



Water Forum III: Droughts and Other Extreme Weather Events October 14–15, 2013

Monday, October 14: Sessions SAC North Ballroom, 2.412
Breakfast served: 8:30–9:30AM SAC South Ballroom, 2.410

MONDAY MORNING SESSION (1/2): Water Operations in the Face of Extreme Events

Chair: Zong-Liang Yang, *Center for Integrated Earth System Science, University of Texas at Austin*

8:50–9:00AM **Logistics, Meeting Expectations and Introduction**, Zong-Liang Yang

9:00–9:20AM **Water Data and Modeling Services**, David Maidment¹, Kathy Alexander²,
Fernando Salas^{1*} and Tim Whiteaker^{1*} ¹*University of Texas at Austin*, ²*Texas Commission on
Environmental Quality*

9:20–9:40AM **Real-Time Water Modeling and Decision Support Framework**, Barbara
Minsker^{1,*}, Erhu Du¹, Jong Lee¹, Tingting Zhao¹, David Maidment², Fernando Salas² and
Zong-Liang Yang² ¹*University of Illinois Urbana–Champaign*; ²*University of Texas at Austin*

9:40–9:55AM **Real-time Water Decision Support Services for Droughts**, Tingting Zhao^{1,*},
Barbara Minsker¹, Jong Lee¹, Fernando Salas², David Maidment² and Cedric David³
¹*University of Illinois Urbana–Champaign*; ²*University of Texas at Austin*; ³*University of
California at Irvine*

9:55–10:10AM **Simulating the Feasibility and Performance of a Real-time Water Market in
Guadalupe River Basin, Texas, by Coupling an Agent-based Model and RAPID Model**,
Erhu Du¹, Barbara Minsker¹ and Ximing Cai¹ ¹*University of Illinois Urbana–Champaign*

10:10-10:30AM **BREAK**

MONDAY MORNING SESSION (2/2): Water Operations in the Face of Extreme Events

Chair: Zong-Liang Yang, *Center for Integrated Earth System Science, University of Texas at Austin*

10:30–10:50AM **“How Texas Prepares For and Responds to Drought”** Brenner Brown,¹
¹*Texas Water Development Board*

10:50–11:05AM **Applying Coupled Noah-MP and RAPID in Reservoir Level Simulation: A Case Study in Lake Buchanan, Texas**, Peirong Lin¹, Zong-Liang Yang¹, Cédric H. David², Ron Anderson³ and Xitian Cai^{1,*} ¹*University of Texas at Austin*; ²*University of California Center for Hydrologic Modeling, Irvine, CA*; ³*Lower Colorado River Authority, Austin, TX*

11:05–11:20AM **GIS-based Modeling Approach to Estimate Nitrogen Loading and Load Reduction in Lakes/ Reservoirs with Application to the San Antonio and Guadalupe Basins**, Ahmad A. Tavakoly^{1,*}, David R Maidment¹, Zong-Liang Yang¹, Tim Whiteaker¹, Lisa H. Meyer¹ and Cedric H. David² ¹*University of Texas at Austin*; ²*University of California at Irvine*

11:20–11:30AM **Publishing and Federating Global Water Data and Maps via Web Services**, David Arctur^{1,*} ¹*Center for Integrated Earth System Science, University of Texas at Austin*

11:30–12:30PM **LUNCH, SAC South Ballroom, 2.410, Sharon Mosher**, Dean, *Jackson School of Geosciences, University of Texas* and **Robert Mace**, Deputy Executive Administrator, *Water Science and Conservation Division, Texas Water Development Board*

MONDAY AFTERNOON SESSION (1/2): Monitoring Water Availability

Chair: David Maidment, *Center for Integrated Earth System Science, University of Texas at Austin*

12:30–12:50PM **Land Cover Effects on Watershed Hydrologic Memory**, Jason P. Julian^{1,*} and Robert H. Gardner² ¹*Texas State University*; ²*University of Maryland Center for Environmental Science*

12:50–1:10PM **Soil Moisture and Drought in Texas**, Todd G. Caldwell^{1,*}, Bridget R. Scanlon¹, Michael H. Young¹ and Di Long¹ ¹*Bureau of Economic Geology, University of Texas at Austin*

1:10–1:30PM **Hydrology from Space: NASA's Satellites Supporting Water Resources Applications**, Margaret Srinivasan¹, Erik Ivins¹ and John Bolten², ¹*California Institute of Technology Jet Propulsion Laboratory, Pasadena, California*; ²*Goddard Space Flight Center, Greenbelt, MD*

1:30–1:45PM **GRACE Satellite Monitoring of Large Depletion in Water Storage in Response to the 2011 Drought in Texas**, Di Long^{1,*}, Bridget R. Scanlon¹, Laurent Longuevergne², Alexander Y. Sun¹, D. Nelun Fernando^{3,4} and Himanshu Save⁵ ¹*Bureau of Economic Geology, University of Texas at Austin*; ²*Geosciences Rennes/CNRS*; ³*Department of Geological Sciences, University of Texas at Austin*; ⁴*Texas Water Development Board*; ⁵*Center for Space Research, University of Texas at Austin*

1:45–2:10PM **Fire, Earth, and Water: Soil Moisture Dynamics across a Wildfire Burn Boundary Resulting from the 2011 Labor Day Bastrop County Complex Fire**, Michael R. Kanarek¹ and M. Bayani Cardenas^{1,*} ¹*Department of Geological Sciences, University of Texas at Austin*

