Travis Allen O'Brien
ORCID: 0000-0002-6643-1175
ResearcherID: M-5250-2013

1001 East 10th St
Bloomington, IN 47405
(812) 856-6298
obrienta@iu.edu

PROFESSIONAL PREPARATION

University of California, Santa Cruz	B. S. Physics	2001-2005
University of California, Santa Cruz	M. S. Earth Science	2006-2008
University of California, Santa Cruz	Ph. D. Earth Science	2008-2011
Lawrence Berkeley National Lab	Postdoc, Climate Science	2011-2013

ACADEMIC POSITIONS HELD

2020-present	Assistant Professor, IU Bloomington
2020-present	Visiting Faculty, LBNL
2017-2019	Career Earth Research Scientist, LBNL
2015-2019	Climate and Atmosphere Process Program Lead, LBNL
2015-2018	Assistant Adjunct Professor, UC Davis
2014-2017	Career-Track Earth Research Scientist, LBNL
2011-2013	Geological Postdoctoral Fellow, LBNL
2010	Associate in Atmospheric Sciences, UC Davis
2009-2011	Ph. D. Candidate, UC Santa Cruz
2006-2009	Graduate Student Researcher, UC Santa Cruz
2006	Research Consultant, LANL
2004-2005	Research Assistant, UC Santa Cruz
2004	Student Intern, SLAC

5 SELECT REFEREED PUBLICATIONS

O'Brien, T. A., Risser, M. D., Loring, B., Elbashandy, A. A., Krishnan, H., Johnson, J., Patricola, C. M., *O'Brien, J. P., *Mahesh, A., *Arriaga Ramirez, S., Rhoades, A. M., Charn, A., *Inda Díaz, H., and Collins, W. D. (2020b). Detection of atmospheric rivers with inline uncertainty quantification: TECA-BARD v1.0.1. *Geoscientific Model Development*, 13(12):6131–6148

*O'Brien, J. P., **O'Brien**, T. A., Patricola, C. M., and Wang, S.-Y. (2019). Metrics for understanding large-scale controls of multivariate temperature and precipitation variability. *Climate Dynamics*, 53(7-8):3805–3823

O'Brien, T. A., Collins, W. D., Kashinath, K., Rübel, O., Byna, S., Gu, J., Krishnan, H., and Ullrich, P. A. (2016c). Resolution dependence of precipitation statistical fidelity in hindcast simulations. *Journal of Advances in Modeling Earth Systems*, 8(2):976–990

O'Brien, T. A., Li, F., Collins, W. D., Rauscher, S. A., Ringler, T. D., Taylor, M., Hagos, S. M., and Leung, L. R. (2013d). Observed scaling in clouds and precipitation and scale incognizance in regional to global atmospheric models. *Journal of Climate*, 26(23):9313–9333

O'Brien, T. A., Sloan, L. C., Chuang, P. Y., Faloona, I. C., and Johnstone, J. A. (2013f). Multidecadal simulation of coastal fog with a regional climate model. *Climate Dynamics*, 40:2801–2812

5 SELECT INVITED TALKS

O'Brien, T. A. (2019b). Probabilistic Detection of Extreme Weather Systems. Workshop on Risk Analysis for Extremes in the Earth System, Berkeley, CA. (Invited)

O'Brien, T. A. (2017c). A Case for Missing Physics in Climate Models. San Jose State University Climate and Meteorology Seminar, San Jose, CA. (Invited)

O'Brien, T. A., Collins, W., Rauscher, S., Kashinath, K., Rübel, O., S, B., Gu, J., Krishnan, H., and Ullrich, P. (2016a). Understanding the resolution dependence of precipitation statistical fidelity in hindcast simulations. AGU Fall Meeting, San Francisco CA. (Invited)

O'Brien, T. A. (2015). Climate modeling of extremes: state of the science. Climate Change Impacts & Integrated Assessment Workshop XXI, Snowmass CO. (Invited)

O'Brien, T. A. and Collins, W. (2015a). Analyzing and leveraging self-similarity in climate models. EGU Spring Meeting, Vienna, Austria. (Invited)

COMMUNITY AND PUBLIC SERVICE

- Organizing committee member, 2020 DOE PI Meeting, Fall 2020
- Panelist, "K-12 Live Science Presents Science in the Sky July 31, 2020", Berkeley, CA
- Atmospheric River Tracking Method Intercomparison Project (ARTMIP) committee member (2019-present)
- Host and Organizer, 3rd ARTMIP Workshop, October 16 – 18, 2019
- Co-organizer, 2018 DOE PI Meeting, Fall 2018
- Steering committee member and report co-author: DOE/NOAA Workshop on High-Resolution Coupling and Initialization to Improve Predictability and Predictions in Climate Models, September 30 – October 2, 2015 (report available online)
- Organizing committee, 2016 DOE/RGCM PI Meeting, Fall 2016
- Organizing committee, 2015 DOE/RGCM Team Leads Meeting, Fall 2015
- Invited participant in interdisciplinary Fog as a System workshop, 2013
- Guest on KQED Forum – discussed heatwaves and climate, 23 June, 2017 (`http://bit.ly/2t4wIad`)
- Referee for: JGR - Atmospheres, J. Clim., J. Atmos. Sci., Clim. Dyn., Earth Interact., Atmos. Sci. Lett., Science Advances, Geosci. Model Devel., and GRL
- Session co-convener for AGU Fall Meetings:
  - A199 (2020): Atmospheric Rivers: Processes, Impacts, and Uncertainty Quantification
  - A33N (2019): Fog: Atmosphere, Biosphere, Ocean, and Land Interactions
  - A026 (2018): Boundary Layer Clouds: Atmosphere, Biosphere, Ocean, and Land Interactions
  - A23E (2016): Fog: Atmosphere, Biosphere, Ocean, and Land Interactions
  - A32E (2015): Fog: Atmosphere, Biosphere, Ocean, and Land Interactions
  - A52B (2014): Innovative Insights into the Climate System and Climate Models: Exploring Scales and Parameter Spaces
  - A14B (2014): Fog: Atmosphere, Biosphere, Ocean, and Land Interactions
  - A033 (2013): Fog: Atmosphere, Biosphere, land, and ocean interactions

  - A025 (2012): Coastal Fog: Atmosphere, Biosphere, Ocean, and Land Interactions
  - A066 (2012): Scale Dependence, Scale Invariance, and Scale Aware Parameterization
- Developer of free, multidimensional probability estimation tool, fastKDE
- Community contributor to the ICTP RegCM regional climate model

