

JIA HU, PH.D.

EDUCATION

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- 2009 UNIVERSITY OF COLORADO, *Boulder, Colorado*  
Ph.D. in Ecology and Evolutionary Biology  
Thesis advisor: Russell Monson  
Dissertation Title: *“Linking the carbon and water cycles in a subalpine forest”*
- 2001 UNIVERSITY OF CALIFORNIA, *Berkeley, California*  
B.A. in Integrative Biology

APPOINTMENTS

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- 2020 – **Associate Professor**, School of Natural Resources and the Environment, University of Arizona, Tucson, AZ, USA
- 2020 – **Associate Director**, School of Natural Resources and the Environment.
- 2019 – **Associate Professor**, Affiliate faculty, Laboratory of Tree Ring Research University of Arizona
- 2018 – 2020 **Assistant Professor**, School of Natural Resources and the Environment University of Arizona, Tucson, AZ, USA
- 2013 – 2017 **Assistant Professor**, Ecology Department  
Montana State University, Bozeman, MT, USA
- 2011 – 2013 **Australia Research Council DECRA Fellow**  
University of Sydney, Sydney, NSW, AU
- 2009 – 2011 **Advanced Studies Postdoctoral Fellow**  
National Center for Atmospheric Research, Boulder, CO, USA
- 2009 **Postdoctoral Researcher**, Natural Resource Ecology Lab  
Colorado State University, Fort Collins, CO, USA

HONORS AND AWARDS

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- 2019 Outstanding Scholarly Faculty Achievement, School of Natural Resources and Environment, University of Arizona, 2019

PUBLICATIONS

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*Underlined author is a current/former student or postdoctoral advisee*

*<sup>†</sup> Indicates last/senior author position, a significant contribution and research product of the Hu lab*

*\*Publications substantially based on work done as a graduate student*

35. Garcia, M.N, Hu, J., Domingues, T.F., Groenendijk, P., Oliveira, R.S., and F.R.C. Costa. 2021. Local hydrological gradients structure high *intra*-species variability in plant hydraulic traits in two dominant central Amazonian tree species. 2021. *Journal of Experimental Biology*, *Accepted*.
34. Szejner, P., Belmecheri, S., Babst, F., Wright, W.E., Frank, D.C., **Hu, J.**, and R.K. Monson. 2021. Stable isotopes of tree rings reveal seasonal-to-decadal patterns during the emergence of a megadrought in the Southwestern US. *Oecologia*, doi.org/10.1007/s00442-021-04916-9.
33. Qubain, C., Yano, Y., and **J. Hu**<sup>†</sup>. 2021. Nitrogen acquisition strategies of Douglas fir: A case study in the northern Rocky Mountains. *Ecosphere* 121: e03338, doi.org/10.1002/ecs2.3338
32. Clute, T., Martin, J., Looker, N., and Hu, J.<sup>†</sup> 2020. Hydraulic traits of co-existing conifers do not correlate with local hydroclimate condition: a case study in the northern Rocky Mountains, U.S.A. *Oecologia*. doi.org/10.1007/s00442-020-04772-z
31. McQueen S.G., Riveros-Iregui D.A., **Hu J.** 2020. The Carbon Balance of Tropical Islands: Lessons from Soil Respiration. In: Walsh S.J., Riveros-Iregui D., Arce-Nazario J., Page P.H. (eds) Land Cover and Land Use Change on Islands. Social and Ecological Interactions in the Galapagos Islands. Springer, Cham. doi.org/10.1007/978-3-030-43973-6\_12
30. **Hu J.**, Qubain C., Riveros-Iregui D. 2020. How Do Non-Native Plants Influence Soil Nutrients Along a Hydroclimate Gradient on San Cristobal Island?. In: Walsh S.J., Riveros-Iregui D., Arce-Nazario J., Page P.H. (eds) Land Cover and Land Use Change on Islands. Social and Ecological Interactions in the Galapagos Islands. Springer, Cham. doi.org/10.1007/978-3-030-43973-6\_9
29. Szejner P., Clute, T., Anderson, E., Evans, M., and J. Hu<sup>†</sup>. 2020. Reduction in lumen area increases the amount of exchange from source water during cellulose synthesis. *New Phytologist* 226: 1583-1593. doi: 10.1111/nph.16484
28. Laufenberg, D., Thoma, D., Hansen, D., and **Hu, J.** 2020. Biophysical Gradients and Performance of Whitebark Pine Plantings in the Greater Yellowstone Ecosystem. *Forests* 11: 119. doi:10.3390/f11010119
27. Hoylman, Z.H., Jencso, K.J., **Hu, J.**, Holden, Z.A., Allred, B., Dobrowski, S., Robinson, N., Martin, J.T. Affleck, D., Seielstad, C. 2019. The topographic signature of ecosystem climate sensitivities in the western U.S. *Geophysical Research Letters* 46, 14508-14,520.
26. Dwivedi, R., Eastoe, C., Knowles, J.F., Wright, W.E., Hamann, L., Minor, R., Mitra, B., Meixner, T., McIntosh, J., Ty Ferre, P.A., Castro, C., Niu, G.Y., Barron-Gafford, G.A., Abramson, N., Papuga, S.A., Stanley, M., **Hu, J.**, Chorover, J. 2019. Vegetation source water identification using isotopic and hydrometric observations from a subhumid mountain Catchment. *Ecohydrology*, e2167.
25. Yano, Y., Qubain, C., Holyman, Z., Jencso, K., and **J. Hu**<sup>†</sup>. 2019. Climate and topographic controls on seasonal and spatial nitrogen availability in a snow-dominated western US forest. *Ecosphere* 10 (7): e02794. 10.1002/ecs2.2794
24. Hoylman, Z., Jencso, K.G., **Hu, J.**, Holden, Z.H., and Martin, J. 2019. Hydrology across the critical zone: Topography and climate controls on spatial and temporal organization of vapor pressure deficits, soil moisture and shallow subsurface flow. *Water Resource Research* 5. doi.org/10.1029/2018WR023302
23. Barnard, D. M., Knowles, J.F., Barnard, H.R., Goulden, M.L., **Hu, J.**, Litvak, M.E., and Molotch, N.P. 2018. Reevaluating growing season length controls on net ecosystem production. *Scientific Reports* 8. 10.1038/s41598-018-36065-0.
22. Martin, J.T., Looker, N., Hoylman, Z., Jencso, K., and Hu, J<sup>†</sup>. 2018. Differential use of winter precipitation by upper and lower elevation Douglas fir in the Northern Rockies. *Global Change Biology* 24: 5607-5621.
21. Schmitt, S.R., Riveros-Iregui, D. and **Hu. J**<sup>†</sup>. 2018. Using stable isotopes to assess the roll of fog, orography and seasonality on precipitation in a semi-arid, tropical island. *Hydrological Processes*: 1-14. https://doi.org/10.1002/hyp.13228

