CURRICULUM VITAE

Elizabeth J. Thompson

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Research Statement

I study precipitation, cloud systems, and coupled ocean-atmosphere boundary layer processes over oceans. This includes cloud microphysics, large scale forcing on precipitation and clouds, and how clouds, precipitation, air-sea fluxes, and coupled boundary layer evolution influence each other. I also study how these processes impact weather and climate variability. I collect and analyze in-situ observations, use satellite observations, and partner with modeling teams to improve process level understanding, develop algorithms, determine observational capabilities and needs, and evaluate models with process-oriented diagnostics.

Research Interests

Air-sea fluxes and their role in the co-evolution of atmospheric and oceanic boundary layers; Studies of meteorology, precipitation, and clouds using observations from dual- and single-polarization radars for clouds and rain, satellites, and disdrometers; Algorithms for quantitative precipitation estimation, precipitation classification, and near-surface ocean stability; Investigations of meteorological and physical oceanographic processes with satellite and in-situ observations; Observation-based research on atmospheric dynamics, physical oceanography, as well as synoptic-scale and mesoscale meteorology; Use of in-situ measurements to evaluate and improve environmental prediction models and remote sensing products.

Education

2012-2016 Ph.D. Atmospheric Science, Colorado State University
Advisor: Steven A. Rutledge; co-advisor: James N. Moum (Oregon State Univ.)
Dissertation: "*Tropical warm pool rainfall variability and impact on upper ocean variability throughout the Madden-Julian Oscillation*"

2010-2012 M.S. Atmospheric Science, Colorado State University
Advisor: Steven A. Rutledge
Thesis: "*Development of a Polarimetric-Radar Based Hydrometeor Classification Algorithm for Winter Precipitation*"

2006-2010 B.S. Meteorology, minors in Mathematics and Geography, Valparaiso University
Advisor: Bart Wolf

Professional Experience

2019-present	Research Meteorologist, NOAA OAR Physical Sciences Laboratory Boundary Layer Observations and Processes Division, Marine Team Lead since 2022
2019-present	Affiliate Scientist, Applied Physics Laboratory at Univ. of Washington, Air-Sea Interaction and Remote Sensing Dept.
2018-2019	Senior Meteorologist, Applied Physics Laboratory at Univ. of Washington, Air-Sea Interaction and Remote Sensing Dept.
2016-2018	Postdoctoral Research Associate, Applied Physics Laboratory at Univ. of Washington, Air-Sea Interaction and Remote Sensing Dept. Mentors: Kyla Drushka, William E. Asher, Andrew T. Jessup
2010-2016	Graduate Research Assistant, Colorado State Univ., Radar Meteorology Group, Advisor: Steven A. Rutledge
2014	Graduate Teaching Assistant, Atmospheric Thermodynamics and Cloud Physics, Supervisor: Prof. Steven A. Rutledge, Colorado State Univ.
2011-2012	Graduate Student Representative, Colorado State Univ.
2010	Environmental Science Interpretation and Visitor Services Assistant, U.S. Forest Service, Chugach National Forest, Glacier Ranger District, Alaska. Mentor: Lezlie Murray
2009-2010	Undergraduate Teaching Assistant, Atmospheric Dynamics, Supervisor: Prof. Teresa Bals-Elsholz, Valparaiso Univ.
2009	Undergraduate Research Assistant. NOAA OAR National Severe Storms Lab, Mentor: Kenneth Howard
2008	Student Volunteer, NOAA National Weather Service Weather Forecast Office Baltimore/Washington D.C., Mentor: Steven Zubrick
2007	Undergraduate Research Assistant, NASA/Texas Commission for Environmental Quality and Valparaiso Univ. Tropospheric Ozone Pollution Project, Mentor: Gary Morris

Field Experiments (13 total)

2023 Moisture and Aerosol Gradients and Physics of Inversion Evolution (MAGPIE), 1-31 Aug, ONR Marine Meteorology, role: co-lead in Science Implementation Plan, field operations, and data collection plans. Coordinated communications and planning for joint data collection between Navy CIRPAS Twin Otter and NOAA P-3 aircraft, G-IV aircraft, and Hurricane Monitoring Saildrones. Helped deploy Sofar wave and SST buoy. Deployed PSL W-band cloud, light rain, and sea spray radar on NOAA P-3 for MAGPIE/APHEX/Hurricane Field Program joint goals.

2023 Hurricane Field Program / Advancement of Prediction in Hurricanes Experiment (HFP/APHEX), summer-fall 2023, NOAA AOML. Deployed PSL W-band cloud, light rain, and sea spray radar on NOAA P-3 for MAGPIE/APHEX/Hurricane Field Program joint goals.

2020 Atlantic Tradewind Ocean- Atmosphere Mesoscale Interaction Campaign (ATOMIC), Jan 6 - Feb 13, NOAA Climate Program Office, role: collected and analyzed observations from SWIFT buoys (Surface Wave Instrument Float with Tracking), wave gliders, R/V Ronald H. Brown, and NOAA P3 aircraft. Observations were taken from the upper ocean mixed layer, ocean surface, air-sea fluxes, clouds, and rain. These were analyzed for gaining a better understanding of coupled boundary layer processes. Gave science presentation at Outreach Day on the ship with Barbados students, Barbados/US Embassy, NOAA Assistant Secretary and Program Managers, EUREC4A scientists, Barbados Coast Guard, scientists from Caribbean Institute of Meteorology and Hydrology. Chief Scientists: Patricia Quinn (NOAA PMEL) and Janet Intieri (NOAA PSL)

2019 Propagation of Intra-Seasonal Tropical Oscillations II (PISTON-2), Sept 2 – Sept 27, NOAA Climate Program Office and ONR Marine Meteorology role: collected ship-based oceanographic, air-sea flux, cloud, and rain measurements, analyzed observations for better understanding of coupled boundary layer processes, R/V Sally Ride, Chief Scientist: James N. Moum (OSU)

2018 Propagation of Intra-Seasonal Tropical Oscillations I (PISTON-1), Sept 14 – Oct 15, NOAA Climate Program Office and ONR Marine Meteorology, role: collected ship-based oceanographic and rain measurements, analyzed all observations for better understanding of coupled boundary layer processes, R/V Thomas G. Thompson, Chief Scientist: James N. Moum (OSU)

2017 Salinity Processes in the Upper Ocean Regional Study 2 (SPURS-2), Oct 16 – Nov 17, NASA Physical Oceanography, role: collected and analyzed ship-based observations of the upper ocean and lower atmosphere, including radar-based rainfall; also analyzed air-sea fluxes, R/V Roger Revelle, Chief Scientist: Kyla Drushka (APL-UW)

2017 UNOLS Chief Scientist Training Cruise: Diurnal Warm Layers in the Great Lakes, June 8 -11, role: collected and analyzed upper ocean and meteorological observations, R/V Blue Heron, co-Chief Scientist: Elizabeth J. Thompson (APL-UW)

2016 Salinity Processes in the Upper Ocean Regional Study 2 (SPURS-2), Aug 13 – Sept 23, NASA Physical Oceanography, role: collected and analyzed ship-based observations of the upper ocean and lower atmosphere, including radar-based rainfall; also analyzed air-sea fluxes, R/V Roger Revelle, Chief Scientist: Andrew T. Jessup (APL-UW)

