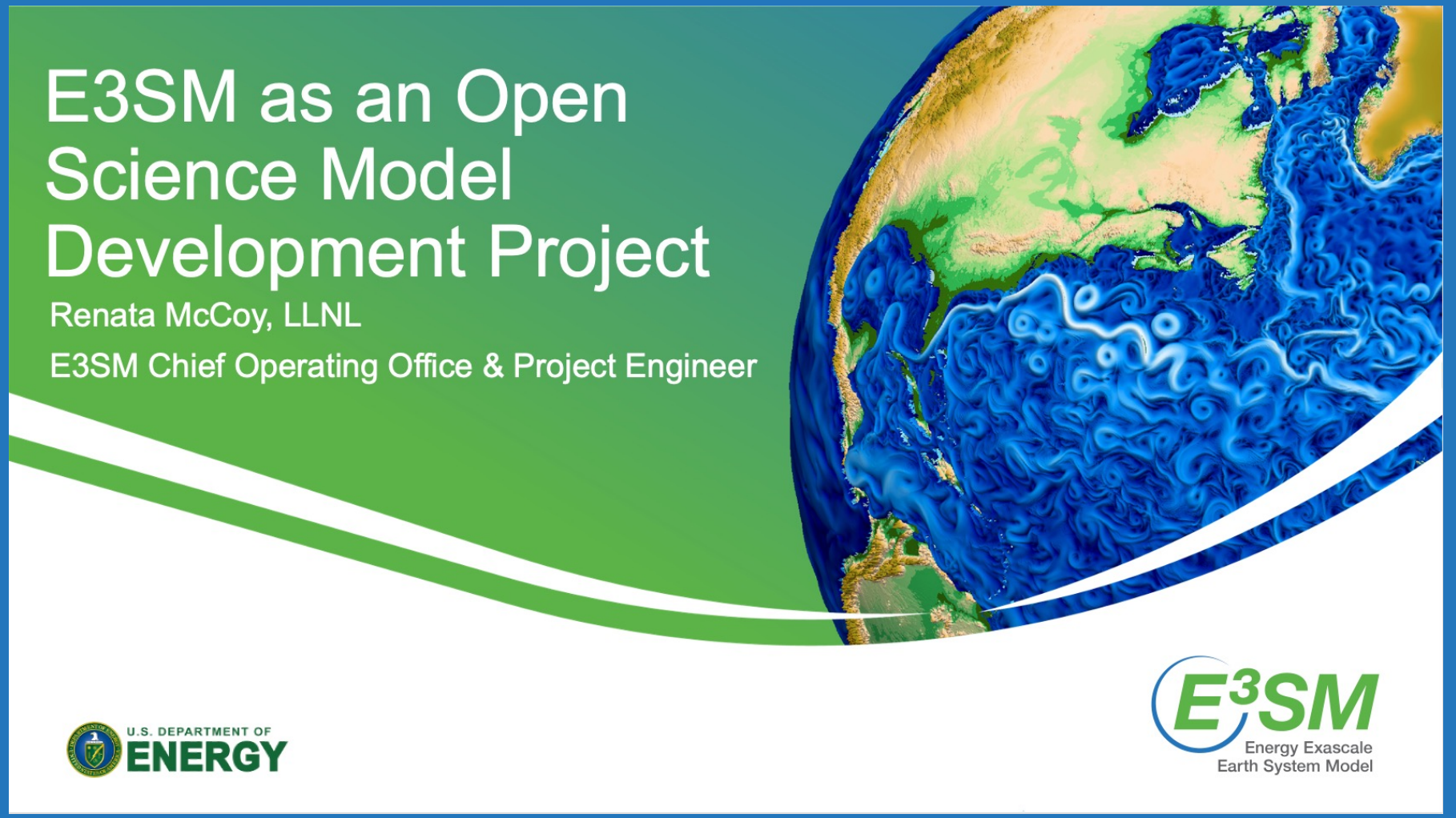
AGU Town Hall

E3SM: A Decade of Earth System Modeling Effort at the Department of Energy

Xujing Davis
Asmeret Asefaw Berhe
Gary Geernaert
Dave Bader
Ruby Leung
Mark Taylor
Renata McCoy

