

**Curriculum Vitae for Dr. James R. Ehleringer**

University	Department of Biology	Phone Number: 801-581-7623
Address:	University of Utah	FAX number: 801-581-4665
	257 South 1400 East	E-mail: <a href="mailto:jim.ehleringer@utah.edu">jim.ehleringer@utah.edu</a>
	Salt Lake City, Utah 84112-0840	Web: <a href="http://ehleringer.net">http://ehleringer.net</a>

**Education:**

B.S.	San Diego State University	1972
M.S.	San Diego State University	1973
Ph.D.	Stanford University	1977

**University of Utah Affiliations:**

2000-present	Distinguished Professor, Department of Biology, <a href="http://ecophys.utah.edu">http://ecophys.utah.edu</a>
1984-present	Director, Stable Isotope Ratio Facility for Environmental Research (SIRFER); <a href="http://sirfer.utah.edu">http://sirfer.utah.edu</a>
2009-2015	Director, Global Change and Sustainability Center <a href="http://environment.utah.edu">http://environment.utah.edu</a>
2013-2016	Member, UU Sustainability leadership team, <a href="http://sustainability.utah.edu">http://sustainability.utah.edu</a>
2008-2010	Research Director, Entrada Field Station, <a href="http://riomesa.utah.edu">http://riomesa.utah.edu</a>
1993-1996	Chair of Biology, Department of Biology, <a href="http://biology.utah.edu">http://biology.utah.edu</a>
1984-2000	Professor, Department of Biology
1980-1984	Associate Professor, Department of Biology
1977-1980	Assistant Professor, Department of Biology

**Commercial Affiliations:**

2004-2013	Senior scientist	IsoForensics, Inc., Salt Lake City
2013-present	Consultant	IsoForensics, Inc., Salt Lake City
2016-present	Consultant	IsoAnalytics LLC, Salt Lake City

**Research Expertise:**

- Plant physiological ecology and ecosystem ecology
- Stable isotope ecology
- Greenhouse gases in natural ecosystems and urban regions
- Stable isotope forensics
- Stable isotopes in plants, animals, hydrology, foods, beverages, and plant products

**Certifications:**

- Certified Approved Forensic Practitioner, Forensic Isotope Ratio Mass Spectrometry Network, 2013-2017 (<http://www.forensic-isotopes.org/fafp.html>)

**Ecosystem Field Experience:**

Agricultural	Amaranth, castor bean, common bean, cotton, sunflower
Alpine tundra	Colorado
Arid and semi-arid	Argentina, Arizona, Australia, California, Chile, Mexico, Nevada, Utah
Forest	California, Canada, Maine, Massachusetts, Oregon, Utah, Washington
Tropics	Brazil, China, French Guiana, Puerto Rico
Urban	Salt Lake Valley, Utah

**Forensic Stable Isotope Ratio Experience:**

Anthropology	Bones, food, hair, teeth
Beverages	Beer, juices, milk, soft drinks, spirits, sparkling wines, water, wines
Biological	Animals, feathers, leaves, plants, soils, trees, tree rings, wood, wool
Controlled substances	Cocaine, heroin, marijuana, pseudoephedrine
Explosives	High energy, military, nitrates, peroxides
Foods	Carbohydrates, honeys, meats, oils, proteins, spirits, waters, wines
Gases	Carbon dioxide, methane, water vapor
Humans	Bone, body water, diets, fingernails, hair, teeth
Law enforcement	Bodies, controlled substances, explosives, food, manufactured materials
Manufactured	Clothing, inks, paper products
Microbes	Culture media, spores
Paper	Counterfeits, currencies, documents, paper materials
Waters	Drinking water, groundwater, surface water, plants, precipitation, rivers

**Courses developed and taught at the University of Utah; current year teaching is in bold:**

Biology 3960	Fresher Seminar and Lab: Stable Isotopes – You Are What You Eat ( <a href="http://www.ehleringer.net/fresher.html">http://www.ehleringer.net/fresher.html</a> )
<b>Biology 5460/5465</b>	Plant Ecology in a Changing World, Lecture and Laboratory ( <a href="http://www.plantecology.net">http://www.plantecology.net</a> )
Biology 5470/5475	Stable Isotope Biogeochemistry and Ecology, Lecture and Laboratory
Biology 6921	Isotopics, Seminar
<b>Biology 7463/7465</b>	Stable Isotope Biogeochemistry and Ecology, Lecture and Laboratory ( <a href="http://www.stableisotopes.net">http://www.stableisotopes.net</a> )
Biology 7961	Global Changes and Society ( <a href="http://environment.utah.edu/students/gcs.html">http://environment.utah.edu/students/gcs.html</a> )
Honors 3700	Think Tank – Wasatch Water: Evaporating Opportunities ( <a href="http://honors.utah.edu/students/engaged-learning/praxis-labs/ecosystem-services-and-the-american-dream/">http://honors.utah.edu/students/engaged-learning/praxis-labs/ecosystem-services-and-the-american-dream/</a> )

