Daniel L. Swain, Ph.D.

Climate Scientist, California Institute for Water Resources
University of California Agriculture and Natural Resources

Research Partner, Weather Extremes Across Scales Section
NSF National Center for Atmospheric Research, Boulder, CO

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Blog: www.weatherwest.com
YouTube: @weatherwest
Twitter/X: @Weather_West
Bluesky: @weatherwest.bsky.social

Updated: Nov. 4, 2026

Research interests

Climate change, extreme weather, regional hydroclimate, wildfire risk and dynamics, extreme event detection & attribution, natural hazard & disaster risk, climate adaptation, science communication and engagement

Education

Ph.D., Earth System Science, Stanford University 2016
Dissertation: "Character and causes of changing North Pacific climate extremes"
Advisor: Dr. Noah Diffenbaugh

B.S., Atmospheric Science, University of California, Davis (Highest Honors) 2011

Professional experience

Scientific Research Appointments

Climate Scientist (Associate Researcher) Nov. 1 2024-Present
California Institute for Water Resources,
University of California Agriculture and Natural Resources (UC ANR), Davis, CA

Research Partner, Weather Extremes Across Scales Section May 2025-Present
Research Fellow, Capacity Center for Weather & Climate Extremes Sep. 2018-May 2025
NSF National Center for Atmospheric Research, Boulder, CO

Climate Scientist (Associate Researcher) Jul. 2024-Jun. 2025
Climate Scientist (Assistant Researcher) Sep. 2018-Jun. 2024
Institute of Environment & Sustainability, University of California, Los Angeles

California Climate Fellow 2018-2024
The Nature Conservancy, Sacramento, CA

NatureNet Postdoctoral Fellow 2016-2018
Institute of Environment & Sustainability, University of California, Los Angeles

Graduate Research Assistant 2011-2016
Climate and Earth System Dynamics Group, Stanford University, Stanford, CA

Private Sector Engagement

Senior Wildfire Advisor 2025-Present
Inigo Insurance, London, UK

Climate and Wildfire Advisor 2022-Present
ReAsk, Sydney, Australia

Climate and Natural Hazard Advisor 2021-Present
Climate Check, San Francisco, California, USA

Climate and Natural Hazard Advisor 2021-2026
Google X ("The Moonshot Factory"), Mountain View, California, USA

Meteorological Advisor 2014-2021
Bloomsky, Redwood City, California, USA

Selected honors and awards

Stephen H. Schneider Award for Outstanding Climate Science Communication	2026
Eric and Wendy Schmidt Award for Excellence in Science Communication, National Academies of Sciences, Engineering, and Medicine	2026
Mark Dubois Award, Friends of the River	2026
"TIME100 Next" List, TIME Magazine	2025
"Grist 50" List, Grist Magazine	2025
"Future Perfect 50" List, Vox Media	2024
DesignSafe Dataset Award (co-recipient with Xingying Huang), NSF/Univ. of Texas, Austin	2023
Deseret Magazine "Most Important Changemaker in the West"	2022
Vice Magazine "Human of the Year"	2020
National Academy of Sciences Kavli Fellow	2019
NatureNet Postdoctoral Fellowship, The Nature Conservancy/University of California	2016-2018
ARCS Fellowship, Achievement Rewards for College Scientists Foundation	2015-2016
Switzer Environmental Fellowship, Robert and Patricia Switzer Foundation	2015-2016
Graduate Student Award for Scholarly & Research Achievement, Stanford University	2015
Centennial Teaching Assistant Award, School of Earth Sciences, Stanford University	2013
College Medal, College of Agricultural & Environmental Sciences, Univ. of California, Davis	2011
Departmental Citation, Atmospheric Science, University of California, Davis	2011

Grants and other external funding

Principal Investigator, Tilia Fund Climate Communication Grant 2024-2029
Anticipated award total: ~$275,000

Co-Investigator, Aon Reinsurance Solutions grant, "Future Fire Weather Scenarios," 2023-2024
Award total: $20,000 (UCLA portion)

Co-Principal Investigator, The Nature Conservancy of California grant, "Climate Science 2018-2024

and Managing Nature to Minimize the Damage of Extreme Events," **Award total: $450,410**

Co-Principal Investigator, National Science Foundation Prediction of and Resilience against Extreme Events (NSF PREEVENTS) Program, Track 2: "COEXIST: COnnected EXtremes In Space and Time," Award ID: 1854761, **Award total: $345,446** (UCLA portion) 2019-2024

Principal Investigator, California Department of Water Resources grant: "Developing plausible extreme storm and flood scenarios for disaster resilience planning and emergency response exercises in California," **Award total: $140,000** 2021-2023

Principal Investigator, Yuba Water Agency grant: "Developing California Megastorm Scenarios for ARkStorm 2.0," **Award total: $60,000** 2021-2022

Publications

47. Bruneau, N., Dixon, R.S., **Swain, D.L.**, Croad, H., and T. Loridan. Increased United States Tropical Cyclone Risk in the Wake of a "Super" El Niño event, *Proceedings of the National Academy of Sciences*, in press, 2026. 2026

†46. Swain, D.L. Strong human fingerprint on low snowpack amid increasing volatility, *Proceedings of the National Academy of Sciences*, 123, e2620765123, 2026. 2026

45. Kalashnikov, Dmitri A., Abatzoglou, J.T., and **D.L. Swain**. Climatology and trends of annual maximum subdaily precipitation in the western United States. *Weather and Climate Extremes*, 53, 100915. doi: 10.1016/j.wace.2026.100915, 2026. 2026

†44. Swain, D.L. Re-thinking resilience in a thirstier atmosphere [in "Stewardship Under Shifting Drought Baselines"], Kreibich, H., Swain, D. L., Chang, F.-J., Reichstein, M., Benson, V., Holden, P., et al. *One Earth*, 9(5). doi:10.1016/j.oneear.2026.101707, 2026. 2026

43. Muñoz-Castro, E., Anderson, B.J., Astagneau, P.C., **Swain, D.L.**, Mendoza, P.A., and Brunner, M.I. How well do hydrological models simulate streamflow extremes and drought-to-flood transitions? *Hydrology and Earth System Sciences*, 30(3), 825–848, 2026. 2026

42. †Swain, D.L. and J.J. Stephens. Wet-to-Dry Cascades May Increasingly Drive Wildfire Activity in Non-Forested Ecosystems, and Further Amplify the Risk of Urban Interface Fire Disasters, in a Warming Climate. *Global Change Biology*, 32(1), e70681. doi: 10.1111/gcb.70681, 2026. 2026

41. Camponuri, S.K., Heaney, A.K., Cooksey, G.S., Vugia, D.J., Jain, S., **Swain, D.L.** Balmes, J., Remais, J.V., and Head, J.R. Recent and Forecasted Increases in Coccidioidomycosis Incidence Linked to Hydroclimatic Swings, California, USA. *Emerging Infectious Diseases,* 31(5):1028-1032, doi: 10.3201/eid3105.241338, 2025. 2025

40. Lee, P.S., **Swain, D. L.,** and Johnson, R. Climate Change and Coccidioidomycosis. *Journal of the American Medical Association.* doi: 10.1001/jama.2024.27274, 2025. 2025

39. †Swain, D. L., Abatzoglou, J. T., Albano, C. M., Brunner, M., Diffenbaugh, N. S., Kolden, C., Prein, A.F., Singh, D., Skinner, C.B., Swetnam, T.W., and Touma, D. Increasing hydroclimatic whiplash can amplify wildfire risk in a warming climate. *Global Change Biology*, 31: e70075. doi: 10.1111/gcb.70075, 2025. 2025

38. Swain, D. L., Prein, A. F., Abatzoglou, J. T., Albano, C. M., Brunner, M., Diffenbaugh, N. S., Singh, D., Skinner, C.B., and Touma, D. Hydroclimate volatility on a warming Earth. *Nature Reviews* 2025

