



WESTERN SNOW CONFERENCE



Draft Program

82nd Annual Western Snow
Conference

April 14-17, 2014

Strater Hotel
Durango, Colorado

<http://westernsnowconference.org>
westernsnowconference@gmail.com

Monday, April 14

8:30 – 2:00

**Dust and Carbon Effects on Snow Process:
Detection and Adaptation**

Short Course – (lunch included)

3:00 – 5:00

Executive Committee Meeting

5:30 – 7:00

Registration and Hospitality – General Chairman's Suite

Tuesday, April 15

7:00 – 8:00

Author's Breakfast

7:30 – 8:30

Conference Registration
Vendor Setup
Poster Paper Setup

CONFERENCE OPENING SESSION

8:30 – 8:40

Opening Remarks: Randy Julander, Conference Chair

8:40 – 8:50

Welcome: Peter Palmer, WSC General Chair

8:50 – 9:15

Guest Speaker - Dick White, Mayor of Durango

9:15 – 9:30

Vendor Introductions: Al Rango

ORAL SESSION I - Jordan Clayton - Session Chair

- 9:30 – 10:00 **Dust-on-snow impacts on Colorado hydrographs – emerging patterns.** Christopher Landry, Center for Snow and Avalanche Studies, Durango CO
- 10:00 – 10:30 **Projected changes in extreme snowfall events in the montane western United States.** Abigail Lute, University of Idaho
- 10:30 – 11:00 **Vendor Introductions and Break**
- 11:00 – 11:30 **Understanding trends in snow accumulation, water availability and climate changes using snow telemetry and streamflow observations in the Missouri River headwaters.** Thomas Mathews, Montana State University
- 11:30 – 12:00 **Are temperature-index models appropriate for assessing climate change impacts on snowmelt?** Mark Raleigh, NCAR
- 12:00 – 1:00 Lunch

ORAL SESSION II - Peter Palmer – Session Chair

- 1:00 – 1:30 **Predicting streamflow hydrograph recession from soil moisture loss at Utah SNOTEL.** Jordan Clayton, NRCS Snow Survey, UT
- 1:30 – 2:00 **Soil moisture dynamics during snowmelt.** Kent Sutcliffe, NRCS Snow Survey, UT
- 2:00 – 2:30 **Improvement of operational streamflow prediction with snow data from remote sensing.** Stacie Bender, NWS, CBRFC, UT
- 2:30 – 3:00 **Break and Vendor Displays**
- 3:00 – 3:30 **Skill assessment of seasonal water supply outlooks in the Colorado River Basin.** Brent Harrison, Univ. of California, Merced
- 3:30 - 5:30 **Poster Introductions, Poster Papers, and Vendor Exhibits**
- The role of avalanches among the dominant variables controlling the magnitude and timing of snowmelt runoff in two alpine basins of southwest Montana.** Jason Welz, Montana State University, Snow and Avalanche Laboratory

Assessing climate change impacts on water availability of snowmelt-dominated watersheds of the Upper Rio Grande Basin. Emile Elias, USDA/ARS Jornada Experimental Range

Above canopy snow transport rate in the central Colorado subalpine. Charles Leaf, Platte River Hydrologic Research Center

Snowmelt infiltration and soil water availability in the Western U.S. Adrian Harpold, INSTAAR University of Colorado

Evaluating snow depth trends along an elevation gradient using 30 years of LTER snow-pit data. Henry Brandes, University of Colorado, Boulder

Mountain groundwater storage and transport processes in varying geologic areas. Alice Hill, CU-Boulder, INSTAAR

Merging complementary datasets to provide real-time, spatially distributed SWE estimates in the Upper Colorado River Basin. Dominik Schneider & Noah Molotch, Dep't of Geography, University of Colorado, INSTARR

Using hydrochemistry data to constrain the role of snow and ice meltwater in the Langtang Valley, Nepal. Alana Wilson, University of Colorado - Boulder, INSTARR

Simulating streamflow under a warming climate. Implications for acequia communities in the Upper Rio Grande. Caitriana Steele, New Mexico State University

