SARAH B. KAPNICK

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Citizenship Status: U.S. Citizen

EDUCATION

University of California, Los Angeles (UCLA) — Los Angeles, CA
Ph.D. in Atmospheric and Oceanic Sciences, Advisor: Alex D. Hall — *2011*
Leaders in Sustainability Certificate, Institute of Environment and Sustainability — *2011*
M.S. in Atmospheric Sciences — *2007*

Princeton University — Princeton, NJ
A.B., Mathematics, Senior Thesis Advisor: S. George Philander — *2004*
Certificate in Finance, Bendheim Center for Finance — *2004*

AWARDS, FELLOWSHIPS, AND HONORS

- *AMS Early Career Leadership Academy*, American Meteorological Society (AMS), 2020
- *NOAA Leadership Seminar*, NOAA, 2018
- *Daniel L. Albritton Outstanding Communicator Award*, Oceanic and Atmospheric Research, NOAA, 2017
- *AGU Cryosphere Section Early Career Award*, American Geophysical Union (AGU), 2015
- *Visiting Scientist Award*, Integrated Climate System Analysis and Prediction (CliSAP), University of Hamburg, 2014
- *NSF Atmospheric and Geospace Sciences Postdoctoral Research Fellowship*, National Science Foundation, 2013-2015
- *ThinkSwiss Travel Grant Award*, ThinkSwiss.org, Switzerland, 2012
- *Bjerknes Award* for academic excellence, Department of Atmospheric and Oceanic Sciences, UCLA, 2011
- *Mautner Graduate Student Award* for demonstrating the highest academic achievement, excellence in research and teaching, dedicated community and university involvement, and scientific communication skills, Physical and Life Sciences Division, UCLA, 2011
- *Brian Lance Bosart Memorial Award* for unselfish service to fellow students and positive contributions to department life, Department of Atmospheric and Oceanic Sciences, UCLA, 2010
- *UCLA Dissertation Fellowship*, UCLA, 2010-2011
- *Switzer Environmental Fellowship Award*, Robert & Patricia Switzer Foundation, 2010
- *UCLA Charles E. and Sue K. Young Graduate Student Award* for outstanding graduate students for exemplary academic achievement, research, and university citizenship, College of Letters and Sciences, UCLA, 2010
- *NASA Earth and Space Science Fellowship*, National Aeronautics and Space Administration (NASA), 2007-2010
- *Edwin W. Pauley Fellowship*, UCLA, 2006-2007
- *Roy and Dorothy John Fellowship*, UCLA, 2006-2007

WORK EXPERIENCE

- **Deputy Division Leader and Research Physical Scientist (ZP-4), 2018 - Present**, Seasonal to Decadal Variability and Predictability Division, Geophysical Fluid Dynamics Laboratory (GFDL), National Oceanic and Atmospheric Administration (NOAA).
- **Research Physical Scientist (ZP-4), 2015 - 2017**, Climate Variations and Predictability Group, Geophysical Fluid Dynamics Laboratory (GFDL), National Oceanic and Atmospheric Administration (NOAA).
- **NSF Postdoctoral Research Fellow, 2013 - 2015**, Atmospheric and Oceanic Sciences Program, Princeton University. Faculty host: Thomas L. Delworth.

- **Postdoctoral Research Associate and Visiting Scientist, 2011 - 2013**, Atmospheric and Oceanic Sciences Program, Princeton University and GFDL, NOAA. Faculty advisor: Thomas L. Delworth.
- **Investment Banking Analyst, 2004 - 2006**, Financial Institutions Group, Investment Banking Division, Goldman Sachs, New York. Mainly advised reinsurance and exchange industries on securities and risk management.

PUBLICATIONS

underlined names indicates student, postdoc, or research associate directly advised