INSTITUTIONAL SERVICE

- 2021, Undergraduate Studies Committee, IU Earth and Atmospheric Sciences Dept.
- 2021, Diversity & Inclusion Committee, IU Earth and Atmospheric Sciences Dept.
- 2020, Diversity & Inclusion pre-Committee, IU Earth and Atmospheric Sciences Dept.
- 2015-2019, Area Council, LBNL Earth and Environmental Sciences Area
- 2015-2019, Division Council, LBNL Climate and Ecosystem Sciences Division
- 2015-2019, Lead, LBNL Climate and Atmospheric Process Program Domain
- 2017-2018, Committee on Undergraduate Courses and Majors and Courses, UC Davis College of Agricultural and Environmental Sciences
- 2017, Internal Fellowship Review Committee, UC Davis Graduate Studies
- 2015-2017, Diversity and Inclusion Council, LBNL
- 2015-2016, Graduate Admission Committee, UC Davis Atmospheric Sciences Graduate Group
- 2014-2015, Deputy Lead, LBNL Climate Modeling Program
- Ph.D. Dissertation Committee Member:
  - 2017, Alan Rhoades, UC Davis, *Understanding 21st Century Hydroclimatic Trends in Western USA Mountain Ranges Using Variable-Resolution CESM*
  - 2016, Xingying Huang, UC Davis, *Studying Regional Climate with Variable-Resolution CESM*
- Qualifying Examination Committee Member:
  - 2019, Héctor Inda Díaz, UC Davis, *Toward theory-based detection of atmospheric rivers: Characterizing the size, Lagrangian properties, and coherent Lagrangian structures of atmospheric rivers*
  - 2018, Elizabeth McClenny, UC Davis, *Atmospheric Rivers in a Hierarchy of Models: Biases, Sensitivities, and Usability Insights*
  - 2017, John P. O'Brien, UC Santa Cruz, *The Quantification of Anthropogenic Contribution to Co-occurring Meteorological Extremes*
  - 2015, Meina Wang, UC Davis, *Observations and Regional Climate Simulations of Changes in Sea-Breeze and Coastal Fog*

TEACHING EXPERIENCE

Professor	EAS E-122	Earth's Dynamic Atmosphere	IU	Spring 2021
Professor	EAS E-474	Current and Future Trends in Extreme Weather	IU	Fall 2020
Professor	EAS E-574	Current and Future Trends in Extreme Weather	IU	Fall 2020
Professor	EAS E-122	Earth's Dynamic Atmosphere	IU	Spring 2020
Professor	ATM298	Python for Environmental Sciences	UCD	Spring 2017
Professor	ATM290	Atmospheric Science Seminar	UCD	Spring 2017
Professor	ATM298	Python for Environmental Sciences	UCD	Spring 2016
Instructor		LaTeXfor Science	LBNL	Summer 2013
T.A.	ES110B	Earth as a Chemical System	UCSC	Winter 2011
Assoc. in Atm. Sci.	ATM120	Atm. Thermodyn. & Cloud Phys.	UCD	Fall 2010
T.A.	ES80C	Introduction to Weather and Climate	UCSC	Fall 2009
T.A.	ES110B	Earth as a Chemical System	UCSC	Winter 2009
T.A.	ES10	California Geology	UCSC	Fall 2007
T.A.	ES80D	Earth Sciences in the Cinema	UCSC	Spring 2007

CURRENT, PENDING, & PAST SUPPORT

Current		
04/20–03/23	Co-PI, DOD RC19-F3-1391 (*$250K*)	Process-based Evaluation of Temperature and Precipitation Projections and Downscaling Methods over the CONUS
10/18–09/21	Co-PI, DOE DE-FOA-0001862 (*$349K*)	Monsoon Extremes: Impacts, Metrics, and Synoptic-Scale Drivers
10/19–09/22	Co-I, DOE Scientific Focus Area (*$8.25M*)	Calibrated And Systematic Characterization, Attribution, and Detection of Extremes (CASCADE)
07/18–06/21	Co-I, DOE SC-FOA-0001862 (*$216K*)	Tropical Cyclone-Climate Interactions using E3SM
Pending		
10/21–09/23	Co-I, NOAA AdSci (*$300K*)	Enhancing Community-Led Adaptation and Resilience to Storms in the Great Lakes
Past		
10/16–09/19	Co-PI, DOE Scientific Focus Area (*$7.4M*)	Calibrated And Systematic Characterization, Attribution, and Detection of Extremes (CASCADE)
10/16–09/19	Co-I, DOE DE-FOA-0001531 (*$1.5M*)	An Integrated Evaluation of the Simulated Hydroclimate System of the Continental US (Hyperion)
10/16–09/19	Co-I, NSF CoastalSEES (*$90K*)	Coastal fog-mediated interactions between climate change, upwelling, and coast redwood resilience: Projecting vulnerabilities and the human response (Summen Project)
10/15–09/18	Co-I, DOE DE-FOA-0001036 (*$150K*)	Developing Metrics to Evaluate the Skill and Credibility of Downscaling
10/13–09/16	Co-I, DOE Scientific Focus Area (*$6.3M*)	Calibrated And Systematic Characterization, Attribution, and Detection of Extremes (CASCADE)

AWARDS:

- 2020 Department of Energy Certificate of Excellence "In appreciation of your leadership in conducting the Third Atmospheric River Transport Method Intercomparison Project (ARTMIP) Workshop"
- 2017 Spot Award for Outstanding Contributions to Diversity & Inclusion
- 2014 Editor's Citation for Excellence in Refereeing, *Geophysical Research Letters*

GRADUATE AND POSTDOCTORAL ADVISORS:

Ph. D. Advisors: Lisa C. Sloan and Patrick Y. Chuang, *UC Santa Cruz*
Postdoctoral Advisor: William D. Collins, *Lawrence Berkeley National Lab*

GRADUATE AND POSTDOCTORAL ADVISEES:

Yang Zhou, *LBNL* (postdoc 2019–present)
John P. O'Brien, *LBNL/UC Santa Cruz* (Ph.D. student 2014–2019)
Sarahí Arriaga-Ramirez, *LBNL/UC Davis* (M.S. student 2016–2020)
Héctor Inda Díaz, *LBNL/UC Davis* (Ph.D. student 2016–present)
Nicholas Cavanaugh, *LBNL* (postdoc 2014–2016)

UNDERGRADUATE ADVISEES:

Thomas Burkle, *IU* (undergraduate researcher, Summer 2020)

Thomas Trapp, *IU* (undergraduate researcher, Summer 2020)
Michael Krauter, *IU* (undergraduate researcher, Summer 2020)
Hannah Isaacson, *IU* (undergraduate researcher, Fall 2020)
Mikayla Asher, *LBNL/U. Michigan* (undergraduate research intern, Summer 2019)
Ankur Mahesh, *LBNL/UC Berkeley* (undergraduate researcher 2017–2019)

OTHER SUPERVISEES

Noel Keen, *LBNL* (software developer 2018–2019)

PEER REVIEWED PUBLICATIONS, CHRONOLOGICAL

Note: '*' indicates a major mentoring role.
Note: '†' indicates that specified co-authors contributed equally to the manuscript.

2021

[31] Risser, M. D., Wehner, M. F., *O'Brien, J. P., Patricola, C. M., **O'Brien**, T. A., Collins, W. D., Paciorek, C. J., and Huang, H. (2021). Quantifying the influence of natural climate variability on in situ measurements of seasonal total and extreme daily precipitation. *Climate Dynamics*, In Press

[30] Prabhat, Kashinath, K., Mudigonda, M., Kim, S., Kapp-Schwoerer, L., Graubner, A., Karaismailoglu, E., von Kleist, L., Kurth, T., Greiner, A., Mahesh, A., Yang, K., Lewis, C., Chen, J., Lou, A., Chandran, S., Toms, B., Chapman, W., Dagon, K., Shields, C. A., **O'Brien**, T., Wehner, M., and Collins, W. (2021). ClimateNet: an expert-labeled open dataset and deep learning architecture for enabling high-precision analyses of extreme weather. *Geoscientific Model Development*, 14(1):107–124

2020

[29] **O'Brien**, T. A., Risser, M. D., Loring, B., Elbashandy, A. A., Krishnan, H., Johnson, J., Patricola, C. M., *O'Brien, J. P., *Mahesh, A., *Arriaga Ramirez, S., Rhoades, A. M., Charn, A., *Inda Díaz, H., and Collins, W. D. (2020b). Detection of atmospheric rivers with inline uncertainty quantification: TECA-BARD v1.0.1. *Geoscientific Model Development*, 13(12):6131–6148