2011 Dynamics of the Madden-Julian Oscillation (DYNAMO), Nov 3 – Dec 13, NOAA Climate Program Office and ONR Marine Meteorology, role: lead radar scientist operating NASA TOGA C-Band Doppler radar used to measure precipitation; analyzed measurements of rain, the upper ocean, the lower atmosphere, and air-sea fluxes, R/V Roger Revelle, Chief Scientist: James N. Moum (OSU)

2011 Midlatitude Continental Convective Clouds Experiment (MC3E), May –June, DOE, role: launched radiosondes for DOE to test NASA Global Precipitation Measurement satellite algorithms; PI: Steven A. Rutledge (CSU)

2009 Engineers Without Borders Valparaiso Univ. Assessment Trip to Tanzania, Africa, May 15-24, role: designed and conducted Geographic Information System (GIS) project to map demographics and deteriorating water canal in primitive village

2008 Plains Convective Storms Student Field Study, May 2008, role: lead Doppler radar data interpreter for the forecasting and interception of severe storms in 20-student team; Supervisor: Bart Wolf (Valparaiso Univ.)

2007 Texas Commission for Environmental Quality Study (TexAQS II), June-July 2007, role: launched daily ozonesondes to study the atmospheric boundary layer and tropospheric ozone in urban environment of Houston; Supervisor: Gary Morris (Valparaiso Univ.)

Publications

In Review

Chen, X., J. Dias, B. Wolding, R. Pincus, C. DeMott, G. Wick, E. J. Thompson, C. W. Fairall: Trade Cumulus Cloudiness Increased over Weak Sea Surface Temperature Warm Anomalies in the ATOMIC Region.

Bytheway, J. L., E. J. Thompson, J. Yang, H. Chen, submitted: Evaluation of Downscaled IMERG Precipitation over Global Oceans using PALs. J. Hydromet., submitted.

Chi, N. E. J. Thompson, H. Chen, A. Shcherbina, F. Bingham, L. Rainville, submitted: Spatiotemporal variability of rainfall and surface salinity in the Eastern Pacific Fresh Pool: A joint in-situ and satellite analysis during the SPURS-2 field campaign. Journal of Geophysical Research: Oceans, submitted

Chen, H. C.W. Fairall, C. R. Williams, E. J. Thompson, submitted: Vertical air motion retrievals from airborne W-band cloud radar, IEEE Geoscience and Remote Sensing Letters, submitted.

Accepted

Li, Z., H. Chen, E. J. Thompson, 2023: The uncertainty of IMERG over the Eastern Pacific Fresh Pool: An error model based on SPURS-2 field campaign observations, IEEE Transactions on Geoscience and Remote Sensing, in press.

Davis, J., J. Thomson, I. A. Houghton, J. D. Doyle, W. Komaromi, C. W. Fairall, E. J. Thompson, 2023: Saturation of ocean surface wave slopes observed during hurricanes. Geophys. Res. Letters, in press.

Li, Z., Thompson, E. J., Behrangi, A., Chen, H., & Yang, J. (2023). Performance of GPCP daily products over oceans: Evaluation using Passive Aquatic Listeners. Geophysical Research Letters, 50, e2023GL104310. https://doi.org/10.1029/2023GL104310

Brizuela, N. G., Johnston, T. M. S., Alford, M. H., Asselin, O., Rudnick, D. L., Moum, J. N., Thompson, E. J., Wang, S., Lee C.-Y. (2023). A vorticity-divergence view of internal wave generation by a fast-moving tropical cyclone: Insights from Super Typhoon Mangkhut. Journal of Geophysical Research: Oceans, 128, e2022JC019400. https://doi.org/10.1029/2022JC019400

Bytheway, J. L., Thompson, E. J., Yang, J., & Chen, H. (2023). Evaluating satellite precipitation estimates over oceans using passive aquatic listeners. Geophysical Research Letters, 50, e2022GL102087. https://doi.org/10.1029/2022GL102087

Reeves Eyre, J. E. J., M. F. Cronin, D. Zhang, E. J. Thompson, C. W. Fairall, and J. B. Edson, 2023: Saildrone direct covariance wind stress in various wind and current regimes of the tropical Pacific. J. Atmos. Oceanic Technol., https://doi.org/10.1175/JTECH-D-22-0077.1

Reid, J. S., and many coauthors including E. J. Thompson, 2023: The coupling between tropical meteorology, aerosol lifecycle, convection, and radiation, during the Cloud, Aerosol and Monsoon Processes Philippines Experiment (CAMP2Ex). Bull. Amer. Meteor. Soc., https://doi.org/10.1175/BAMS-D-21-0285.1

Bailey, A. J., F. Aemisegger, L. Villiger, S. A. Los, G. Reverdin, E. Q. Meléndez, C. Acquistapace, D. B. Baranowski, T. Böck, S. Bony, T. Bordsdorff, D. Coffman, S. P. de Szoeke, C. J. Diekmann, M. Dütsch, B. Ertl, J. Galewsky, D. Henze, P. Makuch, D. Noone, P. K. Quinn, M. Rösch, A. Schneider, M. Schneider, S. Speich, B. Stevens, and E. J. Thompson, 2023: Isotopic measurements in water vapor, precipitation, and sea water during EUREC4A, Earth Syst. Sci. Data Discuss. https://doi.org/10.5194/essd-15-465-2023

Iyer, S., Drushka, K., Thompson, E. J., & Thomson, J., 2022. Small-scale spatial variations of air-sea heat, moisture, and buoyancy fluxes in the tropical trade winds. Journal of Geophysical Research: Oceans, 127, https://doi.org/10.1029/2022JC018972

Yao, S., H. Chen, E. J. Thompson and R. Cifelli, 2022: An improved deep learning model for high-Impact weather nowcasting. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, https://doi.org/10.1109/JSTARS.2022.3203398

Iyer, S., J. Thomson, K. Drushka, E. J. Thompson, 2022: Variations in wave slope and momentum flux from wave-current interactions in the tropical trade winds. Journal of Geophysical Research, Oceans, http://doi.org/10.1029/2021JC018003

Shackelford, K., C. A. DeMott, P. J van Leeuwan, E. J. Thompson, S. Hagos, 2022: Rain-induced stratification of the tropical Indian Ocean and its potential feedbacks to the atmosphere. Journal of Geophysical Research, Oceans, https://doi.org/10.1029/2021JC018025

Quinn, P. K., Thompson, E.J., Coffman, D. J., Baidar, S., Bariteau, L., Bates, T. S., Bigorre, S., Brewer, A., de Boer, G., de Szoeke, S. P., Drushka, K., Foltz, G. R., Intrieri, J., Iyer, S., Fairall, C. W., Gaston, C. J., Jansen, F., Johnson, J. E., Krüger, O. O., Marchbanks, R. D., Moran, K. P., Noone, D., Pezoa, S., Pincus, R., Plueddemann, A. J., Pöhlker, M. L., Pöschl, U., Quinones Melendez, E., Royer, H. M., Szczodrak, M., Thomson, J., Upchurch, L. M., Zhang, C., Zhang, D., and Zuidema, P.: 2021. Measurements from the RV Ronald H. Brown and related platforms as part of the Atlantic Tradewind Ocean-Atmosphere Mesoscale Interaction Campaign (ATOMIC), Earth Syst. Sci. Data Discuss., https://doi.org/10.5194/essd-2020-331

