

# Program for the 42<sup>nd</sup> Annual Climate Diagnostics and Prediction Workshop

Norman, Oklahoma, October 23-26, 2017

## Monday, October 23, 2017

7:30 – 9:30            **Registration**

8:30 – 9:10            **Welcoming Remarks**  
- Various Speakers including University of Oklahoma Provost Kyle Harper

**Session 1:    Recent Events I**  
**Chair: Mike Halpert, NOAA CPC**

9:10 – 9:30            [California from drought to deluge: Dipole reversal and S2S forecast](#)  
Simon Wang, **Emily Becker**, Jinho Yoon, Rob Gillies, Utah State University,  
GIST Korea, NOAA/CPC, Utah State U

9:30 – 9:50            [Diagnosing the atypical extreme precipitation events under weakly forced synoptic setting: The West Virginia flood \(June 2016\) and beyond](#)  
**Binod Pokharel**, S.-Y. Simon Wang, Yen-Heng Lin, Lin Zhao, and Robert Gillies, Utah State University

9:50 – 10:10          [Changes in the statistics of U.S. tornado reports \(INVITED\)](#)  
**Michael K. Tippett**, Columbia University

10:10 – 10:40        **Break**

**Session 2:    Recent Events II**  
**Chair: Mike Halpert, NOAA CPC**

10:40 – 11:00        [Climate Prediction Center Climate Diagnostics and Prediction Workshop](#)  
**David DeWitt**, NOAA CPC

11:00 – 11:20        [The role of anomalous wave activity in high-impact weather events during the 2015-16 winter](#)  
**Samuel Lillo**, David Parsons, School of Meteorology, University of Oklahoma

11:20 – 11:40        [An Overview of the 2016-17 La Niña and return to Neutral conditions](#)  
**Michelle L'Heureux**, NOAA CPC

11:40 – 12:00        [Relation between a Rossby Wave-Breaking Event and Enhanced Convective Activities over the western North Pacific observed in August 2016](#)  
**Kazuto Takemura**, Yutaro Kubo and Shuhei Maeda, Tokyo Climate Center, Japan Meteorological Agency

12:00 – 1:15pm      **Lunch**

**Session 3:      Recent Events III**  
**Chair: Emily Becker, NOAA CPC**

1:15 – 1:35                      [\*The sudden onset of the current 2017 Northern High Plains Drought\*](#)  
**Muthuvel Chelliah** and David Miskus, NOAA CPC

1:35 – 1:55                      [\*The Australian climate of 2016; A strong negative Indian Ocean Dipole dominates\*](#)  
**Catherine Ganter**, BoM Australia

1:55 – 2:15                      [\*Causality and sub-seasonal predictability of the 2016 Yangtze River extreme rainfall\*](#)  
**Xing Yuan**, Shanshan Wang, Zeng-Zhen Hu, Institute of Atmospheric Physics, Chinese Academy of Sciences; Institute of Arid Meteorology, CMA; NOAA/CPC

2:15 – 2:35                      **Break**

**Session 4:      S2S Extremes: General Session I**  
**Chair: Jason Furtado, University of Oklahoma**

2:35 – 2:55                      [\*Advancing Atmospheric River Forecasts into Subseasonal-to-Seasonal Timescales \(INVITED\)\*](#)  
**Cory Baggett**; Elizabeth Barnes; Eric Maloney; Bryan Mundhenk, Colorado State University

2:55 – 3:15                      *Multi-model global assessment of subseasonal-to-seasonal atmospheric river prediction skill*  
**Michael J. DeFlorio**, NASA Jet Propulsion Laboratory/California Institute of Technology

3:15 – 3:35                      [\*Evaluating the Joint Influence of the MJO and the Stratospheric Polar Vortex on Northern Hemisphere Winter Weather Patterns\*](#)  
**Matthew R. Green**, The University of Oklahoma

3:35 – 3:50                      **Discussion (Facilitator: Cory Baggett, Colorado State University)**