[28] Rhoades, A. M., Jones, A. D., **O'Brien**, T. A., *O'Brien, J. P., Ullrich, P. A., and Zarzycki, C. M. (2020b). Influences of North Pacific Ocean domain extent on the western US winter hydroclimatology in variable-resolution CESM. *Journal of Geophysical Research Atmospheres*, 125(14):1–56

[27] Charn, A. B., Collins, W. D., Parishani, H., Risser, M. D., and **O'Brien**, T. A. (2020). Microphysical sensitivity of superparameterized precipitation extremes in the continental US due to feedbacks on large-scale circulation. *Earth and Space Science*, 7(7):e2019EA000731

[26] Vishnu, S., Boos, W. R., Ullrich, P. A., and **O'Brien**, T. A. (2020). Assessing Historical Variability of South Asian Monsoon Lows and Depressions With an Optimized Tracking Algorithm. *Journal of Geophysical Research: Atmospheres*, 125(15):e2020JD032977

[25] Gutowski, W. J., Ullrich, P. A., Hall, A., Leung, L. R., **O'Brien**, T. A., Patricola, C. M., Arritt, R. W., Bukovsky, M. S., Calvin, K. V., Feng, Z., Jones, A. D., Kooperman, G. J., Monier, E., Pritchard, M. S., Pryor, S. C., Qian, Y., Rhoades, A. M., Roberts, A. F., Sakaguchi, K., Urban, N., and Zarzycki, C. (2020a). The Ongoing Need for High-Resolution Regional Climate Models: Process Understanding and Stakeholder Information. *Bulletin of the American Meteorological Society*, 101(5):E664–E683

[24] Patricola, C. M., *O'Brien, J. P., Risser, M. D., Rhoades, A. M., **O'Brien**, T. A., Ullrich, P. A., Stone, D. A., and Collins, W. D. (2020a). Maximizing ENSO as a source of western US hydroclimate predictability. *Climate Dynamics*, 54(1-2):351–372

2019

[23] Rutz, J. J., Shields, C. A., Lora, J. M., Payne, A. E., Guan, B., Ullrich, P., **O'Brien**, T., Leung, L. R., Ralph, F. M., Wehner, M., Brands, S., Collow, A., Goldenson, N., Gorodetskaya, I., Griffith, H., Kashinath, K., Kawzenuk, B., Krishnan, H., Kurlin, V., Lavers, D., Magnusdottir, G., Mahoney, K., McClenny, E., Muszynski, G., Nguyen, P. D., Prabhat, M., Qian, Y., Ramos, A. M., Sarangi, C., Sellars, S., Shulgina, T., Tome, R., Waliser, D., Walton, D., Wick, G., Wilson, A. M., and Viale, M. (2019). The Atmospheric River Tracking Method Intercomparison Project (ARTMIP): Quantifying Uncertainties in Atmospheric River Climatology. *Journal of Geophysical Research: Atmospheres*, 124(24):13777–13802

[22] Risser, M. D., Paciorek, C. J., **O'Brien**, T. A., Wehner, M. F., and Collins, W. D. (2019a). Detected Changes in Precipitation Extremes at Their Native Scales Derived from In Situ Measurements. *Journal of Climate*, 32(23):8087–8109

[21] *O'Brien, J. P., **O'Brien**, T. A., Patricola, C. M., and Wang, S.-Y. (2019). Metrics for understanding large-scale controls of multivariate temperature and precipitation variability. *Climate Dynamics*, 53(7-8):3805–3823

[20] Risser, M. D., Paciorek, C. J., Wehner, M. F., **O'Brien**, T. A., and Collins, W. D. (2019b). A probabilistic gridded product for daily precipitation extremes over the United States. *Climate Dynamics*, 53(5-6):2517–2538

[19] Timmermans, B., Wehner, M., Cooley, D., **O'Brien**, T., and Krishnan, H. (2019). An evaluation of the consistency of extremes in gridded precipitation data sets. *Climate Dynamics*, 52(11):6651–6670

2018

[18] Shields, C. A., Rutz, J. J., Leung, L. R., Ralph, F. M., Wehner, M. F., **O'Brien**, T. A., and Pierce, R. (2019). Defining Uncertainties through Comparison of Atmospheric River Tracking Methods. *Bulletin of the American Meteorological Society*, 100(2):ES93–ES96

[17] Kooperman, G. J., Pritchard, M. S., **O'Brien**, T. A., and Timmermans, B. W. (2018). Rainfall From Resolved Rather Than Parameterized Processes Better Represents the Present-Day and Climate Change Response of Moderate Rates in the Community Atmosphere Model. *Journal of Advances in Modeling Earth Systems*, 7(2):1–6

[16] Stone, D. A., Risser, M. D., Angélil, O. M., Wehner, M. F., Cholia, S., Keen, N., Krishnan, H., **O'Brien**, T. A., and Collins, W. D. (2018). A basis set for exploration of sensitivity to prescribed ocean conditions for estimating human contributions to extreme weather in CAM5.1-1degree. *Weather and Climate Extremes*

[15] *Cavanaugh, N. R., **O'Brien**, T. A., Collins, W. D., and Skamarock, W. C. (2017). Spherical Harmonic Spectral Estimation on Arbitrary Grids. *Monthly Weather Review*, 145(8):3355–3363

2016

[14] Donner, L. J., **O'Brien**, T. A., Rieger, D., Vogel, B., and Cooke, W. F. (2016). Are atmospheric updrafts a key to unlocking climate forcing and sensitivity? *Atmospheric Chemistry and Physics*, 16(20):12983–12992

[13] **O'Brien**, T. A., Collins, W. D., Kashinath, K., Rübel, O., Byna, S., Gu, J., Krishnan, H., and Ullrich, P. A. (2016c). Resolution dependence of precipitation statistical fidelity in hindcast simulations. *Journal of Advances in Modeling Earth Systems*, 8(2):976–990

[12] **O'Brien**, T. A., Kashinath, K., Cavanaugh, N. R., Collins, W. D., and O'Brien, J. P. (2016e). A fast and objective multidimensional kernel density estimation method: fastKDE. *Computational Statistics & Data Analysis*, 101:148–160

[11] Rauscher, S. A., **O'Brien**, T. A., Piani, C., Coppola, E., Giorgi, F., Collins, W. D., and Lawston, P. M. (2016). A multimodel intercomparison of resolution effects on precipitation: simulations and theory. *Climate Dynamics*, 47(7-8):2205–2218

2015

[10] Martini, M. N., Gustafson, W. I., **O'Brien**, T. A., and Ma, P. L. (2015). Evaluation of tropical channel refinement using MPAS-A aquaplanet simulations. *Journal of Advances in Modeling Earth Systems*, 7(3):1351–1367

2014

[9] **O'Brien**, T. A., Collins, W. D., Rauscher, S. A., and Ringler, T. D. (2014e). Reducing the computational cost of the ECF using a nuFFT: A fast and objective probability density estimation method. *Computational Statistics and Data Analysis*, 79:222–234

[8] Güttler, I., Branković, Č., **O'Brien**, T. A., Coppola, E., Grisogono, B., and Giorgi, F. (2014). Sensitivity of the regional climate model RegCM4.2 to planetary boundary layer parameterisation. *Climate Dynamics*, 43(7-8):1753–1772

