



AMS

American Meteorological Society



29th Conference on Weather Analysis and Forecasting

25th Conference on Numerical Weather Prediction

4-8 June 2018

Grand Hyatt Denver

Denver, CO

29TH CONFERENCE ON WEATHER ANALYSIS AND FORECASTING (WAF)/25TH CONFERENCE ON NUMERICAL WEATHER PREDICTION (NWP)

4-8 JUNE 2018

GRAND HYATT DENVER

DENVER, CO

Organizers

The 29th Conference on Weather Analysis and Forecasting is sponsored by the American Meteorological Society and organized by the AMS Committee on Weather Analysis and Forecasting. The 25th Conference on Numerical Weather Prediction is sponsored by the American Meteorological Society and organized by the AMS Committee on Numerical Weather Prediction.

Connect

Conference Twitter: #WAFNWP2018

WiFi Password: AMS2018

ACCOMMODATIONS

Attendees were responsible for making their own hotel arrangements. A block of rooms had been reserved at the the Grand Hyatt Denver. All sessions will take place in Colorado A, Colorado B, and the Aspen Ballroom of the Grand Hyatt Denver. The Grand Hyatt Denver is located at 1750 Welton St, Denver, CO 80202.

Thank you for booking your sleeping room at the Grand Hyatt Denver. In doing so, you're helping AMS maintain a strong pick-up history for future hotel contract negotiations, helping to keep registration rates as low as possible.

REGISTRATION

All attendees must register to attend the conference. At this time registration may be completed online or onsite at the AMS Registration Desk located in the 2nd Floor Lobby of the Grand Hyatt Denver. Everyone presenting and/or attending the 29th Conference on Weather Analysis and Forecasting (WAF)/25th Conference on Numerical Weather Prediction (NWP) must register and wear a badge. If your badge has been misplaced or you did not receive one yet, please proceed to the AMS Registration desk for assistance.

REGISTRATION HOURS

The AMS registration desk will be located in 2nd Floor Lobby of the Grand Hyatt Denver and will be open for registration during the following hours:

Sun. 03 June:	5:00 pm - 7:00 pm
Mon. 04 June:	7:30 am - 5:30 pm
Tues. 05 June:	7:30 am - 3:30 pm
Wed. 06 June:	7:30 am - 5:30 pm
Thurs. 07 June:	7:30 am - 3:30 pm
Fri. 08 June:	7:30 am - 12:30pm

POSTERS

Formal Poster Viewings will be held in the Aspen Ballroom of the Grand Hyatt Denver. Light snacks will be available during the viewings.

The set up, preview, presentation, and tear down times are as follows:

Poster #	Set Up:	Formal Poster Viewing Time	Tear Down By*
1-28	Tues. after 12:00pm	Tues: 4:00pm-5:30pm	12:00pm on Friday
29-56	Tues. after 12:00pm	Thur: 4:00pm-5:30pm	12:00pm on Friday

* Note that AMS is not responsible for posters not removed by the tear down time.

Poster Presenters are expected to stand by their poster, ready to present, during the Poster Viewing time.

SPECIAL EVENTS

Ice Breaker Reception

The Ice Breaker Reception will be held on Monday, 4 June 2018 from 6:00pm-8:00pm in the Aspen Ballroom. Light snacks and a cash bar will be available.

Women's Dinner

The Women's Dinner will take place on Thursday, 5 June at 7:00pm at Henry's Tavern. Henry's Tavern is located at 500 16th St. #184b. This event is open to all women attending the conference. Please note that attendees will be expected to pay on their own at this event.

Early Career Networking Reception

Those currently in the early stage of their career are invited to attend a get-together at Oskar Blues Grill and Brew (1624 Market Street) on Wednesday, 6 June at 7pm. Please note that attendees will be expected to pay on their own at this event.

BEYOND THE CONFERENCE

For information about local attractions, events, and restaurants in Denver, please visit the Denver CVB's website at www.denver.org/

PROFESSIONAL AND RESPECTFUL CONDUCT AT AMS MEETINGS

AMS is committed to safe and productive meetings for all attendees. Harassment, intimidation, or discrimination of any kind will not be tolerated at any meeting or event associated with the meeting. All communication should be appropriate for a professional audience including people of many different backgrounds. Be inclusive and respectful. Be kind to others. Do not insult or put down other attendees. Remember that harassment and sexist, racist, transphobic, or exclusionary jokes are not appropriate for AMS meetings. Those who violate the standards of professional and respectful conduct may be asked to leave the meeting immediately and without refund, may not be considered for service on AMS boards and committees, and may be subject to additional legal action.

Harassment, intimidation, or discrimination includes offensive comments and actions related to age, gender and gender identity, sexual orientation, disability, physical appearance, body size, race, religion; sexual images in public spaces; deliberate intimidation, stalking, or following; harassing photography or recording; sustained disruption of talks or other events; inappropriate physical contact; and unwelcome sexual attention.

General Information

This statement is meant to cover all meeting-associated events, including those sponsored by organizations other than AMS but held in relation to AMS events. This includes the scientific program, short courses, and exhibitions, as well as receptions, town hall meetings, and other informal or formal gatherings associated with AMS. Similarly, participants shall adhere to this code of conduct in online spaces related to the meeting and meeting-associated events, including Facebook, Twitter, and other online venues.

If you believe you have witnessed or have been subjected to behavior that violates professional and respectful behavior, please contact a senior member of the AMS staff. You may do this by talking with any AMS staff person (who are identified with a staff badge) or by sending an e-mail to reportconcern@ametsoc.org or leaving a message at 617-226-3965 with your contact information. You will be contacted by a senior staff member in a timely manner. (If you are not contacted within 12 hours of sending an e-mail or leaving a voicemail, please talk to an AMS staff member at the meeting to ensure that the message is received.) If you witness or experience behavior that constitutes an immediate and serious threat, please call 911 or the local police first.

The AMS takes any breach of professional conduct at an AMS meeting or related function very seriously. You are encouraged to report any unprofessional conduct in the knowledge that AMS staff members will do their best to maintain the confidentiality of all parties to the extent possible while taking appropriate actions. In situations for which additional action is warranted, the AMS will cooperate fully with the appropriate authorities.

SPECIAL NEEDS

It is our sincere desire to comply fully with both the letter and the spirit of the Americans with Disabilities Act of 1990 (ADA). Special housing needs should have been requested when making hotel reservations. Should you need assistance onsite, please see Jen Ives at the AMS Registration Desk.

AMS Oral History Project

Help AMS celebrate 100 years of meteorological advances and contribute your story in a short interview.



You can share your story about any aspect of your education, career, research, or any other facet of your experiences as a meteorologist at the AMS Oral History Project Booth that will be located in Summit Peak on the 2nd Floor of the Grand Hyatt. Timeslots are available June 4–7 (Monday–Thursday) during coffee breaks, lunch breaks, and poster sessions, or you may sign up for another specific interview time.

Your personal account will become part of the AMS Oral History Project and an important part of the AMS Centennial celebration. Please stop by or make an appointment for a specific time to talk about one of the topics below or any other aspect of your education or career experiences:

- Your decision to become a meteorologist and what made you decide on that career
- A teacher or mentor who made a difference in your undergraduate or graduate education
- Your first real research project as a graduate or post-graduate
- Your membership in AMS
- An article from an AMS journal which made a significant impression on you
- What surprised you—or didn't surprise you at all—about your first job
- Significant milestones in your career
- How you have acted as a mentor

To make an appointment to share your story, please email [Jinny Nathans](#), AMS Archivist or feel free to call or text (617) 492-3735. You can also stop by the booth with any questions or to make an appointment once on site.

Interviewer: Jinny Nathans, AMS Archivist and Curator

Welcome to Denver, Colorado and the 29th Weather Analysis and Forecasting (WAF) and 25th Numerical Weather Prediction (NWP) Conferences. The Denver region is home to many in the atmospheric science community, be it at NCAR, NOAA, or the several universities with atmospheric science and meteorology programs in the area. This makes it an apt location for our conference, which takes place from June 4-8, 2018 at the Grand Hyatt Denver downtown.

We have a comprehensive program to offer, with over two dozen oral sessions, two large poster sessions, several keynote speakers, and events for networking while you're here. With topics ranging from winter to tropical weather, mesoscale meteorology to planetary-scale atmospheric dynamics, data assimilation, ensemble forecasting, physical parameterizations, and more, there should be something to offer for everyone. In addition, we have several invited keynote speakers. These include recent AMS award winner Becky DePodwin of AccuWeather (Award for Exceptional Specific Prediction), and WAF Committee award winner, Dr. Curtis Alexander (WAF Committee Early Career Award). Dr. Pam Heinselman (NSSL) will discuss the Warn-on-Forecast project, and Dr. Andrew Brown (ECMWF Director of Research) will give an update on ECMWF's operations on the recent occasion of the 20th anniversary of their implementation of 4D-Var. We also have several opportunities for networking, including an ice breaker reception on Monday evening, a women's dinner on Tuesday, and a happy hour organized by the AMS Board for Early Career Professionals on Wednesday. In addition, we'll be hosting a NOAA Model Development Forum on Tuesday, where you can discuss your thoughts for the future of the NCEP modeling suite. Finally, with so many locals in attendance, we're sure you'll have no trouble finding activities and places to visit outside of the conference.

Planning of these conferences is a big undertaking, and it would not be possible without the work and support of many dedicated individuals. First, our AMS meeting coordinator Jen Ives, with assistance from Marissa Welch, expertly handled the logistics of the conference. Our program committee members: James Belanger, Jeremy Berman, Kari Bowen, Megan Franke, Gail Hartfield, Aaron Hill, Justin McLay, Andrew Molthan, Louisa Nance, Sam Ng, Ryan Sobash, and Nusrat Yussouf, as well as the AMS Committee on Weather Analysis and Forecasting chair Becky Adams-Selin and vice-chair Clark Evans, were vital to the abstract review and event planning process, and I thank them for volunteering their time.

Enjoy your time in Denver, and feel free to reach out to us if you have any questions, comments, or suggestions!

Christopher McCray
Program Chairperson

Numerical Weather Prediction (NWP)

Conference Series

16–18 October 1967	Monterey, CA	(First) Conference on Numerical Weather Prediction
1–4 October 1973	Monterey, CA	Second Conference on Numerical Weather Prediction
26–28 April 1977	Omaha, NE	Third Conference on Numerical Weather Prediction
29 Oct.–1 Nov. 1979	Silver Springs, MD	Fourth Conference on Numerical Weather Prediction
2–6 November 1981	Monterey, CA	Fifth Conference on Numerical Weather Prediction
6–9 June 1983	Omaha, NE	Sixth Conference on Numerical Weather Prediction
17–20 June 1985	Montreal, QC, Canada	Seventh Conference on Numerical Weather Prediction
22–26 February 1988	Baltimore, MD	Eighth Conference on Numerical Weather Prediction
14–18 October 1991	Denver, CO	Ninth Conference on Numerical Weather Prediction
18–22 July 1994	Portland, OR	10th Conference on Numerical Weather Prediction
19–23 August 1996	Norfolk, VA	11th Conference on Numerical Weather Prediction
11–16 January 1998	Phoenix, AZ	12th Conference on Numerical Weather Prediction
13–17 September 1999	Denver, CO	13th Conference on Numerical Weather Prediction
30 July–2 August 2001	Fy. Lauderdale, FL	14th Conference on Numerical Weather Prediction
12–16 August 2002	San Antonio, TX	15th Conference on Numerical Weather Prediction
11–15 January 2004	Seattle, WA	16th Conference on Numerical Weather Prediction
1–5 August 2005	Washington, D.C.	17th Conference on Numerical Weather Prediction
25–29 June 2007	Park City, Utah	18th Conference on Numerical Weather Prediction
1–5 June 2009	Omaha, NE	19th Conference on Numerical Weather Prediction
22–27 January 2011	Seattle, WA	20th Conference on Numerical Weather Prediction
29 May–1 June 2012	Montreal, Canada	21st Conference on Numerical Weather Prediction
2–6 February 2014	Atlanta, GA	22nd Conference on Numerical Weather Prediction
29 June–3 July 2015	Chicago, IL	23rd Conference on Numerical Weather Prediction
22–26 January 2017	Seattle, WA	24th Conference on Numerical Weather Prediction
4–8 June 2018	Denver, CO	25th Conference on Numerical Weather Prediction

Weather Analysis & Forecasting (WAF)

Conference Series

23–25 March 1966	Chicago, IL	(First) Conf. on Modern Methods of Weather Forecasting & Analysis
28 Feb.–2 March 1967	Santa Barbara, CA	Conference on Fair Weather Meteorology
3–5 September 1969	Virginia Beach, VA	Third Conference on Weather Forecasting & Analysis
1–4 May 1972	Portland, OR	Fourth Conference on Weather Forecasting & Analysis
4–7 March 1974	St. Louis, MO	Fifth Conference on Weather Forecasting & Analysis
10–13 May 1976	Albany, NY	Sixth Conference on Weather Forecasting & Analysis
16–19 October 1978	Silver Springs, MD	Seventh Conference on Weather Forecasting & Analysis
10–13 June 1980	Denver, CO	Eighth Conference on Weather Forecasting & Analysis
28 June–1 July 1982	Seattle, WA	Ninth Conference on Weather Forecasting & Analysis
25–29 June 1984	Clearwater Beach, FL	10th Conference on Weather Forecasting & Analysis
17–20 June 1986	Kansas City, MO	11th Conference on Weather Forecasting & Analysis
2–6 October 1989	Monterey, CA	12th Conference on Weather Forecasting & Analysis
3–6 August 1993	Vienna, VA	13th Conference on Weather Forecasting & Analysis
15–20 January 1995	Dallas, TX	14th Conference on Weather Forecasting & Analysis
19–23 August 1996	Norfolk, VA	15th Conference on Weather Forecasting & Analysis
11–16 January 1998	Phoenix, AZ	16th Conference on Weather Forecasting & Analysis
13–17 September 1999	Denver, CO	17th Conference on Weather Analysis & Forecasting
30 July–2 August 2001	Ft. Lauderdale, FL	18th Conference on Weather Analysis & Forecasting
12–16 August 2002	San Antonio, TX	19th Conference on Weather Analysis & Forecasting
11–15 January 2004	Seattle, WA	20th Conference on Weather Analysis & Forecasting
1–5 August 2005	Washington, D.C.	21st Conference on Weather Analysis & Forecasting
25–9 June 2007	Park City, Utah	22nd Conference on Weather Analysis & Forecasting
1–5 June 2009	Omaha, NE	23rd Conference on Weather Analysis & Forecasting
22–27 January 2011	Seattle, WA	24th Conference on Weather Analysis & Forecasting
29 May–1 June 2012	Montreal, Canada	25th Conference on Weather Analysis & Forecasting
2–6 February 2014	Atlanta, GA	26th Conference on Weather Analysis & Forecasting
29 June–3 July 2015	Chicago, IL	27th Conference on Weather Analysis & Forecasting
22–26 January 2017	Seattle, WA	28th Conference on Weather Analysis & Forecasting
4–8 June 2018	Denver, CO	29th Conference on Weather Analysis & Forecasting

Monday, 4 June 2018		
	WAF	NWP
Room	Colorado A	Colorado B
	1A: Tropical Meteorology	1B: Model Center Overviews I
8:15	Welcoming Remarks	Welcoming Remarks
8:30	1A.1 Kiladis, G. N.	1B.1 Lapenta, W.
8:45	1A.2 Dias, J.	
9:00	1A.3 Bengtsson, L. K.	1B.2 Reynolds, C. A.
9:15	1A.4 Leonardo, N.	1B.3 Doyle, J. D.
9:30	1A.5 Jin, Y.	1B.4 Tournay, R.
9:45	1A.6 Jin, H.	1B.5 Hanley, K.
10:00	Coffee Break (Colorado Foyer)	
	2A: High-Impact Local Weather Events	2B: Local Application of Regional Models and Regional Climate Downscaling
10:30	2A.1 DePodwin, R.	2B.1 Steinle, P.
10:45		2B.2 Radhakrishnan, C.
11:00	2A.2 Nielsen, E. R.	2B.3 Madaus, L.
11:15	2A.3 Yussouf, N.	
11:30	2A.4 Mass, C. F.	2B.5 Connelly, R.
12:00	Lunch Break	
	3A: Winter Weather I: Banded Snow and Icing	3B: Updates on Global and Mesoscale Models
1:30	3A.1 Lackmann, G. M.	3B.1 Carley, J. R.
1:45	3A.2 Radford, J. T.	3B.2 Hamill, T. M.
2:00	3A.3 McCray, C. D.	3B.3 Lin, H.
2:15	3A.4 Splawinski, S.	3B.4 Kuchera, E.
2:30	3A.5 Lenning, E.	3B.5 Doyle, J. D.
2:45	3A.6 Baumgardt, D. A.	3B.6 Wilt, B. A.
3:00	3A.7 Thompson, G.	3B.7 Wong, J.
3:15	3A.8 Coleman, T. A.	3B.8 Judt, F.
3:30	Coffee Break (Colorado Foyer)	
	4A: Winter Weather II: Probabilistic Products and High-Impact Events	4B: New or Improved Parameterizations I
4:00	4A.1 Novak, D. R.	4B.1 Benjamin, S.
4:15	4A.2 Perfater, S.	4B.2 English, J. M.
4:30	4A.3 Thielke, T. K.	4B.3 Jimenez, P. A.
4:45	4A.4 Burg, T.	4B.4 Olson, J. B.
5:00	4A.5 Bosart, L. F.	4B.5 Ma, S.
5:15	4A.6 Dawson, L. C.	4B.6 Yudin, V. A.
6:00	Ice Breaker Reception (Aspen Ballroom)	
8:00	Sessions End for the Day	

