WESTERN SNOW CONFERENCE

Preliminary Agenda (as of April 11, 2019)
Timing and Order of Papers subject to change

87th Annual Western Snow Conference

April 15-18, 2019

Renaissance Reno Downtown Hotel
Reno, Nevada

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

Monday, April 15

0900–1300   **Mapping surface elevations and snow depth with Structure from Motion photogrammetry by McKenzie Skiles**
Short Course – (lunch included)   Topaz Room

1400–1700   Vendor Setup   Topaz Foyer

1400–1700   Executive Committee Meeting   River Rock Room

1730–1900   Registration and Hospitality – General Chairman's Suite

Tuesday, April 16

0700–0800   Author's Breakfast   Topaz

0700–0830   Conference Registration
Vendor Setup   Topaz Foyer
Poster Setup (for Tuesday session only) Gallery

CONFERENCE OPENING SESSION   Topaz

0830-0840   **Welcome!** Randall Osterhuber and Ron Abramovich

0840-0900   **Keynote Address**, Mike Dettinger, USGS
Projections for the future of the Sierra Nevada and the West

0900-0915   **Vendor Introductions**, Mel Kunkel

Session A   *Snowmelt Timing, Forecasting, & Operations*   Session Chair Kevin Richards

0915-0935 *Streamflow sensitivity to a shift from snowfall to rainfall and snowmelt timing* **Kate Hale (or Noah Molotch)**, INSTAAR

0935-0955 *The importance of knowing the prior spatial snowpack energy and mass states for estimating snowmelt from rain-on-snow events* **Andrew Hedrick**, USDA-ARS Northwest Watershed Research Center

0955-1030 **Coffee Break/Visit with our vendors**

1030-1050 *Reconsidering the utility of the April 1st snow water equivalent metric for water resource applications* **Keith Musselman**, University of Colorado Boulder

1050-1110 *Converting snow depth to snow water equivalent using climatological variables* **David Hill**, OSU

1110-1130 *Impacts of declining snowpack on reservoirs and hydropower in the Willamette River basin, Oregon* **Anne Nolin**, University of Nevada, Reno

1130-1300 **Lunch** (on your own)

Session B   *Snow and Remote Sensing*, Session Chair Jeff Anderson

1300-1320 *Lasers vs. lasers: a comparison between aerial and terrestrial lidar observations and snow-probe transects from NASA's 2017 SnowEx campaign* **William Currier**, University of Washington

1320-1340 *Mapping the warm-snow zone and defining its observational and modeling challenges* **Keith Jennings**, UNR & DRI

1340-1410 **Coffee Break/Visit with our vendors**

1410-1440 *Near real time and historical trends of snow surface properties based on MODIS for the western U.S.* **Karl Rittger**, INSTAAR

1440-1500 *Predicting SWE, LWC and onset of melt of the snowpack using a combined approach of GNSS in-situ stations, earth observation and hydrological modelling* **Florian Appel**, VISTA Remote Sensing in Geosciences

1500-1730 **Poster Session**   Reno/Tahoe locals day   **Gallery**

A field study of mid-winter snowpack ablation at Sagehen Creek Field Station **Stephen Drake, UNR**

"Stories in the Snow": Identifying Tahoe Winter Storm Cloud Structures Using Citizen Science Observations of Snow Crystals **Meghan Collins, DRI**

Trace elements in snow samples from the Rocky Mountains **Monica Arienzo, DRI**

Rain-on-snow on Donner Summit, California **Randall Osterhuber, UCB**

Forecasting the Effects of Snow Drought on Streamflow Volumes in the Western U.S. **Josh Sturtevant, UNR**

How the reversal of the magnetic field of the sun modulates snowfall in the Sierra Nevada mountain range of the western United States **John Kleppe, University of Nevada, Reno**

Unraveling Controls on Differential Snow Disappearance Under the Forest Canopy versus Open Areas with Observations and Models **Hamideh H. Safa, UNR**

CAMELS-CHEM: Developing a Dataset to Facilitate Hydrochemistry Analysis Across the United States **Gary Sterle, UNR - Mountain Ecohydrology Lab**

Impacts of Recent Temperature-Driven Snow Droughts in the Northern Sierra Nevada **Dan McEvoy, DRI**

Variation in snow-rain elevations during precipitation events in the eastern Sierra Nevada: Implications for flood forecasting and hydrological modeling **Lisa Katz, UNR**

An efficient decision support tool to predict the effects of forest thinning on the Sierra Nevada snowpack **Sebastian Krogh, UNR**

