JESSICA LUNDQUIST

Curriculum Vitae

Civil and Environmental Engineering
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EDUCATIONAL HISTORY

Scripps Institution of Oceanography, University of California, San Diego
Doctor of Philosophy in Oceanography, with an emphasis on Hydrology and Hydroclimatology
September 2004
Dissertation Title: *The Pulse of the Mountains: Diurnal Cycles in Western Streamflow*

Scripps Institution of Oceanography, University of California, San Diego
Masters of Science in Oceanography
June 2000
Thesis Title: *California and Oregon Humidity and Coastal Fog*

University of California, Davis
Bachelors of Science in Atmospheric Science
March 1999
Highest Honors, College Medal for top rank in the college (first of 1700)

EMPLOYMENT HISTORY

Civil and Environmental Engineering, University of Washington
Seattle, WA, USA
Professor, 2017-present
Sylvester Endowed Professor, 2017-2021

Civil and Environmental Engineering, University of Washington
Seattle, WA, USA
Sylvester Endowed Associate Professor, 2016-2017

Civil and Environmental Engineering, University of Washington
Seattle, WA, USA
John R. Kiely Endowed Associate Professor, 2011-2016

Civil and Environmental Engineering, University of Washington
Seattle, WA, USA
Assistant Professor, 2006-2011

CIRES – NOAA Climate Diagnostics Center, University of Colorado, Boulder
Boulder, CO, USA
Postdoctoral Fellow, 2004-2006

Scripps Institution of Oceanography, University of California, San Diego
La Jolla, CA, USA

Graduate Student Researcher, 1999-2004

Woods Hole Oceanographic Institution
Woods Hole, MA, USA
Undergraduate Researcher (NSF REU program), 1998

AWARDS AND HONORS

Faculty Appreciation for Career Education and Training Award, 2022, for dedication to students' professional development, University of Washington

Friday Harbor Faculty Research Fellowship, 2021, to conduct first time research at the UW Friday Harbor Labs

WSL Visiting Faculty Fellowship, 2020-2021, to fund visit and collaboration at the Swiss Federal Institute for Forest, Snow, and Landscape Research (SLF)

Editor's Choice Award, 2013, given to top 1% of publications, for Lundquist et al. 2013 (see publications list, awarded at AGU 2014), *Water Resources Research*.

Visiting Faculty Fellowship, 2013-2014, National Center for Atmospheric Research.

Editor's award for timely and detailed reviews, 2013, *Journal of Hydrometeorology*.

Chair's award for excellence in mentoring doctoral students, 2013, Civil and Environmental Engineering, U. Washington.

Cryosphere Young Investigator Award for significant contributions to cryospheric science and technology, 2008, American Geophysical Union.

Outstanding Scientific Paper Award for improving forecasters' understanding of atmospheric rivers impacting the U.S. west coast, 2009, NOAA Office of Oceanic and Atmospheric Research, (Neiman et al. 2008, see publications list).

Named one of "100 Most Creative People," 2010, Fast Company Magazine.

Named one of "Top 100 under 50 Diverse Emerging Leaders," 2011, Diversity MBA Magazine.

Climate Science Paper Award for most interesting, useful and relevant recent scientific publication, 2008, California Department of Water Resources (Lundquist et al. 2008, see publications list).

CIRES Postdoctoral Fellowship, 2004, Climate Diagnostics Center and University of Colorado in Boulder.

Frank Church Award for best student paper, 2004, Western Snow Conference.

Wagner Memorial Award for best paper written by a woman in atmospheric sciences, 2003, Desert Research Institute, University of Nevada, Reno (Lundquist et al. 2004, see publications list).

Canon National Parks Scholarship, for research on snowmelt and streamflow in the western United States, with a focus on Yosemite National Park, 2002-2004, Canon.

Award for Sierra Nevada Fieldwork, 2003-2004, Sussman Foundation.

Cal-(IT)2 Graduate Student Fellowship, 2002-2004, University of California, San Diego.

National Defense Science and Engineering Graduate Student Fellowship, 1999-2002, Department of Defense.

Best Student Poster, 1999, American Society of Limnology and Oceanography.

College Medal for top rank in the college (first of 1700), 1999, University of California, Davis.

AFFILIATIONS AND OTHER APPOINTMENTS

Adjunct Professor in Atmospheric Sciences, 2017-present

Adjunct Associate Professor in Atmospheric Sciences, 2011-2017

National Center for Atmospheric Research Visiting Faculty Fellow, 2013-2014

PUBLICATIONS

Refereed archival journal publications
([1] student working under my supervision, [2] postdoc under my supervision, [3] other student author)

1. Besso, H. [1], D. Shean, J. D. Lundquist, 2023, Mountain snow depth retrievals from customized processing of ICESat-2 satellite laser altimetry, *Remote Sensing of the Environment*, 300, 113843. https://doi.org/10.1016/j.rse.2023.113843
2. Pestana, S.[1], E. H. Bair, J. Dozier and J. D. Lundquist, 2023, "Observations of Diurnal Midwave Infrared Anisotropy over Snow and Forests with GOES-R ABI," *IGARSS 2023 - 2023 IEEE International Geoscience and Remote Sensing Symposium*, Pasadena, CA, USA, pp. 5-8, doi: 10.1109/IGARSS52108.2023.10282266.
3. Lundquist, J.D., M. Durand, R.S. Kim, L. Prugh, Seasonal Peak Snow Predictability Derived from Early-Season Snow in North America, 2023, *Geophysical Research Letters,* 50, e2023GL103802. https://doi.org/10.1029/2023GL103802.
4. Feldman, D. R., A. C. Aiken; W. R. Boos; R. W.H. Carroll; V. Chandrasekar; Scott Collis; J. M. Creamean; G. de Boer; J. Deems; Paul J. DeMott; Jiwen Fan; Alejandro N. Flores; David Gochis; Maxwell Grover; Thomas C. J. Hill; Anna Hodshire; Erik Hulm; Carson C. Hume; Robert Jackson; Francesc Junyent; Aaron Kennedy; Matthew Kumjian; E. J. T. Levin; J. D. Lundquist; Joseph O'Brien; Mark S. Raleigh; Jennifer Reithel; Alan Rhoades; Karl Rittger; William Rudisill; Zachary S. Sherman; Erica Siirila-Woodburn; S McKenzie Skiles; James N. Smith; Ryan C. Sullivan; Adam Theisen; Matthew Tuftedal; Adam C. Varble; Andrew Wiedlea; Stijn Wielandt; Kenneth Williams; Z. Xu, 2023. The Surface Atmosphere Integrated Field Laboratory (SAIL) Campaign, *Bulletin of the American Meteorological Society*, https://doi.org/10.1175/BAMS-D-22-0049.1
5. Dickerson-Lange, S., E. Howe, K. Patrick, R. Gersonde, and J.D. Lundquist, 2023. Forest gap effects on snow storage in the transitional climate of the Eastern

Cascade Range, Washington, USA, *Frontiers in Water*, 5, https://doi.org/10.3389/frwa.2023.1115264.

6. Sullender, B. [1], C. Cunningham, J. D. Lundquist, L. Prugh, 2023. Defining the danger zone: Critical snow support thresholds for predator-prey interactions, *Oikos*, e09925. https://doi.org/10.1111/oik.09925.

7. Yang, K. [2], A. John, D. Shean, J. D. Lundquist, Z. Sun, F. Yao, S. Todoran, and N. Cristea, 2023. High-resolution mapping of snow cover in montane meadows and forests using Planet imagery and machine learning, *Frontiers in Water, 5*, doi: 10.3389/frwa.2023.1128758.

8. Cristea, N. C., A. Bennett[3], B. Nijssen, and J. D. Lundquist, 2022. When and where are multiple snow layers important for simulations of snow accumulation and melt? *Water Resources Research*, 58, e2020WR028993. https://doi.org/10.1029/2020WR028993.

9. Pestana, S. [1] and J. D. Lundquist, 2022. Evaluating GOES-16 ABI surface temperature observation biases over the central Sierra Nevada of California, *Remote Sensing of the Environment*, 281, 113221. https://doi.org/10.1016/j.rse.2022.113221

10. Lumbrazo, C. [1], A. Bennett[3], W. R. Currier[1], B. Nijssen, J. D. Lundquist, 2022. Evaluating multiple canopy-snow unloading parameterizations in SUMMA with time-lapse photography characterized by citizen scientists. *Water Resources Research*, 58, e2021WR030852. https://doi.org/10.1029/2021WR030852.

11. Currier, W. R. [1], N. Sun, M. Wigmosta, N. Cristea, and J. D. Lundquist, 2022. The impact of forest-controlled snow variability on late-season streamflow varies by climatic region and forest structure. *Hydrological Processes*, 36(6), e14614. https://doi.org/10.1002/hyp.14614

12. Pflug, J. [1], S. Margulis, and J. D Lundquist, 2022. Inferring watershed-scale mean snowfall magnitude and distribution using multidecadal snow reanalysis patterns and snow pillow observations. *Hydrological Processes*, 36(6), e14581. https://doi.org/10.1002/hyp.14581

13. Sun, N., H. Yan, M. S. Wigmosta, J. D. Lundquist, S. Dickerson-Lange, T. Zhou, 2022. Variability of Forest Canopy Effects on Snowpack Dynamics across the Climate Gradients of the Western United States Mountain Ranges, *Water Resources Research*, 58, e2020WR029194. https://doi.org/10.1029/2020WR029194.

14. Dickerson-Lange, S., R. Gersonde, J. Vano, J. D. Lundquist, 2021. Ranking forest effects on snow storage: A decision tool for forest management. *Water Resources Research*, 57, e2020WR027926. https://doi.org/10.1029/2020WR027926

15. Pflug, J. M. [1], Hughes, M., and Lundquist, J. D., 2021. Downscaling snow deposition using historic snow depth patterns: Diagnosing limitations from snowfall biases, winter snow losses, and interannual snow pattern

repeatability. *Water Resources Research*, 57, e2021WR029999. https://doi.org/10.1029/2021WR029999

16. Lundquist, J. D., S. Dickerson-Lange, E. Gutmann, T. Jonas, C. Lumbrazo[1], and D. Reynolds[1], 2021. Snow Interception Modeling: Isolated Observations have led to Land Surface Models Lacking Appropriate Climate Sensitivities, *Hydrological Processes*, https://doi.org/10.1002/hyp.14274

17. Durand, M., A. P. Barros, J. Dozier, R. F. Adler, D. Entekabi, S. Whiting Cooley, B.A. Forman, A. Konings, W. P. Kustas, J. D. Lundquist, T. M. Pavelsky, M. Rodell, S. Steele-Dunne, 2021. Achieving Breakthroughs in Global Hydrologic Science by Unlocking the Power of Multisensor, Multidisciplinary Earth Observations, *AGU Advances*, 2, e2021AV000455. https://doi.org/10.1029/2021AV000455

18. Kim, R. S., Kumar, S., Vuyovich, C., Houser, P., Lundquist, J., Mudryk, L., Durand, M., Barros, A., Kim, E. J., Forman, B. A., Gutmann, E. D., Wrzesien, M. L., Garnaud, C., Sandells, M., Marshall, H.-P., Cristea, N., Pflug, J. M., Johnston, J., Cao, Y., Mocko, D., and Wang, S., 2021. Snow Ensemble Uncertainty Project (SEUP): quantification of snow water equivalent uncertainty across North America via ensemble land surface modeling, *The Cryosphere*, 15, 771–791, https://doi.org/10.5194/tc-15-771-2021.

19. Reynolds, D. [1], Pflug, J. M. [1], & Lundquist, J. D., 2020. Evaluating wind fields for use in basin-scale distributed snow models. *Water Resources Research*, 57, e2020WR028536. https://doi.org/10.1029/2020WR028536

20. Pflug, J.M. [1], Lundquist, J.D., 2020. Inferring distributed snow depth by leveraging snow pattern repeatability: Investigation using 47 lidar observations in the Tuolumne watershed, Sierra Nevada, California. *Water Resources Research*. https://doi.org/10.1029/2020WR027243

21. Pestana, S. [1], C. Chickadel, A. Harpold, T. S. Kostadinov[3], H. Pai, S. Tyler, C. Webster, and J. Lundquist, 2019. Bias correction of airborne thermal infrared observations over forests using melting snow**,** *Water Resources Research,* 55, https://doi.org/10.1029/2019WR025699

22. Lundquist, J. D., M. Hughes, E. Gutmann, S. Kapnick, 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, https://doi.org/10.1175/BAMS-D-19-0001.1

23. Wrzesien, M. L., Pavelsky, T. M., Durand, M. T., Dozier, J., & Lundquist, J. D., 2019. Characterizing biases in mountain snow accumulation from global datasets. *Water Resources Research*, 55. https://doi.org/10.1029/2019WR025350

24. Mazzotti, G. [3], Currier[1], W. R., Deems, J. S., Pflug[1], J. M., Lundquist, J. D., & Jonas, T., 2019. Revisiting snow cover variability and canopy structure within forest stands: Insights from airborne lidar data. *Water Resources Research*, 55, 6198– 6216. https://doi.org/10.1029/2019WR024898

25. Breckheimer, I.[3], E. Theobald[3], N. Cristea[2], A. Wilson[3], J. Lundquist, R. Rochefort, and J. Hille Ris Lambers, 2019. Crowd-sourced data reveals social-ecological mismatch in phenology driven by climate, *Frontiers in Ecology and the Environment,* doi:10.1002/fee.2142.

26. Pflug, J. [1], G. Liston, and J. D. Lundquist, 2019. Testing model representations of snowpack liquid water percolation across multiple climates, *Water Resources Research*, https://doi.org/10.1029/2018WR024632.

27. Currier, W.R. [1], et al. 2019. Comparing aerial lidar observations with terrestrial lidar and snow-probe transects from NASA's 2017 SnowEx campaign, *Water Resources Research*, https://doi.org/10.1029/2018WR024533.

28. Lapo, K. [1], B. Nijssen, and J.D. Lundquist, 2019. Evaluation of turbulence stability schemes of land models for stable conditions. *Journal of Geophysical Research: Atmospheres*, 124, 3072-3089. https://doi.org/10.1029/2018JD028970.

29. Neumann, R.B., C.J. Moorberg, J.D. Lundquist, J.C. Turner, M.P Waldrop, J.W. McFarland, E.S. Euskirchen, C.W. Edgar, and M.R. Turetsky, 2019. Warming effects of spring rainfall increase methane emissions from thawing permafrost. *Geophysical Research Letters,* 46, 1393-1401. https://doi.org/10.1029/2018GL081274.

30. Currier, W. R. [1], & Lundquist, J. D., 2018. Snow depth variability at the forest edge in multiple climates in the western United States. *Water Resources Research*, 54. https://doi.org/10.1029/2018WR022553 .

31. Lundquist, J. D., C. Chickadel, N. Cristea[2], W. R. Currier[1], J. Dozier, B. Henn[2], and E. Keenan[1], 2018, Separating snow and forest temperatures with thermal infrared remote sensing, *Remote Sensing of the Environment*, 209, 764-779. https://doi.org/10.1016/j.rse.2018.03.001.

32. Sun N, Wigmosta M, Zhou T, Lundquist J, Dickerson-Lange S, Cristea N., 2018, Evaluating the functionality and streamflow impacts of explicitly modeling forest-snow interactions and canopy gaps in a distributed hydrologic model. *Hydrological Processes*. https://doi.org/10.1002/hyp.13150.

