

Angela K. Rowe, Ph.D.

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EDUCATION

- 2011 **Ph.D.**, Atmospheric Science, Colorado State University
2007 **M.S.**, Atmospheric Science, Colorado State University
2005 **B.S.**, Meteorology (Cum Laude), Minor in Mathematics, Millersville University

APPOINTMENTS

- 2020- **Assistant Professor**, Department of Atmospheric and Oceanic Sciences, University of Wisconsin-Madison, Madison, WI
- Research areas: Radar meteorology, cloud physics, convective storms, orographic precipitation
- 2020- **Affiliate Assistant Professor**, Department of Atmospheric Sciences, University of Washington, Seattle, WA
- 2015-2019 **Research Scientist 4**, Department of Atmospheric Sciences, University of Washington, Seattle, WA
- 2012-2015 **Postdoctoral Research Associate**, Department of Atmospheric Sciences, University of Washington, Seattle, WA
- *Supervisor:* Dr. Robert A. Houze, Jr.
- 2011-2012 **Postdoctoral Research Associate**, Department of Atmospheric Science, Colorado State University, Fort Collins, CO
- *Supervisor:* Dr. Steven Rutledge
 - 6-month joint appointment with APEC Center for Typhoon and Society in Taipei, Taiwan (*Supervisor:* Dr. Ben Jong-Dao Jou)
- 2005-2011 **Graduate Research Assistant**, Department of Atmospheric Science, Colorado State University, Fort Collins, CO
- *Advisor:* Dr. Steven Rutledge
- 2005 **Teaching Assistant**, Department of Earth Sciences, Millersville University, Millersville, PA
- *Course:* The Atmosphere with Laboratory

GRANTS RECEIVED

Current

Title: *Collaborative Research: Convective upscale growth processes during RELAMPAGO*
PI; NSF – Physical and Dynamic Meteorology; 01/01/2022 – 12/31/2024

Title: *Linking Convective Cloud Processes and Air Motion through Airborne Datasets*
PI; NASA – Science Mission Directorate; 03/16/2020 – 03/15/2024

Title: *Collaborative Research: Topographic Influences on Extreme Warm Season Precipitation*
PI; NSF – Physical and Dynamic Meteorology; 08/01/2019 – 07/31/2023

Title: *Two-way momentum coupling between hydrometeors and small-scale air motions:
Effects on precipitation and drop size distributions*
Co-I; NASA – Science Mission Directorate; 03/16/2020 – 03/15/2023

Previous

Title: *Collaborative Research: Radar Observations of Convective Lifecycle near Argentina’s
Sierras de Córdoba*
PI; NSF – Physical and Dynamic Meteorology; 08/15/2017 – 07/31/2022

Title: *West Coast Precipitation Processes as Modulated by Storm Structure and Terrain*
Co-PI; NSF – Physical and Dynamic Meteorology; 08/15/2017 – 07/31/2020

Title: *Shallow-to-Deep Convective Transition in the Amazon*
Co-I; Dept of Energy – Atmospheric System Research; 8/1/2016 – 7/31/2020

Title: *Diagnosis of convective organization and cold pools using ARM datasets and evaluation
of a unified convection parameterization (UNICON)*
Co-I; Dept of Energy – Atmospheric System Research; /1/2016 – 7/31/2019

FIELD EXPERIMENTS

- 2022 **PI; Convective Processes Experiment – Cabo Verde (CPEX-CV),
Cabo Verde (September 2022)**
- 2022 **PI; Prediction of Rainfall Extremes Campaign in the Pacific (PRECIP),
Taiwan (May-August 2022)**
- 2021 **PI; “Pre-CIP”,
Colorado; virtual operations (May-August 2022)**
- 2021 **PI; Convective Processes Experiment - Aerosols and Winds (CPEX-AW),
St. Croix (August – September 2021)**
- 2018 **PI; Remote sensing of Electrification, Lightning, and Mesoscale/microscale
Processes with Adaptive Ground Observations (RELAMPAGO),
Argentina (October – December 2018); Concurrent with serving on leadership
team of NSF-sponsored IRES Advanced Study Institute – Field Studies of
Convection in Argentina**
- 2015-2016 **Lead radar scientist, outreach coordinator, Olympic Mountain Experiment
(OLYMPEX), Washington**
- 2011-2012 **Radar scientist, Forecaster, Deep Convective Clouds and Chemistry
Experiment (DC3), Colorado**
- 2011 **Lead radar scientist, Dynamics of the MJO (DYNAMO),**

Indian Ocean, R/V Revelle

- 2008 *Student participant, Terrain-influenced Monsoon Rainfall Experiment (TiMREX), Taiwan*
- 2003-2004 *Student participant Wintertime study of airborne particles using the Millersville University Tethered Atmospheric Sounding System, Pennsylvania*

