



WESTERN SNOW CONFERENCE



Draft Program

83rd Annual Western Snow Conference

April 20-23, 2015

Gold Miners Inn
Grass Valley, California

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

Monday, April 20

- 8:30 – 2:00 **LiDAR Basics, Applications, and Use in Snow Hydrology and Field Studies**
Short Course – (lunch included)
- 3:00 – 5:00 Executive Committee Meeting
- 5:30 – 7:00 Registration and Hospitality – General Chairman's Suite

Tuesday, April 21

- 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: Randall Osterhuber, Conference Chair
- 8:40 – 8:50 Welcome: Gary Freeman, WSC General Chair
- 8:50 – 9:15 Guest Speaker and Welcome: **Remleh Scherzinger**, General Manager, Nevada Irrigation District
- 9:15 – 9:30 Vendor Introductions: Vince White, Vendor Chair

ORAL SESSION I - Rick Kattelman - Session Chair - Climatology of Droughts & Climate Change

9:30 – 10:00 **Snow-related drought in the Sierra Nevada: spatial analysis of snow water using MODIS-based SWE reconstructions and in-situ measurements.** Noah Molotch, University of Colorado, Boulder

10:00 – 10:30 **Artificial amplification of warming trends across the mountains of the western United States.** Jared Oyler, University of Montana

10:30 – 11:00 **Vendor Introductions and Break**

11:00 – 11:30 **Planning beyond California's three-year drought.** Gary Freeman, Pacific Gas & Electric Co., San Francisco, CA

11:30 – 12:00 **Snow albedo, radiative forcing, and climate change.** Hans Moosmüller, Desert Research Institute, NV

12:00 – 1:00 Lunch

ORAL SESSION II - Kevin Richards – Session Chair - Public Communication & Observed Trends in Snowpack Conditions

1:00 – 1:30 **Communicating drought-related water resources forecast information in California.** Alan Haynes, California-Nevada River Forecast Center, Sacramento

1:30 – 2:00 **Trends in the snowpack across California.** Kevin He, CA Department of Water Resources, Sacramento

2:00 – 2:30 **Variability in snow-rain transitions challenge the fidelity of temperature-threshold models for ecohydrologic prediction.** Adrian Harpold, University of Nevada, Reno

2:30 – 5:00 Poster Introductions, Poster Papers, and Vendor Displays

Application and evaluation of a snow energy and mass balance distributed model in the Merced and Tuolumne River watersheds of the Sierra Nevada, CA. James Roche, University of California, Merced

New approaches for estimating snow surface roughness. David Kamin, Colorado State University, Ft. Collins

Drought perspective from Donner Summit, CA. Randall Osterhuber, Univ. of CA-Berkeley, Soda Springs

Snow trends and spatial variability in No. Arizona: The effects of climate and forest restoration treatments. Jonathan Donald, Northern Arizona University, Flagstaff

Characterizing spatial variability of snow water equivalent using pressure sensors. Benjamin Trustman, Desert Research Institute, Reno, NV

Effects of melt season snowpack dynamics on subalpine forest net ecosystem exchange. Taylor Winchell, CU-Boulder, INSTAAR

Sensitivity of hydrologic partitioning to snowpack dynamics. Theodore Barnhart, Dep't of Geography, University of Colorado, INSTARR

Integrating SNOTEL and MODIS observations to quantify trends in watershed snow cover. Russell Quails, University of Idaho, Moscow

Canopy cover effects on maximum snow cover between forest treatments. Michael Pickard, Univ. of CA-Merced

Aerosol characterization for studying changes in snow albedo. Nicholas Beres, Desert Research Institute, Reno, NV

Subregional interannual variability of SWE in the Pacific northwest. Abby Lute, University of Idaho, Boise

New instrumentation for snow radiative properties. Nicholas Beres, Desert Research Institute, Reno, NV

Sustaining a hydroclimate monitoring network in Yosemite National Park: Notes from the field. Harrison Forrester, Yosemite National Park, CA

From snow to flow: estimating the time of peak streamflow using SNOTEL ablation curves. Kara Ferguson, Boise State University, ID

Using the Precipitation Runoff Modeling System to model snowmelt and runoff in the Yuba River Basin. Catherine Percival, Pacific Gas and Electric, San Francisco, CA

Persistent wave structures and western droughts. Marshall Liddle, Desert Research Institute, Reno, NV

Tradeoffs between water demand and soil properties control

sensitivity of soil water stress to earlier snowmelt timing.

