

Mtn Clim 2018

September 17 - 21, 2018 in Gothic, Colorado

**All Meals and Sessions will take place in the billy barr
community center. unless otherwise noted.**

Sun Sep 16

Time	Event
3:00 PM - 6:00 PM	Registration for early arrivals in the billy barr community center
6:00 PM - 7:00 PM	Dinner

Mon Sep 17

Time	Event
7:00 AM - 8:00 AM	Breakfast
9:00 AM - 5:00 PM	Field Trips near RMBL to research and conservation areas
3:00 PM - 6:00 PM	Registration in billy barr community center
6:00 PM - 7:00 PM	Dinner
7:30 PM - 8:30 PM	Redmond Lecture: Chris Daly

Tue Sep 18

Time	Event
7:00 AM - 8:00 AM	Breakfast
8:00 AM - 9:30 AM	Session: Trees and Snow and Water
9:30 AM - 10:00 AM	Break
10:00 AM - 11:00 aM	Session: Trees and Snow and Water (Continued)
11:00 AM - 12:00 PM	Session: Causes and Consequences of Temperature and Hydroclimate Variability during the Common Era
12:00 PM - 1:00 PM	Lunch
1:00 PM - 2:30 PM	Session: Causes and Consequences of Temperature and Hydroclimate Variability during the Common Era (Continued)
2:30 PM - 3:00 PM	Break
3:00 PM - 5:00 PM	Session: Contributed Talks
6:00 PM - 7:00 PM	Dinner
7:30 PM - 9:30 PM	Poster Session

Wed Sep 19

Time	Event
7:00 AM - 8:00 AM	Breakfast
8:00 AM - 9:00 AM	Keynote: John Harte
9:00 AM - 10:00 AM	Anticipating climate change impacts in mountains
10:00 AM - 10:30 AM	Break
10:30 AM - 12:00 PM	Anticipating climate change impacts in mountains (cont)
12:00 PM - 1:00 PM	Lunch
1:00 PM - 3:00 PM	Workshops/Research Tour
3:00 PM - 3:15 PM	Group Photo - Conference Hall
3:15 PM - 4:15 PM	Early Career Scientists
4:15 PM - 4:30 PM	Break
4:30 PM - 5:30 PM	Early Career Scientists (Continued)
6:00 PM - 7:00 PM	Dinner
7:30 PM - 8:30 PM	Keynote: David Inouye

Thu Sep 20

Time	Event
7:00 AM - 8:00 AM	Breakfast
8:30 AM - 10:00 AM	Session: Contributed Talks
10:00 AM - 10:30 AM	Break
10:30 AM - 12:00 PM	Session: Contributed Talks (Continued)
12:00 PM - 1:00 PM	Lunch
1:00 PM - 2:30 PM	Session: Contributed Talks (Continued)
2:30 PM - 3:00 PM	Break
3:00 PM - 5:00 PM	Session: Facilitating collaboration in mountain climate science
5:00 PM - 6:00 PM	No Host Happy Hour
6:00 PM - 7:00 PM	Dinner
7:00 PM - 7:30 PM	Screening "End of Snow" film featuring billy barr

Fri Sep 21

7:00 AM - 8:00 AM	Breakfast
8:00 AM - 12:00 PM	Workshops/Breakouts
12:00 PM - 1:00 PM	Lunch
1:00 PM	MtnClim Adjourns

Mountain Climate Conference 2018
September 17 – 21, 2018 in Gothic Colorado

KEYNOTES

Monday, September 17, 7:30 PM

The Redmond Lecture: MtnClim weather since 2016

Christopher Daly. Senior Research Professor, Oregon State University

Chris will give the inaugural lecture in honor of Kelly Redmond, the mountain climate legend who passed away in 2016. Title and description coming soon.

Wednesday, September 19, 8:00 AM

Insights into ecosystem-climate dynamics from 28 years of climate manipulation, long-term observations, and modeling

John Harte, Professor of Ecosystem Sciences, University of California

John will walk us through a series of questions he has developed and helped to answer during nearly three decades of work at RMBL: Can decadal-scale ecological trends be attributed to a changing ambient climate? Can both short- and long-term future ecosystem responses to global warming be predicted? Can the sign and magnitude of future ecologically-mediated feedbacks to the climate be predicted? John uses a combination of 28 years of experimental climate manipulation, long-term observational data, and robust modeling to address these questions and identify the driving mechanisms of ecological change in a subalpine meadow.