2013

[7] **O'Brien**, T. A., Li, F., Collins, W. D., Rauscher, S. A., Ringler, T. D., Taylor, M., Hagos, S. M., and Leung, L. R. (2013d). Observed scaling in clouds and precipitation and scale incognizance in regional to global atmospheric models. *Journal of Climate*, 26(23):9313–9333

[6] **O'Brien**, T. A., Sloan, L. C., Chuang, P. Y., Faloona, I. C., and Johnstone, J. A. (2013f). Multidecadal simulation of coastal fog with a regional climate model. *Climate Dynamics*, 40:2801–2812

2012 [5] Giorgi, F., Coppola, E., Solmon, F., Mariotti, L., Sylla, M., Bi, X., Elguindi, N., Diro, G., Nair, V., Giuliani, G., Turuncoglu, U., Cozzini, S., Güttler, I., **O'Brien**, T., Tawfik, A., Shalaby, A., Zakey, A., Steiner, A., Stordal, F., Sloan, L., and Brankovic, C. (2012). RegCM4: model description and preliminary tests over multiple CORDEX domains. *Climate Research*, 52:7–29

[4] **O'Brien**, T. A., Chuang, P. Y., Sloan, L. C., Faloona, I. C., and Rossiter, D. L. (2012a). Coupling a new turbulence parametrization to RegCM adds realistic stratocumulus clouds. *Geoscientific Model Development*, 5(4):989–1008

2010 [3] **O'Brien**, T. A., Sloan, L. C., and Snyder, M. A. (2010e). Can ensembles of regional climate model simulations improve results from sensitivity studies? *Climate Dynamics*, 37(5-6):1111–1118

2007 [2] Bridges, F., Downs, C., **O'Brien**, T., Jeong, I. K., and Kimura, T. (2007a). Limitations on the extent of off-center displacements in TbMn O3 from EXAFS measurements. *Physical Review B - Condensed Matter and Materials Physics*, 76(9):1–11

[1] **O'Brien**, T., Bridges, F., Downward, L., Mitchell, J., and Zheng, H. (2007a). Evidence for magnetic dimerons in the anisotropic bilayer system La1.2Sr1.8Mn2O7: An EXAFS study. *Physical Review B*, 75(6):064417

OTHER PUBLISHED WORKS, CHRONOLOGICAL

This section contains conference proceedings and other works (e.g., technical reports) that appear outside of standard academic journals.

Note: '+' indicates that the work underwent peer-review.

Note: '*' indicates a major mentoring role.

Note: '†' indicates that specified co-authors contributed equally to the manuscript.

[7] **O'Brien**, T. A., Payne, A. E., Shields, C. A., Rutz, J., Brands, S., Castellano, C., Chen, J., Cleveland, W., DeFlorio, M. J., Goldenson, N., Gorodetskaya, I., *Inda Díaz, H., Kashinath, K., Kawzenuk, B., Kim, S., Krinitskiy, M., Lora, J. M., McClenny, B., Michaelis, A., *O'Brien, J., Patricola, C. M., Ramos, A. M., Shearer, E. J., Tung, W.-w., Ullrich, P. A., Wehner, M. F., Yang, K., Zhang, R., Zhang, Z., and Zhou, Y. (2020a). Detection Uncertainty Matters for Understanding Atmospheric Rivers. *Bulletin of the American Meteorological Society*, 101(6):E790–E796

[6] Preston, K. T., Higuchi, S., Hanif, A., Hoell, A., Kosmal, A., Wuebbles, D., McRae, M., Pagliarello, M., Lee, R., Thompson, T., and **O'Brien**, T. (2019). Resilient Aviation Infrastructure Workshop: Assessing climate risks to land-based aviation infrastructure and ground support facilities. Technical report, DOD

\+ [5] Houlton, B., Lund, J., Greco, S., London, J., Margolis, H., Niemeier, D., Ogden, J., Ostoja, S., Ullrich, P., Wheeler, S., Almaraz, M., Harrison, S., Middleton, B.-R., Moyle, P., Nichols, S., **O'Brien**, T., Pinkerton, K., and Roberts, C. (2018). Sacramento Summary Report. In Cayan, D. and Wilhelm, S., editors, *California's Fourth Climate Change Assessment*, chapter SUM-CCCA4-2018-002

\+ [4] †Mudigonda, M., †Kim, S., †*Mahesh, A., Kahou, S., Kashinath, K., Williams, D., Michalski, V., **O'Brien**, T. A., and Prabhat, M. (2017). Segmenting and Tracking Extreme Climate Events using Neural Networks. In *31st Conference on Neural Information Processing System*, pages 1–5, Long Beach, CA, USA

[3] Torregrosa, A., **O'Brien**, T. A., and Faloona, I. C. (2014). Coastal Fog, Climate Change, and the Environment. *Eos, Transactions American Geophysical Union*, 95(50):473–474

\+ [2] Miller, N., Cayan, D., Duffy, P., Jin, H. H. J., Kanamaru, H., Kanamitsu, M., **O'Brien**, T., Schlegel, N., Sloan, L., Snyder, M., and Yoshimura, K. (2009). an Analysis of Simulated California Climate Using Multiple Dynamical and Statistical Techniques. Technical report. *Peer Reviewed.*

[1] Bridges, F., Downward, L., Jiang, Y., and **O'Brien**, T. (2007b). What Can We Learn from a Detailed Study of the Temperature Dependence of σ, the Width of the Pair Distribution Function? In *AIP Conference Proceedings*, volume 882, pages 59–63. AIP

MANUSCRIPTS IN REVIEW

Note: '*' indicates a major mentoring role.

O'Brien, T. A., Wehner, M. F., Payne, A. E., Shields, C. A., Rutz, J. J., Leung, L. R., Ralph, F. M., Marquardt Collow, A. B., Guan, B., Lora, J. M., and al., E. (2021). Increases in Future AR Count and Size: Overview of the ARTMIP Tier 2 CMIP5/6 Experiment. *Geophysical Research Letters*, In Revision

*Inda Díaz, H., **O'Brien**, T. A., Zhou, Y., and Collins, W. D. (2020). Constraining and Characterizing the size of Atmospheric Rivers : A perspective independent from the detection algorithm. *Journal of Geophysical Research Atmospheres*, In Review:1–20

*Zhou, Y., **O'Brien**, T. A., Ullrich, P. A., Collins, W. D., Patricola, C. M., and Rhoades, A. M. (2020c). Uncertainties in Atmospheric River Life Cycles by Detection Algorithms: Climatology and Variability. *Journal of Geophysical Research Atmospheres*, In Revision

PUBLIC PRESENTATIONS, CHRONOLOGICAL

Note: '*' indicates a major mentoring role.