PUBLICATIONS

- Kollias, P. D. Bodine, R. Palmer, E. Luke, S. Nesbitt, P. Kirstetter, A. Shapiro, M. Oue, J. Salazar, H. Bluestein, W.-C. Lee, R. Tanamachi, C. Griffin, T. Adachi, X. Wang, **A. Rowe**, M. Kumjian, J. Kurdzon, J. Houser, and D. Zrnice, 2022: Science application of phased array radars. *Bull. Amer. Met. Soc.*, in revision.
- Palmer, R., D. Bodine, P. Kollias, D. Schwartzman, D. Zrnice, P. Kirstetter, G. Zhang, T.-Y. Yu, B. Cheong, S. Collis, S. Frasier, C. Fulton, K. Hondl, M. Kumjian, E. Knapp, J. Kurdzo, T. Ohio, **A. Rowe**, J. Salazar, S. Torres, W. Weber, and M. Yearly, 2022: A primer on phased array radar technology for the atmospheric sciences. *Bull. Amer. Met. Soc.*, accepted.
- Crespo, A., **A. K. Rowe**, L. Arena, and A. Desai, 2022: Evaluation of satellite-derived signatures for three verified hailstorms in central Argentina. *Meteorology*, 1(2), 183-210, doi: 10.3390/meteorology1020013. [advisee]
- Sasaki, C., **A. K. Rowe**, L. A. McMurdie, and K. L. Rasmussen, 2021: New insights into the South American Low-Level jet from RELAMPAGO observations. *Mon. Wea. Rev.*, 150(6), 1247-1271, doi:10.1175/MWR-D-21-0161.1. [advisee]
- DeLaFrance, A., L. A. McMurdie, and **A. K. Rowe**, 2021: Orographically modified ice-phase precipitation processes during the Olympic Mountains Experiment (OLYMPEX). *J. Atmos. Sci.*, 78(11), 3815-3833 doi:10.1175/JAS-D-21-0091.1. [advisee]
- Nesbitt, S. W., P. Salio, E. Avila, L. Carey, V. Chandrasekar, W. Deierling, F. Dominguez, M. E. Dillon, C. M. Garcia, S. Goodman, K. Kosiba, M. Kumjian, T. Lang, J. Marquis, L. McMurdie, E. L. Nascimento, K. Rasmussen, R. Roberts, **A. K. Rowe**, J. J. Ruiz, E. F. S. Sabbas, A. C. Saulo, R. Schumacher, Y. G. Skabar, L. A. T. Machado, R. J. Trapp, A. Varble, J. Wilson, and J. Wurman, 2020: A storm safari in Argentina: Proyecto RELAMPAGO. *Bull. Amer. Met. Soc.*, 102(8), E1621-E1644, doi:10.1175/BAMS-20-0029.1.
- Rasmussen, K., M. A. Burt, **A. K. Rowe**, R. Haacker, D. Hence, L. M. Luna, S. W. Nesbitt, and J. Maertens, 2020: Enlightenment strikes! Broadening graduate school training through field campaign participation. *Bull. Amer. Met. Soc.*, early online release, doi:10.1175/BAMS-D-20-0062.1.
- Piersante, J. O., K. L. Rasmussen, R. S. Schumacher, **A. K. Rowe**, and L. A. McMurdie, 2020: A synoptic evolution comparison of the largest MCSs in subtropical South America between Spring and Summer. *Mon. Wea. Rev.*, 149, 1942-1966, doi:10.1175/MWR-D-20-0208.1.

- Serra, Y. L., **A. K. Rowe**, D. K. Adams, and G. N. Kiladis, 2020: Kelvin waves over the Central Amazon during GOAmazon and their relationship to localized convective initiation. *J. Atmos. Sci.*, **77**, 3533-3550.
- Cheng, W.-Y., D. Kim, **A. K. Rowe**, Y. Moon, and S. Wang, 2020: Mechanisms of convective clustering during a two-day rain event in AMIE/DYNAMO. *J. Adv. Model. Earth Syst.*, **12**, doi:10.1029/2019MS001907.
- Rowe, A. K.**, R. A. Houze, Jr., S. Brodzik, and M. D. Zuluaga, 2019: The diurnal and microphysical characteristics of MJO rain events during DYNAMO. *J. Atmos. Sci.*, **76**, 1975-1988, doi:10.1175/JAS-D-18-0316.1.
- Bruick, Z. S., K. L. Rasmussen, **A. K. Rowe**, and L. A. McMurdie, 2019: Characteristics of intense convection in subtropical South America as influenced by El Niño-Southern Oscillation. *Mon. Wea. Rev.*, **147**, 1947-1966, doi: 10.1175/MWR-D-18-0342.1.
- McMurdie, L., **A. K. Rowe**, R. A. Houze, Jr., S. R. Brodzik, J. P. Zagrodnik, and T. Schuldt, 2018: Terrain-enhanced precipitation processes above the melting level: Results from OLYMPEX. *J. Geophys. Res. Atmos.*, **123**, doi:10.1029/2018JD029161.
- Cheng, W.-Y., D. Kim, **A. K. Rowe**, 2018: Objective quantification of convective clustering observed during the AMIE/DYNAMO 2-day rain episodes. *J. Geophys. Res. Atmos.*, **123**, doi:10.1029/2018JD028497.
- Barnes, H. C., J. P. Zagrodnik, L. A. McMurdie, **A. K. Rowe**, and R. A. Houze, Jr., 2018: Kelvin-Helmholtz waves in precipitating mid-latitude cyclones. *J. Atmos. Sci.*, **75**, 2763-2785.
- Li, X., M. A. Janiga, S. Wang, W.-K. Tao, **A. Rowe**, W. Xu, C. Liu, T. Matsui, and C. Zhang, 2018: Evolution of precipitation structure during November DYNAMO MJO Event: Cloud-resolving model inter-comparison and cross-validation using radar observations. *J. Geophys. Res. Atmos.*, **123**, 3530-3555, doi:10.1002/2017JD027775.
- Houze, R. A., Jr., L. A. McMurdie, W. A. Petersen, M. R. Schwaller, W. Baccus, J. Lundquist, C. Mass, B. Nijssen, S. A. Rutledge, D. Hudak, S. Tanelli, G. G. Mace, M. Poellot, D. Lettenmaier, J. Zagrodnik, **A. Rowe**, J. DeHart, L. Madaus, H. Barnes and C. Chandra, 2017: The Olympic Mountains Experiment (OLYMPEX). *Bull. Amer. Meteor. Soc.*, **98**, 2167-2188.
- Rowe, A. K.**, and R. A. Houze, Jr. 2015: Cloud organization and growth during the transition from suppressed to active MJO conditions. *J. Geophys. Res. Atmos.*, **120**, 10,324-10,350, doi:10.1002/2014JD022948. (“AGU Editors Research Spotlight” Radar study examines pulsing tropical climate, EOS, Vol. 97, doi:10.1029/2016EO046407, 22 February 2016.)
- Feng, Z., S. Hagos, **A. K. Rowe**, C. D. Burleyson, M. N. Martini, and S. P. de Szoeke, 2015: Mechanisms of convective cloud organization by cold pools over tropical warm ocean during the AMIE/DYNAMO field campaign. *J. Adv. Model. Earth Syst.*, **7**, 357-381, doi:10.1002/2014MS000384.
- Rowe, A. K.**, and R. A. Houze, Jr., 2014: Microphysical characteristics of MJO convection over the Indian Ocean during DYNAMO. *J. Geophys. Res. Atmos.*, **119**, 2543-2554,

