

**CW3E Annual Meeting
April 15th - 18th 2019
Scripps Seaside Forum**

Monday, April 15th

12:00-12:45 Check-In

1:00-1:30 Meeting Welcome

Session: Subseasonal-to Seasonal (S2S)

Moderator: Will Chapman

1:30-1:50 Xubin Zeng: Snowpack and its impact on S2S prediction

1:50-2:10 Michael DeFlorio: Experimental Subseasonal-to Seasonal (S2S) Forecasting of Atmospheric River Activity Over the Western U.S.

2:10-2:30 Peter Gibson: Ridging associated with drought in western North America: characteristics, trends and predictability

2:30-2:50 Kristen Guirguis: An exploratory model for predicting landfalling atmospheric river activity based on interacting modes of synoptic-scale atmospheric variability

2:50-3:00 Discussion

3:00-3:15 Break

Synoptic Scale Meteorology

Moderator: Brian Kawzenuk

3:15-3:35 Lance Bosart: The Role of North Pacific Recurving and Transitioning Tropical Cyclones and Atmospheric Rivers in the Termination of "Endless Summer" in the Central and Eastern CONUS in October 2018

3:35-3:55 Zhenhai Zhang: The Feedback of Atmospheric Rivers to Extratropical Cyclones over The North Pacific

3:55-4:15 Bin Guan: Tracking Atmospheric Rivers Globally: Spatial Distributions and Life Cycle Evolutions

4:15-4:35 Ben Hatchett: Minutes to Millennia: Weather and Climate Extremes in Midlatitude Mountains and Drylands

4:35-4:45 Discussion

Tuesday, April 16th

9:00-9:15 Welcome

9:15-10:15 State of CW3E
45 min presentation and 15 mins for questions

10:15-10:45 Strategic Plan Update

10:45-11:00 Break

Session: Impacts

Moderator: Tashiana Osborne

11:00-11:20 Tom Corringham: The Economic Impacts of AR-Related Flooding in the Western United States

11:20-11:40 Nina Oakley: Recent impacts and future directions in short-duration, high intensity precipitation in California

11:40-12:00 Rosana Aguilera Becker: Atmospheric rivers impact California's coastal water quality via extreme precipitation

12:00-12:20 Mike Sierks: Characteristics, Origins, and Impacts of Summertime Extreme Precipitation in the Lake Mead Watershed

12:20-12:30 Discussion

12:30-1:30 Lunch

Session: Forecasts (1:30-3:00)

Moderator: Rachel Weihs

1:30-1:50 Chris Davis: Atmospheric River Prediction Across Scales

1:50-2:10 Jay Cordeira: Evaluating the Water Year Skill of IVT threshold forecasts and the AR Landfall Tool

2:10-2:30 Laurel DeHaan: Object-based verification of Atmospheric River Forecasts

2:30-2:50 Will Chapman: Improving AR forecasts with Machine Learning

2:40-2:50 Discussion

2:50-3:05 Break

Tuesday, April 16th

Session: Hydrology (3:05-4:25)

Moderator: Carly Ellis

- 3:05-3:25 Hilary McMillan: Hydrologic Signatures: Windows into a Watershed
- 3:25-3:45 Dennis Lettenmaier: The role of antecedent soil moisture in AR-related floods in the Russian River basin: past and future
- 3:45-4:05 Edwin Sumargo: Does antecedent soil moisture condition matter?: A case study of the February 2019 AR series
- 4:05-4:20 Lightning round on posters
- 4:30-6:30 Reception

Wednesday, April 17th

9:00-9:15 Welcome

Session: Case Studies (9:15-10:30)