Earth & Environment, 6(1), 35-50. doi:10.1038/s43017-024-00624-z, 2025. ***[Essential Science Indicators (ESI) Hot Paper (top 0.1%); Essential Science Indicators (ESI) Highly Cited Paper (top 1%); Selected as featured article in Nature Portfolio Collection on Holocene Hydroclimate]***

37. †Swain, D.L. On the Job: Daniel Swain, Climate Scientist. *Weatherwise*, **77**:1, 53-55, doi: 10.1080/00431672.2024.2284612, 2024. 2024

36. †Swain, D.L. Support climate scientists in engaging the public. *Nature*, **624**, 9, doi: 10.1038/d41586-023-03436-1, 2023. 2023

35. Swain, D.L., J.T. Abatzoglou, C. Kolden, K. Shive, D. A. Kalashnikov, D. Singh, and E. Smith. "Climate change is narrowing and shifting prescribed fire windows in western United States." *Communications Earth and Environment*, **4**, 340, doi: 10.1038/s43247-023-00993-1, 2023. 2023

34. Gonzales, K.R., **Swain, D.L.**, Roop, H.A., and N.S. Diffenbaugh. Quantifying the Relationship Between Atmospheric River Origin Conditions and Landfall Temperature. *Geophysical Research Letters*, 127, e2022JD037284, doi: 10.1029/2022JD037284, 2022. 2022

33. ++Huang, X.Y. and **D.L. Swain**. Climate change is increasing the risk of a California Megaflood. *Science Advances*, 8, 32, doi: 10.1126/sciadv.abq0995, 2022. 2022
(Equal Contributions /Co-first authors); ***[Essential Science Indicators (ESI) Highly Cited Paper (top 1%)]***

32. Kalashnikov, D.A., Abatzoglou, J.T., Nauslar, N.J., **Swain, D.L.**, Touma, D., & D. Singh. Meteorological factors and elevation dependence of dry lightning in central and northern California. *Environmental Research: Climate*, 1, 025001, doi: 10.1088/2752-5295/ac84a0, 2022. 2022

31. Touma, D., Stevenson, S., **Swain, D.L.**, Singh, D., Kalashnikov, D., and X.Y. Huang. Climate change increases risk of extreme rainfall following wildfire in the western United States. *Science Advances,* 8, eabm0320, doi: 10.1126/sciadv.abm0320, 2022. 2022

30. Fish, M.A., Done, J., **Swain, D.L.**, Wilson, A.M., Michaelis, A.C., Gibson, P.B., and F. Martin Ralph. Large-scale environments of successive atmospheric river events leading to compound precipitation extremes in California. *Journal of Climate*, 35, 1515–1536, doi: 10.1175/JCLI-D-21-0168.1, 2022. 2022

29. Kalashnikov, D., Schnell, J.L., Abatzoglou, J.T., **Swain**, **D.L.** and D. Singh. Increasing co-occurrence of fine particulate matter and ground-level ozone extremes in the western United States. *Science Advances*, 8, eabi9386, doi: 10.1126/sciadv.abi9386, 2022. 2022

28. Brunner, M.I., **Swain, D.L.**, Wood, R.R., Willkofer, F., Done, J.M., Gilleland, E., and R. Ludwig. An extremeness threshold determines the regional response of floods to changes in rainfall extremes. *Communications Earth and Environment*, 2, doi: 10.1038/s43247-021-00248-x, 2021. 2021

27. Goldenson, N., Thackeray, C.W., Hall, A., **Swain, D.L.**, and N. Berg. Using large ensembles to identify regions of systematic biases in moderate to heavy daily precipitation. *Geophysical Research Letters*, 48, e2020GL092026, doi: 10.1029/2020GL092026, 2021. 2021

26. †Swain, D.L. A shorter, sharper rainy season amplifies California wildfire risk. *Geophysical Research Letters,* 48, e2021GL092843, doi: 10.1029/2021GL092843, 2021. 2021

25. Brunner, M.I., **Swain, D.L.**, Gilleland, E., and A. Wood. Increasing importance of temperature as a driver of streamflow drought spatial extent. *Environmental Research Letters*, 2021

16, 024038, doi: 10.1088/1748-9326/abd2f0, 2021.

24. Gonzales, K.R., **Swain**, **D.L.,** Barnes, E.A., and N.S. Diffenbaugh. Moisture vs. Wind-Dominated Flavors of Atmospheric Rivers. *Geophysical Research Letters,* 47, e2020GL090042, doi: 10.1029/2020GL090042, 2020. 2020

23. Swain, D.L., Wing, O.E.J., Bates, P.D., Done, J.M., Johnson, K.A., and D.R. Cameron. Increased flood exposure due to climate change and population growth in the United States. *Earth's Future*, 8, e2020EF00177, doi: 10.1029/2020EF001778, 2020. 2020

22. Persad, G.G., **Swain, D.L.**, Kouba, C., and J.P.O. Partida. Inter-Model Agreement on Projected Shifts in California Hydroclimate Characteristics Critical to Water Management. *Climatic Change,* 162, 1493–1513, doi: 10.1007/s10584-020-02882-4, 2020. 2020

21. Abatzoglou, J., Smith, C., **Swain, D.L.**, Ptak, T., and C. Kolden. Population exposure to pre-emptive de-energization aimed at averting wildfires in Northern California. *Environmental Research Letters*, 15, 094046, doi: 10.1088/1748-9326/aba135, 2020. 2020

20. ***Goss, M., **Swain, D.L., Sarhadi, A., Kolden, C.A., Abatzoglou, J.T., Williams, A.P., and N.S. Diffenbaugh. Climate change is increasing the risk of extreme autumn wildfire conditions across California. *Environmental Research Letters*, 15 (9), 094016, doi: 10.1088/1748-9326/ab83a7, 2020. ***[Essential Science Indicators (ESI) Highly Cited Paper (top 1%)]; Named "Best Article of 2020" by Environmental Research Letters Editorial Board (2020); IOP Publishing Top Cited Paper Award (2023)]*** 2020

19. Huang, X., **Swain, D.L.**, and A. Hall. Large ensemble downscaling of extreme atmospheric River storms in California reveals large increase in fine-scale precipitation. *Science Advances*, 6, eaba1323, doi: 10.1126/sciadv.aba1323, 2020. 2020

18. Brunner, M.I., Gilleland, E., Wood, A., **Swain, D.L.**, and M. Clark. Spatial dependence of floods shaped by spatiotemporal variations in meteorological and land-surface processes. *Geophysical Research Letters,* 47*,* e2020GL088000*,* doi: 10.1029/2020GL088000, 2020. 2020

17. †Swain, D.L., Singh, D., Touma, D., and N.S. Diffenbaugh. Attributing extreme events to climate change: A new frontier in a warming world. *One Earth*, 2, 522-527, doi: 10.1016/j.oneear.2020.05.011, 2020. 2020

16. Huang, X., **Swain, D.L.**, Walton, D.B., Berg, N., Stevenson, S., and A. Hall, Simulating and Evaluating Atmospheric River-Induced Precipitation Extremes along the U.S. Pacific Coast: Case Studies from 1980-2017. *Journal of Geophysical Research: Atmospheres,* 125, e2019JD031554, doi: 10.1029/2019JD031554, 2020. 2020

15. Gibson, P.B., Waliser, D.E., Guan, B., DeFlorio, M.J., and **D.L. Swain**. Ridging associated with drought in western and southwestern United States: characteristics, trends and predictability. *Journal of Climate,* 33, 2485-2408, doi: 10.1175/JCLI-D-19-0439.1, 2020. 2020