**National and International Instructional Courses Developed:**

1996-present	IsoCamp, Stable Isotope Biogeochemistry and Ecology Lectures and Laboratory (Originator and coordinator), <a href="http://stableisotopes.net">http://stableisotopes.net</a>
Intermittent	Stable Isotopes in Forensics, Salt Lake City and Washington D.C.

**Honors and Distinctions:**

2017	Outstanding Education Program in Earth and Space Sciences, American Geophysical Union
2016	The Ehleringer Prize, annual named prize recognizing an outstanding graduate student ecological publication in <i>Oecologia</i> each year
2016	Rosenblatt Prize for Excellence, University of Utah
2016	Elected to the U.S. National Academy of Sciences
2016	Elected as Fellow of the Ecological Society of America
2008	Elected as Fellow of the American Geophysical Union
2000	Elected Distinguished Professor, University of Utah
1999	Governors Medal for Science and Technology, State of Utah
1999	Elected as Fellow of the American Association for Advancement of Science
1998	Students Choice Award for Teaching, University of Utah
1988	Distinguished Research Award, University of Utah

1984	Alexander von Humboldt Fellowship
1978	Murray Buell Award, Ecological Society of America
1974-1977	Carnegie Predoctoral Fellow, Carnegie Institution of Washington, Stanford
1974	Achievement Rewards for College Scientists (ARCS) Scholarship
1971	Outstanding Graduating Senior, Sciences, San Diego State University
1969-1971	Golden Scholarship, San Diego State University

**Professional Service:****Editorial Boards:**

Editorial Board	Oecologia	1982-present
Editor-in-chief	Oecologia	1989-2006
Editorial Board	Physiological Ecology Series, Academic Press	1988-2004
Editorial Board	Plant Cell Environment	1992-2012
Editorial Board	Trends in Plant Science	1998-2007
Editorial Board	Tree Physiology	1998-2014
Editorial Board	Functional Ecology	1986-2000
Section Head	Physiological Ecology, Faculty of 1000	2004-2010

**Advisory Boards and Consortia:**

1986-2011	Ecology Institute Board (Terrestrial Ecology), Oldendorf
1992-1994	Physiological Ecology Section, Ecological Society of America, Chair
1997-2003	Global Change and Terrestrial Ecosystems (GCTE), Focus 1 Office, Core Project of the International Geosphere Biosphere Program (IGBP), Chair
1997-2006	Biosphere-Atmosphere Stable Isotope Network (BASIN), Chair
1997-2010	Biosphere-Atmosphere Stable Isotope Network (BASIN), Steering Committee
1998-2003	Carbon Science Working Group, IGBP
1999-2003	Global Change and Terrestrial Ecosystems (GCTE), Vice Chair
2000-2009	Max-Planck-Institut für Biogeochemie, Advisory Board
2002-2008	NITECRIME, member
2004-2005	Research Infrastructure Committee, National Ecological Observatory Network
2007-2009	National Ecological Observatory Network (NEON), Board of Directors
2004-present	Founding member, Forensic Isotope Ratio Mass Spectrometry Network, FIRMS
2006-present	Biological and Environmental Research Advisory Committee (BERAC), U.S. Department of Energy
2015-present	Western Water Alliance, External Advisory Board
2015-present	Mountain Accord (central Wasatch Mountains), Environmental Subcommittee

**Scientific Review Boards:**

1983-2005, various years	NSF, panel member
1983-1992, various years	USDA, panel member
1986-1987	Plant Response to Environmental Stress, USDA-CRGO, Program Manager
1990-2017, various years	DOE, panel member
1990-1992	National Research Council, Committee on Plant Sciences
1993-1994	U.S. Nuclear Waste Regulatory Board, panel member
2001-2004, various years	NASA, panel member
2016-present	Division of Environment and Life Sciences Advisory Panel, U.S. National Academy of Sciences