Recording of the part of the talk that was cut short due to time limitation



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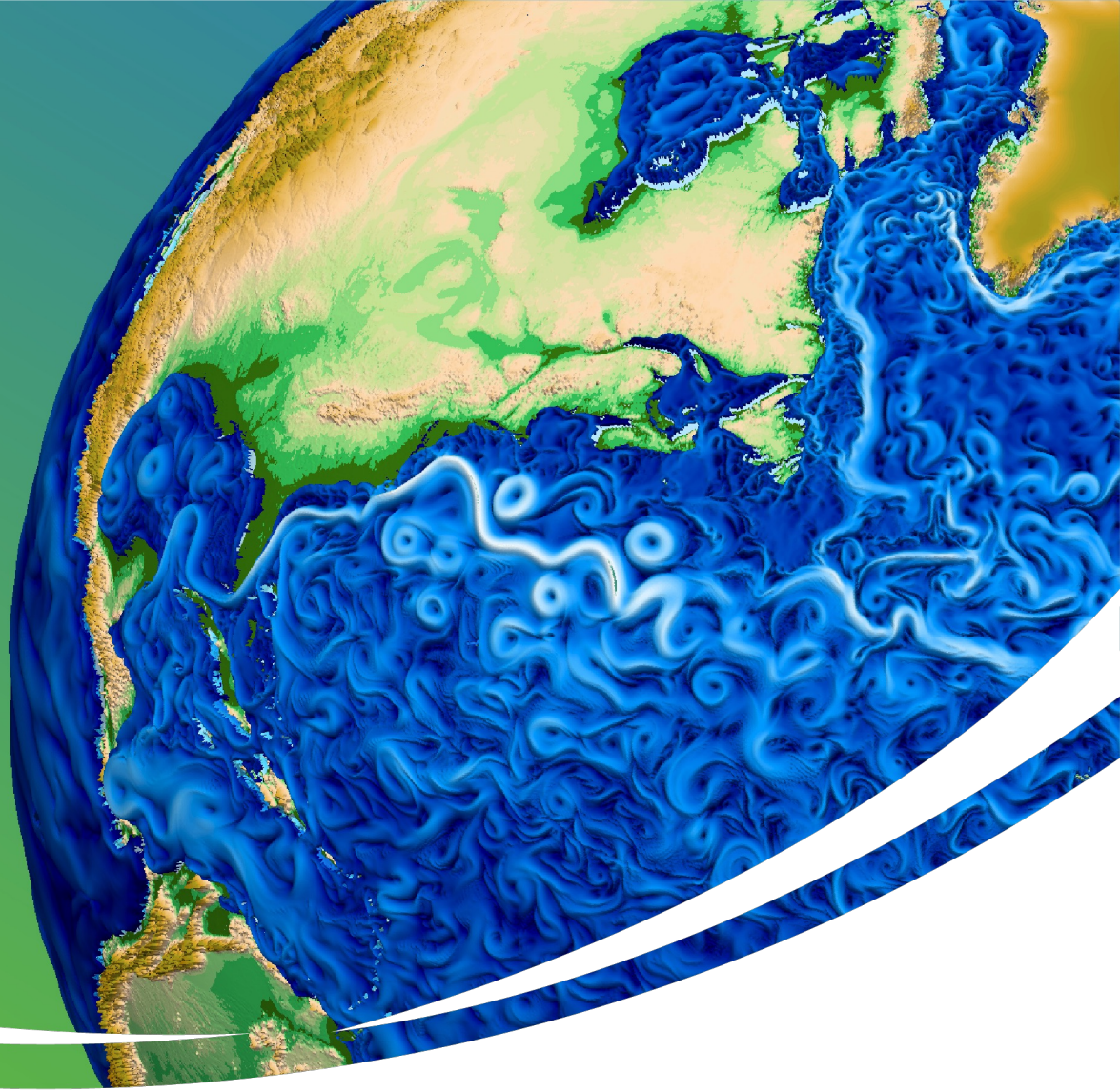
E3SM as an Open Science Model Development Project

