



# 2024 CESM Tutorial

## Daily check-in

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**Aug 5-9, 2024**

# Code of Conduct

Here we value respectful dialogue, please . . .



**CGD's Vision: A Culture of Respect & Belonging**

<https://www.cgd.ucar.edu/about/diversity>

**UCAR DEI Office**

<https://www.ucar.edu/who-we-are/diversity-inclusion/office>

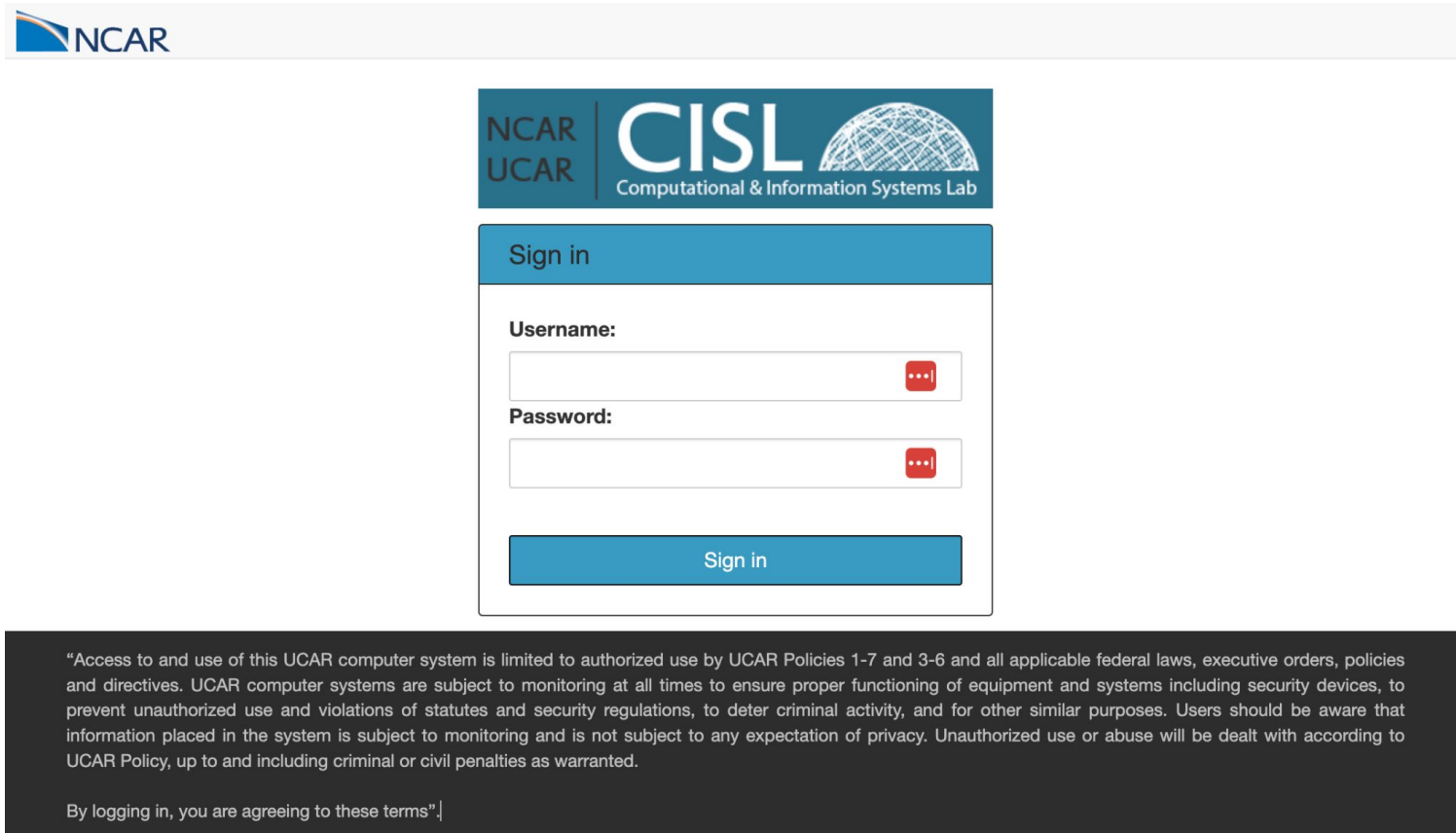
**Report ethics concerns**

<https://www.ucar.edu/who-we-are/ethics>

Norm	Meeting Agenda and Action
Share the Air OR Share Speaking Time	MEETING AGENDA: specify time for individuals with different and varied perspectives  ACTION: Designate a facilitator (who encourages <b>sharing</b> ). Speak <b>concisely</b> when it's your turn.
Show Appreciation & Acknowledge Teamwork	MEETING AGENDA: Include <b>bright spots</b> as an agenda item; create collaborative time during meetings  ACTION: Include your <b>team member's name</b> on your slides, name who provided you with the idea
Listen to Understand	MEETING AGENDA: everyone <b>summarizes</b> ; write and <b>share</b> meeting minutes  ACTION: Ask real questions to <b>learn more</b> , not to argue - for example, "Tell me more"
Communicate Context	MEETING AGENDA: Items or discussion start with <b>background information</b>  ACTION: Describe the <b>goal/purpose</b> of the conversation/meeting
Value New Ideas & Encourage Innovation	MEETING AGENDA: specify time for new ideas/innovation,  ACTION: "Tell me more," and build on others ideas - "yes, that's great , <b>and.... (not but)</b> "
Offer Constructive Feedback	MEETING AGENDA: make time for <b>review and reflection</b>  ACTION: ask "what worked well?" Check your understanding. Ask "what feedback would be meaningful?"

