

MICHELA BIASUTTI

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I am an atmospheric scientist and a climate dynamicist focusing on tropical rainfall: its mechanism of natural variability, its response to external forcing, and the impact of its changes on human wellbeing. I endeavor to make science research inclusive of everybody and relevant to the broader community.

EDUCATION

2003: Ph.D. – Atmospheric Sciences, University of Washington, Seattle, WA. (Advisors: David Battisti and Ed Sarachik. Thesis: On the Annual Cycle over the Atlantic Sector. The Relative Role of Land and Ocean.)

2000: M.S. – Atmospheric Sciences, University of Washington, Seattle, WA. (Advisors: David Battisti and Ed Sarachik. Thesis: Decadal Variability in the Tropical Atlantic as simulated by the Climate System Model and the CCM3 coupled to a Slab Ocean Model.)

1995: Bachelor in Science (Physics) cum laude, Università degli Studi di Trieste, Italy. (Thesis: Variability of precipitation in response to Sea Surface Temperature variability in the COLA General Circulation Model.)

EMPLOYMENT

2022-present: Lamont Research Professor, Lamont-Doherty Earth Observatory; Columbia Climate School.

2014-2022: Lamont Associate Research Professor, Senior Staff, Lamont-Doherty Earth Observatory; The Earth Institute at Columbia University (LDEO).

2013-2014: Lamont Associate Research Professor, Junior Staff, LDEO.

2010-2013: Lamont Assistant Research Professor, LDEO.

2007-2010: Doherty Associate Research Scientist, LDEO.

May 2007-April 2008: Maternity and parental leave.

2004-2006: Post-Doctoral Research Scientist, LDEO.

1996–2003: Research and Teaching Assistant, Department of Atmospheric Sciences, University of Washington, Seattle, WA.

1996: Research Assistant, IMGA-CNR, Modena, Italy.

HONORS

2023 AGU Charney Lecturer

JOURNAL PUBLICATIONS

See [ResearcherID](#) or [Google Scholar](#) for assessments of the impact of my publications. My current h-index in Google Scholar is 34. NB: An asterisk indicates publications led by a mentee.

(2025*) Katrina Hui, Michela Biasutti, Adam H. Sobel, Suzana Camargo. Linking Future Seasonal Tropical Precipitation Frequency and Intensity Changes with Thermodynamic Environments. In preparation for *Geophysical Research Letters*.

(2025) Kuniaki Inoue, Maxwell Kelley, Ann M. Fridlind, Michela Biasutti, Gregory S. Elsaesser. Accurate Column Moist Static Energy Budget in GISS ModelE3. Part 1: Formulating the Conservation Equation and Methodological Design. Revised for *JAMES*.

(2025) Spencer A. Hill, Destiny Zamir Meyers, Adam H. Sobel, Michela Biasutti, Mark A. Cane, Michael K. Tippett, and Fiaz Ahmed. More extreme Indian monsoon daily rainfall in El Niño summers. In review at *Science*.

(2025*) S. Cohen, A. H. Sobel, M. Biasutti. Modeling Tropical Precipitation in a Single Column with a Boundary Layer Forcing. Revised for the *Journal of Atmospheric Sciences*.

2024 Yochanan Kushnir, Mordechai Stein, Michela Biasutti, Yael Kiro, Yonaton Goldsmith, Steven Goldstein. [Paleo and future aridity in the Eastern Mediterranean-Levant driven by atmospheric response to a strong North Atlantic latitudinal surface temperature gradient](#). *Proceedings of the National Academy of Sciences*. **121** (47) e2407166121 <https://www.pnas.org/doi/10.1073/pnas.2407166121>

2024* Dorian Spät, Michela Biasutti, David Schuhbauer, Aiko Voigt. [Autocorrelation - A Simple Diagnostic for Tropical Precipitation in Global Kilometer-Scale Climate Models](#). *Geophysical Research Letters*. <http://dx.doi.org/10.1029/2024GL108856>

2024 Michael P. Byrne, Gabi Hegerl, Jacob Scheff et al. [Theory and the future of land-climate science](#). *Nature Geosciences* <https://www.nature.com/articles/s41561-024-01553-8>