SUBMITTED / IN REVISION

1. Tseng K-C, Johnson NC, **Kapnick SB**, Delworth TL, Lu F, Cooke W, Rosati AJ, Zhang L, McHugh C, Yang X, Harrison M, Zeng F, Zhang G, Murakami H, Wittenberg AT, Bushuk M, Jia L, 202X: Skillful Multi-Seasonal Prediction of Atmospheric Rivers Over Western North America. *Submitted*.
2. Murakami H, Delworth TL, Cooke WF, **Kapnick SB**, Hsu P-C, 202X: Increasing Frequency of Extreme Precipitation Events in Japan due to Global Warming. *Submitted*.
3. Zhang G, Murakami H, Cooke WF, Wang Z, Jia L, Lu F, Yang X, Delworth TL, Wittenberg AT, Harrison MJ, Bushuk M, McHugh C, Johnson NC, **Kapnick SB**, Tseng K-C, Zhang L, 202X: Seasonal Predictability of Baroclinic Wave Activity: Toward Predicting Risks of Extratropical Extremes. *Submitted*.
4. **Kapnick SB** and Jones J, 202X: Improving U.S. Western Water Resilience Through Advancements in Seasonal Prediction. *Submitted*.
5. Tseng K.C., Johnson NC, Maloney ED, Barnes EA, **Kapnick SB**, 202X: Mapping Large-scale Climate Variability to Hydrological Extremes: An Application of the Linear Inverse Model to Subseasonal-to-Seasonal prediction. *Submitted*.
6. Chan HG, Ginoux P, Malyshev S, **Kapnick SB**, 202X: A parameterization of snowpack albedo reduction by light-absorbing impurities for use in large-scale models *Under revision*.
7. Sergienko O, Shah K, **Kapnick SB**, Harrison M, Brun F, 202X: Projected shift in sources and timing of freshwater supply in High-Mountain Asia under warming climate conditions. *Under revision*.

PEER-REVIEWED JOURNAL ARTICLES

8. Pascale S, , **Kapnick SB**, Delworth TL, Cooke WF, 2020: Increasing risk of another Cape Town's Day Zero drought in twenty-first century. *In Press with Proceedings of the National Academy of Sciences*.
9. Hurwitz M., Baxter S., Brown B, Carman J, Dale J, Draper C, Horsfall F, Hughes M, Gerth J, **Kapnick SB**, Olheiser C, Olsen M, Stachelski C, Vincent M, Webb R, Zdrojewski J, 2020: Six Priorities for Investment in Snow Research and Product Development. *In Press at Bulletin of the American Meteorological Society*. doi:10.1175/BAMS-D-20-0218.1
10. Delworth T. L., Cooke W. F., Adcroft A. A., Bushuk M., Chen J.-H., Ginoux P., Gudgel R., Hallberg R. W., Harris L., Harrison M. J., Johnson N., **Kapnick SB**, Lin S.-J., Lu F., Malyshev S., Milly P. C., Murakami H., Naik V., Pascale S., Paynter D., Rosati A., Schwarzkopf M. D., Shevliakova E., Underwood S., Wittenberg A. T., Xiang B., Yang X., Zeng F., Zhang H., Zhang L., Zhao M., 2020: SPEAR: The Next Generation GFDL Modeling System for Seasonal to Multidecadal Prediction and Projection *Journal of Advances in Modeling Earth Systems*, **12**, e2019MS001895.
11. Kirschbaum DB, **Kapnick SB**, Stanley T, Pascale S, 2020: Changes in extreme precipitation and landslides over High Mountain Asia. *Geophysical Research Letters*, **47**, e2019GL085347.
12. Qian Y, Murakami H, Hsu P-C, **Kapnick SB**, 2020: Effect of Anthropogenic Forcing and Natural Variability on the Occurrence of the 2018 Heatwave in Northeast Asia. *Bulletin of the American Meteorological Society*, **101 (1)**, S77–S82, doi:10.1175/BAMS-D-19-0156.1.
13. Johnson NC, Krishnamurthy L, Wittenberg AT, Xiang B, Vecchi GA, **Kapnick SB**, Pascale S, 2020: The impact of sea surface temperature biases on North American precipitation in a high-resolution climate model. *Journal of Climate*, **33**, 2427–2447.
14. Barcikowska MJ, **Kapnick SB**, Krishnamurty L, Russo S, Cherchi A, Folland C, 2020: Changes in the summer Mediterranean climate contribution of large scale dynamics and local factors. *Earth System Dynamics*, **11**, 161–181.