Moderator: Allison Michaelis

- 9:15-9:35 Ben Hatchett: AR sensor Network Case Study
- 9:35-9:55 Nina Oakley/Forest Cannon: Predictability of hazard precipitation in an AR Recon case study
- 9:55-10:15 Alex Tardy: Decision Support Forecasts and Notifications for Winter 2018/2019 heavy precipitation impacts in Southern California
- 10:15-10:25 Discussion
- 10:25-10:45 Break
- 10:45-12:30 **FIRO**
- 10:45-11:00 FIRO Program Overview - Arleen and Marty

- FIRO Projects – Status and Next 5 Years
 - Lake Mendocino – Current Status and FVA (timeline slide)
 - Prado Dam – Current Status, FVA timeline and research needs
 - Next 5 years and research needs
 - Select 2 more reservoirs for full assessment
 - Transferability criteria (with Corps)
 - Apply criteria to 6 reconnaissance-level reservoirs

11:00-12:20 FIRO Applications – P. Sing, R. Hartman, D. Reynolds, F.Cannon

- Lake Mendocino

- WY 19 case study - Patrick Sing, USACE (20 min)
- Processing scaled events through the EFO, and developing seasonal risk curves – Dave Reynolds (20 min)
- FVA Outline and research support - Rob Hartman (15 min)
- Transferability of FIRO Approach (15 min or whatever remaining time we have)
 - Discussion about transferability issues - approach is the same but each reservoir poses unique scientific issues

12:20-12:30 FIRO priority in strategic plan - Arleen and Rob

- Objectives and strategies for next 5 years (10 min)

12:30-1:30 Lunch

1:30-3:00 **Sensor Network Evaluation**

3:00-3:15 Break

Wednesday, April 17th

Session: AR Recon and DA (3:15-4:45)

Moderator:

- 3:15-3:35 Reuben Demirdjian: A Case Study of the Physical Mechanisms Associated with the Initial Condition Sensitivity from an Adjoint Model in an AR
- 3:35-3:55 Shu-Hua: Evaluating the impact of IOP3 dropsones on rainfall forecast over western US using EFSO
- 3:55-4:15 Jennifer Haase: The use of radio occultation observations in mesoscale modeling of AR events
- 4:15-4:35 Minghua Zheng: Impacts of Dropsonde Observations on the Forecast Skills of Atmospheric Rivers
- 4:35-4:45 Discussion

Thursday, April 18th

9:00-9:15 Welcome

Session: Atmospheric Science (9:15-10:45)

Moderator: Cody Poulsen

- 9:15-9:35 Luca Delle Monache: The Potential of Machine Learning and Postprocessing for CW3E Forecasting
- 9:35-9:55 TBD
- 9:55-10:15 Forest Cannon: GPM Satellite Radar Observations of Precipitation Mechanisms in Atmospheric Rivers
- 10:15-10:35 Chad Hecht: Quasi-Geostrophic Forcing During Landfalling Atmospheric Rivers Over Northern and Southern California
- 10:35-10:45 Discussion
- 10:45-11:00 Break
- 11:00-12:00 Next Steps, Future Collaborations and Wrap-Up

Posters on Tuesday Afternoon

Carly Ellis: "Hydrograph Separation Using Stable Water Isotopes"

Meredith Fish: "Coastal sea surface temperature variability in Northern California during landfalling atmospheric rivers"

Nora Mascioli: "Influences of dust on landfalling atmospheric rivers in an idealized framework"

Allison Michaelis: "High-Resolution Global Simulations using the Model for Prediction Across Scales (MPAS) for use in Climate Change Studies"

Michael Murphy: The use of AR Recon airborne radio occultation observations in mesoscale modeling of AR events

Rui Sun: "Modeling the AR events using a coupled ocean-atmosphere model"

Edwin Sumargo: "Scientific and Operational Significances of Hydrometeorological Observations in the Russian River Watershed"

Laura Thapa: "Random Forest for Coastal IVT Forecasting"

Rachel Weihs: "West-WRF and WRF-Hydro Coupled Simulations in Lake Mendocino During the February 2019 AR Events"

Anna Wilson: "An Overview of the FIRO 2019 Field Campaign"