2024* S. Cohen, A. H. Sobel, M. Biasutti, S. Wang, I. Simpson, A. Gettelman, and I. Hu. [Implementation and Exploration of Parametrizations of Large-Scale Dynamics in NCAR's Single Column Atmosphere Model SCAM6](#). *JAMES* <http://dx.doi.org/10.1029/2023MS003866>

2024 Y. You, M. Ting, and M. Biasutti. [Climate warming contributes to the record-shattering 2022 Pakistan rainfall](#). *npj Clim Atmos Sci* **7**, 89. <https://doi.org/10.1038/s41612-024-00630-4>

2023 I. E. Bunge, A. Sobel, M. Biasutti, S. Wang. [Variable Rainfall over Steady SST: The Effect of the Free Troposphere on Surface Pressure and Convergence in the East Pacific](#). *Journal of Atmospheric Sciences*. <https://doi.org/10.1175/JAS-D-23-0101.1>

2023 Michela Biasutti, Mingfang Ting, and Spencer Hill. [The World's Monsoons: Dynamics and Changes](#). *Phys. Today* **76**, 32–38. <https://doi.org/10.1063/PT.3.5308>

2023 Paul-Arthur Monerie, Michela Biasutti, Juliette Mignot, Elsa Mohino, Benjamin Pohl, and

Giuseppe Zappa. [Storylines of Sahel precipitation change: roles of the North Atlantic and Euro-Mediterranean temperature](#). *Journal of Geophysical Research – Atmosphere* 128(16) e2023JD038712. <https://doi.org/10.1029/2023JD038712>

2023* Rebecca J. Herman, Michela Biasutti, and Yochanan Kushnir. [Drivers of Low-Frequency Sahel Precipitation Variability: Comparing CMIP5 and CMIP6 with Observations](#). *Climate Dynamics*, <https://doi.org/10.1007/s00382-023-06755-1>

2023 Zaitchik, B.F., M. Rodell, M. Biasutti, and S.I. Seneviratne. [Terrestrial wetting and drying trends under climate change](#). *Nature Water*, <https://doi.org/10.1038/s44221-023-00073-w>

2022 Boniface Fosu, Edward R. Cook, Michela Biasutti, Brendan M. Buckley, Sharon E. Nicholson. [The Feasibility of Reconstructing Hydroclimate over West Africa using Tree-Ring Chronologies in the Mediterranean Region](#). *Environmental Research Letters*, <https://doi.org/10.1088/1748-9326/ac79c0>

2022 Michela Biasutti, Spencer Hill, and Aiko Voigt. [The Effect of an Equatorial Continent on the Tropical Rain Belt. Part II: Summer Monsoons](#). *Journal of Climate*, 35(10), 3091–3107 <https://doi.org/10.1175/JCLI-D-21-0588.1>

2022* Spencer A. Hill, Adam H. Sobel, Michela Biasutti, and Mark A. Cane. [On the all-India rainfall index and sub-India rainfall heterogeneity](#). *Geophysical Research Letters*, 49(2), e2021GL096541, <https://doi.org/10.1029/2021GL096541>

2021 Michela Biasutti, Rick D. Russotto, Aiko Voigt, and Charles C. Blackmon-Luca. [The Effect of an Equatorial Continent on the Tropical Rain Belt. Part I: Annual Mean Changes in the ITCZ](#). *Journal of Climate*, 34(14), 5813–5828, <https://doi.org/10.1175/JCLI-D-20-0739.1>

2020* Inoue, Kuniaki, Michela Biasutti, and Ann Fridlind. [Evidence that horizontal moisture advection regulates the ubiquitous amplification of rainfall variability over tropical oceans](#). *Journal of the Atmospheric Sciences*. 78(2), 529–547. <http://doi.org/10.1175/JAS-D-20-0201.1>

