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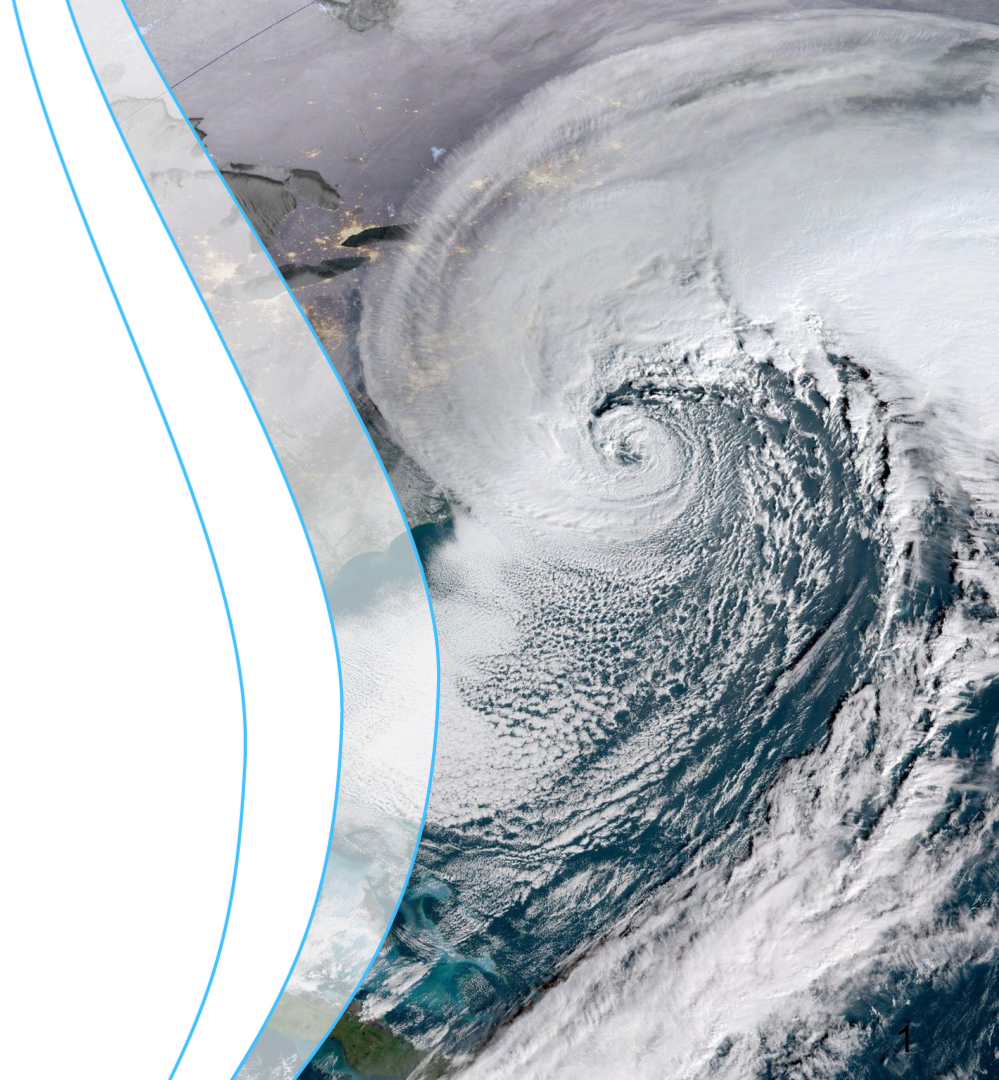
July 6, 2026

2026 CESM Tutorial

Welcome, Introduction, and Logistics

Sophia Macarewich & Elizabeth Faircloth
CGD NSF NCAR

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Welcome to the Mesa Laboratory



Land Acknowledgement



We recognize the many contributions of Indigenous peoples in Colorado and acknowledge that the Mesa Laboratory is located on the traditional territories and ancestral homelands of the Cheyenne, Arapaho, Ute and many other Native American nations. It is important to recognize the history of the state, however difficult, and the histories and experiences of the Indigenous peoples who have lived in these territories for millennia. Their forced removal from these territories has caused devastating and lasting impacts. While we can never undo or rectify the devastation wrought on Indigenous peoples, we commit to improving and enhancing engagement with Indigenous peoples and issues locally and globally.