15. Qian Y, Murakami H, Nakano M, Hsu PC, Delworth TL, **Kapnick SB**, Ramaswamy V, Mochizuki T, Morioka Y, Doi T, Kataoka T, Nasuno T, Yoshida K, 2019: On the Mechanisms of the Active 2018 Tropical Cyclone Season in the North Pacific. *Geophysical Research Letters*, **46**, 12293–12302.
16. Ludquist J, Hughes M, Gutmann E, **Kapnick SB**, 2019: Our skill in modeling mountain rain and snow is bypassing the skill of our observational networks. *Bulletin of the American Meteorological Society*, **100**, 2473–2490.
17. Pu B, Ginoux P, **Kapnick SB**, Yang X, 2019: Seasonal prediction potential for springtime dustiness in the U.S. *Geophysical Research Letters*, **46**, 9163–9173.
18. Vecchi GA, Delworth TL, Murakami H, Underwood S, Wittenberg AT, Zeng F, Zhang W, Baldwin JW, Bhatia K, Cooke W, He J, **Kapnick SB**, Knutson T, Villarini G, van der Wiel K, Anderson W, Balaji V, Chen Jan-Huey, Dixon K, Gudgel R, Harris L, Jia L, Johnson N, Lin S-J, Liu M, Ng J, Rosati A, Smith J, Yang X, 2019: The response of tropical-cyclone permitting coupled global climate models to CO2 doubling: large-scale surface climate and tropical cyclone activity. *Climate Dynamics*, **53**, 5999–6033.
19. Pascale S, Pohl B, **Kapnick SB**, Zhang H, 2019: On the Angola Low interannual variability and its role in modulating ENSO effects in southern Africa. *Journal of Climate*, **32**, 4783–4803.
20. Catalano AJ, Broccoli AJ, **Kapnick SB**, Janoski TP, 2019: High-Impact Extratropical Cyclones along the Northeast Coast of the United States in a Long Coupled Climate Model Simulation. *Journal of Climate*, **32**, 2131–2143.
21. Yang X, Jia L, **Kapnick SB**, Delworth T, Vecchi GA, Gudgel R, Underwood S, Zeng F, 2018: On the seasonal prediction of the western United States El Niño precipitation pattern during the 2015/16 winter. *Climate Dynamics*, **51**, 3765–3783.
22. Janoski TP, Broccoli AJ, **Kapnick SB**, Johnson NC, 2018: Effects of Climate Change on Wind-Driven Heavy Snowfall Events over Eastern North America. *Journal of Climate*, **31**, 9037–9054.
23. van der Wiel K, **Kapnick SB**, Vecchi GA, Smith J, Milly PCD, Jia L, 2018: Characteristics and future changes of 100-year Mississippi floods in a global climate model. *Journal of Hydrometeorology*, **19**, 1547–1563.
24. Pascale S, **Kapnick SB**, Bordoni S, Delworth T, 2018: The influence of CO2 forcing on North American monsoon moisture surges and precipitation intensity in the southwestern United States. *Journal of Climate*, **31**, 7949–7968.
25. Barcikowska M, **Kapnick SB**, Feser F, 2018: Impact of large-scale circulation changes in the North Atlantic sector on the current and future Mediterranean winter hydroclimate. *Climate Dynamics*, **50**, 2039–2059.
26. Krishnamurthy L, Vecchi GA, Yang X, van der Wiel K, Balaji V, **Kapnick SB**, Jia L, Zeng F, Paffendorf K, Underwood S, 2018: Causes and probability of occurrence of extreme precipitation events like Chennai 2015. *Journal of Climate*, **31**, 3831–3848.
27. Wrzesien M, Durand M, Pavelsky T, **Kapnick SB**, Zhang Y, Guo J, Shum CK, 2018: A new estimate of North American mountain snow accumulation from regional climate model simulations. *Geophysical Research Letters*, **45**, 1423–1432, doi:10.1002/2017GL076664.
28. **Kapnick SB**, Yang X, Vecchi GA, Delworth T, Gudgel R, Malyshev S, Milly PCD, Shevliakova E, Underwood S, Margulis S, 2018: Potential for Western United States Seasonal Snowpack Prediction. *Proceedings of the National Academy of Sciences*, **115**(6), 1180–1185. doi:10.1073/pnas.1716760115.
29. Pascale S, Boos W, Bordoni S, Delworth T, **Kapnick SB**, Murakami H, Vecchi GA, Zhang W, 2017: Weakening of the North American monsoon with global warming. *Nature Climate Change*, **7**, 806–812. doi:10.1038/nclimate3412.
30. Tommasi D, Stock C, Hobday A, Methot R, Kaplan I, Eveson J, Holsman K, Miller T, Gaichas S, Gehlen M, Pershing A, Vecchi GA, Msadek R, Delworth T, Eakin M, Sefarian R, Spillman C, Hartog J, Siedlecki S, Samhouri J, Muhling B, Asch R, Pinsky M, Saba V, **Kapnick SB**, Gaitan C, Rykaczewski R, Alexander M, Xue Y, Pegion K, Lynch P, Payne M, Kristiansen T, Lehodey P, Werner C, 2017: Managing living marine resources in a dynamic environment: the role of seasonal to decadal climate forecasts. *Progress in Oceanography*, **152**, 15-49.
31. van der Wiel K, **Kapnick SB**, van Oldenborgh GJ, Whan K, Philip S, Vecchi GA, Singh RK, Arrighi J, Cullen H, 2017: Rapid attribution of the August 2016 flood-inducing extreme precipitation in south Louisiana to climate change, *Hydrol. Earth Syst. Sci.*, **21**, 897-921, doi:10.5194/hess-2016-448.
32. van der Wiel K, **Kapnick SB**, Vecchi GA, 2017: Shifting patterns of mild weather in response to climate change forcing. *Climatic Change*, **140**, 649-658.