2021

Collow, A., Shields, C., Rutz, J., Wehner, M., Leung, R., Ralph, F. M., Payne, A., and **O'Brien**, T. (2021). An overview of artmips tier 2 reanalysis intercomparison: Uncertainty in the detection of atmospheric rivers and their associated precipitation. AMS Annual Meeting 2021, Online

Liu, X., Saravanan, R., Chang, P., Patricola, C., and **O'Brien**, T. (2021). The impact of systematic model errors on the simulation of atmospheric rivers. AMS Annual Meeting 2021, Online

2020

Gutowski, W. J., Ullrich, P. A., Hall, A. D., Leung, L. R., **O'Brien**, T. A., and Patricola, C. M. (2020b). The ongoing need for high-resolution regional climate models: Process understanding and stakeholder information. AGU Fall Meeting 2020, Online

***Mahesh, A., **O'Brien**, T. A., Elbashandy, A., Guan, B., Kashinath, K., Leung, L. R., Lora, J. M., Loring, B., Mudigonda, M., Prabhat, M., and Collins, W. D. (2020b). Probabilistic detection of atmospheric rivers across climate datasets and resolutions with neural networks. AGU Fall Meeting 2020, Online

Payne, A. E., Shields, C. A., **O'Brien**, T. A., Rutz, J. J., Leung, L. R., Ralph, F. M., Wehner, M. F., and Collow, A. (2020). Atmospheric rivers in a changing climate: An overview from the second phase of the atmospheric river tracking method intercomparison project (artmip). AGU Fall Meeting 2020, Online

Rhoades, A., Jones, A. D., Kumarivastava, A., Huang, H., **O'Brien**, T. A., Patricola, C. M., Ullrich, P. A., Wehner, M. F., and Zhou, Y. (2020a). The shifting scales of western us landfalling atmospheric rivers under climate change. AGU Fall Meeting 2020, Online

Risser, M. D., Wehner, M. F., ***O'Brien, J. P., Patricola, C. M., **O'Brien**, T. A., Collins, W. D., Paciorek, C. J., and Huang, H. (2020). High-resolution detection and attribution for extreme precipitation over the contiguous united states. AGU Fall Meeting 2020, Online

Liu, X., Saravanan, R., Chang, P., Patricola, C., and **O'Brien**, T. A. (2020). Assessing the influence of background state and model bias on weather extremes using initialized ensembles in a climate model. AGU Fall Meeting 2020, Online

O'Brien, T. A., Zhou, Y., Shields, C. A., Payne, A. E., Rutz, J. J., and Collins, W. D. (2020c). Uncertainty in current and projected atmospheric rivers: A call for process-oriented constraints on ar detection. AGU Fall Meeting 2020, Online

***Zhou, Y., **O'Brien**, T. A., Ullrich, P. A., Collins, W. D., Patricola, C. M., and Rhoades, A. (2020a). Uncertainties in atmospheric river life cycles by detection algorithms: Climatology and variability. AGU Fall Meeting 2020, Online

Huang, H., Patricola, C. M., **O'Brien**, T. A., Bercos-Hickey, E., Zhou, Y., Collins, W. D., Rhoades, A., and Risser, M. D. (2020a). Sources of subseasonal-to-seasonal predictability of atmospheric rivers and precipitation in the western united states. AGU Fall Meeting 2020, Online

O'Brien, T. A., Zhou, Y., Shields, C. A., Payne, A. E., Rutz, J. J., and Collins, W. D. (2020d). Uncertainty in current and projected atmospheric rivers: A call for process-oriented constraints on ar detection. 2020 International Atmospheric Rivers Conference, Online

***Zhou, Y., **O'Brien**, T. A., Ullrich, P. A., Collins, W. D., Patricola, C. M., and Rhoades, A. (2020b). Uncertainties in atmospheric river life cycles by detection algorithms: Climatology and variability. 2020 International Atmospheric Rivers Conference, Online

Huang, H., Patricola, C. M., **O'Brien**, T. A., Bercos-Hickey, E., Zhou, Y., Collins, W. D., Rhoades, A., and Risser, M. D. (2020b). Sources of subseasonal-to-seasonal predictability of atmospheric rivers and precipitation in the western united states. 2020 International Atmospheric Rivers Conference, Online

Shields, C., Rutz, J., Payne, A., **O'Brien**, T., and Collow, A. (2020). Artmip: An overview and update. 2020 International Atmospheric Rivers Conference, Online

Timmermans, B., Collins, W., **O'Brien**, T., Stone, D., and Risser, M. (2020). Impact of parametric uncertainty in simulated climate extremes and attribution studies. EGU General Assembly, Online

Patricola, C. M., Williams, I. N., *OBrien, J. P., Risser, M. D., Rhoades, A., **O'Brien**, T. A., Ullrich, P. A., Stone, D. A., and Collins, W. D. (2020b). The Longitude of Tropical Pacific Deep Convection: A Perspective on ENSO Diversity and Implications for Western US Hydroclimate. 100$^{\text{th}}$ AMS Annual Meeting, Boston, MA

*Mahesh, A., **O'Brien**, T., Kashinath, K., Mudigonda, M., Prabhat, M., Shields, C., Rutz, J., Leung, L., Payne, A., Ralph, F., Wehner, M., and Collins, W. (2020a). Using Deep Learning to Detect Atmospheric Rivers across Climate Datasets and Resolutions . 100$^{\text{th}}$ AMS Annual Meeting, Boston, MA

2019 Rasch, P. J., Wang, H., Zhang, R., Singh, H. A., **O'Brien**, T. A., and Yoon, J.-H. (2019). High Latitude Water Vapor in CMIP6 models. AGU Fall Meeting, San Francisco, CA

Vishnu Sasidharan Nair, Boos, W. R., Ullrich, P. A., and **O'Brien**, T. A. (2019). Automated identification of South Asian monsoon low pressure systems: Historical variations across reanalysis products. AGU Fall Meeting, San Francisco, CA

O'Brien, T. A., Risser, M. D., Loring, B., Elbashandy, A., Paciorek, C. J., Charn, A. B., *Inda Díaz, H. A., *Mahesh, A., *OBrien, J. P., Patricola, C. M., *Arriaga Ramirez, S., Rhoades, A., Krishnan, H., Wehner, M. F., and Collins, W. D. (2019d). The Importance of Uncertainty in the Detection of Weather Events: Probabilistic Detection of Atmospheric Rivers. AGU Fall Meeting, San Francisco, CA

*Asher, M. and **O'Brien**, T. A. (2019). Investigating a Possible Relationship between Fog and Monsoon Surges. AGU Fall Meeting, San Francisco, CA

Payne, A. E., Shields, C. A., Rutz, J. J., Leung, L. R., **O'Brien**, T. A., Ralph, F. M., and Wehner, M. F. (2019). Atmospheric Rivers in a Changing Climate: An Overview from the Second Phase of the Atmospheric River Tracking Method Intercomparison Project (ARTMIP). AGU Fall Meeting, San Francisco, CA

Risser, M. D., Paciorek, C. J., Wehner, M. F., **O'Brien**, T. A., Patricola, C. M., and Collins, W. D. (2019c). Historical Relationships Between Climate Forcings and Observed Extreme Precipitation. AGU Fall Meeting, San Francisco, CA

Patricola, C. M., Williams, I. N., *OBrien, J. P., Risser, M. D., Rhoades, A., **O'Brien**, T. A., Ullrich, P. A., Stone, D. A., and Collins, W. D. (2019). The Longitude of Tropical Pacific Deep Convection: A Perspective on ENSO Diversity and Implications for Western US Hydroclimate. AGU Fall Meeting, San Francisco, CA

O'Brien, T. (2019a). Tier 2 CMIP5/6 Overview. 3$^{\text{rd}}$ ARTMIP Workshop

O'Brien, T. A. (2019b). Probabilistic Detection of Extreme Weather Systems. Workshop on Risk Analysis for Extremes in the Earth System, Berkeley, CA. (Invited)

O'Brien, T., Risser, M., *Mahesh, A., Paciorek, C., Patricola, C., O'Brien, J., Loring, B., Elbashandy, A., Krishnan, H., Wehner, M., and Collins, W. (2019a). Probabilistic Detection of Atmospheric Rivers. International Meeting on Statistical Climatology

