

Ashley E. Payne

Climate and Space Sciences and Engineering
2517B Space Research Building
2455 Hayward St., Ann Arbor, MI 48109-2143
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EDUCATION

- MAR 2016 **Ph.D. Earth System Science**, University of California, Irvine
Dissertation: "An Analysis of the Behavior and Intensity of Extreme Atmospheric Moisture Transport Events over the North Pacific Basin"
- SEP 2012 **M.Sc. Earth System Science**, University of California, Irvine
- MAY 2010 **B.Sc. Geological Sciences**, University of Texas, Austin
Thesis: "Carbon Isotope Analysis of the Sources and Mechanisms of CO₂ Input and Removal from Central Texas Cave Systems"

ACADEMIC EMPLOYMENT

- SEP 2016 - PRESENT | **President's Postdoctoral Fellow**
Department of Climate and Space Sciences and Engineering
University of Michigan
Mentor: Christiane JABLONOWSKI
- SEP 2010 - MAR 2016 | **Graduate Research Assistant**
Department of Earth System Science
University of California, Irvine
Advisor: Gudrun MAGNUSDOTTIR
- JAN 2009 - AUG 2010 | **Undergraduate Research Assistant**
Jackson School of Geosciences
University of Texas
Advisors: Jay BANNER and Daniel BREECKER

PUBLICATIONS

In Preparation/Submitted:

- Shields, C. A, J. J. Rutz, L. R. Leung, F. M. Ralph, M. Wehner, B. Kawzenuk, J. M. Lora, E. McClenny, T. Osbourne, **A. E. Payne**, P. Ullrich, A. Gershunov, N. Goldenson, B. Guan, Y. Qian, A. Ramos, C. Sarangi, S. Sellars, I. Gorodetzka, K. Kashinath, V. Kurlin, K. Mahoney, G. Muszynski, R. Pierce, A. Subramanian, D. Waliser, D. Walton, G. Wick, A. Wilson, D. Lavers, Prabhat, A. Collow, H. Krishnan, G. Magnusdottir, P. Nguyen, and T. O'Brien, (*submitted to Geoscientific Model Development*): Atmospheric River Tracking Method Intercomparison Project (ARTMIP): Experimental Design and Project Goals.
- Capo, J., **A. E. Payne** and G. Magnusdottir, (*In preparation for Journal of Geophysical Research - Atmospheres*): Weather regime analysis of atmospheric rivers along the western coastline of Scandinavia.

- **Payne, A. E.** and G. Magnusdottir, (*In preparation for Journal of Geophysical Research - Atmospheres*): The influence of moisture on atmospheric river persistence.
- **Payne, A. E.** and C. Jablonowski, (*In preparation for Journal of Geophysical Research - Atmospheres*): A case study evaluation of a mesoscale convective system in variable-resolution CESM.

Published/In-press:

- **Payne, A. E.** and G. Magnusdottir, 2016: Persistent landfalling atmospheric rivers over the West Coast of North America. *Journal of Geophysical Research - Atmospheres*, **121**, 13,287-13,300, doi: 10.1002/2016JD025549.
- **Payne, A. E.**, M. F. Jansen, and T. W. Cronin, 2015: Conceptual model analysis of the influence of temperature feedbacks on polar amplification. *Geophysical Research Letters*, **42**, 9561-9570, doi: 10.1002/2015GL065889.
- **Payne, A. E.** and G. Magnusdottir, 2015: An evaluation of atmospheric rivers over the North Pacific in CMIP5 and their response to warming under RCP 8.5. *Journal of Geophysical Research - Atmospheres*, **120**(11), 173 - 11, 190, doi: 10.1002/2015JD023586.
- **Payne, A. E.** and G. Magnusdottir, 2014: Dynamics of landfalling atmospheric rivers over the North Pacific in thirty years of MERRA reanalysis. *Journal of Climate*, **27**(18), 7133 - 7150, doi: 10.1175/JCLI-D-14-00034.1.
- Breecker, D. O., **A. E. Payne**, J. Quade, J. L. Banner, C. E. Ball, K. W. Meyer, and B. D. Cowan, 2012: The sources and sinks of CO₂ in caves under mixed woodland and grassland vegetation. *Geochimica et Cosmochimica Acta*, **96**, 230 - 246, doi: 10.1016/j.gca.2012.08.023.

Non-refereed:

- **Payne, A. E.**, 2016: An analysis of the behavior and intensity of extreme atmospheric moisture transport events over the North Pacific basin. Doctoral dissertation, Department of Earth System Science, University of California, Irvine.
- **Payne, A. E.**, 2014: Conceptual model analysis of the influence of longwave temperature feedbacks on polar amplification. Woods Hole Oceanographic Institute, Geophysical Fluid Dynamics Program, Proceedings Volume 2014.
- **Quinn, A. E.**, 2010: Carbon isotope analysis of the sources and mechanisms of CO₂ input and removal from Central Texas cave systems. Senior honors thesis, Jackson School of Geosciences, University of Texas at Austin.

