellwood
iDigBio



Nico Franz
NEON Biorepository,
Arizona State University



Anna Monfils
Central Michigan University



William Moser
National Museum of
Natural History



Gil Nelson
iDigBio



David Nobles
UTEX Culture Collection
of Algae



Jyotsna Pandey
AIBS & NSCA



Sinlan Poo
Memphis Zoo



Barbara Thiers
New York Botanical
Garden (Emerita)



Mike Webster
Macaulay Library, Cornell Lab
of Ornithology



Breda Zimkus
Harvard Museum of
Comparative Zoology

U.S. Culture Collection Network (USCCN)

(Dusti Gallagher, USCCN Project Manager)

- A NSF-funded Research Coordination Network currently in 2nd phase (2022-2026)
- Brings together scientists working with **living microbe collections**
- **Vision:** USCCN seeks to optimize the quality and availability of microbial resources and become a central resource for U.S. microbe culture collections and their users.
- **Mission:** Facilitate the safe and responsible utilization of microbial resources for research, education, industry, medicine, and agriculture for the betterment of humankind by providing opportunities for U.S. culture collection workers to engage with each other and with the broader culture collection community.
- usccn.org

USCCN Goal: Expand the current network to increase awareness & enhance collaborations among collections/users

Collections Registry

A searchable database of plant associated, microbial culture collections from universities and government agencies

Submit your collection:
usccn.org/culture-collections



USCCN Structure and Involvement



What is a SMP & what are its elements?

(Breda Zimkus, Harvard Museum of Comparative Zoology)

- A SMP would comprehensively address specimen deposition, digitization, care, and curation to ensure that collections are safeguarded and ethically managed.
- Researchers embarking on projects generating biological collections would reach out to a biorepository at the writing stage of a grant proposal to determine if the specimens meet their criteria for accessioning.
- If the specimens meet the criteria, researchers would work collaboratively with the biorepository to produce a SMP that would be included in their NSF proposal.
 - A SMP would complement and not duplicate the currently required Data Management Plan (DMP).

What is a SMP & what are its elements?

- Criteria for specimen acceptance will vary
 - Is the acquisition consistent with the institution's mission, programmatic goals, and collecting scope?
 - Does the collection fit within the existing storage space of the biorepository?
 - Will there be legal limitations on specimen use?

Adapted from IWGSC Report 2009:

- Rare species
- From endangered sources
- Fill gaps (species, habitat, geography, genotype, phenotype)
- Address urgent problems
- Costly or difficult to acquire
- Have associated data (genome sequence, phenotype, genotype)
- Have research value

What is a SMP & what are its elements?

- Only part of the collection may be accepted by the biorepository.
- Researchers should consider the fate of any specimens/samples not deposited and include this information in the SMP.

Example:

- Tissues that are not selected for deposit by the biorepository will be cryopreserved in the PI's research lab for at least [time period] after the end of this project.

What is a SMP & what are its elements?

Major Elements

1. Anticipated number of specimens and details regarding specific preparation types, referencing relevant best practices

- Number of specimens, samples, and/or strains
- Species, including how they are identified (e.g., morphology, sequencing)
- Where and when collected; single collection or over span of time
- Protocols for preservation and storage requirements (e.g., specific methods, types of vials, temperature in field)
- Specific information about labelling (e.g., number series, labels)
- Shipment from field or PI's institution

What is a SMP & what are its elements?

Major Elements

2. Associated data, referencing data standards that complement emerging recommendations for the Digital Extended Specimen
 - Minimum data requirements and required formatting for the selected biorepository
 - Links to online submission forms or standardized spreadsheets may be available

Column heading	Explanation
COLLECTION_OBJECT_ID	Number sequentially, starting with 1
ACCN	Enter accession number if known
CAT_NUM	LEAVE BLANK
COLLECTOR_AGENT_1	Collector's name [Note: list name as completely as possible.]
COLLECTOR_ROLE_1	Enter "c" for collector
OTHER_ID_NUM1	Enter the field number or collector number
OTHER_ID_NUM_TYPE_1	Include one of the following: "collector number" or "field number" [Note: this is an institutional or departmental number series]
TAXON_NAME	Taxonomic determination of a specimen/lot identified to lowest possible classification level. Enter the genus, species (ex. <i>Anolis sagrei</i>) and subspecies
ID_MADE_BY_AGENT	Enter the name of whoever identified the specimen [Note: list name as completely as possible.]