O'Brien, T., *Mahesh, A., Risser, M., Paciorek, C., Wehner, M., Patricola, C., O'Brien, J., Prabhat, M., Loring, B., Elbashandy, A., and Collins, W. (2019c). Uncertainty in the Detection of Weather Phenomena in Climate Datasets: A Critical Data Analysis Problem Requiring Novel Solutions. Data Analytics for Climate and Earth

Kashinath, K., Prabhat, M., Mudigonda, M., *Mahesh, A., Kim, S., Wu, J., Albert, A., Rupe, A., Fernandez, A., **O'Brien**, T., Wehner, M., and Collins, W. (2019). Deep Learning Recognizes Climate and Weather Patterns and Emulates Complex Processes Critical to the Modeling of Earth's Climate. 99th AMS Annual Meeting, Phoenix, AZ

O'Brien, T., *Mahesh, A., Risser, M., Paciorek, C., Wehner, M., Patricola, C., O'Brien, J., Prabhat, M., and Collins, W. (2019b). Probabilistic AR Detection for Understanding Western Coastal Hydroclimate. 99th AMS Annual Meeting, Phoenix, AZ

*Mahesh, A., **O'Brien**, T., Collins, W., Wehner, M., Prabhat, M., Kashinath, K., and Mudigonda, M. (2019). Probabilistic Detection of Extreme Weather Using Deep Learning Methods. 99th AMS Annual Meeting, Phoenix, AZ

Prabhat, Kurth, T., Treichler, S., Romero, J., Mudigonda, M., *Mahesh, A., **O'Brien**, T., Fatica, M., Houston, M., Kashinath, K., Matheson, M., Shankar, M., Wehner, M., and Collins, W. (2019). Exascale Deep Learning for Climate Science. 99th AMS Annual Meeting, Phoenix, AZ

2018 *Mahesh, A., **O'Brien**, T., Collins, W., Wehner, M., Prabhat, M., Kashinath, K., and Mudigonda, M. (2018a). Probabilistic detection of extreme weather using deep learning methods (Invited). AGU Fall Meeting, Washington, DC

Jian, C., Kashinath, K., Mudigonda, M., *Mahesh, A., **O'Brien**, T., Marcus, P., and Prabhat, M. (2018). Deep learning on the Sphere: Convolutional Neural Network on Unstructured Mesh. AGU Fall Meeting, Washington, DC

Kashinath, K., Prabhat, M., Mudigonda, M., *Mahesh, A., Kim, S.-K., Liu, Y., Kahou, S., Toms, B., Racah, E., Beckham, C., Pal, C., Maharaj, T., Biard, J., Kunkel, K., Williams, D., **O'Brien**, T., Wehner, M., and Collins, W. (2018). Deep Learning recognizes weather and climate patterns (Invited). AGU Fall Meeting, Washington, DC

*Mahesh, A., **O'Brien**, T., Collins, W., Wehner, M., Prabhat, M., Kashinath, K., and Mudigonda, M. (2018b). Using deep learning for probabilistic detection of extreme weather. AGU Fall Meeting, Washington, DC

Prabhat, M., Kurth, T., Treichler, S., Romero, J., Mudigonda, M., M, F., Houston, M., *Mahesh, A., Kashinath, K., Matheson, M., Shankar, M., **O'Brien**, T., Wehner, M., and Collins, W. (2018). Towards Exascale Deep Learning for Climate Science (Invited). AGU Fall Meeting, Washington, DC

O'Brien, T., Risser, M., O'Brien, J., Patricola, C., and Collins, W. (2018d). Chance Rather than Trends in the Unusual 2017 California Wet Season. AGU Fall Meeting, Washington, DC

Risser, M., Paciorek, C., Wehner, M., and **O'Brien**, T. (2018). Spatially-resolved trends in observed extreme precipitation over the United States. AGU Fall Meeting, Washington, DC

Prabhat, M., Racah, E., Biard, J., Liu, Y., Mudigonda, M., Kashinath, K., Beckham, C., Maharaj, T., Kahou, S., Pal, C., **O'Brien**, T., Wehner, M., Kunkel, K., and Collins, W. (2017b). Deep Learning for Extreme Weather Detection. AGU Fall Meeting, New Orleans, LA

Rhoades, A., Jones, A., **O'Brien**, T., Ullrich, P., and Zarzycki, C. (2018). Influences of Pacific Ocean domain extent on the western US hydroclimatology in variable-resolution CESM . AGU Fall Meeting, Washington, DC

Charn, A., Collins, W., Parishani, H., Risser, M., and **O'Brien**, T. (2018). Microphysical Sensitivity of Superparameterized Precipitation Extremes in the Continental US Due to Feedbacks on Large-scale Circulation. AGU Fall Meeting, Washington, DC

*****O'Brien, J., **O'Brien**, T., Patricola, C., and Wang, S.-Y. (2018). Multivariate Metrics to Quantify Co-occurring Extremes Resulting from the Dipole Circulation Pattern. AGU Fall Meeting, Washington, DC

*****Mahesh, A., **O'Brien**, T., Prabhat, M., Collins, W., and Liu, Y. (2018d). Assessing Uncertainty in Deep Learning Techniques that Identify Atmospheric Rivers in Climate Simulations. 2nd ARTMIP Workshop, Gaithersburg, MD

O'Brien, T., Kashinath, K., *****Inda Díaz, H., and Collins, W. (2018a). Convective Aggregation and the Intensity, Duration, Area, and Frequency of Precipitation. 8th GEWEX Open Science Conference, Canmore, Canada

O'Brien, T., O'Brien, J., Risser, M., Patricola, C., and Collins, W. (2018c). A Weakening of Rainy Events in CA. International Detection and Attribution Group Workshop, Berkeley, CA

Timmermans, B., Collins, W., **O'Brien**, T., and Risser, M. (2018). Parameter uncertainty in simulations of extreme precipitation and attribution studies. International Detection and Attribution Group Workshop, Berkeley, CA

*****Arriaga Ramirez, S., **O'Brien**, T., Rhoades, A., and Ullrich, P. (2018). Evaluating Variable Resolution-CESM for the North American Monsoon System. 98th AMS Annual Meeting, Austin, TX

Collins, W., Baird, J., Kashinath, K., Liu, Y., **O'Brien**, T., Pal, C., Prabhat, M., Racah, E., and Wehner, M. (2018). Deep Learning for Detecting Extreme Weather and Climate Patterns. 98th AMS Annual Meeting, Austin, TX

*****Mahesh, A., **O'Brien**, T., Prabhat, M., and Collins, W. (2018c). Assessing Uncertainty in Deep Learning Techniques that Identify Atmospheric Rivers in Climate Simulations. 98th AMS Annual Meeting, Austin, TX

O'Brien, T., Kashinath, K., *****Inda Díaz, H., and Collins, W. (2018b). Convective Aggregation and the Size Distribution of Updrafts. 98th AMS Annual Meeting, Austin, TX

2017 *****Inda Díaz, H. and **O'Brien**, T. (2017). Contrasting self-aggregation over land and ocean surfaces. AGU Fall Meeting, New Orleans, LA

*****Mahesh, A., **O'Brien**, T., Prabhat, M., Collins, W., and Liu, Y. (2017). Assessing Uncertainty in Deep Learning Techniques that Identify Atmospheric Rivers in Climate Simulations. AGU Fall Meeting, New Orleans, LA