14. Gonzales, K.R., **Swain, D.L.**, Barnes, E.A., K. Nardi, and N.S. Diffenbaugh. Recent warming of landfalling atmospheric rivers along the West Coast of the United States. *Journal of Geophysical Research: Atmospheres,* 124, 6810-6826, doi: 10.1029/2018JD029860, 2019. 2019

13. †Swain, D.L., 2019. Is society ready for precipitation whiplash?, In: "Toward a Resilient Global Society: Air, Sea Level, Earthquakes, and Weather." *Earth's Future*, 7, 854-864, doi: 10.1029/2019EF001242, 2019. 2019

12. Thackeray, C.W., A.M. DeAngelis, A. Hall, **D.L. Swain**, and X. Qu. On the Connection Between Global Hydrologic Sensitivity and Regional Wet Extremes. *Geophysical Review Letters,* 45, doi: 10.1029/2018GL079698, 2018. 2018

11. Touma, D., A. M. Michalak, **D.L. Swain**, and N.S. Diffenbaugh. Characterizing the spatial characteristics of extreme precipitation over the United States. *Journal of Climate,* 31, 8023-8037, doi: 10.1175/JCLI-D-18-0019.1, 2018. 2018

10. Swain, D.L., B. Langenbrunner, J.D. Neelin, and A. Hall. Increasing precipitation volatility in twenty-first-century California. *Nature Climate Change,* 8, 427-433, doi: 10.1038/s41558-018-0140-y., 2018. ***[Essential Science Indicators (ESI) Highly Cited Paper (top 1%)]*** 2018

9. Swain, D.L., D. Singh, D.E. Horton, J.S. Mankin, T. Ballard, and N.S. Diffenbaugh. Remote linkages to anomalous winter atmospheric ridging over the northeastern Pacific. *Journal of Geophysical Research: Atmospheres*, 122, 12,194-12,209, doi: 10.1002/2017JD026575, 2017. 2017

8. Diffenbaugh, N.S., Singh, D., Mankin, J.S., Charland, A., Horton, D.E., Haugen, M., **Swain, D.L.**, Rajaratnam, B., and Touma, D. Quantifying the influence of global warming on unprecedented extreme climate events. *Proceedings of the National Academy of Sciences*, 114, 4881-4886, doi: 10.1073/pnas.1618082114, 2017. ***[Essential Science Indicators (ESI) Highly Cited Paper (top 1%)]*** 2017

7. Singh, D., **D. L. Swain**, J.S. Mankin, D.E. Horton, L.N. Thomas, B. Rajaratnam, and N.S. Diffenbaugh. Recent amplification of the North American winter temperature dipole. *Journal of Geophysical Research: Atmospheres*, 121, 9911-9928, doi: 10.1002/2016JD025116, 2016. 2016

6. Swain, D. L., Horton, D.E., Singh, D., and N.S. Diffenbaugh. Trends in atmospheric patterns conducive to seasonal precipitation and temperature extremes in California. *Science Advances*, 2, e1501344, doi: 10.1126/sciadv.1501344, 2016. 2016

5. Swain, **D.L.,** Lebassi-Habtezion, B., and N.S. Diffenbaugh. Evaluation of non-hydrostatic simulations of Northeast Pacific atmospheric rivers and comparison to in-situ observation. *Monthly Weather Review*, 143, 3556-3569, doi: 10.1175/MWR-D-15-0079.1, 2015. 2015

4. Horton, D.E., N.C. Johnson, D. Singh, **D.L. Swain**, B. Rajaratnam and N.S. Diffenbaugh. Contribution of changes in atmospheric circulation patterns to extreme temperature trends. *Nature*, 522, 465–469, doi: 10.1038/nature14550, 2015. ***[Essential Science Indicators (ESI) Highly Cited Paper (top 1%)]*** 2015

3. Diffenbaugh, N.S., **D.L. Swain** and D. Touma. Anthropogenic warming has increased drought risk in California. 112, 3931-3936, *Proceedings of the National Academy of Sciences*, doi: 10.1073/pnas.1422385112, 2015. ***[Essential Science Indicators (ESI) Highly Cited Paper (top 1%)]*** 2015

2. †Swain, D.L. A tale of two California droughts: Lessons amidst record warmth and dryness in a region of complex physical and human geography. *Geophysical Research Letters*, doi:10.1002/2015GL066628, 2015. 2015

1. *Swain, D.L., M. Tsiang, M. Haugen, D. Singh, A. Charland, B. Rajaratnam and N.S. Diffenbaugh. The extraordinary California drought of 2013-2014: character, context, and the role of climate change [in "Explaining Extremes of 2013 from a Climate Perspective"]. *Bulletin of the American Meteorological Society*, 95 (9), S3–S7, 2014. 2014

++ = Equal contributions/co-first authorship

† = Perspective, commentary, opinion piece, or subject matter primer

Publications in progress

Yang, Y., Biswas, A., Pokhrel, Chen, C., **Swain, D.L.**, Callahan, C., and Zhao, R. Global amplification of water whiplash revealed by terrestrial water storage *(in review)*

Muñoz-Castro, E., Anderson, B.J., **Swain, D.L.**, and M.I. Brunner. The role of antecedent drought conditions and short-term meteorology in shaping flood characteristics *(in review)*

Wang, P., Azar, A., and **Swain, D.L.** "Population exposure to hydroclimate whiplash in the contiguous United States" (*in review)*

Camponuri, S.K., Schollaert, C., Head, J.R., Heaney, A.K., Campbell, G., Weaver, A.K., Couper, L.I., Morgan Bustamante, B.L., Sondermeyer-Cooksey, G., Karmarkar, E., Yu, A., Eisen, E.A., **Swain, D.L.**, Marlier, M.E., Remais, J.V. Climate change is projected to intensify and redistribute coccidioidomycosis incidence in California (*in review*)

Webb, M.J., Wein, A.M., **Swain, D.L.**, Imgarten, M., Fennema, S.J., Corringham, T.W., Blum, M., Albano, C.M. Long-Duration Flooding Disproportionately Affects Socially Vulnerable Communities *(in preparation)*

Skinner, C., Barlow, M., Singh, D., **Swain, D.L.** Observed and Projected Lengthening of the Extreme Heat Season (*in review*)

Science communication and public-facing science engagement

Author & founder, Weather West blog (www.weatherwest.com) 2006-Present
Write regular articles focusing on a wide range of California/western North America weather and climate topics; answer questions from public, decision-makers, and scientists regarding meteorology/climatology/general science/science policy. Strong emphasis on making scientific and technical topics accessible to a broad audience (>1 million visitors each year).

Climate, weather, wildfire, and Earth science engagement via social media 2014-Present
Weather, climate, Earth science, and public policy discussion and outreach via Twitter as @Weather_West (>10 million views each year) and on YouTube (@WeatherWest) as well as Bluesky, Threads, & Mastodon. Daily direct engagement with public, scientists, wildland firefighters, water managers, local & regional government, and local to international policymakers.

Expert media source & public science communication 2013-present
Frequent, sustained engagement with local, national, and international news media on weather, climate, wildfire, and disaster-related issues.