33. Henn, B. [2], T. H. Painter, K. Borman, B. McGurk, A. L. Flint, L. Flint, V. White, and J. D. Lundquist, 2018. High-Elevation Evapotranspiration Estimates during Drought: Using Streamflow and NASA Airborne Snow Observatory SWE Observations to Close the Upper Tuolumne River Basin Water Balance, *Water Resources Research*, 54, doi: 10.1002/ 2017WR020473.

34. Cao, Q., T. H. Painter, W. R. Currier, J. D. Lundquist, D. P. Lettenmaier, 2018. Estimation of precipitation of the OLYMPEX domain during winter 2015-16, *J. Hydrometeorology,* 143–160, https://doi.org/10.1175/JHM-D-17-0076.1

35. Henn, B. [1], A. J. Newman, B. Livneh, C. Daly, and J. D. Lundquist, 2018. An assessment of differences in gridded precipitation datasets in complex terrain, *J. Hydrology*, 556, 1205-1219, https://doi.org/10.1016/j.jhydrol.2017.03.008.

36. Henn, B. [1], M. P. Clark; D. Kavetski; A. J. Newman; M. Hughes; B. McGurk; and J. D. Lundquist, 2018. Spatiotemporal patterns of precipitation inferred from streamflow observations across the Sierra Nevada mountain range, *J. Hydrology*, 556, 993-1012, https://doi.org/10.1016/j.jhydrol.2016.08.009

37. Currier, W.R. [1], T. Thorson[1], and J.D. Lundquist, 2017: Independent Evaluation of Frozen Precipitation from WRF and PRISM in the Olympic Mountains. *J. Hydrometeor*., 18, 2681–2703, https://doi.org/10.1175/JHM-D-17-0026.1

38. Cristea, N. [2], I. Breckheimer[3], M.S. Raleigh, J. HilleRisLambers, J. D. Lundquist, 2017. An evaluation of terrain-based downscaling of fractional snow covered area datasets based on lidar-derived snow data and orthoimagery, *Water Resources Research*, 53, 6802–6820, doi:10.1002/2017WR020799.

39. Gutmann, E., J. T. Van Stan, J. Friesen, D. P. Aubrey, and J. D. Lundquist, 2017. Observed compression of in situ tree stems during freezing., *J. Ag. Forest Met.*, 243, 19-24, https://doi.org/10.1016/j.agrformet.2017.05.004.

40. Clark, M. P., J. A. Bahr, M. F. P. Bierkens, X. Cai, T. S. Hogue, C. H. Luce, J. D. Lundquist, D. S. Mackay, H. J. van Meerveld, H. Rajaram, X. Sanchex-Vila, and P.A. Troch, 2017. Editorial: A vision for Water Resources Research, *Water Resour. Res*., 53, doi:10.1002/2017WR021050.

41. Houze, R. A., Jr., L. McMurdie, W. Peterson, M. Schwaller, W. Baccus, J. Lundquist, C. Mass, B. Nijssen, S. Rutledge, D. Hudak, S. Tanelli, J. Mace, M. Poellot, D. Lettenmaier, J. Zagrodnik[3], A. Rowe, J. DeHart, L. Maddaus and H. Barnes, 2017, Olympic Mountains Experiment (OLYMPEX), *Bulletin of the American Meteorological Society*, 98, 2167-2188, https://doi.org/10.1175/BAMS-D-16-0182.1.

42. Hughes, M., J. D. Lundquist, and B. Henn[2], 2017. Dynamical downscaling overcomes deficiencies in gridded precipitation products in the Sierra Nevada, California, *Climate Dynamics*, doi:10.1007/s00382-017-3631-z.

43. Dickerson-Lange, S. [1], R. F. Gersonde, J. A. Hubbart[3], T. E. Link, A. W. Nolin, G. H. Perry[1], T. R. Roth[3], N. E. Wayand[1], and J. D. Lundquist, 2017. Snow disappearance timing in warm winter climates is dominated by forest effects on snow accumulation, *Hydrological Processes*, doi: 10.1002/hyp.11144.

44. Wilson, A. [3], K. Bacher, I. Breckheimer[3], J. D. Lundquist, R. Rochefort, E. Theobald[3], L. Whiteaker, J. HilleRisLambers, 2017. Monitoring Wildflower Phenology using Traditional Science, Citizen Science, and Crowd Sourcing, *Park Science*, 33, 17-26.

45. Lapo, K. [1], L. M. Hinkelman, Edwin Sumargo[3], M. Hughes, and J. D. Lundquist, 2017. A critical evaluation of modeled solar irradiance over California for hydrologic and land-surface modeling, *Journal of Geophysical Research, Atmospheres*, 121, doi:10.1002/2016JD025527.

46. Henn, B. [1], M. Clark, D. Kavetski, T. Painter, B. McGurk, and J. D. Lundquist, 2016. Combining Snow, Streamflow and Precipitation Gauges Observations to

Infer Basin-Mean Precipitation, *Water Resources Research*, 52, doi:10.1002/2015WR018564.

47. Lundquist, J. D., J. Roche[3], H. Forrester[3], C. Moore[1], E. Keenan[1], G. Perry[1], N. Cristea[2], B. Henn[1], K. Lapo[1], B. McGurk, D. R. Cayan, and M. Dettinger, 2016. Yosemite Hydroclimate Network: Distributed Stream and Atmospheric Data for the Tuolumne River Watershed and Surroundings, *Water Resources Research*, 52, doi:10.1002/2016WR019261.

48. Wayand, N. [1], M. Clark, and J. D. Lundquist, 2016. Diagnosing Snow Accumulation Errors in a Rain-Snow Transitional Environment with Snow Board Observations, *Hydrological Processes,* doi: 10.1002/hyp.11002.

49. Wayand, N. E. [1], J. Stimberis, J. P. Zagrodnik[3], C. F. Mass, and J. D. Lundquist, 2016. Improving simulations of precipitation phase and snowpack at a site subject to cold air intrusions: Snoqualmie Pass, WA, *Journal of Geophysical Research, Atmospheres*, 121, doi:10.1002/2016JD025387.

50. Morelli, T. L., C. Daly, S. Z. Dobrowski, D. Dulen, J. L. Ebersole, S. T. Jackson, J. D. Lundquist, C. I. Millar, S. P. Maher, W. B. Monahan, K. Nydick, K. T. Redmond, S. Sawyer, S. Stock, and S. R. Beissinger, 2016. Managing Climate Change Refugia for Climate Adaptation, *PLOS ONE*, 11(8): e0159909. doi:10.1371/journal.pone.0159909.

51. Raleigh, M. S. [1], B. Livneh, K. Lapo[1], J. D. Lundquist, 2016. How does availability of meteorological forcing data impact physically-based snowpack simulations in different climates?, *J. Hydromet*., *17*, 99-120, doi: 10.1175/JHM-D-14-0235.1.

52. Dickerson-Lange, S. E.[1], K. B. Eitel, L. Dorsey, T. E. Link, and J. D. Lundquist, 2016. Challenges and successes in engaging citizen scientists to observe snow cover: from public engagement to an educational collaboration. *J. of Science Communication*, 15 (01), A01.

53. Lundquist, J. D., M. Hughes, B. Henn[1], E. Gutmann, B. Livneh, J. Dozier, and P. Neiman, 2015. High-elevation precipitation patterns: Using snow measurements to assess gridded datasets across the Sierra Nevada, California, *J. Hydromet*., 16, 1773–1792. doi: http://dx.doi.org/10.1175/JHM-D-15-0019.1

54. Lundquist, J. D., N. E. Wayand[1], A. Massmann[1], M. P. Clark, F. Lott[1], N. C. Cristea[2], 2015. Diagnosis of insidious data disasters, *Water Resources Research*, 51, 3815–3827, doi:10.1002/2014WR016585.

55. Henn[1], B., M. P. Clark, D. Kavetski, and J. D. Lundquist, 2015. Estimating mountain basin-mean precipitation from streamflow using Bayesian inference, *Water Resources Research*, 51, doi: 10.1002/ 2014WR016736.

56. Wayand[1], N. E., J. D. Lundquist, and M. P. Clark, 2015. Modeling the influence of hypsometry, vegetation, and storm energy on snowmelt contributions to basins during rain-on-snow floods. *Water Resources Research*, 51, 8551-8569 doi: 10.1002/2014WR016576.

57. Wayand[1], N. E., A. Massmann[1], C. Butler[1] E. Keenan[1], J. Stimberis, and J. D. Lundquist, 2015. A Meteorological and Snow observational data set from Snoqualmie Pass (921 m), Washington Cascades, U.S., *Water Resources Research*, 51, 10092–10103, doi:10.1002/2015WR017773.

58. Dickerson-Lange[1], S. E., J. A. Lutz[2], R. Gersonde, K. A. Martin[1], J. E. Forsyth[1], and J. D. Lundquist, 2015. Observations of distributed snow depth and snow duration within diverse forest structures in a maritime mountain watershed, *Water Resources Research*, 51, 9353–9366, doi:10.1002/2015WR017873.

59. Lapo, K. E. [1], L. M. Hinkelman, C. C. Landry, A. Massmann[1], and J. D. Lundquist, 2015. A simple algorithm for identifying periods of snow accumulation on a radiometer, *Water Resources Research*, 51, 8551-8569, doi:10.1002/ 2015WR017590.

60. Hinkelman, L. M., K. E. Lapo[1], N. C. Cristea[2], and J. D. Lundquist, 2015. Using CERES SYN surface irradiance data as forcing for snowmelt simulation in complex terrain, *J. Hydromet*., 16, 2133-2152. doi: http://dx.doi.org/10.1175/JHM-D-14-0179.1.

61. Raleigh, M.S. [1], J. D. Lundquist, and M. P. Clark, 2015. Exploring the impact of forcing error characteristics on physically based snow simulations within a global sensitivity analysis framework, *Hydrol. Earth Syst. Sci*., 19, 3153-3179, www.hydrol-earth-syst-sci.net/19/3153/2015/, doi:10.5194/hess-19-3153-2015.

62. Dickerson-Lange[1], S. E., J. A. Lutz[2], K. A. Martin[1], M. S. Raleigh[1], R. Gersonde, and J. D. Lundquist, 2015. Evaluating observational methods to quantify snow duration under diverse forest canopies, *Water Resources Research*, 51, 1203–1224, doi:10.1002/2014WR015744.

63. Clark, M.P., B. Nijssen, J.D. Lundquist, D. Kavetski, D.E. Rupp, R.A. Woods, J.E. Freer, E.D. Gutmann, A.W. Wood, L.D. Brekke, J.A. Arnold, D.J. Gochis, and R.M. Rasmussen, 2015. A unified approach to hydrologic modeling: Part 1. Model structure, *Water Resources Research*, 51(4), 2498-2514, doi: 10.1002/2015WR017198.

64. Clark, M.P., B. Nijssen, J.D. Lundquist, D. Kavetski, D.E. Rupp, R.A. Woods, J.E. Freer, E.D. Gutmann, A.W. Wood, D.J. Gochis, R.M. Rasmussen, D. Tarboton, V. Mahat, G. Flerchinger, and D. Marks, 2015. A unified approach to hydrologic modeling: Part 2. Comparison of alternative process representations, *Water Resources Research*, 51, 2515-2542, doi: 10.1002/2015WR017200.

65. Lapo[1], K. E., L. M. Hinkelman, M. S. Raleigh[1], and J. D. Lundquist, 2015. Impact of errors in the surface radiation balance on simulations of snow water equivalent and snow surface temperature, *Water Resources Research*, 51, doi:10.1002/2014WR016259.

66. Friesen, J, J. D. Lundquist, J, and J. T. Van Stan, II, 2015. Evolution of forest precipitation water storage measurement methods. *Hydrol. Process*., 29, 2504–2520. doi: 10.1002/hyp.10376.

67. Curtis, J. A., L. E. Flint, A. L. Flint, J. D. Lundquist, B. Hudgens, E.E. Boydston, and J.K. Young, 2014. Incorporating Cold-Air Pooling into Downscaled Climate Models Increases Potential Refugia for Snow-Dependent Species within the Sierra Nevada Ecoregion, CA. PLoS ONE 9(9): e106984. doi: 10.1371/journal.pone.0106984

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Submitted to peer-reviewed journals (in review or under revision):

108. Mower, R., E. D. Gutmann, J. D. Lundquist, G. E. Liston, and S. Rasmussen, Parallel SnowModel (v1.0): a parallel implementation of a Distributed Snow-Evolution Modeling System (SnowModel), submitted to *Geoscientific Model Development (GMD)*, July 2023.

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111. Lundquist, J., J. Vano, E. Gutmann, D. Hogan, E. Schwat, M. Haugeneder, E. Mateo, S. Oncley, C. Roden, E. Osenga, and L. Carver, Sublimation of Snow, submitted to the *Bulletin of the American Meteorological Society*, November 2023.

Conference proceedings and other non-journal articles

- ***Fully refereed publications***

Wayand, N. [1], J. D. Lundquist, M. Hughes, and A. Hamlet, 2011. Supplementing Sparse Observations of Temperature and Precipitation with a High Resolution Atmospheric Model. Western Snow Conference, South Lake Tahoe, April 18-21st, 2011. In: Freeman, Gary, *Proceedings of the 79th Annual Western Snow Conference*, p. 63-69.

Lott, F.[1] and J. Lundquist, 2008. Modeling spatial differences in snowmelt runoff timing. *Proc. of the Western Snow Conference*, April 14-17, 2008, Hood River, OR, 76th meeting.

Lundquist J.D. and C. Rochford[1], 2007. Distributed temperatures in the snow zone: Spatial patterns and innovative measurement techniques, *Proc. of the Western Snow Conference*, April 16-19, 2007, Kailua-Kona, HI, 75th meeting.

Lundquist, J. and M. Dettinger, 2004. The effect of basin scale on diurnal streamflow timing. *Proceedings, Western Snow Conference.* Vancouver, British Colombia. *Best student paper award.

Lundquist, J. and M. Dettinger, 2003. Linking diurnal cycles in river discharge to interannual variations in climate. *Proceedings, AMS 17th Conference on Hydrology*. Long Beach, California.

Lundquist, J., N. Knowles, M. Dettinger and D. Cayan, 2002. Snow, topography, and the diurnal cycle in streamflow. *Proceedings, Western Snow Conference*. Granby, Colorado.

Lundquist, J. D. and T. B. Bourcy, 2000. California and Oregon humidity and coastal fog. *Proceedings, 14th Conference on Boundary Layers and Turbulence*. Aspen, Colorado.

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Lundquist, J., R. Dole, M. Dettinger, and D. Cayan, 2005. Surface Temperature Patterns and Lapse Rates: Implications for Water Resources and Studies of Mountain Climate Change. *Proceedings, MTNCLIM Meeting*, Chico Hot Springs, Montana.

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Lundquist, J. D., I. Stewart, M. D. Dettinger, and D. C. Cayan, 2009. Variability and trends in spring runoff in the western United States, Chapter 5 *in Climate Warming in Western North America: Evidence and Environmental Effects*, Ed: F. Wagner, University of Utah Press.

Abstracts, letters, non-refereed papers, technical reports

Lumbrazo, C., S. Dickerson-Lange, E. Howe, and J. D. Lundquist, Combined Effects of Forest Cover and Topography on Snow Depth in the Eastern Cascades, Washington**,** technical report submitted to Washington Department of Natural Resources, August 2023.

Nguyen, A., S. Pestana, E. Schwat, and J. D. Lundquist, Fog Frequency along the Washington Coast from GOES-17 Satellite Imagery, Field Photos, and Field Sensors, technical report submitted to the University of Washington Friday Harbor Labs, August 2023.