doi:10.1002/2013JD020799. (“AGU Editors Research Spotlight” Peering into the microphysics of the Madden-Julian Oscillation, *EOS*, Vol. 95, No. 35, 2 September 2014: DOI: 10.1002/2014EO350022.)

Ruppert, J. H., Jr., R. H. Johnson, and **A. K. Rowe**, 2013: Diurnal circulations and rainfall in Taiwan during SoWMEX/TiMREX (2008). *Mon. Wea. Rev.*, **141**, 3851-3872.

Rowe, A. K., S. A. Rutledge, and T. J. Lang, 2012: Investigation of microphysical processes occurring in organized convection during NAME. *Mon. Wea. Rev.*, **140**, 2168-2187.

Rowe, A. K., S. A. Rutledge, and T. J. Lang, 2011: Investigation of microphysical processes occurring in isolated convection during NAME. *Mon. Wea. Rev.*, **139**, 424-443.

Rowe, A. K., S. A. Rutledge, T. J. Lang, P. E. Ciesielski, and S. M. Saleeby, 2008: Elevation-dependent trends in precipitation observed during NAME. *Mon. Wea. Rev.*, **136**, 4962-4979.

Rowe, A. K., S. A. Rutledge, and T. J. Lang, 2008: Radar-based studies of convection in NAME. *CLIVAR Exchanges*, **13**, 12-14.

TEACHING AND MENTORING

Teaching Experience

University of Wisconsin-Madison, Madison WI

- AOS 453/753 Mesoscale Meteorology (undergraduate elective, professional M.S. graduate elective), Spring 2021 and Spring 2022 in-person/hybrid
- AOS 637 Cloud Physics (graduate elective), Fall 2020, 2021, in-person/hybrid

University of Washington, Seattle, WA (2012-2019)

- Co-taught 301 Introduction to Atmospheric Sciences (undergraduate) and 535 Cloud Physics and Dynamics (graduate), including developing my own lecture material, quizzes, and tests. Student evaluations available.
- Redeveloped and taught the radar section of 451A Instruments and Observations including lecture material, lab assignments, and tests. Student evaluations available.

Colorado State University, Fort Collins, CO (2007-2011)

- Lab instructor for Introduction to Weather and Climate (undergraduate)
- Teaching Assistant for Thermodynamics and Cloud Physics (graduate) and Radar Meteorology (graduate) including developing and evaluating assignments and quizzes.

Millersville University, Millersville, PA (2005)

- Teaching Assistant for The Atmosphere with Laboratory (undergraduate)

Teaching Professional Development

- 2021-2022 *Selected participant* for the University of Wisconsin-Madison's Madison Teaching and Learning Excellence (MTLE) program (in-person fall 2021-spring 2022)
- 2021 *Selected participant* for the University of Wisconsin-Madison's The Discussion Project (virtual, summer 2021)