2020 Wang, Bin; Michela Biasutti, Michael P. Byrne, Christopher Castro, Chih-Pei Chang, Kerry Cook, Rong Fu, Alice Grimm, Kyung-Ja Ha, Harry Hendon, Akio Kitoh, M. K. Roxy, R. Krishnan1, June-Yi Lee, Jianping Li, Jian Liu, Aurel Moise, Salvatore Pascale, Anji Seth, Chung-Hsiung Sui, Andrew Turner, Song Yang, Kyung-Sook Yun, Lixia Zhang, Tianjun Zhou. [Monsoon Climate Change Assessment](#). *Bulletin of the AMS*. <https://doi.org/10.1175/BAMS-D-19-0335.1>

2020* Herman, R.J., A. Giannini, M. Biasutti, Y. Kushnir. [The Effects of Anthropogenic and Volcanic Aerosols and Greenhouse Gases on 20th Century Sahel Precipitation](#). *Sci Rep* 10, 12203. <https://doi.org/10.1038/s41598-020-68356-w>

2020 Marvel, K., Biasutti, M., and Bonfils, C. [Fingerprinting 20th Century Changes in Sahel Precipitation](#). *Env. Res. Lett.*, <https://doi.org/10.1088/1748-9326/ab858e>

2020* Russotto, R. and M. Biasutti. [Polar amplification as an inherent response of a circulating atmosphere: results from the TRACMIP aquaplanets](#). *Geophysical Research Letters*, 47(6), 659. <http://doi.org/10.1029/2019GL086771>

- 2020** Biasutti, M. and A. Voigt. [Seasonal and CO2-induced shifts of the ITCZ: testing energetic controls in idealized simulations with comprehensive models](#). *Journal of Climate*, 33(7), doi:10.1175/JCLI-D-19-0602.1
- 2019** C. Pomposi, Y. Kushnir, A. Giannini, and M. Biasutti. [Towards understanding the occurrence of both wet and dry Sahel seasons during El Niño: The modulating role of the global ocean](#). *Journal of Climate*, 33(3), 1193-1207. DOI:10.1175/JCLI-D-19-0219.1
- 2019** Biasutti, M. [Rainfall Trends in the African Sahel: characteristics, processes, and causes](#). *WIREs Climate Change*, vol 10(4). DOI: 10.1002/wcc.591
- 2018** Biasutti, M., Voigt, A., Boos, W. R., Braconnot, P., Hargreaves, J. C., Harrison, S. P., et al. [Global energetics and local physics as drivers of past, present and future monsoons](#). *Nature Geoscience*, vol 11(6) pp. 392-400
- 2018** Guan, Kaiyu, Stephen Good, Kelly Caylor, David Medvigy, Ming Pan, Eric Wood, Hisashi Sato, Michela Biasutti, Min Chen, Anders Ahlström, Xiangtao Xu. [Simulated sensitivity of African terrestrial ecosystem photosynthesis to rainfall frequency, intensity, and rainy season length](#). *Environmental Research Letters*, vol 13(2) 025013
- 2017** Marvel, Kate, Michela Biasutti, Celine Bonfils, Karl E Taylor, Yochanan Kushnir, and Benjamin Cook. [Observed and Projected Changes to the Precipitation Annual Cycle](#). *Journal of Climate*, 30(13), 4983–4995. doi:10.1175/JCLI-D-16-0572.1
- 2017** Guan, Kaiyu, Benjamin Sultan, Michela Biasutti, Christian Baron, and David B Lobell. [Assessing Climate Adaptation Options and Uncertainties for Cereal Systems in West Africa](#). *Agricultural and Forest Meteorology* 232 (January): 291-305, doi:10.1016/j.agrformet.2016.07.021.
- 2016** Voigt, Aiko, Michela Biasutti, Jacob Scheff, Jürgen Bader, Simona Bordoni, Francis Codron, Ross D Dixon, et al. [The Tropical Rain Belts with an Annual Cycle and a Continent Model Intercomparison Project: TRACMIP](#). *J. Adv. Model. Earth Syst* 8 (4): 1868-91. doi:10.1002/2016MS000748.
- 2016** Biasutti, Michela, Richard Seager, and Dalia B Kirschbaum. [“Landslides in West Coast Metropolitan Areas: the Role of Extreme Weather Events”](#). *Weather and Climate Extremes* 14 (December): 67-79. doi:10.1016/j.wace.2016.11.004.
- 2016** Dixon, Ross D, Anne Sophie Daloz, Daniel J Vimont, and Michela Biasutti. 2016. [“Saharan Heat Low Biases in CMIP5 Models”](#). *Journal of Climate*, December, doi:10.1175/JCLI-D-16-0134.1.
- 2016*** Paul-Arthur Monerie, Michela Biasutti, and Pascal Roucou. [“On the projected increase of Sahel rainfall during the late rainy season”](#). *International Journal of Climatology*. doi: 10.1002/joc.4638.
- 2015** Kaiyu Guan, Benjamin Sultan, Michela Biasutti, Christian Baron and David B. Lobell. [“What aspects of future rainfall changes matter for crop yields in West Africa?”](#) *Geophysical Research Letters* 42, 8001-8010, doi:10.1002/ 2015GL063877.
- 2015** John Dwyer, Suzana Camargo, Adam Sobel, Michela Biasutti, Kerry Emanuel, Gabriel Vecchi and Ming Zhao. [“Projected Twenty-First-Century Changes in the Length of the Tropical Cyclone Season”](#). *J Climate*, 28(15), 6181-6192. doi:/10.1175/JCLI-D-14-00686.1

