

# JIA HU, PH.D.

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Assistant Professor  
School of Natural Resources and Environment  
University of Arizona  
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## EDUCATION

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UNIVERSITY OF COLORADO, *Boulder, Colorado* 2009  
Ph.D. in Ecology and Evolutionary Biology  
Dissertation Title: “*Linking the carbon and water cycles in a subalpine forest*”

UNIVERSITY OF CALIFORNIA, *Berkeley, California* 2001  
B.A. in Integrative Biology

## APPOINTMENTS

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Assistant Professor *January 2018 – present*  
School of Natural Resources and the Environment  
University of Arizona

Affiliate Faculty *August 2019 – present*  
Laboratory of Tree Ring Research  
University of Arizona

Assistant Professor *June 2013 – December 2017*  
Ecology Department  
Montana State University

Australia Research Council DECRA Fellow *October 2011 – June 2013*  
Faculty of Agriculture, Food, and Natural Resources  
University of Sydney

Advanced Studies Postdoctoral Fellow *September 2009 – September 2011*  
National Center for Atmospheric Research

## RESEARCH TOPICS

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### CURRENT

- Understanding climate change impacts (increases in temperature and precipitation dynamics) on forest productivity in the forests using stable isotope analysis of tree ring record.
- Quantifying the influence of climate, landscape structure, and plant physiological responses to below and above ground hydrologic processes in forest ecosystems.
- Examining snowpack and nitrogen dynamics in a forested watershed in the Western U.S.
- Investigating the role of fog and invasive species on ecosystem water and carbon dynamics in the Galapagos Islands.
- Ecohydrology of co-occurring riparian tree species

## POSTDOCTORAL

- Coupling gas exchange measurements with high frequency laser isotope measurements of transpired water ( $^{18}\text{O}/^{16}\text{O}$ ,  $^2\text{H}/^1\text{H}$ ) and  $\text{CO}_2$  ( $\text{C}^{18}\text{O}/^{16}\text{O}$ ) on wheat plants to evaluate plant water use efficiency.
- Understanding the impacts of climate change and land-use policies on grassland ecosystems on the Tibetan Plateau using a multi-factorial experimental approach.

## GRADUATE

- Coupling the carbon and water cycle in a subalpine forest in the Colorado Rocky Mountains in light of climate change.
- Airborne Carbon in the Mountain Experiment (ACME) in collaboration with the National Center for Atmospheric Research.

## FUNDING

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- 2018 – 2021 National Science Foundation, Division of Environmental Biology (DEB)  
**Co-Principle Investigator**, \$895,280 (Award # 1754430)  
*“Collaborative Proposal: Forest Carbon-Water Interactions in Relation to the North American Monsoon Climate System”*
- 2015 – 2020 National Science Foundation, Division of Environmental Biology (DEB)  
**Principal Investigator**, \$333,197 (Award #1840737)  
*“Collaborative Research: Landscape heterogeneity modulates the sensitivity of forested ecosystems to climate”*
- 2017 – 2017 National Science Foundation REU Supplemental Request, \$6,700  
*“Collaborative Research: Landscape heterogeneity modulates the sensitivity of forested ecosystems to climate”*
- 2015 – 2020 USDA, National Institute of Food and Agriculture: Renewable Energy, Natural Resources and Energy (NIFA RENRE; Award #2015-67020-23454)  
**Principal Investigator**, \$467,757  
*“Linking topography, changing snow regimes, nitrogen dynamics, and forest productivity”*
- 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 – 2019 Turner Enterprises, Inc.  
**Principle Investigator**, \$50,000  
*“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”*
- 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**
- 2003 – 2009 Various Graduate School Grants, \$13,500

## GRANTS/AWARDS ACHIEVED BY CURRENT OR FORMER STUDENTS

- 2017 Corrine Moss, undergraduate, Undergraduate scholar’s Program, MSU \$1,500
- 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, Native Society Grant, \$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 Sarah Amish, undergraduate, Undergraduate Scholar’s Program, MSU, \$1,500
- 2014 Sarah 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