Student Mentoring

- 2020- *University of Wisconsin-Madison, Madison, WI*
- Advisor of graduate students:
 - o Ian Cornejo (2020-)
 - o Anthony Crespo (MS Co-advisor 2020, Advisor starting 2021)
 - o Benjamin Rodenkirch (2020-)
 - Graduate committees
 - o Karimar Ledesma-Maldonado (2022 -), Atmospheric and Oceanic Sciences
 - o Stephanie Bradshaw (2021-), Atmospheric and Oceanic Sciences
 - o Julia Shates (2020-), Atmospheric and Oceanic Sciences
 - o Juliet Pilewski (2020-), Atmospheric and Oceanic Sciences
 - o Samantha Hartke (2021), Civil and Environmental Engineering
 - o Chelsea Snide (2021), Atmospheric and Oceanic Sciences
 - o Brianne Andersen (2021), Atmospheric and Oceanic Sciences
- 2016- *University of Washington, Seattle, WA*
- Co-Advisor of graduate students:
 - o Clayton Sasaki (2018-)
 - o Andrew DeLaFrance (2018-)
 - Served on graduate student committees: Megan Chaplin (MS, 2017)
 - Mentoring graduate research: Wei-Yi Cheng (MS, 2016-19)
 - Mentoring undergraduate research: Thomas Schuldt (2016-18), Kyle Anderson (2017-18), Jamin Rader (2017-19)

AWARDS

- 2021 **University of Wisconsin-Madison Atmospheric and Oceanic Sciences Graduate Student Association Teaching Award:** Awarded annually to a professor who has done an excellent job teaching at the graduate level
- 2011 **Alumni Award:** Offered annually to a senior Ph.D. student for outstanding research
- 2008 **Herbert Riehl Memorial Award:** Offered annually to a graduate student who submits the best technical manuscript for publication in the referred literature during the previous eighteen-month period
- 2005 **Paul H. Nichols Scholarship:** Awarded to a junior earth sciences major who is chosen on the basis of outstanding motivation and academic excellence

PROFESSIONAL ACTIVITIES AND SERVICE

Editor/Reviewer

- 2020- **Editor** for Monthly Weather Review
- 2015-2019 **Associate Editor** for Monthly Weather Review

2021 **Book Chapter Reviewer** for AGU
 2019 **Book Proposal Reviewer** for Cambridge University Press
 2009-2007- **Panelist Reviewer** for proposals submitted to DOE, NSF, and NASA
Reviewer for Climate Dynamics, Journal of Applied Meteorology and
 Climatology, Journal of the Atmospheric Sciences, Journal of Climate, Journal
 of Geophysical Research, Journal of the Meteorological Society of Japan,
 Monthly Weather Review, Weather and Forecasting, Atmospheres,
 Geophysical Research Letters, International Journal of Climatology

UW-Madison AOS Departmental Committees

2021-2022 Qualifying Exam Review Committee
 2021- AOS Women in Science Committee
 2020- Curriculum Committee
 2020- Undergraduate Program Committee
 2020- Departmental Equipment Committee
 2020-2021 Awards Committee

Community Committees

2020-2023 **Program committee member** for the AMS's 40th Conference on Radar
 Meteorology (postponed from 2021 to 2023)
 2022 **Program committee member** for the AMS 35th Conference on Hurricanes
 and Tropical Meteorology
 2011-2018 **Member** of the AMS STAC Radar Meteorology Committee (student: 2011,
 full: 2012-2018)
 2017 **Program committee member** for AMS's 38th Conference on Radar
 Meteorology
 2013-2015 **Co-organizer** of the DOE ASR Cold Pool Interest Group
 2013 **Program committee member** for the AMS's 36th Conference on Radar
 Meteorology

Conference/Meeting Activities

2021 **Organizer and Content Developer** for the PRECIP Educational and Training
 Workshop, virtual
 2021 **Moderator** for the Virtual Workshop on Atmospheric Science Applications of
 Ground-Based Phased Array Radars, University of Oklahoma (virtual)
 2020 **Mentor** for the AMS 19th Conference on Mountain Meteorology (Virtual)
 2019 **Invited Participant** of the Severe Weather and TAHOPE Planning Workshop
 in Taipei, Taiwan
 2019 **Invited Participant** of the Joint Propulsion Laboratory's A-Team Study on
 the Lifecycle of Convection
 2018 **Co-organizer** of the U.S. DOE ASR's PI meeting breakout session "GOAmazon
 2014/5 synergies II"

- 2017 **Co-organizer** of the PRECIP2020 Workshop at Colorado State University (follow-up from U.S.-Taiwan Extreme Precipitation and Weather workshops)
- 2017 **Co-organizer** of the U.S. DOE ASR's PI meeting breakout session "Observational needs for studying convective transition processes."
- 2017 **Symposia Co-Organizer** of the Robert A. Houze, Jr. Symposium and the 5th Symposium on Prediction of the Madden-Julian Oscillation at the 97th Annual AMS Meeting in Seattle, WA
- 2016 **Invited Participant** of the U.S. DOE Atmospheric Systems Research Program's workshop on "The representation of evolution of convective cloud populations in the next generation climate models" at PNNL in Richland, WA
- 2016 **Invited Participant** of the 2nd U.S.-Taiwan Extreme Precipitation and Weather Workshop in Honolulu, HI
- 2015 **Invited Participant** of the 1st U.S.-Taiwan Extreme Precipitation and Weather Workshop in Taipei, Taiwan
- 2015 **Nominated panelist** for the 2015 AMS Student Conference session "Getting your Hands Dirty in the Field"
- 2014 **Participant** of the Early Career Professionals Conference at the AMS Annual Meeting
- 2013- **Judge** of student paper awards at AGU Meetings (2013, 2014, 2017), AMS Meetings (2015, 2017, 2019, 2020, 2022), ICMCS-XII (2017)
- 2012- **Session chair** for DOE ASR Science Team and Fall Working Group meetings, AMS 18th Conference on Mesoscale Processes, AMS 31st and 35th Conferences on Hurricanes and Tropical Meteorology, AMS 36th Conference on Radar Meteorology, AMS 20th Conference on Mountain Meteorology, MJO Field Data and Science Workshop, AGU Fall Meetings, AMS Annual Meetings