Pincus, R., Fairall, C. W., Bailey, A., Chen, H., Chuang, P. Y., de Boer, G., Feingold, G., Henze, D., Kalen, Q. T., Kazil, J., Leandro, M., Lundry, A., Moran, K., Naeher, D. A., Noone, D., Patel, A. J., Pezoa, S., PopStefanija, I., Thompson, E. J., Warnecke, J., and Zuidema, P, 2021: Observations from the NOAA P-3 aircraft during ATOMIC, Earth Syst. Sci. Data Discuss. https://doi.org/10.5194/essd-2021-11

Stevens, B., and over 292 coauthors, 2021: EUREC4A, Earth Syst. Sci. Data Discuss., https://doi.org/10.5194/essd-2021-18

Jackson, R., Collis, S., Louf, V., Protat, A., Wang, D., Giangrande, S., Thompson, E.J., Dolan, B., Powell, S.W., 2021. The development of rainfall retrievals from radar at Darwin. Atmospheric Measurement Techniques 14, 53–69. https://doi.org/10.5194/amt-14-53-2021

Reverdin, G., A. Supply, K. Drushka, E. J. Thompson, W. E. Asher, 2020. Intense and small freshwater pools from rainfall investigated during SPURS-2 on November 9 2017 in the eastern tropical Pacific. Journal of Geophysical Research: Oceans. 125, e2019JC015558. https://doi.org/10.1029/2019JC015558

Hagos, S., G.R. Foltz, C. Zhang, E. Thompson, H. Seo, S. Chen, A. Capotondi, K.A. Reed, C. DeMott, and A. Protat, 2020: Atmospheric Convection and Air-Sea Interactions over the Tropical Oceans: Scientific Progress, Challenges and Opportunities. Bull. Amer. Meteor. Soc., 101, E253–E258, https://doi.org/10.1175/BAMS-D-19-0261.1

Thompson E. J., W. E. Asher, A. T. Jessup, K. Drushka, 2019: High-resolution rain maps from an X-band marine radar and their use in understanding ocean freshening. Oceanography 32(2):58–65, https://doi.org/10.5670/oceanog.2019.213

Asher, W. E., K. Drushka, A. T. Jessup, E. J. Thompson, D. Clark, 2019: Estimating rain-generated turbulence at the ocean surface using the Active Controlled-Flux Technique. Oceanography 32(2):108–115, https://doi.org/10.5670/oceanog.2019.218

Drushka, K., W.E. Asher, A.T. Jessup, E.J. Thompson, S. Iyer, and D. Clark, 2019: Capturing fresh layers with the Surface Salinity Profiler. Oceanography 32(2):76–85, https://doi.org/10.5670/oceanog.2019.215

Thompson, E. J., Moum, J. N., Fairall, C. W., & Rutledge, S. A. 2019: Wind limits on rain layers and diurnal warm layers. Journal of Geophysical Research: Oceans, 124, 897-924. https://doi.org/10.1029/2018JC014130

Dolan, B., B. Fuchs, S. A. Rutledge, E. A. Barnes, E. J. Thompson, 2018: Primary modes of global drop-size distributions. J. Atmos. Sci., 75, 1453–1476, https://doi.org/10.1175/JAS-D-17-0242.1

Thompson, E. J., S. A. Rutledge, B. Dolan, M. Thurai, and V. Chandrasekar, 2018: Dual-polarization radar rainfall estimation over tropical oceans. J. Appl. Meteor. Climatol., 57, 755–775, https://doi.org/10.1175/JAMC-D-17-0160.1

Thompson, E. J., S. A. Rutledge, B. Dolan, and M. Thurai, 2015: Drop size distributions and radar observations of convective and stratiform rain over the equatorial Indian and west Pacific Oceans. J. Atmos. Sci., 72, 4091-4125. https://doi.org/10.1175/JAS-D-14-0206.1

Moum, J. N., S. P. de Szoeke, W. D. Smyth, J. B. Edson, H. L. DeWitt, A. J. Moulin, E. J. Thompson, C. J. Zappa, S. A. Rutledge, R. H. Johnson, and C. W. Fairall, 2014: Air-sea interactions from MJO westerly wind bursts. Bull. Am. Meteorol. Soc., 95, 1185-1199. https://doi.org/10.1175/BAMS-D-12-00225.1

Thompson, E. J., S. A. Rutledge, B. Dolan, V. Chandrasekar, and B.-L. Cheong, 2014: A dual-polarization radar hydrometeor classification algorithm for winter precipitation. J. Atmos. Oceanic Technol., 31, 1457-1481. https://doi.org/10.1175/JTECH-D-13-00119.1

Willingham, K. M., E. J. Thompson, K. W. Howard, and C. L. Dempsey, 2010: Characteristics of Sonoran Desert microbursts. Weather Forcast., 26, 94-108. https://doi.org/10.1175/2010WAF2222388.1

Published Code

Bariteau Ludovic, Blomquist Byron, Fairall Christopher, Thompson Elizabeth, Edson Jim, & Pincus Robert. (2021, July 16). Python implementation of the COARE 3.5 Bulk Air-Sea Flux algorithm (Version v1.1). Zenodo. http://doi.org/10.5281/zenodo.5110991

PSL GitHub for COARE bulk air-sea flux algorithm in python, matlab, and fortran: https://github.com/NOAA-PSL/COARE-algorithm

