

Program for the 41st Annual Climate Diagnostics and Prediction Workshop

Orono, Maine, October 3-6, 2016

Monday, October 3, 2016

- 07:00 – 09:00 Registration
- 08:45 – 09:00 **Welcoming Remarks – CPC and University of Maine**
- 09:00 - 09:20 **Keynote: *Contemporary Challenges in Short-Term Climate Forecasting***
David DeWitt, Climate Prediction Center
- Session 1: The 2015-16 El Niño**
Chair: Mike Halpert
- 09:20- 09:40 *Evolution of the 2015-16 El Niño (INVITED)*
Mike McPhaden, NOAA/PMEL
- 09:40- 10:00 [*The 2015-16 El Niño and What's Next*](#)
Michelle L'Heureux and the CPC/IRI ENSO Forecast Team,
CPC/NCEP/NWS/NOAA
- 10:00– 10:20 [*Monitoring and Diagnosis of the 2015/2016 Super El Nino Event*](#)
Bing Zhou, Xie Shao, Beijing Climate Centre, CMA
- 10:20- 10:40 [*Anatomy of the 2015-2016 El Nino Episode*](#)
Agniv Sengupta (a), Sumant Nigam (a), Stephen Baxter (b), Alfredo Ruiz-Barradas (a), (a) Department of Atmospheric and Oceanic Science, University of Maryland, College Park, (b) NOAA/Climate Prediction Center, College Park, Maryland
- 10:40 – 11:10 Break
- Session 2: The 2015-16 El Niño (continued)**
Chair: Zeng-Zhen Hu
- 11:10 – 11:30 [*The 2015-16 El Niño Event from Onset to Impact*](#)
A.M. Chiodi and D.E. Harrison, UW JISAO/NOAA PMEL
- 11:30 – 11:50 [*Did the big El Niño of 2015-16 leave the expected footprint in the US?*](#)
Klaus Wolter, Andrew Hoell, and Marty Hoerling, University of Colorado-Boulder & NOAA-ESRL-PSD

- 11:50 – 12:10 [*Evolution of Winter 2015/16 Atmospheric and Terrestrial Anomalies over North America: El Niño Response and Role of noise*](#)
Mingyue Chen, and Arun Kumar, CPC/NCEP/NWS/NOAA
- 12:10 – 12:30 [*Why the 2015/16 El Niño failed to bring excessive precipitation to California?*](#)
Bor-Ting Jong, Mingfang Ting, and Richard Seager, Lamont-Doherty Earth Observatory, Columbia University
- 12:30 – 14:00 Lunch
- Session 3: Climate Modeling, MME, Prediction & Predictability I**
Chair: Dan Collins
- 14:00 – 14:20 [*NMME Real-Time vs. Historical Predictability \(INVITED\)*](#)
Ben Kirtman, University of Miami - RSMAS/CIMAS
- 14:20 – 14:40 [*Do Statistical Pattern Corrections Improve Seasonal Climate Predictions in NMME Models?*](#)
Tony Barnston and Michael Tippet, Int'l Research Inst for Climate & Society (IRI), Columbia Univ
- 14:40 – 15:00 [*Long-Range Prediction using the North American Multi-Model Ensemble \(NMME\) and Climatological Observations for Maritime Prediction and Analysis Support Service \(COMPASS\)*](#)
Alison O'Connor(a), Zac Bathen (a), Ben Kirtman(b), Ray Bell(b), and Joe Gorman(a), Charles River Analytics(a), University of Miami(b)
- 15:00 – 15:20 [*Nonstationarity in the magnitude and seasonality of extreme precipitation over U.S. Climate Regions*](#)
Shaleen Jain (1) and Nirajan Dhakal (2), (1) Department of Civil and Environmental Engineering, University of Maine; (2) Environmental and Health Sciences Program, Spelman College
- 15:20 – 15:50 Break
- Session 4: Climate Prediction & Predictability I (continued)**
Chair: Jon Gottschalck
- 15:50 – 16:10 [*Predictability of Week 3-4 Average Temperature and Precipitation over the Contiguous United States*](#)
Timothy DelSole and **Laurie Trenary**, George Mason University

