Welcome to the 2023 Fall Meeting of the

Data Systems Committee

October 11th – DSC Meeting

October 12th – OOIFB & DSC Joint Session

Welcome Remarks & Introductions
Jim Potemra, DSC Interim Chair
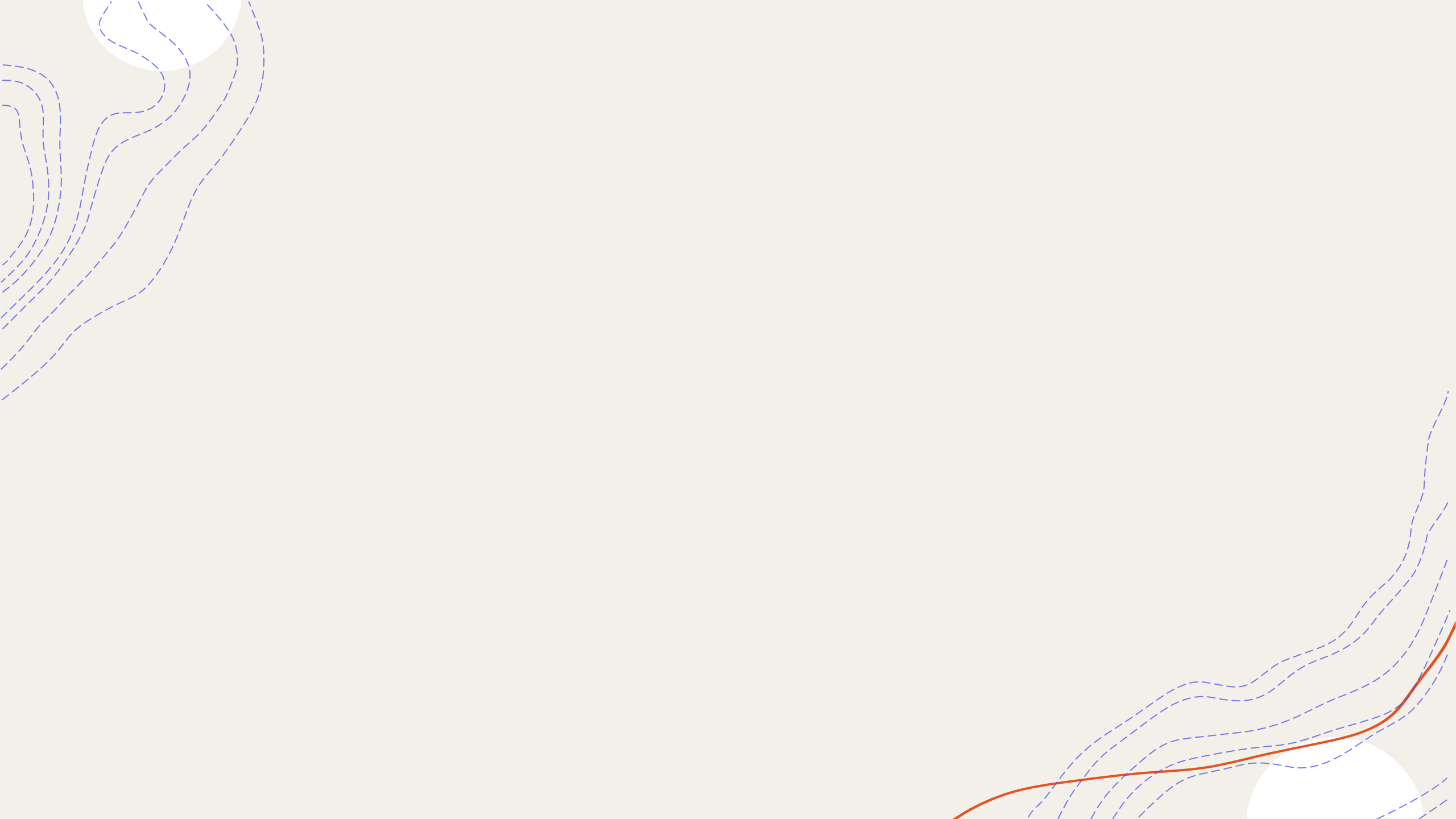
- **Welcome Remarks**