Published Datasets

1. DYNAMO 2011 ship ocean surface stable layers and upstream radar rainfall - submitted
2. SPURS-2 2016-2017 ship X-band radar rain maps - in press
3. SPURS-2 2016-2017 ship disdrometer drop size distributions and rain - in press
4. SPURS-2 2016-2017 ship underway salinity and temperature ship data - https://doi.org/10.5067/SPUR2-USPS0 and https://doi.org/10.5067/SPUR2-MET00
5. SPURS-2 2016-2017 Surface Salinity Profiler data - https://doi.org/10.5067/SPUR2-SSP00
6. SPURS-2 2016-2017 Passive Aquatic Listener rain and wind speed data - https://doi.org/10.5067/SPUR2-PALS0
7. ** led effort to publish and obtain DOIs for all 34 PISTON 2018-2019 experiment datasets for the entire campaign – https://asdc.larc.nasa.gov/project/PISTON (link broken, TBD)
    - R/V Mirai ship sondes and radar data: https://doi.org/10.5067/SUBORBITAL/PISTON2018-ONR-NOAA/RVMIRAI/DATA001 or https://www-air.larc.nasa.gov/cgi-bin/ArcView/camp2ex?RV-THOMPSON=1
    - Island sondes: https://doi.org/10.5067/SUBORBITAL/PISTON2018-2019-ONR-NOAA/ISLANDS/DATA001 or https://www-air.larc.nasa.gov/cgi-bin/ArcView/camp2ex?SONDES=1
    - R/V Thompson 2018 ship data from all ocean/atmosphere instruments: https://doi.org/10.5067/SUBORBITAL/PISTON2018-ONR-NOAA/RVTHOMPSON/DATA001 or https://www-air.larc.nasa.gov/cgi-bin/ArcView/camp2ex?RV-THOMPSON=1
    - R/V Sally Ride 2019 ship data from all ocean/atmosphere instruments: https://doi.org/10.5067/SUBORBITAL/PISTON2019-ONR-NOAA/RVSALLYRIDE/DATA001 or https://www-air.larc.nasa.gov/cgi-bin/ArcView/camp2ex?RV-SALLY-RIDE=1
    - Autonomous measurements from moorings and floats: https://doi.org/10.5067/SUBORBITAL/PISTON2018-2019-ONR-NOAA/AUTONOMOUS/DATA001 or https://www-air.larc.nasa.gov/cgi-bin/ArcView/camp2ex?MOORING=1 or https://www-air.larc.nasa.gov/cgi-bin/ArcView/camp2ex?TRAJECTORY=1
8. PISTON 2018 ship disdrometer drop size distributions and rain (R/V Thompson link above)
9. PISTON 2018-2019 ship W-band radar (R/V Ride and Thompson links above)
10. PISTON 2018-2019 ship ceilometer cloud height statistics and backscatter (R/V Ride and Thompson links above)
11. PISTON 2018-2019 ship navigation, meteorology, seawater, air-sea flux (R/V Ride and Thompson links above)

12. PISTON 2018-2019 ship skin sea surface temperature (R/V Ride and Thompson links above)
13. ** led effort to publish and obtain DOIs for all 27 ATOMIC 2020 experiment datasets for the entire campaign - https://www.ncei.noaa.gov/archive/accession/ATOMIC-2020
14. ATOMIC 2020 ship W-band cloud and precipitation radar - https://doi.org/10.25921/44cy-kr53
15. ATOMIC 2020 ship ceilometer cloud height statistics and backscatter - https://doi.org/10.25921/jbz6-e918
16. ATOMIC 2020 ship navigation, meteorology, seawater, air-sea flux - https://doi.org/10.25921/etxb-ht19
17. ATOMIC 2020 ship skin sea surface temperature - https://doi.org/10.25921/nwx9-rd07
18. ATOMIC 2020 SWIFT drifters - https://doi.org/10.25921/s5d7-tc07
19. ATOMIC 2020 Wavegliders - https://doi.org/10.25921/dvys-1f29
20. Global Oceanic Passive Aquatic Listener (PAL) rain rate and wind speed database - https://dx.doi.org/10.5067/GPMGV/PAL/DATA101
21. NOAA PSL synthesized all-cruise ship-based air-sea flux database (doi coming soon) https://downloads.psl.noaa.gov/psd3/cruises/PSL_FluxBase_synthesis/

Research Grants

Current Awards:

- PI: ONR Marine Meteorology, FY 23-27
  "Boundary Layer Motion, Moisture, Clouds, Precipitation, and Air-Sea Interaction in Caribbean Warm-Season Convective Environments"
- PI: NOAA PSL internal, FY 23
  "Marine Boundary Layer Observations and Processes Team W-band Radar Relocation, Training of CSU Radar Engineers, and Ability to do simple/short domestic aircraft or land deployments each year"
- PI (co-I 2020-2022): NOAA GOMO, FY 23-present
  "High Resolution Climate Data from Research and Volunteer Observing Ships"
- PI: NOAA COM/GOMO/CVP, FY 21-24
  "An Air-Sea Flux, SST, Wave Database from the ATOMIC field program"
- PI: NASA Ocean Salinity Science Team, FY17-22 *mentor early career scientist
  "Bridging satellite and in-situ scales of near-surface salinity stratification"
- Co-I: ONR NOPP, FY21-24
  "Air-Deployed Wave Buoys for Hurricane Forecast Improvements": led by J. Thomson APL-UW *providing unfunded effort
- Co-I: NASA Physical Oceanography, FY18-21 *mentor postdoc
  "SPURS-2 Synthesis: Multi-scale Integration of Freshwater into the Upper Eastern Pacific Ocean" led by A. Shcherbina, APL-UW
- Collaborator: NSF Oceanography Technology, FY19-21
  "Simultaneous Remote Measurement of Skin and Sub-skin Temperature for USVs and Ships Buoys" by A. Jessup, APL-UW
- Collaborator: NOAA WPO Precipitation Precip Grand Challenge, FY20-21.
  "Boundary-layer and Microphysical Properties of Convective Precipitation in VORTEX-SE" by R. Cifelli NOAA PSL

Past Awards:

- Collaborator: NSF Physical Oceanography, FY19-21 *co-mentor MS student
  "Formation of rain layers in the Warm Pool and their feedbacks to atmospheric convection in an idealized modeling framework" led by C. DeMott, CSU
- PI: NASA Precipitation Measurement Mission, FY18-22*mentor early career scientist
  "Comparison of oceanic acoustic rain measurements with downscaled IMERG rainfall for the study of air-sea interaction"
- PI: NOAA CPO CVP, FY18-22*co-mentored PhD student
  "Spatial structure of air-sea interaction in the tropical Atlantic Ocean"
- Co-PI: NOAA WPO Precipitation Prediction Grand Challenge, FY20-21.
  "Identifying physical processes responsible for tropical UFS errors and their relation to UFS week 2-4 precipitation predictability in the western US" with J. Dias NOAA PSL
- PI: University of Washington Royalty Research Fund, FY19-20
  "The skin and subskin temperature of seas surrounding the Maritime Continent"
- Co-I: NASA Salinity Science Team, FY17-21
  "The Generation and Evolution of Near-Surface Salinity Stratification" led by J. Schanze, ESR * *providing unfunded effort*

White Papers

2023 US CLIVAR Air-Sea Transition Zone Study Team Report: A New Paradigm for Observing and Modeling of Air-Sea Interactions to Advance Earth System Prediction
Also available at: usclivar.org/us-clivar-reports and https://doi.org/10.5065/24j7-w583

2023 CLIVAR Workshop Report: Role of the Gulf Stream in Weather and Climate, 2022 (in press)

2022 CLIVAR Variations White Paper / Newsletter Articles: Satellite Observations and Needs for Air Sea Interaction; Tropical Pacific in-situ Observing System (in press)

2021 Ocean Best Practices Workshop Report on ocean surface radiation measurements

2021 NOAA-DOE Workshop Report on Interdisciplinary Processes session from 2020 Workshop on Precipitation Predictability and Processes
Balmaseda M, A Barros, S Hagos, B Kirtman, H-Y Ma, Y Ming, A Pendergrass, V Tallapragada, E Thompson. 2020. "NOAA-DOE Precipitation Processes and Predictability Workshop." U.S. Department of Energy and U.S. Department of Commerce NOAA; DOE/SC-0203; NOAA Technical Report OAR CPO-9.