- 16:10 – 16:30 [*A New Method for Determining the Optimal Lagged Ensemble*](#)
Laurie Trenary, Center for Ocean-Land-Atmosphere Studies and George Mason University
- 16:30 – 16:50 [*Sub-seasonal Precipitation and Temperature Skill and Predictability using the Extended Range NCEP Global Ensemble Forecasting System*](#)
Christopher Melhauser, Wei Li, and Yuejian Zhu, NOAA NCEP EMC/IMSG
- 16:50 – 17:10 [*Estimation and correction of the GFS systematic errors*](#)
Kriti Bhargava, Eugenia Kalnay, Jim Carton and Fanglin Yang, University of Maryland
- 17:30 – 20:00 **Ice Breaker**
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Tuesday, October 4, 2016

07:30 - 09:00 Registration

Session 5: ENSO
Chair: Michelle L'Heureux

08:30 – 08:50 *The NOAA El Niño Rapid Response Field Campaign*
Robert Webb (and many others), NOAA OAR Physical Sciences Division

08:50 - 09:10 [*A re-examination of the relationship between ENSO and the “short rains” of East Africa*](#)
Sharon E. Nicholson, Florida State University

09:10- 09:30 *Remarkable increase in global sea surface temperature in 2014 and 2015: how was it related to El Niño and decadal variability?*
Yusuke Urabe, Tamaki Yasuda, Hitomi Saitou, Kazuto Takemura Yoshinori Oikawa and Shuhei Maeda, Climate Prediction Division, Japan Meteorological Agency / Meteorological Research Institute

09:30–09:50 *Atmospheric Secular Mode and Its Possible Impact to Recent El Nino Teleconnection*
Peitao Peng and Arun Kumar, CPC/NCEP/NWS/NOAA

09:50- 10:10 *North American wintertime temperature anomalies: the role of El Nino diversity and differential teleconnections*
Mussie T. Beyene & Shaleen Jain, University of Maine

- 10:10 – 10:40 Break
- Session 6:** **ENSO (continued)**
Chair: Arun Kumar
- 10:40 – 11:00 [*Interaction between the Indian Ocean Dipole and ENSO Associated with Ocean Subsurface Variability*](#)
Hui Wang, Arun Kumar, and Raghu Murtugudde, CPC/NCEP/NWS/NOAA and the University of MD
- 11:00 – 11:20 [*Distinct patterns of Tropical Pacific SST Anomaly and Their Impacts on North American Climate*](#)
Yuanyuan Guo and **Mingfang Ting**, Lamont-Doherty Earth Observatory, Columbia University
- 11:20 – 11:40 [*Does Vertical Temperature Gradient of the Atmosphere Matter for El Niño Development?*](#)
Zeng-Zhen Hu, Bohua Huang, Yu-heng Tseng, Wanqiu Wang, Arun Kumar, Jieshun Zhu, and Bhaskar Jha, CPC/NCEP/NWS/NOAA
- 11:40 – 12:00 [*What is the variability in US west coast winter precipitation during strong El Niño events?*](#)
Arun Kumar, CPC/NCEP/NWS/NOAA
- 12:00 – 13:40 Lunch
- Session 7:** **Climate Modeling, MME, Prediction & Predictability II**
Chair: Ben Kirtman
- 13:40 – 14:00 [*Multi-Model Seasonal Forecasting at Environment and Climate Change Canada \(INVITED\)*](#)
Bill Merryfield and **Marko Markovic**, Canadian Centre for Climate Modelling and Analysis, Environment and Climate Change Canada
- 14:00 – 14:20 [*Subseasonal-to-Seasonal Science and Prediction Initiatives of the NOAA MAPP Program*](#)
Heather Archambault, Dan Barrie, and Annarita Mariotti, NOAA Climate Program Office
- 14:20 – 14:40 [*Improved climate prediction services for Australia*](#)
Robyn Duell, David Jones, Oscar Alves, Andrew Watkins, Australian Bureau of Meteorology
- 14:40 – 15:00 [*Status of Week 3-4 activities at the Climate Prediction Center*](#)
Jon Gottschalck, NOAA / Climate Prediction Center