Adrian Harpold, University of Nevada, Reno

A simple algorithm for identifying snow on a pyranometer.

Karl Iapo, University of Washington, Seattle

New recording standards for California Snow Surveys.

Randall Osterhuber, Univ. of CA-Berkeley, Central Sierra Snow Laboratory

Using hydrologic mixing models to validate the VIC model in the Como Creek watershed, CO.

Zhang Qinghuan, University of Colorado/INSTAAR, Boulder

Airborne Snow Observatory: basin SWE and inflow comparison from three years, and proposed new forecasting tool.

Chris Graham, SFPUC/Hetch Hetchy Water & Power, Moccasin, CA

Wednesday, April 22

8:30 – 1:00

Spouse/Visitor breakfast and tour. First enjoy a leisurely breakfast compliments of the Western Snow Conference, and then leave for local attractions in and around Grass Valley, and including lunch.

8:30 – 8:45

Announcements – Randall Osterhuber

8:45 - 9:15

Guest Speaker - **Curt Aikens**, GM, Yuba County Water Agency, Importance of Snow Surveys and Snow Information

ORAL SESSION III – Randall Osterhuber – Session Chair - Spatial Variation in Snowpack and Melt Conditions

9:15 – 9:45

The influence of a heterogeneous mixed-conifer canopy on snow accumulation and melt. Eryn Schneider, University of Montana

9:45 – 10:30

Break: Poster and Vendor Exhibits

10:30 – 11:00

Understanding the spatial distribution of snow water equivalent of paired basins in southwest Montana. Jason Welz, Center for Snow and Avalanche Studies, CA

11:00 – 11:30

Variability of cloud cover and its relation to springtime snowmelt and runoff. Edwin Sumargo, Scripps Institute of Oceanography, CA

11:30 – 12:30 Lunch

ORAL SESSION IV – Frank Gehrke – Session Chair - Remote sensing of snow cover and terrestrial snow cover monitoring

12:30 – 1:00 **The Landsat fractional snow covered area essential climate variable: Methodology and preliminary accuracy assessment.**
David Selkowitz, US Geological Survey, AK

1:00 – 1:30 **A comparison of snow water equivalent products for the Feather River watershed, CA.** Kevin He, CA Department of Water Resources, Sacramento.

1:30 – 2:00 **Comparison and error analysis of reconstructed SWE to Airborne Snow Observatory measurements in the Upper Tuolumne Basin, CA.** Edward Bair, Univ. of CA - Santa Barbara, and US Army Corps of Engineers, CRREL

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

2:30 – 3:00 **Combining ground-based observations, distributed models, and remotely sensed data for real-time SWE estimates.**
Dominik Schneider, INSTAAR/Univ. of Colorado, Boulder

3:00 – 3:30 **Pillows, courses, LiDAR, and streamgages: How best to assimilate observations of snowpack and streamflow into inference of basins' water balance.** Brian Henn, University of Washington, Seattle

3:30 – 4:00 **Design, implementation, and hydrologic evaluation of a snow-measurement network using wireless sensors in the American River basin, CA.** Bob Rice, Univ. of CA-Merced

4:00 – 4:15 Technical Tour Announcements and Special Events at Dinner

4:15 – 4:30 Annual Business Meeting – Gary Freeman, General Chairman

4:30 – 5:00 Awards Committee Convenes – Jolyne Lea, TBA

CONFERENCE BANQUET & AWARDS – Wednesday, April 22

6:00 – 7:00 Hospitality

7:00 – 9:00 Banquet and Awards

Guest Speaker – **Pat Armstrong**, snow surveyor and author of "The Log of a Snow

Survey: Skiing and Working in a Mountain Winter World"

Technical Tour – Thursday April 23, 8:30 am – 5:00 pm

Board the bus, sit back, and relax for a beautiful bus ride from Grass Valley up into Gold Country to explore the transition of water use from gold mining uses to power generation and agriculture. The tour will visit several reservoirs, release facilities, and include a tour into a powerhouse. An excellent box lunch will be provided at a scenic overlook.