**Workshops and Events (Organizer or Co-organizer):**

- 1984 Workshop on Future Needs in Physiological Ecology, Asilomar
- 1986 Stable Isotopes in Ecology, Lake Arrowhead
- 1990 Ecological Society of America, 75th Annual Meeting, Snowbird
- 1990 Workshop on Scaling in Ecology, Snowbird
- 1992 Carbon and Water Relations Perspectives from Stable Isotopes, Riverside
- 1995 Ecological Society of America, 80th Annual Meeting, Snowbird
- 1997 Biosphere-Atmosphere Stable Isotope Network Workshop, Snowbird
- 1998 Biosphere-Atmosphere Stable Isotope Network Workshop, Barcelona
- 2000 GCTE International Science Conference, Barcelona
- 2000 Controls Over Soil Respiration and Decomposition Workshop (GCTE), Jena
- 2000 Ecological Society of America, 85th Annual Meeting, Snowbird
- 2001 Atmospheric CO<sub>2</sub> and its Effects on Plants, Animals and Ecosystems, Snowbird
- 2002 Stable Isotopes in Biosphere-Atmosphere Interactions, Banff
- 2003 Stable Isotopic Signals of the Terrestrial Biosphere: Linking Ecosystem C fluxes to Isotopic Signals of Plant Components, Orvieto
- 2004 Partitioning of Fluxes Between the Biosphere and the Atmosphere Across Spatial Scales, Interlaken
- 2004 On the Formation of a National Stable Isotope Network in NEON, Park City
- 2005 Stable Isotopes in the National NEON Plan, Tucson
- 2005 Lead coordinator for purchase and development of the Entrada Ranch in southern Utah as a University facility for research, teaching, and outreach
- 2006 Chair of DOE-BERAC Subcommittee review of elevated CO<sub>2</sub> ecosystem research within the Department of Energy
- 2006 Lead coordinator to develop site locations and RFI responses for NEON research in the Great Basin (Domain 15)
- 2006 Isotopes as Recorders of Ecological Change, Tomar
- 2009 Lead development of Global Change and Sustainability Center, University of Utah
- 2010 Co-lead development of EPSCoR Track-1: iUTAH, Urban Transitions and Aridregion Hydro-sustainability
- 2015 Co-lead, Workshop on the Development of an IFL Urban Observatory, BERAC, DOE

**Publications (last ten years, 2007-2017):**

- 364. Roden, J., and J.R. Ehleringer. 2007. Summer precipitation influences the stable oxygen and carbon isotopic composition of tree ring cellulose in *Pinus ponderosa*. *Tree Physiology* 27:491-501.
- 365. Domingues, T.F., L.A. Martinelli, and J.R. Ehleringer. 2007. Ecophysiological traits of plant functional groups in forest and pasture ecosystems from eastern Amazônia, Brazil. *Plant Ecology* DOI:10.1007/s1158-006-9251-z.
- 366. Cerling, T.E., L.K. Ayliffe, M.D. Dearing, J.R. Ehleringer, B.H. Passey, D.W. Podlesak, A.-M. Torregrossa, and A.G. West. 2007. Determining biological tissue turnover using stable isotopes: the reaction progress variable. *Oecologia* 151:175-189. DOI: 10.1007/s00442-006-0571-4
- 367. Pataki, D.E., T. Xu, Y.Q. Luo, and J.R. Ehleringer. 2007. Inferring ecosystem carbon cycling from the urban CO<sub>2</sub> dome. *Oecologia* DOI: 10.1007/s00442-006-0656-0
- 368. Pataki, D.E., C.-T. Lai, C.D. Keeling, and J.R. Ehleringer. 2007. Insights from stable isotopes on the role of terrestrial ecosystems in the global carbon cycle, p. 37-44. In J. Canadell, D.E. Pataki,