2020 NOAA Precipitation Prediction Grand Challenge: Chapter 5 Observations

2019 ATOMIC Field Experiment Implementation Plan: Science Themes chapter

2019 US CLIVAR Workshop Report (later a published manuscript *Hagos et al. 2020*) on Atmospheric Convection and Air-Sea Interaction over Tropical Oceans

Awards and Honors

2019 US CLIVAR Early Career Scientist Leadership Award: Processes, Observations, Synthesis (US Climate Variability and Predictability Program)

2016-2018 APL-UW SEED Postdoctoral Research Fellowship

2012-2015 NSF Graduate Research Fellowship

2010-2011 AMS Graduate Research Fellowship
2010 NSF Graduate Research Fellowship Program Honorable Mention
2010 Valparaiso Univ. Eugene M. Rasmussen Meteorology Scholarship and Service Award
2008-2010 NOAA Ernest F. Hollings Undergraduate Scholarship Program
2009 AMS John R. Hope Endowed Scholarship in Atmospheric Sciences
2009 NWA Arthur C. Pike Scholarship in Meteorology
2008-2009 Valparaiso Univ. Swim Team Captain

Invited Seminars

2024 Air-Sea Interaction from GATE to the future, 2024 AMS Annual Meeting
2022 NASA Global Modeling and Assimilation Office (GMAO) invited seminar: "Observations of precipitation, boundary layer clouds, and coupled air-sea transition zones over tropical oceans: science questions, satellite evaluation, and model improvement opportunities", oral virtual
2020 NOAA-DOE Precipitation Processes and Predictability Workshop, Keynote Speaker of Interdisciplinary Processes session: "Atmosphere-Ocean Interactions Related to Precipitation Predictability"
2020 AGU Fall Meeting session on Tropical Pacific Observing System (TPOS) In Situ and Remote Sensing Technology: "Observing rain layers, diurnal warm layers, and their impacts in tropical oceans"
2018 NASA Coupled Ocean Surface Variables Workshop: "Outstanding questions regarding air-sea interaction and near-surface processes: How can satellites be used to find answers?"
2014 University of Oklahoma School of Meteorology: "Development of a Polarimetric Radar Based Hydrometeor Classification Algorithm for Winter"

Science Teams and Committee Service

Co-author / Member, US CLIVAR Air-Sea Transition Zone Study Group, 2022-2023
Scientific Steering Committee, US CLIVAR workshop on The Role of the Gulf Stream in Climate Variability and Predictability, 2021-2022
co-Chair Ocean Best Practices Workshop Session for Surface Solar Radiation. 2020-present
co-Chair 3-day Data Analysis Hackathon from the NOAA ATOMIC field campaign, including converting, organizing, and posting all field campaign datasets into common data format on shared website, planning and leading 3-day virtual event during pandemic, co-leading communication and planning announcements. 2020
Scientific Steering Committee, US CLIVAR workshop on Atmospheric Convection and Air-Sea Interaction over Tropical Oceans, including co-leading the workshop agenda, breakout discussions, and published summary report; encouraged participation and representation from oceanography. 2018-2020
Member, NASA Ocean Salinity Science Team. 2018-present
Member, NASA Precipitation Measurement Mission Team. 2018-present
Convener, AGU Fall Meeting Session 2020, 2021

Public Science Article Contributions

Barbados MAGPIE/CIMH/BACO Media Day
CBS This Morning Saturday: Study aims to examine links between climate change and clouds
NOAA Research: New research helps crack the mystery of clouds to improve climate prediction *(plus coverage on data papers and data archive)*
NOAA Research: Barbadian students tour NOAA Ship Ronald H. Brown
NOAA Research: Wave gliders, ocean drifters and drones to help international researchers solve key climate question
NOAA Research: NOAA launches major field campaign to improve weather and climate prediction
NOAA Research: From the ocean to the clouds: Life on the NOAA ATOMIC mission
NOAA PSL: The ATOMIC Field Project
NASA Notes from the Field: The Salinity Processes in the Upper Ocean Regional Study (SPURS2)

Science Mentoring and Outreach

Chair, Steering Committee: NOAA PSL Workplace Advisory Committee, understanding workplace interpersonal issues and promoting workplace respect, unity, and efficiency. Steering Committee member: 2019-present; Chair: 2022-present.
Mentor: one PhD student 2022-2023 through NOAA's Educational Partnership Program for Minority Serving Institutions Graduate Research Fellowship
Mentor: two undergraduate interns through NOAA Lapenta Undergraduate Research Internship. 2021. Projects included: Air-Sea Boundary Layer Interactions During PISTON and also Cloud Fraction Estimates from Saildrone Sky Cameras during ATOMIC
Volunteer Presenter: NOAA ATOMIC field campaign Outreach Day in Barbados aboard NOAA ship Ronald H. Brown. Gave guided tour of ship oceanographic and atmospheric instrumentation and mission goals to Barbados high school students, Barbados/US Embassy, NOAA Assistant Secretary and Program Managers, EUREC4A scientists, Barbados Coast Guard, and scientists from Caribbean Institute of Meteorology and Hydrology. 2020
Volunteer Presenter: NOAA PSL "Funtastic" virtual presentation during pandemic to children on "Ocean Robots". 2020
Volunteer Presenter: CU CIRES at Home presentation to children during pandemic on "Ocean-Atmosphere Interactions: Amphibious Science". Shared on multiple media platforms. 2020
Volunteer Presenter: NOAA/ONR PISTON field campaign Outreach Day in Taiwan aboard R/V Sally Ride. Gave guided tour of ship oceanographic and atmospheric instrumentation and science mission goals to National Taiwan University students, faculty, and researchers, as well as Taiwan/US Embassy. 2019.
Mentor and Project Manager: co-mentoring 1 PhD student and 1 postdoc, co-supervising 3 early career scientists. 2019-present
Steering Committee: APL-UW Early Career Principal Investigators, raising awareness about challenges, building community, and advocating for opportunities for early-career oceanographers, meteorologists, and engineers. 2018-present
Steering Committee and still current member: SeaTalk at APL-UW aimed at building community between fieldgoers in APL and Oceanography" by addressing and preventing sexual harassment, improving communication techniques and effectively planning for field work at sea. 2017-2019
Volunteer Presenter at Seattle's Polar Science Weekend: "Waves in the Arctic". 2017

Volunteer Presenter at Bush School 5th grade: “Life as a Scientist”. 2016
Volunteer Presenter for PROGRESS: Promoting Geoscience Research, Education and Success, PI: Emily Fischer, CSU. Workshops open up valuable professional development opportunities to undergraduate women in the geosciences. 2015
Mentor of student between middle and high school in meteorology and preparation for college education. 2012-2016
Tutor: two 7th grader girls for meteorology Olympiad contest, weekly meetings. 2010
Project co-lead for Engineers Without Border: developing water resources project between Valparaiso University students and community in Tanzania, Africa. 2008-2009