Reminder on UCAR Code of Conduct

**Be
Respectful**

**Be
Collaborative**

**Consider
differing
opinions**

**Communicate
openly**

**Be
mindful
of others**

If you have questions or issues, please
contact: fair@ucar.edu or hannay@ucar.edu

Primary Contacts



Sophia Macarewich
CESM Tutorial Science Chair
macarew@ucar.edu



Elizabeth Faircloth
CESM Tutorial Coordinator
fair@ucar.edu

As a result of attending the CESM Tutorial, attendees will:

- Gain a foundational scientific understanding of the core CESM components and CESM features.
- Be able to run and modify the model and use the output.
- Have opportunities to network with peers and CESM scientists.
- Attain an understanding of High Performance Computing (HPC) needed for CESM.
- Perceive the tutorials to be an inclusive learning environment.

CESM Tutorial Website



NSF | NCAR Community Earth System Model
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Contact Us Search CESM

About ▾ What We Do ▾ Models ▾ Working Groups ▾ Education & Outreach ▾ Events ▾ News ▾

Home / Events / Tutorials

CESM Tutorial 2026

CESM Tutorial Participants 2025

TUTORIAL

Jul. 6 to Jul. 10, 2026

8:00 am – 5:00 pm MDT

Countdown to the 2026 CESM Tutorial

Days	Hours	Minutes	Seconds

CESM TUTORIAL 2026

- Logistics
- Agendas, Presentations, and Resources

RESOURCE LINK

- Tutorial Resources

[https://www.cesm.ucar.edu/
events/tutorials/cesm](https://www.cesm.ucar.edu/events/tutorials/cesm)

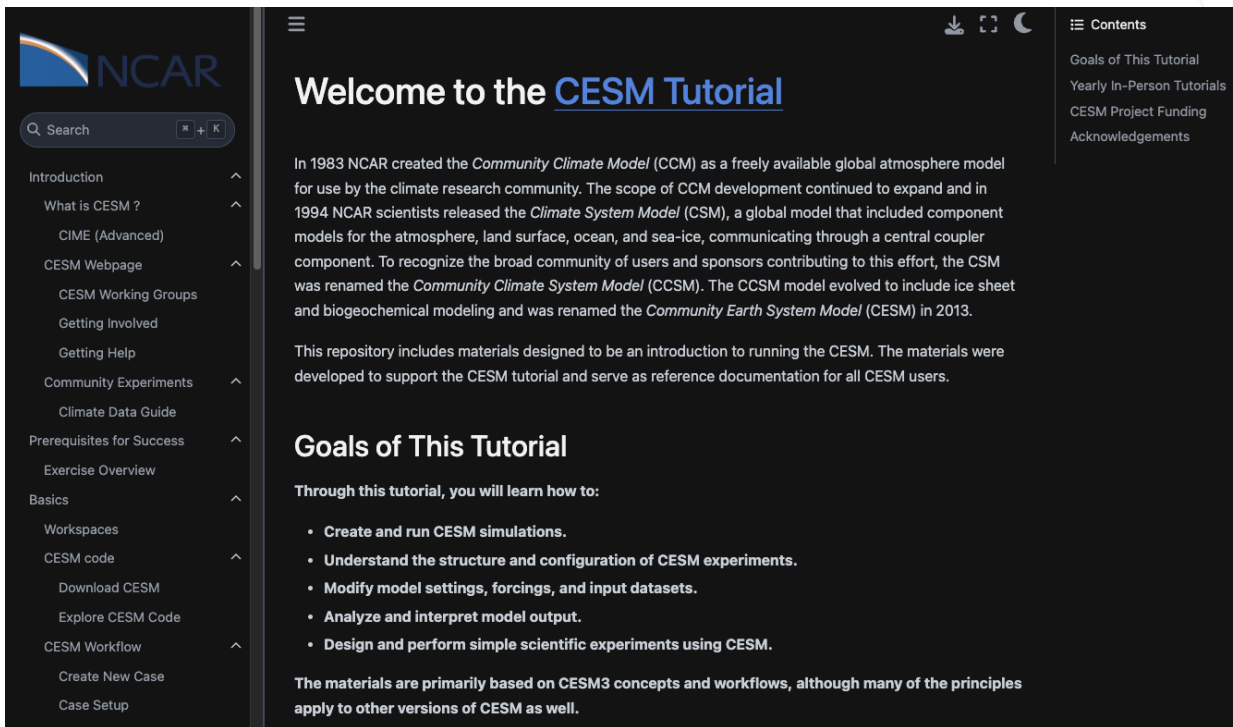
OR Search “cesm tutorial 2026 ncar”