- and L.F. Pitelka (eds.), *Terrestrial ecosystems in a changing world*. Springer-Verlag, Berlin.
369. Bush, S.E., D.E. Pataki, and J.R. Ehleringer. 2007. Sources of variation in  $\delta^{13}\text{C}$  of fossil fuel emissions in Salt Lake City, USA. *Applied Geochemistry* 22:715-723, DOI:10.1016/j.apgeochem.2006.11.001.
370. Bowen, G.J., J.R. Ehleringer, L.A. Chesson, E. Stange, and T.E. Cerling. 2007. Stable isotope ratios of tap water in the coterminous USA. *Water Resources Research* 43:W03419, doi:10.1029/2006WR005186.
371. Alstad, K.P., C.-T. Lai, L.B. Flanagan, and J.R. Ehleringer. 2007. Environmental controls on the carbon isotope composition of ecosystem respired  $\text{CO}_2$  in contrasting forest ecosystems in Canada and USA. *Tree Physiology* 27:1361-1374.
372. West, J.B., J.R. Ehleringer, and T.E. Cerling. 2007. Geography and vintage predicted by a novel GIS model of wine  $\delta^{18}\text{O}$ . *Journal of Agricultural and Food Chemistry* 55:7075-7083.
373. Ehleringer, J.R., T.E. Cerling, and J. B. West. 2007. Forensic applications of stable isotope ratio analysis, pages 399-422. In R. D. Blackledge (ed.), *Forensic analysis on the cutting edge: new methods for trace evidence analysis*. Wiley Interscience.
374. Bowen, G.J., T.E. Cerling, and J.R. Ehleringer. Stable isotopes and human water resources: signals of change. In Dawson, T.E., and R.T.W. Siegwolf (eds.), *Stable isotopes as indicators of ecological change*. Academic Press, San Diego.
375. Cerling, T.E., G.J. Bowen, J.R. Ehleringer, and M. Sponheimer. 2007. The reaction progress variable and isotope turnover in biological systems. In Dawson, T.E., and R.T.W. Siegwolf (eds.), *Stable isotopes as indicators of ecological change*. Academic Press, San Diego.
376. Ehleringer, J.R., and T.E. Dawson. 2007. Stable isotopes record ecological change, but a sampling network may be essential. In Dawson, T.E., and R. Siegwolf (eds.), *Stable isotopes as recorders of ecological change*. Academic Press, San Diego.
377. Martinelli, L.A., J.P.H.B. Ometto, F.Y. Ishida, T.F. Domingues, G.B. Nardoto, R.S. Oliveira, and J.R. Ehleringer. 2007. The use of carbon and nitrogen stable isotopes to track effects of land-use changes in the Brazilian Amazon region. In Dawson, T.E., and R.T.W. Siegwolf (eds.), *Stable isotopes as indicators of ecological change*. Academic Press, San Diego.
378. Williams, D.G., R.D. Evans, J.B. West, and J.R. Ehleringer. 2007. Applications of stable isotope measurements for early-warning detection of ecological change. In Dawson, T.E., and R.T.W. Siegwolf (eds.), *Stable isotopes as indicators of ecological change*. Academic Press, San Diego.
379. Hultine, K.R., S.E. Bush, A.G. West, and J.R. Ehleringer. 2007. Effect of gender on sap flux-scaled transpiration in a dominant riparian tree species: box elder (*Acer negundo*). *Journal of Geophysical Research* 112:G03S06, doi:10.1029/2006JG000232.
380. Hultine, K.R., S.E. Bush, A.G. West, and J.R. Ehleringer. 2007. Population structure, physiology and ecohydrological impacts of dioecious riparian tree species of western North America. *Oecologia* 154:85-93. DOI 10.1007/s00442-007-0813-0.
381. West, A.G., K.R. Hultine, K. Burtch, and J.R. Ehleringer. 2007. Seasonal variations in moisture