Tuesday, 5 June 2018		
	WAF	NWP
Room	Colorado A	Colorado B
	5A: Dynamics of Mid- and High-Latitude Weather	5B: NOAA's Next Generation Global Prediction System
8:00	5A.1 Gyakum, J. R.	5B.1 Stajner, I.
8:15	5A.2 Atallah, E. H.	5B.2 Tallapragada, V.
8:30	5A.3 Bentley, A. M.	5B.3 Yang, F.
8:45	5A.4 Bunker, E. M.	5B.4 Zhang, C.
9:00	5A.5 Keyser, D.	5B.5 Kurkowski, N. P.
9:15	5A.6 Biernat, K. A.	5B.6 Bernardet, L.
9:30	5A.7 Bowley, K.	5B.7 Kolczynski, W. Jr.
9:45	5A.8 Berman, J. D.	
10:00	Coffee Break (Colorado Foyer)	
	6A: Forecast Communication and Societal Impacts	6B: Model Center Overviews II
10:30	6A.1 Morss, R. E.	6B.1 Brown, A.
10:45	6A.2 Demuth, J. L.	
11:00	6A.3 Semmens, K.	6B.2 Grell, G. A.
11:15	6A.4 Dube, K.	6B.3 Dowell, D. C.
11:30	6A.5 Neilley, P. P.	6B.4 Hutchinson, T.
12:15		NOAA Modeling Development Forum
	7A: Testbed and Proving Ground Activities	7B: Data Assimilation Development and Testing
1:30	7A.1 Meyer, T. C.	7B.1 Kleist, D. T.
1:45	7A.2 Snook, N.	7B.2 Thomas, C.
2:00	7A.3 Jung, Y.	7B.3 Cipriani, J. P.
2:15	7A.4 Wang, Y.	7B.4 Hu, M.
2:30	7A.5 Weinrich, J.	7B.5 Ge, G.
2:45	7A.6 Lamberson, W. S.	7B.6 Ladwig, T. T.
3:00	7A.7 Ganetis, S. A.	7B.7 Wang, Y.
3:15	7A.8 Szoke, E.	7B.8 Mallick, S.
3:30	Coffee Break (Aspen Foyer)	
4:00	Formal Poster Viewing (Aspen Ballroom)	
5:30	Sessions End for the Day	

Wednesday, 6 June 2018		
WAF		NWP
Room	Colorado A	Colorado B
	8A: Forecasting Tools: New Applications	8B: New Data Assimilation Techniques
8:00	8A.1 Heinselman, P. L.	8B.1 Romine, G.
8:15		8B.2 Trailovic, L.
8:30	8A.2 Kalmikov, A. G.	8B.3 Zhao, Q.
8:45	8A.3 Reeves, H. D.	
9:00	8A.4 Reinhart, A. E.	8B.5 Stratman, D. R.
9:15	8A.5 Coleman, T. A.	8B.6 Otkin, J.
9:30	8A.6 Grempler, K.	8B.7 Stefanescu, R.
9:45	8A.7 Muccilli, M.	8B.8 Albers, S.
10:00	Coffee Break (Colorado Foyer)	
	9A: Forecasting Tools: Machine Learning Applications	9B: New or Improved Parameterizations II
10:30	9A.1 Lagerquist, R. A.	9B.1 Kain, J. S.
10:45	9A.2 Gagne, D. J. II	9B.2 Lee, J. A.
11:00	9A.3 Schumacher, R. S.	9B.3 Cheng, A.
11:15	9A.4 Schaffer, J.	9B.4 Otkin, J.
11:30	9A.5 Roebber, P.	
11:45	9A.6 Honor, A. N.	9B.6 Colle, B. A.
12:00	Lunch Break	
	10A: Mesoscale Meteorology and Severe Local Storms I: Modeling Studies of Mcss and Other Convective Events	10B: Forecast Verification Methods and Performance I
1:30	10A.1 Weisman, M.	10B.1 Tolman, H. L.
1:45	10A.2 Adams-Selin, R.	10B.2 Toth, Z.
2:00	10A.3 Lombardo, K.	10B.3 Mandelbaum, T. S.
2:15	10A.4 Vertz, N. J.	10B.4 Rodwell, M. J.
2:30	10A.5 Evans, C.	10B.5 Squitieri, B. J.
2:45	10A.6 Henson, C. B.	10B.6 Thielen, J. E.
3:00	10A.7 Potvin, C. K.	10B.7 Newman, K. M.
3:30	Coffee Break (Colorado Foyer)	
	11A: Forecasting Techniques: New Data Products and Analyses	11B: New Ensemble and Probabilistic Forecasting Techniques I
4:00	11A.1 Reinhart, A. E.	11B.1 Hamill, T. M.
4:15	11A.2 Weygandt, S. S.	11B.2 Luo, Y.
4:30	11A.3 Levine, S.	11B.3 Du, J.
4:45	11A.4 Zhang, X.	11B.4 Wang, Y.
5:00	11A.5 Weinrich, J.	11B.5 Herman, G. R.
5:15	11A.6 Zupanski, D.	11B.6 McLay, J. G.
5:30	Sessions End for the Day	

Thursday, 7 June 2018		
	WAF	NWP
Room	Colorado A	Colorado B
	12A: Research to Operations and Forecast Verification	12B: Improving Model Performance and Efficiency I
8:00	12A.1 Nelson, J. A. Jr.	12B.1 Alexander, C. R.
8:15	12A.2 Schneider, T. L.	
8:30	12A.3 Paturi, S.	12B.2 Alcott, T.
8:45	12A.4 Ortega, K. L.	12B.3 James, E. P.
9:00	12A.5 Fryer, K. R.	12B.4 Evans, C.
9:15	12A.6 Williams, J. K.	12B.5 Penc, R. S.
9:30	12A.7 Belanger, J. I.	12B.6 Liu, P.
10:00	Coffee Break (Colorado Foyer)	
	13A: Research to Operations and Forecast Verification	13B: Improving Model Performance and Efficiency II
10:30	13A.1 Case, J. L.	13B.1 Parsons, D. B.
10:45	13A.2 DeHaan, L. L.	13B.2 Firl, G.J.
11:00	13A.3 Jensen, T. L.	13B.3 Juang, H. M. H.
11:15	13A.4 Biswas, M. K.	13B.4 Hertneky, T. J.
11:30	13A.5 Gilleland, E.	13B.5 Kavulich Jr., M. J.
11:45	13A.6 Bua, W. R.	13B.6 Smith, J. A.
12:00	Lunch Break	
	14A: Forecasting Techniques: New Data Types and Observational Platforms	14B: New Ensemble and Probabilistic Forecasting Techniques at the Hazardous Weather Testbed
1:30	14A.1 Brewster, K. A.	14B.1 Potvin, C. K.
1:45	14A.2 Gasperoni, N. A.	14B.2 Hanley, K.
2:00	14A.3 Coniglio, M. C.	14B.3 Flora, M. L.
2:15	14A.4 Yussouf, N.	14B.4 Johnson, A.
2:30	14A.5 Hu, J.	14B.5 Gallus, W. A. Jr.
2:45	14A.6 Koch, S. E.	14B.6 Jirak, I. L.
3:00	14A.7 Moore, A. D.	14B.7 Roberts, B.
3:15	14A.8 Ma, Z.	14B.8 Clark, A.
3:30	Coffee Break (Aspen Foyer)	
4:00	Formal Poster Viewing (Aspen Ballroom)	
6:00	Sessions End for the Day	

Friday, 8 June 2018		
WAF		NWP
Room	Colorado A	Colorado B
	15A: Mesoscale Meteorology and Severe Local Storms II: Observational Analyses from Vortex-SE and Other	15B: New Ensemble and Probabilistic Forecasting Techniques II
8:00	15A.1 Koch, S. E.	15B.1 Schwartz, C. S.
8:15	15A.2 Coleman, T. A.	15B.2 Wolff, J. K.
8:30	15A.3 Haliczzer, D.	15B.3 Case, J. L.
8:45	15A.4 Hulsey, C. B.	15B.4 Porson, A.
9:00	15A.5 Lyza, A. W.	15B.5 Gehne, M.
9:15	15A.6 Conrad, D. M.	15B.6 Lawson, J. R.
9:30	15A.7 Kuster, C. M.	15B.7 Bengtsson, L. K.
9:45	15A.8 Kelley, J.	
10:00	Coffee Break (Colorado Foyer)	
	16A: Quantitative Precipitation Forecasting and Hydrology	16B: Forecast Verification Methods and Performance II
10:30	16A.1 Novak, D. R.	16B.1 Levit, J.
10:45	16A.2 Shafer, P. E.	16B.2 Jensen, T. L.
11:00	16A.3 Szoke, E.	16B.3 Raby, J. W.
11:15	16A.4 Milrad, S. M.	16B.4 Melick, C. J.
11:30	16A.5 Carlberg, B. R.	16B.5 Gallo, B. T.
11:45	16A.6 Herman, G. R.	16B.6 Hepper, R. M.
12:00	16A.7 Mahoney, K.	16B.7 Gowan, T. M.
12:15	16A.8 Kelsch, M.	16B.8 Fiorino, M.
12:30	Conference Concludes	

29TH CONFERENCE ON WEATHER AND FORECASTING (WAF) 25TH CONFERENCE ON NUMERICAL WEATHER PREDICTION (NWP)

AMS Committee on Weather Analysis and Forecasting

Becky Adams-Selin, Chairperson and Clark Evans, Vice-Chairperson

Alicia Bentley, Louisa Bogar Nance, Joseph Slezak, Syrena-Marie Aboud, Robert F. Banks, Martin A. Baxter,

James I. Belanger, Jason Furtado, Gail I. Hartfield-Supina, Justin McLay, Shawn M. Milrad, Sam Ng,

Jonathan C. Porter, Alex Tardy, Jennifer E. Tate, Jerry W. Wegiel, Nusrat, Yussouf

Program Committee

Christopher McCray, Chairperson

James Belanger, Jeremy Berman, Kari Bowen, Megan Franke, Gail Hartfield, Aaron Hill,

Justin McLay, Andrew Molthan, Louisa Nance, Sam Ng, Ryan Sobash, and Nusrat Yussouf

Monday, June 04

7:30 A.M.—5:30 P.M.	Registration Open—2nd Floor Lobby
10:00 A.M.—10:30 A.M.	Coffee Break—Colorado Foyer
12:00 P.M.—1:30 P.M.	Lunch Break
3:30 P.M.—4:00 P.M.	Coffee Break—Colorado Foyer
6:00 P.M.—8:00 P.M.	Ice Breaker Reception—Aspen Ballroom

8:15 A.M.—10:00 A.M.

29WAF

Session 1A: TROPICAL METEOROLOGY —COLORADO A

Chairs: Clark Evans, UW-Milwaukee, Milwaukee, WI; James I. Belanger, The Weather Company, Andover, MA

8:15 A.M.

Welcoming Remarks. **Rebecca Adams-Selin**, AER, Offutt AFB, NE

8:30 A.M.

1A.1 *The Performance of the NCEP and ECMWF Operational Models for Quantitative Precipitation Forecasts during 2015-2016.*

George N. Kiladis, ESRL, Boulder, CO; J. Dias, M. Gehne, P. Bechtold, T. Haiden

8:45 A.M.

1A.2 *Diagnosing Sources of Operational Forecast Model Errors in Tropical-Extratropical Interactions.* **Juliana Dias**, CIRES/Univ. of Colorado and NOAA/ESRL, Boulder, CO; G. N. Kiladis, M. Gehne

9:00 A.M.

1A.3 *The Role of ECMWF Deep and Shallow Convection Schemes and ECMWF Initial Conditions on Equatorial Waves in the NOAA/NCEP Forecasting Systems..* **Lisa K Bengtsson**, CIRES/Univ. of Colorado, Boulder, CO; J. Dias, M. Gehne, P. Bechtold, J. W. Bao, P. Pegion, S. A. Michelson

9:15 A.M.

1A.4 *An Investigation of Large Track Errors of North Atlantic Tropical Cyclones.* **Nicholas Leonardo**, SUNY, Stony Brook, NY; B. A. Colle

9:30 A.M.

1A.5 *High-Resolution Simulation of Hurricane Patricia (2015)—Rapid Intensification.* **Yi Jin**, NRL, Monterey, CA; D. R. Ryglicki, H. Jin, J. D. Doyle, J. R. Moskaitis

9:45 A.M.

1A.6 *Development of a Post Processes Method for High-Resolution Surface Winds and Pressure for Hindcasts of Hurricane Surge.* **Hao Jin**, NRL, Monterey, CA; J. Doyle

8:15 A.M.—10:00 A.M.

25NWP

Session 1B: MODEL CENTER OVERVIEWS I —COLORADO B

Chairs: Christopher D. McCray, McGill Univ., Montréal, Canada; Bruce Telfeyan, AMS, Boston, MA

8:15 A.M.

Welcoming Remarks. **Christopher McCray**, McGill Univ., Montreal, QC, Canada

8:30 A.M.

1B.1 *Planned Upgrades to the NCEP Operational Modeling Suite.* **William Lapenta**, NOAA/NWS/NCEP, College Park, MD

9:00 A.M.

1B.2 *Update on the US Navy's Earth System Prediction Capability Effort.* **Carolyn A. Reynolds**, NRL, Monterey, CA; N. P. Barton, C. Bishop, D. P. Eleuterio, M. Flatau, S. Frolov, P. Hogan, G. Jacobs, M. A. Janiga, J. G. McLay, E. J. Metzger, J. G. Richman, J. Ridout, E. Rogers, C. D. Rowley, B. Ruston, T. R. Whitcomb

9:15 A.M.

1B.3 *Overview of the Navy's Coupled Mesoscale Modeling System and Future Plans.* **James D. Doyle**, NRL, Monterey, CA; S. Chen, C. M. Amerault, D. D. Flagg, S. Gabersek, T. Haack, R. M. Hodur, T. R. Holt, X. Hong, Q. Jiang, H. Jin, Y. Jin, W. A. Komaromi, J. R. Moskaitis, J. Nachamkin, P. A. Reinecke, D. R. Ryglicki, J. Schmidt, D. P. Tyndall, S. Wang, L. Xu

9:30 A.M.

1B.4 *US Air Force Modeling Capability at the 557th Weather Wing.* **Robert Tournay**, 16th Weather Squadron, Offutt AFB, NE

9:45 A.M.

1B.5 Numerical Weather Prediction at the Met Office: Recent Progress and Future Direction. **Kirsty Hanley**, Met Office, Reading, United Kingdom; B. Macpherson, W. Tennant, D. Walters

10:30 A.M.–12:00 P.M.

29WAF

Session 2A: HIGH-IMPACT LOCAL WEATHER EVENTS –COLORADO A

Chairs: Martin A. Baxter, Central Michigan Univ., Mt. Pleasant, MI; Megan Franke, Metropolitan State Univ., Denver

10:30 A.M.

2A.1 Meteorologist Expertise, Client Relationships, and Data Synthesis: How AccuWeather Enterprise Solutions Provides Lifesaving Warnings to Clients (Award for Exceptional Specific Prediction). **Rebecca DePodwin**, AccuWeather, Inc., State College, PA

11:00 A.M.

2A.2 Observations of Extreme Short-Term Precipitation Associated with Supercells and Mesovortices. **Erik R. Nielsen**, Colorado State Univ., Fort Collins, CO; R. S. Schumacher

11:15 A.M.

2A.3 Applications of Warn-on-Forecast for Flash-Flood Producing Extreme Convective Rainfall Events. **Nusrat Yussouf**, CIMMS/OU/ NSSL, Norman, OK; P. L. Heinselman, T. A. Jones, P. S. Skinner, D. C. Dowell, X. Wang

11:30 A.M.

2A.4 The Northern California Fires of October 2017: A Terrain-Induced Downslope Windstorm Well Predicted by Mesoscale Models. **Clifford F. Mass**, Univ. of Washington, Seattle, WA; D. Ovens

10:30 A.M.–12:00 P.M.

25NWP

Session 2B: LOCAL APPLICATION OF REGIONAL MODELS AND REGIONAL CLIMATE DOWNSCALING –COLORADO B

Chairs: Thomas M. Hamill, NOAA, Boulder, CO; Evan Kuchera, USAF 16th Weather Squadron, Offutt Air Force Base, NE

10:30 A.M.

2B.1 Rapid Update Convective Scale NWP Systems for Australia. **Peter Steinle**, BoM, Docklands, Australia; X. Sun, S. J. Rennie, M. Krysta, S. Cooper

10:45 A.M.

2B.2 Improving the CASA Prediction System over Dallas Fort Worth (DFW) Urban Network By Blending Radar-Based Nowcasting and High-Resolution Numerical Weather Prediction Models. **Chandrasekar Radhakrishnan**, Colorado State Univ., Fort Collins, CO; C. V. Chandra

11:00 A.M.