Peterson, W. A., L. McMurdie, R. A. Houze, J. Zagrondnik, S. Tanelli, J. Lundquist, and J. Wurman, 2016, The Olympic Mountains Experiment: from ocean to summit, *Meteorological Technology International*, September 2016.

Perry, G. [1], J. D. Lundquist, R. D. Moore, 2016. Review of the potential effects of forest practices on streamflow in the Chehalis River Basin. Available at: http://depts.washington.edu/mtnhydr/people/Perry_Chehalis_forest_streamflow.pdf

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Cooper, D., J. Lundquist, J. King, A Flint, L. Flint, E. Wolf, F. Lott[1], 2006. Effects of the Tioga Road on hydrologic processes and Lodgepole Pine invasion into Tuolumne Meadows, Yosemite National Park, Report prepared for Yosemite National Park. 146 pp. Available at: http://faculty.washington.edu/jdlund/home/publications.shtml

Hutto, L., R. Weller, J. Lord, J. Smith, P. Bouchard, C. Fairall, S. Pezoa, L. Bariteau, J. Lundquist, V. Ghate, R. Castro, C. Cisternas, (2006), Stratus Ocean Reference Station (20˚S, 85˚W), mooring recovery and deployment cruise R/V Ronald H. Brown cruise 05-05, September 26, 2005–October 21, 2005, WHOI Technical Reports, WHOI-2006-06, Upper Ocean Processes Group, UOP-2006-01. Available at: http://hdl.handle.net/1912/1072

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Other significant research dissemination (web sites, software, data, Wikis, etc.)

Lundquist, J. D. and R. S. Kim. (2023). Model output from Snow Ensemble Uncertainty Project (SEUP) as used in Seasonal Snow Predictability Derived from Early-Season Snow in North America [Data set]. Zenodo. https://doi.org/10.5281/zenodo.8156495

Dickerson-Lange[1], S. E., J. A. Lutz[2], R. Gersonde, K. Martin[1], J. E. Forsythe[1], and J. D. Lundquist, 2015. Observations of distributed snow depth and snow duration within diverse forest structures in a maritime mountain watershed. Univeristy of Washington Research Works Archive at: http://hdl.handle.net/1773/33268 and CUAHSI HIS at: https://dx.doi.org/10.4211/his-data-cedarriverforestsnow.

Lundquist, J. D., A. K. Massmann[1], J. Stimberis, and N. E. Wayand[1], 2014, Surface meteorological and snow observations at Snoqualmie Pass, WA. Available in the Univeristy of Washington Research Works Archive at: http://hdl.handle.net/1773/25611.

Temperature Toolbox, 2008, Guidelines for deploying inexpensive temperature sensors. http://faculty.washington.edu/jdlund/Ttoolbox/

Lundquist, J. 2004. When is the best time to cross a mountain stream? *Sierra Nature Notes*. http://www.sierranaturenotes.com/naturenotes/StreamFlow.htm

Lundquist, J. 2003. Synchronous snowmelt and streamflow in the Sierra. *Sierra Nature Notes*. http:// www.sierranaturenotes.com /naturenotes/naturenotes_synchsnow.htm

Lundquist, J., 2002. Monitoring snow from the beach in San Diego: Automatic snow sensors in the Sierra. *Sierra Nature Notes*. http://www.sierranaturenotes.com/naturenotes/SnowSurvey.htm

OTHER SCHOLARLY ACTIVITY

Invited lectures and seminars.

1. International Conference on Alpine Meteorology (ICAM), Invited speaker, *Where does mountain water go? Combining efforts to track snowflakes, snow packs, water droplets, and water vapor in the East River Watershed, Colorado*, June 2023.
2. Washington Department of Ecology, Invited Speaker, *Snow, Forests, Water, and Fires*, December 2022.
3. University of Saskatchewan, 2022 Distinguished Lecture Series, Invited Speaker, *The predictive power of early-season snow in North America*, recording available here: https://water.usask.ca/events/2022/09/dls1.php
4. Department of Energy SAIL, Invited Seminar, *Sublimation of Snow*, April 2022, recording available here: https://sail.lbl.gov/events/regular-meetings/ .
5. Washington State University, Vancouver, Invited Seminar, *Snow, Forests, Water, and Fire*, September 2020.
6. Los Alamos National Laboratory, Invited Seminar, *Learning to See in Thermal Infrared*, January 2019.
7. Portland State University, Portland, Oregon, Invited Seminar, *Learning to See in Thermal Infrared*, June 2018.
8. Oregon State University, Corvallis, Oregon, Invited Seminar, *Learning to See in Thermal Infrared*, June 2018.
9. IARPC Teleseminar, Invited Presentation, *Linking measurements and modeling across disciplines to improve both seasonal snow and glacier research*, March 2018.
10. SLF, Davos, Switzerland, Invited Seminar, *Forests, snow and change*, February 2018.
11. International Snow School, Col de Lautaret, France, Invited Lecture, *Snowpack hydrology, modeling, and observations*, February 2018.
12. American Geophysical Fall Meeting, Invited Panel, Discussion of the Publishing Process, December 2017.
13. University of Nevada, Reno, Invited Seminar, *Forests, Snow, and Change*, September 2017.
14. Boise State University, Invited Seminar, *Forests, Snow, and Change*, September 2017.
15. Canadian Geophysical Union, Keynote Speaker, *Forests, Snow, and Change*, June 2017.
16. Geophysical Fluid Dynamics Laboratory, Princeton, New Jersey, Invited Seminar, *Mountain Snow and Precipitation*, June 2016.
17. University of Saskatchewan Centre for Hydrology Mountain Field Office, Canmore, Alberta, Invited Seminar, *Forests and Snow*, May 2014.
18. University of Otago, Dunedin, New Zealand, Geography Department, Invited Seminar, *Mountain Weather and Snow*, April 2014.
19. University of Colorado, Boulder, Engineering Department, Invited seminar, *Spatial Precipitation Patterns in Complex Terrain Using Snow and Streamflow Observations: Case Study of the Southern Sierra Nevada, California*, March 2014.
20. CUAHSI (Consortium of Universities Allied for Hydrologic Science, Inc), Emergency Impromptu Cyberseminar, *Data driving us to distraction*, February 2014; over 100 people in online attendance, archived here: http://www.cuahsi.org/SeminarDetails.aspx?id=72
21. AGU News Briefing on the Airborne Snow Observatory (ASO) in California, December, 2013, archived here: http://www.youtube.com/watch?v=5urZaRCi7gA
22. University of California, Santa Barbara, Geography Department, Invited seminar, *Lower forest density enhances snow retention in regions with warmer winters*, October 2013
23. CUAHSI (Consortium of Universities Allied for Hydrologic Science, Inc), Invited Cyberseminar, *Mountain hydrology as revealed by large networks of inexpensive sensors*,

March 2013; over 100 people in online attendance, archived at http://cuahsi.adobeconnect.com/p68fe5soccg/

24. University of Saskatchewan, Saskatoon, SK Canada, Invited seminar, *Cold air pooling in complex terrain*, April 2012
25. University of California, Merced, Invited seminar, *Orographic Precipitation and Implications for Hydrology*, April 2012
26. Western States Water Council Meeting (to advise the Western Governor's Association), *Snow, Hydroclimatic Processes, and Trend Detection*, October 2011
27. NOAA Water Cycle Science Challenge Workshop, *Snow Information*, September 2011
28. Univeristy of California, Davis, Hydrology Group Seminar Series, *Orographic Precipitation and Implications for Hydrology*, June 2011
29. National Center for Atmospheric Research (NCAR), *Relationships between barrier jet heights, orographic precipitation, and streamflow in the Sierra Nevada*, July 2010
30. Oregon State University, Corvallis, Interdisciplinary Water Group Seminar Series, *Orographic Precipitation and Implications for Hydrology*, April 2010
31. University of Washington, Water Center Annual Review, *Silviculture to Maximize Snow Retention*, February 2010
32. University of California, Berkeley, Atmospheric Science Group Seminar Series, *Precipitation in the Sierra Nevada*, November 2009
33. University of Wisconsin, Madison, Civil Engineering Department Water Seminar, *The importance of shading on snowmelt and streamflow in a warmer world*, October 2009.
34. University of Utah, Departments of Biology and Meteorology, *Hydroclimatology at Ecosystem Scales*, March 2009
35. University of Arizona, Department of Hydrology, *Mapping temperature across complex terrain*, December 2008
36. University of Washington, Atmospheric Science Seminar, *Spatial temperature patterns in the snow zone and innovative measurement techniques*, February 2008
37. University of Washington, Water Center Seminar, *Using diurnal cycles in streamflow to interpret surface and subsurface flow paths in mountain environments*, May 2007
38. University of Washington, Atmospheric Science Seminar, *Rain vs. snow in the Sierra Nevada, California*, November 2006
39. University of Washington, Climate Impacts Group Seminar, *Surface temperature patterns and lapse rates*, October 2006
40. University of Washington, Civil and Environmental Engineering Seminar, *Surface temperature patterns and lapse rates: Implications for water resources and studies of mountain climate change*, April 2006

Presentations given at conferences (bold indicates presenter)

([1] student under my supervision, [2] postdoc under my supervision, [3] other student author)

1. **Schwat, E**. [1], D. Hogan, J.D. Lundquist, E. D. Gutmann, and J. A. Vano, Measuring sublimation of snow on the valley floor of a Colorado River headwater basin, American Geophysical Union Fall Meeting, Chicago, December 2023.
2. **Hogan, D**. [1], and J. D. Lundquist, Spring precipitation deficits impact streamflow in the Upper Colorado River Basin during the Millennium Drought. American Geophysical Union Fall Meeting, Chicago, December 2023.
3. **Besso, H**. [1], J. D. Lundquist, and R. Mower, Determining where annual snow depth anomalies are correlated across the western United States, American Geophysical Union Fall Meeting, Chicago, December 2023.

4. **Mower, R**. [1], E. D. Gutmann, and J.D. Lundquist, A physically-based approach to assess snow heterogeneity and its influence on streamflow efficiency in the western United States, American Geophysical Union Fall Meeting, Chicago, December 2023.
5. **Dechow, J**. [3], M.T. Durand, J. Lundquist, L. Prugh, B. Sullender, C. Cunningham, and C. Lumbrazo, Estimating snow surface density with linear and non-linear methods for wildlife tracking applications, American Geophysical Union Fall Meeting, Chicago, December 2023.
6. **Eklof, J**. [3], J. Lundquist, M. P. Waldrop, B. Dafflon, J. Tao, B. M. Jones, K. Ring, R. B. Neumann, Environmental interactions controlling thermal regimes and permafrost progression in interior Alaska, American Geophysical Union Fall Meeting, Chicago, December 2023.
7. **Mateo, E. I**., L. Carver, J. A. Vano, E. C. Osenga, J. D. Lundquist, D. Hogan, E. Schwat, E. D. Gutmann, and M. Haugeneder, Developing outreach and educational tools and opportunities for the Sublimation of Snow (SOS) project, American Geophysical Union Fall Meeting, Chicago, December 2023.
8. **Prugh, L**., J. D. Lundquist, et al., Landscape heterogeneity partially buffers the impact of extreme winter weather on wildlife, American Geophysical Union Fall Meeting, Chicago, December 2023.
9. **Dickerson-Lange, S.E**., E. R. Howe, K. Patrick, R. Gersonde, and J.D. Lundquist, Forest gap effects on snow storage in the transitional climate of the eastern Cascade Range, Washington, USA, American Geophysical Union Fall Meeting, Chicago, December 2023.
10. **Keck, J. W.** [3], E. Istanbulluoglu, J. D. Lundquist, C. Bandaragoda, K. L. Jaeger, G. S. Mauger and A. Horner-Devine, How Does Precipitation Variability Control Bedload Response Across a Mountainous Channel Network in a Maritime Climate?, American Geophysical Union Fall Meeting, Chicago, December 2022.
11. **Eklof, J.** [3], J. D. Lundquist, M. P. Waldrop, J. Tao, B. Dafflon, K. Ring, and R.B. Neumann, Environmental Controls on Subsurface Temperature and Permafrost Thaw Progression at a Discontinuous Permafrost Site in Interior, AK, American Geophysical Union Fall Meeting, Chicago, December 2022.
12. **Yang, K.**[2], A. John, D. E. Shean, J. M. Hu, J. D. Lundquist, Z. Sun, and N. C. Cristea, Comparison of snow-covered area derived from PlanetScope CubeSat, Harmonized Landsat Sentinel-2, and MODIS imagery in forested mountain regions. American Geophysical Union Fall Meeting, Chicago, December 2022.
13. **Mower, R.**[1], E. D. Gutmann, G. E. Liston, J. D. Lundquist, A. J. Newman, A. Reinking, K. R. Arsenault, C. Vuyovich, B. A. Forman, and S. Rasmussen, High-resolution spatial and temporal snow distribution trends over CONUS (1990-2021). American Geophysical Union Fall Meeting, Chicago, December 2022.
14. **Dechow, J**. [3], M.T. Durand, D. Gomez, M. L. Wrzesien, J. Lundquist, L. M. Hinkelman, K. Rittger, J Dozier, T. Pavelsky, and S. B. Kapnick, A Comparison of Constrained Least Squares Adjustment and Non-Linear Solvers to Estimate Snow Water Equivalent from Regional Climate Models and Remote Sensing Observations American Geophysical Union Fall Meeting, Chicago, December 2022.
15. **Besso. H.**[1]**,** D. Shean, and J. D. Lundquist, Evaluating ICESat-2 for snow depth. Western Snow Conference, Salt Lake City, April 2022.
16. **Pestana, S.** [1]**,** and J. D. Lundquist, Orthorectifying GOES ABI imagery for mountain surface temperature observations, American Geophysical Union Fall Meeting, New Orleans, December 2021.
17. **Durand, M.**, J. Dechow, J. D. Lundquist, L. Prugh, B. Sullender, C. Lumbrazo[1], C. Breen, and C Cunningham, Predicting surface density using snow models and assimilation for wildlife applications. American Geophysical Union Fall Meeting, New Orleans, December 2021.