Workshop and Training Participation

2023-2024 Mid-Career Leadership Development Program, NOAA
2023 NASA Decadal Survey Planetary Boundary Layer Incubation Community Meeting
2023 Atmosphere-Ocean Coupling at (Sub)Mesoscales Workshop, Leiden, Netherlands
2023 Empathy in the Workplace Training, NOAA
2023 US CLIVAR Mesoscale and Frontal-Scale Air-Sea Interactions Workshop
2022 US CLIVAR Whither the Gulf Stream: Present Understanding and Future Opportunities for Elucidating the Role of the Gulf Stream in Weather and Climate *Scientific Steering Committee member
2021 ESWN Women in Sciences Leadership Workshop
2021 NOAA Diversity, Inclusion & Equity: A Culture of Engagement Workshop
2021 US CLIVAR Tropical Pacific Ocean Observing Needs for Modeling Workshop
2021 NOAA GOMO Integrating Ocean Observations to Improve NOAA's Hurricane Intensity Forecasts *session moderator
2021 Unlearning Racism in the Geosciences 8-part curriculum
2020 NOAA-DOE Precipitation Processes and Predictability Workshop *keynote speaker
2020 ATOMIC Data Analysis Hackathon *co-Lead
2020 NOAA Diversity and Inclusion workshop on Implicit Bias
2020 NASA Planetary Boundary Layer Workshop
2019 US CLIVAR Atmospheric Convection and Air-Sea Interaction over Tropical Oceans Workshop (NCAR) *Scientific Steering Committee Member
2019 NOAA Engineering Forum (NOAA PMEL): learning to work more successfully with engineers, advocate for their success, retention, and innovation
2018 NASA Coupled Ocean Surface Variables Workshop (APL-UW)
2017 NASA Global Ocean Salinity and Water Cycle Workshop (WHOI)
2017 NASA/GPM OLYMPEX Science Workshop (UW)
2017 Cross-cultural Communication Workshop (UW)
2016 NASA Coupled Ocean Surface Variables Workshop (APL-UW)
2014 NASA Jet Propulsion Laboratory (JPL) Summer School: Using Satellite Observations to Advance Climate Models
2011 American Meteorological Society Summer Policy Colloquium (Washington D.C.)

Reviews

- 1-2 proposal panel reviews per year

- Approximately 10 journal article reviews total per year for: *Journal of the Atmospheric Sciences, Journal of Oceanic and Atmospheric Technology, Journal of Applied Meteorology and Climatology, Monthly Weather Review, Journal of Climate, Journal of Physical Oceanography, Weather and Forecasting, Journal of Geophysical Research: Atmospheres, EGU Atmospheric Measurement Technique, Institute of Electrical and Electronics Engineers Sensors Journal, Artificial Intelligence for the Earth Systems*

Technological and Instrumentation Expertise

Led the collection, quality-controlling, processing, and analysis of measurements from sea/land:

- W-, X-, C-, and S-band single and dual polarization Doppler radars and ceilometer lidars (precipitation, clouds, wind, atmospheric boundary layer)
- X-band marine navigation radar (precipitation)
- 2D-video and optical disdrometers: ground and ship-based (raindrop size distributions)
- air-sea turbulent fluxes over ocean (bulk, eddy covariance, inertial dissipation)
- surface meteorology over ocean (wind, humidity, pressure, temperature)
- surface radiation over ocean (solar, infrared)
- sea surface temperature (infrared radiometer, sea snake, throughflow ports)
- radiosondes (meteorological data and ozone concentration as functions of height)
- ocean CTDs: underway, profiling, through-flow on hull, towed from ship (ocean temperature, salinity, velocity)

Presentations

J. R. Davis, J. Thomson, I. Houghton, C. Fairall, E. J. Thompson, G. De Boer, W. Komaromi, J. Doyle, Saturation of wave slopes observed during hurricanes, Waves in Sea Environments (WISE) meeting, Princeton, NJ, USA, May 2023.

Chen, H., L. Wang, E. J. Thompson: Interpretable Deep Learning for Polarimetric Radar Rainfall Estimation. AMS Annual Meeting 2023.

Bytheway, J., E. J. Thompson, J. Yang, H. Chen: Evaluation of Downscaled IMERG Precipitation over Global Oceans Using PALs. AMS Annual Meeting 2023.

Zhang, D., G. Foltz, C. Zhang, C. W. Fairall, H.-S. Kim, J. A. Zhang, A. Mehra, A. M. Chiodi, M. F. Cronin, E. J. Thompson, J. Thomson: Air-Sea Surface Fluxes in Tropical Cyclones Measured By Uncrewed Surface Vehicle Saildrones. AMS Annual Meeting 2023.

Li, Z., E. J. Thompson, H. Chen, J. L. Bytheway: The Uncertainty of IMERG Over the Eastern Pacific Fresh Pool (EPFP): An Error Model Based on SPURS-2 Field Campaign Observations. AMS Annual Meeting 2023.

Clayson, C. A., N. Laxague, J. F. Booth, D. Kang, L. O'Neill, M. J. Roberts, R. J. Small, R. Samuelson, E. J. Thompson: Advances and Opportunities for Predicting and Understanding

Gulf Stream Impacts on Weather and Climate: 2022 CLIVAR Workshop Report. AMS Annual Meeting 2023.

J. L. Bytheway, E. J. Thompson, H. Chen, J. Yang: Evaluating Satellite Precipitation Estimates over Ocean Using Passive Aquatic Listeners. AMS Annual Meeting 2023.

Chen, H., C. W. Fairall, C. R. Williams, E. J. Thompson: Vertical Air Motion Retrievals from Airborne W-band Cloud Radar. AMS Annual Meeting 2023.

Chen, X., J. Dias, B. Wolding, R. Pincus, C. DeMott, G. Wick, E. J. Thompson, C. W. Fairall: An Observation-Based Air-Sea Interaction Study in the Northwestern Atlantic Trade-wind Boundary Layer: Can Weak Sea Surface Temperature Anomalies Do Heavy Lifting for Shallow Convection? AMS Annual Meeting 2023.

J. F. Booth, E. J. Thompson, Clayson, C. A., N. Laxague, D. Kang, R. Samuelson, R. J. Small, M. J. Roberts, L. O'Neill: Advances and Opportunities for Predicting and Understanding Gulf Stream Impacts on Weather and Climate: 2022 CLIVAR Workshop Report. AGU Fall Meeting 2022.

Zhang, D., G. Foltz, C. Zhang, C. W. Fairall, H.-S. Kim, J. A. Zhang, A. Mehra, A. M. Chiodi, M. F. Cronin, E. J. Thompson, J. Thomson: Concurrent surface flux, current and wave measurements by Uncrewed Surface Vehicle Saildrones in Tropical Cyclones. AGU Fall Meeting 2022.

Thompson, E. J., K. Drushka, H. Chen, Z. Li, J. Bytheway, 2022: Bridging satellite and in-situ scales of rain-induced near-surface salinity stratification. Ocean Salinity Conference, oral.

Chi, N., H. Chen, E. J. Thompson, A. Shcherbina, F. Bingham, L. Rainville, 2022: Ocean Salinity Conference, poster.

Davis, J., J. Thomson, I. Houghton, C. Fairall, E. J. Thompson, G. de Boer, 2022: Wave slopes observed during hurricanes using arrays of drifting buoys. Waves in Sea Environments Conference, poster.

Chen, X, J. Dias, R. Pincus, C. DeMott, B. Wolding, G. Wick, E. J. Thompson, C. Fairall, 2022: Understanding the Role of Sea Surface Temperature Warm Anomalies in Mesoscale Organization of Shallow Cumulus in the Northwestern Atlantic Trade Wind Boundary Layer. Ocean Sciences Meeting, poster.