News media engagement by the numbers:

- >200 media interviews on average per year
- ~2,000 interviews cumulatively over career
- >375 distinct news outlets

- >770 individual journalists
- ~44% newspaper, ~27% magazine & digital, ~16% television, ~13% radio & podcast.
- Most frequent (20-80+ interviews each): New York Times, Los Angeles Times, San Francisco Chronicle, CNN, Bloomberg, Associated Press, NPR, Washington Post, Sacramento Bee, KQED, USA Today, The Guardian, BBC, NBC News, Inside Climate News, San Jose Mercury News, LAist/KPCC, Grist
- Recurring (10–19 each): WIRED, National Geographic, The Weather Channel, CBS News, ABC News, E&E News, Capital Public Radio, The Atlantic, Reuters, Wall Street Journal, Mashable, Axios, Yahoo News, BuzzFeed, Santa Rosa Press Democrat, ABC7
- Also including: 60 Minutes, PBS NewsHour, The New Yorker, Science, Nature, The Economist, Financial Times, MSNBC, Rolling Stone, Al Jazeera, CBC, Democracy Now, TIME, Newsweek

Podcast Appearances (50+ named programs, ~95 appearances):
Network and national: StarTalk (Neil deGrasse Tyson), NPR Short Wave, Living on Earth, Science Friday (NPR), The Assignment (CNN), NOVA (PBS), What on Earth (CBC), What Next: TBD (Slate), Factually (Adam Conover), In the Bubble (Andy Slavitt), Against the Odds (Wondery), TILclimate (MIT), Boiling Point (LA Times), The Weather Geeks (The Weather Channel)

Climate and science independents: American Adapts, California Adapts, Generation Anthropocene, The Climate Pod, Disasterproof, This Week in Science, EarthSky, GeoTrek, Across the Sky, The Fire Break, The Lookout, Water Talk, Climate Chat, Science Talk, The Climate Dispatch, Lawless Planet, Scholars' Circle, Who What Why, California Sun

Regional, agricultural and trade: Garden Basics with Farmer Fred, Voice of California Agriculture, Grown in the Valley, Full Circle, Rising Tide Ocean, Sustainability Leaders, Berkeley Climate Change Network, Signals of Change, Net Zero Speaks, Risky Science, The Civil Engineering Podcast, Abwaan Chronicles, What Is California, Union of Concerned Scientists, WebMD Health Discovered, The Everything Story, Last Born

Science writing and film production for broad audiences

Scientific and Technical Advisor, "Climate Extremes: Agriculture" Documentary film; release date 05/31/2026. — 2026

Op-Ed rebuttal, "Absolutely not." In response to: "Should the world shift away from curbing emissions in the fight against climate change?" Debatable column, *Semafor*. 14 Nov. 2025. — Nov. 2025

Scientific and Technical Advisor, "Climate Extremes: Extreme Weather" Documentary film; release date 07/10/2025. — 2025

Scientific and Technical Advisor, "Climate Extremes: At The Abyss?" Documentary film; release date 10/25/2024. — 2024

Swain, D.L. Extreme Weather Page-A-Day Calendar 2025: A Year of Fire Tornadoes, Atmospheric Rivers, and Other Wild Weather Events. Workman Publishing Company, ISBN-9781523525317, 6 August 2024. — 2024

Swain, D.L. Extreme Weather Page-A-Day Calendar 2024: A Year of Fire Tornadoes, Atmospheric Rivers, and Other Wild Weather Events. Workman Publishing Company, ISBN-9781523520886, 8 August 2023. — 2023

Swain, D.L. "The Deadly Dynamics of Colorado's Marshall Fire," *Outside Magazine*, — Jan. 2022

11 January 2022.

Swain, D.L., Kolden, C., and J. Abatzoglou, "The era of megafires: the crisis facing California and what will happen next," perspective in *The Guardian*, 08 August 2018. Aug. 2018

Swain, **D.L.**, *Outside Magazine* & KQED Public Media contributor, various articles 2015-2016

Public policy engagement

Invited Panelist, "Super El Niño" Town Hall meeting hosted by California State Senator Mike McGuire Aug. 2026

Peer-reviewed works cited 425 times across 328 policy documents (per Sage PolicyProfiles) 2014-present

Member, Scientific Advisory Committee for the Delta Stewardship Council's Delta Science Program 2021-present

Member, Public Policy Institute of California Water Policy Research Network 2018-present

Invited Presentation, Firescope Predictive Services Committee, State of California Apr. 2025

Invited Seminar, National Park Service Climate Change Response Program Feb. 2025

Invited Presentation, White House Office of Science and Technology Policy (OSTP) & U.S. Global Change Research Program delivered to U.S. Subcommittee on Global Change Research (SGCR) and the U.S. Subcommittee on Climate Services Jan. 2025

Expert Testimony, Public Hearing on Climate Action, City of Hayward/Climate Protection and Restoration Initiative Public, Hayward, CA*****. Aug. 2024

Invited Panelist, White House Council of Economic Advisers Roundtable on Climate Risk Modeling, The White House, Washington, D.C. Sep. 2023

Expert Testimony, Hearing on California's Preparedness for and Response to Extreme Atmospheric River Incidents, California Assembly Joint Hearing by Committee on Emergency, Committee on Utilities and Energy, & Committee on Water, Parks, and Wildlife Feb. 2023

Invited Panelist, California Governor's Office of Planning and Research (OPR) Roundtable On Water Management and California's 5th Climate Change Assessment Sep. 2022

Invited Expert, science briefing on extreme heat and climate change, office staff of U.S. Senator Alex Padilla Sep. 2022

Invited Panelist, California Senate Democratic Caucus panel on climate change Mar. 2022

Invited Panelist, Climate Change Town Hall meeting hosted by California State Senator Mike McGuire Oct. 2021

Invited Expert, science briefing on extreme atmospheric rivers, climate change, and flood risk in California, United States Representative Terrance John Cox Jul. 2020

Invited Expert, science briefing on weather extremes and climate change, United States Oct. 2019

Senator Sheldon Whitehouse

Invited scientific/professional presentations

"Looking Beyond the Mean: The Critical Importance of Considering Event Sequencing and Non-Stationary Variability in Weather to Climate-Scale Risk Assessments," American Geophysical Union Annual Meeting, Advances in Physical Climate Risk Assessment for the Financial and Insurance Sectors session, San Francisco, CA **(invited speaker)** Dec. 2026

"Managing risk from increasing whiplash—Hydroclimate and beyond" 29th annual Energy and Climate Research Seminar, Electric Power Research Institute (EPRI), Washington, D.C., **(invited speaker)** May 2026

"Dynamics and impacts of increasing volatility in the warming climate system, from the hydrologic cycle and beyond," Civil & Environmental Engineering & Hydrologic Science and Engineering Environmental Seminar, Colorado School of Mines, Golden, CO **(invited speaker)** Feb. 2026

"Increasing volatility in the warming climate system, from the hydrologic cycle and beyond," Land, Air, and Water Resources Faculty Seminar, University of California, Davis, Davis, CA **(invited speaker)** Oct. 2025

"Innovations in addressing compound-hazard risks" panel, *Compounding, Cascading, and Critical Risks to U.S. Infrastructure and Security Workshop*, Portland State University, Portland, OR **(invited panelist)** Aug. 2025

"Beware the Expanding Atmospheric Sponge!," *Sci Foo Camp 2025*, O'Reilly Media, Digital Science, and Google, Mountain View, CA **(invited participant and speaker)** Jul. 2025

"Climate communication in an era of epistemic upheaval," *Ecology and Evolutionary Biology Seminar*, University of California, Santa Cruz, Santa Cruz, CA **(invited speaker)** May 2025

"Shifts in seasonality and increases in hydroclimate whiplash are increasing California wildfire risk," *California Fire Science Seminar Series*, California Fire Science Consortium/UC Berkeley*** (invited speaker)** Feb. 2025

"Increasing hydroclimate whiplash in California: Implications for California's grasslands and shrublands," *Rustici Rangeland Science Symposium*, University of California, Davis, Davis, CA*** (invited speaker)** Jan. 2025

"Increasing Hydroclimate Whiplash on a Warming Earth," *DAES/ASRC Joint Colloquium Series*, State University of New York, Albany (SUNY Albany) **(invited speaker)** Oct. 2024

"An overview of ARkStorm 2.0 and its implications: California flood risk looms large in a warming climate," 2024 California Extreme Precipitation Symposium (CEPSYM), University of California, Davis, Davis, CA **(invited speaker)** Jul. 2024