33. Lemoine D and **Kapnick SB**, 2016: A Top-Down Approach to Projecting Market Impacts of Climate Change, *Nature Climate Change*, **6**, 51-55, doi:10.1038/nclimate2759.
34. Pascale S, Bordoni S, **Kapnick SB**, Vecchi GA, Jia L, Delworth T, Underwood S, Anderson W, 2016: The impact of horizontal resolution on North American monsoon Gulf of California moisture surges in a suite of coupled global climate models. *Journal of Climate*, **29** (21), 7911-7936.
35. van der Wiel K, **Kapnick SB**, Vecchi GA, Cooke W, Delworth T, Jia L, Murakami H, Underwood S, Zeng F, 2016: The resolution dependence of US precipitation extremes in response to CO2 forcing. *Journal of Climate*, **29** (22), 7991-8012.
36. Jia L, Yang Z, Vecchi GA, Gudgel R, Delworth T, Rosati A, Stern B, Wittenberg AT, Krishnamurthy L, Zhang S, Msadek R, **Kapnick SB**, Underwood S, Zeng F, Anderson W, Balaji V, Dixon K, 2015: Improved Seasonal Prediction of Temperature and Precipitation over Land in a High-Resolution GFDL Climate Model. *Journal of Climate*, **28** (5), 2044-2062.
37. Wrzesien M, Pavelsky T, **Kapnick SB**, Durand M, Painter T, 2015: Validation of Snow Cover Fraction for Regional Climate Simulations in the Sierra Nevada. *International Journal of Climatology*, **35**, 2472-2484.
38. Yang X, Vecchi GA, Gudgel R, Delworth T, Zhang S, Rosati A, Jia L, Stern W, Wittenberg AT, **Kapnick SB**, Msadek R, Underwood S, Zeng F, Anderson W, Balaji V, 2015: Seasonal predictability of extratropical storm tracks in a high-resolution GFDL climate prediction model. *Journal of Climate*, **28** (9), 3592-3611.
39. **Kapnick SB**, Delworth T, Ashfaq M, Malyshev S, Milly PCD, 2014: Snowfall less sensitive to warming in Karakoram than in Himalayas due to a unique seasonal cycle. *Nature Geoscience*, **7**, 834-840, doi:10.1038/ngeo2269.
40. Vecchi GA, Delworth T, Gudgel R, **Kapnick SB**, Rosati A, Zeng F, Anderson W, Balaji V, Jia L, Kim H-S, Krishnamurthy L, Msadek R, Stern WF, Underwood S, Villarini G, Wittenberg AT, Yang X, Zhang S, 2014: On the Seasonal Forecasting of Regional Tropical Cyclone Activity. *Journal of Climate*, **27** (21), 7994-8016.
41. **Kapnick SB** and Delworth T, 2013: Controls of Global Snow Under a Changed Climate. *Journal of Climate*, **26** (15), 5537-5562.
42. Pavelsky T, Sobolowski S, **Kapnick SB**, Barnes J, 2012: Changes in orographic precipitation patterns caused by a shift from snow to rain. *Geophysical Research Letters*, **39**, L18706, doi:10.1029/2012GL052741.
43. **Kapnick SB** and Hall A, 2012: Causes of recent changes in western North American snowpack. *Climate Dynamics*, **38** (9), 1885-1899, doi:10.1007/s00382-011-1089-y.
44. Waliser D, Kim J, Xue Y, Chao Y, Eldering A, Fovell R, Hall A, Li Q, Liou K-N, McWilliams J, **Kapnick SB**, Vasic R, De Sale R, Yu Y, 2012: Simulating the Sierra Nevada snowpack: The impact of snow albedo and multi-layer snow physics. *Climatic Change*, **109** (S1), 95-117.
45. Boé J, Hall A, Colas F, McWilliams J, Qu X, Kurian J, **Kapnick SB**, 2011: What shapes mesoscale wind anomalies in coastal upwelling zones? *Climate Dynamics*, **36** (11), 2037-2049, doi:10.1007/s00382-011-1058-5.
46. Pavelsky T, **Kapnick SB**, Hall A, 2011: Accumulation and melt dynamics of snowpack from a multi-resolution regional climate model in the central Sierra Nevada, California. *JGR-Atmospheres*, **116**, doi:10.1029/2010JD015479.
47. **Kapnick SB** and Hall A, 2010: Observed climate-snowpack relationships in California and their implications for the future. *Journal of Climate*, **23** (13), 3446-3456.