2B.3 Cloud-Based WRF Downscaling Simulations at Scale Using Community Reanalysis and Climate Datasets. **Luke Madaus**, Jupiter, Boulder, CO; J. Hacker, J. Exby

2B.4 WITHDRAWN

11:30 A.M.

2B.5 Predictability of Snow Multi-Bands in the Cyclone Comma Head Using a 40-Member WRF Ensemble. **Ryan Connelly**, SUNY, Stony Brook, NY; B. A. Colle

1:30 P.M.–3:30 P.M.

29WAF

Session 3A: WINTER WEATHER I: BANDED SNOW AND ICING –COLORADO A

Chairs: John Gyakum, McGill Univ., Montreal, Canada; Lisa K Bengtsson, CIRES/Univ. of Colorado, Boulder, CO

1:30 P.M.

3A.1 Investigation of Hydrometeor Lofting During Banded Snowfall Events. **Gary M. Lackmann**, North Carolina State Univ., Raleigh, NC

1:45 P.M.

3A.2 Verification of High-Resolution Banded Snowfall Forecasts. **Jacob T. Radford**, North Carolina State Univ., Raleigh, NC; G. Lackmann, M. A. Baxter

2:00 P.M.

3A.3 Long-Duration Freezing Rain Events over North America: Regional Climatology and Maintenance Mechanisms. **Christopher D. McCray**, McGill Univ., Montréal, Canada; J. R. Gyakum, E. H. Atallah

2:15 P.M.

3A.4 Freezing Rain: an Analysis of Rare Events Associated with Northwesterly Winds at Montreal, Quebec (CYUL) and Overall Impacts of Freezing Precipitation on the Aviation Industry. **Sophie Splawinski**, EC, Montreal, Canada

2:30 P.M.

3A.5 A Revised Bourgouin Precipitation-Type Algorithm. **Eric Lenning**, NOAA/NWS Chicago WFO, Romeoville, IL; K. Birk

2:45 P.M.

3A.6 Vertical Temperature and Moisture Characteristics of Drizzle and Freezing Drizzle Environments. **Dan A. Baumgardt**, NWS, La Crosse, WI; A. Just, T. Rieck

3:00 P.M.

3A.7 The Ability of the WRF Model to Predict Aircraft and Ground Icing Conditions. **Gregory Thompson**, NCAR, Boulder, CO; M. K. Politovich, R. M. Rasmussen

3:15 P.M.

3A.8 The 28 January 2014 “Snowmageddon” in the Southeastern U.S.. **Timothy A. Coleman**, Univ. of Alabama, Huntsville, AL; J. P. Dice

1:30 P.M.–3:30 P.M.

25NWP

Session 3B: UPDATES ON GLOBAL AND MESOSCALE MODELS –COLORADO B

Chairs: Georg A. Grell, ESRL, Boulder, CO; Rebecca Adams-Selin, AER, Offutt AFB, NE

MONDAY

1:30 P.M.

3B.1 *Ongoing Upgrades to NOAA's Real Time Mesoscale Analysis System.* **Jacob R. Carley**, NOAA/NCEP/EMC, College Park, MD; M. Pondeva, S. Levine, R. Yang, Y. Lin, S. Flampouris, J. Whiting, S. Melchior, A. M. Gibbs, R. J. Purser, B. T. Blake, G. Manikin, B. Yang, E. Colón, X. Zhang, M. T. Morris, M. Pyle, E. Rogers, J. C. Derber

1:45 P.M.

3B.2 *NOAA's Next-Generation, Modern-Era Global Reanalysis and Reforecast.* **Thomas M. Hamill**, NOAA, Boulder, CO; J. Whitaker, V. Tallapragada

2:00 P.M.

3B.3 *Assimilation of Polar Orbiter and Geostationary Satellite Data in the Rap and HRRR Models: Recent Upgrades and Ongoing Work with New Observation Sets..* **Haidao Lin**, CIRA/Colorado State Univ. and NOAA/ESRL/GSD, Boulder, CO; S. S. Weygandt, A. Back, M. Hu, J. M. Brown, C. R. Alexander

2:15 P.M.

3B.4 *A New Operational Global Ensemble from the United States Air Force.* **Evan Kuchera**, USAF 16th Weather Squadron, Offutt Air Force Base, NE

2:30 P.M.

3B.5 *Overview of the Navy's Next-Generation NEPTUNE Modeling System.* **James D. Doyle**, NRL, Monterey, CA; P. A. Reinecke, K. C. Viner, D. D. Flagg, S. Gabersek, M. Martini, J. Michalakes, D. R. Ryglicki, F. X. Giraldo

2:45 P.M.

3B.6 *MPAS (Model for Prediction Across Scales): An Overview of Forecast Evaluation and Improvements.* **Brett A. Wilt**, The Weather Company, Andover, MA; J. P. Cipriani

3:00 P.M.

3B.7 *MPAS for Operational Turbulence Forecasts and Other Commercial Applications.* **John Wong**, The Weather Company, an IBM Business, Andover, MA; T. Hutchinson, J. K. Williams, C. Meyer

3:15 P.M.

3B.8 *Insights into Atmospheric Predictability Through Global Convection-Permitting Model Simulations.* **Falko Judt**, NCAR, Boulder, CO

4:00 P.M.—5:30 P.M.

29WAF

Session 4A: WINTER WEATHER II: PROBABILISTIC PRODUCTS AND HIGH-IMPACT EVENTS – COLORADO A

Chairs: Eyad Atallah, McGill Univ., Westmount, Canada; Alicia M. Bentley, SUNY, Albany, NY

4:00 P.M.

4A.1 *A Vision for Probabilistic Winter Weather Services.* **David R. Novak**, NOAA/NWS, College Park, MD; D. Soroka, G. W. Carbin

4:15 P.M.

4A.2 *The Testing of Deterministic and Probabilistic Precipitation Type Algorithms During the 2017-2018 HMT-WPC Winter Weather Experiment.* **Sarah Perfater**, MSG, College Park, MD

4:30 P.M.

4A.3 *A Statistical and Approach to Improve Predictability of Cold Season Precipitation Type and Amount for the HRRR-TLE.* **Timothy Kirk Thielke**, University of Wisconsin Milwaukee, Milwaukee, WI; P. Roebber

4:45 P.M.

4A.4 *Applying Forecast Track Diagnostics in High-Impact Northeast Winter Storms: Climatology and Case Analysis.* **Tomer Burg**, SUNY, Albany, NY; A. L. Lang, K. L. Corbosiero, R. D. Torn

5:00 P.M.

4A.5 *The "Pi-Day" Coastal Storm of 14 March 2017.* **Lance F. Bosart**, SUNY, Albany, NY; A. M. Bentley, T. Burg, A. C. Winters

5:15 P.M.

4A.6 *Systematic Biases in NCEP Model Guidance for 2017-2018 East Coast Winter Storms.* **Logan C. Dawson**, NOAA/NWS/NCEP/EMC, College Park, MD; T. A. Dorian, G. S. Manikin

4:00 P.M.—5:30 P.M.

25NWP

Session 4B: NEW OR IMPROVED PARAMETERIZATIONS I – COLORADO B

Chairs: Jared A. Lee, NCAR, Boulder, CO; Greg Thompson, NCAR, Boulder, CO

4:00 P.M.

4B.1 *A Mesoscale Physics Suite to Reduce PBL Errors Including Cloud-Radiation Errors from Day 1 HRRR to Week 4 Subseasonal-Global Prediction.* **Stan Benjamin**, NOAA/ESRL, Boulder, CO; G. Grell, J. Olson, T. Smirnova, C. Alexander

4:15 P.M.

4B.2 *Simulating Vortex-SE Weather Events with a Scale-Adaptive PBL Scheme in the HRRR Model at Varying Resolutions.* **Jason M. English**, CIRES/Univ. of Colorado, Boulder, CO; D. D. Turner, J. B. Olson, J. S. Kenyon

4:30 P.M.

4B.3 *Unifying Vertical Turbulent Mixing and Horizontal Diffusion into a Three Dimensional Planetary Boundary Layer Parameterization.* **Pedro A. Jimenez**, NCAR, Boulder, CO; B. Kosovic, A. Martilli

4:45 P.M.

4B.4 *Improving Forecasts of Low-Level Winds Induced by Thermal Troughs in the Columbia River Basin.* **Joseph B. Olson**, CIRES, Boulder, CO; J. Kenyon, J. M. Brown, M. Toy, K. Lantz, R. M. Banta, L. Bianco, Y. Pichugina, J. Sharp, M. T. Stoelinga, C. Long, M. B. Smith, R. Pierce, K. Holub, M. Marquis

5:00 P.M.

4B.5 *Comparisons of Air-Sea Flux Parameterizations on the Intensity Prediction of GRAPES-GFS.* **Suhong Ma**, NWPD/NMC, Beijing, China

5:15 P.M.

4B.6 *Gravity Wave Physics and Dynamics in the FV3-based Atmosphere Models Extended into the Mesosphere.* **Valery A. Yudin**, Colorado Univ., Boulder, CO; R. A. Akmaev, J. C. Alpert, T. J. Fuller-Rowell, S. I. Karol

Tuesday, June 05

7:30 A.M.–3:30 P.M.	Registration Open–2nd Floor Lobby
10:00 A.M.–10:30 A.M.	Coffee Break–Colorado Foyer
12:00 P.M.–1:30 P.M.	Lunch Break
12:15 P.M.–1:15 P.M.	NOAA Modeling Development Forum –Colorado B
3:30 P.M.–4:00 P.M.	Coffee Break–Aspen Foyer
4:00 P.M.–5:30 P.M.	Formal Poster Viewing–Aspen Ballroom

8:00 A.M.–10:00 A.M.

29WAF

Session 5A: DYNAMICS OF MID- AND HIGH-LATITUDE WEATHER –COLORADO A

Chairs: Youngsun Jung, CAPS/Univ. of Oklahoma, Norman, OK; Charles M. Kuster, CIMMS/NOAA NSSL, Norman, OK

8:00 A.M.

5A.1 *Analysis and Prediction of Large-Scale Cold-Season Atmospheric Circulation Regimes Associated with Extreme Weather over North America.* **John R. Gyakum**, McGill Univ., Montreal, Canada; E. H. Atallah, J. Hart, Y. Low

8:15 A.M.

5A.2 *A Simple Definition of Flow Regimes and its Relationship to High Impact Weather Events.* **Eyad H. Atallah**, McGill Univ., Montreal, Canada; S. M. Milrad, D. J. Gyakum, Y. Low, J. Hart

8:30 A.M.

5A.3 *Extratropical Cyclones leading to Extreme Weather Events over Central and Eastern North America.* **Alicia M. Bentley**, SUNY, Albany, NY; D. Keyser, L. F. Bosart

8:45 A.M.

5A.4 *An Analysis of Large-Scale Regime Transition on the Spatiotemporal Distribution of Cyclone Clustering.* **Eric M Bunker**, SUNY, Albany, NY; L. F. Bosart

9:00 A.M.

5A.5 *Linkages Between Tropopause Polar Vortices and the Great Arctic Cyclone of August 2012.* **Daniel Keyser**, SUNY, Albany, NY; K. A. Biernat, L. F. Bosart

9:15 A.M.

5A.6 *A Multiscale Analysis and Predictability Study of a Polar Low Linked to a Tropopause Polar Vortex.* **Kevin A. Biernat**, SUNY, Albany, NY; D. Keyser, L. F. Bosart

9:30 A.M.

5A.7 *A Diagnosis of the Role of Anticyclonic Rossby Wave Breaking in Increasing Zonal Available Potential Energy.* **Kevin Bowley**, Pennsylvania State Univ., State College, PA; J. R. Gyakum, E. H. Atallah

9:45 A.M.

5A.8 *The Impact of Warm Conveyor Belt Forecast Errors on Variability in the Downstream Waveguide within MPAS Forecasts.* **Jeremy D. Berman**, SUNY, Albany, NY; R. D. Torn

8:00 A.M.–10:00 A.M.

25NWP

Session 5B: NOAA'S NEXT GENERATION GLOBAL PREDICTION SYSTEM –COLORADO B

Chairs: John S. Kain, EMC, College Park, MD; Sam Ng, Metropolitan State Univ., Denver, CO

8:00 A.M.

5B.1 *Building NOAA's Next Generation Global Prediction System.* **Ivanka Stajner**, NOAA/NWS, Silver Spring, MD; F. Toepfer, V. Tallapragada, S. Warren, H. L. Tolman, N. P. Kurkowski, T. L. Schneider

8:15 A.M.

5B.2 *Operational Global Modeling Advancements at NCEP: Beta Version of FV3-GFS Parallel Implementation Details and Performance Evaluation.* **Vijay Tallapragada**, NOAA/NWS/NCEP/EMC, College Park, MD

8:30 A.M.

5B.3 *Evaluation of Retrospective and Real-time NGGPS FV3GFS Experiments for Q3FY18 Beta Implementation.* **Fanglin Yang**, NOAA, College Park, MD; V. Tallapragada

8:45 A.M.

5B.4 *Evaluation of FV3 Convection-Allowing Forecasts over CONUS using Different Physics Schemes during the 2018 Hazardous Weather Testbed Spring Experiment.* **Chunxi Zhang**, CAPS, Norman, OK; M. Xue, T. A. Supinie, N. Snook, K. A. Brewster, F. Kong, K. Thomas, L. Harris, S. J. Lin

9:00 A.M.

5B.5 *Plans to Evolve HWRF to a Regional FV3-based Hurricane Model within NOAA's Unified Forecasting Strategy.* **Nicole P. Kurkowski**, NWS, Silver Spring, MD; E. Rappaport, F. Toepfer, F. Marks, S. G. Gopalakrishnan, V. Tallapragada, M. DeMaria, I. Stajner, T. L. Schneider

9:15 A.M.

5B.6 *Facilitating Development of Physical Parameterizations for NOAA's Unified Forecast System.* **Ligia Bernardet**, CIRES/Univ. of Colorado, NOAA/GSD and Developmental Testbed Center, Boulder, CO; G. J. Firl, J. S. Kain, V. Tallapragada, F. Toepfer, B. Gross

9:30 A.M.

5B.7 *Impact of Stochastic Physics in FV3-GEFS—Preliminary Results.* **Walter Kolczynski**, NOAA/NWS/NCEP/EMC via IMISG, College Park, MD; B. Fu, P. Pegion, Y. Zhu, D. Hou

10:30 A.M.–12:00 P.M.

29WAF

Session 6A: FORECAST COMMUNICATION AND SOCIETAL IMPACTS –COLORADO A

Chairs: Megan Franke, Metropolitan State Univ., Denver, CO; Jason Levit, EMC, College Park, MD

10:30 A.M.

6A.1 *Understanding Weather Forecast Communication, Interpretation, and Use through Analysis of Twitter Data.* **Rebecca E. Morss**, NCAR, Boulder, CO; J. L. Demuth, M. Bica, L. Palen, J. Anderson, K. M. Anderson, J. Henderson, M. Kogan, H. Lazrus, K. Stowe, O. Wilhelm

TUESDAY

10:45 A.M.

6A.2 *NWS Forecasters' Interpretations, Uses, and Needs Regarding High-Resolution Ensemble Guidance.* **Julie L. Demuth**, NCAR, Boulder, CO; R. E. Morss, I. Jankov, C. R. Alexander, T. Alcott, D. Nietfeld, T. Jensen

11:00 A.M.

6A.3 *Major Risks, Uncertain Outcomes: Making Ensemble Forecasts Work for Multiple Audiences.* **Kathryn Semmens**, Nurture Nature Center, Easton, PA; B. E. Montz, R. H. Carr, K. Maxfield, S. Connolly, P. R. Ahnert, R. Shedd, J. C. Elliott

11:15 A.M.

6A.4 *Climate Change and Potential Impacts on Tourism. Evidence from the Zimbabwean Side of the Victoria Falls World Heritage Site.* **Kaitano Dube**, Univ. of South Africa, Johannesburg, South Africa; G. Nhamo

11:30 A.M.

6A.5 *Why Good Weather Isn't Good Enough: The O2D (Operations to Decisions) Divide.* **Peter P. Neillley**, The Weather Company/IBM, Andover, MA; J. K. Williams

10:30 A.M.—12:00 P.M.

25NWP

Session 6B: MODEL CENTER OVERVIEWS II – COLORADO B

Chairs: Bruce Telfeyan, AMS, Boston, MA; Christopher D. McCray, McGill Univ., Montréal, Canada

10:30 A.M.

6B.1 *ECMWF: Progress and Plans (Invited Presentation).* **Andrew Brown**, ECMWF, Reading, United Kingdom

11:00 A.M.

6B.2 *NWP Prediction at ESRL/GSD: Overview of Global Modeling Development Activities.* **Georg A. Grell**, ESRL, Boulder, CO; L. Bernardet, S. Sun, R. Ahmadov, J. M. Brown, C. DeLuca, M. W. Govett

11:15 A.M.

6B.3 *Regional NWP Development at NOAA's Earth System Research Laboratory.* **David C. Dowell**, NOAA/ESRL/GSD, Boulder, CO

11:30 A.M.