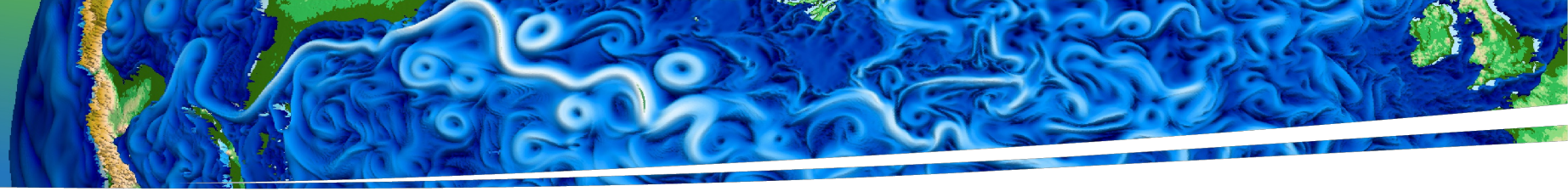
Renata McCoy, LLNL

E3SM Chief Operating Office & Project Engineer



U.S. DEPARTMENT OF ENERGY

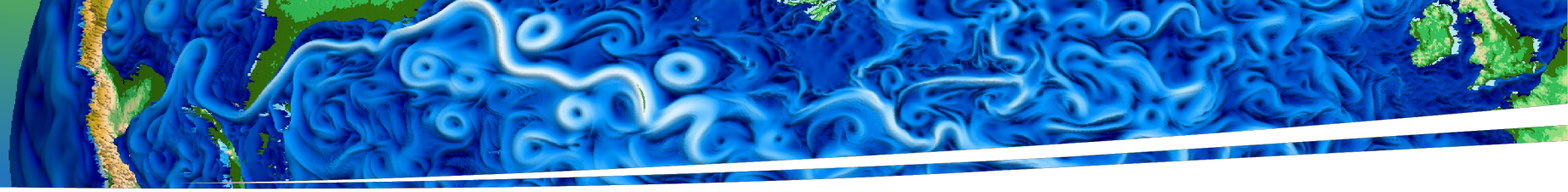
E3SM Energy Exascale Earth System Model



Open Science Development Model

- E3SM is **Open Development Code**!!
  - As of the first data release (Apr 2018), E3SM is freely available on GitHub
- All in **E3SM tools** are **open-source** development tools
  - https://e3sm.org/resources/tools/
- **Data** from all major, campaign simulations are **available to all**, **published on ESGF** *
  - Few months delay between the production and publication to ESGF to publish an overview paper
- Support for code and data (limited)
  - Support for **"scientifically validated" compsets / configuration** used in simulation campaigns
  - Supported versions:
    - maint-v1.0, maint-v1.1, maint-v1.2, maint-v2.0, maint-v2.1,
  - Guaranteed to run on the **E3SM-supported DOE LC centers**

* ESGF – Earth System Grid Federation



External project's early access to data or internal documentation

Projects can submit a **collaboration request** specifying:

- What data/simulation/early access information they need
- What research are they planning to do
- Specify an E3SM Point of Contact (POC)
- Agree to collaborate and include the E3SM POC in your publication

- **Fill in the doc at**
  - https://e3sm.org/about/collaboration/collaboration_request/

Documentation, Webinars, Online Tutorials

- Extensive documentation on the **Confluence public site**
  - https://acme-climate.atlassian.net/wiki/spaces/DOC
- Diagnostics and analysis tools
  - https://e3sm.org/resources/tools/
- Documentation and online tutorials
  - https://e3sm.org/about/events/e3sm-tutorials/
- Webinars and presentations
  - https://e3sm.org/about/events/all-hands-presentations/

First In-person Hands-on Tutorial Workshop @ NERSC

- May 7-10, 2024

- At NERSC
  - National Energy Research Scientific Computing Center (NERSC)
    Lawrence Berkeley National Lab in Berkeley, CA.