What is a SMP & what are its elements?

Major Elements

3. Funding estimates for the repository to curate, digitize, and care for the material

The budget for this proposal includes funds to be paid to [institution/collection] to cover the costs to accession, catalog, digitize, and store approximately # specimens collected in 2023 and # specimens collected in 2024.

What is a SMP & what are its elements?

Major Elements

4. Plans for how to disseminate the specimens and associated data to the research community, as well as address any required data embargoes

Specimens will be made available for loan by request for the purposes of research, education, and exhibition. The [institution/collection] will make all specimen data publicly available in their online collection management system. Metadata is routinely shared with a variety of data aggregators (e.g., iDigBio, GBIF) through IPT, thereby increasing discoverability by researchers worldwide.

- Both researchers depositing specimens and the biorepository need to collaboratively ensure that all national and international permits and agreements that govern specimen maintenance and use are understood and tracked.

Need for a Specimen Management Plan (SMP)

(Andy Bentley, University of Kansas Biodiversity Institute)

- Specimen Management Plan (SMP) vs Data Management Plan (DMP)
- Deposition of research materials in collections and minimizing “dark” collections.
- Increase the value of these collections and contribute to Open, FAIR science and the Digital Extended Specimen ideal.

Benefits of SMP to stakeholder communities

An SMP will have benefits to all communities involved:

- Researchers
- Collections and institutions/research organizations
- Funding agencies
- Publishers

Benefits of SMP to stakeholder communities

Researchers

- Dialog between researchers and repository during grant-writing stage
- Collections can advise/assist in national and international laws and regulations, IACUC, IRB, biosafety, and biosecurity, as well as ethical guidelines.
- Collections can inform about existing collections and research projects.
- Sound collection plan would ensure efficient use of funds and maximize impact of specimen and data collected far beyond current project.

Benefits of SMP to stakeholder communities

Collections and institutions/research organizations

- High quality specimens and metadata, legally collected and preserved in a format compatible with storage
- Data that adheres to standards and best practices and is compatible with their CMS
- Funding to catalog, digitize, maintain, and curate specimens.
- Funds directed to collections that are in active use and growing.
- Potential early access to information about cutting-edge research

Benefits of SMP to stakeholder communities

Funding agencies

- Receive a larger and earlier return on their investments in collections.
- Clearer view of which repositories preserve specimens generated through research funding.
- Highlight areas of need in collections infrastructure.
- All collections that receive accessions from NSF-funded research would receive some NSF funding.
- Would be seen to be supporting reproducible, ethical science in relation to sample management.

Benefits of SMP to stakeholder communities

Publishers

- Better equipped to fulfill their mandate of exposing reproducible science.
- Benefit from the guidance included in an SMP to increase uniformity of citation and attribution to support the Extended Specimen.
- Empowered to make the links between research, funding dollars, and collection information more transparent.
- Better equipped to facilitate compliance with national and international permitting agreements.
- The SMP could reduce publishing delays and bottlenecks.

Case Studies and Examples:

- Living microbial collections
 - Kyria Boundy-Mills
- NEON Biorepository Service Example
 - Nico Franz
- Antarctic Biorepository
 - Kristin O'Brien

Case study: SMP draft template

Kyria Boundy-Mills, Curator
Phaff Yeast Culture Collection
University of California Davis



DRAFT TEMPLATE for discussion purposes
Version 3, 4 Dec 2022

by Kyria Boundy-Mills

DRAFT SPECIMEN MANAGEMENT PLAN TEMPLATE

This Specimen Management Plan was jointly prepared by **[PI name(s)]**, **[institution]**, and **[general name, position title]** of the Phaff Yeast Culture Collection, University of California Davis, for inclusion in the proposal to **[Agency, program]** titled, **"[Title]"**.