18. **Jonas, T**., G. Mazzotti, M. Haugeneder, C. Lumbrazo, J. D. Lundquist, J. Malle, and C. Webster, Exploring wintertime canopy surface temperature dynamics in a sub-alpine spruce forest using thermal infrared imagery. American Geophysical Union Fall Meeting, New Orleans, December 2021.
19. **Pestana, S.** [1]**,** C. C. Chickadel, and J. D. Lundquist, High Temporal Resolution GOES-16 and -17 Observations of Snow Surface Temperature during the SnowEx 2020 Field Campaign (Invited Presentation), American Meteorological Society Annual Meeting, Virtual, January 2021.
20. **Pflug, J. M.** [1]**,** S. Margulis, and J. D. Lundquist, Overcoming snow model and observational uncertainty using snowpack reanalysis patterns in mountainous terrain. American Meteorological Society Annual Meeting, Virtual, January 2021. **First place student presentation.
21. **Vuyovich, C.,** S. Kumar, J. D. Lundquist, J. W. Wegiel, and Y. Yoon, An approach for snow research to operations, American Meteorological Society Annual Meeting, Virtual, January 2021.
22. **Gutmann, E.,** C. Vuyovich, G. Liston, J. D. Lundquist, K. Arsenault, A. Reinking, M. L. Wrzesien, A. J. Newman, and B. Forman, Explicitly Simulating Snow Spatial Variability at Scale to Improve Predictions, American Meteorological Society Annual Meeting, Virtual, January 2021.
23. **Kim, R. S.,** S. Kumar, C. Vuyovich, P. Houser, J.D. Lundquist, L. Mudryk, M. Durand, A. Barros, E. J. Kim, B. Forman, E. Gutmann, M. L. Wrzesien, C. Garnaud, and M. Sandells, Impact evaluation of snow water equivalent uncertainty on streamflow estimation across North America using ensemble land surface modeling, American Meteorological Society Annual Meeting, Virtual, January 2021.
24. **Lundquist, J.D.,** S. E. Dickerson-Lange, E. D. Gutmann, T. Jonas, D. Reynolds[1], C. Lumbrazo[1], Which family trees of snow interception modeling history have the essentials for success?, American Geophysical Union Fall Meeting, Virtual, December 2020.
25. **Elkof, J.** [3]**,** M.P. Waldrop, B. M Jones, J. D. Lundquist, and R. B. Neumann, Ability of thermal energy from rainfall to warm and thaw soils at a thermokarst site in south-central Alaska, American Geophysical Union Fall Meeting, Virtual, December 2020.
26. **Pflug, J. M**. [1], S. A. Margulis, J. D. Lundquist, Comparing interannual snow pattern repeatability between snowpack reanalyses and airborne lidar observations in the California Sierra Nevada, American Geophysical Union Fall Meeting, Virtual, December 2020.
27. **Keck, J**. **W.** [3], E. Istanbulluoglu, J. D. Lundquist, C. Bandaragoda, K. L. Jaeger, and A. Horner-Devine, Bedload response to precipitation averaging across a channel network, American Geophysical Union Fall Meeting, Virtual, December 2020.
28. **Duan, Z.**[3], E. Istanbulluoglu, C. Bandaragoda, J. W. Keck[3], J. D. Lundquist and G. S. Mauger, Flood characterization in Pacific Northwest Coastal Mountains, American Geophysical Union Fall Meeting, Virtual, December 2020.
29. **Lumbrazo, C**. [1], A. Bennett[3], W. R. Currier, B. Nijssen, and J. D. Lundquist, Evaluating multiple canopy-snow unloading parameterizations with time-lapse photography characterized by citizen scientists, American Geophysical Union Fall Meeting, Virtual, December 2020.
30. **Dickerson-Lange, S. E**., J. D. Lundquist, J. A. Vano, R. Gersonde, Ranking forest effects on snow storage: A hierarchical framework to support forest management, American Geophysical Union Fall Meeting, Virtual, December 2020.
31. **Neumann, R. B.,** J. Elkof [3], M. P. Waldrop, B. M. Jones, C. Moorberg, J. D. Lundquist, J. Turner, J. W. Mcfarland, E. S. Euskirchen, C. Edgar, and M. R. Turetsky, Thermal transport by rain into thawing permafrost landscapes, American Geophysical Union Fall Meeting, Virtual, December 2020.

32. **Shean, D. E**., J. M. Hu [3], S. Bhushan [3], O. Alexandrov, C. A. Hiemstra, S. T. Henderson, and J. D. Lundquist, Stereo2SWE: Snow depth and snow-covered area from commercial stereo satellite imagery. American Geophysical Union Fall Meeting, Virtual, December 2020.
33. **Currier, W.R**.[1], and J.D. Lundquist, How does forest-edge snow depth variability affect streamflow?, American Geophysical Union Fall Meeting, San Francisco, CA, December 2019.
34. **Reynolds, D**. [1], and J.D. Lundquist, Evaluating downscaled wind data using snow depth patterns, American Geophysical Union Fall Meeting, San Francisco, CA, December 2019.
35. **Pflug, J**.[1], and J.D. Lundquist, Integrating satellite and ground-based observations with airborne lidar snow pattern assimilation in mountainous terrain?, American Geophysical Union Fall Meeting, San Francisco, CA, December 2019.
36. **Pestana, S**. [1], and J.D. Lundquist, Multi-scale comparison of wintertime mountain surface temperatures from GOES ABI, MODIS, ASTER, and airborne thermal infrared observations, American Geophysical Union Fall Meeting, San Francisco, CA, December 2019.
37. **Ly, V**. [1], and J.D. Lundquist, Snow masks for identifying accurate snow information worldwide, American Geophysical Union Fall Meeting, San Francisco, CA, December 2019.
38. **Lumbrazo, C**. [1], and J.D. Lundquist, Evaluating snow interception parameterizations with time-lapse photography, American Geophysical Union Fall Meeting, San Francisco, CA, December 2019, (winner of student presentation award)
39. **Lundquist, J**. D., Could increased summer rains save mountain ecosystems as snow disappears, American Geophysical Union Fall Meeting, San Francisco, CA, December 2019, (invited presentation).
40. **Pflug, J. M.** [1]**,** and J. D. Lundquist, Assimilating subsampled airborne lidar: How much lidar is enough?, Western Snow Conference, Reno, NV, April 2019, (winner of best poster presentation)
41. **Pflug, J. M.** [1]**,** G. E. Liston, J. D. Lundquist, An Investigation of Liquid Water Percolation and Model Transferability in Multiple Snow Climates (Invited Presentation), AMS 99th Annual Meeting, Phoenix, AZ, January 2019, https://ams.confex.com/ams/2019Annual/meetingapp.cgi/Paper/352950 (recorded and winner of student award).
42. **Currier, W. R.** [1]**,** J. Pflug[1], G. Mazzotti[3], T. Jonas, J. Deems, K. Bormann, T. Painter, C. Hiemstra, A. Gelvin, Z. Uhlmann[3], L. Spaete, N. Glenn, and J. D. Lundquist, Lasers vs. Lasers: An intercomparison between lidar datasets, GNSS, and snow-probe transects from NASA's SnowEx campaign, AGU Fall Meeting, Washington, D.C., December 2018.
43. **Pestana, S.** [1]**,** J.D. Lundquist, C. Chickadel, C. Webster, A. Harpold, S.Tyler, H. Pai, T. S. Kstadinov, Scaling Remotely Sensed Surface Temperatures of Forests and Melting Snow, AGU Fall Meeting, Washington, D.C., December 2018.
44. **Cristea, N.** [2]**,** D.S. Reynolds[1], L. M. Hinkelman, N. Sun, M.S. Wigmosta, J.D. Lundquist, Importance of model structure and irradiance input to modeling snow surface temperature and snowmelt in complex terrain, AGU Fall Meeting, Washington, D.C., December 2018.
45. **Lundquist, J. D.,** J. S. Deems, M.T. Durand, A. Langlois, H.P. Marshall, M.S. Raleigh, M. J. Sandells, M. Sturm, C. Vuyovich, A strategy for global snow information for nature and society, AGU Fall Meeting, Washington, D.C., December 2018.
46. **Lundquist, J.D.,** Recent snow science in *Water Resources Research***,** AGU Fall Meeting, Washington, D.C., December 2018.
47. **Gutmann, E. D.,** J.D. Lundquist, M.P. Clark, Canopy interception and climate change, AGU Fall Meeting, Washington, D.C., December 2018.
48. **Istanbulluoglu, E.,** A.R. Horner-Devine, C. Bandaragoda, A. Pfeiffer, J.A. Morgan, J. Keck, G.S. Mauger, B.D. Collins, D. E. Shean, N. Kumar, J. Lundquist, S.W. Anderson, K. L. Jaeger, E. Grossman, E. Whorton, D. Montgomery, J.L. Riedel, Integrated Modeling of

Hydro-Geomorphic Hazards: Floods, Landslides and Sediment, AGU Fall Meeting, Washington, D.C., December 2018.

49. **Kim, R.S.**, S. Kumar, C. Vuyovich, P. Houser, M.T. Durand, J. Lundquist, E. J. Kim, A. P. Barros, C. Derksen, B. A. Forman, C. Garnaud, M. J. Sandells, Snow Ensemble Uncertainty Project (SEUP): Quantification of snow water equivalent uncertainty across North America via ensemble-based land surface modeling, AGU Fall Meeting, Washington, D.C., December 2018.
50. **Currier, W.R.**[1] and J.D. Lundquist, Snow depth distributions with respect to forest canopy and topography in multiple climates, MtnClim Conference, Gothic, CO, September 2018.
51. **Lundquist, J. D.,** Forest ecosystems and the water cycle across multiple spatial scales, MtnClim Conference, Gothic, CO, September 2018.
52. **Currier, W.R.**[1] and J.D. Lundquist, Snow depth distributions with respect to forest canopy and topography in multiple climates, Western Snow Conference, Albuquerque, NM, April 2018.
53. **Lundquist, J. D**., B. Henn, M. Hughes, R. Currier, N. Wayand, Has our ability to model mountain rain and snow exceeded the skill of our observational networks?, *Invited*, AMS 18th Conference on Mountain Meteorology, Santa Fe, NM, June 2018. Recorded: https://ams.confex.com/ams/18Mountain/videogateway.cgi/id/48507?recordingid=48507
54. **Hughes, M.,** J. Lundquist, and B. Henn[2], Dynamical downscaling improves upon gridded precipitation products in the Sierra Nevada, California, AMS Annual Meeting, Austin, Texas, January 2018.
55. **Currier, W.R.**[1], G. Mazzotti[3], J. M. Pflug[1], T. Jonas, and J. Lundquist, Understanding Snow Depth Variability with Respect to the Canopy in Multiple Climates Using Airborne LiDAR, AGU Fall Meeting, New Orleans, Louisiana, December 2017.
56. **Lundquist, J. D.,** Do forest-snow feedbacks mitigate or exacerbate a mountain's hydrologic response to a warming world? (Invited as part of Pardee Symposium), GSA Meeting, Seattle, Washington, September 2017.
57. **Lundquist, J. D.,** Surface temperatures of snow and trees, First Workshop on NASA SnowEx Results, Longmont, Colorado, August 2017.
58. **Henn, B.**[2], T. H. Painter, B. McGurk, A. L. Flint, L. Flint, V. White and J. D. Lundquist: High-elevation evapotranspiration estimates during drought: Using streamflow and NASA Airborne Snow Observatory SWE snow observations to close the upper Tuolumne River basin water balance. Poster, 85th Western Snow Conference, Boise, ID, April 2017.
59. **Hughes, M.**, J. Lundquist, and B. Henn[2]; Dynamical downscaling improves upon gridded precipitation products in the Sierra Nevada, California, International Conference on Alpine Meteorology, Reykjavik, Iceland, June 2017.
60. **Currier, W.R.**[1] and J. Lundquist, Unifying datasets to evaluate the accuracy of LiDAR and understand the variability of snow depth with in various canopy structures: SnowEx data and the Institute for Snow and Avalanche Research (SLF), First Workshop on NASA SnowEx Results, Longmont, Colorado, August 2017.
61. **Currier, W.R.**[1] and J. Lundquist, Using OLYMPEX High Elevation Measurements to Evaluate Predicted Frozen Precipitation by both PRISM and WRF (4/3 km) in the Olympic Mountains during WY 2015 and 2016, 28th Conference on Weather Analysis and Forecasting at the 2017 American Meteorological Society (AMS) Annual meeting, Seattle, Washington, January 2017. *3rd place student oral presentation award
62. **Lapo, K.**[1] and J. D. Lundquist, Testing Turbulence Schemes in Land Models During Stable Conditions, Hydrology Section of the 2017 American Meteorological Society (AMS) Annual meeting, Seattle, Washington, January 2017. *1st place student oral presentation award
63. **Lundquist, J.D.,** Do forest-snow feedbacks mitigate or exacerbate a mountain's hydrologic response to a warming world? (Invited), AGU Fall Meeting, San Francisco, California, December 2016.

64. **Cao, Q.,** D. P. Lettenmaier, T. H. Painter, J. D. Lundquist, and W. A. Peterson, Estimation of precipitation over the OLYMPEX domain during winter 2015-2016 using radar, gauge precipitation, and ASO snow estimates, AGU Fall Meeting, San Francisco, California, December 2016.
65. **Sun, N.,** M. S. Wigmosta, T. Zhou, S.E. Dickerson-Lange, J. D. Lundquist**,** An integrated canopy gap module with DHSVM for improving predictions of canopy-snow dynamics, AGU Fall Meeting, San Francisco, California, December 2016.
66. **Henn, B. M.,** T. H. Painter, B. J. McGurk, A. L. Flint, V. White, and J. D. Lundquist**,** High-elevation evapotranspiration estimates during drought: Using streamflow and LiDAR snow observations to close the upper Tuolumne River Basin water balance, AGU Fall Meeting, San Francisco, California, December 2016.
67. **Wayand, N.** [1]**,** J. Stimberis, J. Zagrodnik, C. Mass, and J. D. Lundquist**,** Improving simulations of precipitation phase and snowpack at a site subject to cold air intrusions: Snoqualmie Pass, WA, AGU Fall Meeting, San Francisco, California, December 2016.
68. **Lapo, K.** [1]**,** M. P. Clark, B. Nijssen, and J. D. Lundquist**,** Testing turbulence schemes in land models during stable conditions, AGU Fall Meeting, San Francisco, California, December 2016.
69. **Hughes, M.,** J. D. Lundquist, and B. M. Henn, Dynamical downscaling overcomes deficiencies in gridded precipitation products in the Sierra Nevada, California, AGU Fall Meeting, San Francisco, California, December 2016.
70. **Clark, M.,** B. Nijssen, J. D. Lundquist, C. H. Luce, K. N. Musselman, N. E. Wayand, M. Ou, K. E. Lapo, Improving the representation of cryospheric processes in land models, AGU Fall Meeting, San Francisco, California, December 2016.
71. **Lundquist, J. D.,** Snow and forest surface temperatures: February 2016 Yosemite field experiment from point to airplane to satellite, Mtnclim Meeting, Leavenworth, Washington, October 2016.
72. **Lundquist, J.D.,** Snow measurements in the Olympics, Western Snow Conference, Seattle, Washington, April 2016 (Invited).
73. **Currier, W.R.** [1] and J. Lundquist, Stories from the field in the Olympics, Western Snow Conference, Seattle, Washington, April 2016 (Invited).
74. **Thorson, T.** [1] and J. Lundquist, Predictive SWE model based on snow depth and ambient air temperature, Western Snow Conference, Seattle, Washington, April 2016.
75. **Keenan, E.** [1] and J. Lundquist, Thermal infrared remote sensing of snow surface temperature: quantifying snow's energy budget, Western Snow Conference, Seattle, Washington, April 2016.
76. **Henn, B.**[2] and J. Lundquist, Sierra Nevada precipitation spatial distribution and uncertainty, Western Snow Conference, Seattle, Washington, April 2016.
77. **Cristea, N.** [2] and J. Lundquist, An evaluation of terrain-based downscaling of MODIS-based fractional-snow-covered-area datasets over the Tuolumne River, CA based on LIDAR derived snow data, Western Snow Conference, Seattle, Washington, April 2016.
78. **Dickerson-Lange, S.** [1] and J. Lundquist, Snow disappearance timing in warm winter climates is dominated by forest effects on snow accumulation, Western Snow Conference, Seattle, Washington, April 2016.
79. **Lapo, K.** [1] and J. Lundquist, The need for including snow surface temperature in model evaluations, Seattle, Washington, April 2016. *Church Award for best student presentation
80. **Henn, B.** [1]**,** M. Clark, D. Kavetski, B. McGurk, T. Painter, J. Lundquist, A44B-04: Precipitation trends in the High Sierra of California inferred from streamflow and snowpack observations (Invited), AGU Fall meeting, San Francisco, California, December 2015.
81. **Lapo, K.** [1]**,** L. Hinkelman, and J. Lundquist, A31C-0063: Evaluating patterns of solar irradiance errors over an area of complex topography, AGU Fall meeting, San Francisco, California, December 2015. *Winner of student paper award