- Applications
  - Announce via E3SM and EESSD-related email lists in December
  - Priority to DOE projects
  - https://e3sm.org/announcing-the-e3sm-tutorial-workshop-at-nersc

- The tutorial will encompass:
  1. Lectures on earth system simulation and the model components of E3SM.
  2. Practical sessions on running E3SM, modifying components, and analyzing data.
  3. Best practices for utilizing the model and potentially contributing to its development.

- Will be **recorded** and available on **E3SM YouTube**
  - Lectures, examples, class notes

E3SM Communication

- **E3SM Website** http://e3sm.org

- Public **Confluence** for
  - Developer's documentation: https://acme-climate.atlassian.net/wiki/spaces/DOC
  - E3SM Conferences: https://acme-climate.atlassian.net/wiki/spaces/ECM

- **E3SM quarterly "*Floating* Points" Newsletter** provides:
  - Latest news
  - Research Highlights
  - Project vision and Roadmaps
  - Self subscribe:
    - email listserv@listserv.llnl.gov with the email body: 'subscribe E3SM-news'

- **E3SM YouTube Channel** with seminars, webinars, and tutorials
  - https://www.youtube.com/@e3sm-project

November 30, 2023 View In Browser

E3SM Floating Points, Nov '23: E3SM Wins Gordon Bell Prize for Climate Modeling.

E3SM Energy Exascale Earth System Model

FLOATING POINTS

News from DOE's state-of-the-science Earth system model development project.

Editor in Chief: Renata McCoy

From the Program Manager

Welcome to the Winter issue of E3SM newsletter ... On November 16th, at the Supercomputing Conference (SC23), it was announced that E3SM wins the inaugural Gordon Bell Prize for Climate Modeling. It is an incredible honor for E3SM to receive such a prestigious prize among our well-accomplished national and international peers ... Read more of Dr. Davis' message.

Project News

E3SM Wins the Gordon Bell Prize for Climate Modeling

We are pround to announce that in November 2023, at the Supercomputing Conference (SC23) in Denver, E3SM was awarded the Gordon Bell Prize... Read more.

Data Releases: v2.0 NARRM and Large Ensembles and More

Three data categories were added: E3SMv2 North America Regionally Refined Model (NARRM), E3SMv1.0 high resolution data, and the Large Ensembles (LENS) simulation ecosystem data. ... Read more.

Summary of the E3SM Leadership Meeting

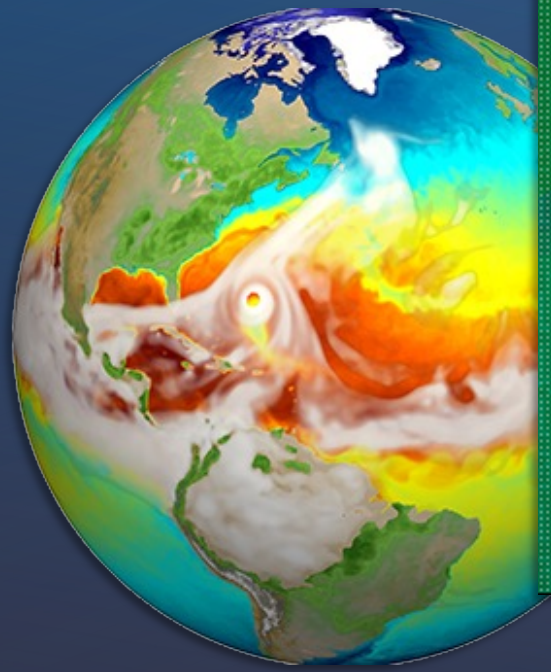
E3SM Leadership Team held an in-person meeting in Bethesda, MD, focusing on long-term strategy and project support including: communication, documentation, tutorials, code review, and best practice standards. ... Read more.

Announcing the E3SM Tutorial Workshop at NERSC

The first ever in-person E3SM Tutorial Workshop will be held during May 7-10 at the National Energy Research Scientific Computing Center (NERSC) at Lawrence Berkeley National Lab in Berkeley, CA.. ... Read more.

Thank You!

e3sm.org



E3SM-related sessions on AGU: https://tinyurl.com/a8yvy958