BOOK CHAPTERS

48. Stanley T, Kirschbaum D, Pascale S, **Kapnick SB**, 2020: Extreme precipitation in the Himalayan landslide hotspot. In *Satellite Precipitation Measurement. Springer*, **69** (2), ISBN:978-3-030-35797-9.

PEER-REVIEWED GOVERNMENT DOCUMENTS

49. **Kapnick S** and Hall A, 2009: Observed changes in the Sierra Nevada snowpack: potential causes and concerns. California Environmental Protection Agency and California Energy Commission Report CEC-500-2009-016-F.
50. Kim J, Fovell R, Hall A, Li Q, Liou K-N, McWilliams J, Xue Y, Qu X, **Kapnick S**, Waliser D, Eldering A, Chao Y, Friedl R, 2009: A projection of the cold season hydroclimate in California in mid-21st century under the SRES-A1B emission scenario. California Environmental Protection Agency and California Energy Commission Report CEC-500-2009-029-F.

51. Waliser D, Kim J, Xue Y, Chao Y, Eldering A, Fovell R, Hall A, Li Q, Liou K-N, McWilliams J, **Kapnick S**, Vasic R, De Sale R, Yu Y, 2009: Simulating the Sierra Nevada snowpack: The impact of snow albedo and multi-layer snow physics. California Environmental Protection Agency and California Energy Commission Report CEC-500-2009-030-F.

TALKS

ACADEMIC

† indicates invited

- **2020**
  † NOAA Snow Workshop, NOAA Center for Weather and Climate Prediction, College Park, MD (Virtual Workshop)
  † NOAA Climate Prediction Center, College Park, MD
  † Eastern Region Climate Team, January Stakeholder Webinar
  † American Meteorological Society Annual Meeting, Boston, MA (2 presented)
- **2019**
  † AGU Annual Meeting, Washington, D.C.
  † Climate Connections Workshop, NOAA Climate Program Office, Silver Spring, MD
  † Mississippi Flood Risks Panel, NOAA Modeling, Analysis, Predictions and Projections (MAPP), Webinar
  † American Physical Society March Meeting, Boston, MA
  † Workshop for Women in Math and Public Policy, UCLA, Los Angeles, CA (Participation as Lecturer during workshop cancelled due to 2018-19 Federal Shutdown)
- **2018**
  † AGU Annual Meeting, Washington, D.C.
  International Conferences on Subseasonal to Decadal Prediction, World Climate Research Programme, Boulder, CO
  † NOAA West Watch, Webinar
  † NOAA Fisheries Pacific Northwest, Webinar
  † Western States Water Council, San Diego, CA
  † Pacific Northwest Drought and Climate Outlook, National Integrated Drought Information System Program (NIDIS), Webinar
  † American Meteorological Society (AMS) Workshop on Water Management Forecasting, Washington, D.C.
  † NASA High Mountain Asia Team (HiMAT) Team Meeting, Seattle, WA
  † NOAA National Integrated Drought Information System Program (NIDIS), Webinar
  † UCLA, Department of Atmospheric and Oceanic Sciences, Los Angeles, CA
- **2017**
  † Rutgers University, Department of Environmental Sciences, New Brunswick, NJ
  † Princeton University, Department of Geosciences, Princeton, NJ
  † California Institute of Technology, Department of Environmental Science and Engineering, Pasadena, CA
  † NASA High Mountain Asia Team (HiMAT) Team Meeting with Chinese Academy of Sciences, Juneau, AK
  AMS 30th Conference on Climate Variability and Change, Baltimore, MD
  † NOAA Modeling, Analysis, Predictions and Projections (MAPP) Webinar
  † NASA High Mountain Asia Team (HiMAT) Team Meeting on Precipitation, NASA Goddard Space Flight Center, Greenbelt, MD
  AGU Annual Meeting, New Orleans, LA
- **2016**
  † iSWGR NASA Snow Meeting, University of Washington, Seattle, WA
  † Western States Water Council / NOAA Meeting on Seasonal to Subseasonal Prediction, San Diego, CA
  WCRP Workshop on Model Hierarchies, Princeton University, Princeton, NJ
  † NASA High Mountain Asia Team (HiMAT) Team Meeting, NASA Goddard Space Flight Center, Greenbelt, MD
- **2015**
  † AGU Annual Meeting, San Francisco, CA
  † SUNY-Stony Brook, School of Marine and Atmospheric Sciences, Stony Brook, NY
  † Western States Water Council / NOAA Meeting on Seasonal to Subseasonal Prediction, Salt Lake City, UT

