

# 2024 Annual Meeting of the Weather Modification Association

Wednesday April 17<sup>th</sup>, 2024

## Opening Remarks

8:45AM – *Dan Breed*, President of the Weather Modification Association

## **Session 1: Operational Updates and Feasibility: Convective Programs**

Chair, *Jonathan Jennings*, WMA President-Elect, Utah Division of Water Resources

9:00AM – 9:30AM – 20-Years of TITAN Evaluations in Texas

*Archie Ruiz*, Texas Weather Modification Association

9:30AM – 9:50AM – A Review of 2023 Convective Cloud Seeding Operations in Texas

*Bria DeCarlo*, Texas Weather Modification Association

9:50AM – 10:10AM – New Initiatives in Enhancing Summertime Rainfall in the Southwestern US

*George Bomar*, Advanced Weather Modification Solutions

10:10AM – 10:20AM – HAILCAST Adaption into an Ensemble Forecasting Framework

*Adam Brainard*, Weather Modification International

10:20AM – 10:40AM - Break

## **Session 2: Operational Updates and Feasibility: Winter Programs**

Chair, *Adam Brainard*, Weather Modification International

10:40AM – 11:00AM – Investigating the Potential for Cloud Seeding in the East River Basin of Colorado

*Sarah Tessendorf*, RAL NCAR

11:00AM – 11:20AM – Cloud Seeding Feasibility in Idaho's Lemhi River Basin: Climatology and Ground Based Seeding Simulations

*Meghan Stell and Jamie Wolff*, RAL NSF NCAR

11:20AM – 11:40AM – Overview of Synoptic Scale Weather Patterns and Seeding in the Central Coast Region of California during the two most recent seasons.

*Dave Yorty*, North American Weather Consultants

11:40AM – 12:00 PM – The Nevada Cloud Seeding Program: History, Updates, and Research

*Frank McDonough*, Desert Research Institute

12:00PM – 1:40PM – Lunch Break

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## **Session 3: Research Updates: Winter Programs**

Chair, *Jake Serago*, NAWMC President-Elect, Utah Division of Water Resources

1:40PM – 2:00PM – Toward an Objective Analysis of Cool-Season Orographic Glaciogenic  
Cloud Seeding Targets

*Caleb Steele*, Weather Modification International

2:00PM– 2:20PM - Evaluating the Precipitation Impacts of Cloud Seeding in the Medicine Bow  
and Sierra Madre Mountain Ranges using WRF-WxMod<sup>®</sup> within an Ensemble  
Modeling Framework

*Michelle Harrold*, NFS-NCAR

2:20PM – 2:40PM – Assessing WRF Model Performance for the Cloud Seeding Conditions over  
Utah Mountains

*Binod Pokharel*, Utah Climate Center, Department of Plants, Solids, and  
Climate, Utah State University.

2:40PM – 3:00PM – Comparison of Aircraft and Ground-Based Effects in the Upper American  
River Basin

*Rick Stone*, RHS Consulting

3:00PM – 3:20PM - Break

## **Session 4: Research Updates: Convective Programs**

Chair, *Bria DeCarlo*, South Texas Weather Modification Association

3:20PM – 3:40PM – Refining Weather Modification Evaluations: The Crucial Role of Detailed  
Storm Tracking and Multiparameter Radar Analysis

*Roelof Burger*, Northwest University

3:40PM – 4:00PM – Observations of Wind Flow Along the Southern Red Sea  
Escarpment of Saudi Arabia

*Bruce Boe*, Weather Modification International

4:20PM – 4:40PM – Cloud Observations and Processes over Central Saudi Arabia

*Andrew Detwiler*, South Dakota School of Mines and Technology

4:40PM– 5:00PM – Analyzing the Effects of Cloud Seeding on Hail Suppression during the  
North Dakota Cloud Modification Project

*Lynnlee Rosolino*, Department of Atmospheric Science, North Dakota State  
University

5:00PM – 5:05PM – Closing Remarks, *Dan Breed*, President, Weather Modification Association

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## **Session 5: International Projects**

Chair, *Jonathan Jennings*, President-Elect, Utah Division of Water Resources

9:00AM – 9:20AM – Forecasting Hail at Grey Zone Resolutions for Operational Use in a Hail Suppression Environment

*Alexandru Szatmari*, Interventii Active in Atmosfera, Romania

9:20AM – 9:40AM – An Overview of some Extreme Hailstorms and the Importance of the Hail Suppression System in Romania

*Daniel Florea*, Interventii Active in Atmosfera, Romania

9:40AM – 10:00AM – The Recent Activities of Cloud Seeding of NIMS/KMA

*Ki-Ho Chang*, Department of Research Applications, National Institute of Meteorological Sciences, KMA

10:00AM – 10:20AM – Seeding of Supercooled Low Stratus Clouds with a UAV to Study Microphysical Ice Processes: An Introduction to the CLOUDLAB Project

*Jan Henneberger*, Institute for Atmospheric and Climate Science, ETH Zurich, Zurich, Switzerland

10:20AM – 10:40AM - Break

## **Session 6: Supporting Research and Standard Updates**

Chair, *Jonathan Jennings*, President-Elect, Utah Division of Water Resources

10:40AM – 11:10AM - Standard Practice for Weather Modification Operations – Annual Update

*Tom DeFelice*, ASCE

11:10AM – 11:30AM – Weather Modification Association Certification: Your Questions Answered Part II

*Mark Schneider*, North Dakota Atmospheric Resource Board

11:30AM – 11:50AM – Revisions to the Weather Modification Standard and Ethics Statement

*Andrew Detwiler*, South Dakota School of Mines and Technology

11:50 – Closing Remarks, *Dan Breed*, President, Weather Modification Association

12:00PM – 2:00PM – Lunch Break

# **2024 Annual Meeting of the Weather Modification Association**

**Thursday April 18<sup>th</sup>, 2024** (continued)

## **Weather Modification Association General Membership Meeting**

2:00PM – 3:30PM – Meet in same location of the sessions.

3:30PM – 5:00PM – Break

## **North American Weather Modification Council Silent Auction / Happy Hour**

5:00PM – 6:00PM

## **Weather Modification Association Banquet and Awards**

6:00PM – 8:00PM

Keynote Speaker: **David G. Schwartz**, Ombuds, professor, and gaming historian at the University of Las Vegas, Nevada