82. **Lundquist, J. D**., N. E. Wayand[1], A. Massmann[1], M. P. Clark, F. Lott[1], N. C. Cristea[2], C43E-0443: Diagnosis of Insidious Data Disasters, AGU Fall meeting, San Francisco, California, December 2014 (Invited).
83. **Lundquist, J. D**., E. Gutmann, M. Clark, C41D-06: Forests, Snow, and Change: How Modeling History Is Shaping Our Predictions for the Future. AGU Fall meeting, San Francisco, California, December 2014 (Invited).
84. **Wayand, N. E**. **[1]**, J. D. Lundquist, M. C. Clark, C41D-03: "How Important Is Snowmelt Input for Runoff during Rain-on-Snow Floods over the Western U.S. Mountains? AGU Fall meeting, San Francisco, California, December 2014 (Invited).
85. **Friesen, J**., J. D. Lundquist, J. Van Stan, "Evolution of Forest Precipitation Water Storage Monitoring Methodologies (H21E-0772)." AGU Fall meeting, San Francisco, California, December 2014.
86. **Raleigh, M**., J. D. Lundquist, M. Clark, "Which forcing data errors matter most when modeling seasonal snowpacks (C43E-0444). " AGU Fall meeting, San Francisco, California, December 2014.
87. **Wayand, N**.[1], A. Massmann, M. Clark, J. D. Lundquist, "Constraining snow model choices in a transitional snow environment with intensive observations (C43E-0445)." AGU Fall meeting, San Francisco, California, December 2014.
88. **Dickerson-Lange, S**. **[1]**, J. Lutz, K. Martin[1], M. Raleigh, R. Gersonde, J. D. Lundquist, "Evaluating observational methods to quantify snow duration under diverse forest canopies (C43E-0456)." AGU Fall meeting, San Francisco, California, December 2014.
89. **McMurdie, L**., R. Houze, J. Lundquist, C. Mass, W. Petersen, M. Schwaller, "OLYMPEX: A Global Precipitation Mission (GPM) Ground Validation Campaign on the Olympic Peninsula in the Pacific Northwest (H23P-08)." AGU Fall meeting, San Francisco, California, December 2014.
90. **Hinkelman, L**., K. Lapo**[1]**, N. Cristea, J. D. Lundquist, "Snow Never Falls on Satellite Radiometers: A Compelling Alternative to Ground Observations (C43D-0429)." AGU Fall meeting, San Francisco, California, December 2014.
91. **Henn, B**. **[1]**, D. Kavetski, M. Clark, J. Lundquist, "Inferring Mountain Basin Precipitation from Streamflow Observations Using Bayesian Model Calibration (H23M-1062)." AGU Fall meeting, San Francisco, California, December 2014.
92. **Lundquist, J.D.,** B. Henn**[1]**, M. Hughes, "How snow observations reveal mountain precipitation patterns missed by conventional means." AMS Mountain Meteorology Conference, San Diego, California, August 2014.
93. **Henn, B. [1],** M. Clark, D. Kavetski**,** J. D. Lundquist, "Doing hydrology backward to estimate mountain precipitation patterns from streamflow." AMS Mountain Meteorology Conference, San Diego, California, August 2014.
94. **Wayand, N., [1]** J. D. Lundquist, "Constraining snow model choices in a transitional and intermittent snow environment with intensive observations." Eastern Snow Conference, Boone, North Carolina, June 2014.
95. **Wayand, N. [1],** J. D. Lundquist, "Is snowmelt important for runoff during rain-on-snow floods over the Western U.S. mountains?" European Geophysical Union Conference, Vienna, Austria, April 2014.
96. **Lundquist, J.D.,** "Data driving us to distraction." Davos Cryosphere Assembly (DACA), Davos, Switzerland, July 2013. *(Invited.)*
97. **Lundquist, J.D.,** "The Atmosphere and Snow." Fourth International Workshop on Space-based Snowfall Measurement, Mammoth, California, May 2013. *(Invited.)*
98. **Wayand, N. [1],** J. D. Lundquist, "Quantifying low-elevation snow." Western Snow Conference, April 2013.
99. **Lundquist, J. D.**, **"**Temperature-induced tipping point in effect of trees on snow." Mountains Under Watch Conference, Italy, February 2013.

100. **Henn, B.[1];** J. D. Lundquist; and M. S. Raleigh, 2012. "To what extent does snow cover influence near-surface air temperature in complex terrain?", Fall Meeting, AGU, San Francisco, California, December 2012.
101. **Raleigh, M. S.[1]**, K. E. Rittger[3], J. D. Lundquist, "Buried Treasure: Using Distributed Ground Temperature Sensors to Test Remote Sensing of Fractional Snow Cover." Fall Meeting, AGU, San Francisco, California, December 2012.
102. **Wayand, N. E.,[1]** A. F. Hamlet, M. Hughes, S. Feld[1], and J. D. Lundquist. "Intercomparison of Meteorological Forcing Data from Empirical and Mesoscale Model Sources in the N.F. American River Basin in northern California," Fall Meeting, AGU, San Francisco, California, December 2012.
103. **Clark, M. P**., D. Kavetski, A. G. Slater, J. D. Lundquist, A. W. Wood, D. Gochis, E. Gutmann, and R. Rasmussen, "A computational framework to advance hydrometeorological prediction capabilities in cold regions," Fall Meeting, AGU, San Francisco, California, December 2012.
104. **Lapo, K. E**.[1], J. D. Lundquist, and L. M. Hinkelman, "How common problems with estimating surface radiative fluxes impact snow simulations," Fall Meeting, AGU, San Francisco, California, December 2012.
105. **Van Stan, J**. T., K. Martin, J. Friesen, M. Jarvis, J. D. Lundquist, and D. F. Levia, "Instrumental method to reduce error in canopy water storage estimates via mechanical displacement," Fall Meeting, AGU, San Francisco, California, December 2012.
106. **Lundquist, J**. D., S. Dickerson-Lange, N. C. Cristea[2], J. Lutz, "Thinned forests enhance snow retention in warmer climates," Fall Meeting, AGU, San Francisco, California, December 2012.
107. **Henn, B.[1],** J. D. Lundquist, M. S. Raleigh[1], and A. Fisher. 2012. "Estimation of hourly near-surface temperature in complex terrain: influence of elevation, cold air pools and snow cover," 15th Conference on Mountain Meteorology, AMS, Steamboat Springs, CO, August 2012.
108. **Lowry, C.S**., S.P. Loheide, J.D. Lundquist, N.C. Cristea[1], and C.E. Moore. 2012. High Elevation Groundwater Dependent Ecosystems: Modeling ecohydrology to quantify historical and restoration scenarios. International Association of Hydrogeologists 2012 Congress. Niagara Falls, Ontario, Canada, September 2012.
109. **Hinkelman, L. M.,** J. D. Lundquist, R. T. Pinker and K. Lapo[1], "Use of Satellite-Based Surface Radiative Fluxes to Improve Snowmelt Modeling," AGU Chapman Conference on Remote Sensing of the Terrestrial Water Cycle, Kona, Hawaii, February 2012.
110. **Rittger, K. E.**[3], T. H. Painter, M. S. Raleigh[1], J. D. Lundquist, J. Dozier, "Assessment of viewable and canopy-adjusted snow cover from MODIS," AGU Chapman Conference on Remote Sensing of the Terrestrial Water Cycle, Kona, Hawaii, February 2012.
111. **Lundquist, J. D.** and S. P. Loheide "How evaporative water losses vary between wet and dry water years as a function of elevation in the Sierra Nevada, California, and critical factors for modeling," Fall Meeting, AGU, San Francisco, California, December 2011.
112. **Henn, B.**[1], J. D. Lundquist, M.S. Raleigh[1], and A. Fisher, "Comparison of EOF-based and traditional techniques for filling short-term gaps in temperature data in dense-station datasets," Fall Meeting, AGU, San Francisco, California, December 2011.
113. **Raleigh, M.*** [1], K. Rittger, and J. D. Lundquist. "What Lies Beneath? Comparing MODIS Fractional Snow Covered Area Against Ground-Based Observations Under Forest Canopies and in Meadows of the Sierra Nevada," Western Snow Conference, Lake Tahoe, California, April 2011. <u>*Recipient of Dr. Church Memorial Award for Best Student Presentation</u>.
114. **Lundquist, J. D.** and S.P. Loheide II. "How Evaporative Water Losses Vary Between Wet and Dry Water Years as a Function of Elevation in the Sierra Nevada, California," Western Snow Conference, Lake Tahoe, California, April 2011.

115. **Wayland, N.E.** [1]**,** J.D. Lundquist**,** M. Hughes, and A. Hamlet. "The Applicability of Regional Climate Models for Distributed Hydroclimate Simulations of Snowpack: A Case in the North Fork American River," Western Snow Conference, Lake Tahoe, California, April 2011.

116. **Wayand, N. E.** [1] and J. D. Lundquist. "A Distributed Hydrological model Forced by DIMP2 Data and the WRF Mesoscale model." AGU, San Francisco, California, December 2010.

117. **Lowry, C**., S.P. Loheide, J. S. Deems, C. E. Moore[1], and J. D. Lundquist. "Importance of snowmelt-derived fluxes on the groundwater flow in a high elevation meadow. (Invited)" AGU, San Francisco, California, December 2010.

118. **Loheide, S. P.**, C. Lowry, C. Moore[1], and J. D. Lundquist. "Groundwater Controls on Vegetation Composition and Patterning in Mountain Meadows." AGU, San Francisco, California, December 2010.

119. **Moore, C**. [1], J. D. Lundquist, and S. P. Loheide. "Modeling Alpine Meadow Restoration Techniques and their Effects on Stream Stage Regimes." AGU, San Francisco, California, December 2010.

120. **J. Helmschrot,** J. D. Lundquist, and P. Krause. "Impact of High-altitude Meadows on Runoff Dynamics Across Environmental and Elevational Gradients in the Sierra Nevada, California." AGU, San Francisco, California, December 2010.

121. **Raleigh, M**[1], and J. D. Lundquist. "Northern Sierra Nevada Snowfall Accumulation: Comparing SWE Reconstruction and PRISM." AGU, San Francisco, California, December 2010.

122. Kunz, A[3], **J. Helmschrot**, J. D. Lundquist. "Analyzing the Locations, Severity and Frequency of Cold Air Pools (CAP) in the Sierra Nevada, California," AGU, San Francisco, California, December 2010.

123. **Lundquist, J. D.**, P. J. Neiman, J. R. Minder[3], and E. Sukovich. "Relationships between barrier Jet heights, precipitation distributions, and streamflow in the northern Sierra Nevada." 14th Conference on Mountain Meteorology, Lake Tahoe, CA, September 2010.

124. **Neiman, P**. J., E. Sukovich, F. M. Ralph, M. Hughes, and J. D. Lundquist. "A seven-year wind profiler-based climatology of the windward barrier jet and precipitation distributions along California's northern Sierra Nevada." 14th Conference on Mountain Meteorology, Lake Tahoe, CA, September 2010.

125. **Raleigh, M**. [1], and J. D. Lundquist. "An alternative approach to predicting snowfall across the Sierra Nevada." 14th Conference on Mountain Meteorology, Lake Tahoe, CA, September 2010.

126. **Lundquist, J. D.,** J. Minder, P. J. Neiman, E. Sukovich. "Relationships between barrier jet heights, precipitation distributions, and streamflow in the Northern Sierra Nevada." CUAHSI Biennial Symposium on Hydrologic Science and Engineering, Boulder, CO, July 2010.

127. **Raleigh, M.** [1]**,** J. D. Lundquist. "A snow hydrologist's time machine: determining winter snow accumulation with springtime mass and energy exchanges at the air-snow interface." CUAHSI Biennial Symposium on Hydrologic Science and Engineering, Boulder, CO, July 2010.

128. **Forsyth, J.** [1]**,** J. D. Lundquist, N. Wayand[1]. "An experimental and modeling investigation of the impact of silvicultural manipulation on snow hydrology in the Cedar River Watershed, WA." Western Regional Snow Conference, Logan, UT, April 2010.

129. **Lundquist, J. D**. "How can resource managers cope with a disappearing snowpack? *(Invited).*" AGU, San Francisco, California, December 2009.

130. **Deems, J. S**. [2], J. D. Lundquist; S. P. Loheide, "Climate change impacts on snowmelt hydrology in small Sierra Nevada basins for ecological applications." AGU, San Francisco, California, December 2009.

131. **Lundquist, J. D.,** "Monitoring Mountain Meteorology without Much Money *(Invited)."* AGU, San Francisco, California, December 2009.
132. **Moore, C.E**. [1], J. S. Deems; S. P. Loheide; J. D. Lundquist, "Examining Alpine Meadow Restoration Techniques through Hydraulic Modeling." AGU, San Francisco, California, December 2009.
133. **Raleigh, M. S**. [1], and J. D. Lundquist, "Calculating snowmelt backwards – using the date of snowpack disappearance to determine how much snow fell over a season." AGU, San Francisco, California, December 2009.
134. **Pepin, N. C**., C. Daly; and J. D. Lundquist, "The role of cold-air drainage in explaining spatial patterns of temperature trends in the Western U.S.," AGU, San Francisco, California, December 2009.
135. **Deems, J.**, F. Lott[1], and J. D. Lundquist, "Refining Distributed Snowmelt Models in a Mountain Environment," AGU, San Francisco, California, December 2008.
136. **Raleigh, M.** [1]**,** F. Lott[1], and J. D. Lundquist, "Most Critical Surface Meteorological Measurements for Modeling Distributed Snowmelt in the Sierra Nevada, California", AGU, San Francisco, California, December 2008.
137. **Lundquist, J. D**., "Variations in Spatial Precipitation Patterns in the Sierra Nevada, California: Implications for Hydrologic Modeling and Water Resource Planning." *AGU*, San Francisco, California, December 2008, Invited presentation.
138. **Lundquist, J. D.,** "Mountain hydroclimatology at ecosystem scales: What do we need to know?" *Climate Ecosystems and Resources of Eastern California (CEREC) Conference*, Bishop, California, November 2008, Invited presentation.
139. **Lundquist, J. D**., "Mapping mountain temperatures", *MtnClim 2008*, Silverton, Colorado, June 2008.
140. **Lundquist, J. D.,** "Evapotranspiration in wet vs. dry years in the Sierra Nevada", *Western Snow Conference*, Portland, Oregon, April 2008.
141. Lundquist, J. and **P. Mote**, "Microclimate studies with microsensors", *EGU General Assembly 2008*, Vienna, Austria, April 2008.
142. **Lundquist, J. D**., "Runoff Efficiency of Sierra Snowmelt: Evaporative Water Losses in Wet vs. Dry Years", *AGU*, San Francisco, California, December 2007.
143. **Lott, F.** [1] and J. D. Lundquist, "Modeling spatial differences in snowmelt runoff timing", *AGU*, San Francisco, California, December 2007.
144. **Lundquist, J. D**., "Wet vs. dry years in the Sierra Nevada: implications beyond the obvious less snow to start with." *Yosemite Hydroclimate Conference*, Yosemite, California, October 2007.
145. **Lundquist, J. D**., "Distributed temperatures in the snow zone: spatial patterns and innovative measurement techniques." *Western Snow Conference*, Kailua, Hawaii, April 2007.
146. **Lundquist, J. D.,** M. Dettinger, D. Cayan, "Hydrology and climate in the Sierra Nevada: Disproving the myth of linear gradients with elevation." *AGU*, San Francisco, California, December 2006, invited presentation.
147. **Roop, H.** [3]**,** Huggett, B., Lundquist, J., Clow, D., Roche, J., "Wilderness Stream Gauging: the application of new technology and techniques in Yosemite National Park." *AGU*, San Francisco, California, December 2006.
148. **Lundquist, J.,** D. Reynolds, R. Bales, D. Cline, D. Lettenmaier, K. Redmond, P. Restrepo, and E. Strem, "Hydrologic Aspects of the Hydrometeorological Testbed –West – the North Fork American River." *USA PUB workshop*, Corvallis, Oregon, October 2006.
149. **Lundquist, J. D.,** P. J. Neiman, B. Martner, A. B. White, D. J. Gottas, F. M. Ralph, "Rain vs. snow in the Sierra Nevada, California, Comparing free-air observations of melting-level with surface measurements." *USA Precipitation in Ungauged Basins (PUB) Workshop*, Corvallis, Oregon, October 2006.