- use in a piñon-juniper woodland. *Oecologia* 153:787-798. DOI:10.1007/s00442-007-0777-0.
382. West, A.G., K.R. Hultine, T.L. Jackson, and J.R. Ehleringer. 2007. Differential summer moisture use by *Pinus edulis* and *Juniperus osteosperma* reflect contrasting hydraulic characteristics. *Tree Physiology* 27:1711-1720.
383. De Araujo, A.C., J.P.H. B. Ometto, A.J. Dolman, B. Kruijt, M.J. Waterloo, and J.R. Ehleringer. 2007. Implications of CO<sub>2</sub> pooling on δ<sup>13</sup>C of ecosystem respiration and leaves in Amazonian forest. *Biogeosciences Discussions* 4:4459-4506. [www.biogeosciences-discuss.net/4/4459/2007/](http://www.biogeosciences-discuss.net/4/4459/2007/).
384. Podlesak, D.W., A.-M. Torregrossa, J.R. Ehleringer, M.D. Dearing, B.H. Passey, and T.E. Cerling. 2008. Turnover of oxygen and hydrogen isotopes in the body water, CO<sub>2</sub>, hair, and enamel of a small mammal. *Geochimica et Cosmochimica Acta* 72:19-35.
385. Bush, S.E., D.E. Pataki, K.R. Hultine, A.G. West, J.S. Sperry, and J.R. Ehleringer. 2008. Wood anatomy constrains stomatal responses to atmospheric water vapor pressure deficit. *Oecologia* 156:13-20.
386. Ehleringer, J.R., G.J. Bowen, L.A. Chesson, A.G. West, D. Podlesak, and T.E. Cerling. 2008. Hydrogen and oxygen isotopes in human hair are related to geography. *Proceedings of the National Academy of Sciences USA* 105:2788-2793.
387. Chesson, L.A., D.W. Podlesak, A.H. Thompson, T.E. Cerling, and J.R. Ehleringer. 2008. Variation of hydrogen, carbon, nitrogen, and oxygen stable isotope ratios in an American diet: fast food meals. *Journal of Agricultural and Food Chemistry* 56:4084-4091.
388. West, A.G., K.R. Hultine, J.S. Sperry, S.E. Bush, and J.R. Ehleringer. 2008. Transpiration and hydraulic strategies in a piñon-juniper woodland. *Ecological Applications* 18:911-927.
389. West, J.B., A. Sobek, and J.R. Ehleringer. 2008. A simplified GIS approach to modeling global leaf water isoscapes. *PLoS One* (6): e2447. doi:10.1371/journal.pone.0002447.
390. Ehleringer, J.R., T.E. Cerling, J.B. West, D.W. Podlesak, L.A. Chesson, and G.J. Bowen. 2008. Spatial considerations of stable isotope analyses in environmental forensics, pages 36-53. In R.E. Hester and R.M. Harrison (eds.), *Issues in Environmental Science and Technology* volume 26. Royal Society of Chemistry Publishing, Cambridge.
391. Lai, C.-T., J.P.H.B. Ometto, L.A. Martinelli, J.A. Berry, T.F. Domingues, and J.R. Ehleringer. 2008. Life form-specific variations in leaf water oxygen-18 enrichment in Amazonian vegetation. *Oecologia* 157:197-210.
392. Nardoto, G., J.P.H.B. Ometto, J.R. Ehleringer, N. Higuchi, M. Bustamante, and L.A. Martinelli. 2008. Understanding the influences of spatial patterns on N availability within the Brazilian Amazon forest. *Ecosystems* doi:10.1007/s10021-008-9189-1.
393. Schwinning, S., J. Belnap, D.R. Bowling, and J.R. Ehleringer. 2008. Sensitivity of the Colorado Plateau to change: climate, ecosystems, and society. *Ecology and Society* 13(2): 28. [online] URL: <http://www.ecologyandsociety.org/vol13/iss2/art28/>
394. Hultine, K.R., T.L. Jackson, K.G. Burtch, S.M. Schaeffer, and J.R. Ehleringer. 2008. Elevated stream inorganic nitrogen impacts on a dominant riparian tree species: results from an