HONORS & FELLOWSHIPS

- 2016 University of Michigan President's Postdoctoral Fellowship
- 2015 Faculty Endowed Fellowship, Department of Earth System Science, School of Physical Sciences, University of California Irvine
- 2014 Woods Hole Oceanographic Institution (WHOI) Geophysical Fluid Dynamics Program Fellowship
- 2014 Outstanding Contributions to the Department of Earth System Science, School of Physical Sciences, University of California Irvine
- 2011 National Science Foundation Graduate Research Fellowship
- 2010 Highest honors, University of Texas (top 4% of graduating class university-wide)
- 2010 Valedictorian (awarded lifetime membership to the Texas Exes) and departmental honors, Jackson School of Geosciences, University of Texas

INVITED TALKS

- 2016 Department of Climate and Space Sciences and Engineering, University of Michigan, Ann Arbor, Oct. 13.
- 2014 Woods Hole Oceanographic Institute, Geophysical Fluid Dynamics Program, Woods Hole, MA, Aug. 19.

CONFERENCE ACTIVITY

Planning:

- 2017 Program Co-chair
 - Present Atmospheric Rivers and Other Extreme Climate Events
31st Conference on Climate Variability and Change
AMS Annual Meeting, Austin, TX
- 2017 Steering Committee Member
 - Present International Atmospheric Rivers Conference 2018
University of California, San Diego, CA
- 2015 Climate Action Selection Committee Member
 - California Higher Education Sustainability Conference 2015
San Francisco State University, San Francisco, CA

Invited Participant:

- 2017 Atmospheric River Tracking Model Intercomparison Project Workshop
Scripps Institute of Oceanography, La Jolla, CA (May 10 - 12)
- 2017 NextProf Science 2017 Workshop
University of Michigan, Ann Arbor, MI (May 2 - 5)
- 2015 Weather Day on the Hill
University Corporation for Atmospheric Research Summit
Washington D.C. (May 13 - 14)

Talks:

- 2018 **Payne, A. E.** and G. Magnusdottir: "The Development of Persistent Atmospheric Rivers," 2018 Annual Meeting, American Meteorological Society, Austin, TX, Jan 7 - 11.
- 2018 **Payne, A. E.** and C. Jablonowski: "Evaluation of a Mesoscale Convective System in Variable-Resolution CESM," 2018 Annual Meeting, American Meteorological Society, Austin, TX, Jan 7 - 11.
- 2017 **Payne, A. E.** and C. Jablonowski: "Evaluation of a Mesoscale Convective System in Variable-Resolution CESM," 2017 Fall Meeting, American Geophysical Union, New Orleans, LA, Dec 11 - 15.
- 2015 **Payne, A. E.** and G. Magnusdottir: "An Analysis of the Dynamical Coupling in the Development of Persistent Landfalling Atmospheric Rivers over the Eastern North Pacific," 2015 Fall Meeting, American Geophysical Union, San Francisco, CA, Dec 14 - 18.
- 2015 **Payne, A. E.** and E. Swiedler: "Student Engagement and the UC Carbon Neutrality Initiative Fellowship Program," California Higher Education Sustainability Conference, San Francisco State University, San Francisco, CA, Jul 19 - 24.

- 2015 **Payne, A. E.** and G. Magnusdottir: "A Dynamical Analysis of Atmospheric River Behavior in Two Different Climates," 20th Conference on Atmospheric and Oceanic Fluid Dynamics, American Meteorological Society, Minneapolis, MI, Jun 14 - 19.

Posters:

- 2017 Magnusdottir, G. and **Payne, A. E.**: "The Development of Persistent Atmospheric Rivers," 2017 Fall Meeting, American Geophysical Union, New Orleans, LA, Dec 11 - 15.
- 2017 **Payne, A. E.**, C. Jablonowski, C. Zarzycki, and J. Olson: "Evaluation of Convection Parameterizations in Variable-Resolution CESM over the Southern Great Plains," 17th Conference on Mesoscale Processes, American Meteorological Society, San Diego, CA, Jul 24 - 27.
- 2017 **Payne, A. E.** and G. Magnusdottir: "An Analysis of the Development of Persistent Landfalling Atmospheric Rivers along the Western Coastline of North America," 17th Conference on Mesoscale Processes, American Meteorological Society, San Diego, CA, Jul 24 - 27.
- 2017 **Payne, A. E.**, C. Jablonowski, C. Zarzycki, and J. Olson: "Evaluation of Convection Parameterizations in Variable-Resolution CESM over the Southern Great Plains," 21st Conference on Atmospheric and Oceanic Fluid Dynamics, American Meteorological Society, Portland, OR, Jun 26 - 30.
- 2017 **Payne, A. E.**, C. Jablonowski, C. Zarzycki, and J. Olson: "Evaluation of Convection Parameterizations in Variable-Resolution CESM over the Southern Great Plains," 22nd Annual CESM Workshop, Boulder, CO, Jun 19 - 22.
- 2016 **Payne, A. E.** and G. Magnusdottir: "Role of Moist Processes in the Development of the March 2005 Atmospheric River Event," 2016 Fall Meeting, American Geophysical Union, San Francisco, CA, Dec 12 - 16.
- 2014 **Payne, A. E.** and G. Magnusdottir: "A Dynamical Analysis of Present and Future Atmospheric River Behavior over the North Pacific in MERRA Reanalysis and CMIP5 RCP 8.5 Projections," 2014 Fall Meeting, American Geophysical Union, San Francisco, CA, Dec 15 - 19.
- 2013 **Payne, A. E.** and G. Magnusdottir: "Atmospheric River Formation and Behavior over the North Pacific Basin," 19th Conference on Atmospheric and Oceanic Fluid Dynamics, American Meteorological Society, Newport, RI, Jun 16 - 21.
- 2009 **Quinn, A. E.**, D. O. Breecker, J. L. Banner, and B. D. Cowan: "Investigating Cave Ventilation in Central Texas using Seasonal Variations in the $\delta^{13}\text{C}$ Value and Concentration of Cave-Air CO_2 ," 2009 Annual Meeting, Geological Society of America, Portland, OR, Oct 18 - 21.