# Login to the JupyterHub

In preparation for tomorrow lab, go to the JupyterHub website: <https://jupyterhub.hpc.ucar.edu/> and log in with DUO authentication.



The screenshot shows the login interface for the NCAR Computational & Information Systems Lab (CISL). At the top left is the NCAR logo. The main header features the CISL logo, which includes a globe icon and the text "CISL Computational & Information Systems Lab". Below the header is a "Sign in" section with a blue title bar. It contains two input fields: "Username:" and "Password:", each with a red eye icon for toggling visibility. A blue "Sign in" button is positioned below the fields. At the bottom of the page, a dark grey box contains a disclaimer: "Access to and use of this UCAR computer system is limited to authorized use by UCAR Policies 1-7 and 3-6 and all applicable federal laws, executive orders, policies and directives. UCAR computer systems are subject to monitoring at all times to ensure proper functioning of equipment and systems including security devices, to prevent unauthorized use and violations of statutes and security regulations, to deter criminal activity, and for other similar purposes. Users should be aware that information placed in the system is subject to monitoring and is not subject to any expectation of privacy. Unauthorized use or abuse will be dealt with according to UCAR Policy, up to and including criminal or civil penalties as warranted." Below the disclaimer is a link: "By logging in, you are agreeing to these terms".

# Start server



Home

Token

NCAR ▾

hannay

Logout

Server name

Resource

Last activity

Time Remaining

Actions

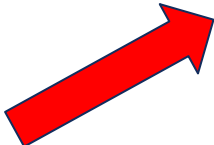
[Add New Server](#)