Memberships in Professional Societies

- 2012- American Geophysical Union
- 2001- American Meteorological Society
- 2008-2011 Member of the National Weather Association (student)
- 2001-2005 Member of the Millersville University AMS chapter (*VP 2004-2005*)

Forecasting

- 2009-2010 Forecaster for the Colorado State University campus television station, providing forecasts to the communications majors for broadcasting three days a week
- 2006-2009 Participant in the WxChallenge Forecasting Competition
- 2003-2005 Participant in the National Collegiate Weather Forecasting Contest
- 2002-2005 Forecaster for the Millersville University Campus Weather Service (*Lead: 2004-2005*)

Other

- 2021 **Participant** in URGE: Unlearning Racism in the Geosciences program

- 2014 **Contributor, Indexer, Editor** for sections of Dr. Houze's Cloud Dynamics (second edition) textbook
- 2006-2007 **Graduate Student Representative** in the Department of Atmospheric Science at Colorado State University

OUTREACH

- 2021 **WISE Faculty Dinner**
- Dinner guest to meet with undergraduate women interested in STEM in the UW-Housing Learning Community WISE program
- 2018 - 2019 **RELAMPAGO/ASI-FSCA**
- Conducted media (print, TV) interviews for RELAMPAGO campaign
 - Co-coordinated local outreach (K-12, public open house)
 - Contributed to large social media effort promoting campaign
- 2015-2019 **OLYMPEX**
- Worked with NASA Education and Outreach team to coordinate media day and social, to organize and promote teacher's webinar, and to develop K-12 classroom material
 - Visited schools and communities on the Olympic Peninsula prior to and after the field campaign, reaching 700+ students including underrepresented communities, as well as hosting site visits during campaign
 - Coordinated and participated in media requests and contributed to blog and social media pages to promote campaign and OLYMPEX research
 - Hosted an OLYMPEX booth at the AMS Annual Meeting's WeatherFest in Seattle (2017) including hands-on activities for scientists of all ages
- 2012- **Community Cloud Atlas**
- Co-creator and co-administrator of this community-based social media tool, including Facebook, Twitter, and WordPress pages.
 - This resource provides a means for the public to share their pictures of the sky. We identify the clouds and explain the associated science to the public, as well as building a database of cloud types.
 - We have presented on the Community Cloud Atlas in Education/Outreach sessions of the AGU Fall and AMS Annual meetings.
- 2012-2014 **GLOBE Scientists' Blog**
- Guest contributor
 - Topics included monsoons, pyrocumulus clouds, weather in the Pacific Northwest, and the Community Cloud Atlas
- 2013 **NOVA Cloud Lab**
- Served as an expert advisor for the PBS NOVA Cloud Lab, which provides educational material to the public

- Responsibilities included identifying clouds in photos, providing feedback on video content, and participating in a week long NOVA Labs Meet the Scientists Q&A.

2007-2011 **Severe Weather Presentations for Science Classes**

- During May of each of these years, participated in and led a series of presentations about severe weather and weather safety to 9th grade science classes at Loveland High School in Loveland, CO.

TRAINING

2010 **East Asia Pacific Summer Institutes for U.S. Graduate Students (EAPSI)**

National Taiwan University, Taipei, Taiwan

Participation in a ten-week program at an international research institution providing U.S. graduate students a research and cultural experience in the respective location and developing future collaborations

Supervisor: Dr. Ben Jong-Dao Jou

Topic: A study of microphysical processes occurring in convection during TiMREX

2009 **Advanced Study Program: Exploring the Atmosphere, Observational Instruments and Techniques**

National Center for Atmospheric Research (NCAR), Boulder, CO

Participation in a two-week colloquium including a student-led two-day field program using NSF lower-observation facilities, U. of Wyoming's King Air, and CSU's CHILL radar

Topic: The interaction between convective cells and a gust front: A dual-Doppler and surface analysis

2008 **National Weather Service Student Volunteer**

Cheyenne Weather Forecast Office, WY

Job shadowed forecasters and the SOO and familiarized myself with tools including AWIPS, GFE, and the Weather Event Simulator (WES)

2005 **National Weather Center Research Experience for Undergraduates**

National Severe Storms Laboratory (NSSL), Norman, OK

Participated in a ten-week program to introduce undergraduates to scientific research, including writing and presenting results

Mentors: Dr. Pamela Heinselman and Dr. Terry Schuur

Topic: Estimating hail size using polarimetric radar

2001 **Community Internship Program**

WHAG NBC25, Hagerstown, MD

Worked with the morning-shift on-air meteorologist to create forecasts and generate graphics

PRESENTATIONS

Invited

Rowe, A. K., 2022: Understanding Extreme Rainfall in Mountainous Terrain. *Invited Seminar, National Taiwan University, Taiwan*