4:00 – 5:00                      **National Weather Center tours**

5:30 – 7:30                      **Ice Breaker**

**Tuesday, October 24, 2017**

**Session 5: S2S Extremes: Severe Weather**  
**Chair: Arun Kumar, NOAA CPC**

8:30 – 8:50            The Impact of ENSO on Winter and Early Spring U.S. Tornado Outbreaks  
(INVITED)  
**Ashton Robinson Cook**, NOAA NWS Storm Prediction Center

8:50 – 9:10            [\*Developing a Experimental Week 2-4 Severe Weather Outlook for the United States\*](#)  
**Hui Wang**, Alima Diawara, Arun Kumar, and Dave DeWitt, NOAA/NWS/NCEP/CPC

9:10 – 9:30            [\*Gulf of Mexico Influence on Sub-seasonal and Seasonal Severe Thunderstorm Frequency\*](#)  
**Maria J. Molina**, John T. Allen, Vittorio A. Gensini, Department of Earth and Atmospheric Sciences, Central Michigan University, Department of Geographic and Atmospheric Science, Northern Illinois University

9:30 – 9:50            [\*Developing seasonal predictions of lightning potential for Alaska with application to the summer wildfire season\*](#)  
**Peter Bieniek**, University of Alaska Fairbanks

9:50 – 10:10           **Discussion** (*Facilitator: Ashton Robinson Cook, NOAA SPC*)

10:10 – 10:40           **Break**

**Session 6: S2S Extremes: General Session II**  
**Chair: Michael Tippett, Columbia University**

10:40 – 11:00           [\*Short-term climate extremes using the North American Multi-Model Ensemble\*](#)  
**Emily Becker**, CPC/INNOVIM

11:00 – 11:20           [\*Are the more extreme seasonal climate conditions easier to predict?\*](#)  
**Cheng-Ta Chen**, Teng-Ping Tseng, and Shou-Li Lin, National Taiwan Normal University, Department of Earth Sciences

11:20 – 11:40           [\*Evaluating the MJO forecast skill in the NCEP GEFS 35-day Experiments\*](#)  
**Wei Li**, Xiaqiong Zhou, Yuejian Zhu, Malaquias Peña, Dingchen Hou, Hong Guan, Eric Sinsky and Christopher Melhauser, EMC/NCEP

11:40 – 12:00           [\*Progress in dynamical model tools for forecasting heat waves in week 2\*](#)  
**Evan Oswald**, Jon Gottschalck, CPC/INNOVIM

12:00 – 1:20pm        **Lunch**

**Session 7: S2S Extremes: Tropical Cyclones**  
**Chair: Daniel Harnos, NOAA CPC**

1:20 – 1:40 [\*Impacts of Extratropical Rossby Wave Breaking on Atlantic Tropical Cyclones \(INVITED\)\*](#)

**Zhuo Wang**, University of Illinois at Urbana-Champaign

1:40 – 2:00 [\*Influence of Convectively Coupled Equatorial Waves, the MJO, and ENSO on the Environment of Tropical Cyclones in Coupled Atmosphere-Ocean Subseasonal Prediction Systems\*](#)

**Matthew A. Janiga**, UCAR

2:00 – 2:20 [\*Evaluations of Western North Pacific Tropical Cyclone Forecasts from the NCEP GEFSv11 Reforecasts\*](#)

**Hsiao-Chung Tsai**, Pang-Cheng Chen, Tzu-Ting Lo, Meng-Shih Chen, and Ren-Feng Liu, Department Water Resources and Environmental Engineering, Tamkang University and Central Weather Bureau, Taiwan

2:20 – 2:40 [\*Machine Learning Approaches for Diagnosis of Tropical Cyclone Errors\*](#)

**Michael B. Richman** and Lance M. Leslie, University of Oklahoma

2:40 – 3:10 **Break**

**Session 8: Climate Services**  
**Chair: David DeWitt, NOAA CPC**

3:10 – 3:30 [\*Delivering Impact-Based Seasonal Outlooks for South Central Texas\*](#)