20. Looker, N.T., Martin, J.T., Hoylman, Z., Jencso, K., and **Hu, J<sup>†</sup>**. 2018. Dynamics of conifer water relations along topoclimatic gradients in a subalpine catchment. *Ecohydrology*: e1994. <https://doi.org/10.1002/eco.1994>
19. Riveros-Iregui, D., Lorenzo, T.M., Liang, L.L., and **Hu, J.** 2018. Summer Dry-Down Modulates the Isotopic Composition of Soil CO<sub>2</sub> Production in Snow-Dominated Landscapes. *PLoS ONE* 3(5): e0197471.
18. Hoylman, Z., Jencso, K., **Hu, J.,** Martin, J., Holden, Z., Seielstad, E., and Rowell, E. 2018. Landscape topography mediates conifer forest sensitivity to climate. *Journal of Geophysical Research – Biogeosciences* 123, 353–371.
17. Martin, J.T., Looker, N.T., Hoylman, Z., Jencso, K., and **Hu, J<sup>†</sup>**. 2017. Hydrometeorology organizes intra-annual patterns of tree growth across time, space, and species in a montane watershed. *New Phytologist* 215:1387-1398.
16. Looker, N.T., Martin, J.T., Jencso, K.G., and **J. Hu<sup>†</sup>**. 2016. Contribution of sapwood traits to uncertainty in conifer sap flow as estimated with the heat ratio method. *Agricultural and Forest Meteorology* 223: 60-71.
15. **Hu, J.<sup>†</sup>**, and D.A. Riveros-Iregui. 2016. Life in the Clouds: Are tropical montane cloud forests responding to changes in climate? *Oecologia* 180:1061-1073.
14. Burns, S. P., P. D. Blanken, A. A. Turnipseed, **J. Hu**, and R. K. Monson, 2015. The influence of warm-season precipitation on the diel cycle of the surface energy balance and carbon dioxide at a Colorado subalpine forest site. *Biogeosciences*, 12, 7349-7377.
13. Berkelhammer, M., **Hu, J.**, Baily, A., Noone, D.C., Still, C., Barnard, H., Gochis, D., Hsiao, G.S., Rahn, T., and Turnipseed, A. 2013. The nocturnal water cycle in an open-canopy forest, *Journal of Geophysical Research – Atmospheres* 118: 10225-10242.
12. Simonin, K.A., Roddy, A.B., Link, P., Apodaca, R., Tu, K.P., **Hu, J.**, Dawson, T.E., and M.M. Barbour. The isotopic composition of transpiration and rates of change in leaf water isotopologue storage in response to environmental variables. 2013. *Plant Cell and Environment* 36: 2190-2206.
11. **Hu, J.**, Hopping, K.A., Bump, J.K., Kang, S., and J.A. Klein. 2013. Climate change and water use partitioning by different plant functional groups in a grassland on the Tibetan Plateau. *PLoS ONE* 8(9): e75503.
10. Riveros-Iregui, D. A., **Hu, J.**, Burns, S.P., Bowling, D.R., and R.K. Monson. 2011. An inter-annual assessment of the relationship between the stable carbon isotopic composition of ecosystem respiration and climate in a high elevation subalpine forest. *Journal of Geophysical Research* 116: G02005.
9. Burns, S.P.B., Sun, J., Lenschow, D.H., Oncley, S.P., Stephens, B.B., Yi, C., Anderson, D.E., **Hu, J.\***, and R.K. Monson. 2011. Atmospheric stability effects on wind fields and scalar mixing within and just above a subalpine forest in sloping terrain. *Boundary-Layer Meteorology* 138: 231-262.
8. **Hu, J.\***, Moore, D.J.P, Riveros-Iregui, D., and R.K. Monson. 2010. Modeling whole tree carbon assimilation rate using observed transpiration rates and needle sugar carbon isotope ratios. *New Phytologist* 185: 1000-1015.
7. Sun, J., Oncley, S., Stephens, B., Watt, A., Burns, S., Campos, T., Aulenbach, S., Lenschow, D.H., Tschudi, M., Monson, R.K., **Hu, J.\***, Schimel, D., Sacks, W.J., de Wekker, S., Lai, C., Lamb, B., Ojima, D., Ellsworth, P.Z., Sternberg, L.S.L., Zhong, S., Clements, C., and D. Anderson. 2010. A Multi-scale Investigation of Ecosphere-Atmosphere CO<sub>2</sub> Exchange over Mountains. *Bulletin of the American Meteorological Society* 91: 209-230.
6. **Hu, J.\***, Moore, D.J.P., and R.K. Monson. 2010. Weather and climate controls over seasonal carbon isotope dynamics of subalpine trees. *Plant Cell and Environment* 33: 35-47.