- **Participant Introductions**

- *For Virtual Participants:*
  - *Please mute yourself at the start of the meeting (unless you are the presenter).*
  - *Questions can be placed in the chat or with a raised hand.*

Data Systems Committee Membership

Member	Affiliation	Position
James Potemra	Lamont-Doherty Earth Observatory	DSC Interim Chair
Shima Abadi	University of Washington	DSC Member
Karen Bemis	Rutgers University	DSC Member
Teresa Burlingame	NEON / Battelle	DSC Member
Tom Connolly	Moss Landing Marine Lab	DSC Member
Richard Dewey	University of Victoria	DSC Member
Kristen Fogaren	Boston College	DSC Member
Orest Kawka	University of Washington	OOI Appointee
Craig Risien	Oregon State University	OOI Appointee
Kendra Daly	University of South Florida	Ex-Officio: OOIFB Chair
Jeffrey Glatstein	Woods Hole Oceanographic Institution	Ex-Officio: Data Delivery Manager

Please enjoy a break!

We will return at 10:30 am ET

2022 DSC Annual Report

Revisit the 2022 DSC Annual Report and Status of Future DSC Activities

- Review recommendations and suggestions for future activities – Jim Potemra
- Identify areas that need further attention by the DSC
- Identify and prioritize future activities for the DSC

2022 DSC Annual Report
Recommendations Regarding OOI Data Systems

Shorter-term Recommendations

1) Provide a public-facing real-time report (i.e., a single short web page) showing a high-level overview of data ingestion progress and plans. This overview should indicate which of the data missing from Data Explorer will be included in the future, and which of the data are not suited for Data Explorer and will not likely be included in the near future (Very high-priority recommendation).

2) Byte-range requests should be enabled on the ERDDAP servers. Byte-range request service is required for lazy loading of NetCDF files and to facilitate Kerchunk indexing (high-priority).

2022 DSC Annual Report
Recommendations Regarding OOI Data Systems

Longer-term Recommendations

1) Continue to improve the ability of users to find data with, and ingest data into, cloud-based workflows. …Kerchunk indexes should be accessible for all datasets. High-priority

2) Continue to explore OOI datacenter on-premises compute offerings, as a proof of concept and to help improve workflows as described in longer-term recommendation 1). Medium-priority

2022 DSC Annual Report Recommendations Regarding OOI Data Systems

Longer-term Recommendations (continued)

3) Endeavor to keep current on data science advances, methods, and tools, which Earth and ocean scientists increasingly use in their daily work. …The Committee recommends that OOI expand engagement with the Pangeo and Pangeo-Forge projects (pangeo.io) to explore new technologies and methods for advancing oceanographic data discovery, processing and interoperability. Medium-priority

4) Begin exploring potential replacements and/or enhancements for ERDDAP, focusing especially on solutions that will scale with the expanding quantity of OOI data, and will be tied to international standards such as the Open Geospatial Consortium (OGC) Environmental Data Retrieval (EDR) API (https://www.ogc.org/standards/ogcapi-edr).

2022 DSC Annual Report
Future Activities of the Committee

Activity	Volunteer/ Leader
Complete: Generate a short summary of the Second OOI Community Survey on Data Delivery Methods that can be distributed to the public	Mary Jo Richardson
Solicit input from specific high-volume user groups (e.g., the OOI Biogeochemical Sensor Working Group, Ocean Hack Weeks, Interactive Oceans, etc.) regarding data access, quality, potential improvements, and other topics identified during the most recent survey.	Kristen Fogaren

2022 DSC Annual Report
Future Activities of the Committee

Activity	Volunteer/ Leader
Engage the participation of outside speakers and experts, perhaps from the Open Geospatial Consortium, Interactive Oceans, the devs of STAC, Intake, Pangeo and Pangeo Forge as well as others working to develop new big data solutions in Earth and ocean science. Data science and related fields are currently moving very fast and OOI data and data services will need to work hard to keep up.	Everyone