TEACHING EXPERIENCE

University of Michigan

- Climate and Space Sciences and Engineering Seminar, CLaSP 749 (FALL 2017, WINTER 2018)

University of California, Irvine (Teaching Assistant)

- Earth System Science I (FALL 2015)
- University Studies 13A-C (FALL 2012, WINTER 2013, SPRING 2013)

Outreach with Climate, Literacy, Empowerment and iNquiry (CLEAN) Education

- Curriculum development for "Weather and Climate"

- Lead instructor, Orange County Children's Water Festival, CA, 2013 - 2016
- Lead instructor, MacArthur Fundamental Intermediate School, Santa Ana, CA (FEB 2015)
- Instructor, MacArthur Fundamental Intermediate School, Santa Ana, CA (MAR 2014)
- Instructor, College Park Elementary School, Irvine, CA (MAY 2012)

STUDENTS SUPERVISED

OCT 2017 - PRESENT	<p>Eva Gnegy B.Sc. Aerospace Engineering (anticipated 2020) Undergraduate Research Opportunity Program University of Michigan</p>
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PROFESSIONAL SERVICE

Peer Review: Journal of Climate, Journal of Geophysical Research - Atmospheres, Journal of Hydrometeorology, Space Weather, Geophysical Research Letters, Journal of the Meteorological Society of Japan, Nature Communications, Monthly Weather Review, Atmosphere

Department/University:

- 2017 - PRESENT Co-lead organizer for the seminar schedule for the Department of Climate and Space Sciences and Engineering, University of Michigan
- 2017 Lead organizer for the "Tornado Week" seminar series and for Tornado Camp 2017
- 2015 Graduate student representative to the University of California Sustainability Steering Committee
- 2014/15 Graduate student representative to the Global Climate Leadership Council for the University of California system (ten campuses)
- 2013/14 Graduate student representative to the Department of Earth System Science, University of California Irvine

Community:

- 2017 - PRESENT Co-Lead/Lead Organizer for mentoring circle, Association for Women in Science, University of Michigan
- 2017 - PRESENT Mentor, Department of Climate and Space Sciences and Engineering Peer Mentorship Program, University of Michigan
- NOV 2017 Engineering Graduate Symposium Space and Planetary Sciences Session judge, University of Michigan
- OCT 2017 Facilitator for "Career Paths: Professor/Post-doc at a University," Female Faculty/Graduate Student Luncheon, University of Michigan
- AUG 2017 Travel grant reviewer, Atmospheric Sciences Section, American Geophysical Union
- APR 2017 Michigan Geophysical Union Atmospheric & Climate Sciences Section judge, University of Michigan
- APR 2017 Facilitator for "Choosing a Post-doc Mentor," Female Faculty/Graduate Student Luncheon, University of Michigan

Nov 2016 Facilitator for "Time Management: Over-commitment?" Female Faculty/Graduate Student Luncheon, University of Michigan

REFERENCES

Christiane JABLONOWSKI cjablono@umich.edu	Associate Professor Department of Climate and Space Sciences and Engineering University of Michigan 2455 Hayward Street Ann Arbor, MI 48109-2143
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Malte JANSEN mfj@uchicago.edu	Assistant Professor Department of the Geophysical Sciences University of Chicago 5734 S. Ellis Avenue Chicago, IL 60637
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Gudrun MAGNUSDOTTIR gudrun@uci.edu	Professor Department of Earth System Science University of California, Irvine 3200 Croul Hall Irvine, CA 92697-3100
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F. Martin RALPH mralph@ucsd.edu	Director Center for Western Weather and Water Extremes Scripps Institution of Oceanography University of California, San Diego 9500 Gilman Drive La Jolla, CA 92093
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