Additional info about
logistics. photos, etc

agenda (including slides
of lectures)

lab materials

<https://ncar.github.io/CESM> - Tutorial/



The screenshot shows the NCAR CESM Tutorial website. The header features the NCAR logo and a search bar. The left sidebar contains a navigation menu with categories like Introduction, What is CESM?, CIME (Advanced), CESM Webpage, CESM Working Groups, Getting Involved, Getting Help, Community Experiments, Climate Data Guide, Prerequisites for Success, Exercise Overview, Basics, Workspaces, CESM code, Download CESM, Explore CESM Code, CESM Workflow, Create New Case, and Case Setup. The main content area is titled "Welcome to the CESM Tutorial" and includes a paragraph about the history of the model and a section titled "Goals of This Tutorial" with a list of learning objectives. The right sidebar contains a "Contents" menu with links to "Goals of This Tutorial", "Yearly In-Person Tutorials", "CESM Project Funding", and "Acknowledgements".

Welcome to the [CESM Tutorial](#)

In 1983 NCAR created the *Community Climate Model* (CCM) as a freely available global atmosphere model for use by the climate research community. The scope of CCM development continued to expand and in 1994 NCAR scientists released the *Climate System Model* (CSM), a global model that included component models for the atmosphere, land surface, ocean, and sea-ice, communicating through a central coupler component. To recognize the broad community of users and sponsors contributing to this effort, the CSM was renamed the *Community Climate System Model* (CCSM). The CCSM model evolved to include ice sheet and biogeochemical modeling and was renamed the *Community Earth System Model* (CESM) in 2013.

This repository includes materials designed to be an introduction to running the CESM. The materials were developed to support the CESM tutorial and serve as reference documentation for all CESM users.

Goals of This Tutorial

Through this tutorial, you will learn how to:

- Create and run CESM simulations.
- Understand the structure and configuration of CESM experiments.
- Modify model settings, forcings, and input datasets.
- Analyze and interpret model output.
- Design and perform simple scientific experiments using CESM.

The materials are primarily based on CESM3 concepts and workflows, although many of the principles apply to other versions of CESM as well.

- Lectures (Main Seminar Room)

- Component Lectures (CL) → information about how the core model components work
- Specialized Lectures (SL) → Earth System Prediction, Paleoclimate, Atmosphere chemistry, variable resolution, etc.

- Lab activities (Library)

- Days 1-3 → all participants complete same exercises
- Day 4 → example plotting and diagnostics for your chosen component(s)
- Day 5 → challenge exercises focused on your area(s) of interest

Welcome to the Mesa Laboratory



- Lunch (Mesa Lab cafeteria)

- Food is available in the Mesa Lab cafeteria. Vegetarian and Gluten free options are available.
- You are responsible for paying for your own lunch.
- Stagger lunchtime if possible, beginning at 11:30 am
- Lunch is limited on **Friday soup/salad/pre** - **ordered bagged lunch; please complete the order form by 3pm today**

- Meet an expert (optional) (breakout areas)

- Lunch on Tuesday/Wednesday/Thursday
- Casual conversation with a scientist with no fixed agenda
- You need to fill the form (with your 1st/2nd/3rd choice)
- We will **assign you to one scientist** to ensure reasonably sized groups

- Mesa Lab Exhibit Tours (optional)

- Public tours on Monday, Wednesday, and Friday. We can have a private tour with Leanne on Tuesday (sign-up sheet at the registration table). Meet at 12:00pm at the front entrance. You can also explore the exhibits on your own.

Typical Day



Morning (starts at 8:25am)

Lectures (Seminar Room)

Lab (Library)

Light snacks and coffee/tea (in front of the Main Seminar Room
and the Outer Damon in the afternoon)

Only cups with lids allowed in the Main Seminar Room

Reduce waste and recycle cans/bottles

Lunch (12:00 - 1:15 pm)

Eat/Socialize (Cafeteria)

Meet an expert (Various locations)

Mesa Lab exhibit tours (Hallway)

Afternoon (ends at 4:35pm)

Lectures (Seminar Room)

Lab (Library)

Light snacks (Damon Room)

Daily check-in (Seminar Room)

Daily Check - in



At the end of each day, we will reconvene in the main seminar room for the daily check - in:

- we will discuss what went well and what didn't
- you will complete the daily survey

For each lecture:

- How relevant was the content of the class to your interests or needs?
- Was the difficulty level of the class appropriate for your skill level?
- Any additional comments or suggestions?

On the last day, there will be a general survey.

These surveys are important for us to improve the content of the tutorial. Please fill out the survey. Thanks in advance.

If you complete every survey, you will be entered into a raffle & could win cool prizes!