- 2015** Biasutti, Michela and Richard Seager. [“Projected changes in US rainfall erosivity”](#). *Hydrology and Earth System Sciences*, 19(6), 2945-2961. doi:10.5194/hess-19-2945-2015
- 2015** Rodriguez-Fonseca, B., E. Mohino, R. C. Mechoso, C. Caminade, M. Biasutti, M. Gaetani, J. Garca-Serrano, E. K. Vizy, K. Cook, Y. Xue, I. Polo, T. Losada, L. Druyan, B. Fontaine, J. Bader, F. J. Doblas-Reyes, L. Goddard, S. Janicot, A. Arribas, W. Lau, A. Colman, M. Vellinga, D. P. Rowell, F. Kucharski, A. Voldoire: [“Variability and Predictability of West African Droughts: A Review on the Role of Sea Surface Temperature Anomalies”](#). *J Climate*, 28(10), 4034-4060. doi:10.1175/JCLI-D-14-00130.1
- 2015** Shelley Welton, Michela Biasutti, and Michael Gerrard. [“Legal and Scientific Integrity in advancing a ‘Land Degradation Neutral World’ ”](#). October, 2014 *Columbia Law Review*.
- 2014** Sultan B., K. Guan, M. Kouressy, M. Biasutti, C. Piani, G. L. Hammere, G. McLean, and D. Lobell. [“Robust features of future climate change impacts on sorghum yields in West Africa”](#). *Environmental Research Letters*, 9(10), 104006. doi:10.1088/1748- 9326/9/10/104006
- 2014** * Lee, D-E and M. Biasutti: [“Climatology and variability of rainfall in the 20th century reanalysis”](#). *Journal of Climate* 27(15), 5964-5981. doi:10.1175/JCLI-D-13-00630.1
- 2014** * Dwyer, J.G., M. Biasutti, A.H. Sobel: [“The effect of greenhouse-gas-induced changes in SST on the annual cycle of zonal-mean tropical precipitation.”](#) *Journal of Climate* 27(12), 4544-4565. doi:10.1175/JCLI-D-13-00216.1.
- 2013** Biasutti, M. and S.E. Yuter: [“Observed frequency and intensity of tropical precipitation: the importance of instantaneous estimates.”](#) *Journal of Geophysical Research- Atmosphere* 118(17), 9534-9551. doi:10.1002/jgrd.50694
- 2013** * Saba, A., M. Biasutti, M.B. Gerrard, and D.B. Lobell: [“Getting ahead of the curve: Supporting adaptation to long-term climate change and short-term climate variability alike”](#) *Carbon and Climate Law Review* 7(1), 323.
- 2013** A. Seth, S.A. Rauscher, M. Biasutti, A. Giannini, S.J. Camargo, and M. Rojas: [“CMIP5 Projected Changes in the Annual Cycle of Precipitation in Monsoon Regions.”](#) *Journal of Climate*, 26(19), 7328-7351. doi:10.1175/JCLI-D-12-00726.1
- 2013** Biasutti, M.: [“Forced Sahel rainfall trends in the CMIP5 archive.”](#) *Journal of Geophysical Research-Atmospheres*, 118, doi:10.1002/jgrd.50206.
- 2013** Sobel, A.H., C.D. Burleyson, E. Yuter, and M. Biasutti: [“Correction to Rain on small tropical islands”](#) *Journal of Geophysical Research-Atmospheres*, 118, doi:10.1002/jgrd.50205.
- 2012** Lintner, R.B., M. Biasutti, N.S. Diffenbaugh, J.-E. Lee, M. Niznik, K.L. Findell. [“Amplification of wet and dry month occurrence over tropical land regions in response to global warming.”](#) *Journal of Geophysical Research-Atmospheres*, 117(D11), D11106. doi:10.1029/2012JD017499
- 2012** * Dwyer, J.G., M. Biasutti, A.H. Sobel: [“Projected Changes in the Seasonal Cycle of Surface Temperature”](#) *Journal of Climate*, 120419124110000. doi:10.1175/JCLI-D-11- 00741.1
- 2011** Biasutti, M., S.E. Yuter, C.B. Burleyson, and A.H. Sobel: [“Very High Resolution Rain- fall Patterns measured by TRMM Precipitation Radar: Seasonal and Diurnal Cycles”](#). *Climate Dynamics*, doi:10.1007/s00382-011-1146-6