"Hydroclimate volatility on a warming Earth," *Earth Day Speaker Series*, National Science Foundation, Arlington, VA*** (invited speaker)** — Apr. 2024

"Increasing whiplash due to climate change: Perspectives on volatility in the hydrologic cycle (and beyond) in a warming world," *NASA Global Modeling and Assimilation Office (GMAO) Seminar Series on Earth System Science*, NASA Goddard Space Flight Center, Greenbelt, MD **(invited speaker)** — Mar. 2024

"Will increasing 'hydroclimate whiplash' in a warming climate amplify co-seismic hazards in California (and beyond)?" *USGS Northern California Earthquake Hazards Workshop*, Moffett Field, CA*** (invited keynote speaker)** — Jan. 2024

"ARkStorm 2.0: An extreme multi-week winter storm and flood scenario for California reimagined for the climate change era," *California Floodhub Discussion,* University of California Berkeley Center for Catastrophic Risk Management & California Department of Water Resources, Berkeley, CA*** (invited speaker)** — Nov. 2023

"Worse droughts, but also more severe floods: Increasing hydroclimate volatility in a warming California," *California Islands Climate Change Workshop*, *California Islands Symposium*, Ventura, CA* **(invited keynote speaker)** — Nov. 2023

"Thinking (critically) about the most "extreme extremes" in a warming climate," *Sci Foo Camp 2023*, Googleplex, Mountain View, CA **(invited speaker and participant)** — Jul. 2023

"Increasing hydroclimate whiplash in a warming climate: Implications for the future of California water," *UC Davis Institute of the Environment Seminar*, University of California, Davis **(invited speaker)** — Apr. 2023

"Understanding extremes in a warming climate: On acknowledging uncertainty, embracing complexity, and asking societally relevant questions," *American Physical Society Annual Meeting*, Chicago, IL*** (invited speaker)** — Mar. 2022

"Rising California flood risk from stronger, wetter atmospheric rivers in a warming climate," *California Extreme Precipitation Symposium*, University of California, Davis*** (invited speaker)** — June 2021

"A worsening wildfire crisis in California and the broader West: The role of climate change," Cat Risk Management 2021 Conference, Reinsurance Association of America*** (invited speaker)** — Mar. 2021

"Sharpening seasonality and shifting hydrology: implications for wildfire and flood risk in a warming California," *Geological and Planetary Sciences Division Seminar*, California Institute of Technology, Pasadena, CA*** (invited speaker)** — Mar. 2021

"Climate communication in the Twitter era: Challenges, opportunities, and some personal reflection," *American Geophysical Union Fall Meeting*, San Francisco, CA*** (invited speaker)** — Dec. 2020

"Regional downscaling of large ensemble simulations as a tool for understanding changing hydroclimatic extremes in a warming climate," *CLIVAR Large Ensembles Workshop*, Boulder, CO **(invited speaker)** — Jul. 2019

"Hydroclimatic intensification in a warming world: is society ready for increasing precipitation whiplash?" *American Geophysical Union Fall Meeting*, Washington, D.C. **(invited speaker)** — Dec. 2018

"Thinking about climate risk in an era of extremes: California's increasingly wide swings between drought and flood," *Department of Geography Seminar*, University of California, Berkeley **(invited lecturer)** Oct. 2018

"Atmospheric rivers as a scientific (and conversational) bridge between weather and climate," *International Atmospheric Rivers Conference*, Scripps Institute of Oceanography, La Jolla, CA **(invited speaker)** Jun. 2018

"California's increasingly extreme climate future," Rusch Honors Colloquium, Viterbi School of Engineering, Univ. of Southern California, Los Angeles, CA **(invited lecturer)** Nov. 2017

"Causes and impacts of climate change—a California perspective," Climate and Law Policy Seminar, UCLA School of Law, Los Angeles, CA **(invited lecturer)** Sep. 2017

"Teleconnections and regional impacts under anthropogenic forcing" & "Global warming influence on extreme events," *US Climate Variability and Predictability Program (CLIVAR) Summit*, Baltimore, MD **(invited speaker and panelist)** Aug. 2017

"Trends in persistent seasonal-scale atmospheric circulation patterns responsible for precipitation and temperatures extremes in California," *American Geophysical Union Fall Meeting*, San Francisco, CA **(invited speaker)** Dec. 2015

"Drought causes," *American Geophysical Union Chapman Conf. on California Drought: Causes, Impacts, & Policy*, Univ. of California, Irvine **(invited speaker)** Apr. 2015

"The extraordinary 2012-2015 drought in California and its context in a warming world," *Water Scarcity in the West: Past, Present, Future Conference*, Univ. of California, Davis **(invited speaker and panelist)** Apr. 2015

"Persistent atmospheric patterns and the ongoing California drought: the role of the Ridiculously Resilient Ridge," *NASA Earth Science Seminar*, NASA Ames, Mountain View, CA **(invited speaker)** Mar. 2015

"The extraordinary California drought of 2012-2015: Historical context and the role of climate change," PACLIM *Pacific Climate Workshop 2015*, Pacific Grove, CA **(invited speaker)** Mar. 2015

"The extraordinary California drought of 2012-2015: Historical context and the role of climate change," *Atmosphere and Energy Departmental Seminar*, Stanford University, Stanford, CA **(invited speaker)** Mar. 2015

Academic service activities and professional affiliations

Journal Manuscript Referee: *Geophysical Research Letters (29 reviews), Journal of Climate (14 reviews), Journal of Geophysical Research—Atmospheres (7 reviews), Environmental Research Letters (5 reviews), Science Advances (4 reviews), Proceedings of the National Academy of Sciences (8 reviews), Bulletin of the American Meteorological Society, (3 reviews), Climatic Change (2 reviews), International Journal of Climatology (2 reviews), Scientific Reports (2 reviews), Communications Earth and Environment (4 reviews), Advances in Water Resources (1 review), Earth's Future (4 reviews), Nature (1 review), Nature Climate Change (1 review), Nature Communications (1 review), PNAS Nexus (1 review), Global Change Biology (3 reviews), Water Resources Research (1 review)* 2013-present

Co-Organizer and Lead Reviewer, "Climate Science & Communication Fund" via 2025-present

a broad consortium of private philanthropy organizations

Ad Hoc Reviewer, National Science Foundation (NSF) STEM K-12 Program (2026), NSF Climate and Large-scale Dynamics (CLD) Program (2024), NSF Paleo Perspectives on Climate Change (P2C2) Program (2021), NSF Industry-University Research Partnerships Program (2021) — 2021-present

External Reviewer, "Priorities for California's Water: Advice for the Incoming Governor" report, Public Policy Institute of California — 2026

Core Committee Member, University of California Agriculture and Natural Resources Search Committee — 2025

Expert Reviewer, California's Fifth Climate Change Assessment — 2025

Expert External Reviewer, Corporation for Public Broadcasting (PBS), proposed PBSKIDS digital and broadcast content pertaining to weather/climate — 2024

External Reviewer, University of California personnel advancement dossiers — 2022

Associate Editor, *Frontiers in Climate*, Climate, Ecology, and People section — 2021-2022

American Geophysical Union Outstanding Student Presentation Award Judge, AGU Fall Meeting — 2024, 2019

Expert Reviewer, United Nations International Strategy for Disaster Reduction (UNISDR) Global Assessment Report on Disaster Risk Reduction (GAR) 2019 — 2019

Expert Reviewer, California's Fourth Climate Change Assessment — 2018

President, American Meteorological Society Student Chapter, UC Davis — 2009-2011

American Geophysical Union (AGU) Fall Meeting session co-convener: "Hydroclimate and Extremes in the Western United States in a Changing Climate" (2026, 2025, 2024), "Bridging the Gap from Climate to Extreme Weather: Observations, Theory and Modeling (2019 & 2010), "Tropical Cyclones in the Global Climate System" (2010) — 2010-present