Wednesday, September 19, 7:30 PM

The effects of global and regional climate change on phenology of wildflowers and animals in the Colorado Rocky Mountains

David Inouye, Professor Emeritus, University of Maryland and Principal Investigator at the Rocky Mountain Biological Laboratory

David will talk about some of the research he has done at the Rocky Mountain Biological Laboratory since 1973, including work on wildflowers, bumble bees, and hummingbirds. His projects have included 45-year studies of plant demography, variation in abundance and phenology of 120 species of wildflowers, ant-plant mutualisms, and pollination biology. Climate, and snowmelt date in particular, drives most of the phenology of that montane ecosystem.

MAIN THEME

Anticipating Climate Change Impacts in Mountains: Embracing Variability

Chairs: Solomon Dobrowski, John Abatzoglou

Decades of research has led to the understanding that temporal variability in climate affects mountain ecosystems in terms of water availability, the distribution of organisms, wildfire, and a myriad of ecosystem processes. In addition to variation over time, there has been increased interest in the variability that we see in mountain climate as expressed in space. In this session, we will look at how the intersection of climate variation in time and space might produce surprises that are hard to anticipate. These include the potential for mountain systems to act as refugia, approaches for characterizing spatial and temporal climate variability (e.g. climate velocity), climatic buffering by forests, and other areas of research relevant to anticipating and mitigating climate change impacts.

SESSIONS

Trees, Snow and Water

Chair: Jessica Lundquist

A central issue in ecohydrology is developing better understanding of how changes in snow dynamics can alter the timing of water supply relative to demand in montane forests. How trees, snow, and water interact impacts evapotranspiration with a host of downstream effects. In this session we will look at these interactions from very different scales and perspectives ranging from how snowflakes bounce off tree branches to physiological controls on tree transpiration to catchment and watershed scale processes. This session will present new science and identify gaps where further research is needed. A series of short presentations will be followed by an open discussion facilitated by the speakers.

Causes and Consequences of Temperature and Hydroclimate Variability during the Common Era

Chairs: Connie Woodhouse, Gregory Pederson

The magnitude and persistence of hydroclimatic changes over the Common Era (last 2,000 years) is broadly understood through a handful of high-resolution proxies and reconstructed metrics. Reconstructions of gridded drought, snowpack, and watershed-scale streamflow provide a good understanding of the regional and region-wide patterns of moisture, but the temperature component of hydroclimate has received far less attention. Temperature has also has critical impacts on ecosystems, including changes in tree line and disturbance regimes. Our understanding of the ways that temperature

has interacted with the ecosystems and other parts of the climate system is far from complete, but growing with new proxy records, approaches, and techniques. The purpose of the session is to review the state of existing science and identify ways the MtnClim community can collaborate to generate new data and scientific advances in this area. A poster session and a series of short presentations will be followed by an open discussion facilitated by the speakers.

Early Career Scientists

Chairs: Jia Hu and Meagan Oldfather

This session is a mainstay of MtnClim and features invited talks by early career scientists working in a variety of disciplines.

Contributed Talks

Chairs: Selected from Steering Committee

General interest talks on a range of subjects. Chairs will work to organize thematically.

WORKSHOPS / TOURS OF RESEARCH AREAS

In addition to tours of existing, long-term RMBL research projects like the Warming Meadow Experiment, phenology plots and the RMBL campus and facilities we have the following workshops in the planning stages.

Resource Managers: Adapting to Variability

Coordinator: Imtiaz Rangwala

A hands on managers workshop done in coordination with or led by folks from the [Gunnison Climate Working Group](#). Details to come.

Field Instrumentation I: System Design and Key Concepts for Climate and Ecohydrology Monitoring

Coordinator: Scotty Strachan

Science and management needs in mountain systems increasingly require on-the-ground observations to evaluate model performance, establish baselines, track rapid change, and provide local-scale operational information. Shifts in technology have made many automated observation sensors affordable to purchase, but true primary costs come in the form of managing and maintaining these field systems. This "light workshop" is designed to provide a high-level overview of best practices in sensor system deployment in remote areas, regardless of science purpose or vendor used, with the objective of aiding in planning and reducing maintenance cost and data loss. Topics covered will include: site and platform planning; power system design; telemetry approaches; and data management issues. Depending on facilities and weather, there will be opportunities for hands-on demonstrations of system elements with a focus on power and telemetry.

Field Instrumentation II: Using Thermochrons for Topoclimate Modeling

Coordinator: Stu Weiss

Stu Weiss will show some of the tips and tricks he's learned on deploying iButtons, HOBOs, etc to better understand the expression of temperature over complex terrain. This will involve show and tell with the instruments as well as processing and modelling the data.

Authentic Outreach: How to Make your Impacts Broader

Coordinators: Justin Gay and Shealyn Malone

Justin and Shealyn will host a discussion on how to craft meaningful, relevant, and useful outreach efforts for proposals and projects that are underway.