

Community Earth System Model (CESM) Tutorial

NCAR Mesa Lab, Boulder, CO

5-9 August 2019

Main Seminar Room – morning lectures & practical intro
Damon Room / Library – afternoon practical labs

Monday, August 5

- 8:30-8:50 Welcome, Intro, Logistics ([Oleson, Otto-Bliesner, Brinkworth, Ballard](#))
8:50-9:40 Lecture 1: Introduction to the coupled system ([Danabasoglu](#))
9:40-9:55 *Break*
9:55-10:45 Lecture 2: Atmosphere Modeling I: Intro & Dynamics ([Lauritzen](#))
10:45-11:00 *Break*
11:00-11:50 Lecture 3: Atmosphere Modeling II: Physics ([Neale](#))
- 11:50-1:10 Lunch (*on your own*)
- 1:10-1:30 Introduction to NCAR computing environment ([Kelly](#))
1:30-2:40 Practical Intro 1: Run CESM ([Thayer-Calder/Fischer](#))
2:40-5:00 Practical Lab 1 (snacks available in Damon room)
5:00-6:50 Reception: Mesa Lab Cafeteria (Ice breaker)

Tuesday, August 6

- 8:30-9:20 Lecture 4: Land Modeling I: Biogeophysics ([D. Lawrence](#))
9:20-9:35 *Break*
9:35-10:00 Lecture 5a: Atmosphere Modeling III: WACCM ([Mills](#))
10:00-10:25 Lecture 5b: Atmosphere Modeling IV: Chemistry, Aerosols ([Emmons](#))
10:25-10:40 *Break*
10:40-11:40 Applications 1
 - #1 Isotopes ([Bette Otto-Bliesner](#))
 - #2 Geoengineering ([Yaga Richter](#))
 - #3 Earth System Prediction ([Liz Maroon](#))
- 11:40-1:30 Lunch (*on your own*)
1:00-1:30 Specialized Talk 1: Simpler Models ([Simpson](#))
- 1:30-2:20 Practical Intro 2: Run CESM: Simple Modifications ([Shields](#))
2:20-5:00 Practical Lab 2 (snacks available in Damon room)

Wednesday, August 7

- 8:30-9:20 Lecture 6: Land Modeling II: Biogeochemistry: Ecosystem Modeling ([Lombardozzi](#))
9:20-9:35 *Break*
9:35-10:25 Lecture 7: Ocean Modeling I ([Marques](#))
10:25-10:40 *Break*
10:40-11:40 Applications 2
 - #1 Deep Time ([Christine Shields](#))

- #2 Large Ensembles (*Flavio Lehner*)
- #3 Extremes in the Arctic (*Laura Landrum*)

11:40-1:30 Lunch (*on your own*)
 1:00-1:30 Specialized Talk 2: Model development: Coupling/Tuning (*Hannay*)

 1:30-2:20 Practical Intro 3: Diagnostics and Output (*Phillips*)
 2:20-5:00 Practical Lab 3 (snacks available in Damon room)

Thursday, August 8

8:30-9:20 Lecture 8: Ocean Modeling II (*Gent*)
 9:20-9:35 Break
 9:35-10:25 Lecture 9: Ocean Biogeochemistry (*Lindsay*)
 10:25-10:40 Break
 10:40-11:30 Lecture 10: Sea Ice Modeling (*DuVivier*)

 11:30-1:30 Lunch (*on your own*)
 11:45-12:45 Meet a CESM Scientist (*Danabasoglu, Lombardozzi, Wieder, Kay, Neale, Otto-Bliesner, DuVivier*)
 1:00-1:30 Specialized Talk 3: Porting Session (*Edwards*)

 1:30-2:20 Practical Intro 4: Namelist and Code Modifications (*Hannay*)
 2:20-5:00 Practical Lab 4 (snacks available in Damon room)

Friday, August 9

8:30-9:20 Lecture 11: Land Ice Modeling (*Lipscomb*)
 9:20-9:35 Break
 9:35-10:25 Applications 3:
 Does the Atlantic force the Pacific or does the Pacific force the Atlantic? (*Meehl*)
 10:25-10:30 Closing Remarks (*Oleson*)
 10:30 Photo (*meet outside Main Seminar Room*)
 10:30-10:45 Break
 10:45-11:35 Practical Intro 5:
 Breakouts:
 Ocean/Sea Ice/Land Ice (*Altuntas, Bailey/DuVivier, Thayer-Calder*) Director's
 Land/BGC (*Lawrence/Kluzek, Lindsay*) Chapman/Damon
 Atm/Chem/WACCM (*Coleman, Emmons, Mills*) Main Seminar Room

 11:35-12:30 Lunch (*on your own*)

 12:30-3:00 Practical Lab 5

 3:00 Adjourn