2019 CLM/CTSM Tutorial

CTSM Website

http://www.cgd.ucar.edu/events/2019/ctsm/

Community Terrestrial Systems Model Tutorial

The National Center for Atmospheric Research (NCAR) is offering a week-long tutorial on the Community Terrestrial Systems Model (CTSM) *hosted by the Climate & Global Dynamics laboratory (CGD)* on 4-8 February 2019. CTSM is a unified land model for climate, weather, hydrology, and ecology. The Community Land Model (CLM5) is an instantiation of CTSM. Configurations for Numerical Weather Prediction, hydrology, and ecology (CLM-FATES) research applications are in development and are likely to be available by the tutorial. This tutorial will use a combination of lectures and practical sessions to provide an introduction to the CTSM, including new features such as FATES, representative hillslopes, and anthropogenic land and water management practices.

Learning objectives include:

- Understanding ecological, biogeochemical, biogeophysical, and hydrologic theory underpinning the CTSM
- Running and modifying components of the CTSM
- Analyzing CTSM output

The tutorial will be taught primarily by the staff of the Terrestrial Sciences Section at NCAR and is intended for graduate students and postdocs in ecology, hydrology, environmental sciences, climate or related fields.

The application deadline for the tutorial has passed.

The cut off date for registration was **09 January 2019**.

Event Details

Event Start Date: February 4th 2019
Event End Date: February 8th 2019
Location: NCAR Mesa Lab, Boulder CO

Webcast: http://www.fin.ucar.edu/it/mms/ml2-live.htm

A block of rooms has been reserved for February 03, 2019 - February 09, 2019 at the Best Western Plus Boulder Inn.

If you requested travel support, we will book your shared room so please do not contact the hotel directly. When you register for the meeting, a question will be listed in reference to this

If you did not request travel support and are booking your own room, please make your reservations using the link here or view our lodging page for more information.

Event Agenda

- View the agenda here

Meeting Information

Dates: 04 - 08 February 2019

Venue: Mesa Lab, National Center for Atmospheric Research (NCAR), Boulder, CO, USA

Webcast: http://www.fin.ucar.edu/it/mms/ml2-live.htm

Meeting Home

Agenda

Lodging

Logistics

Registration [Closed]

Events

• Overview

CGD Seminar Series

Research Reports

Past Events

A typical day

Morning
- Breakfast at your hotel
- Science lectures (Fleishmann Building)
- Coffee break

Lunch
- NCAR cafeteria on your own
- Optional:
  - Round-table discussions with a scientist (Wednesday)
  - Porting CLM to other machines (Thursday)

Afternoon
- Introduction to the Practical Sessions (Main Seminar Room)
- Practical session (Library)
- Coffee break (Chapman Room)

Evening
- Dinner on your own (optional group dinner on Thursday downtown at The Med)
- Reception/Poster session Monday (tonight)

Agenda

Monday, February 4 **Overview**	_Tuesday, February 5_ **Biogeophysics**	_Wednesday, February 6_ **Biogeochemistry**	_Thursday, February 7_ **Human Impacts & Parameter Estimation**	_Friday, February 8_ **Ecosystem Demography**
8:20: Bus departs hotel _Fleishman Building_ **8:45** Dave & Danica _Welcome & Logistics_ **9:00** Gordon Bonan _Terrestrial System Overview_ **9:45** Dave Lawrence _CLM Overview_ **10:30** break **10:50** Martyn Clark _CTSM Overview & numerical methods_	**8:05:** Bus departs hotel _Fleishman Building_ **8:30** Gordon Bonan _Fluxes in Plant Canopies_ **9:15** Daniel Kennedy _Hydraulic Conductance_ **9:45** break **10:15** Sean Swenson _Hydrology_ **11:00** Dave Lawrence _Snow_ **11:20** Martyn Clark _River routing_	**8:05:** Bus departs hotel _Fleishman Building_ **8:30** Danica _BGC in models & Veg C dynamics_ **9:30** Will _Veg N Dynamics_ **10:00** Break **10:30** Will Wieder _Soil biogeochemistry_ **11:15** Fang Li _Fire_ **11:30** Sean Swenson _Hillslope hydrology_	**8:05:** Bus departs hotel _Fleishman Building_ **8:30** Peter Lawrence _Land use land cover_ **9:15** Danica Lombardozzi _Crop Model_ **9:45** Break **10:15** Keith Oleson _Urban Model_ **10:45** Andy Fox _Data assimilation_ **11:15** Katie Dagon _Parameter Estimation_ **11:45** Danica & Dave _Summary_	**8:05:** Bus departs hotel _Fleishman Building_ **8:30** Charlie, Rosie, Jackie, Ryan Introduction to Ecosystem Demography & FATES in ESMs Information flow in FATES Vegetation, nutrient cycling, and demographic processes **9:45** Break Patch & Cohort dynamics FATES modes and file structure Plant Functional Types & experiments FATES-Hyrdo and future developments
11:30 Lunch (on your own)	**11:45** Lunch (on your own)	**11:45** Lunch — Round Table Discussions	**12:00** Lunch (on your own)	**12:00** Lunch (on your own)
Main Seminar Room **12:45** TSS Introductions **1:00** Danica _Lecture: Configure & Run CLM_ _Library_ **1:15** Practical: Running CLM & Basic analysis **2:45** Break (_Chapman Room_) **5:00** Reception & posters (_Cafeteria_) **7:00** Bus pickup	_Main Seminar Room_ **1:00** Keith Oleson _Lecture: Postprocessing_ **1:15** Dave Lawrence _Lecture: Land Model Benchmarking_ **1:30** Jackie & Katie _Lecture: Basic Modifications_ _Library_ **2:00** break (_Chapman Room_) **2:30** Practical: Basic Modifications & Analysis **5:15** Bus pickup	_Main Seminar Room_ **1:15** Bill Sacks & Jackie _Lecture: Tracking Bugs & Coding Best Practices_ _Library_ **1:45** Practical: Tracking bugs & coding best practices **3:00** Break (_Chapman Room_) **5:15** Bus pickup	_Main Seminar Room_ **12:45** Jim Edwards _Optional Lecture: Porting CLM to other machines_ **1:15** Sean Burns _Lecture: simulating flux towers with CLM_ **1:30** Will & Sean Swenson _Lecture: Single Point in CLM_ _Library_ **2:00**: Practical: Single Point **3:00** Break (_Chapman Room_) **5:15** Bus pickup **6:30** Dinner (_location TBD_)	_Main Seminar Room_ **1:15** Ryan Knox _Lecture: Running FATES_ _Library_ **2:00** Practical: Running Fates **3:00** Break (_Chapman Room_) **4:45** Tutorial wrap-up **5:15** Bus pickup