- 2011** Biasutti, M., A.H. Sobel, S.J. Camargo, and T.T. Creyts: “[Projected changes in the physical climate of the Gulf Coast and Caribbean](#)”. *Climatic Change*, doi:10.1007/s10584-011-0254-y
- 2009** Biasutti, M. and A.H. Sobel: “[Delayed Seasonal Cycle and African Monsoon in a Warmer Climate](#)”. *Geophysical Research Letters*. 36, doi:10.1029/2009GL041303.
- 2009** Biasutti, M., A. H. Sobel, S.J. Camargo: “[The role of the Sahara Low in Sahel rainfall variability and change in the CMIP3 models](#)”. *Journal of Climate*, 22: 5755-5771. doi:10.1175/2009JCLI2969.1
- 2008** Giannini, A., M. Biasutti, M.M. Verstraete. “[A climate model-based review of drought in the Sahel: Desertification, the re-greening and climate change](#).” *Global and Planetary Change* 64 119-128.
- 2008** Biasutti, M., I. M. Held, A. H. Sobel, A. Giannini: “[SST forcings and Sahel rainfall variability in simulations of the 20th and 21st centuries](#)”. *Journal of Climate*, 21 3471- 3486.
- 2008** Giannini, A., M. Biasutti, I. M. Held, A. H. Sobel: “[A global perspective on African climate](#)”. *Climatic Change*. 14 March 2008. doi:10.1007/s10584-008-9396-y
- 2006** Biasutti, M., A. Giannini: “[Robust Sahel drying in response to late 20th century forcings](#)”. *Geophysical Research Letters*, 33, L11706, doi:10.1029/2006GL026067.
- 2006** Biasutti, M., A.H. Sobel, Y. Kushnir: “[AGCM precipitation biases in the tropical Atlantic](#)”. *J. Climate*, 19 935-958.
- 2005** M. Biasutti, D. S. Battisti, and E. S. Sarachik. “[Terrestrial influence on the annual cycle of the Atlantic ITCZ](#).” *J. Climate*, 18 211-228.
- 2004** M. Biasutti, D. S. Battisti, and E. S. Sarachik. “[Mechanisms Controlling the Annual Cycle of Precipitation in the Tropical Atlantic Sector in an Atmospheric GCM](#).” *J. of Climate*, 17 4708-4723.
- 2003** J. Chiang, M. Biasutti, and D. S. Battisti. “[Sensitivity of the Atlantic ITCZ to last glacial maximum boundary conditions](#).” *Paleoceanography*, 18:10.1029/2003PA000916.
- 2003** M. Biasutti, D. S. Battisti, and E. S. Sarachik. “[The annual cycle over the tropical Atlantic, South America, and Africa](#).” *J. Climate*, 16:2491-2508.
- 2000** Navarra, A., Biasutti, M., Gualdi, S., Roeckner, E., Schlese, U., Schulzweida, U. “[Sensitivity experiments to mountain representations in spectral models](#).” *Annals of Geophysics*, 43(3). doi:10.4401/ag-3658