Ask Freely! There are no stupid questions



We all come from different backgrounds and are here to learn. There are no stupid questions! Please do not leave still confused and with your questions unanswered.

- Ask presenters during the Q&A after their lectures or at a break
- Ask helpers during lab sessions
- Ask clarification questions at daily check - in
- Ask questions during the meet - an - expert lunch session
- Ask your peers
- If you are not sure who to ask, let Elizabeth know and she will connect you with someone on the team



- **Wireless access**

- Use the UCAR Visitor wifi. It is an open, unencrypted network (require registration for access).
- Use the Eduroam wireless only if you have it already installed on your computer / set up with your home institution

- **Project account & Reservation Queues**

- We have set the **project account** (UESM0016) as a default in the .profile or .tschrc files we instruct you to use.
- To use the **reservation queue** , you need to follow instructions in Lab Materials
- If you have problems using these or conflicts with other, existing project codes please let us know ASAP

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Select connect to agree to the [terms of use](#) and gain access to the UCAR Visitor Network.

UCAR employees can use Eduroam or GlobalProtect now for encrypted access to all UCAR networks.



Questions about UCAR Visitor? Visit our FAQ page [here](#).

NCAR is sponsored by
National Science Foundation



Resources ^

NCAR Supercomputer ^

Modules on NCAR HPC

Tutorial one time setup

Tutorial queue and account

Welcome to the Mesa Laboratory

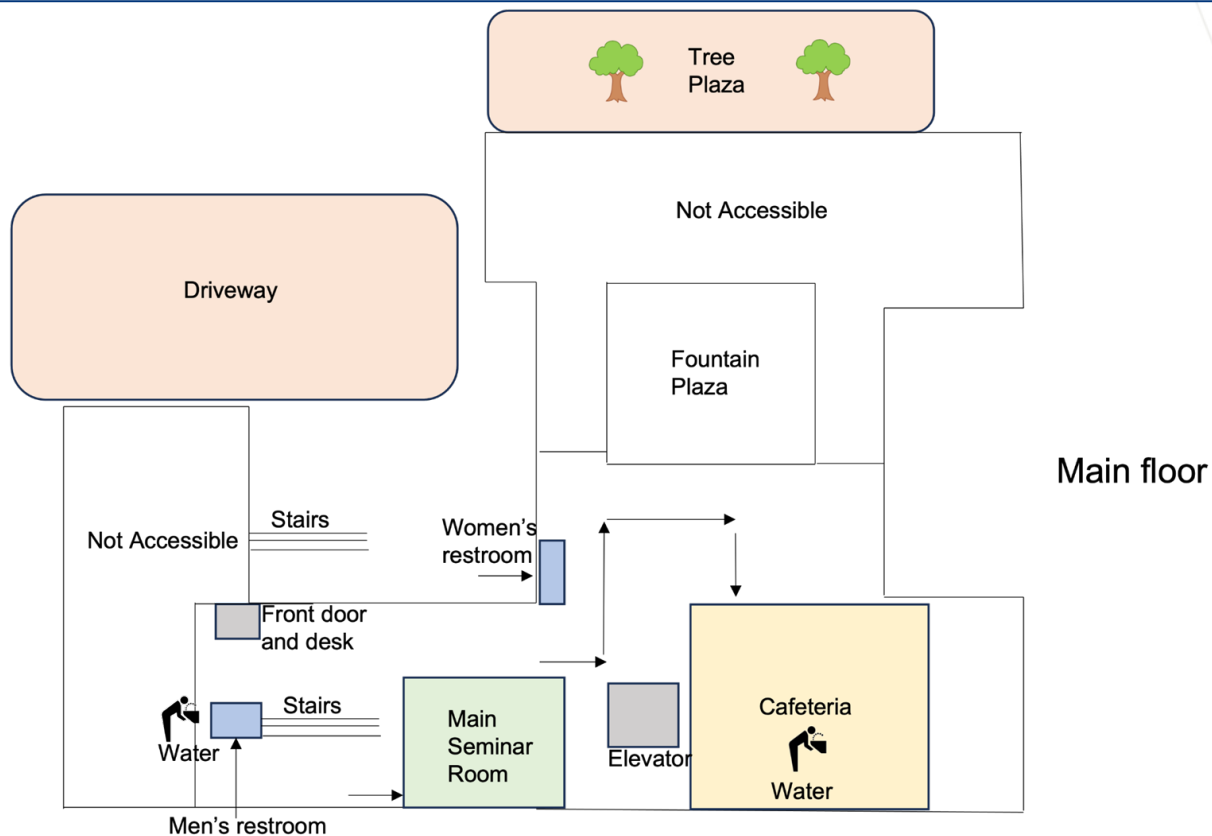


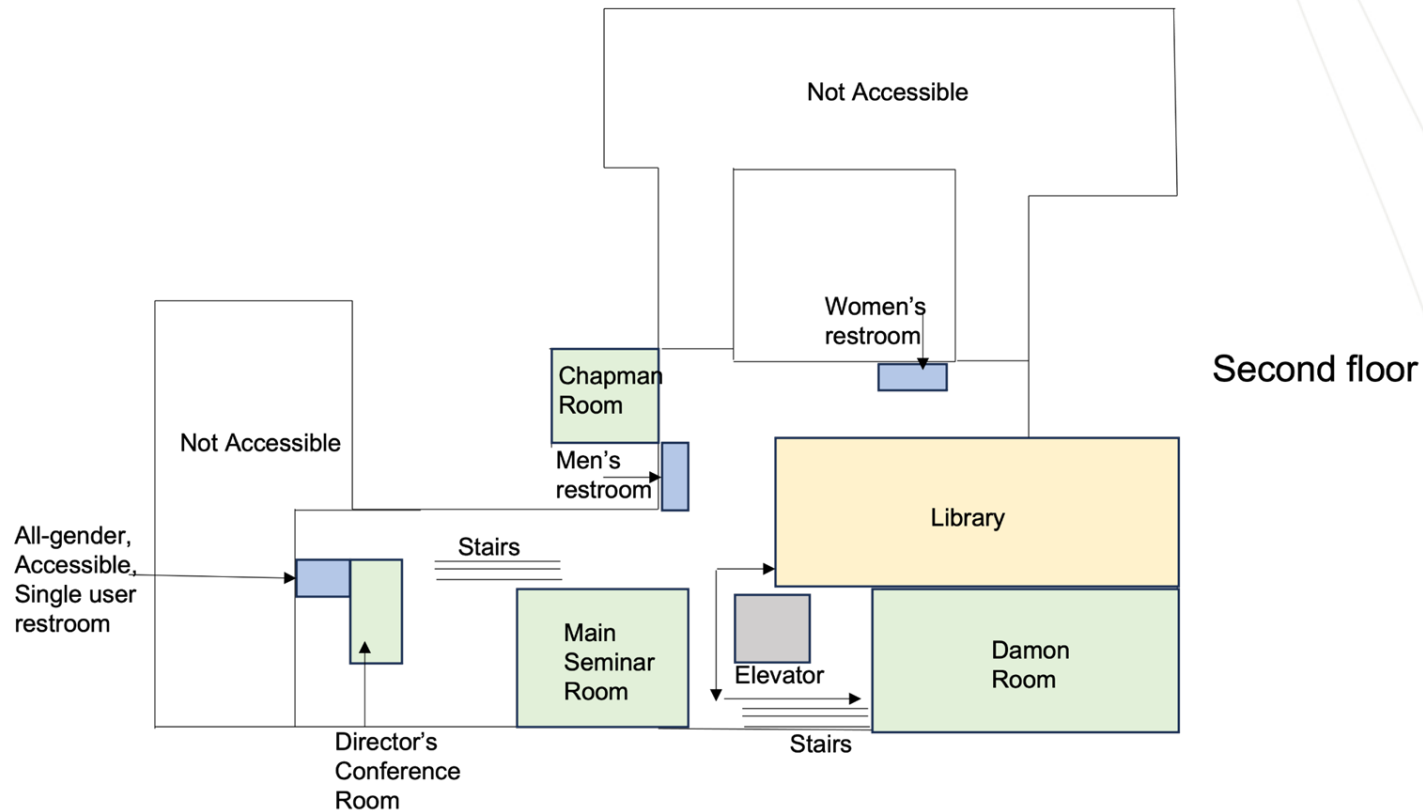
- **Google Group: [cesm - tutorial - participants@gmail.com](mailto:cesm-tutorial-participants@gmail.com)**

We have created a Google group for the 2026 CESM tutorial participants. Participants have been introducing themselves here. Once here you can start coordinating with other participants to socialize and network. (Auditors are welcome to join as well)

- **Special CESM Cafe**

On Thursday, from 9:45 am - 10:15 am, CGD staff, visitors, and guests from across NCAR will join us for a special CESM Cafe. Use this opportunity to meet with other staff members, ask questions, network etc.





Need a break? Quiet spaces



QUIET ROOM



Outdoor Seating



Walking Path



Check with our admin team for available rooms.



Questions?