1. Brief description of number, types, sources, and timeline of yeast strains to be generated in the proposed project, and timeline for deposit.
For example: "Up to 500 yeasts will be collected from industrial food and beverage fermentations in Mexico in the 2023 through spring 2024. We expect most yeasts will be *Saccharomyces* and other food-associated genera. Specimens will be assigned by ribosomal sequencing. We expect to select and ship yeasts to UC Davis in summer 2024."

2. Criteria for selecting specimens to be preserved in the Phaff collection
[PI name] will work with Phaff collection personnel to select strains for deposit that will best enhance the draft collection yeast strain public catalog. **[PI name]** will strongly encourage to communicate with the Phaff collection at the proposal planning stage to learn of existing yeast strains in the Phaff collection and associated data that may enhance their research project. Criteria for inclusion or exclusion may include: # of papers in the Phaff collection database, niche (ecological, geographic, phenotypic), research value to Phaff collection users. Associated data (genome sequence, phenotype, genotype, rare, from endangered sources, costly or difficult to acquire, only deposited pathogen). Examples:

- "In consultation with the Phaff collection curator, strains that fit gaps in the collection or meet the needs of collection users will be prioritized."
- "Strains whose genome sequence will be made public will be deposited."
- "Novel species will be deposited in the Phaff collection."
- "Yeasts from rain forests threatened with deforestation will be prioritized for deposit."
- "Strains that are known human, plant or animal pathogens will be another."

Check to confirm that these criteria will be met:

- ☐ No known human, plant or animal pathogens are included.
- ☐ All required permits will be obtained, and strains will be sent to the Phaff collection (for example: collecting permits, MTA, MAF, PIC, import permits)

3. How accession costs (US\$ 150 per specimen) will be covered

The budget for the proposed includes \$ _____ to be paid to the Phaff collection to cover the Phaff collection costs for accession of _____ (number) strains.

4. Format of specimens: preservation method, assignment of UCDYST strain ID numbers, format of specimen labels

[Edit as needed] Three vials of each yeast strain will be cryopreserved by **[PI name]** using a protocol provided by the Phaff Yeast Culture Collection (UCDPST), to ensure that they can be directly deposited into the collection stock. Ideally, the Phaff collection will assign UCDYST strain ID numbers to each strain to be deposited. For each strain, the Phaff collection will provide three pre-printed vial labels with species name and UCDYST strain ID number, and three cryovials of sterile 20% glycerol. **[PI name]** will prepare vials/stock per protocols provided by the Phaff collection and maintain them at -80°C until shipment to UC Davis. Strains will be shipped by FedEx overnight on dry ice at **[PI name's]** expense. The viability, purity and species will be validated by Phaff collection personnel after arrival.

1

DRAFT TEMPLATE for discussion purposes
Version 3, 4 Dec 2022

by Kyria Boundy-Mills

5. Format of specimen data and metadata

[Edit as needed] Before collecting specimens, we will discuss with Phaff collection personnel to confirm that we are collecting all relevant sources, phenotypic and genotypic data (including DNA sequences accessioned in DNA sequence repositories) in a format compatible with Phaff collection database. We will fill out and submit the Phaff collection Specimen Data Form available at <https://phaffcollection.ucdavis.edu> and Specimen Data Spreadsheet in a format available online ([URL](https://phaffcollection.ucdavis.edu)). Scans of all relevant documents such as collecting permits, MTA, PIC, IRBC and relevant compliance documentation associated with the strains will also be emailed to the collection.

6. Agreements for inclusion of strains and data in the Phaff collection public catalog
[Edit as needed] **[PI name(s)]** agrees to make these yeast strains available in the new community through inclusion in the Phaff Yeast Culture Collection public catalog in a firm manner. The Phaff collection will post the strains in their online catalog for distribution to research community upon notification by **[PI name(s)]**, or 6 years after deposit, or upon retirement of last **[PI name]**, whichever comes first."