You can also find the agenda on the tutorial website: http://www.cgd.ucar.edu/events/2019/ctsm/agenda.pdf

Tutorial materials

During tutorial, lectures and practicals will be posted here

https://drive.google.com/open?id=10fFUXjljrU050oZmMQRrsGlcs8pBIQxA

After the tutorial, lectures will be given a more permanent home accessed from the tutorial website.

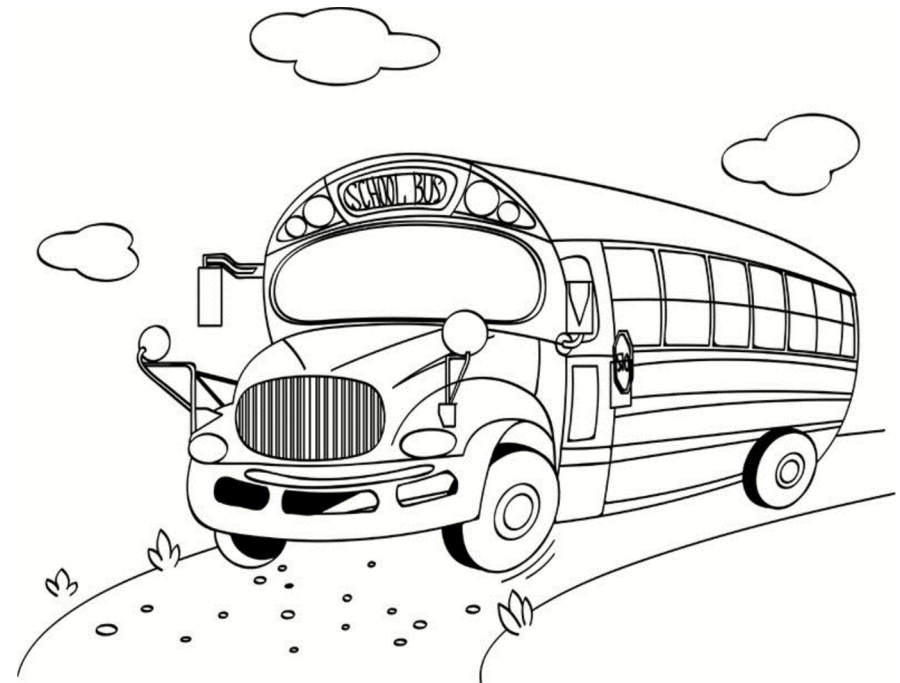# Bus Schedule

Leaving the hotel (Tuesday – Friday): 8:05am

Leaving NCAR:
7:00 on Monday
5:15 Tuesday- Friday

On Thursday: Bus will have two stops.

1. Hotel
2. The Med restaurant
   (https://www.themedboulder.com/)

http://jeuxetcompagnie.fr

Optional Thursday dinner at The Med

The Med is a tapas restaurant serving Mediterranean-style food

The bus will drop folks off near The Med around 5:45.

Tapas dinner + dessert is $25/person. Drinks or additional food are extra

Options for getting back to your hotel:
- walk (2 miles, ~45 minutes)
- bus (will still involve ~15 minutes of walking. Skip or Hop routes, $2.60)
- Lyft/Uber

NCAR|UCAR Code of Conduct

NCAR|UCAR strives to create an environment of full inclusion. Whatever your identities, or intersection of identities, you are welcome here at NCAR|UCAR.

Our rule: Be kind to fellow participants, instructors, and yourselves.

This applies to everyone in all venues and situations. Remember this is a professional environment, and people are here to learn.

If you need help, please ask Danica, Dave, or Marlene