2022 DSC Annual Report
Future Activities of the Committee

Activity	Volunteer/ Leader
Study how the OOI website or Data Explorer can identify the existence of PI-funded instruments collecting data intended to go into the public domain (e.g., NSF-funded projects), with the goal of making sure all data (OOI-owned or PI-owned) is easily discoverable. The DSC will prepare to make recommendations on this subject.	Karen Bemis & Orest E. Kawka
Turn additional attention to cybersecurity, both in terms of data integrity and system security. Invite speakers to discuss big-picture issues and ideas as well as helping us to better understand potential benefits of new technologies, for example containerization strategies.	Craig Risien & Jim Potemra

2022 DSC Annual Report
Future Activities of the Committee

Activity	Volunteer/ Leader
Explore options for establishing more precise metrics regarding OOI data services. In particular, help find ways to more accurately tally and report the number and types of users accessing the OOI data systems, as well as the number of datasets accessed.	Karen Bemis & Richard Dewey
Continue brainstorming potential new methods and modes of data access and analysis for OOI users over a 5 to 10-year timescale and explore approaches to scientific research using cloud-optimized data models and cloud-based computational resources. Learn more about analysis-ready cloud-optimized data service models, which could provide cloud integration without a significant investment in paid cloud services. Invite speakers that can help the DSC explore blue-sky ideas regarding the future of OOI data and the science it can enable.	Shima Abadi

Please enjoy Lunch!
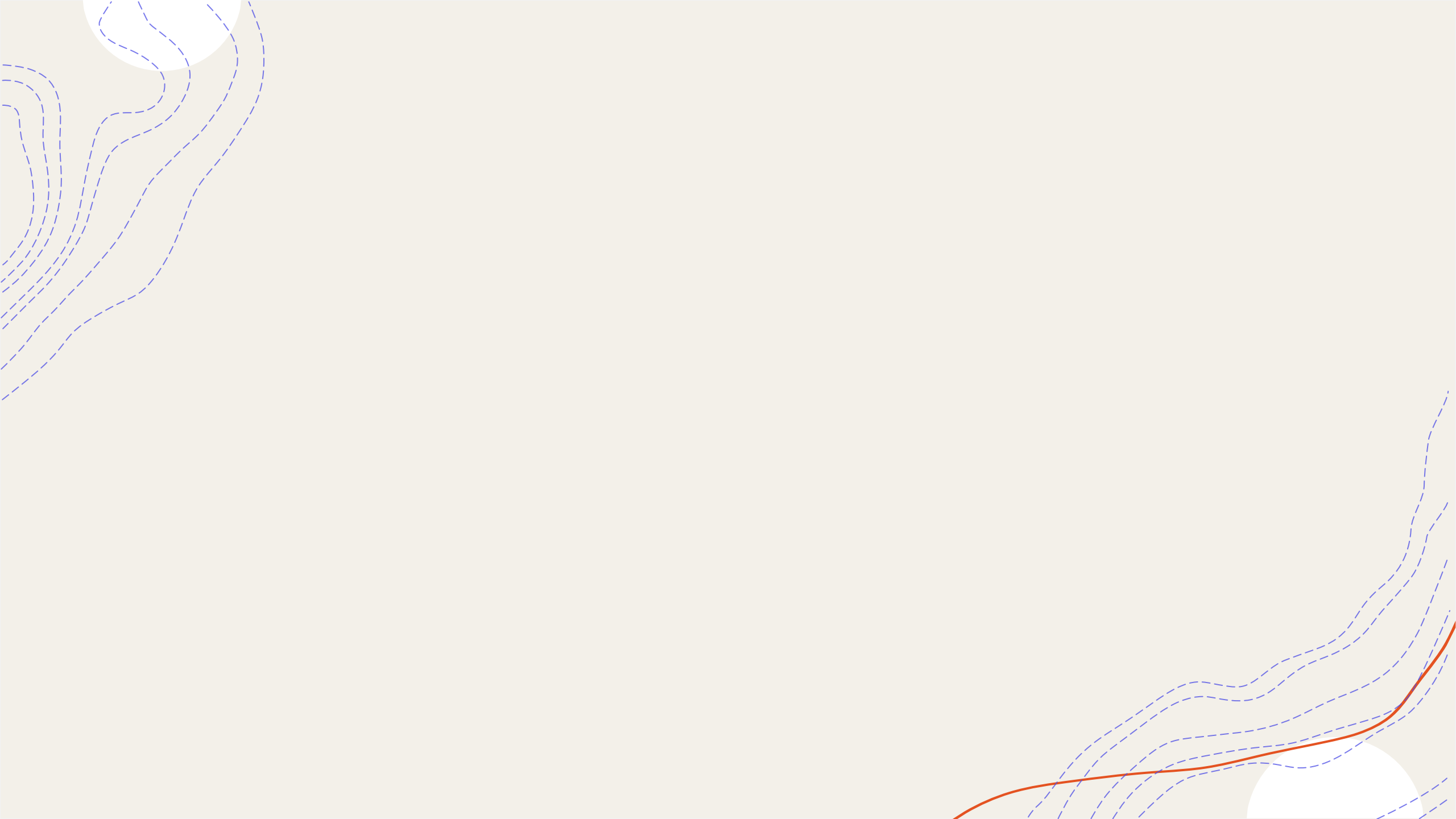
We will return at 1:15 pm ET