6B.4 *Numerical Weather Prediction at IBM/The Weather Company: Overview of a Global Rapidly-Updating Forecast System.* **Todd Hutchinson**, The Weather Company, Andover, MA; B. A. Wilt, J. Wong, J. P. Cipriani

12:15 P.M.—1:15 P.M.

25NWP

Town Hall Meeting: NOAA MODELING DEVELOPMENT FORUM –COLORADO B

1:30 P.M.—3:30 P.M.

29WAF

Session 7A: TESTBED AND PROVING GROUND ACTIVITIES –COLORADO A

Chairs: Sarah Perfater, MSG, College Park, MD; Adam Clark, NOAA/NSSL, Norman, OK

1:30 P.M.

7A.1 *An Overview of the 2017 Experimental Warning Program at the Hazardous Weather Testbed.* **Tiffany C. Meyer**, CIMMS/Univ. of Oklahoma and NOAA/NSSL, Norman, OK; K. Berry, M. A. Bowlan, K. M. Calhoun, J. Correia Jr., G. S. Garfield, A. Gerard, T. L. Hansen, C. D. Karstens, K. E. Klockow, D. M. Kingfield, D. LaDue, J. G. LaDue, C. Ling, K. L. Manross, H. Obermeier, G. J. Stumpf

1:45 P.M.

7A.2 *Verification of CAPS Storm-scale Ensemble Forecasts from the 2017 HMT FFAIR Experiment and a Patchwise Localized Probability Matched Mean for Ensemble Precipitation Forecasts.* **Nathan Snook**, CAPS/Univ. of Oklahoma, Norman, OK; F. Kong, M. Xue, K. Brewster, K. W. Thomas, T. A. Supinie

2:00 P.M.

7A.3 *Development of GSI-Based EnKF and Hybrid EnVar Data Assimilation Capabilities for Continental-Scale 3-km Convection-Permitting Ensemble Forecasting and Testing via NOAA Hazardous Weather Testbed Spring Forecasting Experiments.* **Yongsun Jung**, CAPS/Univ. of Oklahoma, Norman, OK; M. Xue, G. Zhao, J. Luo, T. A. Supinie, C. Liu, R. Kong, F. Kong, K. Thomas

2:15 P.M.

7A.4 *Development and Research of GSI based EnVar with Direct Radar Data Assimilation for the US NWS Operational Regional Convection Allowing Modeling Systems to Improve Convection-Allowing Hazardous Weather Forecast and Results during the HWT Spring Experiments.* **Yongming Wang**, Univ. of Oklahoma, Norman, OK; X. Wang, J. R. Carley, D. C. Dowell

2:30 P.M.

7A.5 *Joint Polar Satellite System (JPSS) Proving Ground Initiatives.* **Jeffrey Weinrich**, JPSS, Washington, DC

2:45 P.M.

7A.6 *The Weather Prediction Center Day 8-10 Forecast Experiment: Experiment Overview.* **William S. Lamberson**, MSG, College Park, MD; M. J. Bodner, S. Ganetis, J. Kastman, J. A. Nelson Jr.

3:00 P.M.

7A.7 *The Weather Prediction Center Day 8-10 Forecast Experiment: Assessment and Verification.* **Sara A. Ganetis**, NOAA/NWS and MSG, College Park, MD; M. J. Bodner, W. S. Lamberson, J. Kastman, J. A. Nelson Jr.

3:15 P.M.

7A.8 *An Update on CIRA's NWS Proving Ground Activities: Advancing New Satellite Products Into Operations.* **Ed Szoke**, NOAA/ESRL/GSD and CIRA, Boulder, CO; D. Bikos, B. H. Connell, H. Gosden, S. Miller, J. Torres, R. Brummer, D. T. Lindsey, D. W. Hillger, D. A. Molenaar, C. J. Seaman

1:30 P.M.–3:30 P.M.

25NWP

Session 7B: DATA ASSIMILATION DEVELOPMENT AND TESTING –COLORADO B

Chairs: Todd Hutchinson, The Weather Company, Andover, MA; Carolyn A. Reynolds, NRL, Monterey, CA

1:30 P.M.

7B.1 *Data Assimilation Development and Testing for the Initial Version of the FV3-GFS.* **Daryl T. Kleist**, NOAA, College Park, MD; R. B. Mahajan, C. Thomas, J. C. Derber, R. Treadon, A. Collard, J. Whitaker

1:45 P.M.

7B.2 *Data Assimilation Development for the 2019 Operational FV3-GFS.* **Catherine Thomas**, EMC, College Park, MD; R. Mahajan, D. T. Kleist, R. Treadon, J. S. Whitaker

2:00 P.M.

7B.3 *Development of a GSI-based Global Data Assimilation System for the Model for Prediction Across Scales.* **James P. Cipriani**, The Weather Company, Yorktown Heights, NY; B. A. Wilt, T. Hutchinson, J. Wong

2:15 P.M.

7B.4 *Building Functional Similar Testing System for Community Researchers to Contribute Operational Storm-Scale Data Assimilation.* **Ming Hu**, NOAA/ESRL/GSD and CIRES/Univ. of Colorado, Boulder, CO; G. Ge, C. Zhou, C. R. Alexander, S. Weygandt

2:30 P.M.

7B.5 *Further Improvements of Radial Wind Assimilation in the High-Resolution Rapid Refresh (HRRR) model.* **Guoqing Ge**, CIRES at NOAA/ESRL/GSD, Boulder, CO; M. Hu, C. Zhou, J. Beck, S. Weygandt, C. Alexander

2:45 P.M.

7B.6 *Hybrid Ensemble-Variational Data Assimilation for Cloud Hydrometeors in GSI.* **Therese T. Ladwig**, NOAA/ESRL/GSD and CIRES/Univ. of Colorado, Boulder, CO; M. Hu, C. R. Alexander, S. S. Weygandt, D. C. Dowell, S. G. Benjamin, J. M. Brown

3:00 P.M.

7B.7 *Predictions of Tornado-like Vortex Embedded in the 8 May 2003 Oklahoma City Tornadic Supercell Initialized from the Sub-Kilometer Analysis Produced By the GSI-Based EnVar Data Assimilation System.* **Yongming Wang**, Univ. of Oklahoma, Norman, OK; X. Wang

3:15 P.M.

7B.8 *Storm-Scale Satellite Data Assimilation into the WoF GSI-EnKF System: Recent Results and Future Plans.* **Swapan Mallick**, CIMMS, NOAA/ NSSL, Norman, OK; T. A. Jones, K. H. Knopfmeier, D. C. Dowell, X. Wang, P. Skinner, P. Minnis

25NWP / 29WAF

Joint Poster Session 1:WAF/NWP POSTER SESSION I - ASPEN BALLROOM

1 *The Occurrences of Significant Tornadoes Across the High Plains Under Favorable Synoptic Conditions.* **Sam Ng**, Metropolitan State Univ., Denver, CO; T. K. Croan

2 *The Effects of Differential Friction on PBL Kinematics and Possible Influences on Tornadoes and CI.* **Timothy A. Coleman**, Univ. of Alabama, Huntsville, AL; A. M. Weigel

3 *Climatology of High-Impact Supercells over Northeastern Wyoming and Western South Dakota.* **Keith D. Sherburn**, NOAA/ NWS, Rapid City, SD; M. J. Bunkers

4 *Research and Operational Challenges Posed by the 18 November 2017 High-Shear/Low-CAPE QLCS Tornado Outbreak in North Alabama.* **Anthony W. Lyza**, Univ. of Alabama, Huntsville, AL; K. Knupp

5 *A Recent Climatological Look at Tornado Events Relative to Sunset.* **Erik R. Nielsen**, Colorado State Univ., Fort Collins, CO; G. R. Herman, J. M. Peters, R. S. Schumacher

6 *Dynamical Insights into Extreme Short-Term Precipitation Associated with Supercells and Mesovortices.* **Erik R. Nielsen**, Colorado State Univ., Fort Collins, CO; R. S. Schumacher

7 *Research on Atmospheric Conditions supporting MCSs over East China in Summer.* **Liu Zhang**, Colorado State Univ., Fort Collins, CO

8 *Analysis of Back-Building of a Simulated MCS in an Environment with a Low Level Stable Layer.* **Stacey M. Hitchcock**, Colorado State Univ., Fort Collins, CO; R. S. Schumacher

9 *An Investigation of the Conditional Practical Predictability of the 31 May 2013 Heavy-Rain-Producing Mesoscale Convective System.* **Clark Evans**, UW-Milwaukee, Milwaukee, WI; A. R. Kurosaki

10 *Analysis of Convectively Generated Gravity Waves in the 14-15 July 2015 Mesoscale Convective System During PECAN.* **Faith P. Groff**, Colorado State Univ., Fort Collins, CO; R. S. Schumacher, R. Adams-Selin

11 *Evaluation of HAILCAST during NOAA/Hazardous Weather Testbed Spring Forecasting Experiments using Multiple Verification Metrics.* **Rebecca Adams-Selin**, AER, Offutt AFB, NE; A. Clark, C. Melick, S. R. Dembek, I. L. Jirak, C. Ziegler

12 *Impact of Increased Resolution on Storm-Scale Ensemble Performance in the US Southeast.* **John R. Lawson**, CIMMS/NSSL, Norman, OK; C. K. Potvin

13 *Improving NWS Convection-Allowing Hazardous Weather Ensemble Forecasts through Optimizing Multi-Scale Initial Condition (IC) Perturbations.* **Aaron Johnson**, Univ. of Oklahoma, Norman, OK; X. Wang

TUESDAY

- 14** *Enhancing Storm-Scale 1-h Probabilistic Low-Level Rotation Forecasts through Machine Learning.* **Montgomery L. Flora**, Univ. of Oklahoma, Norman, OK; C. K. Potvin, A. McGovern, P. S. Skinner
- 15** *Convection-Allowing Ensemble Forecasts Using the Model for Prediction across Scales.* **Ryan A. Sobash**, NCAR, Boulder, CO; C. S. Schwartz
- 16** *How Well Can a Climate Model Simulate an Extreme Precipitation Event: a Case Study using Transpose-AMIP Experiment.* **Jian Li**, Chinese Academy of Meteorological Sciences, Beijing, China; H. Chen
- 17** *New Data for Old Storms: Can New, Convection-Allowing Ensemble Simulations of Historic Storms Help Minimize Present-Day Flood Risk?.* **Kelly Mahoney**, ESRL, Boulder, CO; C. McColl, B. D. Kappel, D. M. Hultstrand
- 18** *The Impact of Microphysics Schemes in Convection-Allowing Simulations of Banded Snowfall.* **Martin A. Baxter**, Central Michigan Univ., Mt. Pleasant, MI; P. N. Schumacher, J. T. Radford, G. M. Lackmann
- 19** *Multiscale Frontal Circulations during the 6–8 January 2014 Lake-Effect Snow Event: Understanding their Superposition and Predictability using Convection-Permitting Ensemble Forecasts.* **Daniel Keyser**, SUNY, Albany, NY; W. M. Bartolini, J. Minder, C. S. Schwartz, R. D. Torn
- 20** *The Weather Prediction Center Day 8-10 Forecast Experiment: Development and Utilization of Forecast Tools.* **William S. Lamberson**, IMMSG, College Park, MD; M. J. Bodner, S. Ganetis, J. Kastman, J. A. Nelson Jr.
- 21** *Assessing the Subseasonal Predictability of PV Streamer Activity compared to Tropical Cyclone activity using the Navy Earth System Model.* **Philippe P. Papin**, NRC/NRL, Monterey, CA; C. Reynolds, M. A. Janiga
- 22** *Verification of Multi-Model Ensemble Forecasts of North Atlantic Tropical Cyclones..* **Nicholas Leonardo**, SUNY, Stony Brook, NY; B. A. Colle
- 23** *Using the Big Weather Web Ensemble to Examine Systemic Biases in WRF-model Parameterizations.* **Russ S. Schumacher**, Colorado State Univ., Fort Collins, CO; K. Tyle
- 24** *Using SURFRAD and CERES Datasets to Evaluate Physics Parameterizations.* **Michelle Harrold**, NCAR, Boulder, CO; M. Zhang, J. K. Wolff, L. Bernardet, J. K. Henderson
- 25** *The Model Evaluation Tools (MET): Recent Additions and Enhancements.* **John E. Halley Gotway**, NCAR, Boulder, CO; T. L. Jensen, R. Bullock, H. Soh, J. Prestopnik
- 26** *Development of an Adaptive Ensemble Technique.* **Tyler J. Wixtrom**, Texas Tech Univ., Lubbock, TX; B. C. Ancell
- 27** *Dependence of Model Performance on Vertical Resolution for Operational Prediction.* **Haixia Mei**, Jiangsu Institute of Meteorological Science, Nanjing, China; X. Z. Liang, M. Zeng, C. sun, Y. Li, Q. Li
- 28** *Diagnosis of the Radiation Fluxes in Grapes-GFS and Related Improvements.* **Guangguang Cheng**, China Meteorological Administration, Beijing, China

Wednesday, June 06

7:30 A.M.–5:30 P.M.	Registration Open–2nd Floor Lobby
10:00 A.M.–10:30 A.M.	Coffee Break–Colorado Foyer
12:00 P.M.–1:30 P.M.	Lunch Break
3:30 P.M.–4:00 P.M.	Coffee Break–Colorado Foyer
6:00 P.M.–8:00 P.M.	Early-Career Get-Together–Oskar Blues Grill and Brew (Pay on Own)

8:00 A.M.–10:00 A.M.

29WAF

Session 8A: FORECASTING TOOLS: NEW APPLICATIONS –COLORADO A

Chairs: Nusrat Yussouf, CIMMS/OU/NSSL, Norman, OK; Gail Hartfield, NOAA/NWS, Raleigh, NC

8:00 A.M.

8A.1 *A Vision for the Development and Implementation of the Warn-on-Forecast Concept (Invited Presentation).* **Pamela L. Heinselman**, NOAA/NSSL, Norman, OK

8:30 A.M.

8A.2 *Forecasts on Demand for Renewable Energy and Agriculture at The Weather Company, an IBM Business.* **Alexander G. Kalmikov**, The Weather Company, Andover, MA; J. K. Williams, C. S. Guiang, J. I. Belanger, J. P. Koval, D. Winn, T. Crawford, H. C. Hassenzahl, P. Neillay

8:45 A.M.

8A.3 *The Multi-Radar/Multi-Sensor System Expansion into the Transportation Sector.* **Heather D. Reeves**, CIMMS/Univ. of Oklahoma and NOAA/NSSL, Norman, OK; S. Handler, A. A. Rosenow, K. W. Howard, K. Cooper, A. E. Reinhart, D. M. Kingfield, R. Toomey, S. B. Cocks, M. J. Simpson, A. P. Osborne

9:00 A.M.

8A.4 *The Multi-Year Reanalysis of Remotely Sensed Storms Progress Update and Research Overview.* **Anthony E. Reinhart**, CIMMS, and NOAA/OAR/NSSL, Norman, OK; K. L. Ortega, T. M. Smith

9:15 A.M.

8A.5 *Shear Available Potential Energy (SHAPE): A Quantitative Measure of the Effect of Wind Shear on Convective Updraft Potential.* **Timothy A. Coleman**, Univ. of Alabama, Huntsville, AL; K. Knupp

9:30 A.M.

8A.6 *Using the Downdraft Convective Inhibition (DCIN) to Evaluate Severe Weather Threats from Elevated Convection.* **Kevin Grempler**, Univ. of Missouri, Columbia, MO; P. S. Market, C. B. Henson, S. Ritter

9:45 A.M.

8A.7 *National Weather Service Baltimore/Washington's Model Verification Internal Web Display.* **Michael Muccilli**, NWS Baltimore/Washington, Sterling, VA

8:00 A.M.–10:00 A.M.

25NWP

Session 8B: NEW DATA ASSIMILATION TECHNIQUES –COLORADO B

Chairs: James P. Cipriani, The Weather Company, Andover, MA; Catherine Thomas, EMC, College Park, MD

8:00 A.M.

8B.1 *Assessment of Covariance Inflation Options for a Continuously-Cycled Mesoscale EnKF Analysis System.* **Glen Romine**, NCAR, Boulder, CO; C. Schwartz, K. Fossell

8:15 A.M.

8B.2 *Testing an Optimized 4D-Var Technique in NWP Models.* **Lidia Trailovic**, CIRES, Boulder, CO; I. Jankov, J. Guerrette, C. W. Harrop, Y. Trémolet, M. W. Govett

8:30 A.M.

8B.3 *NRL Four-dimensional Variational Radar Data Assimilation for Improved Near-term and Short-term Storm Prediction.* **Qingyun Zhao**, NRL, Monterey, CA; T. R. Holt, P. Harasti, C. M. Amerault, L. Xu, N. Baker, J. Doyle, Y. Jin, H. Jin, M. Frost, Q. Xu, H. J. Chen, B. S. Chua, D. Geiszler

8B.4 WITHDRAWN

9:00 A.M.

8B.5 *Correcting Storm Displacement Errors in Ensembles Using the Feature Alignment Technique (FAT).* **Derek R. Stratman**, OU/CIMMS and NOAA/OAR/NSSL, Norman, OK; C. K. Potvin, L. J. Wicker

9:15 A.M.