## PUBLICATIONS

\* *graduate student*

**In Review**

- Szejner, P., Clute, T., Anderson, E., Evans, M., and J. Hu. Reduction in lumen area increases the amount of  $\delta^{18}\text{O}$  exchange from the source water expressed in cellulose. *In Review, New Phytologist*
- Qubain, C.\*, Yano, Y., and J. Hu. Nitrogen acquisition strategies of Douglas fir: A case study in the northern Rocky Mountains. *In Review, Oecologia*
- Yano, Y., Qubain, C.\*, Holyman, Z.\*, Jencso, K., and **Hu, J.** Climate and topographic controls on seasonal and spatial nitrogen availability in a snow-dominated western US forest. *In Review, Ecosphere*.

### Published

25. Yano, Y., Qubain, C.\*, Holyman, Z., Jencso, K., and **J. Hu**. 2019. Climate and topographic controls on seasonal and spatial nitrogen availability in a snow-dominated western US forest. *In Press, Ecosphere*.
24. Hoylman, Z.\*, Jencso, K.G., **Hu, J.**, Holden, Z.H., and Martin, J.\* 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](https://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. *Accepted, Nature-Scientific Reports*.
22. Martin, J.T.\*, Looker, N.\*, Hoylman, Z.\*, Jencso, K., and **Hu, J.** 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.** 2018. Using stable isotopes to assess the roll of fog, orography and seasonality on precipitation in a semi-arid, tropical island. *Hydrologic Processes*: 1-14. <https://doi.org/10.1002/hyp.13228>
20. Looker, N.T.\* , Martin, J.T.\* , Hoylman, Z.\* , Jencso, K., and **Hu, J.** 2018. Dynamics of conifer water relations along topo-climatic 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. 2018. *Journal of Geophysical Research – Biogeosciences* 123, 353–371.
17. Martin, J.T.\* , Looker, N.T.\* , Hoylman, Z.\* , Jencso, K., and **Hu, J.** 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**. 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.**, 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. 2013. The isotopic composition of transpiration and rates of change in leaf water

- isotopologue storage in response to environmental variables. *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.

## TEACHING

Stable Isotope in Ecology	1 section	2019
Watershed Hydrology (Undergraduate/Graduate)	1 section	2018
Introduction to the Ecohydrology of Tropical Islands	2 sections	2015 - 2016
Plant Physiological Ecology (Graduate)	2 section	2014 - 2016
Ecological Responses to Climate Change	4 sections	2014 - 2017
Principles of Biological Diversity	9 sections	2013 - 2017
Understanding Climate Change (Graduate)	1section	2012
Ecosystem Ecology (co-instructor)	1section	2010
Discovering Climate Change (co-instructor)	1section	2008
General Biology (Teaching Assistant)	4 sections	2003 - 2004

## MENTORING/ADVISING

### IN PROGRESS

- *Post-doctoral fellow advisor*, Paul Szejner, 2018 – present (UA)
- *Ph.D. advisor*, Brandon Strange, 2018 – present (UA)
- *Ph.D. advisor*, Kinzie Bailey, 2017 – present (UA)

### GRADUATE COMMITTEE

- Ph.D. committee member, Shuli Chen, 2019 – present (UA, EEB)
- Ph.D. committee member, Martha Gebhardt, 2018 – present (UA, SNRE)
- Ph.D. committee member, Drew Eppenhimer, 2018 – present (UA, SNRE)
- Ph.D. committee member, Susan Washko, 2018 – present (UA, SNRE)
- M.S. committee member, Blake Steiner, 2018 – present (UA, SNRE)
- M.S. committee member, Peter Moma, 2018 – present (UA, SNRE)