Default

2024-08-08 14:48 UTC

-

start



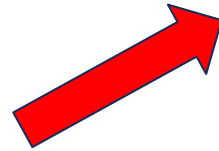
Start server

# Launch server

## NCAR HPC JupyterHub

Resource Selection




Casper Login ▾



Launch Server

Change from Casper Login to Casper PBS Batch

# Launch server

Casper PBS Batch   
tutorial (or R1903032)   
UESM0013 

## NCAR HPC JupyterHub

### Resource Selection

Casper PBS Batch

### Queue or Reservation (-q)

tutorial

### Project Account (-A)

UESM0013

### Specify N Nodes (-l select=N)

1

### Specify N CPUs per Node (-l ncpus=N)

1

### Specify Threads per Process (-l ompthreads=N)

1

### Specify MPI processes per Node (-l mpirprocs=N)

1

### Specify Memory per Node in GB (-l mem=N)

4

### Specify X Number of GPUs / Node (-l ngpus=X)

0

### Select GPU Type, X (-l gpu\_type=X)

none

### Wall Time HH:MM:SS (24-hour max)

02:00:00

### Jupyter Environment

Base

Launch server 

Launch Server

# Your landing page

The image shows a web browser window displaying a launcher interface. The browser's address bar shows a path to a home directory: `u/home/hannay`. The interface includes a sidebar on the left with a file explorer view, showing a list of folders and files. The main area displays a grid of notebook launchers, each with a unique icon and name. The launchers are organized into a grid with 6 columns and 4 rows. The first row contains: Python 3 (ipykernel), Bash, Bash [conda env:miniconda3], CMIP6 2019.10a, ForceSMIP, and GPU Workshop. The second row contains: IDL 8.9.0, IDL 9.0.0, Julia 1.10.2, Julia 1.9.2, Matlab R2023a, and Matlab R2024a. The third row contains: my-ADF, my-kernel, Notebook Gallery 2019.12, NPL 2022b, NPL 2023a, and NPL 2023b. The fourth row contains: NPL 2024a, NPL 2024b, Pangeo (2019.09.12), Python [conda env:cupid-], Python [conda env:cupid-dev], and Python [conda env:miniconda3].

























Bookmarks: Calendar, Gmail, Drives, New workflow, github, Helpdesk, Justin, Notes, WFH, Bookmarklet, Intranet

File Edit View Run Kernel Tabs Settings Help NCAR

Launcher

u/home/hannay

Notebook

 Python 3 (ipykernel)	 Bash	 Bash [conda env:miniconda3]	 CMIP6 2019.10a	 ForceSMIP	 GPU Workshop
 IDL 8.9.0	 IDL 9.0.0	 Julia 1.10.2	 Julia 1.9.2	 Matlab R2023a	 Matlab R2024a
 my-ADF	 my-kernel	 Notebook Gallery 2019.12	 NPL 2022b	 NPL 2023a	 NPL 2023b
 NPL 2024a	 NPL 2024b	 Pangeo (2019.09.12)	 Python [conda env:cupid-]	 Python [conda env:cupid-dev]	 Python [conda env:miniconda3]