8B.6 *Nonlinear Bias Correction for Satellite Data Assimilation.* **Jason Otkin**, Univ. of Wisconsin, Madison, WI; R. Potthast, A. Lawless

9:30 A.M.

8B.7 *Radio Occultation Observation Operators for Data Assimilation.* **Razvan Stefanescu**, Spire Global, Inc., Boulder, CO; M. Gorbunov, V. Irisov, D. Zupanski, R. McKeown, T. Brown, C. Holt, A. E. MacDonald

9:45 A.M.

8B.8 *The Use of Sky Cameras to Validate and Augment Satellite/Radar Based Cloud Assimilation.* **Steve Albers**, CIRA, Boulder, CO; D. Nietfeld, Z. Toth

10:30 A.M.–12:00 P.M.

29WAF

Session 9A: FORECASTING TOOLS: MACHINE LEARNING APPLICATIONS –COLORADO A

Chairs: Nathan Snook, CAPS/Univ. of Oklahoma, Norman, OK; Gail Hartfield, NOAA/NWS, Raleigh, NC

10:30 A.M.

9A.1 *Deep Learning for CONUS-Wide Prediction of Thunderstorm Wind in Real-time.* **Ryan A. Lagerquist**, Univ. of Oklahoma, Norman, OK; A. McGovern

WEDNESDAY

10:45 A.M.

9A.2 *Hail Forecasting with Interpretable Deep Learning.* **David John Gagne**, NCAR, Boulder, CO

11:00 A.M.

9A.3 *Evaluation of a Machine-Learning Model for the Prediction of Heavy and Extreme Rainfall.* **Russ S. Schumacher**, Colorado State Univ., Fort Collins, CO; G. R. Herman, S. Perfater, B. Albright

11:15 A.M.

9A.4 *Using Evolutionary Programming to Generate Improved Tropical Cyclone Intensity Forecasts.* **Jesse Schaffer**, Univ. of Wisconsin, Milwaukee, WI; P. Roebber, C. Evans

11:30 A.M.

9A.5 *Using Ecosystem Dynamics to Evolve Skillful Ensemble Forecasts.* **Paul Roebber**, Univ. of Wisconsin-Milwaukee, Milwaukee, WI

11:45 A.M.

9A.6 *Using Self Organizing Map Transition Matrices as a Forecast Tool.* **Andrea Nicole Honor**, Univ. of Wisconsin Milwaukee, Milwaukee, WI; P. Roebber

10:30 A.M.–12:00 P.M.

25NWP

**Session 9B: NEW OR IMPROVED
PARAMETERIZATIONS II –COLORADO B**

Chairs: Jason M. English, CIRES/Univ. of Colorado, Boulder, CO; Martin A. Baxter, Central Michigan Univ., Mt. Pleasant, MI

10:30 A.M.

9B.1 *The NOAA/EMC Vision for the Parameterization of Atmospheric Physical Processes in the Emerging National Unified Forecast System.* **John S. Kain**, EMC, College Park, MD; S. Moorthi, V. Tallapragada, L. R. Bernardet, C. Bretherton, J. Doyle, G. Grell

10:45 A.M.

9B.2 *Impacts of Background Albedo Dataset on WRF Model Simulations.* **Jared A. Lee**, NCAR, Boulder, CO; M. Barlage, G. Thompson

11:00 A.M.

9B.3 *Implementation and Evaluation of MG Microphysics in FV3GFS.* **Anning Cheng**, NOAA, College Park, MD; S. Moorthi, Y. T. Hou, A. Gettelman, H. Morrison, F. Yang, J. Wang, R. Sun, D. Barahona, S. Lu, J. Kain, V. Tallapragada

11:15 A.M.

9B.4 *Assessing the Impact of Stochastic Cloud Microphysics in High-Resolution Models Using GOES-16 Infrared Brightness Temperatures.* **Jason Otkin**, Univ. of Wisconsin, Madison, WI; S. M. Griffin, G. Thompson, J. Berner, F. Kong, M. E. Frediani

9B.5 **WITHDRAWN**

11:45 A.M.

9B.6 *Evaluating Cloud Microphysical Schemes in Simulating Orographic Precipitation Using Intensive OLYMPEx field instrumentation.* **Brian A. Colle**, SUNY, Stony Brook, NY; A. Naeger, N. Zhou, A. L. Molthan

1:30 P.M.–3:30 P.M.

29WAF

**Session 10A: MESOSCALE METEOROLOGY AND
SEVERE LOCAL STORMS I: MODELING STUDIES
OF MCSS AND OTHER CONVECTIVE EVENTS –
COLORADO A**

Chairs: Michael C. Coniglio, NOAA/NSSL, Norman, OK; Ryan A. Sobash, NCAR, Boulder, CO

1:30 P.M.

10A.1 *Progress in Forecasting Derechos with the NCAR-WRF High-Resolution Ensemble.* **Morris Weisman**, NCAR, Boulder, CO; C. Schwartz, K. Manning

1:45 P.M.

10A.2 *MCS Evolution in Response to Convectively-Generated Low-Frequency Gravity Waves.* **Rebecca Adams-Selin**, AER, Offutt AFB, NE; R. S. Schumacher

2:00 P.M.

10A.3 *Mid-latitude Squall Lines Interacting with Offshore Stable Boundary Layers.* **Kelly Lombardo**, Univ. of Connecticut, Groton, CT; R. M. Hastings

2:15 P.M.

10A.4 *Can Moisture and Temperature Errors Within the Inflow Region be used to Predict MCS Displacement Errors in WRF?* **Nicholas J Vertz**, Iowa State Univ., Ames, IA; W. A. Gallus Jr., B. J. Squitieri

2:30 P.M.

10A.5 *A Preliminary Evaluation of Paired Regional/Convection-Allowing Model-Forecast Vertical Profiles in Warm-Season, Thunderstorm-Supporting Environments.* **Clark Evans**, UW-Milwaukee, Milwaukee, WI; S. J. Weiss, I. L. Jirak

2:45 P.M.

10A.6 *Evaluating the Frontal Influence on Convection Using Parcel Trajectories.* **Chasity B. Henson**, Univ. of Missouri, Columbia, MO; P. Market

3:00 P.M.

10A.7 *Bayesian Modeling of Reporting Biases in the SPC Tornado Database.* **Corey K. Potvin**, CIMMS, and NOAA/OAR/NSSL, Norman, OK; C. Broyles, P. S. Skinner, H. E. Brooks

1:30 P.M.–3:30 P.M.

25NWP

**Session 10B: FORECAST VERIFICATION METHODS
AND PERFORMANCE I –COLORADO B**

Chairs: Jacob R. Carley, NOAA/NCEP/EMC, College Park, MD; Burkely T. Gallo, CIMMS/NSSL, Norman, OK

1:30 P.M.

10B.1 *To Mm or Not to Mm, That's the Question.* **Hendrik L. Tolman**, NOAA, Silver Spring, MD

1:45 P.M.

10B.2 *A New Method for the Estimation of Analysis and Forecast Error Variance.* **Zoltan Toth**, NOAA, Boulder, CO; J. Feng, M. Peña

2:00 P.M.

10B.3 *Assessing the Spread/Error Relationship for East Coast Winter Cyclones.* **Taylor S Mandelbaum**, Stony Brook Univ., Stony Brook, NY; T. Alcott, B.A. Colle

2:15 P.M.

10B.4 *Exploring a Practical Path to More Skilful Ensemble Forecasts.* **Mark J. Rodwell**, ECMWF, Reading, United Kingdom

2:30 P.M.

10B.5 *Forecast Sensitivities of Mcs Stratiform Precipitation Shields to Changes in Horizontal Grid Spacing in WRF Simulations.* **Brian Joseph Squitieri**, Iowa State Univ., Ames, IA; W.A. Gallus Jr.

2:45 P.M.

10B.6 *Microphysical and Horizontal Grid Spacing Influences on WRF Forecasts of Stratiform Rain Regions and General Convective Morphology Evolution in Nocturnal MCSs.* **Jonathan E. Thielen**, Iowa State Univ., Ames, IA; W.A. Gallus Jr., B. J. Squitieri

3:00 P.M.

10B.7 *An Evaluation of the Grell-Freitas Cumulus Scheme in the Hurricane Weather Research and Forecasting System.* **Kathryn M. Newman**, NCAR, Boulder, CO; M. K. Biswas, E.A. Kalina, E. Grell, L. Bernardet, G. Grell, L. Carson, J. Frimel

3:15 P.M.

10B.8 *A Comparison of the Impact of Using Downscaled and Convection-Permitting Analyses on Model Behavior.* **May Wong**, NCAR, Boulder, CO; G. S. Romine, C. Snyder

4:00 P.M.–5:30 P.M.

29WAF

Session 11A: FORECASTING TECHNIQUES: NEW DATA PRODUCTS AND ANALYSES –COLORADO A

Chairs: Chunhua Zhou, NCAR, Boulder, CO; Jason Otkin, Univ. of Wisconsin, Madison, WI

4:00 P.M.

11A.1 *The Role of WSR-88D VCPs and Intra-Volume Scanning Strategies on Volumetric Analyses of Thunderstorm Intensity using Simulated Observations.* **Anthony E. Reinhart**, Univ. of Oklahoma/ CIMMS & NOAA/OAR/NSSL, Norman, OK; D. M. Kingfield

4:15 P.M.

11A.2 *Development and Evaluation of a Three-Dimensional Rapidly Updating Real-Time Mesoscale Analysis (RTMA).* **Stephen S. Weygandt**, NOAA/ESRL, Boulder, CO; C. R. Alexander, G. Ge, T. T. Ladwig, C. Hartsough, J. R. Carley

4:30 P.M.

11A.3 *Improved Quality Control of Mesonet Observations in the Real-Time Mesoscale Analysis System.* **Steven Levine**, EMC, College Park, MD; J. R. Carley, M. Pondeva, B. J. Miretzky, M. E. Jeglum, A.A. Jacques, J. C. Derber

4:45 P.M.

11A.4 *Assimilation of S-NPP VIIRS Land Surface Temperature into NCEP Real-Time Mesoscale Analysis (RTMA) System over Alaska.* **Xiaoyang Zhang**, IMISG and NOAA/NWS/NCEP, College Park, MD; J. C. Derber, A. Collard, J. Carley, M. Pondeva, E. Petrescu

5:00 P.M.

11A.5 *Joint Polar Satellite System (JPSS) Data Products.* **Jeffrey Weinrich**, JPSS, Washington, DC

5:15 P.M.

11A.6 *Quantifying Information Content of GNSS Radio Occultation Observations from Spire Global CubeSats.* **Dusanka Zupanski**, Spire Global, Inc., Boulder, CO; R. Stefanescu, R. McKeown, T. Brown, C. Holt, A. E. MacDonald

4:00 P.M.–5:30 P.M.

25NWP

Session 11B: NEW ENSEMBLE AND PROBABILISTIC FORECASTING TECHNIQUES I –COLORADO B

Chairs: Tara L. Jensen, NCAR/RAL, Boulder, CO; James I. Belanger, The Weather Company, Andover, MA

4:00 P.M.

11B.1 *Testing of Updated Methods for Probabilistic Quantitative Precipitation Forecasting in the NWS's National Blend of Models..* **Thomas M. Hamill**, NOAA, Boulder, CO

4:15 P.M.

11B.2 *The Performance of NCEP GEFS in Past 20 Years.* **Yan Luo**, NOAA/NCEP/EMC and IMISG, College Park, MD; Y. Zhu, B. Cui, J. Peng

4:30 P.M.

11B.3 *Application of Targeted Post-Processing to NCEP Global Ensemble Forecasts for Hurricane Irma'2017.* **Jun Du**, NOAA/ NWS/NCEP/EMC, College Park, MD; J. Peng

4:45 P.M.

11B.4 *Calibration of 2-m Temperature Forecasts using the Bayesian Processor of Ensemble (BPE).* **Yi Wang**, GSD, Boulder, CO; Z. Toth, M. S. Antolik, G. J. Layne, M. A. Petty, C. Buxton, M. Peña, Y. Zhu

5:00 P.M.

11B.5 *Improving Medium-Range Severe Weather Forecasting with Random Forests.* **Gregory R. Herman**, Colorado State Univ., Fort Collins, CO; R. S. Schumacher

5:15 P.M.

11B.6 *Using TIGGE Data to Analyze Features of Time Series of Forecast Uncertainty.* **Justin G. McLay**, NRL, Monterey, CA; C. H. Bishop, D. Hodyss, E.A. Satterfield

WEDNESDAY

Thursday, June 07

7:30 A.M.–3:30 P.M.	Registration Open–2nd Floor Lobby
10:00 A.M.–10:30 A.M.	Coffee Break–Colorado Foyer
12:00 P.M.–1:30 P.M.	Lunch Break–Colorado Foyer
3:30 P.M.–4:00 P.M.	Coffee Break–Aspen Foyer
4:00 P.M.–5:30 P.M.	Formal Poster Viewing–Aspen Ballroom
7:00 P.M.–9:00 P.M.	Women's Dinner–Henry's Tavern (Pay on Own)

8:00 A.M.–10:00 A.M.

29WAF

Session 12A: RESEARCH TO OPERATIONS AND FORECAST VERIFICATION I –COLORADO A

Chairs: Israel L. Jirak, NOAA/NWS/NCEP/Storm Prediction Center, Norman, OK; Sarah Perfater, IMSG, College Park, MD

8:00 A.M.

12A.1 *The Weather Prediction Center Development and Training Branch: Research to Operations Activities.* **James A. Nelson**, NCEP, College Park, MD

8:15 A.M.

12A.2 *NOAA Plans for Numerical Guidance, Products and Services at Subseasonal to Seasonal Timescales.* **Timothy L. Schneider**, NWS/Office of Science and Technology Integration, Boulder, CO; D. DeWitt, F. Toepfer, V. Tallapragada, A. Chawla, J. Gottschalck, K. Keith, I. Stajner, N. P. Kurkowski

8:30 A.M.

12A.3 *Development/Implementation of Data Assimilation System for Operational Ocean Forecasting at NCEP.* **Shastri Paturi**, EMC/IMSG, College Park, MD; A. Mehra, Z. D. Garraffo, I. Rivin, J. Cummings, H. C. Kim, A. Chawla

8:45 A.M.

12A.4 *Severe Weather Algorithm Development and Improvement Activities for the WSR-88D at NSSL/CIMMS Under the ROCTech Transfer MOU.* **Kiel L. Ortega**, OU/CIMMS and NOAA/OAR/NSSL, Norman, OK; D.W. Burgess, K. L. Elmore, M. C. Mahalik, B. R. Smith

9:00 A.M.

12A.5 *Validating a WRF Ensemble Using IMPOWR Field Data for Two Fire Weather Days in Central New Jersey.* **Keenan R. Fryer**, Stony Brook Univ., Stony Brook, NY; B.A. Colle, J. J. Charney

9:15 A.M.

12A.6 *"Prototypes" from The Weather Company's Probability Forecast Platform: A Tool for Forecasting Uncertainty in Weather-Dependent Outcomes.* **John K. Williams**, The Weather Company, Andover, MA; P. Neilley, J. I. Belanger, A. G. Kalmikov, S. Marshall, J. McDonald

9:30 A.M.

12A.7 *Mean What You Say-Calibration and Verification of the Probability Forecast Platform (PFP) at The Weather Company.* **James I. Belanger**, The Weather Company, Atlanta, GA; J. K. Williams, J. McDonald, J. P. Koval, A. G. Kalmikov, P. Neilley

8:00 A.M.–10:00 A.M.

25NWP

Session 12B: IMPROVING MODEL PERFORMANCE AND EFFICIENCY I –COLORADO B

Chairs: Jacob R. Carley, NOAA/NCEP/EMC, College Park, MD; Michael J. Kavulich, NCAR, Boulder, CO

8:00 A.M.

12B.1 *A Decade in Community-Supported Development of the Frequently Updated RAP and HRRR Model Forecast Systems: From Research to Operations and Back Again (WAF Early Career Award).* **Curtis R. Alexander**, NOAA/ESRL/GSD, Boulder, CO

8:30 A.M.

12B.2 *Rapid Cycling in the Last Frontier: Improving Model Initialization over Alaska.* **Trevor Alcott**, OAR, Boulder, CO; M. Hu, D. C. Dowell, C. R. Alexander

8:45 A.M.

12B.3 *Testing the Impact of Additional Vertical Levels for the 3km High-Resolution Rapid Refresh.* **Eric P. James**, CIRES/Univ. of Colorado and NOAA/ESRL/GSD, Boulder, CO; C. R. Alexander, J. M. Brown

9:00 A.M.

12B.4 *The Influence of Vertical Advection Discretization in the WRF-ARW Model on Capping Inversion Representation in Warm-Season, Thunderstorm-Supporting Environments.* **Clark Evans**, UW-Milwaukee, Milwaukee, WI; D. Nevius

9:15 A.M.

12B.5 *Intercomparison of Seven Planetary Layer/Surface Layer Physics Schemes over Complex Terrain for Battlefield Situational Awareness Applications.* **Richard S. Penc**, U.S. Army Research Laboratory, WSMR, NM; J. A. Smith, J. W. Raby, R. E. Dumais Jr., B. P. Reen, L. Dawson

9:30 A.M.