7. Factors that may impact public distribution of yeast strains by the Phaff collection
[Edit as needed] The Phaff collection may only yeasts from their public catalog if they do meet the collection's species identity, purity and viability standards. Species that are subsequently revealed as human, plant or animal pathogens or opportunistic pathogens are subject to restrictions such as Nagoya Protocol legislation may be removed from the catalog.

8. Confirmation

Phaff Yeast Culture Collection personnel approved this Specimen Management Plan.

Dr. Kyria Boundy-Mills, Curator

Date

Phaff Yeast Culture Collection

If requested, the Phaff collection can provide a Document of Compliance to **[PI name]** in **[Funding Agency]** listing the yeast strains that have been deposited as outlined in this Specimen Management Plan and confirming which strains have been posted in the Phaff collection catalog. <https://phaffcollection.ucdavis.edu>

2

Issues for Phaff collection

- Financial (who pays costs?)
- Number of specimens (storage limits)
- Types of specimens (future use)
- Specimen format
- Data format
- Material Transfer Agreement
- Transfer ownership to UC?
- Distribution terms
- Compliance: biosafety, biosecurity, Nagoya Protocol



Agreement for the Transfer of Material(s) to the UC Davis Plant-Yeast Culture Collection

This deposit agreement ("Agreement") is made between the Depositor cited below and The Regents of the University of California on behalf of the Plant-Yeast Culture Collection (UCDPST) located at its Denver Campus. ("The Regent(s)")

- The Depositor is providing the yeast strain(s) described in Exhibit 1 (hereinafter referred to as the "Material"), which is attached hereto and incorporated into this Agreement. The UCDPST will accept your strain that are classified as Risk Group 1 according to the Directive 2004/35/EC of the European Parliament and of the Council of 18 September 2004 on the protection of workers from risks related to exposure to biological agents at work (except individual directives within the meaning of Article 1(4)) of Directive 84/361/EEC.
- The Material is made available by the Depositor to The Regent(s) for use by The Regent(s) to facilitate distribution to parties who request the Material from the UCDPST ("Recipient(s)") as a service to the research community. The Depositor represents to the best of his knowledge that he has the legal right to distribute the Material, and that its design and distribution of the Material to the Recipient(s) is in accordance with all applicable laws and regulations, including but not limited to its Strategic Plan(s) or its Convention on Biological Diversity.
- Subject to any restrictions set forth in item 10 of Exhibit 1, Depositor hereby grants to the Recipient(s) non-exclusive license to list the Material in the UCDPST public catalog; to make, prepare, use, and sell the Material for research exclusively under the UCDPST terms and conditions (<https://ucdps.ucdavis.edu/about-us/>) and any other applicable condition; and to use the Material for The Regent's own research and educational purposes.
- The Material, including any Material present in any subsequent created by Recipient(s) that contains or incorporates the Material, is the property of the depositor and/or recipient(s).
- The Material is provided by the Depositor to the Recipient(s) for the following purpose(s):
Purpose: Plant collection
Use: Yeast
Risk group: Group 1
Depositor's strain number: 100-1001
Saccharomyces
Saccharomyces cerevisiae
Genus:
Species:
Accession group:
Date isolated:
Source habitat:
Geographic origin:
History of deposit:
Isolation by:
Other condition:
- THE MATERIAL WILL NOT BE PROPRIETARY RIGHTS, nor shall it be used for commercial purposes, without the prior written consent of the Depositor. If the material is deposited by a company with business interest in the material, the company must sign a separate document.
- The Regent(s) acknowledge, and in return may have benefits PERMANENT AND THE BROAD WIDER RANGES OF ANY KIND OF NON-DENIABLEITY OF THE MATERIAL IS PROVIDED BY THE DEPOSITOR TO THE REGENT(S). No changes or modifications to the original material are allowed.
- Receipt to the extent prohibited for claims for damage against a depository of the Material.
- No changes or modifications to the original material are allowed.