Prabhat, M., Racah, E., Biard, J., Liu, Y., Mudigonda, M., Kashinath, K., Beckham, C., Maharaj, T., Kahou, S., Pal, C., **O'Brien**, T., Wehner, M., Kunkel, K., and Collins, W. (2017b). Deep Learning for Extreme Weather Detection. AGU Fall Meeting, New Orleans, LA

Prabhat, M., Biard, J Ganguly, S., Ames, S., Kashinath, K., Kim, S.-K., Kahou, S., Maharaj, T., Beckham, C., **O'Brien**, T., Wehner, M., Williams, D., Kunkel, K., and Collins, W. (2017a). ClimateNet: A Machine Learning Dataset for Climate Science Research. AGU Fall Meeting, New Orleans, LA

O'Brien, T. A. (2017c). A Case for Missing Physics in Climate Models. San Jose State University Climate and Meteorology Seminar, San Jose, CA. (Invited)

O'Brien, T. (2017b). The Uncertain Future of Coastal Fog. Riparian Summit 2017, Davis, CA. (Invited)

O'Brien, T. (2017a). A Case for Missing Physics in Climate Models. 7th Annual oSTEM Conference, Chicago, IL

Timmermans, B., Collins, W., **O'Brien**, T., and Risser, M. (2017a). Parameter uncertainty in simulations of extreme precipitation and attribution studies. AGU Fall Meeting, New Orleans, LA

Timmermans, B., Collins, W., **O'Brien**, T., and Risser, M. (2017b). Parametric uncertainty in simulations of extreme weather events. Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC

*****O'Brien, J. and **O'Brien**, T. (2017a). Identifying and Understanding Regional Differences in Temperature and Precipitation in California Under the Influence of PDO. The 28th Pacific Climate Workshop, Pacific Grove, CA

*****O'Brien, J. and **O'Brien**, T. A. (2017b). Identifying and Understanding Regional Differences in Temperature and Precipitation in California Under the Influence of PDO. AMS Annual Meeting, Seattle, WA

Wehner, M., Stone, D., Johnson, J., Loring, B., Krishnan, H., and **O'Brien**, T. A. (2017). High resolution climate model simulations of stabilized 1.5 and 2 degree warming scenarios. AMS Annual Meeting, Seattle, WA

2016 *****Inda Díaz, H., **O'Brien**, T. A., and Stone, D. (2016). The anthropogenic influence on heat and humidity in the US Midwest. AGU Fall Meeting, San Francisco, CA

O'Brien, T. A., Collins, W., Rauscher, S., Kashinath, K., Rübel, O., S, B., Gu, J., Krishnan, H., Ullrich, P., and Donner, L. (2016b). A case for missing cloud physics in climate models. AGU Fall Meeting, San Francisco CA. (Invited)

Wehner, M., Stone, D., Johnson, J., Loring, B., Krishnan, H., and **O'Brien**, T. A. (2016). High resolution climate model simulations of stabilized 1.5 and 2 degree warming scenarios. AGU Fall Meeting, San Francisco, CA

O'Brien, T. A., Collins, W., Rauscher, S., Kashinath, K., Rübel, O., S, B., Gu, J., Krishnan, H., and Ullrich, P. (2016a). Understanding the resolution dependence of precipitation statistical fidelity in hindcast simulations. AGU Fall Meeting, San Francisco CA. (Invited)

Timmermans, B., **O'Brien**, T. A., Wehner, M., and Krishnan, H. (2016). Uncertainty in extreme precipitation representation in numerical simulations and hydrological datasets. AGU Fall Meeting, San Francisco, CA

O'Brien, T. A. (2016). A Case for Missing Physics in Climate Models. UC Santa Cruz Whole Earth Seminar, Santa Cruz CA. (Invited)

*****Liu, Y., Kashinath, K., **O'Brien**, T. A., and Prabhat, M. (2016). Systematic Characterization of Cyclogenesis in High Resolution Climate Model Simulations. 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, PR

O'Brien, T. A., Kashinath, K., Cavanaugh, N., Collins, W., and O'Brien, J. (2016d). A Fast and Objective Multidimensional Kernel Density Estimation Method for Climate Data Analysis: fastKDE. AMS Annual Meeting, New Orleans, LA

Krishnan, H., Loring, B., Byna, S., Wehner, M., **O'Brien**, T. A., Prabhat, M., Paciorek, C., and Stone, D. (2016). Enabling End-to-End Climate Science Workflows in High Performance Computing Environments. AMS Annual Meeting, New Orleans, LA

Gittens, A., Cavanaugh, N., Kashinath, K., **O'Brien**, T. A., Prabhat, M., and Mahoney, M. (2016). Large-scale Parallelized EOF Computation on the CSFR Ocean Temperature Field. AMS Annual Meeting, New Orleans LA

*****Cavanaugh, N., **O'Brien**, T. A., and Collins, W. (2016). Reduced Weather Variability Indicated by Decreases in Atmospheric Energy Spectra. AMS Annual Meeting, New Orleans, LA

2015 **O'Brien**, T. A., Kashinath, K., and Collins, W. (2015a). A New Framework for Systematically Characterizing and Improving Extreme Weather Phenomena in Climate Models. AGU Fall Meeting, San Francisco, CA

Krishnan, H., Byna, S., Wehner, M., Gu, J., **O'Brien**, T. A., Loring, B., Stone, D., Collins, W., Prabhat, M., Liu, Y., Johnson, J., and Paciorek, C. (2015). Enabling Efficient Climate Science Workflows in High Performance Computing Environments. AGU Fall Meeting, San Francisco, CA

O'Brien, T. A., Kashinath, K., and Collins, W. (2015b). The Role of SST and Large-Scale Dynamical Motions on the Onset and Shutdown of the Super Greenhouse Effect. AGU Fall Meeting, San Francisco, CA

*****Liu, Y., Rao, P., Kashinath, K., Prabhat, M., and **O'Brien**, T. A. (2015). Systematic Characterization of Cyclogenesis in High Resolution Climate Model Simulations. AGU Fall Meeting, San Francisco, CA

Collins, W., Wehner, M., **O'Brien**, T. A., Paciorek, C., Krishnan, H., Johnson, J., and Prabhat, M. (2015). Data informatics for the Detection, Characterization, and Attribution of Climate Extremes. AGU Fall Meeting, San Francisco, CA

*****Cavanaugh, N., **O'Brien**, T. A., and Collins, W. (2015). Reduced weather variability indicated by decreases in atmospheric energy spectra. AGU Fall Meeting, San Francisco, CA

*****O'Brien, J. and **O'Brien**, T. A. (2015). The Joint Statistics of California Temperature and Precipitation as a Function of the Large-scale State of the Climate. AGU Fall Meeting, San Francisco, CA

O'Brien, T. A. and Collins, W. (2015d). Frontiers in climate modeling at the watershed scale. 13th IWA Special Conference on Watershed and River Basin Management, San Francisco, CA. (Invited)

O'Brien, T. A. (2015). Climate modeling of extremes: state of the science. Climate Change Impacts & Integrated Assessment Workshop XXI, Snowmass CO. (Invited)

O'Brien, T. A. and Collins, W. (2015b). Analyzing and leveraging self-similarity in climate models. San Jose State University Climate and Meteorology Seminar, San Jose, CA

O'Brien, T. A. and Collins, W. (2015c). Analyzing and leveraging self-similarity in climate models. UC Davis Atmospheric Science Seminar, Davis, CA