12B.6 *Use of Non-iteration Dimensional-split Semi-Lagrangian (NDSL) in Central Weather Bureau Global Forecast System.* **PangYen Liu**, CWB, Taipei City, Taiwan; J. H. Chen, H. M. Juang

12B.7 WITHDRAWN

10:30 A.M.–12:00 P.M.

29WAF

Session 13A: RESEARCH TO OPERATIONS AND FORECAST VERIFICATION II –COLORADO A

Chairs: Adam Clark, NOAA/NSSL, Norman, OK; Israel L. Jirak, NOAA/NWS/NCEP/Storm Prediction Center, Norman, OK

10:30 A.M.

13A.1 *NASA Participation in the International Collaborative Experiment for the PyeongChang Olympics and Paralympic Winter 2018 Games (ICE-POP).* **Jonathan L. Case**, ENSCO, Inc., Huntsville, AL; W. A. Petersen, J. Srikishen, R. E. Allen, P. J. Meyer, J. B. Roberts, W. K. Tao, T. Iguchi, M. R. Smith, F. J. LaFontaine, E. B. Berndt, A. L. Molthan, B. T. Zavodsky

10:45 A.M.

13A.2 *Object-Based Verification of Forecasted Atmospheric River Objects.* **Laurel L. DeHaan**, SIO, La Jolla, CA; A. Martin

11:00 A.M.

13A.3 *An Update on the Community Effort for Convection Allowing Model (CAM) Scorecarding.* **Tara L. Jensen**, NCAR/RAL, Boulder, CO; A. Clark, C. P. Kalb, P. Skinner, J. Levit, C. R. Alexander

11:15 A.M.

13A.4 *How Developmental Testbed Center is Facilitating Transitioning Research Innovations into the Operational HWRF Model.* **Mrinal K. Biswas**, NCAR, Boulder, CO; K. M. Newman, E. A. Kalina, E. Grell, J. Frimel, L. Carson, L. Bernardet

11:30 A.M.

13A.5 *Testing the Distance-Based Spatial Forecast Verification Methods on a New More Rigorous Set of Contrived Cases.* **Eric Gilleland**, NCAR, Boulder, CO; G. Skok

11:45 A.M.

13A.6 *New and Planned NWP Training from UCAR's COMET® Program.* **William R. Bua**, UCAR/COMET, College Park, MD; A. Bol, A. Stevermer

10:30 A.M.–12:00 P.M.

25NWP

Session 13B: IMPROVING MODEL PERFORMANCE AND EFFICIENCY II—COLORADO B

10:30 A.M.

13B.1 *Continental Convection, Rossby Wave Packets and Regime Change in the Middle Latitude and Arctic.* **David B. Parsons**, Univ. of Oklahoma, Norman, OK; S. P. Lillo

10:45 A.M.

13B.2 *Testing Physical Parameterization Development in a Single-column Model Framework for Operational NWP.* **Grant J. Firl**, NCAR and Developmental Testbed Center, Boulder, CO; L. Xue, L. Bernardet, D. Heinzeller

11:00 A.M.

13B.3 *Development of Deep Atmospheric Dynamics (DAD) in NCEP FV3 for Applications on Whole-Atmosphere Modeling.* **Hann-Ming Henry Juang**, NCEP, College Park, MD; S. K. Kar, A. Kubaryk

11:15 A.M.

13B.4 *Verification of FV3 Forecasts Using the Model Evaluation for Research Innovation Transition (MERIT) Testing Framework.* **Tracy J. Hertneky**, NCAR, Boulder, CO; G. Ketefian, J. Beck, I. Jankov, J. Wolff, C. Williams, M. Harrold, L. Blank

11:30 A.M.

13B.5 *Enhancing Community Collaborations through NWP Software Containers.* **Michael J. Kavulich**, NCAR, Boulder, CO; J. H. Gotway, M. Harrold, J. K. Wolff, K. Fossell, J. Exby

11:45 A.M.

13B.6 *Statistical Design of Experiments in Numerical Weather Prediction: Some Emerging Results.* **Jeffrey A. Smith**, U.S. Army Research Laboratory, White Sands Missile Range, NM; R. S. Penc, J. V. Raby

1:30 P.M.–3:30 P.M.

29WAF

Session 14A: FORECASTING TECHNIQUES: NEW DATA TYPES AND OBSERVATIONAL PLATFORMS —COLORADO A

Chairs: Sam Ng, Metropolitan State Univ., Denver, CO; Glen Romine, NCAR, Boulder, CO

1:30 P.M.

14A.1 *High Resolution Forecasting and Observation System Experiments in the CASA Dallas-Fort Worth Urban Testbed.* **Keith A. Brewster**, Univ. of Oklahoma, Norman, OK; F. H. Carr, M. T. Morris, A. P. Osborne, K. W. Thomas

1:45 P.M.

14A.2 *Assessing Impacts of Assimilating Surface Observations for the Forecast of Convection Initiation on 3 April 2014 within the Dallas-Fort Worth Urban Testbed.* **Nicholas Antonio Gasperoni**, Univ. of Oklahoma, Norman, OK; X. Wang, F. H. Carr, K. A. Brewster

2:00 P.M.

14A.3 *Impact of assimilating AERI and Doppler Wind Lidar Retrievals on Convection-Allowing Ensemble Forecasts of Thunderstorms.* **Michael C. Coniglio**, NOAA/NSSL, Norman, OK; G. S. Romine, D. D. Turner, R. D. Torn

2:15 P.M.

14A.4 *Next-generation Rapid-Scan Phased Array Radar Observations on Storm-scale NWP for Hazardous Weather Forecasts.* **Nusrat Yussouf**, CIMMS/OU/NSSL, Norman, OK; Y. Jung, T. A. Supinie, D. R. Stratman, B. J. Putnam

2:30 P.M.

14A.5 *Impact of Ground Based Remote Sensing Boundary Layer Observations on Convective-Scale NWP.* **Junjun Hu**, CIMMS/Univ. of Oklahoma, NOAA/OAR/NSSL, Norman, OK; N. Yussouf, D. D. Turner, X. Wang, T. A. Jones

2:45 P.M.

14A.6 *On the Potential for using Unmanned Aircraft Systems for Mesoscale Analysis and Short-range Numerical Weather Prediction of Severe Convection.* **Steven E. Koch**, NOAA/NSSL, Norman, OK

3:00 P.M.

14A.7 *Observation System Simulation Experiment Studies (OSSEs) on the Use of Small Unmanned Aerial Systems (sUAS) for Boundary Layer Sampling.* **Andrew D. Moore**, Univ. of Oklahoma, Norman, OK; F. H. Carr, K. A. Brewster, P. B. Chilson

3:15 P.M.

14A.8 *Himawari-8 AHI Data Assimilation impact on Hurricane Dujuan with HWRF.* **Zaizhong Ma**, IMSG/NOAA/NCEP/EMC, College Park, MD; Y. Zhu, A. Mehra

THURSDAY

1:30 P.M.–3:30 P.M.

25NWP**Session 14B: NEW ENSEMBLE AND PROBABILISTIC FORECASTING TECHNIQUES AT THE HAZARDOUS WEATHER TESTBED –COLORADO B**

Chairs: Christopher J. Melick, 557th Weather Wing, Offutt AFB, NE; Tara L. Jensen, NCAR/RAL, Boulder, CO

1:30 P.M.

14B.1 *Inter-model Storm-scale Comparisons from the 2017 HWT Spring Forecasting Experiment.* **Corey K. Potvin**, CIMMS, and NOAA/OAR/NSSL, Norman, OK; J. Carley, A. Clark, L. J. Wicker, P. S. Skinner, A. E. Reinhart, J. S. Kain

1:45 P.M.

14B.2 *Ensemble Simulations of a Case from the 2017 NOAA Hazardous Weather Testbed using the Unified Model.* **Kirsty Hanley**, Met Office, Reading, United Kingdom; H. Lean

2:00 P.M.

14B.3 *Practical Predictability of Supercells: Exploring Ensemble Forecast Sensitivity to Initial Condition Spread.* **Montgomery L. Flora**, Univ. of Oklahoma, Norman, OK; C. K. Potvin, L. J. Wicker

2:15 P.M.

14B.4 *Object-Based Probabilistic Forecasting of Severe Weather Hazards in the 2018 HWT Spring Experiment: A Multi-Variable Probabilistic Approach for Research and Operations..* **Aaron Johnson**, Univ. of Oklahoma, Norman, OK; X. Wang, A. Clark, I. L. Jirak

2:30 P.M.

14B.5 *The Impact of Adding Mixed Physics to a Mixed Initial and Lateral Boundary Condition Ensemble Used for Convection Forecasts-Results from the 2016 and 2017 Community Leveraged Unified Ensembles.* **William A. Gallus**, Iowa State Univ., Ames, IA; J. Halley Gotway, J. Wolff, M. Harrold

2:45 P.M.

14B.6 *Exploring the Optimal Configuration of the High Resolution Ensemble Forecast System.* **Israel L. Jirak**, NOAA/NWS/NCEP/Storm Prediction Center, Norman, OK; A. J. Clark, B. Roberts, B. T. Gallo, S. J. Weiss

3:00 P.M.

14B.7 *Web-Based Visualization and Evaluation of Convection-Allowing Ensembles for Severe Weather Forecasting Applications.* **Brett Roberts**, NSSL, Norman, OK; I. L. Jirak, A. J. Clark, S. J. Weiss

3:15 P.M.

14B.8 *The 2018 NOAA Hazardous Weather Testbed Spring Forecasting Experiment.* **Adam Clark**, NOAA/NSSL, Norman, OK; I. L. Jirak, B. Gallo, S. J. Weiss, L. J. Wicker, S. R. Dembek, M. Xue, F. Kong, K. Thomas, K. H. Knopfmeier, G. J. Creager, K. A. Brewster, Y. Jung, B. Roberts, G. Romine, C. Alexander, X. Wang, S. M. Willington, Y. Wang, A. T. Johnson, L. M. Harris, M. J. Morin, S. J. Lin, R. M. Hepper, T. A. Supinie, A. R. Dean

25NWP / 29WAF**Joint Poster Session 2: WAF/NWP POSTER SESSION II—ASPEN BALLROOM**

29 *The Use of Integrated Enstrophy in Blocking and Flow Regime Transition for Operational Forecasting.* **Joshua Kastman**, CIRES, Boulder, CO; S. A. Ganetis, W. S. Lamberson, M. J. Bodner, P. S. Market, A. R. Lupo

30 *Developing a Probabilistic Heavy-Rainfall Guidance Forecast Model for Great Lakes Cities.* **Cory Rothstein**, Univ. of Wisconsin Milwaukee, Milwaukee, WI; P. Roebber

31 *Influences of Coastal Geometry and Orography on Lake- and Sea-Effect Precipitation.* **W. James Steenburgh**, Univ. of Utah, Salt Lake City, UT; L. Campbell, P. G. Veals, T. West, T. M. Gowan, S. Nakai

32 *Risk, Information, and Vulnerability for Evolving Tornado Threats: Examining the 22 January 2017 EF-3 Tornadoes in Adel and Albany, Georgia.* **Julie L. Demuth**, NCAR, Boulder, CO; H. Lazrus, J. Henderson, J. Vickery, R. E. Morss, K. D. Ash, K. M. Anderson, L. Palen

33 *Synoptic- and Meso-Scale Weather Patterns associated with the Rapid Glacier Loss Across the Semi-Arid Chilean Andes.* **Sam Ng**, Metropolitan State Univ., Denver, CO; J. Janke, A. Bellisario, S. Reichlin

34 *The Role of the North Pacific Jet in Two West Coast Atmospheric River Events during February 2017.* **Eli Turasky**, Univ. at Albany, SUNY, Albany, NY; A. C. Winters, L. F. Bosart, D. Keyser

35 *An Examination of the 30 January 2018 Long Island Snowfall Forecast Bust.* **Keenan Fryer**, Stony Brook Univ., Stony Brook, NY; R. Connelly, B. A. Colle

36 *High-resolution WRF Forecasts of Mid-21st Century Urban Extreme Heat Events.* **David E. Jahn**, Iowa State Univ., Ames, IA; W. A. Gallus Jr., Y. Zhou, K. Cetin, E. Jahani

37 *The 22-26 December 2013 Caribbean Rainstorm.* **Marshall Pfahler**, SUNY, Albany, NY; L. F. Bosart

38 *Using Machine Learning to Predict Road Temperatures.* **Shawn Handler**, CIMMS/Univ. of Oklahoma and NOAA/NSSL, Norman, OK; H. D. Reeves

39 *Observation Informed Generalized Hybrid Error Covariance Models.* **Elizabeth A. Satterfield**, NRL, Monterey, CA; D. Hodyss, D. D. Kuhl, C. H. Bishop

40 *Improving the Land Surface Forecast in Navy's Global Atmospheric Model.* **Ming Liu**, NRL, Monterey, CA; R. Langland, M. Martini, K. C. Viner

41 *Short-Term Wind Prediction over Dallas Fort Worth (DFW) Urban Network.* **Chandrasekar Radhakrishnan**, Colorado State Univ., Fort Collins, CO; C. V. Chandra

42 *Evaluating the WRF-Hydro Modeling System in Alaska.* **Nicholas J. Elmer**, Univ. of Alabama, Huntsville, AL; A. L. Molthan, J. R. Mecikalski

- 43** *Influence of Prescribed Rocky Mountain Springtime Snowpack on Evolution of Summertime Precipitation in the Great Plains.* **Matthew A. Campbell**, SUNY, Albany, NY; C. R. Ferguson, D.A. Burrows, L. F. Bosart
- 44** *Improved Forecasts of Cold Pools in Complex Terrain from WFP2.* **Jaymes Kenyon**, NOAA Earth System Research Laboratory and CIRES, Univ. of Colorado, Boulder, CO; J. B. Olson, M. Toy, J. M. Brown, W. M. Angevine, M. Marquis, C. Draxl, Y. Pichugina, A. Choukulkar, T.A. Bonin, R. Banta, L. Bianco, I. V. Djalalova, K. McCaffrey, J. M. Wilczak, K. Lantz, C. N. Long, S. Redfern, J. Sharp, J. McCaa, M. T. Stoelinga, E. P. Gritmit, L. K. Berg
- 45** *Study on Reconstructing Tropical Cyclone Wind Field By the Generalized Additive Model.* **Jian Liang**, China Meteorological Administration, Guangzhou, China; S. Tang, C. Qian, L. Lin, B. Huang
- 46** *A Comparison of NAM CONUS Nest Failures and Successes to Regional 3-Km FV3 Runs with Different Microphysics Schemes..* **Eric Aligo**, EMC/NCEP/NWS/NOAA and I.M. Systems Group, Inc., College Park, MD
- 47** *Predictability Experiments with a Non-Hydrostatic Global Model over a Cubed Sphere Grid.* **Song-You Hong**, Korea Institute of Atmospheric Prediction System, Seoul, Korea, Republic of (South)
- 48** *Development of a Subgrid-Scale Orographic Drag Parameterization Suite for the NOAA Rap/HRRR Atmospheric Model.* **Michael D. Toy**, CIRES, Boulder, CO; J. B. Olson, T. Smirnova, J. S. Kenyon, J. M. Brown, G. Grell
- 49** *Making Forecasts Better-Community Infrastructure for Facilitating Improvement and Testing of Physical Parameterizations.* **Dom Heinzeller**, NOAA/ESRL/GSD and Univ. of Colorado/CIRES, Boulder, CO; L. Bernardet, G. J. Firl, L. Carson, C.W. Harrop, P.A. Jimenez, G. Ketefian, J. Schramm, D. Stark, L. Xue, M. Zhang, D. Gill
- 50** *Developing the MYNN-Eddy Diffusivity/Mass-Flux PBL Scheme to Improve Non-Local Mixing Across the Greyzone.* **Joseph B. Olson**, CIRES, Boulder, CO; J. Kenyon, W. M. Angevine, G. Grell, J. M. Brown, K. Suselj
- 51** *Applying a General Nonlinear Transformation to the Analysis of Surface Visibility and Cloud Ceiling Height.* **Runhua Yang**, IMSG and NOAA/NCEP/EMC, College Park, MD; R. J. Purser, J. R. Carley, M. Pondeva, Y. Zhu, W. S. Wu
- 52** *High Resolution Weather Forecast of CWB-GFS Nested with NCEP-RSM.* **Ying-Ju Chen**, CWB, Taipei, Taiwan; H. M. H. Juang, J. H. Chen
- 53** *Scientific and Technical Documentation for Parameterizations in the Common Community Physics Package (CCPP).* **Man Zhang**, CU/CIRES at NOAA Earth System Research Laboratory/Global Systems Division and Developmental Testbed Center, Boulder, CO; G. J. Firl, L. Bernardet, V. Kunkel
- 54** *Assimilation of GOES-16 Derived Layer Precipitable Water and Radar Data Using a 3D Ensemble-Variational Hybrid Analysis Technique: Impact on Thunderstorm Forecasting.* **Sijie Pan**, CIMMS/Univ. of Oklahoma, Norman, OK; J. Gao, Y. Wang, T.A. Jones, J. Li, X. Wang
- 55** *Assimilation of Pseudo Water Vapor and Radar Data for Convective-Scale NWP in a Variational Framework.* **Jidong Gao**, NSSL/NOAA, Norman, OK; A. Lai, S. Koch, C. Cui
- 56** *Testing and Evaluation of the Radar Data Assimilation and Its Impact on Convective Forecast for the 3-Km High Resolution Regional Applications.* **Chunhua Zhou**, NCAR, Boulder, CO; M. Hu, Y. Zhang, G. Ge

Friday, June 08

7:30 A.M.–12:30 P.M.	Registration Open–2nd Floor Lobby
10:00 A.M.–10:30 A.M.	Coffee Break–Colorado Foyer
12:30 P.M.	Conference Adjourns

8:00 A.M.–10:00 A.M.