Iyer, S., J. Thomson, K. Drushka, E. J. Thompson, 2022: Small-scale spatial variations of air-sea heat and moisture fluxes in the tropical trade winds. Ocean Sciences Meeting, oral.

Speich, S., and many coauthors including E. J. Thompson, 2022: Preliminary results from the EUREC4A Ocean-Atmosphere/ATOMIC project: An overview. Ocean Sciences Meeting, oral.

Karstensen, J., and many coauthors including E. J. Thompson, 2021: The EUREC4A Ocean/Atmosphere campaign: status. AGU Fall Meeting, oral.

Zhang, D., and many coauthors including E. J. Thompson, 2021: Air-sea heat and momentum fluxes measured by uncrewed surface vehicles during EUREC4A/ATOMIC. AGU Fall Meeting, oral.

Pate, A., E. J. Thompson, D. Zhang, 2021: Cloud fraction estimates from saildrone sky cameras during ATOMIC. AGU Fall Meeting, poster.

Iyer, S., J. Thomson, K. Drushka, E. J. Thompson, 2021: The influence of wave-current interactions on wave slope and momentum flux in an area of moderate ocean current variability. AGU Fall Meeting, oral.

Penunuri, A., E. J. Thompson, C. Zhang, 2021: Air-sea boundary layer interactions during PISTON. AGU Fall Meeting, poster.

Reid, J., and many coauthors including E. J. Thompson, 2021: Aerosol Vertical Transport, Exchange, and Transformation in the Maritime Southeast Asia: Observations and Implications from CAMP2EX and PISTON. AGU Fall Meeting, oral.

Thompson, E.J., J. N. Moum, C. W. Fairall, S. A. Rutledge, 2021: Air-sea flux responses to warm or fresh ocean surface stable layers: measured processes and modeling considerations. US CLIVAR Workshop - Tropical Pacific Observing Needs to Advance Process Understanding and Representation in Models, virtual, poster.

Thompson, E.J., J. N. Moum, C. W. Fairall, S. A. Rutledge, Wind limits on Ocean Rain Layers and Diurnal Warm Layers. AMS 34th Conference on Hurricanes and Tropical Meteorology, virtual, poster.

Chen, H., E. J. Thompson, 2021: Reducing uncertainty in satellite precipitation estimates using machine learning. AMS Annual Meeting, virtual, poster

Thomson, J., S. Iyer, K. Drushka, E. J. Thompson, 2020: Mesoscale air-sea interactions observed by autonomous platforms during ATOMIC. AGU Fall Meeting, virtual, poster.

Thompson, E.J., and many coauthors, 2020: Observing rain layers, diurnal warm layers, and their impacts in tropical oceans. AGU Fall Meeting, virtual, poster *invited

Fairall, C.W., E. J. Thompson, B. Blomquist, L. Bariteau, S. Pezoa, 2020: Surface Energy Budgets in MISOBOB and PISTON. AGU Fall Meeting, virtual, oral.

Maring, H. B., J. S. Ried, and many coauthors including E. J. Thompson, 2020: The Rock Matrix Around CAMP^{2}Ex's Gemstones: The Value of the Apparently Mundane in Shaping Earth System Observation. AGU Fall Meeting, virtual, oral.

Thomson, J.M., S. Iyer, K. Drushka, E.J. Thompson, 2020: Mesoscale Air-Sea Interactions Observed by Autonomous Platforms During ATOMIC. AGU Fall Meeting, virtual, poster.

Chen, H., R. Cifelli, P. Xie, E.J. Thompson, 2020: Improving GOES-R/ABI rainfall estimates with ground-based radar observations using machine learning. AGU Fall Meeting, virtual, poster.

Thompson, E.J. 2020: Air Sea Interactions Related to Precipitation Predictability and Bias. NOAA-DOE Workshop on Precipitation Predictability and Processes, virtual, oral *invited

Thompson, E. J., and coauthors, 2020: Spatial Variability of Air-Sea Interaction and Coupled Boundary Layers Observed During ATOMIC. NOAA PSL Flash Seminar, oral.

Thompson, E.J., J. N. Moum, C. W. Fairall, S. A. Rutledge, 2020: Wind Limits on Rain Layers and Diurnal Warm Layers. Ocean Sciences Meeting, San Diego, CA, poster.

Thompson, E.J., J. N. Moum, C. W. Fairall, S. A. Rutledge, 2020: Wind Limits on Rain Layers and Diurnal Warm Layers. Ocean Sciences Meeting, San Diego, CA, poster.

Schanze, J. J., S. R Springer, E. J. Thompson, G. S. E. Lagerloef, and R. W. Schmitt, 2020: Salinity Physics in the ITCZ - Modelling of Freshwater Lenses Constrained by In Situ Observations. Ocean Sciences Meeting, San Diego, CA, oral.

Thompson, E. J., and coauthors, 2020: Ship observations and autonomous ocean/air-sea observations during ATOMIC. NOAA PSL Flash Seminar, oral

Jackson, R. C., S. M. Collis, Y. Feng, V. Louf, A. Protat, E. J. Thompson, B. Dolan, S. W. Powell, S. E. Giangrande, R. J. Warren, 2019: The influence of large scale forcing on the diurnal cycle of rainfall over Darwin: observations and modeling. AGU Fall Meeting, San Francisco, CA, poster.

Thompson, E.J., J. N. Moum, C. W. Fairall, S. A. Rutledge, 2019: Wind Limits on Rain Layers and Diurnal Warm Layers. CLIVAR Workshop: Atmospheric Convection and Air-Sea Interactions over Tropical Oceans, Boulder, CO, poster

Thompson, E. J., J. Thomson, 2018: Air-Sea Interaction during EUREC4A: Spatially distributed observations. Planning Workshop for the Atlantic Trade wind Ocean-Atmosphere Mesoscale Interaction Campaign (ATOMIC), Boulder, CO, oral

Thompson, E. J., and M. Bourassa, 2018: Outstanding questions regarding air-sea interaction and near-surface processes, and how satellites can be used to find answers. NASA Coupled Surface Variables Workshop, Seattle, WA, oral (invited)

Thompson, E. J., 2018: Salinity Stratification by Rain during SPURS-2. Synthesis Meeting for the Salinity Processes Upper Ocean Regional Study 2 Experiment, La Jolla, CA, oral.