5. Monson, R.K., Prater, M.R., **Hu, J.\***, Burns, S., Sparks, J.P., Sparks, K.L., and L.E. Scott-Denton. 2010. Tree species effects on ecosystem water-use efficiency in a high-elevation, subalpine forest. *Oecologia* 162: 491-504.
4. **Hu, J.\***, Moore, D.J.P., Burns, S. and Monson R.K. 2010. Longer growing seasons lead to less carbon sequestration in a subalpine forest. *Global Change Biology* 16: 771-783.
3. Turnipseed, A.A., Burns, S.P., Moore, D.J.P., **Hu, J.\***, Guenther, A.B., and Monson, R.K. 2009. Controls over ozone deposition to a high elevation subalpine forest. *Agricultural and Forest Meteorology* 149: 1447-1459.
2. Moore, D.J.P., **Hu, J.\***, Sacks, W.J., Schimel, D.S., and R.K. Monson. 2008. Estimating transpiration and the sensitivity of carbon uptake to water availability in a subalpine forest using a simple ecosystem process model informed by measured net CO<sub>2</sub> and H<sub>2</sub>O fluxes. *Agricultural and Forest Meteorology* 148: 1467-1477.
1. Monson, R., K., Sparks, J.P., Rosenstiel, T.N., Scott-Denton, A.E., Huxman, T.E., Harley, P.C., Turnipseed, A.A., Burns, S.P., Buckland, B., and **J. Hu.\*** 2005. Climatic influences on net ecosystem CO<sub>2</sub> exchange during the transition from wintertime carbon source to springtime carbon sink in a high-elevation, subalpine forest. *Oecologia* 146: 130-147.

## AWARDS AND CONTRACTS

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### Federal

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| 2020 – 2020 | National Science Foundation REU Supplemental Request<br><b>Principal Investigator</b> , \$6800<br><i>“Collaborative Proposal: Forest Carbon-Water Interactions in Relation to the North American Monsoon Climate System”</i>   |
| 2018 – 2021 | National Science Foundation, Division of Environmental Biology (DEB)<br>Award #1754430<br><b>Co-Principle Investigator</b> , \$895,280<br><i>“Collaborative Proposal: Forest Carbon-Water Interactions in Relation to the North American Monsoon Climate System”</i> |
| 2015 – 2019 | National Science Foundation, Division of Environmental Biology (DEB)<br>Award #1840737<br><b>Principal Investigator</b> , \$333,197<br><i>“Collaborative Research: Landscape heterogeneity modulates the sensitivity of forested ecosystems to climate”</i>          |
| 2017 – 2017 | National Science Foundation REU Supplemental Request<br><b>Principal Investigator</b> , \$6700<br><i>“Collaborative Research: Landscape heterogeneity modulates the sensitivity of forested ecosystems to climate”</i>   |
| 2015 – 2020 | USDA, National Institute of Food and Agriculture: Renewable Energy, Natural Resources and Energy (NIFA RENRE)<br>Award #2015-67020-23454<br><b>Principal Investigator</b> , \$467,757  |

*“Linking topography, changing snow regimes, nitrogen dynamics, and forest productivity”*

- 2012 – 2015 Australian Research Council, Discovery Early Career Research Award Fellowship  
**Principal Investigator**, \$375,000 (relinquished in 2013 to begin at MSU)  
*“Water and carbon stable isotope exchange between the biosphere and atmosphere”*
- 2010 – 2012 National Center for Atmospheric Research (NCAR)  
**Advanced Studies Postdoctoral Fellowship**, \$130,000
- 2007 – 2009 National Science Foundation  
**Doctoral Dissertation Improvement Grant**, \$11,032

### **State**

- 2017 – 2019 Montana Water Center Faculty Seed Grant  
Matched with funds through a grant from Turner Enterprises, Inc.  
**Principle Investigator**, \$15,000  
*“Rocky Mountain Juniper influences on stream flow dynamics”*
- 2017 – 2018 Montana State University Faculty International Research and Program Development  
**Principle Investigator**, \$3,120  
*“Exploring water and nutrient dynamics on the Galapagos Island”*
- 2017 – 2018 Montana State University Letters and Science Research Enhancement Grant  
**Principle Investigator**, \$1,300  
*“Ecohydrology of the Galapagos Islands”*
- 2016 – 2017 Montana Institute on Ecosystems and Montana EPSCoR  
**Principal Investigator**, \$15,000  
*“Water and Nutrient Controls on Ecosystem Productivity Across Space and Time”*
- 2015 – 2016 Montana Institute on Ecosystems and Montana EPSCoR  
**Principal Investigator**, \$10,000  
*“Topographic controls on snow accumulation, melt, and nitrogen dynamics”*
- 2013 – 2014 Montana Institute on Ecosystems and Montana EPSCoR  
**Principal Investigator**, \$39,000  
*“Quantifying the influence of climate, landscape structure, and plant physiological responses to below and above ground hydrologic processes”*

### **Private Foundation**

- 2017 – 2020 Ted Turner Enterprises, Inc.  
**Principle Investigator**, \$59,000 awarded to MSU  
*“Rocky Mountain Juniper influences on stream flow dynamics”*

### **Non-Profit Organization**

- 2021 – The Nature Conservancy (Arizona)  
**Principle Investigator**, \$40,500

*"How do mature mesquite bosques and younger mesquite thickets differ in water use strategies?"*

2018 – The Nature Conservancy (Montana)  
**Principle Investigator**, \$25,000  
*"Rocky Mountain Juniper influences on stream flow dynamics"*