- experimental riparian stream system. *Journal of Geophysical Research, Biogeosciences* 113, G04025. doi:10.1029/2008JG000809.
395. Hultine, K.R., S.E. Bush, A.G. West, K.G. Burtch, D.E. Pataki, and J.R. Ehleringer. 2008. Gender specific patterns of above-ground allocation, canopy conductance and water use in a dominant riparian tree species: box elder (*Acer negundo*). *Tree Physiology* 28:1383-1394.
396. West, J.B., J.M. Hurley, and J.R. Ehleringer. 2009. The isotopic signatures of marijuana cultivation. I. Carbon and nitrogen stable isotopes describe the growth regime. *Journal of Forensic Science* 54:1-6. doi:10.1111/j.1556-4029.2008.00909.x
397. Chesson, L.A., J.R. Ehleringer, and T.E. Cerling. 2009. American fast food isn't all corn-based. *Proceedings of the National Academy of Sciences USA* 106(6):E8, doi:10.1074/pnas.0811787106.
398. Bowen, G.J., J.R. Ehleringer, L.A. Chesson, A. Thompson, D. Podlesak, and T.E. Cerling. 2009. Dietary and physiological controls on the hydrogen and oxygen isotope ratios of hair from mid-20<sup>th</sup> century indigenous populations. *American Journal of Physical Anthropology* doi:10.1002/ajpa.21008.
399. Bowen, G.J., J.B. West, B.H. Vaughn, T.E. Dawson, J.R. Ehleringer, M. L. Fogel, K. Hobson, J. Hoogewerff, C. Kendall, C.-T. Lai, C.C. Miller, D. Noone, H. Schwarcz, and C.J. Still. 2009. Isoscapes to address large-scale Earth science challenges. *EOS* 90:109-110.
400. Cerling, T.E., G. Wittemyer, J.R. Ehleringer, C.H. Remien, and I. Douglas-Hamilton. 2009. History of animals using isotope records (HAIR): a 6-year dietary history of one family of African elephants. *Proceedings of the National Academy of Sciences USA* 106:8093-8100. doi: 10.1073/pnas0902192106.
401. Dennison, P.E., P.L. Nagler, K.R. Hultine, E.P. Glenn, and J.R. Ehleringer. 2009. Remote monitoring of tamarisk defoliation and evapotranspiration following saltcedar leaf beetle attack. *Remote Sensing of Environment* 113:1462-1472. doi:10.1016/j.rse.2008.05.022.
402. Chesson, L.A., D.W. Podlesak, T.E. Cerling, and J.R. Ehleringer. 2009. Evaluating uncertainty in the calculation of non-exchangeable hydrogen fractions within organic materials. *Rapid Communications in Mass Spectrometry* 23:1275-1280.
403. West, J.B., J.M. Hurley, F.O. Dudas, and J.R. Ehleringer. 2009. The isotopic signatures of marijuana cultivation. II. Strontium isotopes relate to geographical origin. *Journal of Forensic Science* 54:1261-1269.
404. Hultine, K.R., J. Belnap, C. van Ripper, J.R. Ehleringer, P.E. Dennison, M.E. Lee, P.L. Nagler, K.A. Snyder, S.M. Uselman, and J.B. West. 2009. Biocontrol of tamarisk in the western United States: an event underway with significant ecological and societal implications. *Frontiers in Ecology and the Environment* 8:467-474; doi:10.1890/090031.
405. Chesson, L.A., D.W. Podlesak, B.R. Erkkila, T.E. Cerling, and J.R. Ehleringer. 2009. Isotopic consequences of consumer food choice: hydrogen and oxygen stable isotope ratios in foods from fast food restaurants *versus* supermarkets. *Food Chemistry* 119:1250-1256; doi:10.1016/j.foodchem.2009.07.046.