COMMENTARIES and OTHER PUBLICATIONS

- 2022** Biasutti, Michela, Mingfang Ting, and Spencer A. Hill. [Guest post: How the south Asian monsoon is changing in a warming climate](#). Carbon Brief.
- 2017** Biasutti, Michela, Aiko Voigt, Benjamin R. Lavon, Jacob Scheff. [Sources of Inter-Model Scatter in TRACMIP, the Tropical Rain Belts with an Annual cycle and a Continent - Model Intercomparison Project](#). *Extended Abstract* for the AMS 21st Conference on Atmosphere and Ocean Fluid Dynamics. Portland, OR.

2016 Biasutti, Michela. Hydrology: [What Brings Rain to the Sahel?](#) *Nature Climate Change* 6 (10) 897-98. doi:10.1038/nclimate3080.

2015 Janicot, S., M. Gaetani, F. Hourdin, A. Giannini, M. Biasutti, E. Mohino, Y. Xue, A. Boone, A. Gaye, S. Salack and C. Lavaysse “[The Recent Partial Recovery in Sahel Rainfall: A Fingerprint of Greenhouse Gases Forcing?](#)” *GEWEX News*, Vol. 27 No. 4., 11-15.

2013 M. Biasutti “[Climate change: Future rise in rain inequality.](#)” *Nature Geoscience*, 6(5), 337-338. doi:10.1038/ngeo1814

2013 M. Biasutti “Sahel Rainfall Trends in CMIP5 models” *Variations: the U.S. CLIVAR Newsletter*

2011 M. Biasutti. “[Atmospheric science: A man-made drought.](#)” *Nature Climate Change*, 1(4), 197-198. doi:10.1038/nclimate1151

2007 Biasutti, M., A. Giannini, A. H. Sobel, I. M. Held, and J. C. H. Chiang. Sahel climate change. *EOS, Transactions American Geophysical Union*, 88:295.

BOOK CHAPTERS

2014 Jean-Philippe Lafore, Michela Biasutti , Peter Knippertz , and Chris Taylor: “The West African Monsoon”, in “The Global Monsoon Systems: Research and Forecast”, edited by Chih-Pei Chang, Hung-Chi Kuo, N.C. Lau, R.H. Johnson, Bin Wang, and Matthew C Wheeler, *World Scientific Series on Asia-Pacific Weather and Climate. Vol.9* 35-39

2013 Contributing Author: IPCC AR5, Chapter 14: Climate Phenomena and their Relevance for Future Regional Climate Change.

MEETINGS ORGANIZED:

[WCRP Grand Challenge on Clouds, Circulation and Climate Sensitivity: 2nd Meeting on Monsoons and Tropical Rain Belts](#). International Centre for Theoretical Physics, July 2-5, 2018 (Secured NSF funds for Early Career Scientists)

[Monsoons and ITCZ: The annual cycle in the Holocene and the future](#). Columbia University, September 15-18, 2015 (Secured NSF funds for Early Career Scientists)

Dynamics of Climate Change and their impacts on the hydrologic cycle at regional scales: Session Convener at 2011 AGU Fall Meeting.

[Workshop on Climate Change in the Sahel](#): Columbia University, March 19-21 2007.

DATASETS PRODUCED or FACILITATED:

TRMM Precipitation Radar Climatology at 5km Resolution: [Data](#). [Paper](#).

TRACMIP: Tropical Rainfall with an Annual cycle and Continent Model Inter-comparison Project. [Data](#). [Paper](#).

RECENT INVITED SEMINARS and LECTURES:

2024: [Joint WCRP/WWRP webinar series: African Monsoon](#).

2024: Stevens Institute of Technology, Physics Seminar Series.

2024: State University of New York College of Environmental Science and Forestry

2023: [The Jule Gregory Charney Lecture](#), AGU Fall Meeting.

2023: History and Climate Change Workshop; Columbia University, NY.