# Let's logout

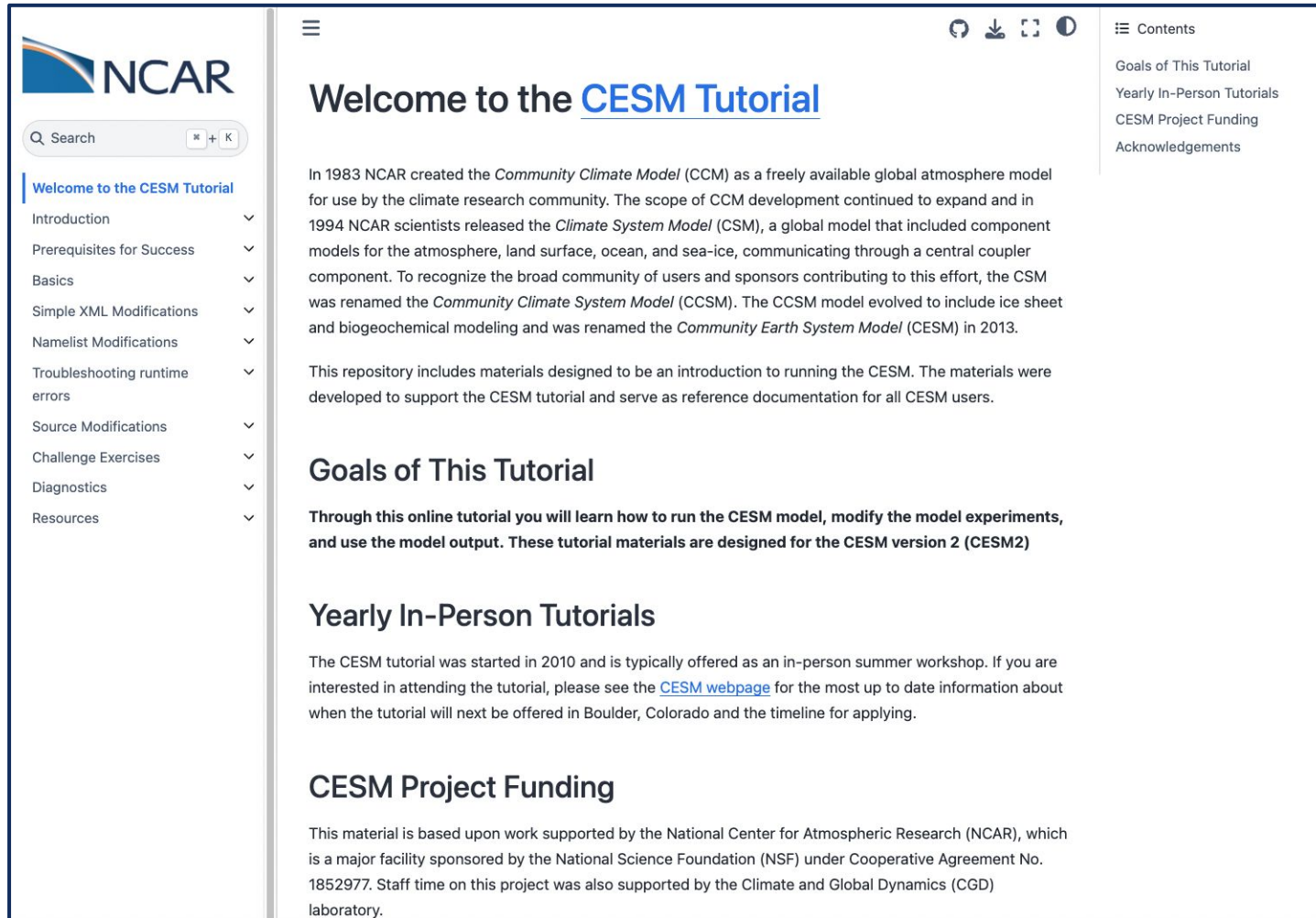
The screenshot shows the JupyterLab interface with the 'File' menu open. The menu items are: Open from Path..., Open from URL..., Recents, New View for File, New Console for Activity, Close Tab (⌘ W), Close and Shut Down (⌘ Q), Close All Tabs, Save File (⌘ S), Save File As... (⇧ ⌘ S), Save All, Reload File from Disk, Revert File to Checkpoint..., Rename File..., Duplicate File, Download, Save and Export Notebook As..., Save Current Workspace As..., Save Current Workspace, Launch Dask Dashboard Layout, Print... (⌘ P), Hub Control Panel, and Log Out. The main workspace shows a file browser for 'u/home/hannay' with a 'Notebook' view. The workspace contains a grid of 24 environment icons: Python 3 (ipykernel), Bash, Bash [conda env: miniconda3], CMIP6 2019.10a, ForceSMIP, GPU Workshop, IDL 8.9.0, IDL 9.0.0, Julia 1.10.2, Julia 1.9.2, Matlab R2023a, Matlab R2024a, my-ADF, my-kernel, Notebook Gallery 2019.12, NPL 2022b, NPL 2023a, NPL 2023b, NPL 2024a, NPL 2024b, Pangeo (2019.09.12 - 07), Python [conda env: cupid-...], Python [conda env: cupid-dev], and Python [conda env: miniconda3].

Logout 



# Lab documentation

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



The screenshot shows the top portion of the CESM Tutorial README page. On the left is the NCAR logo and a search bar. Below the logo is a table of contents with expandable sections: Introduction, Prerequisites for Success, Basics, Simple XML Modifications, Namelist Modifications, Troubleshooting runtime errors, Source Modifications, Challenge Exercises, Diagnostics, and Resources. The main content area is titled "Welcome to the CESM Tutorial" and contains introductory text about the history of the model (from CCM to CSM to CCSM to CESM) and a note that the repository is for reference documentation. Below this are sections for "Goals of This Tutorial" (stating the tutorial is for learning to run and modify the model), "Yearly In-Person Tutorials" (providing information on workshop dates), and "CESM Project Funding" (acknowledging support from NCAR, NSF, and CGD).

## Rough guidelines for the lab

Day 1: Basics

Day 2: Simple xml modifications

Day 3: Namelist, Troubleshooting, Source Mods

Day 4: Challenge exercises (Breakout rooms)

Day 5: Diagnostics

**BUT**

This is a **self-paced lab**.

We all come from different backgrounds. Some people will move faster, and some will move slower. It's completely okay.

Questions ?