**Awards achieved by graduate and undergraduate students**

2020 Kinzie Bailey, PhD student, ORIGIN fellowship, \$8000  
 2020 Brandon Strange, PhD student, EPAZ Environmental Scholarship Program, \$2000  
 2019 Brandon Strange, PhD student, University of Arizona CALS grant, \$1500  
 2019 Kinzie Bailey, PhD student, University of Arizona travel grant, \$750  
 2019 Kinzie Bailey, PhD student, Kel Fox Fellowship Award, \$5500  
 2019 Kinzie Bailey, PhD student, IsoCamp Support funds, \$800  
 2018 Kinzie Bailey, PhD student, Ecophys Workshop grant, \$500  
 2017 Corinne Moss, undergraduate, Undergraduate Scholars Program, MSU \$1500  
 2017 Chase Dart, undergraduate, NSF REU researcher, \$6700  
 2017 Tim Clute, MS student, Montana Institute on Ecosystems grant, \$750  
 2017 Spencer Johnson, undergraduate, Undergraduate Scholar's Program, MSU \$500  
 2017 Sara Nerby, undergraduate, Hopa Science Fellowship, \$7000  
 2017 Claire Qubain, MS, Geological Society of America student grant, \$1500  
 2017 Claire Qubain, MS, Science Across Virtual Institutes (SAVI) grant, \$7000  
 2016 Taylor Simpson, undergraduate, Undergraduate Scholar's Program, MSU, \$1,500  
 2016 Taylor Simpson, undergraduate, Montana Institute on Ecosystems, \$4,000  
 2016 Claire Qubain, MS student, Montana Institute on Ecosystems Fellow, \$3,500  
 2016 Claire Qubain, MS student, American Water Resources Fellowship, \$1,000  
 2016 Justin Martin, PhD student, NSF GRIP, \$5,000  
 2015 Sara Amish, undergraduate, Undergraduate Scholar's Program, MSU, \$1,500  
 2014 Sara Amish, undergraduate, Montana Institute on Ecosystems, \$4,000  
 2014 **Justin Martin, PhD student, NSF Graduate Research Fellowship Program, \$141,000**  
 2014 **Nathaniel Looker, MS student, NSF Graduate Research Fellowship Program, \$141,000**  
 2013 Justin Martin, PhD student, American Water Resources Fellowship, \$1,000  
 2013 Nathaniel Looker, MS student, MSU Graduate Fellowship, \$5,000

**CONFERENCES/SCHOLARLY PRESENTATIONS**

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**Invited: University Colloquia/Seminars**

2021 Department of Geography, University of Nevada Reno, "Interpreting tree ring records using a plant ecophysiological approach"  
 2021 School of Natural Resources and Environment, University of Arizona, April. "The Role of Fog on the Galapagos Islands"  
 2020 School of Natural Resources and Environment, University of Arizona, April. "Interpreting tree ring records using a plant ecophysiological approach"  
 2020 Department of Biology, University of West Virginia, February. "Interpreting tree ring records using a plant ecophysiological approach"  
 2019 Laboratory for Tree Ring Research, University of Arizona, November. "Interpreting tree ring records using a plant ecophysiological approach"

- 2019 Center for Ecosystem Science and Society, Northern Arizona University, February. "Linking water availability with plant productivity and nutrient dynamics in complex watersheds"
- 2018 Department of Hydrology and Atmospheric Sciences, University of Arizona, November. "Linking water availability with plant productivity and nutrient dynamics in complex watersheds"
- 2017 Laboratory of Tree Ring Research, University of Arizona, April 2017. "Interpreting tree ring records using a plant ecophysiological approach"
- 2017 School of Natural Resources and Environment, University of Arizona, March. "Linking ecohydrology, nutrient dynamics, and plant productivity in terrestrial ecosystems"
- 2016 Virginia Commonwealth University, Richmond, VA, November. "Landscape and plant physiological controls on water use, nutrient dynamics, and productivity"
- 2016 Women in Science and Engineering (WISE), Montana State University, October. "From the Tibetan Plateau to the Galapagos Islands: my journey through science"
- 2016 Institute on Ecosystems Rough Cut Seminar, February. " Ecohydrology of a conifer forest in the western US: climate and topographic influences on transpiration, productivity and nutrient cycling"
- 2015 University of North Carolina Chapel Hill, Department of Geography, January. "Impacts of climate change on water and carbon relations in two contrasting ecosystems: an alpine grassland on the Tibetan Plateau and a conifer forest in Western Montana"
- 2013 University of Montana, Department of Forestry and Conservation, October. "Impacts of climate change on water and carbon relations in two contrasting ecosystems: a subalpine forest in Colorado and an alpine grassland on the Tibetan Plateau"
- 2013 Institute on Ecosystems Rough Cut Seminar, October. "Climate impacts on forest ecohydrology from hydrological and physiological perspectives"
- 2010 Colorado State University, Department of Forestry, April. "Talk title: Linking water, carbon, and nutrient dynamics in two contrasting ecosystems: a subalpine forest and a grassland on the Tibetan Plateau"
- 2010 University of Colorado Boulder, Geography Department Colloquium speaker, February. " Linking water, carbon and nutrient dynamics in two contrasting ecosystems: a subalpine forest and a grassland on the Tibetan Plateau"

**Invited: National and International Conference Proceedings**

- 2018 American Geophysical Union Conference, Washington DC, December. "Differential use of winter precipitation by upper and lower elevation Douglas fir in the Northern Rockies"
- 2016 American Geophysical Union Conference, San Francisco, CA, December. "Declining snowpack and forest productivity in a montane ecosystem in the Northern Rocky Mountains"

**Contributed: National and International Conference Proceedings**

- 2020 Ecological Society of America, Virtual, August. "How well do plant hydraulic traits determine where conifers grow within a watershed?"
- 2020 European Geosciences Union Conference, Virtual, May. "Reduction in lumen area increases the amount of  $\delta^{18}\text{O}$  exchange with source water during cellulose synthesis"
- 2019 American Geophysical Union Conference, San Francisco, CA, December. "Snowpack influences spatial and temporal soil nitrogen dynamics in a western us montane forested watershed"
- 2018 Climate Change in Mountain Ecosystems (MtnClim). Talk title: Hydrometeorological controls on soil nitrogen availability and tree nitrogen use in a snow-dominated western US montane forest.
- 2018 USDA, NIFA PD meeting. Talk title: Hydrometeorological controls on soil nitrogen availability and tree nitrogen use in a snow-dominated western US montane forest.

