2021 Student Research Symposium
REU Site in Earth System Science

Tuesday, August 3, 2021 | 9:00 AM - 3:00 PM MDT
Atmospheric Science - ATS 101 (in-person participation)

Please email Melissa Burt (Melissa.Burt@colostate.edu) to receive the Zoom information

8:50  Introductions and Welcome

Session 1: 9:00 AM - 10:00 AM
Atmospheric Convection

9:00  Variability in thermodynamic profiles of extreme precipitation events in northern Taiwan
Kyle Brooks, University of Georgia
Mentors: Dr. Michael Bell, Dr. Jen DeHart, and Chelsea Nam

9:15  The influence of topography on extreme rainfall events in Taiwan
Leah Swinney, Texas A&M University, Corpus Christi
Mentors: Dr. Kristen Rasmussen, Rung Panasawatwong, and Marqi Rocque

9:30  Influence of the Andes mountains on the thermodynamics of mesoscale convective systems in subtropical South America
Victoria Chavez, University of Colorado, Boulder
Mentors: Dr. Kristen Rasmussen, Marqi Rocque, Dr. Jim Hurrell, Lantao Sun

9:45  Estimation and meteorological analysis of CCN during RELAMPAGO-CACTI in Córdoba, Argentina
William Faletti, Northern Illinois University
Mentors: Samuel O’Donnell, Benjamin Swanson, Dr. Jeffery Pierce, Dr. Paul Demott, and Dr. Sonia Kreidenweis

10:00  Break - 15 min
Session 2: 10:15 AM - 11:15 AM MDT
Tropical Phenomena

10:15 Detecting tropical cyclone secondary eyewalls with a microwave-based scheme
Alvin Cheung, Pennsylvania State University
Mentors: Dr. Chris Slocum and Dr. John Knaff

10:30 Cold pools in tropical cyclones and isolated tropical convection
Brittney Smith, Northern Vermont University, Lyndon
Mentors: Nicholas Falk and Dr. Susan van den Heever

10:45 The effect of projected Sea Surface Temperature (SST) pattern changes on tropical precipitation using CESM 1
Amanda Bowden, University of Georgia
Mentors: Dr. Eric Maloney, Justin Whitaker, Michael Natoli, and Justin Hudson

11:00 A simple model of tropical and subtropical interactions
Jay Pillai, University of Illinois, Urbana-Champaign
Mentors: Michael Needham, Mark Branson, Dr. David Randall

11:15 Break - 65 minutes
Session 3: 12:15 PM - 1:30 PM MDT
Atmospheric Aerosols, Chemistry, and Wildfires

12:20  Quantifying enhancements in ammonia and methane from concentrated animal feeding operations in northeastern Colorado using ground-based mobile sampling
Trey Maddaleno, Truman State University
Yuwei Zhao, Colorado State University
*Mentors: Dr. Ilana Pollack, Dr. Amy Sullivan, Julieta Juncosa Calahorrano, and Dr. Emily Fischer*

12:45  Using PM2.5 observations to verify HRRR smoke forecasts during the 2020 western US fire season
Sam Lesmerises, Northern Vermont University, Lyndon
*Mentor: Dr. Amanda Back and Dr. Christina Holt*

1:00  Local and long-range impacts of wildfire smoke on air quality in Fort Collins, CO
Blake Checkoway, University of Georgia
*Mentor: Dr. Jenny Hand*

1:15  Analysis of risk communications during the Cameron Peak Fire
Gillian Felton, University of Northern Colorado
*Mentors: Dr. Matt Rogers and Andrea Schumacher*

1:30  Break - 15 minutes
Session 4: 1:45 PM - 3:00 PM MDT
Prediction, Data Assimilation, and Satellite Retrieval

1:45
Formulation of a nonlinear GOES-R Lightning flash extent density forward operator for ensemble assimilation and verification in the High Resolution Rapid Refresh (HRRR)
Ashley Sebok, Millersville University
Mentors: Dr. Amanda Back, Dr. David Dowell, and Dr. Eric Bruning

2:00
Understanding weekly precipitation forecast errors in western Colorado
Abby Thornton, Texas A&M University
Mentors: Dr. Russ Schumacher and Dr. Becky Bolinger

2:15
Predicting September arctic sea-ice extent using a hierarchy of statistical models
Hannah Myint, University of San Francisco
Mentors: Dr. Zachary Labe and Dr. Elizabeth Barnes

2:30
Predicting the Madden-Julian Oscillation using abstention-based neural networks
Anushka Narayanan, Cornell University
Mentors: Dr. Zane Martin, Kirsten Mayer, and Dr. Elizabeth Barnes

2:45
Updates to the GOES-16 split-window precipitable water satellite product
Emily Luschen, University of Oklahoma
Mentors: Dr. Jack Dostalek and Dr. Lewis Grasso

3:00
ADJOURN

Join us for the REU Poster Session!
Thursday, August 5, 2021
10:00 - 11:30 AM (Morning Session)
1:30 - 3:00 PM (Afternoon Session)

ATS West Seminar Room (Rm. 121)

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