### COMPLETED

- M.S. committee member, David Laufenberg (MSU), 2016 – 2019
- M.S. committee member, Rebecca Stolar, 2019 (UA, Hydro and Atmos Sci)
- Ph.D. committee member, Leonardo Calle (MSU), 2015 – 2019
- Ph.D. committee member, Anthony Slominski (MSU), 2013 – 2018
- Ph.D. committee member, Zach Hoyleman (University of Montana), 2014 – 2018
- Ph.D. committee member, Sarah Schmitt (University of North Carolina), 2014 – 2018
- *M.S. advisor*, Timothy Clute, 2015 – 2018, (MSU)
- *M.S. advisor*, Claire Qubain, 2015 – 2018 (MSU)
- *Ph.D. advisor*, Justin Martin, **NSF Graduate Research Fellow**, 2013 – 2018 (MSU)
- *M.S. advisor*, Nate Looker, **NSF Graduate Research Fellow**, 2013 – 2015 (MSU).
- Ph.D. committee member, Tony Chang (MSU), 2013 – 2017
- Ph.D. committee member, Kristin Emmitt (MSU), 2014 – 2017
- M.S. committee member, Jackie Schultz (MSU), 2014 – 2017
- M.S. committee member, Kole Stewart (MSU), 2013 – 2016
- Undergraduate Research Assistant, Corinne Moss, 2017- 2018 (MSU)
- Undergraduate mentor, Taylor Simpson, Institute on Ecosystems Summer Fellow and Undergraduate Scholars Program, 2016 - 2017 (MSU)
- Undergraduate Research Assistant, Sara Nerby, Native Science Fellowship (funded by Hopa Mountain through National Science Foundation), 2017
- Undergraduate mentor, Sarah Amish, Institute on Ecosystems Summer Fellow 2014 and Undergraduate Scholars Program 2014 – 2015 (MSU)
- Undergraduate Researcher, Shannon Thennis, 2014 – 2016 (MSU)
- Undergraduate Researcher, Ryan McKinney, 2014 – 2016 (MSU)
- Undergraduate/Master's Research Assistant, Erik Anderson, 2014 – 2016 (MSU)
- Ecology Departmental Advisor, 30 undergraduates, 2013 – 2017 (MSU)

## PRESENTATIONS

### INVITED

- Center for Ecosystem Science and Society, Northern Arizona University, February 2019.
- American Geophysical Union Conference, Washington DC, December 2018. Differential use of winter precipitation by upper and lower elevation Douglas fir in the Northern Rockies.

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

#### CONTRIBUTED

- Climate Change in Mountain Ecosystems (MtnClim) 2018. Talk title: Hydrometeorological controls on soil nitrogen availability and tree nitrogen use in a snow-dominated western US montane forest.
- Ecological Society of America, Portland, OR, August 2017. Talk title: Partitioning source water and relative humidity signals in Douglas fir and ponderosa pine.
- Mountain Climate Conference, Leavenworth, Washington, October 2016. Talk title: Snow versus rain: do conifer species differ in source water use across a montane ecosystem in the Northern Rocky Mountains?
- AGU Chapman Conference, Cuenca, EC, June 2016. Poster Title: Life in the clouds: are tropical montane cloud forests responding to changes in climate?
- Ameridendro Conference, Mendoza, AR, March 2016. Talk title: Landscape and plant physiological controls on water use within a mountainous landscape.
- American Geophysical Union, San Francisco, CA, December 2015. Poster title: Landscape controls on nitrogen availability in a western-forested watershed.
- European Geosciences Union, Vienna, Austria, April 2015. Talk title: Landscape and physiological controls on productivity and water dynamics within a watershed.