Opportunities and limitations for assessing ski area vulnerability and potential low-snow adaptation strategies in the changing climate. Lisa Nichols, University of Idaho

Assessment of large-magnitude snow avalanche events in Colorado. Sara Simonson, Colorado State University

Airborne snow observatory: Hetch Hetchy Basin snow water equivalent time series, 2013. Bruce McGurk, McGurk Hydrologic

USDA Southwest Regional Hub for risk adaptation and mitigation to climate change. Al Rango, USDA ARS Jornada Experimental Range

Will the 2014 drought in California set a record? Maurice Roos, CA Dep't of Water Resources

The 2014 California drought – dealing with extreme dryness.

Gary Freeman, Pacific Gas & Electric Company

Wednesday, April 16

8:30 – 1:00 **Spouse/Visitor breakfast and tour.** First enjoy a leisurely breakfast compliments of the Western Snow Conference, and then leave for Mesa Verde, returning to Durango for strolling and shopping if there is time.

8:30 – 8:45 Announcements – Randy Julander

ORAL SESSION III – Kent Sutcliffe – Session Chair

8:45 – 9:15 **Payette River Basin, Idaho: high-resolution modeling and gauging.** Mel Kunkel, Idaho Power Co

9:15 – 9:45 **Modeling of inter-annual snow storage for long-term simulation.** Noriaki Ohara, University of Wyoming

9:45 – 10:30 Break: Poster and Vendor Exhibits

10:30 – 11:00 **Niveograph interpolation to estimate peak accumulation of SWE in Rocky Mountain National Park.** Glen Patterson, Colorado State University

11:00 – 11:30 **Snow-cover depletion curves from MODIS imagery and SNOTEL data for northern Colorado.** Steven Fassnacht, Colorado State University

11:30 – 12:45 Lunch

ORAL SESSION IV – Randall Julander – Session Chair

12:30 – 1:00 **Automated in-situ snow grain size acquisitions.** Dominik Schneider, INSTAAR/ CU Boulder

1:00 – 1:30 **Estimation of snow and ice melt using positive degree day model for discharge of Langtang River in Rasuwa District, Nepal.** Rijan Bhatka Kayastha, HiCCDRC, Kathmandu University

1:30 – 2:00 **SWE estimates in Afghanistan and the Sierra Nevada using passive microwave and reconstruction.** Edward Bair, USACE, CRREL

2:00 – 2:30 Break: Exhibits and Vendors

- 2:30 – 3:00 **Nominal remotely sensed data inputs for robust snow cover estimation in alpine-forested terrain.** Elzbieta Czyzowska, University of Arizona
- 3:00 – 3:30 **Investigating the inter-annual consistency of mountain snow distributions using multiple LiDAR surveys and a wind redistribution model.** Andrew Hedrick, Center for the Geophysical Investigation of the Shallow Subsurface, Boise State University
- 3:30 – 4:00 **Doing hydrology backward to estimate mountain precipitation patterns from streamflow.** Brian Henn, University of Washington
- 4:00 – 4:15 Technical Tour Announcements and Special Events at Dinner
- 4:15 – 4:30 Annual Business Meeting – Peter Palmer, General Chairman
- 4:30 – 5:00 Awards Committee Convenes – Jolyne Lea, TBA

CONFERENCE BANQUET & AWARDS – Wednesday, April 16

- 6:00 – 7:00 Hospitality
- 7:00 – 9:00 Banquet and Awards

Guest Speaker – Al Harper, CEO of the Durango/Silverton Railway

Technical Tour – Thursday April 17, 8:30 am – 5:00 pm

Board the bus, sit back, and relax for a beautiful bus ride from Durango to the high Rocky Mountain town of Silverton, Colorado, surrounded by beautiful alpine peaks. Explore current research activities in the Durango/Silverton area led by personnel of the Center for Snow and Avalanche Studies in Silverton. One of their projects is the issue of dust on snow, changes in albedo, accelerated melt, and the subsequent impact on stream flow.