29WAF

Session 15A: MESOSCALE METEOROLOGY AND SEVERE LOCAL STORMS II: OBSERVATIONAL ANALYSES FROM VORTEX-SE AND OTHER EVENTS –COLORADO A

Chairs: Corey K. Potvin, CIMMS, and NOAA/OAR/NSSL, Norman, OK; Erik R. Nielsen, Colorado State Univ., Fort Collins, CO

8:00 A.M.

15A.1 *Field Campaign Results from the VORTEX-SE Program.*

Steven E. Koch, NOAA/NSSL, Norman, OK; E. N. Rasmussen

8:15 A.M.

15A.2 *A Significant Tornado in a Heterogeneous Environment During VORTEX-SE.* **Timothy A. Coleman**, Univ. of Alabama, Huntsville, AL; A. W. Lyza, K. Knupp, K. B. Laws, W. Wyatt

8:30 A.M.

15A.3 *An Observational and Numerical Modeling Study of Rapid Changes in the Pre-Storm Boundary Layer of a Severe Nocturnal QLCS during VORTEX-SE on 9-10 March 2017.* **David Haliczar**, Univ. of Alabama, Huntsville, AL; K. Knupp

8:45 A.M.

15A.4 *29-30 November 2016 Northern Alabama Tornado Outbreak: Radar and Vertical Profiling Observations of a Complex Supercell Mesocyclone.* **Carter B. Hulse**, Univ. of Alabama, Huntsville, AL; K. R. Knupp, A. W. Lyza

9:00 A.M.

15A.5 *Using Observations and Numerical Simulations to Assess the Effects of Topography on the 29-30 November 2016 Tornado Outbreak in Northeastern Alabama.* **Anthony W. Lyza**, Univ. of Alabama, Huntsville, AL; X. Li, K. Knupp, J. R. Mecikalski

9:15 A.M.

15A.6 *Doppler Radar Observations of a Tornadoic Mesovortex in the 04 January 2015 Quasi-Linear Convective System.* **Dustin M. Conrad**, Univ. of Alabama, Huntsville, AL; K. R. Knupp

9:30 A.M.

15A.7 *Rapid-Scan Radar Observations of Zdr Column Depth and Its Potential Use During the Warning Decision Process.* **Charles M. Kuster**, CIMMS/NOAA NSSL, Norman, OK; J. C. Snyder, T. J. Schuur, J. W. Brogden, R. Toomey, P. L. Heinselman

9:45 A.M.

15A.8 *Damaging Downslope Surface Winds Associated with a Great Plains Cyclone.* **Jeff Kelley**, NWS, Hastings, NE; D. M. Schultz, R. S. Schumacher

8:00 A.M.–10:00 A.M.

25NWP

Session 15B: NEW ENSEMBLE AND PROBABILISTIC FORECASTING TECHNIQUES II –COLORADO B

Chairs: James I. Belanger, The Weather Company, Andover, MA; Christopher Melick, 557th Weather Wing, Offutt AFB, NE

8:00 A.M.

15B.1 *Evaluating the NCAR Ensemble's Initialization Approach.*

Craig S. Schwartz, NCAR, Boulder, CO; G. S. Romine, R. A. Sobash, K. R. Fossell, M. Wong

8:15 A.M.

15B.2 *Addressing Model Uncertainty through Stochastic Parameter Perturbations within the Thompson Microphysics Scheme as part of a High Resolution Rapid Refresh Ensemble.* **Jamie K. Wolff**, NCAR, Boulder, CO; G. Thompson, I. Jankov, J. Beck, M. Harrold, M. J. Kavulich Jr., L. Blank

8:30 A.M.

15B.3 *Forecasting and Monitoring Intense Thunderstorms in the Hindu Kush Himalayan Region: Spring 2018 Forecasting Experiment.* **Jonathan L. Case**, ENSCO, Inc., Huntsville, AL; P. N. Gatlin, J. Srikishen, J. Knickerbocker, J. R. Bell, R. E. Allen, P. J. Meyer, D. J. Cecil, W. A. Petersen

8:45 A.M.

15B.4 *Km-scale Ensemble Simulations over Singapore.* **Aurore Porson**, Met Office, Reading, United Kingdom; D. Boyd, S. Hagelin, J. C. F. Lo

9:00 A.M.

15B.5 *Land-Surface Parameter and State Perturbations in the Global Ensemble Forecast System.* **Maria Gehne**, ESRL, Boulder, CO; T. M. Hamill, G. Bates, P. Pegion, W. Kolczynski Jr.

9:15 A.M.

15B.6 *Uncertainty²: Stochastic Perturbations in a Convective-Scale Ensemble.* **John R. Lawson**, CIMMS/NSSL, Norman, OK; N. Yussouf, J. Kain

9:30 A.M.

15B.7 *Representing Uncertainties in the NOAA/NCEP Next Generation Global Prediction System Associated with Unresolved Convection.* **Lisa K Bengtsson**, NOAA/ESRL, Boulder, CO; J. W. Bao, P. Pegion, J. S. Whitaker

10:30 A.M.–12:30 P.M.

29WAF

Session 16A: QUANTITATIVE PRECIPITATION FORECASTING AND HYDROLOGY –COLORADO A

Chairs: Therese Ladwig, NOAA/ESRL/GSD and CIRES/Univ. of Colorado, Boulder, CO; Aaron Johnson, Univ. of Oklahoma, Norman, OK

10:30 A.M.

16A.1 *Advances in Operational Extreme Rainfall Prediction.* **David R. Novak**, NOAA/NWS, College Park, MD

10:45 A.M.

16A.2 *Experimental LAMP 1-h Probabilistic QPF Guidance for the CONUS in Support of the National Weather Service's National Blend of Models.* **Phillip E. Shafer**, NWS, Silver Spring, MD; F. G. Samplatsky, J. P. Charba, J. E. Ghirardelli, H. R. Glahn, M. Masuda, A. J. Kochenash, A. Gibbons

11:00 A.M.

16A.3 *A Look at the Performance of the Next Version of the HRRR Model for Some Recent Heavy Precipitation/High Impact Events.* **Ed Szoke**, NOAA/ESRL/GSD and CIRA, Boulder, CO; S. Benjamin, J. M. Brown, C. R. Alexander, E. P. James, T. Alcott

11:15 A.M.

16A.4 *The Extreme Precipitation Index (EPI): A Multivariate Metric to Diagnose Heavy Rainfall Associated with Atmospheric Flow Stagnation.* **Shawn M. Milrad**, Embry-Riddle Aeronautical Univ., Daytona Beach, FL; E. H. Atallah, J. R. Gyakum, J. Klepitzki

11:30 A.M.

16A.5 *Creating an Ensemble Streamflow Forecast Through the Systematic Shifting of QPF.* **Bradley R. Carlberg**, Iowa State Univ., Ames, IA; K. J. Franz, W. A. Gallus Jr.

11:45 A.M.

16A.6 *Verifying Flash Floods: Pondering Precipitation Proxies.* **Gregory R. Herman**, Colorado State Univ., Fort Collins, CO; R. S. Schumacher

12:00 P.M.

16A.7 *Understanding the Role of Forecast Forcings in National Water Model Errors.* **Kelly Mahoney**, ESRL, Boulder, CO; F. Viterbo, L. Wu, R. Cifelli, T. Vukicevic, R. Wolford

12:15 P.M.

16A.8 *Use of the National Water Model and New Satellite Tools in the Hurricane Harvey Case.* **Matthew Kelsch**, UCAR, Boulder, CO

10:30 A.M. – 12:30 P.M.

25NWP

Session 16B: FORECAST VERIFICATION METHODS AND PERFORMANCE II –COLORADO B

Chairs: Louisa B. Nance, NCAR, Boulder, CO; Jonathan L. Case, ENSCO, Inc., Huntsville, AL

10:30 A.M.

16B.1 *Current and Future Strategies for Verification and Post-Processing of Numerical Weather Prediction Models at the NOAA Environmental Modeling Center.* **Jason Levit**, EMC, College Park, MD; G. Manikin, H. Y. Chuang

10:45 A.M.

16B.2 *Unifying Verification with MET+: An Update.* **Tara L. Jensen**, NCAR/RAL, Boulder, CO; J. Levit, B. Strong, I. Stajner, G. Manikin, M. Row

11:00 A.M.

16B.3 *Modification of the Unified Post Processor (UPP) Version 3 to Achieve Improved Accuracy for Model Verification.* **John W. Raby**, U.S. Army Research Laboratory, WSMR, NM; B. P. Reen

11:15 A.M.

16B.4 *The Usefulness of High-Resolution Observational Data for Verification within the United States Air Force.* **Christopher J. Melick**, 557th Weather Wing, Offutt AFB, NE; W. T. Sedlacek, R. J. Craig

11:30 A.M.

16B.5 *Evaluating FV3 Performance during the Spring Severe Convection Season.* **Burkely T. Gallo**, CIMMS/NSSL, Norman, OK; A. Clark, L. J. Wicker, C. K. Potvin, I. L. Jirak, Y. Wang, S. R. Dembek, S. J. Weiss, P. L. Heinselman

11:45 A.M.

16B.6 *Verification of Convective Environment Forecasts from the NAM Parent and CONUS Nest within SPC Outlook Areas.* **Robert M. Hepper**, CIMMS/Univ. of Oklahoma and NOAA/NWS/SPC, Norman, OK; I. L. Jirak

12:00 P.M.

16B.7 *Validation of Mountain Precipitation Forecasts from the Convection-Permitting NCAR Ensemble and Operational Forecast Systems over the Western United States.* **Thomas M. Gowan**, Univ. of Utah, Salt Lake City, UT; W. J. Steenburgh, C. S. Schwartz

12:15 P.M.

16B.8 *Trends in Tropical Cyclone NWP in the HFIP decade 2007-2017.* **Mike Fiorino**, CIRES, Boulder, CO

CONFERENCE CONCLUDES

FRIDAY

Conf.	Paper #	Day	Time	Conf.	Paper #	Day	Time
A				E			
Adams-Selin, R.	29WAF 10A.2	Wed	1:45 PM	Elmer, N. J.	25NWP 42	Thu	4:00 PM
Adams-Selin, R.	29WAF 11	Tue	4:00 PM	English, J. M.	25NWP 4B.2	Mon	4:15 PM
Adams-Selin, R.	29WAF	Mon	8:15 AM	Evans, C.	29WAF 9	Tue	4:00 PM
Albers, S.	25NWP 8B.8	Wed	9:45 AM	Evans, C.	25NWP 12B.4	Thu	9:00 AM
Alcott, T.	25NWP 12B.2	Thu	8:30 AM	Evans, C.	29WAF 10A.5	Wed	2:30 PM
Alexander, C. R.	25NWP 12B.1	Thu	8:00 AM	F			
Aligo, E.	25NWP 46	Thu	4:00 PM	Fiorino, M.	25NWP 16B.8	Fri	12:15 PM
Atallah, E. H.	29WAF 5A.2	Tue	8:15 AM	Firl, G. J.	25NWP 13B.2	Thu	10:45 AM
B				Flora, M. L.	29WAF 14	Tue	4:00 PM
Baumgardt, D. A.	29WAF 3A.6	Mon	2:45 PM	Flora, M. L.	25NWP 14B.3	Thu	2:00 PM
Baxter, M. A.	29WAF 18	Tue	4:00 PM	Fryer, K.	25NWP 35	Thu	4:00 PM
Belanger, J. I.	29WAF 12A.7	Thu	9:30 AM	Fryer, K. R.	29WAF 12A.5	Thu	9:00 AM
Bengtsson, L. K.	29WAF 1A.3	Mon	9:00 AM	G			
Bengtsson, L. K.	25NWP 15B.7	Fri	9:30 AM	Gagne, D. J. II	29WAF 9A.2	Wed	10:45 AM
Benjamin, S.	25NWP 4B.1	Mon	4:00 PM	Gallo, B. T.	25NWP 16B.5	Fri	11:30 AM
Bentley, A. M.	29WAF 5A.3	Tue	8:30 AM	Gallus, W. A. Jr.	25NWP 14B.5	Thu	2:30 PM
Berman, J. D.	29WAF 5A.8	Tue	9:45 AM	Ganetis, S. A.	29WAF 7A.7	Tue	3:00 PM
Bernardet, L.	25NWP 5B.6	Tue	9:15 AM	Gao, J.	25NWP 55	Thu	4:00 PM
Biernat, K. A.	29WAF 5A.6	Tue	9:15 AM	Gasperoni, N. A.	29WAF 14A.2	Thu	1:45 PM
Biswas, M. K.	29WAF 13A.4	Thu	11:15 AM	Ge, G.	25NWP 7B.5	Tue	2:30 PM
Bosart, L. F.	29WAF 4A.5	Mon	5:00 PM	Gehne, M.	25NWP 15B.5	Fri	9:00 AM
Bowley, K.	29WAF 5A.7	Tue	9:30 AM	Gilleland, E.	29WAF 13A.5	Thu	11:30 AM
Brewster, K. A.	29WAF 14A.1	Thu	1:30 PM	Gowan, T. M.	25NWP 16B.7	Fri	12:00 PM
Brown, A.	25NWP 6B.1	Tue	10:30 AM	Grell, G. A.	25NWP 6B.2	Tue	11:00 AM
Bua, W. R.	29WAF 13A.6	Thu	11:45 AM	Grempler, K.	29WAF 8A.6	Wed	9:30 AM
Bunker, E. M.	29WAF 5A.4	Tue	8:45 AM	Groff, F. P.	29WAF 10	Tue	4:00 PM
Burg, T.	29WAF 4A.4	Mon	4:45 PM	Gyakum, J. R.	29WAF 5A.1	Tue	8:00 AM
C				H			
Campbell, M. A.	25NWP 43	Thu	4:00 PM	Haliczer, D.	29WAF 15A.3	Fri	8:30 AM
Carlberg, B. R.	29WAF 16A.5	Fri	11:30 AM	Halley Gotway, J. E.	29WAF 25	Tue	4:00 PM
Carley, J. R.	25NWP 3B.1	Mon	1:30 PM	Hamill, T. M.	25NWP 3B.2	Mon	1:45 PM
Case, J. L.	25NWP 15B.3	Fri	8:30 AM	Hamill, T. M.	25NWP 11B.1	Wed	4:00 PM
Case, J. L.	29WAF 13A.1	Thu	10:30 AM	Handler, S.	25NWP 38	Thu	4:00 PM
Chen, Y. J.	25NWP 52	Thu	4:00 PM	Hanley, K.	25NWP 1B.5	Mon	9:45 AM
Cheng, A.	25NWP 9B.3	Wed	11:00 AM	Hanley, K.	25NWP 14B.2	Thu	1:45 PM
Cheng, G.	29WAF 28	Tue	4:00 PM	Harrold, M.	29WAF 24	Tue	4:00 PM
Cipriani, J. P.	25NWP 7B.3	Tue	2:00 PM	Heinselman, P. L.	29WAF 8A.1	Wed	8:00 AM
Clark, A.	25NWP 14B.8	Thu	3:15 PM	Heinzeller, D.	25NWP 49	Thu	4:00 PM
Coleman, T. A.	29WAF 3A.8	Mon	3:15 PM	Henson, C. B.	29WAF 10A.6	Wed	2:45 PM
Coleman, T. A.	29WAF 2	Tue	4:00 PM	Hepper, R. M.	25NWP 16B.6	Fri	11:45 AM
Coleman, T. A.	29WAF 15A.2	Fri	8:15 AM	Herman, G. R.	25NWP 11B.5	Wed	5:00 PM
Coleman, T. A.	29WAF 8A.5	Wed	9:15 AM	Herman, G. R.	29WAF 16A.6	Fri	11:45 AM
Colle, B. A.	25NWP 9B.6	Wed	11:45 AM	Hertneky, T. J.	25NWP 13B.4	Thu	11:15 AM
Coniglio, M. C.	29WAF 14A.3	Thu	2:00 PM	Hitchcock, S. M.	29WAF 8	Tue	4:00 PM
Connelly, R.	25NWP 2B.5	Mon	11:30 AM	Hong, S. Y.	25NWP 47	Thu	4:00 PM
Conrad, D. M.	29WAF 15A.6	Fri	9:15 AM	Honor, A. N.	29WAF 9A.6	Wed	11:45 AM
D				Hu, J.	29WAF 14A.5	Thu	2:30 PM
Dawson, L. C.	29WAF 4A.6	Mon	5:15 PM	Hu, M.	25NWP 7B.4	Tue	2:15 PM
DeHaan, L. L.	29WAF 13A.2	Thu	10:45 AM	Hulsey, C. B.	29WAF 15A.4	Fri	8:45 AM
Demuth, J. L.	25NWP 32	Thu	4:00 PM	Hutchinson, T.	25NWP 6B.4	Tue	11:30 AM
Demuth, J. L.	29WAF 6A.2	Tue	10:45 AM	J			
DePodwin, R.	29WAF 2A.1	Mon	10:30 AM	Jahn, D. E.	25NWP 36	Thu	4:00 PM
Dias, J.	29WAF 1A.2	Mon	8:45 AM	James, E. P.	25NWP 12B.3	Thu	8:45 AM
Dowell, D. C.	25NWP 6B.3	Tue	11:15 AM	Jensen, T. L.	25NWP 16B.2	Fri	10:45 AM
Doyle, J. D.	25NWP 1B.3	Mon	9:15 AM	Jensen, T. L.	29WAF 13A.3	Thu	11:00 AM
Doyle, J. D.	25NWP 3B.5	Mon	2:30 PM	Jimenez, P. A.	25NWP 4B.3	Mon	4:30 PM
Du, J.	25NWP 11B.3	Wed	4:30 PM	Jin, H.	29WAF 1A.6	Mon	9:45 AM
Dube, K.	29WAF 6A.4	Tue	11:15 AM				