- American Geophysical Union, San Francisco, CA, December 2014. Talk title: Landscape and physiological controls on productivity and water dynamics within a watershed.
- Ecological Society of America, Sacramento, CA, August 2014. Talk title: Climate change and water use partitioning by different plant functional groups in a grassland on the Tibetan Plateau
- American Geophysical Union, San Francisco, CA, December 2013. Talk title: The isotopic steady state of transpired water in wheat leaves grown under different watering regimes.
- Institute on Ecosystems Summit Meeting, Helena, MT, August 2013. Poster title: Quantifying the influence of climate, landscape structure, and plant physiological responses to below and above ground hydrologic processes.
- Convener and lecturer at the Stable Isotopes in Biosphere Studies (SIBS) workshop, University of Sydney, February 2-12, 2013.
- Biosphere-Atmosphere Stable Isotope Network (BASIN), Keystone, CO, April 2011.
- American Geophysical Union, San Francisco, CA, December 2010. Poster title: Linking water use and carbon dynamics in an alpine grassland on the Tibetan Plateau.
- Ecological Society of America, Albuquerque, NM, August 2009. Poster title: Climate controls over the seasonal carbon isotope dynamics of subalpine forest trees.
- Ecological Society of America, San Jose, CA, August 2007. Talk title: Using fine scale measurements of carbon isotope analysis to couple the water and carbon cycles in a subalpine forest
- Long Term Ecological Network All Scientists Meeting, September 2006. Poster title: Ecosystem measurements of carbon and water fluxes in a subalpine forest in the Colorado Rocky Mountains.
- Ecological Society of America, Memphis, TN, August 2006. Talk title: Are spatial patterns of ecosystem water use efficiency due to species difference?
- American Geophysical Union, San Francisco, December 2004. 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

\* *graduate students*, \*\* *undergraduate students*

- 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. 2018
- Yano, Y., Hoylman, Z.\*, Jencso, K., Hu, J. Talk title: Climate and topographic controls on seasonal and spatial soil nitrogen availability in a snow-dominated western US montane forest. Ecological Society of America, Portland, OR, August 2017.
- Qubain, C.A.\*, Yano, Y., Hu, J. Poster title: Storage vs. growth: Seasonal nitrogen allocation in *Pseudotsuga menziesii*. Ecological Society of America, Portland, OR, August 2017.
- Yano, Y., Hu, J., Qubain, C\*, and K. Jencso. Mountain Climate Conference. Leavenworth, Washington, 2016. Poster title: Topographic and seasonal control on N availability in western montane forest ecosystem.

- Qubain, C\*, Yano, Y., and J. Hu. Mountain Climate Conference. Leavenworth, Washington, 2016. Poster title: Are conifers nitrogen limited? Seasonal nitrogen and carbon allocation in *Pseudotsuga menziesii*
- Simpson, T.\*\*\*, Clute, T.\*, and J. Hu. 2016. Montana Institute on Ecosystems. Talk title: The Effects of Drought on Long Term Water Source Uses for the Douglas Fir
- Martin, J.\* Ameridendro, Mendoza, Argentina, March 2016. Talk title: Tree Growth Response to Measured Microclimate
- Martin, J.\*, Hoylman, Z.\* , Jencso, K., and J. Hu. American Geophysical Union, San Francisco, CA December 2015. Poster title: Climate controls on tree growth.
- Jencso, K., Hu, J., Z. Hoylman\*, and S. Running. European Geosciences Union, Vienna, Austria, April 2015. Talk title: Landscape Heterogeneity Modulates Forest Sensitivity to Climate
- Amish, S.\*\* and J. Hu. University Sponsored Program Undergraduate Program. Title: Germination Success Rates: testing the success of an ecosystem to recover post disturbance.
- Martin, J.\*, Hu, J., Looker, N\*., and K. Jencso. American Geophysical Union, San Francisco, CA December 2014. Poster title: Precipitation and Topography as Drivers of Tree Water Use and Productivity at Multiple Scales.
- Looker, N.\*, Hu, J., Martin, J.\*, and K. Jencso. American Geophysical Union, San Francisco, CA, December 2014. Poster title: Uncertainties in sap-flow based transpiration due to xylem properties.
- Holyman, Z.\* , Jencso, J., Hu., J., and S. Running. American Geophysical Union, San Francisco, CA, December 2014. Poster title: Landscape Heterogeneity Modulates Forest Sensitivity to Climate.
- Martin, J.\* , Jencso, K., Holyman, Z. and J. Hu. American Water Resources Association Meeting, Kalispell, MT, October 2014. Poster title: Forest Water Use and Productivity Dynamics Across Topographic and Elevation Gradients
- Looker, N.\*, Jencso, K., and J. Hu American Water Resources Association Meeting, Kalispell, MT, October 2014. Talk title: Improving Confidence in Tree Transpiration Estimates
- Holyman, Z.\* , Jencso, J., Hu., J., and R. McGlynn. American Geophysical Union, San Francisco, CA, December 2013. Poster title: Landscape Heterogeneity Modulates Forest Sensitivity to Climate.
- 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, December 2012. Talk title: Stable isotope composition of transpired water and the rate of change in leaf water enrichment in response to variable environments.
- 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, December 2011. 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.
- 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, December 2011. Title: Interactions between atmospheric water vapor, dew and leaf waters in an open-canopy forest using in situ isotopic measurements.
- 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, December 2011. Diagnosing the influence of model structure on the simulation of water, energy and carbon fluxes on bark beetle infested forests.
- 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, December 2010. Title:

- Vulnerability on the Roof of the World: Resilience to Climate Change and Natural Resource Policies on the Tibetan Plateau.
- Hopping, K.A., Klein, J.A., Hu, J., and S. Kang. American Geophysical Union, San Francisco, CA, December 2010. Title: Alpine ecosystem vulnerability to climate change on the Tibetan Plateau: Global implications for carbon balance, regional consequences for local pastoralists.
  - 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, December 2010. Title: Measuring and modeling changes in land-atmosphere exchanges and hydrologic response in forests undergoing insect-driven mortality.
  - Dominguez, F., Gochis, J.J., Harley, P.C., Turnipseed, A., and J. Hu. American Geophysical Union, San Francisco, CA, December 2010. Title: Transpiration and Evaporation Measurements in a Mountain Ecosystem Using Real-Time Field-Based Water Vapor Isotopes.
  - Klein, J.A., Bump, J., Harte, J., Hopping, J., Kang, S. and X. Zhao. Ecological Society of America Annual Meeting. Pittsburgh, PA, August 2010. 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.
  - Burns, S.P., Turnipseed, A., Bowling, D.R., Hu, J., and R.K. Monson. American Geophysical Union, San Francisco, CA, December 2009. Title: Ten-year variability in fluxes, meteorology, and environmental conditions at a Colorado subalpine forest site.
  - Riveros-Iregui, D.A., Hu, J., Bowling, D.R., and R.K. Monson. American Geophysical Union, San Francisco, CA, December 2009. Title: Environmental Controls on the Stable Isotopic Composition of Ecosystem Respiration in a High Elevation Subalpine Forest.
  - 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, August 2009. Title: Tree species effects on ecosystem water-use efficiency in a high-elevation subalpine forest.

## ENGAGEMENT, OUTREACH, AND SERVICES

### PROFESSIONAL

- 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 grant/year): 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): 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

2008 – Management, Science of the Total Environment, Estuarine, Coastal and Shelf Science, Biogeosciences, Water Resources Research, National Geographic  
Member of American Geophysical Union, Ecological Society of America, American Water Resources Association, Tree Ring Society

#### DEPARTMENT

2019 – UA, SNRE, Strategic Planning Committee  
2019 – UA, SNRE, Watershed Management and Ecohydrology Program Chair (*interim*)  
2019 UA, SNRE McGinnies Award Committee  
2018 – 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

2019 Alan Alda Leadership Workshop  
2018 – UA, SNRE Faculty Representative for the College of Agriculture Faculty Council

#### UNIVERSITY

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

#### PUBLIC

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

#### **MEDIA**

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.”