- 15:00 – 15:30 Break
- Session 8: Climate Modeling, Prediction & Predictability II (continued)**
Chair: Kirk Maasch
- 15:30 – 15:50 [Assessment of Ensemble Regression to Combine and Weight Seasonal Forecasts from Multiple Models of the NMME](#)
Dan Collins, NOAA/NCEP Climate Prediction Center
- 15:50 – 16:10 [Calibration and Combination of CHFP precipitation forecasts over South America using Ensemble Regression](#)
Marisol Osman and Carolina Vera, Centro de Investigaciones del Mar y la Atmosfera (CIMA-CONICET/UBA)
- 16:10 – 16:30 [Validation and calibration of multi-scale catchment rainfall forecasts for use by reservoir managers in East Africa](#)
Emily E Riddle, NCAR
- 16:30 – 16:50 [Moist thermodynamical changes \(heat stress\) in the 21st Century using Weather Research and Forecast model](#)
Jonathan R Buzan, Purdue University
- 17:00 – 20:00 **Poster Session**
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Wednesday October 5, 2016

- 08:00 – 09:00 Registration
- Session 9: Prediction, Attribution & Analysis of High Impact Extreme Climate Events**
Chair: Bradfield Lyon
- 08:30 – 08:50 [Enhancing Resilience to Heat Extremes: Forecasting Excessive Heat Events at Subseasonal Lead Times \(Week-2 to Week-4\)](#)
Augustin Vintzileos, University of Maryland - ESSIC/CISC-MD
- 08:50 – 09:10 [Assessing Temperature Record Trends in Maine and New Hampshire](#)
Chris Kimble, NOAA/NWS Gray, Maine
- 09:10 – 09:30 [A New Dataset to Analyze Extreme Events in New England](#)
Muge Komurcu, Massachusetts Institute of Technology

- 09:30 – 09:50 [February 2015: A Month to Remember in New England for Record Cold](#)
Corey Bogel, NOAA/NWS/Caribou Forecast Office
- 09:50 – 10:10 [Prediction and Predictability of Atmospheric Rivers](#)
Duane Waliser, JPL/Caltech
- 10:10 – 10:40 Break
- Session 10: Extreme Climate Events (continued)**
Chair: Muthuvel Chelliah
- 10:40 – 11:00 [Relative Impacts of Mitigation, Temperature, and Precipitation on 21st-Century Megadrought Risk in the American Southwest \(INVITED\)](#)
Toby Ault, Cornell University
- 11:00 – 11:20 [Causes of Extreme Ridges that Induce California Droughts](#)
Haiyan Teng, NCAR and Grant Branstator
- 11:20 – 11:40 [Monitoring and Prediction System for Flash Droughts over the United States](#)
Kingtse C. Mo, Climate Prediction Center and Dennis P. Lettenmaier
- 11:40 – 12:00 [Storm Tracks and their Influence on High Impact Weather in the Southern Hemisphere Winter](#)
Katherine E. Lukens and E. Hugo Berbery, University of Maryland, CICS-MD
- 12:00 – 12:20 [A Global Perspective on the Seasonal Prediction of Drought and Pluvials by the NMME During 2015-16](#)
Bradfield Lyon, University of Maine
- 12:20 – 13:50 Lunch
- Session 11: Extreme Climate Events (continued)**
Chair: Shaleen Jain
- 13:50 – 14:10 [Understanding the Role of Land-Atmospheric Interaction in the NCEP Coupled Forecast System \(CFS\) on Drought Forecast for the 2011 and 2012 US Droughts](#)
Rongqian Yang and Mike Ek, EMC/NCEP/NWS and IMSG
- 14:10 – 14:30 [Attribution and Prediction of China Droughts across Scales](#)
Xing Yuan, RCE-TEA, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing 100029, China

- 14:30 – 14:50 [*Three-Dimensional Structure of Synoptic Waves over West Africa based on Empirical Orthogonal Functions*](#)
Yuan-Ming Cheng, Chris D. Thorncroft and George N. Kiladis, University at Albany, State University of New York, Albany, NY
- 14:50 – 15:10 [*Is the Active Atlantic Hurricane Era over?*](#)
Muthuvel Chelliah, CPC/NCEP/NWS
- 15:10 – 15:40 Break
- Session 12: Climate Services**
Chair: Marina Timofeyeva
- 15:40 – 16:00 [*Consultation with industry to improve Australia's climate prediction services*](#)
Robyn Duell, Alison Cook, Jeff Sabburg, Helen Bloustein, Andrew Watkins, David Jones, Australian Bureau of Meteorology
- 16:00 – 16:20 [*The Influence of Teleconnection Patterns on MCS Initiation Locations within the United States Corn Belt*](#)
Elisabeth Callen, Iowa State University
- 16:20 – 16:40 [*Application of seasonal rainfall forecasts to inform the implementation of drought contingency triggers in selected water supply reservoirs in Texas*](#)
John Zhu, Texas Water Development Board
- 16:40 – 17:00 [*Delivering NOAA's Climate Information at Regional Scales, Examples on ENSO and Drought*](#)
Ellen Mecray, NOAA Regional Climate Services Director, Eastern Region
- 17:30 – 20:30 **Banquet**
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Thursday October 6, 2016