DSC Discussion

- Cybersecurity, an NSF Perspective – Michael Corn

- DSC Terms of Reference and Membership – Jim Potemra
  - The DSC Terms of Reference are included as Annex I of the OOIFB Charter.

- Machine Learning and AI – Richard Dewey

DSC Other Business

- Day/Time for monthly DSC web conference?
    - o Doodle Poll: **Third to last Tuesday of every month, 1-2pm ET**
    - o Actual dates:
      10/17, 11/21*, 12/19, 1/16/24, 2/20*, 3/19, 4/16, 5/21, 6/18, 7/16, 8/20, 9/17

- Do we need an October DSC web conference (meet again next Tuesday?)

DSC Other Business

- Review membership – Holly Morin
- Review Action Item Status – Holly Morin
- DSC Annual Report for 2023 – Jim Potemra

DSC Membership

Current Members:				
Member	**Affiliation**	**Position**	**First Term**	**Second Term**
James Potemra	University of Hawaii	DSC Interim chair	09/2018 - 09/2021	09/2021 - 09/2024
Shima Abadi	University of Washington	DSC Member	01/2023 - 01/2026	
Karen Bemis	Rutgers University	DSC Member	07/2021 - 09/2023	09/2023 - 09/2026
Teresa Burlingame	NEON Battelle	DSC Member	10/2023 - 10/2026	
Thomas Connolly	San Jose State	DSC Member	09/2023 - 09/2024	
Richard Dewey	University of Victoria	DSC Member	09/2018 - 09/2021	09/2021 - 09/2024
Kristen Fogaren	Boston College	DSC Member	07/2020 - 09/2022	09/2022 - 09/2025
Orest Kawka	University of Washington	OOI Appointee	09/2018 - XX	
Craig Risien	Oregon State University	OOI Appointee	12/2021 - XX	
Ex Officio Members:				
Kendra Daly	University of South Florida	OOIFB Chair	11/2019 - XX	
Jeffrey Glatstein	OOI/WHOI	Data Delivery Mgr	09/2018 - XX	

DSC Start Date: January 28, 2021 (All DDCI members transitioned to DSC with resepective term dates)
DDCI Start Date: September 2018

DSC Action Items – Status

Summary*:*

- 2018 – 2022 – All DDCI & DSC actions complete.

- 2023 – 6 Action Items:

  - 5 actions completed

  - 1 in-progress: Action: DSC-2023-02 – Identify strategies for addressing the recommended DSC future activities. These activities were highlighted in the 2022 DSC Annual Report.

    https://ooifb.org/action-items/

DSC Annual Report for 2023

In accordance with the DSC terms of Reference:

"Reports of DSC meetings, activities, and recommendations shall be made to the OOIFB. The DSC will provide an annual report to the OOIFB on February 1 of each year."

Open Discussion

Around the Table

Thank you!