- **2014**
  † Max-Planck-Institute for Meteorology and University of Hamburg Institute of Oceanography Joint Seminar, Hamburg, Germany
  GEWEX Conference on Global Water and Energy Cycle, The Hague, Netherlands
  † SUNY-Albany, Department of Atmospheric and Environmental Sciences, Albany, NY
- **2013**
  AGU Annual Meeting
  † Rutgers University, Department of Environmental Sciences, New Brunswick, NJ
  † NOAA Modeling, Analysis, Predictions and Projections (MAPP) Webinar
  † UNC-Chapel Hill, Department of Geological Sciences, Chapel Hill, NC
  † NOAA Headquarters, NOAA Library, Silver Spring, MD
  † Columbia University Lamont-Doherty Earth Observatory, Palisades, NY
  † Yale University, Department of Geology and Geophysics, New Haven, CT
- **2012**
  AGU Annual Meeting
  † Dissertation Initiative for the advancement of Climate Change ReSearch (DISCCRS) VII, Colorado Springs, CO
  National Centres of Competence in Research (NCCR) Climate Summer School, Ticino, Switzerland
  † Princeton University, Princeton Institute for International and Regional Studies, Princeton, NJ
- **2011**
  † NOAA GFDL, Princeton, NJ
  † UCLA, Department of Atmospheric and Oceanic Sciences, Los Angeles, CA
  AMS Annual Meeting, Seattle, WA
- **2010**
  † Stevens Institute of Technology, Department of Civil, Environmental, Ocean Engineering, Hoboken, NJ
  † NASA Goddard Institute for Space Studies, New York, NY
- **2009**
  † Department of Energy Pacific Northwest National Laboratory, Richland, WA
- **2008**
  † Climate, Ecosystems, and Resources in Eastern California Conference, Bishop, CA
  California Climate Change Research Conference, Sacramento, CA

SELECTED OUTREACH (SINCE 2014)

- **2020** *Weathering the Storm: Extreme Weather & Climate Change*, Environmental Law Institute, Webinar
- **2020** *Climate Change: How Bad Will it Be, and What Must be Done? Inter-Disciplinary Panels of Leading Experts Answer these Questions on the 50th Anniversary of Earth Day*, NY City Bar, New York, NY (Virtual Workshop)
- **2019** *Celebration of Women in Science for International Women's Day*, NOAA, Webinar.
- **2018** *Why American Geophysical Union Scientists Study the Earth and Space*, Union Session, AGU, Washington, D.C.
- **2018** *Climate and Precipitation over High Mountain Asial*, Securing the Third Pole: Glaciers, Snowpacks, and Water Vulnerability in High Asia, Wilson Center, Washington, D.C.
- **2018** *Expert Is In; Support of 10th Anniversary of Sant Ocean Hall*, Smithsonian National Museum of Natural History, Washington, D.C.
- **2018** *Climate Change: How We Know*, Taste of Science Festival, New York, NY
- **2018** *Seasonal Water Resource Prediction*, Congressional AMS Hill Briefing, Washington, D.C
- **2018** *Using Climate Science to Understand Water, Extreme Weather, and Economic Growth*, Princeton Energy & Climate Scholars Round Table, Princeton Environmental Institute, Princeton University, Princeton, NJ.
- **2017** *The Climate Influence on Financial Markets and Decision Making*, Energy Round Table Dinner, Princeton Environmental Institute, Princeton University, Princeton, NJ.
- **2017** *Middle School STEM Ambassador of Climatology: What it's like to work as a climate scientist at NOAA*, Video segment for Pearson, *www.pearson.com*

- **2016** *Mountain Climate: Variability, Predictability, and Water Supply*, NOAA Science Days on Water, Silver Spring, MD and Washington, D.C.
- **2015** *Ice, Glaciers, and Snow: How a Scientist Views Glacier Photographs*, Princeton Day School, Princeton, NJ.
- **2014** *Superstorm Sandy and NYC*, NOAA Science on a Sphere, World Science Festival, New York, NY.
- **2014** *Climate, Finance, and Renewables: What You Should Know*, Energy Round Table Dinner, Princeton Environmental Institute, Princeton University, Princeton, NJ.