PRESENTER INDEX

Conf.	Paper #	Day	Time	Conf.	Paper #	Day	Time
J (Cont.)				M (Cont.)			
Jin, Y.	29WAF 1A.5	Mon	9:30 AM	McCray, C.	25NWP	Mon	8:15 AM
Jirak, I. L.	25NWP 14B.6	Thu	2:45 PM	McCray, C. D.	29WAF 3A.3	Mon	2:00 PM
Johnson, A.	25NWP 14B.4	Thu	2:15 PM	McLay, J. G.	25NWP 11B.6	Wed	5:15 PM
Johnson, A.	29WAF 13	Tue	4:00 PM	Mei, H.	29WAF 27	Tue	4:00 PM
Juang, H. M. H.	25NWP 13B.3	Thu	11:00 AM	Melick, C. J.	25NWP 16B.4	Fri	11:15 AM
Judt, F.	25NWP 3B.8	Mon	3:15 PM	Meyer, T. C.	29WAF 7A.1	Tue	1:30 PM
Jung, Y.	29WAF 7A.3	Tue	2:00 PM	Milrad, S. M.	29WAF 16A.4	Fri	11:15 AM
K				Moore, A. D.	29WAF 14A.7	Thu	3:00 PM
Kain, J. S.	25NWP 9B.1	Wed	10:30 AM	Morss, R. E.	29WAF 6A.1	Tue	10:30 AM
Kalmikov, A. G.	29WAF 8A.2	Wed	8:30 AM	Muccilli, M.	29WAF 8A.7	Wed	9:45 AM
Kastman, J.	25NWP 29	Thu	4:00 PM	N			
Kavulich, M. J. Jr.	25NWP 13B.5	Thu	11:30 AM	Neille, P. P.	29WAF 6A.5	Tue	11:30 AM
Kelley, J.	29WAF 15A.8	Fri	9:45 AM	Nelson, J. A. Jr.	29WAF 12A.1	Thu	8:00 AM
Kelsch, M.	29WAF 16A.8	Fri	12:15 PM	Newman, K. M.	25NWP 10B.7	Wed	3:00 PM
Kenyon, J.	25NWP 44	Thu	4:00 PM	Ng, S.	29WAF 1	Tue	4:00 PM
Keyser, D.	29WAF 5A.5	Tue	9:00 AM	Ng, S.	25NWP 33	Thu	4:00 PM
Keyser, D.	29WAF 19	Tue	4:00 PM	Nielsen, E. R.	29WAF 2A.2	Mon	11:00 AM
Kiladis, G. N.	29WAF 1A.1	Mon	8:30 AM	Nielsen, E. R.	29WAF 5	Tue	4:00 PM
Kleist, D. T.	25NWP 7B.1	Tue	1:30 PM	Nielsen, E. R.	29WAF 6	Tue	4:00 PM
Koch, S. E.	29WAF 15A.1	Fri	8:00 AM	Novak, D. R.	29WAF 4A.1	Mon	4:00 PM
Koch, S. E.	29WAF 14A.6	Thu	2:45 PM	Novak, D. R.	29WAF 16A.1	Fri	10:30 AM
Kolczynski, W. Jr.	25NWP 5B.7	Tue	9:30 AM	O			
Kuchera, E.	25NWP 3B.4	Mon	2:15 PM	Olson, J. B.	25NWP 50	Thu	4:00 PM
Kurkowski, N. P.	25NWP 5B.5	Tue	9:00 AM	Olson, J. B.	25NWP 4B.4	Mon	4:45 PM
Kuster, C. M.	29WAF 15A.7	Fri	9:30 AM	Ortega, K. L.	29WAF 12A.4	Thu	8:45 AM
L				Otkin, J.	25NWP 8B.6	Wed	9:15 AM
Lackmann, G. M.	29WAF 3A.1	Mon	1:30 PM	Otkin, J.	25NWP 9B.4	Wed	11:15 AM
Ladwig, T. T.	25NWP 7B.6	Tue	2:45 PM	P			
Lagerquist, R. A.	29WAF 9A.1	Wed	10:30 AM	Pan, S.	25NWP 54	Thu	4:00 PM
Lamberson, W. S.	29WAF 7A.6	Tue	2:45 PM	Papin, P. P.	29WAF 21	Tue	4:00 PM
Lamberson, W. S.	29WAF 20	Tue	4:00 PM	Parsons, D. B.	25NWP 13B.1	Thu	10:30 AM
Lapenta, W.	25NWP 1B.1	Mon	8:30 AM	Paturi, S.	29WAF 12A.3	Thu	8:30 AM
Lawson, J. R.	25NWP 15B.6	Fri	9:15 AM	Penc, R. S.	25NWP 12B.5	Thu	9:15 AM
Lawson, J. R.	29WAF 12	Tue	4:00 PM	Perfater, S.	29WAF 4A.2	Mon	4:15 PM
Lee, J. A.	25NWP 9B.2	Wed	10:45 AM	Pfahler, M.	25NWP 37	Thu	4:00 PM
Lenning, E.	29WAF 3A.5	Mon	2:30 PM	Porson, A.	25NWP 15B.4	Fri	8:45 AM
Leonardo, N.	29WAF 22	Tue	4:00 PM	Potvin, C. K.	25NWP 14B.1	Thu	1:30 PM
Leonardo, N.	29WAF 1A.4	Mon	9:15 AM	Potvin, C. K.	29WAF 10A.7	Wed	3:00 PM
Levine, S.	29WAF 11A.3	Wed	4:30 PM	R			
Levit, J.	25NWP 16B.1	Fri	10:30 AM	Raby, J. W.	25NWP 16B.3	Fri	11:00 AM
Li, J.	29WAF 16	Tue	4:00 PM	Radford, J. T.	29WAF 3A.2	Mon	1:45 PM
Liang, J.	25NWP 45	Thu	4:00 PM	Radhakrishnan, C.	25NWP 2B.2	Mon	10:45 AM
Lin, H.	25NWP 3B.3	Mon	2:00 PM	Radhakrishnan, C.	25NWP 41	Thu	4:00 PM
Liu, M.	25NWP 40	Thu	4:00 PM	Reeves, H. D.	29WAF 8A.3	Wed	8:45 AM
Liu, P.	25NWP 12B.6	Thu	9:30 AM	Reinhart, A. E.	29WAF 11A.1	Wed	4:00 PM
Lombardo, K.	29WAF 10A.3	Wed	2:00 PM	Reinhart, A. E.	29WAF 8A.4	Wed	9:00 AM
Luo, Y.	25NWP 11B.2	Wed	4:15 PM	Reynolds, C. A.	25NWP 1B.2	Mon	9:00 AM
Lyza, A. W.	29WAF 4	Tue	4:00 PM	Roberts, B.	25NWP 14B.7	Thu	3:00 PM
Lyza, A. W.	29WAF 15A.5	Fri	9:00 AM	Rodwell, M. J.	25NWP 10B.4	Wed	2:15 PM
M				Roebber, P.	29WAF 9A.5	Wed	11:30 AM
Ma, S.	25NWP 4B.5	Mon	5:00 PM	Romine, G.	25NWP 8B.1	Wed	8:00 AM
Ma, Z.	29WAF 14A.8	Thu	3:15 PM	Rothstein, C.	25NWP 30	Thu	4:00 PM
Madaus, L.	25NWP 2B.3	Mon	11:00 AM	S			
Mahoney, K.	29WAF 17	Tue	4:00 PM	Satterfield, E. A.	25NWP 39	Thu	4:00 PM
Mahoney, K.	29WAF 16A.7	Fri	12:00 PM	Schaffer, J.	29WAF 9A.4	Wed	11:15 AM
Mallick, S.	25NWP 7B.8	Tue	3:15 PM	Schneider, T. L.	29WAF 12A.2	Thu	8:15 AM
Mandelbaum, T. S.	25NWP 10B.3	Wed	2:00 PM	Schumacher, R. S.	29WAF 9A.3	Wed	11:00 AM
Mass, C. F.	29WAF 2A.4	Mon	11:30 AM	Schumacher, R. S.	29WAF 23	Tue	4:00 PM

Conf.	Paper #	Day	Time	Conf.	Paper #	Day	Time
S (Cont.)				W			
Schwartz, C. S.	25NWP 15B.1	Fri	8:00 AM	Wang, Y.	25NWP 11B.4	Wed	4:45 PM
Semmens, K.	29WAF 6A.3	Tue	11:00 AM	Wang, Y.	29WAF 7A.4	Tue	2:15 PM
Shafer, P. E.	29WAF 16A.2	Fri	10:45 AM	Wang, Y.	25NWP 7B.7	Tue	3:00 PM
Sherburn, K. D.	29WAF 3	Tue	4:00 PM	Weinrich, J.	29WAF 11A.5	Wed	5:00 PM
Smith, J. A.	25NWP 13B.6	Thu	11:45 AM	Weinrich, J.	29WAF 7A.5	Tue	2:30 PM
Snook, N.	29WAF 7A.2	Tue	1:45 PM	Weisman, M.	29WAF 10A.1	Wed	1:30 PM
Sobash, R. A.	29WAF 15	Tue	4:00 PM	Weygandt, S. S.	29WAF 11A.2	Wed	4:15 PM
Splawinski, S.	29WAF 3A.4	Mon	2:15 PM	Williams, J. K.	29WAF 12A.6	Thu	9:15 AM
Squitieri, B. J.	25NWP 10B.5	Wed	2:30 PM	Wilt, B. A.	25NWP 3B.6	Mon	2:45 PM
Stajner, I.	25NWP 5B.1	Tue	8:00 AM	Wixtrom, T. J.	29WAF 26	Tue	4:00 PM
Steenburgh, W. J.	25NWP 31	Thu	4:00 PM	Wolff, J. K.	25NWP 15B.2	Fri	8:15 AM
Stefanescu, R.	25NWP 8B.7	Wed	9:30 AM	Wong, J.	25NWP 3B.7	Mon	3:00 PM
Steinle, P.	25NWP 2B.1	Mon	10:30 AM	Wong, M.	25NWP 10B.8	Wed	3:15 PM
Stratman, D. R.	25NWP 8B.5	Wed	9:00 AM	Y			
Szoke, E.	29WAF 7A.8	Tue	3:15 PM	Yang, F.	25NWP 5B.3	Tue	8:30 AM
Szoke, E.	29WAF 16A.3	Fri	11:00 AM	Yang, R.	25NWP 51	Thu	4:00 PM
T				Yudin, V. A.	25NWP 4B.6	Mon	5:15 PM
Tallapragada, V.	25NWP 5B.2	Tue	8:15 AM	Yussouf, N.	29WAF 2A.3	Mon	11:15 AM
Thielen, J. E.	25NWP 10B.6	Wed	2:45 PM	Yussouf, N.	29WAF 14A.4	Thu	2:15 PM
Thielke, T. K.	29WAF 4A.3	Mon	4:30 PM	Z			
Thomas, C.	25NWP 7B.2	Tue	1:45 PM	Zhang, C.	25NWP 5B.4	Tue	8:45 AM
Thompson, G.	29WAF 3A.7	Mon	3:00 PM	Zhang, L.	29WAF 7	Tue	4:00 PM
Tolman, H. L.	25NWP 10B.1	Wed	1:30 PM	Zhang, M.	25NWP 53	Thu	4:00 PM
Toth, Z.	25NWP 10B.2	Wed	1:45 PM	Zhang, X.	29WAF 11A.4	Wed	4:45 PM
Tournay, R.	25NWP 1B.4	Mon	9:30 AM	Zhao, Q.	25NWP 8B.3	Wed	8:30 AM
Toy, M. D.	25NWP 48	Thu	4:00 PM	Zhou, C.	25NWP 56	Thu	4:00 PM
Trailovic, L.	25NWP 8B.2	Wed	8:15 AM	Zupanski, D.	29WAF 11A.6	Wed	5:15 PM
Turasky, E.	25NWP 34	Thu	4:00 PM				
V							
Vertz, N. J.	29WAF 10A.4	Wed	2:15 PM				

American Grills & Steakhouses

Pub 17 Welton St. Hotel Lobby: Casual Dining \$

The Capital Grill in Larimer Square: Upscale Dining \$\$\$

Denver Chophouse & Brewery 19th Street next to Coors Field: Brewery Atmosphere \$\$

Earls Kitchen + Bar 16th & Glenarm Place: Contemporary Dining \$\$

Elway's 18th & Curtis: Upscale Steak House \$\$

Appaloosa Grill 16th & Welton: Casual Dining \$

Morton's Steakhouse 17th & Wynkoop: Casual Dining \$\$

Marlowe's Restaurant & Steakhouse 16th & Glenarm: Mid-level Dining \$\$

Paramount Café 16th & Glenarm: Casual Dining \$

Prime Steakhouse 14th & Arapahoe: Upscale Dining \$\$\$

Ted's Montana Grill Larimer Square: Western Atmosphere \$\$

Buffalo Exchange 10th & Osage: Ultimate Colorado Experience \$\$

Edge Restaurant & Bar 14th Arapahoe: Upscale Dining \$\$\$

Guard and Grace 18th & California: Modern Upscale \$\$\$

1515 15th & Market: Modern American \$\$\$

The Broker 17th & Champa: Vault Dining Area \$\$

The Kitchen 16th & Wazee: Farm to Table \$\$

Freshcraft 15th & Blake: Pub/Casual \$

Range 17th & Champa: American West/Upscale \$\$

Rialto Café 16th & Curtis: Casual \$

Steuben's 17th & Pearl: Trendy/Retro-Themed \$

Seafood

Jax Fish House & Oyster Bar 17th & Wazee: Sustainable Seafood, Upscale Dining \$\$\$

McCormicks Fish House & Bar in Oxford Hotel 17th & Wazee: Casual Dining \$

Oceanaire Seafood Room 14th & Arapahoe: Upscale Dining \$\$

Bubba Gump Shrimp Co. 14th & California: Very Casual Dining \$

Bayou Bob's 16th & Glenarm: Very Casual \$

Ocean Prime 15th & Larimer: Upscale Dining \$\$

Stoic & Genuine 17th & Wynkoop: Modern/Upscale \$\$\$

Mexican

D'Corazon 15th & Blake: Authentic Dishes \$\$

Tamayo 14th & Larimer: Modern/Upscale \$\$

Illegal Pete's 16th & Wazee: Funky/Local \$

Lolo Mexican Fish House 15th & Boulder: Casual \$\$

Los Chingones 24th & Larimer: Modern \$\$

Pinche Taqueria 15th & York: Innovative Street-Style Tacos \$\$

Work & Class 25th & Larimer: Homestyle Latin \$\$

French

Le Grand Bistro & Oyster Bar 15th & Curtis: Casual Dining \$\$

Bistro Vendome Larimer Square: Upscale Ambience \$\$\$

CooHills 15th & Wewatta: Locally Sourced/Community Table \$\$

Crepes & Crepes 15th & Larimer: Casual \$

Asian Fusion

Cholan Modern Asian Bistro 15th & Blake: Casual Dining \$\$

Zengo 16th & Little Raven: Modern Atmosphere \$\$

Sushi Sasa 15th & Platte: Upscale sushi bar \$\$

Hapa Sushi Grill & Sake Bar 15th & Blake: Traditional Japanese \$\$

JJ Bistro 19th & Larimer: Casual \$

Vegetarian Dining & Bistro Style Dining

Watercourse 17th & Emerson: Eclectic Modern Dining \$\$

Native Foods Café 16th Glenarm: Bistro Café Dining \$

Mod Market 16th & Champa: Variety of Salads \$

Cooks Fresh Market 16th & Glenarm: Quality food market \$

The Market 15th & Larimer: Prepared Fresh Daily \$

Italian

The Old Spaghetti Factory 18th and Lawrence: Casual \$

Venice Risorante 17th and Wynkoop: Fine Dining \$

Panzano 17th and Champa: Northern Italian \$\$

Osteria Marco 14th and Larimer: Upscale/Fine Dining \$\$\$

Indian

Little India 15th and Champa: Authentic/Fine \$

Biju's Little Curry Shop 26th & Walnut: Southern Indian Cuisine \$

2nd Floor