**Larry Hopper**, Mark Lenz, Ty Dickinson, Austin-San Antonio NWS WFO

3:30 – 3:50 [\*Improving Impact-Based Seasonal Outlooks for South Central Texas\*](#)

**Ty Dickinson**, Larry Hopper, Mark Lenz, University of Oklahoma

3:50 – 4:10 [\*Regional drought early warning, impacts, and assessment for water and agriculture in the Lower Rio Grande Valley, 2016-2017\*](#)

**David Brown**, USDA Southern Plains Climate Hub

4:10 – 4:30 [\*Assessing User Needs and Model Accuracy of Seasonal Climate Forecasts for Winter Wheat Producers in the Southern Great Plains\*](#)

**Toni Klemm**; Renee McPherson, Ph.D., University of Oklahoma / South Central Climate Science Center

4:30 – 5:30 **Break**

5:30 – 7:30 **Poster Session**

**Wednesday, October 25, 2017**

**Session 9: High Latitude Variability I**  
**Chair: Sara Strey, University of Oklahoma**

- 8:30 – 8:50 [\*Diagnosing extremes and trends of seasonal temperatures in Alaska \(INVITED\)\*](#)  
**John E. Walsh** and Brian Brettschneider, University of Alaska, Fairbanks
- 8:50 – 9:10 [\*Searching for Arctic Temperature Trends and Extremes from Original Station Records\*](#)  
**Taneil Uttal**, NOAA
- 9:10 – 9:30 [\*New pathway of tropical influences on Arctic subseasonal warming events in the troposphere\*](#)  
**Yen-Heng Lin**, S.Y. Simon Wang, Department of Plants, Soils and Climate, Utah State University
- 9:30 – 9:50 [\*Predictability of Sudden Stratospheric Warmings in Operational Subseasonal-to-Seasonal Forecasting Models\*](#)  
**Jason C. Furtado**, School of Meteorology, University of Oklahoma, Judah Cohen, Emily Becker, Dan Collins
- 9:50 – 10:10 [\*Stratospheric Influence on the Mechanisms of MJO-AO Teleconnections in the S2S models\*](#)  
**Laura M. Ciasto**, NOAA Climate Prediction Center and INNOVIM, LLC
- 10:10 – 10:40 **Break**

**Session 10: High Latitude Variability II**  
**Chair: John Walsh, University of Alaska- Fairbanks**

- 10:40 – 11:00 [\*When will see an ice free summer in the Arctic Ocean? \(INVITED\)\*](#)  
**Qinghua Ding**, Michelle L'Heureux, Kirstin Harnos, Nathaniel Johnson, and Mitch Bushuk, USCB, CPC/NOAA, GFDL/NOAA
- 11:00 – 11:20 [\*Potential Impacts of New Arctic Air-Ice-Ocean Interaction Processes on Climate Diagnostics\*](#)  
**Janet Intrieri**, Ola Persson, CIRES/Univ. of Colorado/NOAA/ESRL/PSD
- 11:20 – 11:40 [\*Seasonal Arctic sea ice in the North American Multimodel Ensemble\*](#)  
**Kirstin Harnos**, Michelle L'Heureux, Qin Zhang, and Qinghua Ding, NOAA Climate Prediction Center and Innovim LLC
- 11:40 – 12:00 **Discussion (Facilitator: Qinghua Ding, Univ. of California, Santa Barbara)**

12:00 – 1:20pm      **Lunch**

**Session 11: Drought and Pluvial Events I**  
**Chair: Muthuvel Chelliah, NOAA CPC**

1:20 – 1:40      [Subseasonal prediction of warm season drought in North America \(INVITED\)](#)  
**Hailan Wang**, Siegfried D. Schubert, Yehui Chang, Randal D. Koster, NASA  
Global Modeling and Assimilation Office