- Rowe, A. K.**, 2022: Understanding Extreme Rainfall in Mountainous Terrain. *Invited Seminar, National Central University, Taiwan*
- Rowe, A. K.**, C. Sasaki, L. A. McMurdie, K. Rasmussen, S. Brodzik, I. Arias, V. Chandrasekar, 2021: Convective upscale growth near mountainous terrain: Insights from RELAMPAGO. *AGU Fall Meeting, Invited (Oral)*, New Orleans, LA (virtual participation)
- Rowe, A. K.**, 2021: Observing and Predicting Extreme Rainfall in Mountainous Taiwan. *Purdue EAPS Department Seminar, Invited*, Virtual.
- Rowe, A. K.**, 2021: Radar-based insights into precipitation processes in mountainous regions. *International Conference on Weather Forecast and Hydrological Application of Radar 2021, Invited (Oral)*, Korean Meteorological Society Weather Radar Center (virtual participation)
- Rowe, A. K.**, K. Rasmussen, I. Arias, V. Chandrasekar, and S. Brodzik, 2021: Extreme convection in Argentina: Measurement strategies and successes from the RELAMPAGO field campaign. *14th International Conference on Mesoscale Convective Systems and High-Impact Weather in East Asia (ICMSC-XIV), Invited (Oral)*, Nanjing, China but participated virtually.
- Rowe, A. K.**, 2021: Improving understanding of global high-impact weather. *Invited Guest lecturer, Dept. of Atmospheric and Oceanic Sciences, University of Wisconsin-Madison ATMOCN340, Madison, WI.*
- Rowe, A. K.**, 2021: Making decisions in uncertain times: Life lessons from the field. *101st AMS Annual Meeting Student Conference, Invited (Oral)*, Virtual.
- Rowe, A. K.**, 2019: Field campaigns in Atmospheric Science. *ATS220 Invited Guest Lecturer (Winter and Fall Quarters)*, University of Washington, Seattle, WA.
- Rowe, A. K.**, 2019: Distinguishing and characterizing heavy rain events during TiMREX/SoWMEX. *Severe Weather and TAHOPE Planning Workshop, Invited (Oral)*, Taipei, Taiwan.
- Rowe, A. K.**, 2018: Terrain-influenced precipitation processes: Insights from the Olympic Mountains Experiment (OLYMPEX). *Invited Seminar, SUNY Albany, Albany, NY.*
- Rowe, A. K.**, 2018: Olympic Mountains Experiment (OLYMPEX). *Invited Guest lecturer, U. of Victoria Mountain Met Course, remote.*
- Rowe, A. K.**, 2017: A radar-based comparison of precipitation processes in subtropical and tropical regions. *12th International Conference On Mesoscale Convective Systems and High-Impact Weather in East Asia, Invited (Oral)*, Taipei, Taiwan
- Rowe, A. K.**, and Coauthors, 2017: Terrain-influenced precipitation processes in mid-latitude cyclones during the Olympic Mountains Experiment. *Invited Seminar, National Taiwan University, Taipei, Taiwan.*
- Rowe, A. K.**, 2016: OLYMPEX radar observations. *Invited Guest lecturer, U. of Victoria Mountain Met Course, remote.*
- Rowe, A. K.**, 2016: Ground-based measurements of precipitation during OLYMPEX. *Short Course: "Validation of the Rain/Snow GPM Satellite Data in the Olympic Mountains: UW and NASA", Western Snow Conference, Invited (Oral)*, Seattle, WA.
- Rowe, A. K.**, R. A. Houze, Jr., L. McMurdie, and J. Zagrodnik, 2016: Measuring precipitation in complex terrain: Insights from the OLYMPEX field campaign. *2nd U.S.-Taiwan Extreme Precipitation and Weather Workshop, Invited (Oral)*, Honolulu, HI.

Rowe, A. K., and R. A. Houze, Jr., 2015: Microphysical characteristics of orographic precipitation: Insights from TiMREX and beyond. *2015 US-Taiwan Extreme Precipitation and Weather Workshop, Invited (Oral)*. Taipei, Taiwan.

Conference/Meeting Oral Presentations (selections from past 5 years)

Rowe, A. K., K. L. Rasmussen, A. Nugent, I. Cornejo, T. Zuo, and R. Panawatwong, 2022: The influence of terrain on precipitation intensity and duration in mountainous Taiwan. *AMS 20th Conference on Mountain Meteorology (Oral)*, Park City, Utah.

Rowe, A. K., B. D. Rodenkirch, O. Sy, S. Tanelli, F. J. Turk, and S. S. Chen, 2022: A window into tropical convection from the CPEX-AW airborne radar dataset. *AMS 35th Conference on Hurricanes and Tropical Meteorology (Oral)*, New Orleans, LA, Virtual.

Rowe, A. K., I. Cornejo, K. Rasmussen, A. Nugent, T. Zuo, R. Panawatwong, and Lea Swinney, 2022: The influence of terrain on precipitation intensity and duration during the June 2017 heavy rain event. *ISEE International Conference on Heavy Rainfall and Tropical Cyclone in East Asia (Oral)*, Nagoya, Japan, Virtual.