- 2017 Ecological Society of America, Portland, OR, August. Talk title: Partitioning source water and relative humidity signals in Douglas fir and ponderosa pine.
- 2016 Mountain Climate Conference, Leavenworth, Washington, October. Talk title: Snow versus rain: do conifer species differ in source water use across a montane ecosystem in the Northern Rocky Mountains?
- 2016 AGU Chapman Conference, Cuenca, EC, June. Poster Title: Life in the clouds: are tropical montane cloud forests responding to changes in climate?
- 2016 Ameridendro Conference, Mendoza, AR, March. Talk title: Landscape and plant physiological controls on water use within a mountainous landscape.
- 2015 American Geophysical Union, San Francisco, CA, December. Poster title: Landscape controls on nitrogen availability in a western-forested watershed.
- 2015 European Geosciences Union, Vienna, Austria, April. Talk title: Landscape and physiological controls on productivity and water dynamics within a watershed.
- 2014 American Geophysical Union, San Francisco, CA, December. Talk title: Landscape and physiological controls on productivity and water dynamics within a watershed.
- 2014 Ecological Society of America, Sacramento, CA, August. Talk title: Climate change and water use partitioning by different plant functional groups in a grassland on the Tibetan Plateau
- 2013 American Geophysical Union, San Francisco, CA, December. Talk title: The isotopic steady state of transpired water in wheat leaves grown under different watering regimes.
- 2013 Institute on Ecosystems Summit Meeting, Helena, MT, August. Poster title: Quantifying the influence of climate, landscape structure, and plant physiological responses to below and above ground hydrologic processes.
- 2011 Biosphere-Atmosphere Stable Isotope Network (BASIN), Keystone, CO, April.
- 2010 American Geophysical Union, San Francisco, CA, December. Poster title: Linking water use and carbon dynamics in an alpine grassland on the Tibetan Plateau.
- 2009 Ecological Society of America, Albuquerque, NM, August. Poster title: Climate controls over the seasonal carbon isotope dynamics of subalpine forest trees.
- 2007 Ecological Society of America, San Jose, CA, August. Talk title: Using fine scale measurements of carbon isotope analysis to couple the water and carbon cycles in a subalpine forest
- 2006 Long Term Ecological Network All Scientists Meeting, September. Poster title: Ecosystem measurements of carbon and water fluxes in a subalpine forest in the Colorado Rocky Mountains.
- 2006 Ecological Society of America, Memphis, TN, August. Talk title: Are spatial patterns of ecosystem water use efficiency due to species difference?
- 2004 American Geophysical Union, San Francisco, December. Poster title: Boundary-layer measurements of CO<sub>2</sub> concentration, carbon and oxygen isotopes of atmospheric CO<sub>2</sub> over montane forest regions in Colorado, USA.

**Secondary Contributed: National and International Conference Proceedings**

*Underlined author is a current/former student or postdoctoral advisee*

*‡current/former undergraduate students*

- 2020 Strange, B., Scott, R., Knowles, J., and J. Hu. High Resolution Estimates of Gross Primary Productivity Derived From Tree-Ring Stable isotopes and Sap-Flux Measurements. American Geophysical Union, Virtual, December.
- 2020 K. Bailey, P. Szejner, B. Strange, R. Monson, and J. Hu. Differential use of North American Monsoon precipitation by Pinus ponderosa in the American southwest. Ecological Society of America, Virtual, August

- 2020 Kuebert, A., Kuehnhammer, K., Bamberger, I., Daber, E., De, L., Jason, Hu, J., Bailey, K., ... others. (2020). Above ground response of rainforest functional groups to experimental drought. EGU General Assembly Conference (Virtual)
- 2020 Kerman, S. ‡, Bailey, K., Haren, J., Kuebert, A., Kuehnhammer, K., Werner, C., ... Hu, J. (2020). Plant Water Relation and Drought: Relationship Between Plant Water Potential and Relative Leaf Water Content in Different Tropical Plants. EGU General Assembly Conference (Virtual)
- 2020 Bailey, K., Hu, J., Warner, C., Ladd, N., Meredith, L., Haren, J., ... Prohaska, N. (2020). How does drought affect the d<sup>18</sup>O cellulose record? A Biosphere 2 experiment. EGU General Assembly Conference (virtual)
- 2019 Strange, B., Knowles, J., Barron-Gafford, G., Hu, J. Increased spatiotemporal resolution of whole-tree carbon assimilation estimated with stable isotopes from tree-ring cellulose. American Geophysical Union Meeting, San Francisco, CA.
- 2019 Bailey, K., Korb, N., Hu, J. Ecophysiological comparison within a riparian area between two co-occurring woody species: juniper (encroached) and willow (naturally occurring). American Geophysical Union, San Francisco, CA.
- 2018 Szejner, P., Clute, T., Anderson, E., Hu, J. High temporal resolution of carbon and oxygen isotopes reveal trends in forest vulnerability in the SW USA. American Geophysical Union, Washington D.C.
- 2018 Jencso, J., Hoylman, Z., Hu, J., Holden, Z., Martin, J. The superposition of climate and topography influence atmospheric demand, soil moisture, and resultant shallow subsurface flow dynamics across six mountain catchments. American Geophysical Union, Washington, D.C.
- 2018 Hoylman, Z., Jencso, K., Hu, J., Holden, Z., Robinson, N., Allred, B., Dobrowski, S., Martin, J. Hillslope topography mediates the sensitivity of western U.S. net primary productivity to climate. American Geophysical Union, Washington D.C.
- 2017 Yano, Y., Hoylman, Z., Jencso, K. Hu, J. Ecological Society of America, Portland, OR. Talk title: Climate and topographic controls on seasonal and spatial soil nitrogen availability in a snow-dominated western US montane forest.
- 2017 Qubain, C.A., Yano, Y., Hu, J. Ecological Society of America, Portland, OR. Poster title: Storage vs. growth: Seasonal nitrogen allocation in *Pseudotsuga menziesii*.
- 2017 Moss, C., ‡ Qubain, C., and Hu, J. Montana State University Undergraduate Scholars Program. Poster title: Comparing photosynthesis and transpiration rates in native versus invasive plants on the Galapagos Islands.
- 2016 Yano, Y., Hu, J., Qubain, C., and K. Jencso. Mountain Climate Conference. Leavenworth, Washington. Poster title: Topographic and seasonal control on N availability in western montane forest ecosystem.
- 2016 Qubain, C., Yano, Y., and J. Hu. Mountain Climate Conference. Leavenworth, Washington. Poster title: Are conifers nitrogen limited? Seasonal nitrogen and carbon allocation in *Pseudotsuga menziesii*.
- 2016 Simpson, T. ‡, Clute, T., and J. Hu. Montana Institute on Ecosystems. Talk title: The Effects of Drought on Long Term Water Source Uses for the Douglas Fir.
- 2016 Martin, J. Jencso, K. and Hu, J. Ameridendro Conference, Mendoza, Argentina. Talk title: Tree Growth Response to Measured Microclimate.
- 2015 Martin, J., Hoylman, Z., Jencso, K., and J. Hu. American Geophysical Union, San Francisco, CA. Poster title: Climate controls on tree growth.
- 2015 Jencso, K., Hu, J., Z. Hoylman, and S. Running. European Geosciences Union, Vienna, Austria. Talk title: Landscape Heterogeneity Modulates Forest Sensitivity to Climate.