2022: Continental Climate Change Workshop; St. Andrews, Scotland. IMG Colloquium; Vienna, Austria. Modeling Hierarchies Workshop; Stanford, CA. Dept. of Atmospheric and Oceanic Sciences, Peking University, China.

2022: *Visiting Professor*: Universität Wien, Institut für Meteorologie und Geophysik, Austria.

2021: Berkeley Geography Colloquium; Berkeley, CA.

2019: SUNY Colloquium; Albany, NY. 2nd ICTP Summer School on Theory, Mechanisms and Hierarchical Modelling of Climate Dynamics; Trieste, Italy. Atmospheric Processes Workshop; South African Weather Service, Pretoria, South Africa (remote). Workshop on Monsoon Climate Change and Attribution; Sun Yat-Sen University, Zhuhai, China (remote).

2018: Caltech Colloquium, Pasadena CA. Water & Climate Change Workshop, MIT.

2017: International Training Course: Climate Services for disaster prevention, IBIMET, Firenze, Italy. Fourth International Conference on Earth System Modelling (4ICESM), MPI, Germany. EGU Annual Assembly, Vienna, Austria; Hamburg University, Germany. NE Tropical Workshop, Albany NY.

2016: AGU Fall Meeting, San Francisco, CA; EGU Annual Assembly, Vienna, Austria; WCRP Model Hierarchies Workshop, Princeton University, NJ.

2015 Linde Workshop on Monsoons: Past, Present and Future, CalTech, Pasadena, CA; Our Common Future under Climate Change, UNESCO, Paris, France; AOS Colloquium, University of Wisconsin, Madison, WI.

2014 WCRP Grand Challenge Workshop, Schloss Ringberg, Germany; Colloquium, Dept. of Atmospheric Sciences, University of Washington, Seattle, WA; MPI-M/CliSAP Workshop on Climate, Land Use, and Conflict in Northern Africa, Lübeck, Germany.

2013 WAMME Workshop, San Francisco, CA; CCCM (Center for Climate Change in the Mediterranean), Bologna, Italy.

2012 Workshop on Convection, Water Vapor, and Climate, MIT, Cambridge, MA; Climate Dynamics of Tropical Africa Workshop, John Hopkins, Baltimore, MD; Department of Earth and Atmospheric Sciences, Cornell, Ithaca, NY; NOAA MAPP Webinar: Evaluation of Reanalysis Products.

RECENTLY FUNDED PROJECTS:

2023-2026: NSF-ATG: Insolation gradients and Eastern Mediterranean aridity: impacts on

winter storms and implications for climate projections (M. Biasutti, Y. Kushnir, S. Goldstein, P. Alexander)

2023-2026: NSF-P4CLIMATE: Collaborative Research: Shifting Drought Patterns in West Africa: Constraining Model Simulations with Paleo Reconstructions (M. Biasutti, E. Cook, B. Buckley, B. Fosu).

2022: CU-Climate Center: Of Trees and People: Connecting Climate, Population History, and Adaptive Strategies in West Africa ((M. Biasutti, E. Cook, B. Buckley)

2021-2024 NSF-ATG: How do energy fluxes link precipitation variability across the tropical weather-climate continuum? (S. Hill, M. Biasutti)

2020-2023 NSF-ATG: Forced precipitation response in a single column model with parameterized dynamics (A. Sobel, M. Biasutti)

2018-2021 Monsoon Mission (India): Local Processes and Global Constraints in the Indian Monsoon: Understanding for Prediction (A. Sobel, M. Biasutti, M. Cane)

2016-2019 NSF-ATG: The essential dynamics of tropical rain belts: Monsoons and ITCZ in a multi-model ensemble of idealized simulations. (M. Biasutti, A. Voigt, J. Scheff)

2016-2019 NASA-SERVIR: Desertification or “re-greening”? Adaptation lessons learned in coping with late 20th century drought in West Africa. (A. Giannini et al.)