Rain on Snow Flooding in the Truckee Meadows, Nevada, USA: A Case Study of Hydrology, Disaster Response, and Mitigating Future Impacts **Cory Rogaczewski, UNR**

Atmospheric Humidity Causes Diverging Changes in the Timing and Amount of Snowmelt derived Streamflow Across the West **Mackenzie Kohler, UNR - Mountain Ecohydrology Lab**

Wednesday April 17, 2019

0900-1300 **Guest breakfast and downtown Reno Tour**: Truckee River Promenade, installation art, Automobile Museum, Art Nuevo architecture, Nevada Museum of Art

0700-0830 **Poster Setup** (for Wednesday session)   Gallery

0830-0845 **Announcements** Randall Osterhuber   Topaz

Session C   **Snow and Remote Sensing,** (continued) Session Chair Kevin Richards

0845-0905 *Mapping hard snow and ice layers in the Arctic Boreal region; linkages to rain-on-snow events and wildlife* **Christopher Cosgrove**, Oregon State University

0905-0925 *Bias correction of regression-based SWE estimates in near real-time with the NASA Airborne Snow Observatory SWE data* **Kehan Yang**, University of Colorado at Boulder

0925-0945 *Automated detection of wind patterns in LiDAR snow depth data* **Dylan Reynolds**, University of Washington

0945-1030 **Coffee Break/Visit with our vendors**

Session D   **Snow in Forests**, Session Chair Kevin Richards

1030-1050 *Within-Stand Boundary Effects of Snow Water Equivalence Distribution in Forested Areas* **Ryan Webb**, University of New Mexico

1050-1110 *Montane forest water use under increased episodic and earlier snowmelt* **Ava Cooper**, U Nevada - Reno

1110-1140 *Forest Canopies Effect the Deposition and Concentration of Impurities in Sierra Nevada Snowpack* **Kelly Gleason**, Portland State University

1140-1300 **Lunch** (on your own)

Session D (continued), Session Chair Rick Kattelmann

1300-1320 *Managing Sierra forests for less snow: Improving hydrological prediction by fusing high-resolution observations and models* **Adrian Harpold**, University of Nevada, Reno

1320-1340 *Climate and Forest Disturbance Impacts on Maritime Snow in the Oregon Cascades* **Michael Johnson**, University of Nevada Reno

1340-1350 **Announcements** Randall Osterhuber

1350-1420 **Western Snow Conference Annual Business Meeting** Ron Abramovich

1420-1450 **Awards Committee Convenes** Jolyne Lea

1430-1700 **Poster Session   Guests from afar   Gallery**

Snow Cover Trends over High Mountain Asia from MODSCAG **Chelsea Ackroyd, University of Utah**

Characterization of Differences in Snow Grain Evolution in Forested and Open Environments on Grand Mesa, Colorado **Sydney Weiss, Oregon State University**

New thoughts on old methods: best practices for estimating the near-surface temperature lapse rate **Abby Lute, Univ of Idaho**

Modeling dust in snow stratigraphy and concentration using observations of snow depth and snow albedo at Senator Beck Basin **Jon Wagner, University of Utah**

Assimilating subsampled airborne lidar: How much lidar is enough? **Justin Pflug, Univ of Washington**

Snowmelt Hydrology in the North Slope of Alaska. Case Study: Upper Kuparuk River **Kelsey Dean, Univ of Alaska**

Transformation of the SNOTEL temperature record – methods and implications **Chris R. Brown, NRCS**

Rain-snow transition elevation from wireless sensor network in American and Feather River basins **Guotao Cui, UC-Merced**

Regional Variability of Canopy Interception **Cassie A. Lumbrazo, University of Washington**

Trends in Magnitude and Timing of Seasonal Streamflow Runoff at USDA Water Supply Forecast Points **Angus Goodbody, NRCS**

Snowpack variability across forest stand boundaries in a moderate snowpack **Adrian Marziliano, Univ of New Mexico**

1800-1900 **No Host Happy Hour   Topaz**

1900-2100 **Annual Banquet and Awards   Topaz**
Guest Speaker: **Dr. JE Church,** Professor of Classics, University of Nevada Reno, and Snow Survey Pioneer

Thursday April 18, 2019

0800-1600 **Technical Tour** Main Hotel Lobby/Foyer
University of Nevada JE Church Archives, Desert Research Institute's Cloud Seeding Lab, Ice Core Lab, Environmental Lab, Eco Cells, Climate Engine (on site lunch included)