- 2014 Amish, S. <sup>#</sup> and J. Hu. University Sponsored Program Undergraduate Program. Title: Germination Success Rates: testing the success of an ecosystem to recover post disturbance.
- 2014 Martin, J., Hu, J., Looker, N., and K. Jencso. American Geophysical Union, San Francisco, CA. Poster title: Precipitation and Topography as Drivers of Tree Water Use and Productivity at Multiple Scales.
- 2014 Looker, N., Hu, J., Martin, J., and K. Jencso. American Geophysical Union, San Francisco, CA. Poster title: Uncertainties in sap-flow based transpiration due to xylem properties.
- 2014 Holyman, Z., Jencso, J., Hu, J., and S. Running. American Geophysical Union, San Francisco, CA. Poster title: Landscape Heterogeneity Modulates Forest Sensitivity to Climate.
- 2014 Martin, J., Jencso, K., Holyman, Z. and J. Hu. American Water Resources Association Meeting, Kalispell, MT. Poster title: Forest Water Use and Productivity Dynamics Across Topographic and Elevation Gradients.
- 2014 Looker, N., Jencso, K., and J. Hu American Water Resources Association Meeting, Kalispell, MT. Talk title: Improving Confidence in Tree Transpiration Estimates.
- 2013 Holyman, Z., Jencso, J., Hu, J., and R. McGlynn. American Geophysical Union, San Francisco, CA. Poster title: Landscape Heterogeneity Modulates Forest Sensitivity to Climate.
- 2012 Simonin, K.A., Roddy, A.B., Link, P., Apodaca, R.L., Tu, K.P., Hu, J., Dawson, T.E., and M. Barbour. American Geophysical Union, San Francisco, CA. Talk title: Stable isotope composition of transpired water and the rate of change in leaf water enrichment in response to variable environments.
- 2011 Monson, R.K., Moore, D.J., Trahan, N.A., Scott-Denton, L., Burns, S.P., Hu, J., and D.R. Bowling. American Geophysical Union, San Francisco, CA. Talk title: Process coupling and control over the response of net ecosystem CO<sub>2</sub> exchange to climate variability and insect disturbance in subalpine forests of the Western US.
- 2011 Berkelhammer, M.B., Raudzen, B.A., Hu, J., Still, G.J., Gochis, D.J., Hsiao, G., Barnard, H.R., Noone, D.C., Rahn, T., and A. Turnipseed. American Geophysical Union, San Francisco, CA. Title: Interactions between atmospheric water vapor, dew and leaf waters in an open-canopy forest using in situ isotopic measurements.
- 2011 Gochis, D.J., Gutmann, E.D., Brooks, P.D., Reed, D.E., Ewers, B.E., Pendall, E., Biederman, J.A., Harpold, A.A., Barnard, H.R., and J. Hu. American Geophysical Union, San Francisco, CA. Diagnosing the influence of model structure on the simulation of water, energy and carbon fluxes on bark beetle infested forests.
- 2010 Klein, J.A., Hopping, K.A., Yeh, E., Hu, J., Nyima, U., Boone, R., Galvin, K., Kang, S., and D.S. Ojima. American Geophysical Union, San Francisco, CA. Title: Vulnerability on the Roof of the World: Resilience to Climate Change and Natural Resource Policies on the Tibetan Plateau.
- 2010 Hopping, K.A., Klein, J.A., Hu, J., and S. Kang. American Geophysical Union, San Francisco, CA. Title: Alpine ecosystem vulnerability to climate change on the Tibetan Plateau: Global implications for carbon balance, regional consequences for local pastoralists.
- 2010 Gochis, D.J., Brooks, P.D., Harpold, A.A., Ewers, B.E., Pendall, E., Barnard, H.R., Reed, D.E., Harley, P.C., Hu, J., and J.A. Biederman. American Geophysical Union, San Francisco, CA. Title: Measuring and modeling changes in land-atmosphere exchanges and hydrologic response in forests undergoing insect-driven mortality.
- 2010 Dominguez, F., Gochis, J.J., Harley, P.C., Turnipseed, A., and J. Hu. American Geophysical Union, San Francisco, CA. Title: Transpiration and Evaporation Measurements in a Mountain Ecosystem Using Real-Time Field-Based Water Vapor Isotopes.
- 2010 Klein, J.A., Bump, J., Harte, J., Hopping, J., Kang, S. and X. Zhao. Ecological Society of America Annual Meeting. Pittsburgh, PA. Title: A multi-method investigation of global change on the