PROPOSALS

- Development of a Rapid Response Capability to Evaluate Causes of Extreme Climate Events, Climate Program Office, NOAA, 2020-2023. Co-PI, $680k
- Reducing uncertainty in future projections of High Mountain Asia Climate through improved understanding of natural and anthropogenic processes controlling biomass burning and dust, National Aeronautics and Space Administration (NASA), 2020-2023. Principal Investigator, $810k.
- Valuing Prediction Systems From Equity Markets. Climate Program Office, NOAA, 2018-2019. Co-PI, $168k total.
- Quantifying the Role of Dust on Precipitation, Snow, and Runoff in High Mountain Asia. Space and Earth Sciences Division, NASA, #15-HMA15-0016, 2017-2019. Principal Investigator, $518k total.

ACADEMIC COMMITTEES & ADVISING

POSTDOCTORAL RESEARCHERS & RESEARCH ASSOCIATES ADVISED

- Hoi Ga Veronica Chan (now at Port of London Authority)
- Salvatore Pascale (now at Stanford University)
- Karin van der Wiel (now at Koninklijk Nederlands Meteorologisch Instituut, KNMI)
- Monika Barcikowska (now at Environmental Defense Fund)

GRADUATE STUDENT COMMITTEE MEMBER

- Justin Ng (Princeton University)
- Arielle Catalano (Rutgers University)

GRADUATE STUDENT SUMMER INTERNS

- Robin Sehler, Geosciences and Environment, California State Los Angeles (Princeton University Cooperative Institute for Climate Science Summer Internship)

UNDERGRADUATE STUDENTS ADVISED

† Subsequently pursued a STEM graduate program

- Surabhi Biyani, Atmospheric Sciences (Climate) and Earth and Space Science (Physics), University of Washington (NOAA Hollings Scholar)
- Sarah Weidman, Atmospheric Sciences, Massachusetts Institute of Technology (NOAA Hollings Scholar)
- † Laura Queen, Physics, University of Oregon (NOAA Hollings Scholar)
- † Haylie Mikulak, Meteorology, University of Nebraska-Lincoln (Princeton University Cooperative Institute for Climate Science Summer Internship)
- † Tyler Janoski, School of Environmental and Biological Sciences, Marine Science and Meteorology, Rutgers University (NOAA Hollings Scholar Advisor and Senior Thesis Co-Advisor)
- † Kasturi Shah, Physics, Princeton University (Collaborator on Senior Thesis)
- † Melissa Wrzesien, Geological Sciences, University of North Carolina Chapel Hill (Collaborator on Senior Thesis)

TEACHING EXPERIENCE

- **Guest Lecture, Fall 2019:** GEO 427, Fundamentals of the Earth's Climate System, Princeton University
- **Guest Lecture, Fall 2015:** GLOB1-GC1030, International Political Economy, New York University
- **Guest Lecture, Summer 2014:** GLOB1-CE9905, Carbon-Constrained Economies, New York University
- **Guest Lecturer (2), Spring 2012:** GEO 202, Ocean, Atmosphere, and Climate, Princeton University
- **Guest Lecturer (2), Spring 2009 and 2008:** AOS 201B, Geophysical Fluid Dynamics II, UCLA
- **Guest Lecturer (2), Winter 2009:** AOS 201A, Geophysical Fluid Dynamics I, UCLA
- **Teaching Assistant, Spring 2008:** AOS 1, Climate Change: Puzzles and Policies, UCLA

SERVICE

BROAD COMMUNITY

- Electorate Nominating Committee, Atmospheric and Hydrospheric Sciences, *American Association for the Advancement of Science*, 2020-2022
- Honors Committee Member for the Flinn Award, American Geophysical Union, 2020
- Associate Editor, *Water Resources Research*, 2017-2020
- Honors Committee Member for the Cryosphere Section of the American Geophysical Union, 2016, 2017
- Judge for Princeton Women in Geosciences Elevator Pitch Practice, 2016
- Panelist Judge for American Geophysical Union Thriving Earth Exchange, 2015
- Co-founder and co-organizer of Princeton Women in Geosciences, a program to create and implement a mentoring and career development program for early career scientists working in the Geosciences at Princeton University (in the Geosciences Department and Atmospheric and Oceanic Sciences Program). This program has been replicated at other institutions and in other departments at Princeton University. Successfully funded by a proposal written for the Princeton University Dean of Graduate Studies and both member departments, 2012-2015
- Science Expert Panelist to the U.S. Fish and Wildlife Service to review the science associated with a proposal to list the wolverine as Threatened under the Endangered Species Act, 2014
- Applicant reviewer for Dissertation Initiative for the advancement of Climate Change ReSearch (DISCCRS) VIII Symposium, 2013
- Member of: American Geophysical Union, American Meteorological Society, and American Association for the Advancement of Science