1:40 – 2:00      [An Empirical Method to Generate Probabilistic Drought Intensification Forecasts over Sub-Seasonal Time Scales](#)  
**Jason Otkin**, University of Wisconsin-Madison / CIMSS / SSEC

2:00 – 2:20      [Predicting Global Drought Conditions using the North American Multi-Model Ensemble](#)  
**Jeremy P. Anthony**, US Air Force

2:20 – 2:40      [Investigation of Land Atmosphere Feedbacks in Oklahoma using Local Coupling Metrics](#)  
**Ryann Wakefield**, University of Oklahoma School of Meteorology

2:40 – 3:00      *Diagnosing extreme drought characteristics across the globe*  
**Ehsan Najafi**, Indrani Pal, Naresh Devineni, Reza Khanbilvardi, NOAA-  
Cooperative Remote Sensing Science and Technology Center (NOAA-CREST),  
City University of New York

3:00 – 3:30      **Break**

**Session 12: S2S Predictability**  
**Chair: Michelle L'Heureux, NOAA CPC**

3:30 – 3:50      [The Subseasonal Experiment \(SubX\)](#)  
**Emerson LaJoie**, NOAA CPC, Kathy Pegion, GMU/COLA

3:50 – 4:10      [An evaluation of weeks 3&4 through extended NCEP GEFS](#)  
**Yuejian Zhu**, NWS/NCEP/EMC

4:10 – 4:30      [CFS Hindcast Skill and MJO Propagation across the Maritime Continent](#)  
**Carl Schreck**, Anantha Aiyyer, Matthew Janiga, Cody Yeary, NCICS/NCSU,  
NCSU, UCAR, and NCSU

4:30 – 4:50      [The NCEP UGCSv1.0.0 for subseasonal to seasonal prediction](#)  
**Malaquias Peña**, University of Connecticut, and NCEP EMC collaborators

4:50 – 5:10 [Assesment of NMME Skill over Southwest Asia and Horn of Africa](#)  
**Ryan D. Smith**, Robb M. Randall, Ray B. Kiess, Jeremy P. Anthony, 14th  
Weather Squadron, USAF

6:00 – 8:00 **Banquet at the Sam Noble Oklahoma Museum of Natural History**  
**Keynote: Harold Brooks (NSSL)**

**Thursday, October 26, 2017**

**Session 13: Drought and Pluvial Events II**  
**Chair: David S. Gutzler, University of New Mexico**

8:50 – 9:10 [Future Projections of U.S. Drought and Pluvial Events Characteristics](#)  
**Elinor R Martin**, University of Oklahoma

9:10 – 9:30 [Primary Atmospheric Drivers of Pluvial Years in the United States Great Plains](#)  
**Paul X. Flanagan**, University of Oklahoma; School of Meteorology

9:30 – 9:50 [Long-term Variation of US Land Surface Hydrological Extremes](#)  
**Yun Fan** and Huug van den Dool, NOAA/NWS/NCEP/CPC

9:50 – 10:10 [Seasonal and interannual variability of land-atmosphere coupling across the Southern Great Plains of North America](#)  
**Jeffrey B. Basara** and Jordan I. Christian, School of Meteorology, University of Oklahoma

10:10 – 10:40 **Break**

**Session 14: Climate Diagnostics, Prediction, and Analyses**  
**Chair: Stephen Baxter, NOAA CPC**

10:40 – 11:00 [Warm Season Forecast Experiments with Different Treatments on Ground Water and Evaporative Parameterizations in the NCEP Coupled Forecast System](#)  
**Rongqian Yang** and Mike Ek, EMC/NCEP

11:00 – 11:20 [Modulated impact of heavy snowpack on 2017 streamflow in Southwestern rivers](#)  
**David S. Gutzler**, University of New Mexico

11:20 – 11:40 [Improving CPC's Handling of Long-term Trends in Seasonal Forecasts](#)  
**Stephen Baxter**, NOAA/NWS/NCEP/CPC

11:40 **Workshop Adjourns**