O'Brien, T. A. and Collins, W. (2015a). Analyzing and leveraging self-similarity in climate models. EGU Spring Meeting, Vienna, Austria. (Invited)

2014 **O'Brien**, T. A., Collins, W., Rauscher, S., and Ringler, T. (2014b). Scale-dependent vertical mass flux and a possible deficiency in current parameterization suites. Latsis Symposium, Zurich, Switzerland

O'Brien, T. A. (2014). Developing climate scenarios for the energy sector at LBNL/UC Berkeley. Climate Scenarios for the California Energy Sector, Sacramento CA

O'Brien, T. A., Collins, W., Kashinath, K., Rubel, O., and Krishnan, H. (2014a). Using the resolution dependence of modeled extreme event fidelity to drive model development: Model evaluation within the CASCADE SFA. DOE Integrated Climate Modeling Principal Investigator Meeting, Potomac, MD

O'Brien, T. A., Collins, W., Rauscher, S., Ringler, T., and Taylor, M. (2014c). Analyzing and leveraging self-similarity in climate models. UC Berkeley Geolunch Seminar, Berkeley, CA

O'Brien, T. A., Collins, W., Rauscher, S., Ringler, T., and Taylor, M. (2014d). Scale-dependent horizontal velocity fields drive vertical velocity resolution dependence. CESM Atmosphere Working Group Meeting, Boulder, CO

2013 **O'Brien**, T. A., Collins, W., Rauscher, S., and Ringler, T. (2013c). Fractal behavior drives resolution dependent vertical velocity fields. AGU Fall Meeting, San Francisco, CA

O'Brien, T. A., Collins, W., Li, F., Rauscher, S., Ringler, T., Taylor, M., Hagos, S., and Leung, L. (2013a). Observed Scaling in Clouds and Precipitation and Scale Incognizance in Regional to Global Atmospheric Models. CESM Atmosphere Working Group Meeting, Boulder, CO

O'Brien, T. A., Collins, W., Li, F., Rauscher, S., Ringler, T., Taylor, M., Hagos, S., and Leung, L. (2013b). Observed Scaling in Clouds and Precipitation and Scale Incognizance in Regional to Global Atmospheric Models. Pacific Northwest National Laboratory Climate Physics Seminar, Richland, WA. (Invited)

O'Brien, T. A., Sloan, L., Chuang, P., and Faloona, I. (2013e). The Recent Decline of Coastal Fog and the Drying of the Coastal Boundary Layer. Oregon State University Physics of Oceans and Atmospheres Seminar Series, Corvallis, OR. (Invited)

2012 **O'Brien**, T. A., Collins, W., Li, F., Rauscher, S., Ringler, T., Taylor, M., Hagos, S., and Leung, L. (2012c). Observed Scaling in Clouds and Precipitation and Scale Incognizance in Regional to Global Atmospheric Models. AGU Fall Meeting, San Francisco, CA

Collins, W., **O'Brien**, T. A., and Li, F. (2012). Observational constraints on scale-awareness: Scale-incognizant parameterizations in the Community Atmosphere Model. Frontiers in Computational Physics O35

O'Brien, T. A., Sloan, L., Chuang, P., Faloona, I., and Collins, W. (2012f). Simulating the Recent Decline in Coastal Fog. California Climate Change & Water Symposium, Davis, CA

O'Brien, T. A., Collins, W., Sloan, L., Chuang, P., and Faloona, I. (2012d). Sea Surface Temperatures Drive Fog Variability but not the Long-term Trend. Eastern Pacific Ocean Conference, Mt Hood, OR

O'Brien, T. A., Sloan, L., Chuang, P., and Faloona, I. (2012e). Changes in California Coastal Dynamics over the Last 100 Years. ICTP RegCM Workshop, Trieste, Italy. (Invited)

O'Brien, T. A., Collins, W., and Li, F. (2012b). Observational constraints on scale-awareness: Illumination of a scale-incognizant stratiform parameterization in CAM. BASC Symposium, Berkeley, CA

2011 **O'Brien**, T. A., Sloan, L., Chuang, P., and Faloona, I. (2011a). Simulating Coastal Fog with a Regional Climate Model. AGU Fall Meeting, San Francisco, CA

O'Brien, T. A., Sloan, L., Chuang, P., and Faloona, I. (2011b). What has caused the long-term decline in California coastal fog? UC Davis Atmospheric Sciences Seminar, Davis, CA. (Invited)

2010 Snyder, M. and **O'Brien**, T. A. (2010). Regional climate model ensemble techniques: Towards higher spatial resolution probabilistic climate scenarios. AGU Fall Meeting, San Francisco, CA

Sloan, L., Graves, D., and Snyder, M. (2010). Climate Change and Wine: Observations, Impacts, and Implications. Seymour Center Lecture Series, Santa Cruz, CA

O'Brien, T. A., Sloan, L., Chuang, P., and Faloona, I. (2010b). Regional Simulation of Marine Stratus and Fog. UC Davis Symposium on Sea and Coast, Bodega Bay, CA

O'Brien, T. A., Sloan, L., Chuang, P., and Rossiter, D. (2010c). What can a regional climate model tell us about the long term climatology of marine stratocumulus off California's coast? AMS Cloud Physics Conference, Portland, OR

O'Brien, T. A., Sloan, L., Chuang, P., and Faloona, I. (2010a). Does a new boundary layer model improve simulation of coastal environments in RegCM3? ICTP RegCM Workshop, Trieste, Italy

O'Brien, T. A., Sloan, L., and Snyder, M. (2010d). Can Ensembles of Regional Climate Model Simulations Improve Results from Sensitivity Studies? BASC Symposium, Berkeley, CA

2008 Snyder, M., **O'Brien**, T. A., and Sloan, L. (2008). Future Changes in Surface Winds in the Western U.S. due to Climate Change. AGU Fall Meeting, San Francisco, CA

Hutchison, K., **O'Brien**, T. A., and Sloan, L. (2008). The Regional Impact of Current and Future Dust Levels on Climate in Western North America. AGU Fall Meeting, San Francisco, CA

O'Brien, T. A., Hutchison, K., Sloan, L., and Solmon, F. (2008). Application of ICTP RegCM3' New Dust Model to Modern N. Americ: Challenges and Questions. AGU Fall Meeting, San Francisco, CA

2007 **O'Brien**, T. A., Solmon, F., Sloan, L., and Snyder, M. (2007b). Airborne Dust Modified the North American Climate During the 1930's Dust Bowl. AGU Joint Assembly, Acapulco, Mexico

2005 **O'Brien**, T. A., Downward, L., Larson, D., Downs, C., Bridges, F., Mitchell, J., and Zheng, H. (2005b). Evidence for Magnetic Dimerons in the Anisotropic Bilayer System La1.2Sr1.8Mn2O7: an EXAFS study. SSRL Users' Meeting Poster Session, Menlo Park, CA

O'Brien, T. A., Downward, L., Larson, D., Downs, C., Bridges, F., Mitchell, J., and Zheng, H. (2005a). Anisotropic Local Distortion of La1.2Sr1.8Mn2O7 Through the Ferromagnetic Transition Temperature. American Physical Society Meeting, Los Angeles, CA

2004 **O'Brien**, T. A., Downward, L., Larson, D., Downs, C., Bridges, F., Mitchell, J., and Zheng, H. (2004). Anisotropic Local Distortion of La1.2Sr1.8Mn2O7 Through the Ferromagnetic Transition Temperature. SSRL Users' Meeting Poster Session, Menlo Park, CA