150. **Lundquist, J. D.**, P. J. Neiman, B. Martner, A. B. White, D. J. Gottas, F. M. Ralph, "Rain vs. snow in the Sierra Nevada, California, Comparing free-air observations of melting-level with surface measurements." *MtnClim*, Mt. Hood, Oregon. September 2006.
151. **Dettinger, M.,** J. Lundquist, and D. Cayan, "The 16 May 2005 flood in Yosemite: a glimpse into high-country flood generation in the Sierra Nevada." *MtnClim*, Mt. Hood, Oregon. September 2006.
152. **Lundquist, J. D.**, P. J. Neiman, B. Martner, A. B. White, D. J. Gottas, F. M. Ralph, "Rain vs. snow in the Sierra Nevada, California, Comparing radar observations of melting-level with surface measurements." *Quantitative Precipitation Forecasting and Hydrology Symposium*. Boulder, Colorado, June 2006.
153. **Lundquist, J.**, F. M. Ralph, P. Nieman, D. Kingsmill1, A. White, D. Gottas 2005. Recipe for Flood: Rainstorms falling on the Sierra Nevada Snowpack. AGU Fall Meeting, San Francisco, California. December 2005.
154. **Lundquist, J.,** R. Dole, M. Dettinger, and D. Cayan, "Surface temperature patterns and lapse rates: Implications for water resources and studies of mountain climate change", *MTNCLIM 2005*, Chico, Montana, March 2005.
155. **Lundquist, J**., "How snowmelt onset varies with elevation." *American Meteorological Society Forum: Living with a Limited Water Supply*, San Diego, California, February 2005.
156. **Lundquist, J**., A. Flint, M. Dettinger, and D. Cayan, "How the 2004 onset of snowmelt and streamflow varied with elevation," *American Geophysical Union Fall Meeting*. San Francisco, California, December 2004.
157. **Lundquist, J.** and D. Cayan, "Yosemite National Park: Hydroclimate observatory and educational opportunity." *American Geophysical Union Fall Meeting*. San Francisco, California, December 2004.
158. **Lundquist, J.**, D. Cayan, and M. Dettinger, "Variability and trends in spring runoff in the Western United States." *American Association for the Advancement of Science Western Regional Conference*. Logan, Utah, June 2004, Invited presentation.
159. **Lundquist, J**. and M. Dettinger, "How snow heterogeneity affects streamflow timing." *21st Annual PACLIM Workshop*. Pacific Grove, California, March 2004.
160. **Lundquist, J**. and M. Dettinger, "The effect of basin scale on diurnal streamflow timing." *American Geophysical Union Fall Meeting*, San Francisco, California, December 2003.
161. **Lundquist, J**., "Research and monitoring in Yosemite National Park," *California Cooperative Snow Surveys Meeting*, Folsom, California, October 2003, Invited presentation.
162. **Lundquist, J.,** M. Dettinger, and D. Cayan, "Meteorology and hydrology in Yosemite National Park: a sensor network application," *ISPN Conference*. Palo Alto, California, May 2003.
163. **Lundquist, J**., M. Dettinger, and D. Cayan, "Is Sierra Nevada snowmelt independent of elevation?" *20th Annual PACLIM Workshop*. Pacific Grove, California, April 2003.
164. **Lundquist, J**. and M. Dettinger, "Linking diurnal cycles in river discharge to interannual variations in climate*." 83rd AMS Annual Meeting, 17th Conference on Hydrology*. Long Beach, California, February 2003.
165. **Lundquist, J**., M. Dettinger, and D. Cayan, "Is snowmelt independent of elevation?" American Geophysical Union Fall Meeting. San Francisco, California, December 2002.
166. **Lundquist, J**., N. Knowles, M. Dettinger and D. Cayan, "Snow, topography, and the diurnal cycle in streamflow." *Western Snow Conference*, Granby, Colorado, April 2002.
167. **Lundquist, J**., N. Knowles, M. Dettinger and D. Cayan, "Snow, topography, and the diurnal cycle in streamflow." *Sierra Nevada Science Symposium*, Lake Tahoe, California, May 2002.

168. **Lundquist, J**., "Diurnal cycles in river discharge: a key to understanding snowmelt, evapotranspiration, and infiltration." *82nd AMS Annual Meeting. 16th Conference on Hydrology.* Orlando, Florida, January 2002.
169. **Lundquist, J.** and A. Leydecker, "Pathways to the gauge: the diurnal cycle as an indicator of snowmelt rates and transport." *American Geophysical Union Fall Meeting.* San Francisco, California, December 2001.
170. **Lundquist, J**., M. Dettinger, and D. Cayan, "Diurnal cycles in streamflow in the Western United States: a new tool for understanding snowmelt." *American Geophysical Union Fall Meeting*. San Francisco, California, December, 2000.
171. **Lundquist, J. D**. and T. B. Bourcy, "California and Oregon humidity and coastal fog." *14th Conference on Boundary Layers and Turbulence.* Aspen, Colorado, August 2000.
172. **Lundquist, J.**, "Surface drag and momentum exchange in hurricane conditions." *American Society of Limnology and Oceanography Annual Meeting*. Santa Fe, New Mexico, February 1999.

Professional society memberships.

American Geophysical Union, 1999 – present
American Meteorological Society, 1999 – present
International Association of Hydrologic Sciences, 2002 - present

Review of Papers and Proposals:

National Science Foundation (~6 per year)
Water Resources Research (~12 per year)
Journal of Hydrology (~2 per year)
Journal of Hydrometeorology (~4 per year)
Geophysical Research Letters (~3 per year)
Journal of Geophysical Research (~2 per year)
Remote Sensing of the Environment (~2 per year)
Hydrologic Processes (~1 per year)
Hydrology and Earth System Sciences Discussions (~1 per year)
Journal of Glaciology (~1 per year)
Cryosphere (~1 per year)
IEEE Transactions on Geoscience and Remote Sensing (~1 per year)
Review Panels for NASA and NSF (~2 per year)

Research Cruises.

Hawaii Ocean Mixing Experiment, September 2000. R/V Roger Revelle. PI: Dan Rudnick. Assisted with Seasoar deployment and monitoring.
Pacific Ocean Seafloor Mapping, May 2001. R/V Roger Revelle. PI: Peter Lonsdale. Assisted with sonic depth probe collection of seafloor bathymetry.
Stratus Ocean Reference Station mooring recovery and deployment cruise, September-October 2005. R/V Ronald H. Brown. PI: Bob Weller. Worked with Chris Fairall to deploy radiosondes and study atmospheric structure.

GRADUATE STUDENTS

Chaired Doctoral Degrees

Student Name	Level of Supervision	Awards	Title of dissertation	Completed (Year)	Current Employer
Steven Pestana	Chair	NASA FINNEST Fellowship	Scaling Thermal Infrared from GOES	2023	UW

Cassie Lumbrazo	Chair	NCALM Award; Valle Fellowship;	Forest-snow-interactions	2023	UW
Justin Pflug	Chair	NASA ESS Fellowship; AMS Presentation Award; Western Snow Conference Presentation Award; Nece Fellowship	Snow modeling and data assimilation	2021	University of Colorado, Boulder & NASA
William Ryan Currier	Chair	NASA ESS Fellowship; Nece Fellowship	Forest interception of snow	2019	NOAA
Karl Lapo	Chair	PCC Grad Fellowship; NASA ESS Fell.; AGU Best Student Poster Award; AMS 1st Place Student Pres. Award	Remote-sensed radiation and turbulence exchange in snow modeling	2017	U. Bayreuth
Susan Dickerson -Lange	Chair	NSF GRDS Fellowship; Nece Award; Society of Women Engineers Award	Silviculture to enhance snow retention in the Pacific Northwest	2016	Natural Systems Design
Nic Wayand	Chair	Fellowships: Valle; NASA ESS; NCAR Visitor	Using mesoscale atmospheric models to improve hydroclimate simulations	2016	Amazon
Brian Henn	Chair	NDSEG Fellowship; Valle Fellowship; AWRA Award	Combining Indirect Observations and Models to Resolve Spatiotemporal Patterns of Precipitation in Complex Terrain	2015	Vulcan
Mark Raleigh	Chair	Fellowships: Valle; NASA; Nece; Hydro Res. Foundation; and U.S. Society on Dams	Modeling snow accumulation and melt for flood forecasting and water resource applications	2013	Asst Prof, OSU
Nicoleta Cristea	Co-chair with Steve Burges	Egtvedt Fellowship	Evaluating reference evapotranspiration and the effects of climate change and soil parameterization within distributed hydrologic modeling	2012	UW/CEE/e Science

Current Doctoral Students

Student Name	**Level of Supervision**	**Awards**	**Dissertation Topic**	**Status**

Ross Mower	Chair	College of Engineering Fellowship	Fine resolution snow modeling over large spatial domains	Passed qualifying exam (2023)
Eli Schwat	Chair		Snow Sublimation	Passed qualifying exam (2022)
Hannah Besso	Chair	Burges Fellowship	Remote sensing of snow depth	Passed qualifying exam (2023)
Daniel Hogan	Chair		Snow Sublimation and Colorado Weather	Qualifying exam scheduled for March 2024

Chaired Masters Degrees

Student Name	Level of Supervision	Awards	Thesis/Paper Title	Completed (Year)	Current Employer
Daniel Hogan	Chair		Colorado Streamflow	2023	UW/CEE
Hannah Besso	Chair	Burges Fellowship	Remote sensing of snow depth	2022	UW/CEE
Joe Ammatelli	Chair		Videography of tree sway to study interception and ET	2022	UW/CEE
Cassie Lumbrazo	Chair	Burges Fellowship; AGU Best Student Presentation Award	Snow Interception	2020	UW/CEE
Victoria Lee	Chair	Gibbs Fellowship; NSF Grad Research Fellowship	Remote Sensing Strategies for Snow	2020	Jacobs Consulting
Annie Zaccarin	Chair	Valle Fellowship	Snow Patterns	2020	PG&E
Dylan Reynolds	Chair		Snow density and lidar	2019	SLF/WSL (Switzerland)
Steven Pestana	Chair		Scaling Issues in Infrared Sensing of Snow and Forest	2019	UW/CEE
Justin Pflug	Chair	Valle Fellowship; AWRA Fellowship; NPS Young Leaders in Climate Change Fellowship; American Avalanche Society Research Award	Including liquid water percolation in snow models	2018	UW/CEE

William Ryan Currier	Chair	NASA ESS Fellowship	Intermittent snow and modeling	2016	NOAA
Gwyn Perry	Chair		Coursework-based, Projects on Bayesian rating curves and forest hydrology	2015	Otak
Karl Lapo	Chair	PCC Grad Fellowship; NASA ESS Fell.	Radiation and snow modeling	2014	U. Bayreuth
Nic Wayand	Chair	PCC Grad Fellowship; Valle Fellowship	Using mesoscale atmospheric models to improve hydroclimate simulations	2012	Amazon
Shara Feld	Chair	NSF Honorable Mention; NDSEG Fellowship	Relative humidity in complex terrain	2012	unknown (finished Ph.D. with Susan Bolton)
Kael Martin	Chair		Development and testing of a snow interceptometer	2012	Consulting and making snowboard movies
Courtney Moore	Chair	NSF GRDS Fellowship	Stream restoration modeling in Tuolumne Meadows, CA	2011	U.S. Army Corps of Engineers
Mark Raleigh	Chair	Valle Fellowship; NASA Fellowship	Evaluation of the snow disappearance date scaling method for mapping precipitation.	2009	Asst. Prof., OSU
Fred Lott	Chair	Valle Fellowship	Modeling spatial patterns of snowmelt and streamflow in the Tuolumne River, CA	2008	King County (previously at Northwest Hydraulic Consultants)

Current Masters Students

Student Name	**Level of Supervision**	**Awards**	**Thesis/Paper Title**	**Status**
Emma Boudreau	Chair	Future Rivers Fellowship	Snow and streamflow	Started Fall 2023
Clinton Alden	Chair		Wildlife and layers in snow	Started Fall 2023

Other significant student supervision

Student Name	**Level of Supervision**	**Thesis Topic** (if applicable)	**Completed** (Year)
Lydia Tierney, PhD, Atm Sci	Dissertation Committee, GSR	Mountain waves	2022
Friedrich Knuth, PhD, CEE	Dissertation Committee	Glaciers and climate change	2024 (expected)

Shashank Bushan, PhD, CEE	Dissertation Committee	Glaciers and remote sensing	2023
Michelle Hu, PhD, CEE	Dissertation Committee	Snow and remote sensing	2023
Jacqueline Nugent, PhD, Atm Sci	Dissertation Committee, GSR	Deep convection in climate models	2023
Don Radcliff, PhD, SEFS	Dissertation Committee	Forest fires and forest structure	2024 (expected)
Lily McGill, PhD, SAFS	Dissertation Committee	PNW Streamflow and Climate	2023 (expected)
Shelby Ahrendt, PhD, CEE	Dissertation Committee	Sediment movement and floods	2023 (expected)
Joel Eklof, PhD, CEE	Dissertation Committee	Alaskan thermokarst	2024 (expected)
Catherine Breen, PhD, SEFS	Dissertation Committee	Snow-wildlife interactions	2024 (expected)
Andri Gunnarsson, PhD, University of Iceland	Dissertation Committee, Visiting Valle Scholar	Snow physics in Iceland	2022
Jeffery Keck	Dissertation Committee, advising on research	Simulating Atmospheric River events for landslides	2023
Liz VanWagtendonk, PhD, SEFS	Dissertation Committee	Lidar and forests for forest management	2023
Giulia Mazzotti, PhD, ETH Zurich, Switzerland	Dissertation Committee	Hyper-resolution forest snow measurements and modeling	2020
Rebecca Gugerli, PhD, University of Fribourg, Switzerland	Dissertation Committee	Towards improved spatio-temporal snow observations for glacierized high mountain regions	2020
Catherine Kuhn, PhD, SEFS	Dissertation Committee	Remote sensing of river colors	2020
Joe Zagrodnik, PhD, Atm. Sci.	Dissertation Committee	Meteorology in the Olympics	2019
Travis Roth, PhD, Oregon State University	Dissertation Committee	Forest manipulation and snow in Oregon	2019
Jim Roche, PhD, UC Merced	Dissertation Committee	Fire and snow in Yosemite National Park	2017
Ronda Strauch, PhD, CEE	Dissertation Committee	Landslides under climate change	2017
Aimee Fullerton, PhD, SEFS	Dissertation Committee, GSR	Stream temperature patterns	2016
Nicholas Siler, PhD, Atmospheric Science	Reading Committee and Dissertation Committee	Controls on the amount and distribution of mid-latitude orographic precipitation	2015
Wenmo Chang, PhD, Electrical Engineering	Dissertation Committee, GSR	Microwave Remote Sensing of Snow: Forward Modeling	2014
Olivia Wright, MS, CEE	Thesis Committee	Low Impact Development	2013
Eric Rosenberg, PhD, CEE	Reading Committee and Dissertation Committee	Hydrologic Modeling and Operations	2012
Rachel Headly, PhD, ESS	Dissertation Committee, GSR	Subsurface Glacier Flow	2011
Jennifer Tran, PhD, Fisheries	Dissertation Committee, GSR	Salmon in the Columbia River	2011
Justin Minder, PhD, Atmospheric Science	Dissertation Committee, co-authored papers	Orographic Precipitation	2010