Member, American Association for the Advancement of Science (AAAS) — 2017-present

Member, American Geophysical Union (AGU) — 2010-present

Member, American Meteorological Society (AMS) — 2007-present

Broader public & community engagement (including invited talks & events)

Invited Speaker, "Climate change plus "Super" El Nino: What it all means for California in 2026-2027," California Conference for Directors of Environmental Health, Monterey, CA* — Sep. 2026

Invited Speaker, "Weather extremes in California: From El Nino, climate change, and beyond," California State Library virtual seminar series* — Sep. 2026

Invited Speaker and Panelist, "Facts and Context Regarding the 2026 El Niño," Marin County — Sep. 2026

Council of Mayors and Councilmembers, Ecologically Sound Practices Partnership, Marin Wildfire Prevention Authority, and Marin Conservation League Special Joint Meeting, Kentfield, CA*

Invited Speaker, "Super El Niño Town Hall" meeting hosted by California State Senator Mark McGuire* — Aug. 2026

Invited Speaker, "Hydroclimate extremes in California: Climate Change, "Super" El Niño, and Beyond," Water Advisory Committee of Orange County Meeting, Fountain Valley, CA* — Aug. 2026

Invited Keynote Speaker, "California Wildfire in a Warming Climate," Los Altos Hills Wildfire Community Preparedness Day, Los Altos Hills, CA* — May 2026

Invited Speaker, "California Wildfire in a Warming Climate," Contra Costa Resource Conservation District webinar* — Apr. 2026

Invited Speaker, "Weather and Water Extremes in a Warming California," San Fernando Valley Climate Reality Project Webinar* — Mar. 2026

Invited Speaker, "Perspectives on a Warming Climate: The California Context," Concerned Citizens of Laguna Beach Village webinar* — Mar. 2026

Invited Speaker, "California's weather extremes in a warming climate," Calleguas Municipal Water District Purveyor Managers Meeting, Thousand Oaks, CA* — Feb. 2026

Invited Speaker, "What we know (and what we don't) about climate change in California," Mill Valley Outdoor Art Club, Mill Valley, CA* — Feb. 2026

Invited Speaker, "Introduction to climate change in California," Sonoma County Master Gardeners Webinar, University of California Agriculture and Natural Resources* — Feb. 2026

Invited Speaker, "Climate change and California: Increasingly volatile variations on a familiar theme," Rotary Club of Long Beach, Long Beach, CA — Feb. 2026

Invited Speaker, "Weather and Water Extremes on a Warming Planet: The California Experience," First Wednesdays event at the Aquarium of the Pacific, Long Beach, CA — Feb. 2026

Invited Speaker, "Recent and future trends in Southern California climate," Climate & Agriculture: Farming in a changing climate workshop, University of California Agriculture and Natural Resources, Camarillo, CA* — Jan. 2026

Invited Speaker and Panelist, "Rapid response to the record warm winter of 2025-2026: What is the climate change context?", Mountain Towns 2030 Climate Summit Webinar* — Jan. 2026

Invited Speaker, "Hydroclimate whiplash in California," Marin County Ecologically Sound Practices Partnership/Marin Conservation League webinar, San Rafael, CA* — Dec. 2025

Invited Speaker, "Climate change through the lens of increasing hydroclimate whiplash," National Academies of Science "Distinctive Voices" Series, Irvine, CA — Nov. 2025

Invited Panelist, "The Bill Gates Memo: Climate Scientists Respond With Urgency," Covering Climate Science live virtual event* — Nov. 2025

Invited Guest Lecturer, "Climate change and California: The story so far and what's on the the horizon," University of California Climate Stewards Course, Cosumnes River Preserve, Galt, CA — Oct. 2025

Invited Speaker, "Wildfire in a warming climate," Citizens' Climate Lobby Webinar* — Sep. 2025

Invited Keynote Speaker, "Climate change, the Delta, and its watersheds: What we know, what we don't, and what surprises might be out there," Delta Independent Science Board Emerging Climate Research Symposium, Davis, CA* — Sep. 2025

Invited Speaker, "Climate change and California: What we know, what we don't, and some recent lessons learned," University of California Environmental Stewards California Online Naturalist Event Series (CONES webinar)* — Aug. 2025

Invited Attendee and Speaker, "Beware the Expanding Atmospheric Sponge," O'Reilly Media/Digital Science/Google/Nature Sci Foo Camp 2025, Mountain View, CA — Jul. 2025

Invited Keynote Speaker, "100 Hours to Save America's Forecasts: Ask Me Anything" broadcast live via YouTube* — May 2025

Invited Speaker, "Wildfire & Climate Change in California: Lessons From Los Angeles & Other Recent Disasters," Los Altos Hills County Fire District Wildfire Community Preparedness Day, Los Altos Hills, CA* — May 2025

Invited Keynote Speaker: "Drier and Wetter in 21st Century California? Managing Increasing Hydroclimate Whiplash in a Warming World," Irvine Company Landscape Symposium, Irvine, CA — Apr. 2025

Invited Keynote Speaker: "Wildfire and climate change in California: Lessons from Los Angeles and other recent disasters," Special community event hosted by CA Wildfire and Forest Resilience Task Force, Climate and Wildfire Institute, and Marin Wildfire Prevention Authority, San Rafael, CA — Mar. 2025

Invited speaker: "What we know (and what we don't) about climate change in California," *Language of the Land Webinar*, Sonoma Land Trust***** — Feb. 2025

Invited Speaker, "Climate change in California: Hotter with increasing hydroclimate whiplash," Alameda County Beekeepers Association Meeting, Alameda, CA***** — Feb. 2025

Invited Keynote Speaker, "Drier *and* wetter in 21st century California? Managing increasing — Jan. 2025

hydroclimate whiplash in a warming world," California Irrigation Institute Annual Conference, Sacramento, CA

Invited Opening Speaker, "The Science of Climate Change in California and beyond," Climate Health and Action Webinar Series, San Bernardino County Medical Society/ California Medical Association***** — Sep. 2024

Invited Speaker, "Atmospheric Rivers, Heat Domes, and Hydroclimate Whiplash (Oh My!): How is it Playing Out Today?", Ursus Environmental Symposium, University of California, Los Angeles College of Social Sciences/Department of Geography***** — Sep. 2024

Invited Guest and Speaker, "Recharging California - In Conversation with Dr. Daniel Swain," Public webinar hosted by Sustainable Conservation***** — Sep. 2024

Invited Speaker, "Wildfires and climate change in Northern California." Marin Wildfire Prevention Authority Ecologically Sound Practices Partnership (ESP) Meeting, San Rafael, CA — Jul. 2024

Invited Speaker, "Climate change in California: What we know, what we don't know, and what it all means for the Golden State." Stanford Alumni for Climate Action***** — Apr. 2024

Invited Keynote Speaker, "Hydroclimate whiplash on a warming Earth." Operation Sierra Storm Conference 2024, South Lake Tahoe, CA — Jan. 2024

Invited Speaker, "*Twister* in 35mm: A post-screening conversation." *Beware the Elements: Natural Disasters on Film* series, Academy Museum of Motion Pictures, Los Angeles, CA — Jan. 2024

Invited Speaker, "Revisiting the ARkStorm 2.0 scenario in the context of an evolving El Niño event," FEMA Region 9 Climate Adaptation Seminar***** — Sep. 2023

Invited Panelist, "Extreme weather events and their impact on urban, rural, working, and natural lands," TOGETHER Bay Area 2023 Spring Conference, Richmond, CA — May 2023

Invited Keynote Speaker, "California flood risk looms large as atmospheric rivers intensify in a warming climate," California Central Valley Flood Control Association Flood Forum 2023, Sacramento, CA — Apr. 2023