Thompson, E. J., K. Drushka, W. E. Asher, A. T. Jessup, J. J. Schanze and D. Clark, 2018: How is salinity stratification affected by surrounding precipitation variability? AGU Ocean Sciences, Portland, OR, oral

K. Drushka, W. E. Asher, E. J. Thompson, S. Iyer, A. T. Jessup, and D. Clark, 2018: A mechanistic synthesis of turbulence measurements made during SPURS-2. AGU Ocean Sciences, Portland, OR, oral

W. E. Asher, Kyla Drushka, E. J. Thompson, S. Iyer, A. T. Jessup, and D. Clark, 2018: Rain-generated ocean surface turbulence and salinity stratification. AGU Ocean Sciences, Portland, OR, poster

Schanze, J. J., S. R Springer, G. S E. Lagerloef, and E. J. Thompson, 2018: The Physics of Very-Near Surface Salinity Stratification and its Effects on Satellite Salinity. AGU Ocean Sciences, Portland, OR, oral

Thompson, E. J., J. Thomson, 2017: Air-Sea Interaction during EUREC4A: SWIFT Buoys, Wave Glider, and Underway Ship Measurements, Meeting for the Elucidating the Role of Cloud-Circulation Coupling in Climate Campaign (EUREC4A), New Orleans, LA, oral

Thompson, E. J., K. Drushka, W. E. Asher, A. T. Jessup, J. J. Schanze and D. Clark, 2017: Utility of shipborne disdrometer and marine navigation radar observations during convective and stratiform rain. AMS 38th Conference on Radar Meteorology, Chicago, IL, oral: https://ams.confex.com/ams/38RADAR/meetingapp.cgi/Paper/321223

Thompson, E. J., K. Drushka, W. E. Asher, J. J. Schanze, A. T. Jessup, and D. Clark, 2017: Predictability of tropical freshwater lenses due to convective and stratiform rain during SPURS-2. Global Ocean Salinity and Water Cycle Workshop, Woods Hole Oceanographic Institution, Woods Hole, MA, oral

Thompson, E. J., K. Drushka, W. E. Asher, J. J. Schanze, A. T. Jessup, and D. Clark, 2017: Satellite Rain Rate from IMERG as a Predictor for Salinity Stratification in the Upper Meter of the Ocean during SPURS-2 Rain Events. AMS Annual Meeting, Seattle, WA, poster

Drushka, K., W. E. Asher, E. J. Thompson, A.T. Jessup, D. Clark, 2017: Observations of near-surface fresh layers during SPURS-2. European Geophysical Union General Assembly Conference Abstracts 19, 10658, oral

Thompson, E. J., S. A. Rutledge, B. Dolan, M. Thurai, V. Chandrasekar, 2017: Dual-polarization radar rainfall estimation over warm tropical oceans. AMS Annual Meeting, Seattle, WA, poster

Asher, W. E., E. J. Thompson, K. Drushka, A. T. Jessup, J. J. Schanze, D. Clark, 2016: Comparing spatial scales of IMERG rain with depth-resolved near-surface salinity structure as measured during the SPURS-2 experiment. AGU Fall Meeting, San Francisco, CA, poster

Thompson, E. J., W. E. Asher, K. Drushka, A. T. Jessup, J. J. Schanze, D. Clark, 2016: Rain Rate from IMERG as a Predictor for Salinity Stratification in the Upper Meter of the Ocean during SPURS-2 Rain Events. AGU Fall Meeting, San Francisco, CA, oral

Thompson, E. J., S. A. Rutledge, J. N. Moum, C. W. Fairall, 2016: Rain-formed and diurnal warming-formed near-surface ocean mixed layers: impacts on SST throughout the MJO. AMS 31st Conference on Hurricanes and Tropical Meteorology, San Juan, PR, oral: https://ams.confex.com/ams/32Hurr/webprogram/meeting.html#Friday1

Timothy J. Lang, NASA/MSFC, Huntsville, AL; and B. Dolan, B. Fuchs, P. Hein, E. J. Thompson, S. Collis, J. Helmus, and N. Guy, 2015, Marshall Space Flight Center and the open-source radar software revolution. AMS 37th Conference on Radar Meteorology, Norman, OK, oral

Michael J. Dixon, NCAR, Boulder, CO; and J. W. Wilson, T. M. Weckwerth, D. Albo, and E. J. Thompson, 2015, A dual-polarization QPE method based on the NCAR Particle ID algorithm - description and preliminary results. AMS 37th Conference on Radar Meteorology, Norman, OK, oral

Thompson, E. J., S. A. Rutledge, 2015: Potential Benefits of Dual-Polarization Radar during SPURS-2: Mesoscale Precipitation Patterns in the Eastern Pacific Ocean. Planning Meeting for the NASA Salinity Processes Upper Ocean Regional Study 2 Experiment, La Jolla, CA, oral

Thompson, E. J., S. A. Rutledge, J. N. Moum, C. W. Fairall, 2014 Influence of precipitating systems on upper Indian Ocean stability during DYNAMO. AGU Fall Meeting, San Francisco, CA, poster

Thompson, E. J., J. M. Peters, R. S. Schumacher, S. A. Rutledge, 2014: Explaining low convective echo top heights during a strong DYNAMO westerly wind burst. AMS 31st Conference on Hurricanes and Tropical Meteorology, San Diego, CA, poster

Thompson, E. J., S. Rutledge, J. N. Moum, C. W. Fairall, S. P. de Szoeke, A. Brewer, 2014 Oceanic influence of atmospheric cold pools during DYNAMO. AMS 31st Conference on Hurricanes and Tropical Meteorology, San Diego, CA, oral

Thompson, E. J., S. A. Rutledge, B. Dolan, R. A. Rilling, M. Dixon, S. M. Ellis, and W. Xu, 2013: Radar Rainfall estimation during DYNAMO. AMS 36th Conference on Radar Meteorology, Breckenridge, CO, poster

Thompson, E. J., S. A. Rutledge, B. Dolan, V. Chandrasekar, and B. L. Cheong, 2013: A dual-polarization radar hydrometeor classification algorithm for winter precipitation. AMS 36th Conference on Radar Meteorology, Breckenridge, CO, oral: https://ams.confex.com/ams/36Radar/webprogram/Paper228449.html

Thompson, E. J., S. Rutledge, Timothy. J. Lang, 2012. Radar analysis of precipitation influenced by tropical cyclone-MJO interaction during DYNAMO. AGU Fall Meeting, San Francisco, CA, oral

Morris, G.A., D. Martins, A. Thompson, A. Reed, E. Joseph, and E. Thompson, 2012: The impact of radiosonde pressure sensor errors on ozone profiles and columns as reported by ozonesondes, Quadrennial Ozone Symposium, Toronto, Canada.

Thompson E. J., K. M. Willingham, K. W. Howard, 2010. Characteristics of Sonoran Desert Microbursts. AMS Annual Meeting, Atlanta, GA, oral

Thompson, E. J., Brian J. Lasorsa and Steven M. Zubrick, 2009: The February 2007 Valentine's Day Storm: Diagnosis and Impact on the Washington, DC Area. AMS Annual Meeting, Student Conference, Phoenix, AZ, poster

Thompson, E. J., S. A. Rogowski, S. M. Zubrick, S. A. Listemaa, 2008: Analysis of 4 July 2006 Washington, DC Severe Thunderstorm: Overview with Synoptic and Mesoscale Assessment, 33rd Annual National Weather Association Meeting, Student Conference, Louisville, KY, poster (award winner)

Ford, B. G. A. Morris, X. Li, B. Rappenglueck, D. Byun, B. Lefer, R. Perna, R. Boudreaux, B. McEvoy-Day, L. Pedemonte, E. Thompson, 2008: The impact of residual layer ozone on surface ozone levels in Houston, Texas during TexAQS II, 10th Conference on Atmospheric Chemistry, 88th Annual AMS Meeting, New Orleans, LA, poster