2015-2018 DOE-BER Understanding recent global hydroclimate change using multivariate detection and attribution techniques and GCM Experiments (Y. Kushnir, M. Biasutti, K. Marvel)

2013-2018 NSF-EaSM: Linking near term future changes in weather and hydroclimate in western North America to adaptation for land management. (R. Seager, M. Ting., Y. Kushnir, M. Biasutti, J. Smerdon, B. Cook, A. Greene, A. Ray, B. Rajagopalan)

2011-2012 NOAA: Climatology and variability of tropical rainfall in the 20th century reanalysis. (M. Biasutti)

2011-2014 NSF-EaSM: Use of Climate Information in International Negotiation for Adaptation Resources. (M. Biasutti, M. Gerrard, D. Lobell, A. Sobel)

2011-2012 NOAA: The role of greenhouse gases in the forcing of 20th Century Precipitation Changes in the African Sahel. (M. Biasutti, A. Giannini)

2010-2013 NSF-ATG: Future Changes in the Seasonal Cycle: Mechanisms and Implications. (M. Biasutti, A. Sobel)

STUDENTS ADVISED:

Graduate (PhD): John Dwyer, Sean Cohen, Isabelle Bunge (PhD student in the Department of Applied Physics and Applied Math): Co-advised with Adam Sobel. Rebecca Herman (PhD students in the Department of Earth and Environmental Sciences): Co-advised with Yochanan Kushnir. Alex Parsells (PhD students in DEES): Co-advised with Spencer Hill.

Catherine Pomposi and Xiaoqiong (Sage) Li, Rebecca Herman, Tess Jacobson, Yujia You (PhD students in the Department of Earth and Environmental Sciences), PhD committee.

Graduate (MS in Climate & Society): Noël Coenraad, Stephanie Stettz (research project). I also serve as an academic advisor to a handful of students (4-10) every year.

Undergraduate: Jason Maytin (APAM); Alyssa Poletti (Caltech summer intern); Charles Blackmon-Luca (APAM/CS Earth Institute Undergraduate RA); Lucas Vargas Zeppetello (APAM senior / Earth Institute Undergraduate RA); Priscilla Bell (APAM sophomore / Earth Institute Undergraduate RA); Ben Lavon (APAM, post graduate); Deanna Tufano, Julio E. Herrera Estrada (APAM Seniors), Ségolène Berthou (exchange from the École Normale Supérieure de Paris).

CLASSROOM TEACHING:

ENVP U6115: Climatology

CLMT GR5001: Dynamics of Climate Variability and Change

EESC UN2100: Earth's Environmental Systems: Climate System

EESC GU5400: Dynamics of Climate Variability and Change

EESC GU5404: Regional Climate & Climate Impacts (co-developed)

SUSC PS5010: Climate Science for Decision Makers: Modeling, Analysis, and Applications (co-developed)

Guest Lectures:

EESC UN2100: Earth's Environmental Systems: Climate System

EESC GR6928: Tropical Meteorology

Summer Schools:

NCAR colloquium on African Weather and Climate, Boulder, CO.

ICTP Summer School on Theory, Mechanisms and Hierarchical Modelling of Climate Dynamics, Trieste, Italy.

Visiting Professorship:

Tropical Climate Change. Department of Meteorology and Geophysics at the University of Vienna, Austria.

OUTREACH ACTIVITIES:

Lamont Open House: Wind & Water; Salinity & the Global Water Cycle; Temperature, Radiation & the IR gun; Two Centuries of Climate History; Climate Science Photo Booth.

Public Lectures & Panels: Municipal Art Society of NY; NYC Dept. of Construction & Design; Marfa Dialogue; Different Directions; Maplewood, NJ, Climate Change Panel; American Museum of Natural History ([within “Our Earth’s Future”](#)); Long Island City Community Center; public schools (Italy and NYC); citizen councils (Italy); Columbia Journalism School.

Lobbying Activities: AGU Congressional Visits.

DIVERSITY IN SCIENCE ACTIVITIES:

URGE (Unlearning Racism in the Geosciences): LDEO pod

LDEO: Task Force on Diversity Equity and Inclusion (Working Group: Supporting Success)

LDEO: Committee on Professional Conduct

LDEO: Campus Life and Work Environment Survey

@WCRP Monsoon & ITCZ Meeting: Diversity Discussions

Outreach to Girls (career fairs in grade schools, Girl Scout troops)