- 08:00 – 09:00 Registration
- Session 13: Arctic Climate & Linkages to Lower Latitudes**
Chair: Sean Birkel
- 08:30 – 08:50 [*Influence of the recent high-latitude atmospheric circulation change on summertime Arctic sea ice \(INVITED\)*](#)
Qinghua Ding, Axel Schweiger, Michelle L'Heureux, David Battisti, Nathaniel Johnson, Eduardo Blanchard Wrigglesworth, Qin Zhang, Kirstin Harnos, Ryan Eastman, Eric Steig, University of California, Santa Barbara

- 08:50 – 09:10 *Arctic Change Influence on Mid-latitude Weather (INVITED)*
Judah Cohen, AER/MIT
- 09:10 – 09:30 *Inhibition of Arctic summer sea-ice melting and East Asian spring rainfall increase by western-central Pacific heating*
Song Yang, Sun Yat-sen University, China
Chudi Hu, Zhenning Li, Qigang Wu, Bian He, Junwen Chen, Kaiqiang Deng, Tuantuan Zhang and Chengyang Zhang
- 09:30 – 09:50 *Verification of experimental sea ice forecasts at the NCEP Climate Prediction Center*
Thomas Collov, INNOVIM, LLC, Wanqiu Wang and Arun Kumar, NOAA CPC
- 09:50 – 10:10 *Climate Scale Outlooks of Spring River Ice Break-up in Alaska*
Richard I. Thoman Jr, NOAA/NWS/Alaska Region
- 10:10 – 10:40 Break
- Session 14: Arctic Climate & Linkages to Lower Latitudes (continued)**
Chair: Richard Thoman
- 10:40 – 11:00 [*Recommendations on Categorizing Arctic Air Mass Intensity/Coverage and Improving the Monitoring of Arctic Source Regions Across The Northern Hemisphere*](#)
Victor Nouhan, National Weather Service Forecast Office, Caribou, Maine
- 11:00 – 11:20 [*Seasonal Prediction Skill of Northern Extratropical Surface Temperature Driven by the Stratosphere*](#)
Liwei Jia, Xiaosong Yang, Gabriel Vecchi, Richard Gudgel, Thomas Delworth, Stephan Fueglistaler, Pu Lin, Adam A. Scaife, Seth Underwood and Shian-Jiann Lin, Princeton University/GFDL
- 11:20 – 11:40 [*Advancing NOAA NWS Arctic Program Development*](#)
Marina Timofeyeva, Fiona Horsfall, Jenna Meyers, Michael Churma, and Richard Thoman, NOAA NWS
- 11:40 – 12:00 [*Climate Drivers of Tundra Vegetation Greening/Browning in the Arctic*](#)
Uma Bhatt, University of Alaska Fairbanks
- 12:00 – 13:30 Lunch

- Session 15:** **General Session: Climate Diagnostics, Prediction & Analyses**
Chair: Stephen Baxter
- 13:30 – 13:50 [*Cluster analysis of tropical modes*](#)
Carl Schreck, Cooperative Institute for Climate and Satellites - North Carolina
(CICS-NC)
- 13:50 – 14:10 [*Systematic errors in surface marine air temperature observations and their
impact on the MERRA2 atmospheric reanalysis increments*](#)
James A Carton and **Kriti Bhargava**, University of Maryland
- 14:10 – 14:30 [*Prototype new NOAA reanalyses for climate applications - 20CR version 3 and
a replacement for NCEP/NCAR reanalysis version 1 \(R1x\)*](#)
Jeff Whitaker, NOAA Earth System Research Lab
- 14:30 – 14:50 [*Rediscovering the MJO Extratropical Response: Streamfunction as a Preferred
Variable for Subseasonal Teleconnection Analysis*](#)
Stephen Baxter, NOAA/NWS/NCEP/CPC
- 14:50 Workshop Adjourn
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