Invited Speaker, "The future of precipitation in California: A tale of water scarcity (but also overabundance) amid a warming climate," The Nature Conservancy Board Meeting, Santa Barbara, CA — Feb. 2023

Invited Speaker, "Weather extremes in a warming climate: Thoughts from a meteorologist-turned-climate scientist," Steamboat Weather Summit, Steamboat Springs, CO — Jan. 2023

Climate Feedback expert reviewer, assessing national/international media coverage on climate change and extreme weather as member of accredited fact-checking organization — 2016-2022

Invited Speaker, "ARkStorm 2.0: A new and improved extreme storm and flood scenario for California in the climate change era," Federal Emergency Management Agency (FEMA) Region 9 Briefing***** — Oct. 2022

Invited Keynote Speaker, "In a warming climate, California flood risk looms large despite long-term aridification and worsening drought," California Department of Water Resources "Drought to Flood" Climate Change Symposium, Sacramento, CA***** — Oct. 2022

Invited Community Speaker, "California weather in the climate change era: A tale of increasing hydroclimate whiplash," Chan Zuckerberg Biohub Community Speaker Series, San Francisco, CA — Sep. 2022

Invited Speaker, "California Weather, Climate & Its Extremes," Sustainable Silicon Valley Water & Sustainable Life (WET) Talk***** — July 2022

Invited Panelist, West Coast Climate Crisis Symposium, University of California, Los Angeles***** — June 2022

Invited Speaker, "California Wildfire in the Climate Change Era," Marin Wildfire Prevention Authority***** — May 2022

Invited Speaker, "Drought, flood, and precipitation whiplash in a warming California," The Metropolitan Water District of Southern California Water Dialogue***** — Mar. 2022

Invited Panelist, "California Dystopia: Understanding Climate Change and Social Collapse through Science Fiction," USC Visions and Voices: The Arts and Humanities Initiative, University of Southern California, Los Angeles, CA — Mar. 2022

Invited Speaker and Panelist, "Hanging Ourselves Out to Dry or The Beginning of a New Beginning?" California Foundation on the Environment and the Economy Conference on California Water***** — Dec. 2021

Invited Speaker, California Water Action Collaboration Risk Discussion Session***** — Dec. 2021

Invited Keynote Speaker, "California water in an era of increasing climate complexity," California Water Policy Conference***** — Nov. 2021

Invited Speaker and Panelist, "Climate extremes and prediction in a warming California," Drought and Climate Forecasting Panel, California Legislative Staff Education Institute Virtual Meeting***** — Nov. 2021

Invited Panelist, "Making our water infrastructure climate-ready," California Water Policy Conference, Public Policy Institute of California***** — Nov. 2021

Invited Speaker and Panelist, "Climate extremes in a warming California," California Climate Safe Policy Summit***** — Aug. 2021

Invited Speaker, "Warmer and wilder: Increasing water resource variability in a changing — Jun. 2021

California," California Water Efficiency Partnership Annual Conference*****

Invited Plenary Speaker, "Hotter, drier, and longer: Shifting seasonality and fire season in California," The Nature Conservancy of California Leadership Meeting***** Jun. 2021

Invited Speaker, "Wildfire, flood, and drought risk in a warming California," Bay Area Climate Adaptation Network Meeting***** May 2021

Invited Speaker, "Climate change in California: A drier or wetter future—or…both?" 2021 Thelma Hansen Virtual Symposium, University of California Cooperative Extension***** Apr. 2021

Invited Speaker, "Climate Change Issues Affecting Water Supply, Storage and Flood Control, and Endangered Species," California Water Law and Policy Conference 2021***** Apr. 2021

Invited Speaker, "Increasing hydroclimate whiplash in California: Challenges (and opportunities) for wildfire and flood management," ARCS Foundation webinar***** Apr. 2021

Invited Speaker, "Climate Change and Extreme Events in California," Northern California Science Writers Association virtual meeting***** Mar. 2021

Invited Panelist, "Climate change in California and Nevada: Challenges and opportunities in an era of increasing variability," Operation Sierra Storm Broadcast Meteorology Virtual Conference***** Jan. 2021

Invited Panelist, "A Meteorologist, a Seismologist, a Volcanologist, and a Decision-maker Walk into a Bar: Improving our own risk and impact communication by examining experiences from outside the weather, water, and climate enterprise," American Meteorological Society Annual Virtual Meeting***** Jan. 2021

Invited Keynote Speaker, "Water woes in a warming California: Management challenges and opportunities in an era of increasing variability," Association of California Water Agencies (ACWA) Virtual Fall Meeting***** Dec. 2020

Invited Speaker, "Fanning the Flames: The Reality of Climate Change and Wildfires in California," Nature Conservancy of California Webinar***** Nov. 2020

Invited Keynote Speaker, "Climate Change in California: A Tale of Shifting Baselines, Sharpening Seasonality, and Increasing Precipitation Whiplash," Interagency Ecological Program Annual Workshop, Folsom, CA***** Oct. 2020

Invited Panelist, "Early Career Leadership Academy Panel," American Meteorological Society***** Oct. 2020

Invited Speaker, "Climate Change in California: Wetter wets, drier drys, and shifting seasonality," San Bernardino Valley Municipal Water District Board Engineering Workshop***** Aug. 2020

Invited Panelist, "The Future of Wildfire, Climate Change, and Water in the West," California Grantmakers Association***** July 2020

Invited Speaker, "Role of the scientist-communicator in an era of social media and climate change," The Nature Conservancy of California Webinar ***** Mar. 2020

Invited Speaker, "Climate change in California: A tale of fire and flood," Water Education Foundation "Water Leaders" Orientation, Sacramento, CA***** Jan. 2020

Invited Speaker, "Wetter, drier, or both? Increasing hydroclimatic variability in 21st century California," University of California Agriculture & Natural Resources Water Strategic Initiative meeting, Davis, CA***** — May 2019

Invited Speaker, "Is California ready for increasing precipitation whiplash?," American River Operations Work Group meeting, Folsom, CA***** — May 2019

Invited Speaker, "Forces of Nature: H2-Uh-Oh," First Fridays event at Natural History Museum of Los Angeles, Los Angeles, CA — May 2019

Invited Speaker, "The Wild West of Online Science Communication," University of Washington Program on Climate Change, Seattle, WA***** — Apr. 2019

Invited Panelist, "LA's New Abnormal: Megafires," UCLA Institute of the Environment and Sustainability & The Nature Conservancy, Los Angeles, CA — Feb. 2019

Invited Speaker, "Fire & Water from the 30,000-Foot Level," Water Education Foundation "Water Leaders" Orientation, Sacramento, CA***** — Jan. 2019

Invited Keynote Speaker, "Drought, flood, and wildfire amidst increasing climate whiplash: the challenging road ahead for water management in the West," Water Education Foundation Water Summit, Sacramento, CA — Sep. 2018

Invited Interactive Speaker, "Climate Change Cliff Notes," A Climate Series for the Ages, hosted by UCLA Institute of Environment and Sustainability & Natural History Museum of Los Angeles, Los Angeles, CA — Oct. 2017

Invited Speaker, "Change in a land of extremes: what we know (and don't know) about California's climate future," Krotona Institute/Ojai Valley Conservancy, Ojai, California — May 2017

Featured Speaker, Stanford Connects 2016: "The Rise of the Ridiculously Resilient Ridge and the Future of California Drought," Stanford University, Stanford, CA — May 2016

Project Mentor, Stanford University course: "International Climate Negotiations (COP 21)" — Dec. 2015

Invited Speaker, "Flood in a time of drought? Effects of a powerful El Niño in the midst of California's record dry spell," Association of Bay Area Governments, Oakland, CA — Sep. 2015