- Tibetan Plateau: Ecosystem effects of warming, precipitation and grazing across meadow, shrubland and steppe communities.
- 2009 Burns, S.P., Turnipseed, A., Bowling, D.R., Hu, J., and R.K. Monson. American Geophysical Union, San Francisco, CA. Title: Ten-year variability in fluxes, meteorology, and environmental conditions at a Colorado subalpine forest site.
- 2009 Riveros-Iregui, D.A., Hu, J., Bowling, D.R., and R.K. Monson. American Geophysical Union, San Francisco, CA. Title: Environmental Controls on the Stable Isotopic Composition of Ecosystem Respiration in a High Elevation Subalpine Forest.
- 2009 Monson, R.K., Prater, M.R., Hu, J., Burns, S., Scott, L., Sparks, J.P., and K.L. Sparks. Ecological Society of America Annual Meeting, Albuquerque, NM. Title: Tree species effects on ecosystem water-use efficiency in a high-elevation subalpine forest.

## SERVICE AND OUTREACH

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### Local/state

- 2019 Panel for Women in Science, Amphitheater High School
- 2018 – 500 Women Scientist, Tucson Pod member
- 2018 Harelson Elementary School Science Presentation
- 2017 500 Women Scientist, Bozeman Pod leader
- 2017 Montana Water Center Faculty Seed Grant Review
- 2017, 2016 Workshop leader for MSU Explore: Earth and Space Science Camp
- 2016 Headwaters Academy Science Presentation
- 2016 Longfellow Elementary School Science Judge
- 2015 Child Development Center presentation
- 2013 4-H Summer Congress faculty participant
- 2013 Montana Apprenticeship Program faculty participant

### National/International

- 2020 Board Member, Second Nature (secondnature.org)
- 2020 National Science Foundation Panel member, Division of Environmental Biology
- 2020 National Science Foundation Ad-Hoc Review, Division of Environmental Biology and Hydrologic Sciences
- 2019 American Geophysical Union session organizer, H11P: Blue and Green Water in the Mountains: Water Supply, Extreme Events, and Ecological Responses in Snow- and Glacier-Fed Catchments
- 2019 National Science Foundation Ad-Hoc Review, Division of Environmental Biology
- 2018 – Ecological Society of America Physiological Ecology Section Secretary, *elected*
- 2018 Climate Change in Mountains (MtnClim) conference coordinator
- 2018 National Science Foundation Ad-Hoc Review, Division of Earth Sciences Instrumentation and Facilities Program
- 2018 United States Department of Agriculture Ad-Hoc Review, Instrument Development
- 2016 National Science Foundation Ad-Hoc Review, Division of Environmental Biology
- 2015 National Science Foundation Panel Review, Division of Environmental Biology
- 2015 – 2018 American Geophysical Union (AGU) meeting, session chair/co-chair
- 2015 Reviewer for the National Assessment of Drought Impacts on Forests
- 2014 National Science Foundation Panel Review, Graduate Research Fellowship
- 2014 Textbook reviewer for: Plant Ecology and Conservation

- 2013 Convener and lecturer at the Stable Isotopes in Biosphere Studies (SIBS) workshop, University of Sydney
- 2013 – International Grant Reviewer (ca. 1-2 grant/year): Czech Science Foundation, Australian Research Council, Chilean National Commission for Scientific and Technological Research, National Sciences and Engineering Research Council of Canada, Natural Environment Research Council UK
- 2010 – Peer Reviewer for Journals (ca. 1 manuscript/month): Proceedings of the National Academy of Sciences, New Phytologist, Proceedings B, Frontiers in Plant Science, Global Change Biology, Oecologia, Plant Ecology, Plant and Soil, Ecohydrology, Forest Ecology and Management, Journal of Geophysical Research, Agricultural and Forest Meteorology, Geophysical Research Letters, Environmental Management, Science of the Total Environment, Estuarine, Coastal and Shelf Science, Biogeosciences, Water Resources Research, Ecosphere, Ecohydrology, Hydrological Processes, Ecological Application
- 2008 – Member of American Geophysical Union, Ecological Society of America, American Water Resources Association, Tree Ring Society

**Department**

- 2020 – Associate Director of SNRE
- 2020 UA, SNRE, Promotion and Tenure committee (x2)
- 2019 – UA, SNRE, Strategic Planning Committee
- 2019 – 2020 UA, SNRE, Watershed Management and Ecohydrology Program Chair
- 2019 – 2020 UA, SNRE McGinnies Award Committee
- 2019 UA, SNRE Awards Committee
- 2018 – 2020 UA, SNRE Space Committee
- 2018 UA, SNRE Seminar Committee
- 2015 Montana State University (MSU), Ecology Department, Freshwater Ecologist Search Committee
- 2015 MSU, Ecology Department Seminar Committee
- 2013 – 2018 Montana State University, Ecology Department, Executive Committee

**College**

- 2020 CALS Scholarship Grant Reviewer
- 2019 UA, CALS Deans Research Advisory Committee (DRAC)
- 2019 Alan Alda Leadership Workshop
- 2018 – 2020 UA, SNRE Faculty Representative for the College of Agriculture Faculty Council