UCDPST ID	100-1001
Date of deposit	10/1/2017
Risk group	1
Depositor's strain number	100-1001
Genus	Saccharomyces
Species	Saccharomyces cerevisiae
Organism group	Fungi
Date isolated	10/1/2017
Source habitat	USA, Hawaii (Volcano Nat. Park, Oahu Forest, Waipahoia Rd)
Geographic origin	Hawaii, USA
History of Deposit	Single source isolate of NRRL Y-1274 Saccharomyces subspecies sensu lato
Collected by	Dr. J. C. Rodriguez

- 
- AMERICAN INSTITUTE OF
BIOLOGICAL SCIENCES



**BIODIVERSITY
COLLECTIONS NETWORK**

NATURAL
SCIENCE
COLLECTIONS
ALLIANCE



UNITED STATES
CULTURE
COLLECTION
NETWORK

Costs; timeline

- Number and kinds of specimens
- How collection's accession costs will be covered

• *“The budget for this proposal includes \$4,500 to be paid to the Phaff collection to cover the Phaff collection's costs for accession of 30 specimens, plus we will cover shipping costs for delivery to UC Davis. Costs for any additional strains will be covered by institutional funds. We expect to deposit up to 15 strains in 2024, and another 15 strains in 2025.”*

Compliance

- Validation that repository approved the SMP before proposal was submitted
- Validation that researcher deposited specimens

- *Signed and dated by curator before researcher submits to NSF; or "The Phaff collection curator approved this plan on [date]."*
- *"If requested, the Phaff collection can provide documents to [PI name] and [Funding Agency] listing the yeast strains that have been deposited as outlined in this Specimen Management Plan and confirming which strains have been posted in the Phaff collection public catalog, <https://phaffcollection.ucdavis.edu>."*

NEON Biorepository Service Example

(Nico Franz, Arizona State University)

Example specimen management plan and budget:

1. **Storage:** \$xx per cubic foot and month: 2,500 cryo samples stored in 96-well plates correspond to roughly 1 cubic foot. One year storage = \$xxx; 30 years storage total. **\$x,xxxx.**
2. **Labor and services:** 5 hours of cryo collection staff time per year for the 30-year duration [based on an annual salary + ERE of \$xx,xxx]. Services include sample receipt, inventory, data management, loans, shipping, monitoring and safeguarding of the 2,500 cryo samples. **\$x,xxxx.**

Total \$xx,xxx.

Additionally, we request that the client (1) label, house, and ship samples as per our specifications for long term storage, and (2) assist us in publishing all sample-associated data in our [NEON Biorepository] portal at the time of publication, or within 2 years of sample archival, whichever comes first.

Antarctic Biorepository

(Kristin O'Brien, University of Alaska, Fairbanks)

- Feb 2-4, 2022 NSF-funded workshop to evaluate the value and scope of an Antarctic biorepository of specimens
 - Outcomes from pre-workshop survey
 - PIs have extensive undiscoverable collections
 - Publicly available collections are underutilized
 - High interest in accessing and depositing specimens
 - Barriers to deposition: cost, time & effort
 - Barriers to accession: difficulty finding specimens, cost, concerns about sample integrity

Antarctic Biorepository

- Recommendations to NSF:
 - Establish a central virtual hub that manages standardization of collections and data across multiple existing physical repositories
 - Require a specimen management plan
 - Invest in education on best practices
 - Facilitate opportunistic sampling
 - Prioritize and incentivize the deposition of legacy samples
- Outcomes:
 - Data management plan that includes a SMP is now required for OPP proposals
 - Specimens must be deposited in a publicly accessible archive within 2 years of collecting or by the end of the award- whichever comes first
 - DMP must include information on how specimens and associated data will be accessioned into an established long-lived collection
 - Encourages collaboration between PIs and repository

Panel Discussion and Audience Q&A

What's Next

- Call for input on draft proposal
 - Please respond to our survey: <https://aibs.wufoo.com/forms/qxkgeya1f0nip3/>
- BCoN & USCCN are available to participate in community-focused discussions if there is interest – please reach out to us!
 - BCoN: bcon.aibs.org/contact-us/
 - USCCN: usccn.org/contact/