Invited Speaker, "Climate Change in a Land of Extremes: Drought and Flood in California's Past, Present, and Future," U.S. National Park Service Parsons Memorial Lodge Lecture Series, Yosemite National Park, CA — Aug. 2015

Invited Speaker and Panelist, "California Drought Panel," Water in the West/Woods Institute for the Environment, Stanford University, Stanford, CA — Mar. 2015

Invited Panelist, "Earth Matters/A Matter of Degrees," Stanford Continuing Studies Program, Stanford University, Stanford, CA — Feb. 2015

Invited Science Speaker, "Stanford to the Sea" Science Hike, "The Ridiculously Resilient Ridge in Context: Climate Variability of California's Past, Present, and Future," Bill Lane Center for the American West, Stanford University, Stanford, CA — May 2014

Invited Speaker and Panelist, "Current Drought: Causes, how bad is it, and will we see more?" — Apr. 2014

University of California Drought Summit, California State Capitol, Sacramento, CA

Invited Speaker and Panelist, "The California Drought: Causes, Context, and Response," Bill Lane Center for the American West/Woods Institute for the Environment, Stanford University, Stanford, CA — Feb. 2014

Founder and leader, Aggie Forecasting Team at University of California, Davis — 2008-2011

Co-leader, Atmospheric Profiling & Stratospheric Photography Project, Univ. of Calif., Davis — 2009-2011

*****Denotes remote participation via teleconference

Additional awards and recognitions

2025 Outstanding Reviewer, Earth's Future — 2026

Featured article in Nature Portfolio Collection on Holocene Hydroclimate (Swain et al. 2025) — 2025

IOP Publishing Top Cited Paper Award (Goss et al. 2020) — 2023

Environmental Research Letters Editorial Board "Best Article of 2020" (Goss et al. 2020) — 2021

Finalist, AAAS Early Career Award for Public Engagement with Science — 2018

"Must Follow" Social Media Meteorologist/Climatologist, Forbes Magazine — 2016

Best Talk Award, Environmental Science, SES Research Review, Stanford University — 2016

Oakland Museum of California "Agent of Change" — 2015

"Ten under 30: Young leaders changing the American West," *High Country News* — 2015

Fellow, Rising Environmental Leaders Program, Stanford Woods Inst. for the Environment — 2013

"Research as Art" competition winner, School of Earth Sciences, Stanford University — 2015, 2012

ThinkSwiss Award, Swiss National Science Foundation, "NCCR Climate Summer School," Grindelwald, Switzerland — 2013

Winner, Prized Writing Competition, Scientific & Technical Writing, Univ. of California, Davis — 2010, 2008

Guillermo Salazar Rodriguez Undergraduate Scholarship, American Meteorological Society — 2010

Invitee, NCAR Undergraduate Leadership Workshop, Boulder, CO — 2010

Regents Scholarship, University of California, Davis — 2009-2011

UC Davis Integrated Studies Honors Program International Education Award — 2008

UC Davis International Relations Study Abroad Award — 2008

Edward Kraft Prize, University of California, Davis — 2008

American Meteorological Society Undergraduate Scholarship — 2007-2009

Henry A. Jastro Recruitment Scholarship, University of California, Davis — 2007-2009

NASA Ames/AIAA Galileo Memorial Scholarship — 2007

Additional professional experience

Teaching

Teaching Assistant, Department of Earth System Science, Stanford University 2013
Course: "Atmosphere, Ocean & Climate Dynamics: The Atmospheric Circulation."

Invited Guest Lecturer
University of California Agriculture and Natural Resources 2025-2026
Courses: California Naturalist (Climate Stewards) Program, California Master Gardener Program

University of California, Los Angeles 2016-2020
Courses: Advanced Topics in Environment and Sustainability; Climate Law and Policy; The Blue Planet: Introduction to Oceanography

Stanford University 2013-2023
Courses: Atmosphere, Ocean & Climate Dynamics I & II; Forecasting for Innovators; Stanford Pre-Collegiate Institutes

Academic Advisees
Eduardo Muñoz-Castro, Doctoral Student, Swiss Institute for Snow and Avalanche Research /ETH Zurich (Co-advised with Drs. Manuela Brunner & Bailey Anderson, ETH Zurich) 2024-Present

Dr. Jennifer Bukowski, Postdoctoral Researcher, Inst. Of Environ. & Sustainability, UCLA (Co-advised with Dr. James Done, NSF National Center for Atmospheric Research) 2021-2023

Additional publications

Non-peer reviewed reports

Persad, G.G., Partida, J.P.O., and **Swain, D.L.**, "Troubled Waters: Preparing for Climate Threats to California's Water System," *Union of Concerned Scientists*, 2020. 2020

Mount, J., **Swain, D.L.**, and P. Ullrich, "Just the Facts: Climate Change and California's Water," *Public Policy Institute of California*, 2019. 2019

Hanak, E. et al., "California's Water," *Public Policy Institute of California*, 2018. 2018

Mount, J. et al., "Managing Drought in a Changing Climate: Four Essential Reforms," *Public Policy Institute of California*, 2018. 2018

Additional scientific presentations

Oral presentations

"Clausius-Clapeyron as a potential framework for quantifying and attributing an increasingly broad range of extremes amid uncertainty in a warming climate," *American Geophysical Union Fall Meeting, Washington, D.C.* Dec. 2024

"Hydroclimate Volatility on a Warming Earth," *American Geophysical Union Fall Meeting, San Francisco, CA* Dec. 2023

"Climate change is narrowing and shifting windows favorable for prescribed fire in western United States," *American Geophysical Union Fall Meeting, Chicago, IL****** Dec. 2022

"ARkStorm 2.0: Developing a new extreme atmospheric river storm scenario for 21st Oct. 2020

century California," *International Atmospheric Rivers Conference* (virtual meeting)*

"Dynamics of and precursors to California megafloods, present and future," *American Meteorological Society Annual Meeting*, Phoenix, AZ — Jan. 2019

"Increasing climate whiplash in 21st century California," *American Geophysical Union Fall Meeting*, New Orleans, LA — Dec. 2017

"California precipitation extremes in a warming world," *Sustainable LA Water Research Grand Challenge Research Symposium*, Los Angeles, CA — Nov. 2017

Poster presentations

"Is society ready for increasing climate whiplash?" *2019 Israeli-American Kavli Frontiers of Science Symposium*, Jerusalem, Israel — Sep. 2019

"Connections between the tropical Pacific Ocean, Arctic sea ice, and anomalous northeastern Pacific ridging," *American Geophysical Union Fall Meeting*, San Francisco, CA — Dec. 2016

"Character and causes of changing Pacific climate extremes: Special focus on the extraordinary 2012-2015 California drought," *Young Environmental Scholars Conference*, Stanford, CA — Dec. 2015

"The Extraordinary California Drought of 2013-2014: Character, Context, and the Role of Climate Change," *American Geophysical Union Fall Meeting*, San Francisco, CA — Dec. 2014

"The Extraordinary California Drought of 2013-2014: Character, Context, and the Role of Climate Change," *Graduate Climate Conference*, Seattle, WA — Nov. 2014

"The Extraordinary California Drought of 2013-2014: Character, Context, and the Role of Climate Change," *Fourth Workshop on understanding Climate Change from Data*, National Center for Atmospheric Research, Boulder, CO — Jun. 2014

"Evaluation of high-resolution simulations of Northeast Pacific atmospheric rivers," *American Geophysical Union Fall Meeting*, San Francisco, CA — Dec. 2013

"Mid-Latitude Precipitation Extremes: Latitudinal Linkages and Climate Change," *Swiss National Center for Competence in Research (NCCR Climate)*, Grindelwald, Switzerland — Sep. 2013

"High-resolution seasonal simulations of Northeast Pacific atmospheric rivers and comparison to in-situ observations," *American Geophysical Union Fall Meeting*, San Francisco, CA — Dec. 2012