Kostas Andreadis, PhD, CEE	Reading Committee and Dissertation Committee	Microwave Sensing of Snow	2009
Alex Reinecke, PhD, Atm Sci	Dissertation Committee, GSR	Downslope Winds and Mountain Waves	2008
Jennifer Adam, PhD, CEE	Dissertation Committee	Arctic Runoff and Permafrost	2007
Kristian Mickelson, MS, CEE	Thesis Committee	Climate change and rafting	2009
Matthew Bonner, UW CEE undergrad	Manages group website		2022-present
John Cramblitt, UW undergrad	Assists with Zooniverse program and Washington tree-snow project		2022-present
Annalise Pree, UW CEE undergrad	Assists with Zooniverse photos and website updates		2021-2022
Annika Prom, UW CEE undergrad	Supervised Zooniverse citizen science updates and implementation		2020-2022
Jori Carter, UW CEE undergrad	Supervised website design and implementation		2020-2022
Joe Ammatelli, UW CSE undergrad	Supervised research on tree sway and video processing, Mary Gates Scholarship in 2020, presented at Undergrad Research Symposium in 2020		2019-2021
Calista Moore, UW CEE undergrad	Supervised web site development and outreach activities, Mary Gates Scholarship in 2021, presented at Undergrad Research Symposium 2021		2017-2021
Kathryn Knight, UW CEE undergrad	Supervised research on meteorological forcing data for snow modeling		2017-2019
Dylan Reynolds, UW CEE undergrad	Supervised field work and research on snow density, lidar-derived snow patterns, and longwave radiation, Awarded Mary Gates Scholarship 2018, will present at Undergrad Research Symposium 2018, nominated for Hawkin's prize		2017-2019
Hannah Hampson, UW CEE undergrad	Supervised research on rain vs. snow in the Olympics, Awarded Mary Gates Scholarship 2018, will present at Undergrad Research Symposium 2018		2017- 2018
Max Mozer, UW CEE undergrad	Supervised field work in the Olympics and data processing; Zooniverse Project, Awarded Mary Gates Scholarship 2017, presented at Undergrad Research Symposium 2017		2016- 2018
Eric Keenan, UW CEE & ESS undergrad	Supervised research and field assistance at Snoqualmie Pass and in Yosemite National Park; Awarded Mary Gates Scholarship; presented at Undergrad Research Symposium 2016		2014-2017
Tim Adamson, UW CEE undergrad	Supervised research and data analysis		2015-2017
Teddy Thorson, UW CEE undergrad	Supervised research on i-button analysis, testing and programming; field work in the Olympics, analysis of snow density estimates; Awarded Mary Gates Scholarship; presented at Undergraduate Research Symposium 2015; now at Stanford		2013-2016
Colin Butler, UW CEE undergrad	Supervised research on Snoqualmie Pass instrumentation, web programming and field work in the Olympics; Awarded Mary Gates Scholarship; presented at Undergraduate Research Symposium 2015; CEE Nominee for 2016 Dean's Medal; Hawkin's Prize		2014-2016
Brad Gaylor, UW CEE undergrad	Supervised field work in the Olympics		2014-2015

Derek Beal, UW ESS MS	Supervised field work in the Olympics	2014-2015
Adam Massmann, UW CEE undergrad	Supervised research on ways to measure snowmelt energy balance, specifically radiation; presented at Undergraduate Research Symposium 2013; Awarded Mary Gates Scholarship and NSF Graduate Research Fellowship	2012-2014
Kael Martin, UW CEE undergrad	Supervised research on using potentiometers for snow interception, presented at Undergraduate Research Symposium 2010 and at Engineering Open House; Co-authored paper on forest temperature variations as measured by fiber optic cable	2010-2011
Axel Kunz, University of Jena, Germany undergrad	Supervised research on mapping cold air pools and their severity across the Sierra Nevada, CA, hosted as visiting fellow	2010-2011
Kevin Sturm, University of Jena, Germany, MS student	Supervised research on modeling Tuolumne River streamflow above Hetch Hetchy Reservoir using PRMS, hosted as visiting fellow	2011
Lucia Scaff, Universidad de Chile, Chile, MS student	Supervised research on orographic precipitation gradients, hosted as visiting fellow	2011
Alex Fisher, UW CEE undergrad	Supervising research on analyzing stream stage records for response time to storms, Awarded Mary Gates Scholarship	2010-2011
Sara Rose, UW CEE undergrad	Supervised NSF REU sponsored research analyzing different methods of snow detection in the intermittent snow zone (sonic, temperature, and photographic)	2010
Jenna Forsyth, researcher and UW CEE grad	Helped obtain NSF Grad Fellowship; supervised research on Silviculture to maximize snow retention	2008-2010
Nic Wayand, UW Atm. Sci. undergrad	Supervised research on monitoring mountain precipitation and meteorology in Cedar River, Awarded Mary Gates Scholarship	2009
Natalie Lowe, UW CEE undergrad	Supervised research on mountain temperatures and precipitation, co-authored paper	2008
Brian Huggett, CSU Humbolt, MS	Summer fieldwork supervisor, co-authored paper	2008
Heidi Roop, Arizona State University, MS	Summer fieldwork supervisor, co-authored paper	2008

RESEARCH ACTIVITIES

Funded Research

Funding Agency	Title	My Role, Other PI's co-PI's	Total Amount; My Amount (Subcontract and matching)	Dates (start-finish)
DOE	Seasonal Cycles Unravel Mysteries of Missing Mountain Water	PI (Co-I's R. Carroll and E. Gutmann)	~$980 K; ~$625 K	9/1/23-8/31/26
DOE	Changing diurnal energy cycles impact net water vapor fluxes in mountain watersheds	Co-I (PI: E. Gutmann)	~$980 K; ~$390 K	10/1/23-9/30/26
NSF	Sublimation of Snow (SOS)	PI	~$450,000; ~$450,000	1/15/22-1/14/25
NSF	Influence of Winter Watershed Dynamics on Methane Emissions from Permafrost-Thaw Bogs	Co-I (PI: R. Neumann)	~$500,000; ~$100,000	2/1/22-1/31/25
NASA	Scoping an Ecohydrological Testbed	Co-I (PI: Craig Ferguson)	$6,288	5/4/21-5/3/23
NASA	Linking seasonal snow processes to wildlife population dynamics	Co-I (PI: L. Prugh)	$ 1,299,082; $400,000	7/1/20 – 6/30/23
NASA	AIST: SnowModel	Co-I (PI: E. Gutmann)	~$500,000; ~$30,000	6/1/20-8/31/22
NASA	Snow: Learning How to Scale Success from the Field Experiment to the Earth System	PI (Co-I's C. Kummerow and S. Margulis)	$1,649,765; $650,000	9/1/20-9/1/23
NASA	FINNESST Fellowship (Pestana)	PI	$120,000; $120,000	9/1/20-8/31/23
NASA	ESS Fellowship (Pflug)	PI	$120,000; $120,000	9/1/18-8/31/21
NASA	Stereo2SWE	Co-I (PI: D. Shean)	~$350,000; ~$30,000	6/1/18-5/31/21
NSF	PREEVENTS	Co-I (PI: E. Istanbulloglu)	>$1 million; ~$30,000	9/1/17-8/31/22
NSF	Managing Forest for Snow, Water, and Sustainable Ecosystems	PI (co-I: M. Wigmosta, PNNL)	$300k; $280,000	8/1/17-7/31/20
NASA	Combining Field Measurements with Modeling to develop a Global Snow Mission Concept	PI (co-I: A. Langlois, U. Sherbrooke)	$549,000 ; $549,000	7/1/17-6/31/22

NASA	ESS Fellowship (Currier): Improving snow water equivalent modeling in forests	PI	$120,000; $120,000	9/1/16-8/31/19
PNNL	Improving DHSVM snow modeling	Local PI, subcontract from Mark Wigmosta	$55,926; $55,926	11/15/16-1/31/18
NASA	NASA Snow Meeting	PI	$40,000; $40,000	3/1/16-12/31/16
Anchor QEA	Chehalis Forest-Streamflow Review	PI (listed as subcontract under CIG grant)	$44,000; $44,000	2/15/16-6/30/16
NASA	Sensing and Simulating Spatial Snow and Streamflow in the Sierra (S^6)	PI (Co-PI's: Chickadel, APL; Hughes, CU Boulder)	$553,000; $379,000	11/1/14-10/30/17
NASA	In-situ Measurement of Olympic Peninsula Snow (IMOPS)	PI	$233,190; $233,190	6/1/14-12/31/16
NSF	Unraveling Orographic Precipitation Patterns by Combined Hydrologic and Atmospheric Analysis	PI (co-PI Mimi Hughes, CU Boulder)	$246,403 (UW) + $96,233 (CU Boulder) ; $246,403	3/1/14-2/28/17
NSF	Predicting Climate Change impacts on Shallow Landslide Risk at regional scales	Co-PI (PI Istanbulloug lu, UW CEE)	$299,036; $30,000	9/1/13-8/31/16
NASA	Snow, Montane Wildflowers, and Citizen Scientists	Co-PI (PI Hille Ris Lambers, UW Biology)	$189,248; $89,000	1/1/14-12/31/14
NASA	Olympex: Quantifying snow over the Olympics	PI	$44,652l $44,652	8/13-7/14
NW CSC/ USGS	Forest management tools to maximize snow retention under climate change	PI	$193,000; $150,000	9/14-8/16
JCATI	Snow depths from the heights	Co-PI (co-PI Ed McCormack, CEE, UW)	$91,533; $50,000	1/13-6/13
NSF	Process Dynamics in the Intermittent Snow Zone	PI, (co-PI, Martyn Clark, NCAR)	$310,125; $310,125	9/12-8/16

NASA	ESS Fellowship (Lapo): Improving estimates of the radiation balance of snow covered complex terrain using MODIS and CERES data	PI	$90,000; $90,000	9/1/13-6/15/17
NASA	ESS Fellowship (Wayand): Using Remote Sensing to Improve Modeling of Intermittent Snow	PI	$90,000; $90,000	9/1/12-12/31/15
NSF	GRDS Supplement: Forests and Snow	PI	$41,000; $41,000	9/12-8/13
NASA	Using CERES and MODIS data to improve snowmelt modeling	Co-PI, (PI: Laura Hinkelman, JISAO, UW)	$695,152; $200,000	3/11-3/14
NOAA	Hydrometeorological Testbed – Research to improve operations	PI	$25,000; $25,000	8/11-9/13
NSF	GRDS Supplement: Forests and Snow	PI	$43,000; $43,000	9/11-8/12
NPS/ USGS	Wolverine Habitat in a Future Climate	PI	$28,873; $28,873	8/10-12/12
NSF	Manipulating Forest Density and Structure to Maximize Snow Retention and Offset Climate	PI, (co-PI Jim Lutz, $40k)	$291,398 ; $250,000	9/09-9/13
NSF	REU Supplement: Forests and Snow	PI	$8.5 k $8,500	6/10-6/11
NSF	Using mesoscale climate simulations to reduce input data errors in energy balance snow models	PI, Co-PI: (Hamlet, $100k)	$306,405 ; $206,405	6/09-6/13
NSF	GRDS Supplement: Mountain Meadow Restoration with a Changing Climate	PI	$41,542; $41,542	9/09-8/10
NSF	Mountain Meadow Restoration with a Changing Climate	PI, Co-PI: S. Loheide, U. Wisconsin, Madison, joint role	$425,000; $212,500	9/07-7/10
UW Royalty Research	Using diurnal cycles in streamflow to interpret surface and subsurface flow paths in mountain environments	PI	$34,626 ; $34,626	9/07-6/09

NOAA	Combining distributed sensors and models for better flood forecasting: Case study of the American River Basin, California	PI	$150,000; $150k	9/07-9/11
North Coast and Cascades Research Learning Network	National Parks of the Pacific Northwest, for examining temperature and treeline in a changing climate	PI, (co-PI, Jeremy Littel, $1,000)	$9,729; $8,729	6/07-9/09
U. Colorado	High-resolution alpine temperature monitoring	PI	$8,000; $8,000	6/05-8/06

DOCUMENTATION OF TEACHING EFFECTIVENESS

Courses Taught & Student Evaluations

(Item 1: The course as a whole; Item 3: Instructor's contribution to the course; Item 4: Instructor's effectiveness in teaching the subject matter; On a 5.0 scale, where 3 is good, 4 is very good, and 5 is excellent.)

Course	Title	Quarter	Credit Hrs	Enroll-ment	Evaluation Given? Number student responses	Item 1 (raw /adj)	Item 3 (raw /adj)	Item 4 (raw /adj)	Median, Items 1-4 (raw /adj)
CEWA 599	CUAHSI Online Hydrology Classes	Fall 2023	3	11	Yes, 3/11	4.2/4.1	4.2/4.2	4.0/3.9	4.1/4.0
CEWA 568	Snow Hydrology	Spring 2023	3	12	Yes, 11/12	4.6/4.6	4.4/4.4	4.3/4.4	4.4/4.5
CEE 478/578	Water System Management & Ops	Spring 2023	3	37	Yes, 28/37	4.2/4.3	3.9/4.0	3.9/4.0	4.1/4.2
CEE 465/565	Data Analysis in Water Resources	Fall 2022	4	44	Yes, 17/44	4.2/4.0	4.6/4.4	4.0/3.8	4.1/4.0
CEWA 599	Snow Data Science Seminar Class	Fall 2022	1	11	Yes, 5/11	4.7/4.7	4.0/4.0	4.2/4.3	4.3/4.3
CEE 348	Hydrology and Env. Fluid Flows	Spring 2022	4	17	Yes, 13/17	4.2/4.3	4.2/4.3	4.1/4.2	4.2/4.3
CEE 500	Water Seminar	Spring 2022	1	18	Yes, 5/18	4.2/4.4	4.2/4.3	4.0/4.1	4.3/4.4
CEE 599	Reading Class	Spring 2022	1	2	Yes, 2/2	5.0/4.9	5.0/4.0	4.5/4.4	4.8/4.7
CEE 500	Water Seminar	Winter 2022	1	9	Yes, 2/9	4.0/3.9	4.0/3.9	4.5/4.4	4.2/4.2
CEE 500	Water Seminar	Fall 2021	1	14	Yes, 4/14	4.5/4.4	4.5/4.4	4.5/4.4	4.5/4.4
CEE 599	CUAHSI Online Hydrology Education	Fall 2021	3	16	Yes, 7/16	4.6/4.7	4.6/4.7	4.6/4.7	4.6/4.7
CEE 465/565	Data Analysis in Water Resources	Fall 2021	4	55	Yes, 30/55	4.6/4.8	4.8/4.9	4.7/4.8	4.7/4.8
CEE 348	Hydrology and Env. Fluid Flows	Spring 2020	4	19	Yes, 6/19	3.2/2.9	4.5/4.2	4.0/3.7	3.9/3.6
CEE 500	Water Seminar	Spr 2020	1	7	Yes, 4/7	4.8/4.3	4.8/4.4	4.8/4.3	4.8/4.4
CEE 500	Water Seminar	Winter 2020	1	8	Yes, 3/8	3.5/3.1	3.8/3.4	4.0/3.6	3.8/3.4
CEE 500	Water Seminar	Fall 2019	1	-	No	-	-	-	-
CEE 599	CUAHSI Online Hydrology Education	Fall 2019	3	11	Yes, 4/11	4.8/4.6	5.0/4.8	4.8/4.6	4.9/4.6
CEE 465/565	Data Analysis in Water Resources	Fall 2019	4	36	Yes, 26/36	4.3/4.3	4.4/4.4	4.2/4.3	4.3/4.4
CEE 599	CUAHSI Online Hydrology Education	Fall 2018	3	12	Yes, 8/12	4.7/4.4	4.7/4.4	4.7/4.4	4.7/4.4
CEE 465/565	Data Analysis in Water Resources	Fall 2018	4	29	Yes, 20/29	4.4/4.3	4.7/4.7	4.6/4.6	4.5/4.5