2:10-2:20PM **BREAK**

MONDAY AFTERNOON SESSION (2/2): Water Sustainability and Climate

Chair: Lynn Katz, *Center for Research in Water Resources, University of Texas at Austin*

2:20–2:40PM **Drought and the Water Energy Nexus in Texas**, Bridget R. Scanlon^{1,*}, Ian Duncan¹ and Robert C. Reedy¹ ¹*Bureau of Economic Geology, University of Texas at Austin*

2:40–2:55PM **Hydraulic Fracturing Water Use in the Eagle Ford Shale Play: A Systems Dynamics Approach**, Jeanne Eckhart^{1,*} ¹*University of Texas at Austin*

2:55–3:15PM **Socio-Economic Impacts of Agricultural Drought on the Texas Economy**, Jad R. Ziolkowska^{1,*} ¹*Bureau of Economic Geology, University of Texas at Austin*

3:15–3:30PM **It Takes a Village: Facilitating Public Input on Drought Management and Conservation Policy**, D. Gross^{1,*} ¹*Water Conservation Division Manager, Austin Water Utility, Austin, Texas*

3:30–3:50 **Coordinating Texas Water Research**, Jay Banner^{1,*} and Eric Hersh¹ ¹*Environmental Science Institute; Jackson School of Geosciences, University of Texas at Austin*

3:50–4:10PM **BREAK**

4:10–5:30PM **Panel Discussions**

Chair: David Maidment, *Center for Integrated Earth System Science, University of Texas at Austin*

Panel Members: Kathy Alexander, Brenner Brown, Barbara Minsker, Margaret Srinivasan, Zong-Liang Yang, Michael Young

Tuesday, October 15: Sessions SAC Legislative Assembly Room, 2.302

Breakfast Served: 8:30–9:30AM SAC Legislative Assembly Room, 2.302

TUESDAY MORNING SESSION (1/2): Factors Affecting and Affected by Droughts

Chair: Robert Dickinson, *Department of Geological Sciences, University of Texas at Austin*

8:50–9:00AM **Logistics, Meeting Expectations and Introduction**, Zong-Liang Yang

9:00–9:20AM **Explore a Process-based Early Warning Indicator for “Flash” Droughts over the US Great Plains in Supporting US Drought Monitoring and Prediction**, Rong Fu^{1,*}, Nelun Fernando^{1,2} and Ze Yang¹ ¹*Department of Geological Sciences, University of Texas at Austin*; ²*Texas Water Development Board*

9:20–9:40AM **Spatial Variability of Summer Precipitation Related to the Dynamics of the Great Plains Low-level Jet**, Bing Pu^{1,*} and Robert E. Dickinson¹ ¹*Department of Geological Sciences, University of Texas at Austin*

9:40–10:00AM **Understanding Spring Soil Moisture–Precipitation Feedback in the SGP: the Role of Large-scale Atmospheric Conditions**, Hua Su^{1,*}, Zong-Liang Yang¹, Robert E. Dickinson¹ and Jiangfeng Wei¹, ¹*University of Texas at Austin*

10:00–10:20AM **Annual Variability in Leaf Area Index and Isoprene/Monoterpene Emissions in Texas during Drought Years**, Ling Huang¹, Gary McGaughey¹, Elena McDonald-Buller^{1,*}, Yosuke Kimura¹ and David Allen¹ ¹*Center for Energy and Environmental Resources, University of Texas at Austin*

10:20–10:40AM **Short Discussion**

10:40–11:00AM **BREAK**

TUESDAY MORNING SESSION (2/2): Coastal Water Systems

Chair: Brenner Brown, *Texas Water Development Board*

11:00–11:15AM **The Role of the Mexican Plateau in Shaping Rainfall over Texas**, Tong Ren^{1,*} ¹*Department of Geological Sciences, University of Texas at Austin*

11:15–11:30AM **Inclusion of a Simple Reservoir Model in Regional-scale Surface Water Modeling**, Cédric H. David^{1,*} and James S. Famiglietti¹, ¹*University of California at Irvine*

11:30–11:45AM **Understanding Hawaiian Sustainability via Maui Water Availability, Changing Rainfall Trends, and Island Sustainability**, Carey King^{1,*}, Emily Grubert¹ and Michael Webber¹ ¹*University of Texas at Austin*

11:45–12:00PM **Methodology for Applying GIS to Evaluate Hydrodynamic Model Performance in Predicting Inundation**, Sergey K. Reid^{1,*}, Philippe E. Tissot¹, and Deidre D. Williams¹ ¹*Conrad Blucher Institute for Surveying and Science, Texas A&M University – Corpus Christi*

12:00–12:30PM **Panel Discussions**

Chair: Barbara Minsker, *University of Illinois Urbana–Champaign*

Panel Members: Cédric David, Rong Fu, Binayak Mohanty, Gabriela Stermolle, Kristin Tolle, Gordon Wells

12:30–1:30PM **LUNCH, Kevin Kloesel**, Director, *Oklahoma Climate Survey*, Associate Dean, *College of Atmospheric and Geographic Sciences, University of Oklahoma*

1:30–2:30PM **Discussion and Closing Remarks**: Zong-Liang Yang¹ and David Maidment¹ ¹*University of Texas at Austin*

2:30 PM: Water Forum Adjourns