Rowe, A. K., K. L. Rasmussen, I. Arias, V. Chandrasekar, and S. Brodzik, 2020: Convective lifecycle insights from RELAMPAGO observations near the Sierras de Córdoba. *AMS 19th Conference on Mountain Meteorology (Oral)*, Virtual.

Rowe, A. K., C. Sasaki, L. McMurdie, S. Brodzik, and K. Rasmussen, 2019: Characteristics of deep convection observed near the Sierras de Cordoba in Argentina. *39th International Conference on Radar Meteorology (Oral)*, Nara, Japan.

Rowe, A. K., L. McMurdie, J. Zagrodnik, and J. Rader, 2019: Investigation of the Olympic Peninsula rain shadow using radar and in situ observations from OLYMPEX. *39th International Conference on Radar Meteorology (Oral)*, Nara, Japan.

Rowe, A. K., L. McMurdie, S. Brodzik, C. Sasaki, and K. Rasmussen, 2019: Observations of convective lifecycle near the Sierras de Cordoba: Early insights from RELAMPAGO. *AMS 18th Conference on Mesoscale Processes (Oral)*, Savannah, GA.

Rowe, A. K., L. McMurdie, R. A. Houze, Jr., J. Zagrodnik, T. Schuldt, and M. Chaplin, 2017: Upper-level enhancement of microphysical processes in extratropical cyclones during OLYMPEX. *AGU Fall Meeting (Oral)*, New Orleans, LA.

Rowe, A. K., M. Chaplin, T. Schuldt, J. Zagrodnik, R. A. Houze, Jr., and L. McMurdie, 2017: The Olympic Mountains Experiment (OLYMPEX): An opportunity to explore terrain-influenced precipitation processes in mid-latitude cyclones. *AMS 38th Conference on Radar Meteorology (Oral)*, Chicago, IL.

Conference/Meeting Posters (selections from past 5 years)

Rowe, A. K., K. L. Rasmussen, I. Arias, V. Chandrasekar, and S. Brodzik, 2021: Convective evolution in mountainous Central Argentina: New insights from RELAMPAGO. *101st AMS Annual Meeting (Poster)*, Virtual

Serra, Y., and **A. K. Rowe**, S. Hagos, and Z. Feng, 2019: Investigating the impacts of Kelvin wave activity on convection in the Amazon through observations and model experiments. *DOE ASR PI Science Team Meeting (Poster)*, North Bethesda, MD.

Cheng, W.-Y., D. Kim, **A. K. Rowe**, Y. Moon, and S. Park, 2019: Do cold pools help organized convection? A case study during MC3E. *DOE ASR PI Science Team Meeting (Poster)*, North Bethesda, MD.

- Rowe, A. K.**, R. A. Houze, Jr., W.-Y. Cheng, D. Kim, and S. Brodzik, 2019: Observing, quantifying, and understanding convective organization: Insights from DYNAMO. *CLIVAR Atmospheric Convection and Air-Sea Interactions over the Tropical Oceans Workshop (Poster)*, Boulder, CO.
- Serra, Y., and **A. K. Rowe**, 2018: Local and large-scale controls of moisture variability in the shallow-to-deep transition during GOAmazon. *DOE ASR PI Science Team Meeting (Poster)*, Vienna, VA.
- Cheng, W.-Y., D. Kim, **A. K. Rowe**, Y. Moon, and S. Park, 2018: Clustering mechanisms of oceanic and continental convective systems. *DOE ASR PI Science Team Meeting (Poster)*, Vienna, VA.
- Serra, Y., and **A. K. Rowe**, 2017: Kelvin wave influence on the shallow-to-deep transition over the Amazon. *AGU Fall Meeting (Poster)*, New Orleans, LA.
- Kim, D., W.-Y. Cheng, **A. K. Rowe**, and S. Park, 2017: Diagnosis of convective organization and cold pools using ARM Datasets and evaluation of UNICON. *DOE ASR PI Science Team Meeting (Poster)*, Vienna, VA.
- Serra, Y., and **A. K. Rowe**, 2017: The role of Intraseasonal variability in supporting the shallow-to-deep transition in the Amazon. *DOE ASR PI Science Team Meeting (Poster)*, Vienna, VA.
- Rowe, A. K.**, M. M. Chaplin, and R. A. Houze, Jr., 2017: Dual-polarization radar observations of precipitation processes in complex terrain during OLYMPEX. *97th Annual AMS Meeting (Poster)*, Seattle, WA.

Seminars (selections from past 5 years)

- Rowe, A. K.**, 2020: RELAMPAGO: A quest to understand severe storms in Argentina. *Seminar*, Dept. of Atmospheric and Oceanic Sciences, University of Wisconsin-Madison, Madison, WI.
- Rowe, A. K.**, 2018: RELAMPAGO: An international campaign to understand convective lifecycle in mountainous Argentina. *Seminar*, U. of Washington, Seattle, WA.
- Rowe, A. K.**, and Coauthors, 2017: The Olympic Mountains Experiment (OLYMPEX): Terrain-influenced precipitation processes in mid-latitude cyclones. *Seminar*, U. of Washington, Seattle, WA.

