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
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