**University**

- 2021 UArizona Dendrochronology Intensive Summer Course (DISC) guest lecturer
- 2020 UA Arizona Institute for Resilience grant reviewer
- 2020 – UA Study Abroad Advisory Committee
- 2019 UA Water, Environment, and Energy Solutions Grant Reviewer
- 2018 – UA Peer Mentoring Group
- 2015, 2016 MSU Undergraduate Scholars Program Awards Reviewer
- 2015 Montana Institute on Ecosystems Faculty Advisory Committee
- 2015 MSU ADVANCE Bootcamp Writing Workshop speaker
- 2015 Montana State University ESCPoR Reverse Site visit to the National Science Foundation
- 2013 – 2016 MSU Freshman Honors Program participant

2013 – 2017 MSU Women’s Faculty Caucus  
 2013 – Mentoring and Advising

In Progress

*Primary Advisor*

2018 – **Ph.D.** Brandon Strange, UA, SNRE  
 2017 – **Ph.D.** Kinzie Bailey, UA, SNRE  
 2021 – **M.S.** Collin Gillespie, UA, SNRE

*Graduate Committee*

2021 – Ph.D., Allison Newton, UA, SNRE  
 2020 – Ph.D., Hallie Adams, CU Boulder, Dept. of Geography  
 2019 – Ph.D., Shuli Chen, UA, Ecology and Evolutionary Biology  
 2018 – Ph.D., Susan Washko, UA, SNRE

Graduate or Completed

2019 – 2021 Ph.D. committee member, Maquelle Garcia, INPA, Brazil  
 2019 – 2021 M.S. committee member, Kelsey Hollien, UA, SNRE  
 2018 – 2021 M.S. committee member, Blake Steiner, UA, SNRE  
 2018 – 2021 Ph.D. committee member, Drew Epehimer, UA, SNRE  
 2018 – 2020 **Post-doctoral fellow**, Paul Szejner, UA, SNRE  
 2019 M.S. committee member, Rebecca Stolar, UA, Hydro and Atmos Sci  
 2016 – 2019 M.S. committee member, David Laufenberg, MSU,  
 2015 – 2019 Ph.D. committee member, Leonardo Calle, MSU  
 2013 – 2018 Ph.D. committee member, Anthony Slominski, MSU  
 2014 – 2018 Ph.D. committee member, Zach Hoylman, University of Montana  
 2014 – 2018 Ph.D. committee member, Sarah Schmitt, University of North Carolina  
 2015 – 2018 **M.S. advisor**, Timothy Clute, MSU  
 2015 – 2018 **M.S. advisor**, Claire Qubain, MSU  
 2013 – 2018 **Ph.D. advisor**, Justin Martin, **NSF Graduate Research Fellow**, MSU  
 2013 – 2015 **M.S. advisor**, Nate Looker, **NSF Graduate Research Fellow**, MSU  
 2013 – 2017 Ph.D. committee member, Tony Chang, MSU  
 2014 – 2017 Ph.D. committee member, Kristin Emmitt, MSU  
 2014 – 2017 M.S. committee member, Jackie Schultz, MSU  
 2013 – 2016 M.S. committee member, Kole Stewart, MSU

Undergraduate, In Progress

2021 – Undergraduate Research Assistant, Methmi Jayasinghe  
 2021 – Undergraduate Research Assistant, Sophia Dixon  
 2020 – Undergraduate Research Assistant, Rhiannon Nabours

Undergraduate, Completed

2019 – 2020 Undergraduate Honor’s Project, Tanner Muscarella  
 2019 – 2020 Undergraduate Honor’s Thesis, Sydney Kerman  
 2019 – 2020 Undergraduate Research Assistant, Richard Weng  
 2019 – 2020 Undergraduate Research Assistant, Yash Gandhi  
 2019 – 2020 Undergraduate Research Assistant, Javier Lopez, UA  
 2018 – 2020 Undergraduate Research Assistant, Spencer Miller, UA  
 2018 – 2019 Undergraduate Research Assistant, Julia Podgorski, UA

- 2018 – 2019 Undergraduate Research Assistant, Elizabeth Schubert, UA
- 2018 – 2018 NSF Research Experience Undergraduate Researcher, Chase Dart, MSU
- 2017 – 2018 Undergraduate Research Assistant and mentor, Corinne Moss, Undergraduate Scholars Program, MSU
- 2017 – 2018 Undergraduate Research Assistant, Spencer Johnson, MSU
- 2017 – 2018 Undergraduate Research Assistant, Sara Nerby, Hopa Science Grant (funded by Hopa Mountain through National Science Foundation)
- 2016 – 2017 Undergraduate mentor, Taylor Simpson, Institute on Ecosystems Summer Fellow and Undergraduate Scholars Program, MSU
- 2014 – 2015 Undergraduate mentor, Sarah Amish, Institute on Ecosystems Summer Fellow 2014 and Undergraduate Scholars Program, MSU
- 2014 – 2016 Undergraduate Researcher, Shannon Thennis, MSU
- 2014 – 2016 Undergraduate Researcher, Ryan McKinney, MSU
- 2014 – 2016 Undergraduate/Master's Research Assistant, Erik Anderson, MSU
- 2013 – 2017 Ecology Departmental Advisor, 30 undergraduates per year, MSU

## MEDIA

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- 2019 American Geophysical Union Ecohydrology Section "Meet a Leaf" Interview. <https://www.aguecohydrology.org/blog-adding-our-leaves/meet-a-leaf-jia-hu>
- 2018 University of Arizona Research Innovation and Development featured our research through an article, "Chasing a Storm in the Pines." <https://research.arizona.edu/stories/chasing-storm-pines>
- 2015 Rock Your Research Podcast Interview. <https://www.rockyourresearch.com/podcasts/016-dr-jia-hu-prof-montana-state-university/>
- 2010 Manuscript Hu et al., 2010 Global Change Biology was featured on Discovery News, Science Daily, ScienceBlog, PhysOrg, Times of the Internet, and the Irish Times.
- 2010 Interview on KGNU radio show called "How on Earth."
- 2010 Interview on Colorado Public Radio show, "Colorado Matters."