406. Thompson, A.H., L.A. Chesson, D.W. Podlesak, G.J. Bowen, T.E. Cerling, and J.R. Ehleringer. 2010. Stable isotope analysis of modern human hair collected along an Asian geographic transect. *American Journal of Physical Anthropology* 141:440-451.
407. Ehleringer, J.R., A.H. Thompson, D. Podlesak, G.J. Bowen, L.A. Chesson, T.E. Cerling, T. Park, P. Dostie, and H. Schwarcz. 2010. A framework for the incorporation of isotopes and isoscapes in geospatial forensic investigations, p. 357-387. In J. West, G.J. Bowen, T.E. Dawson, and K. Tu (eds.), *Isoscapes: understanding movement, pattern, and process on Earth through isotope mapping*. Springer Verlag, New York.
408. West, J.W., H. Kreuzer, and J.R. Ehleringer. 2010. Approaches to plant hydrogen and oxygen isoscapes generation, p. 161-178. In J. West, G.J. Bowen, T.E. Dawson, and K. Tu (eds.), *Isoscapes: understanding movement, pattern, and process on Earth through isotope mapping*. Springer Verlag, New York.
409. Hurley, J.M., J.B. West, and J.R. Ehleringer. 2010. Tracing retail marijuana in the United States: geographic origin and cultivation patterns. *International Journal of Drug Policy* 21:222-228. doi:10.1016/j.drugpo.2009.08.001
410. Hurley, J.M., J.B. West, and J.R. Ehleringer. 2010. Stable isotope models to predict region-of-origin and cultivation conditions of marijuana. *Science and Justice* 50:86-93.
411. Chesson, L.A., L.O. Valenzuela, S.P. O'Grady, T.E. Cerling, and J.R. Ehleringer. 2010. Hydrogen and oxygen stable isotope ratios of milk in the United States. *Journal of Agricultural and Food Chemistry* 58:2358-2363. doi:10.1021/jf904151c.
412. Chesson, L.A., L.O. Valenzuela, S.P. O'Grady, T.E. Cerling, and J.R. Ehleringer. 2010. Links between purchase location and the stable isotope ratios of bottled water, soda, and beer in the United States. *Journal of Agricultural and Food Chemistry* 58:7311-7316;doi:10.1021/jf1003539.
413. Ehleringer, J.R., and D.R. Sandquist. 2010. Photosynthesis: physiological and ecological considerations, pages . In L. Taiz and E. Zeiger (eds.), *Plant physiology*, 5<sup>th</sup> edition, Sinauer Associates, Sunderland, MA.
414. Hultine, K.R., S.E. Bush, and J.R. Ehleringer. 2010. Ecophysiology of riparian cottonwood and willow before, during and after two years of soil water removal. *Ecological Applications* 20:347-361.
415. O'Grady, S.P., A.R. Wende, C.H. Remien, L.O. Valenzuela, L.E. Enright, L.A. Chesson, E.D. Abel, T.E. Cerling, and J.R. Ehleringer. 2010. The stable isotope signature of body water as a biomarker of aberrant water homeostasis: diabetes mellitus, an index case. *PLoS ONE* 5(7):e11699. doi:10.1371/journal.pone.0011699.
416. Lai, C.-T., and J.R. Ehleringer. 2010. Deuterium excess reveals diurnal sources of water vapor in forest air. *Oecologia* doi 10.1007/s00442-010-1721-2.
417. Chesson, L.A., G.J. Bowen, and J.R. Ehleringer. 2010. Analysis of the hydrogen and oxygen stable isotope ratios of beverage waters without prior water extraction using isotope ratio infrared spectroscopy. *Rapid Communications in Mass Spectrometry* 25:3205-3213; doi:10.1002/rcm.4759.



418. Hultine, K.R., P.L. Nagler, K. Morino, S.E. Bush, K.G. Burtch, P.E. Dennison, E.P. Glenn, and J.R. Ehleringer. 2010. Sap flux-scaled transpiration by tamarisk (*Tamarix* spp.), before, during and after episodic defoliation by the saltcedar leaf beetle (*Diorhabda carinulata*). *Agricultural and Forest Meteorology* 150:1467-1475; doi:10.1016/j.agrformet.2010.07.009.
419. Ehleringer, J.R., and S.M. Matheson Jr. 2010. Stable isotopes and courts. *Utah Law Review* 2010 (2):385-442.
420. Bush, S.E., K.R. Hultine, J.S. Sperry, and J.R. Ehleringer. 2010. Calibration of thermal dissipation sap flow probes for ring- and diffuse-porous trees. *Tree Physiology* 30:1545-1554.
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**Graduate and Postgraduate Training:**

## Current graduate students:

Christy Mancuso (PhD)

## Past graduate students:

## Masters:

Lesley Chesson  
Lori Ducharme  
Sylvia Englund  
Jillian Gregg  
Erin Hanlon  
Brett Hesla  
Susan Kammerdiener  
Susan Phillips  
Mark Smedley  
Jebediah Williamson

## Ph.D.:

Susan Bush  
Jonathan Comstock  
Tomas Domingues  
Lisa Donovan  
Irwin Forseth  
Qin-nong Aaron Fu  
Brent Helliker  
Darren Sandquist  
Adam West  
Kenneth Werk

## Past postdoctoral associates:

Julietta Aranibar  
Melissa Berke  
Gabriel Bowen  
David Bowling  
J. Renee Brooks  
Susan Bush  
Nina Buchmann  
Jonathan Comstock  
Todd Dawson  
Jeffrey Dukes  
R. David Evans  
Julianna Fessenden  
Lawrence Flanagan  
Renate Gebauer  
Peter Harley  
Kevin Hultine  
Wen-yuan Kao  
Helen Kreuzer-Martin  
Chun-Ta Lai  
Shenggong Li  
Guanghui Lin  
John Marshall  
Daniel Mendoza  
Logan Mitchell  
Shannon O'Grady  
Jean Ometto  
Diane Pataki  
David Podlesak  
John Roden  
William Schuster  
Susan Schwinning  
Alexandra Thompson  
Brett Tipple  
Luciano Valenzuela  
Julia Verville  
Joy Ward  
Jason West  
David Williams

## Patents:

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