CEE 578	Water Management	Spring 2018	4	20	Yes, 15/20	4.4/4.0	4.1/3.8	4.1/3.8	4.2/3.9
CEWA 565/CEE 491	Data Analysis in Water Resources	Fall 2017	4	36	Yes, 32/36	4.1/4.3	4.6/4.8	4.1/4.4	4.3/4.5
CEE 578	Water Management	Spring 2017	3	11	Yes, 10/11	4.9/4.8	4.9/4.7	4.9/4.7	4.9/4.7
CEE 599	Data Analysis in Water Resources (new version of 491)	Fall, 2016	4	20	Yes, 20/20	4.2/4.3	4.7/4.8	4.1/4.2	4.4/4.5
CEE 578	Water Management	Spring, 2016	3	19	Yes, 17/19	4.7/4.5	4.6/4.4	4.6/4.4	4.6/4.4
CEE 599	Data Analysis in Water Resources (new version of 491)	Fall, 2015	4	24	Yes, 24/24	4.2/4.3	4.6/4.6	4.1/4/1	4.2/4.3
CEE 491	Systems Engineering	Fall, 2014	3	22	Yes, 21/22	3.8/3.8	4.3/4.3	3.7/3.7	4.0/4.0
CEE 573	Snow Hydrology	Wtr, 2013	3	16	Yes, 13/16	4.3/4.1	4.6/4.5	3.9/3.8	4.2/4.1
CEE 491	Systems Engineering	Fall, 2012	3	19	Yes, 13/19	3.6/3.6	3.8/3.8	3.6/3.6	3.6/3.6
CEE 573	Snow Hydrology	Wtr, 2012	3	17	Yes, 16/17	4.0/4.1	4.3/4.3	4.2/4.3	4.1/4.2
CEE 345	Hydraulics	Wtr, 2012	4	53	Yes, 47/53	2.8/3.0	2.8/3.0	2.7/3.0	2.9/3.1
CEE 578	Water Management	Fall, 2011	3	18	Yes, 15/18	4.8/4.5	4.6/4.4	4.3/4.1	4.6/4.4
CEE 444/445	Capstone Design*	Sp, 2011	4	32	Joint,	-	-	-	-
CEE 578	Water Management	Fall, 2010	3	25	Yes, 15/25	4.2/3.8	3.6/3.3	3.9/3.5	3.9/3.5
CEE 345	Hydraulics	Sp, 2010	4	64	Yes, 54/64	3.5/3.5	3.9/3.9	3.5/3.6	3.6/3.7
CEE 444/445	Capstone Design*	Sp, 2010	4	30	Joint, 14/30	2.8/3.1	2.8/3.1	2.5/2.8	2.8/3.1
CEE 599	Snow Hydrology	Wtr, 2010	3	11	Yes, 11/11	4.7/4.7	4.7/4.7	4.6/4.6	4.7/4.6
CEE 345	Hydraulics	Wtr, 2010	4	57	Yes, 41/57	3.8/3.8	3.8/3.8	3.6/3.6	3.8/3.8
CEE 599	Snow Hydrology	Sp, 2009	3	3	Yes, 3/3	4.0/3.7	4.8/4.6	4.8/4.6	4.2/4.0
CEE 345	Hydraulics	Sp, 2009	4	59	Yes, 38/59	3.4/3.7	3.4/3.7	3.2/3.5	3.3/3.6
CEE 500	Water/Env Seminar	Sp, 2009	1	13	No	-	-	-	-
CEE 500	Water/Env Seminar	Wtr, 2009	1	19	No	-	-	-	-
CEE 345	Hydraulics	Wtr, 2009	4	59	Yes, 30/59	3.9/4.1	4.0/4.2	3.9/4.2	3.9/4.1
CEE 599	Snow Hydrology	Sp, 2008	3	9	Yes, 9/9	4.4/4.1	4.6/4.4	4.4/4.1	4.4/4.1
CEE 342	Fluid Mechanics	Wtr, 2008	4	48	Yes, 43/48	3.4/3.6	3.7/3.9	3.4/3.6	3.4/3.6
CEE 599	Snow Hydrology	Sp, 2007	3	10	Yes, 10/10	4.2/3.8	4.1/3.8	4.0/3.7	4.1/3.8
CEE 342	Fluid Mechanics	Wtr, 2007	4	57	Yes, 45/57	2.9/3.1	3.0/3.2	2.5/2.8	2.9/3.2

** CEE 444/445 was taught jointly with Dr. David Stensel, and separate instructor evaluations were not conducted.*

Peer Teaching Evaluations

Course	Quarter	Reviewer
CEE 500	Winter 2022	Faisal Hossain
CEE 578	Spring 2016	Anne Goodchild
CEE 444/445	Spring 2010	Dave Stensel
CEE 345	Spring 2010	Steve Burges

CEE 345	Spring 2009	Yinhai Wang

Office for the Advancement of Engineering Teaching and Learning Teaching Surveys and Feedback Discussions

Course	Quarter	Reviewer
CEE 465/565	Fall 2018	Jim Borgford-Parnell
CEE 465/565	Fall 2017	Jim Borgford-Parnell
CEE 491/599	Fall 2016	Jim Borgford-Parnell
CEE 599 (now 465)	Fall 2015	Jim Borgford-Parnell
CEE 491	Fall 2014	Jim Borgford-Parnell
CEE 345	Winter 2009	Jim Borgford-Parnell
CEE 345	Winter 2008	Jim Borgford-Parnell

List of other teaching contributions

- Future Rivers Training on Inclusive Mentoring, Fall Quarter 2021
- Future Rivers Training with Greg Diggs-Yang on developing Culturally Responsive Teaching Syllabi and Pedagogy, Fall Quarter 2020.
- Future Rivers Training with Greg Diggs-Yang on Inclusive STEM Classrooms, Fall Quarter 2020.
- Taught Snow Modeling School to greater scientific community, June 2014 (see http://depts.washington.edu/mtnhydr/snowschool/outline.shtml)
- Organizing and teaching Snow Field School through CUAHSI, January 2018.
- Organizing and teaching Snow Field School through CUAHSI, January 2019.
- Taught in International Snow School, France, February 2018.
- Helped CELT develop teaching workshop for other professors based on research done by Center for Advancement of Engineering Education (CAEE), April 2009
- Regularly guest lecture in other professor's classes

Teaching Awards, Nominations for Teaching Awards

Nominated for College of Engineering Community of Innovators Awards: Faculty Innovator for Teaching, for Fluid Mechanics, 2008.

SERVICE

Departmental service

P&T Committee, 2023 - present

Blended BSCE Committee, 2022

CEE Strategic Planning Committee 2022

Undergraduate Committee, July 2016-2018; 2021-2023

Chair of Undergraduate Committee, September 2015-June 2016

Faculty Affairs Committee, Member and Occasional Substitute Chair, September 2018-2020

Chair of Mentoring Committee for Dr. David Shean, January 2018 - present

Member, Mentoring Committee for Dr. Jessica Ray, January 2019 - present

Co-Chair of Geospatial Search Committee, November 2016-April 2017

Search Committee: Freshwater Initiative Multiple Hires, September 2012-June 2013

Undergraduate committee, March 2013-May 2013

Departmental Affairs committee, May 2013-June 2015

Search Committee: Hydrologic Cycle and Extremes, September 2011-March 2012

Chair of Mentoring Committee for Dr. Rebecca Neumann, September 2011-present

Mentoring Committee for Dr. Bart Nijssen, September 2014-present

Chair of Mentoring Committee for Dr. Mari Winkler, May 2017-present

Search Committee: Water and Global Health, September 2009-May 2010

Department-wide search committee, August 2008-June 2009

Undergraduate committee, August 2008-September 2010

Search Committee: Research asst. professor position in env. microbiology, Summer 2007

Emeretis Professor Space Allocation Committee: June 2008-present

University service

Steering Committee, University Freshwater Mountain to Sea Initiative, June 2015-2019

Speaker, University of Washington Freshman Engineering Seminar Series, October 2014

College of the Environment Research Taskforce, Sept 2012-June 2013

College of the Environment Science Communication Taskforce, Sept 2011-Nov 2012

University of Washington Program on Climate Change (PCC) Board of Directors, July 2008-present

Speaker, University of Washington Undergraduate Research Exposed, October 2011

Keynote speaker, University of Washington Program on Climate Change Annual Public Lecture, Seattle, WA, April 2009.

Keynote speaker, University of Washington Graduate Student Climate Conference, Pack Forest, WA, April 2009.

Professional society and other service

Editor, Water Resources Research, 2017-2020

NASA Snow Steering Committee, 2016-present

Associate Editor, Water Resources Research, 2013-2017

Associate Editor, Journal of Hydrometeorology, 2012-2017

Editorial Board, Hydrologic Processes, 2012-2017

National Center for Atmospheric Research (NCAR) Observing Facilities Assessment Panel (OFAP) member (to optimize NSF-sponsored observational science), 2015-2018

American Geophysical Union, Cryosphere Young Investigator Award Committee, 2010-2015

American Geophysical Union, chaired sessions at 2006, 2008, 2009, 2012, 2013, and 2016 fall meetings

American Meteorological Society, co-chaired session for 2011 annual meeting

Member of Mountain Meteorology Group Steering Committee, American Meteorological Society, 2011-2015

Chair of review and steering committee for CTEMPS, made decisions on allocation of resources to share hydrologic instrumentation, 2009-present (Chair, 2012-2014).

Chaired Snow Hydrology Cyberseminar Series with CUAHSI, 2014, info here: http://www.cuahsi.org/2014cyberseminars.aspx

Instrumentation Committee, Consortium for Advancement in Hydrologic Sciences, Inc. (CUAHSI), 2014 – 2016

University Representative, Consortium for Advancement in Hydrologic Sciences, Inc. (CUAHSI), 2010 – present

Co-Chair of the International Snow Working Group on Remote Sensing (iSWGR), info here: http://depts.washington.edu/iswgr/, 2015 – 2018.

Pioneering Summer Snow School on snowpack modeling, info here: http://nasasnowremotesensing.gi.alaska.edu/content/snowpack-modeling-course-summer-2014

Community service, Media and Outreach

News and Outreach associated with the Sublimation of Snow Campaign (2023): https://www.npr.org/2023/05/11/1175403612/why-is-it-difficult-to-figure-out-how-much-snow-will-make-it-to-the-colorado-riv

https://www.kunc.org/news/2023-05-04/snow-detectives-are-in-the-mountains-to-solve-a-mystery-wheres-all-the-snow-going

https://www.agci.org/projects/sublimation-of-snow-sos-project

https://www.ce.washington.edu/news/article/2022-12-05/snow-sleuths

https://www.arm.gov/news/features/post/87190

Friday Harbor Fog, blog in the Friday Harbor Tide Bites: https://depts.washington.edu/fhl/tidebites/Vol98/index.html

American Geophysical Union, Editors' Vox on The Value of Snow: https://eos.org/editors-vox/the-value-of-snow

Hosting "Value of Snow" app to identify how much water comes from different basins in the Western U.S. and how much money it's worth: http://depts.washington.edu/sinter/basinSnow/

Organized and taught CUAHSI Snow School in Colorado in January 2018: https://www.ce.washington.edu/news/article/2018-04-06/snow-school-cool-way-learn-about-hydrology

Taught in Snow Science Winter School in Col du Lautaret, France, February 2018: https://www.slf.ch/de/ueber-das-slf/veranstaltungen-und-kurse/snow-science-winter-school.html & http://www.osug.fr/actualites-736/faits-marquants/la-snow-science-winter-school-s-invite-au-col-du-lautaret.html?lang=en

Ran NASA's snow meeting to determine the optimal location and sampling strategy for SnowEx 2017. See Nature write-up: http://www.nature.com/news/snow-sensing-fleet-to-unlock-water-s-icy-secrets-1.19685

Keynote speaker, Mono Lake Chatauqua Festival, Lee Vining, California, June 2015.

NASA Blog on snow measurements in the Olympics: http://earthobservatory.nasa.gov/blogs/fromthefield/2016/03/23/olympic-efforts-to-measure-olympic-mountain-snow/

AGU News Briefing by graduate student Nic Wayand on factors influencing snowmelt's contribution to rain-on-snow floods, San Francisco, California, December, 2014, archived here: https://www.youtube.com/watch?v=X2YqfP2AOxY

Teaching materials and video presentation for high school teachers to teach about the physics of a rain-on-snow flood event, available here: http://www.uwpcc.washington.edu/outreach/tertiary.jsp?entity=NASA&action=GetEntity&title=NASA/UWHS%20Climate%20Science

AGU News Briefing on the Airborne Snow Observatory (ASO) in California, December, 2013, archived here: http://www.youtube.com/watch?v=5urZaRCi7gA

Snow exhibit, Engineering Open House and Discovery Days, University of Washington, Seattle, WA, April 2010, April 2011, April 2012, April 2013, April 2014, April 2015, April 2016, April 2017, April 2018.

Snow exhibit, Pacific Science Center Polar Science Weekend, Seattle, WA, March 2011.

Panelist and speaker, WISE conference, Seattle, WA, February 2010.

Interpretive Park Ranger Meeting, Tuolumne Meadows, Yosemite, CA, June 2009.

Interpretive Park Ranger Meeting, Tuolumne Meadows, Yosemite, CA, June 2008.

Panelist and speaker, WISE conference, Seattle, WA, February 2008.

Keynote speaker, ASWR meeting, Seattle, WA, October 2006.

Invited speaker, Parson's Lodge Summer Series, Tuolumne Meadows, Yosemite, CA, August 2006.

Invited participant, National Park Service Alpine Monitoring Workshop, Nederland, Colorado, September 2005.

Invited speaker, Canon Envirothon, High School Environmental Competition. Buckhannon, WV, July 2004.

Invited speaker, Parson's Lodge Summer Series, Tuolumne Meadows, Yosemite, CA, July 2004.

Invited presenter, Yosemite Forum. Yosemite, CA. February 2004.

Keynote speaker, American Association of University Women Annual Math and Science Recognition Breakfast for Junior High students. Fallbrook, CA. May 2003.

Invited presenter, E.W. Scripps Associates Science Series. La Jolla, CA. April 2003.

Boulder High School student intern program mentor, 2005.

Mar Vista Poseidon Academy: mentor for low-income high school students, 2002-2004.

Northern California Scholarship Foundation: mentor for high achieving yet economically disadvantaged undergraduate students, 2001-2005.