EXHIBITS & K-12 ENGAGEMENT

- Science Expert to the Oregon Museum of Science and Industry, 2020
- General education engagement: career day speaker and responsive to students inquiries on science and scientific careers. Engaged with various schools and students nationally and internationally through giving classroom visits, answering questions via email, and Skype. 2010-Present
- Science Expert to the Chicago Symphony Orchestra for the *Beyond the Score* program for Debussy's *La Mer* performance. The program was first performed in Chicago in May 2010 and has since traveled to other cities, 2010

CONFERENCES & MEETINGS

- Co-organizer of Workshop: "Prospects for Multi-year Climate Predictability and Societally-relevant Climate Predictions", CLIVAR, 202X (delayed by Covid19)
- OSPA Judge, AGU Fall Meeting, 2019
- Co-convenor of session: "High Mountain Asia's Cryosphere: Collaborative research to address climate, hydrology, geodynamics and hazards", AGU Fall Meeting, 2019
- Meeting Design Team for High Mountain Asia Team (HiMAT) Meeting, NASA Goddard Space Flight Center, Greenbelt, MD, 2016
- Co-convener of session: "Cold season precipitation: projected changes in snow from observations, models and reanalyses", GEWEX Conference on Global Water and Energy Cycle, 2014

GFDL & NOAA

- Member, Diversity Equity and Inclusion Committee, GFDL, 2020-Present
- Drought Research Advisory Panel Member, NOAA National Integrated Drought Information System (NIDIS), 2019-Present
- Team Member, NOAA Eastern Region Climate Team, 2018-Present
- Member, Research Council (one of two laboratory management committees), GFDL, 2017-Present
- Science Panel Member, Climate.gov, 2016-Present
- Steering Committee Member, NOAA Forums (workshops for developing research priorities and best practices), Oceanic and Atmospheric Research Division of NOAA, 2016-2018
- Speaker on the subject of western U.S. snowpack, NOAA Science Days, March 2016
- Early Career Scientist Committee Member, GFDL, 2015-2016
- Co-organizer, Climate Variations and Predictability Group Career Development Discussion Program, 2014-2016

REFEREE

- Manuscripts: *Bulletin of the American Meteorological Society, Climatic Change, Climatic Change Letters, Climate Dynamics, Environmental Health Perspectives, Environmental Research Letters, Geophysical Research Letters, Hydrology and Earth System Sciences Discussions, Journal of Climate, Journal of Geophysical Research, Journal of Hydrometeorology, Nature, Nature Climate Change, Proceedings of the National Academy of Sciences, Science, Science Advances, The Cryosphere, Water Resources Research*
- Proposal Panelist for:
  – National Science Foundation
  – NASA
- Proposal Reviewer for:
  – NOAA Climate Observations and Monitoring Program
  – NOAA Sea Grant
  – Swiss National Science Foundation
- Assessments / Reports Expert Reviewer:
  –2020 Working Group I, Sixth Assessment Report, Intergovernmental Panel on Climate Change
  –2018 Special Report on the Ocean and Cryosphere in a Changing Climate, Intergovernmental Panel on Climate Change
  –2018 California's Fourth Climate Change Assessment
  –2017 Hindu Kush Himalayan Monitoring and Assessment Programme (HiMAP), Chapter 7

Published Media Interviews

Print / Online

Arizona Daily Star • Arizona Daily Sun • Associate Press • Bloomberg News • Business Insider • CBS Local • Chicago Tribune • Clean Technica • Climate Central • ClimateNexus • Climatewire • CNET • CNN • Daily Mail • The Desert Sun • Digital Journal • Discovery.com • Environmental Health Perspectives • Grist • High Country News • Huffington Post • Independent • International Business Times • KQED • KUOW • Las Vegas Sun • LiveScience • McClatchyDC • Miami Herald • Mother Jones • National Geographic • News Deeply • Newsweek • New York Times • NOLA.com • Notizie Scientifiche • Ocano Magazine (Spain) • Phys.org • Popular Science • Refinery29 • San Diego Union-Tribune • Science & Vie • Scientific American • Science Daily • Third Pole • Time • USA Today • U.S. News & World Report • Vox.com • Washington Post • WeatherNationtv.com • World is One News • ZME Science

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Associate Press • Business Insider • KPCC (Southern California) • KUOW (Seattle) • Michigan Radio • National Public Radio • Oregon Public Broadcasting • WMNF (Florida)