Public presentations (selections from past 5 years)

- Rowe, A. K.**, 2020: A Career in Atmospheric Sciences. *Invited*, Q&A with Sequim School District 6-12 students, Sequim, WA, remote.
- Rowe, A. K.**, and Coauthors, 2016: OLYMPEX: A collaborative effort to study rain and snow on the Olympic Peninsula. *Climate Change in America's National Parks webinar series*, *Invited*, remote.
- Rowe, A. K.**, and Coauthors, 2016: OLYMPEX: A collaborative effort to study rain and snow on the Olympic Peninsula. *Sequim Science Cafe*, *Invited*, Paradise Restaurant, Sequim, WA.
- Rowe, A. K.**, and Coauthors, 2016: The Olympic Mountain Experiment: OLYMPEX. *Olympic National Park Perspectives Winter Speaker Series*, *Invited*, ONP Visitor's Center, Port Angeles, WA.

Student Advisee presentations (selections from past 5 years)

- DeLaFrance, A., L. McMurdie, and **A. K. Rowe**, 2022: Process-based sensitivities in two-dimensional modeling simulations of precipitation growth and fallout over an orographic barrier. *AMS 20th Conference on Mountain Meteorology (Oral)*, Park City, UT
- Cornejo, I., **A. K. Rowe**, K. L. Rasmussen, and A. Nugent, 2022: Orographic deformation enhanced frontal convergence: A mechanism for Mei-Yu front convergence continuity in complex terrain. *AMS 20th Conference on Mountain Meteorology (Poster)*, Park City, UT
- Sasaki, C., **A. K. Rowe**, L. McMurdie, and K. Rasmussen, 2022: Insight into the SALLJ from observations and a convection-permitting simulation over Argentina. *AMS 20th Conference on Mountain Meteorology (Oral)*, Park City, UT
- Rodenkirch, B. D., and **A. K. Rowe**, 2022: Tropical oceanic convection structure and near-storm environments observed during NASA CPEX. *AMS 35th Conference on Hurricanes and Tropical Meteorology (Poster)*, New Orleans, LA
- Cornejo, I., **A. K. Rowe**, A. D. Nugent, and K. L. Rasmussen, 2021: The role of topography in a heavy rainfall event in Taiwan. *Midwest Student Conference on Atmospheric Research 2021 (Poster)*, Virtual. 2nd place poster winner.
- Crespo, A., **A. K. Rowe**, and L. E. Arena, 2021: Characterization of three hailstorms in Argentina. *Midwest Student Conference on Atmospheric Research 2021 (Oral)*, Virtual.
- DeLaFrance, A., L. McMurdie, **A. K. Rowe**, 2021: Wave structure along a frontal boundary: Effects on microphysics and surface precipitation. *IMPACTS Science Team Meeting (Poster)*, Seattle, WA.
- Cornejo, I., **A. K. Rowe**, A. D. Nugent, and K. L. Rasmussen, 2021: The influence of microphysical processes in extreme rain events found in complex terrain. *101st AMS Annual Meeting (Poster)*, Virtual.
- Sasaki, C. R. S., **A. K. Rowe**, L. A. McMurdie, and K. L. Rasmussen, 2021: Analysis of the South American Low-Level Jet during the RELAMPAGO campaign. *101st AMS Annual Meeting (Poster)*, Virtual.
- DeLaFrance, A., L. A. McMurdie, and **A. K. Rowe**, 2020: Orographic modification of ice-phase precipitation processes during the Olympic Mountains Experiment (OLYMPEX). *AGU Fall Meeting (Poster)*, Virtual.
- DeLaFrance, A., L. A. McMurdie, and **A. K. Rowe**, 2020: Observations of ice microphysics during Atmospheric-River-Type events in the Olympic Mountains. *International Atmospheric Rivers Conference (Oral)*, Virtual.
- Sasaki, C. R. S., **A. K. Rowe**, L. A. McMurdie, J. O. Piersante, and K. L. Rasmussen, 2020: Observational analysis of the SALLJ during the RELAMPAGO campaign. *AMS 19th Conference on Mountain Meteorology (Poster)*, Virtual.
- DeLaFrance, A., L. A. McMurdie, and **A. K. Rowe**, 2020: Ice microphysical processes in winter storms encountering complex terrain. *AMS 19th Conference on Mountain Meteorology (Oral)*, Virtual.
- Rader, J. K., L. A. McMurdie, **A. K. Rowe**, and J. P. Zagrodnik, 2019: Illuminating the rain shadow: Characteristics of clouds and precipitation on the lee side of the Olympic Mountains. *Poster, 22st Annual Undergraduate Research Symposium at University of Washington*, Seattle, WA

- Rader, J. K., L. A. McMurdie, and **A. K. Rowe**, 2018: Cloud and precipitation structure on the leeward side of the Olympic Mountains. *Oral, 21st Annual Undergraduate Research Symposium at University of Washington, Seattle, WA.*
- Anderson, K., L. A. McMurdie, and **A. K. Rowe**, 2018: Thunderstorm initiation in the lee of the Andes. *Poster, 21st Annual Undergraduate Research Symposium at University of Washington, Seattle, WA.*
- Schuldt, T., L. A. McMurdie, J. Zagrodnik, and **A. K. Rowe**, 2017: Orographic precipitation enhancement over the Olympic Peninsula. *Poster, 20st Annual Undergraduate Research Symposium at University of Washington, Seattle, WA.*