

Curriculum Vitae for Dr. James R. Ehleringer

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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, http://ecophys.utah.edu
1984-present	Director, Stable Isotope Ratio Facility for Environmental Research (SIRFER); http://sirfer.utah.edu
2009-present	Adjunct Professor of Geology and Geophysics
2009-2015	Director, Global Change and Sustainability Center http://environment.utah.edu
2013-2016	Member, UU Sustainability leadership team, http://sustainability.utah.edu
2008-2010	Research Director, Entrada Field Station, http://riomesa.utah.edu
1993-1996	Chair of Biology, Department of Biology, http://biology.utah.edu
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	Advisor	IsoForensics, Inc., Salt Lake City
2016-present	Advisor	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

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 (http://www.ehleringer.net/fresher.html)
Biology 5460/5465	Plant Ecology in a Changing World, Lecture and Laboratory (http://www.plantecology.net)
Biology 5470/5475	Stable Isotope Biogeochemistry and Ecology, Lecture and Laboratory
Biology 6921	Isotopics, Seminar
Biology 7463/7465	Stable Isotope Biogeochemistry and Ecology, Lecture and Laboratory (http://www.stableisotopes.net)
Sustainability 6000	Global Changes and Society (originally Biology 7961) (http://environment.utah.edu/students/gcs.html)
Honors 3700	Think Tank – Wasatch Water: Evaporating Opportunities (http://honors.utah.edu/students/engaged-learning/praxis-labs/ecosystem-services-and-the-american-dream/)

National and International Instructional Courses Developed:

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

Honors and Distinctions:

2017	Outstanding Education Program in Earth and Space Science, 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 CO₂ 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 CO₂ 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, 2008-2018):

- 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, CO₂, 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-20th 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*, 5th 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.
421. O'Grady, S.P., L.E. Enright, J.E. Barnette, T.E. Cerling, and J.R. Ehleringer. 2010. Accuracy and precision of a laser-spectroscopy approach to the analysis of $\delta^2\text{H}$ and $\delta^{18}\text{O}$ in human urine. *Isotopes in Environmental and Health Studies* 46:476-483.
422. Rodushkin, I., D.C. Baxter, E. Engström, J. Hoogewerff, P. Horn, W. Papesch, J. Watling, C. Latkoczy, G. van der Peijl, S. Berends-Montero, J. Ehleringer, and V. Zdanowicz. 2011. Elemental and isotopic characterization of cane and beet sugars. *Journal of Food Composition and Analysis* 24:70-78. doi:10.1016/j.jfca.2010.05.005.
423. Chesson, L.A., B.J. Tipple, B.R. Erkkila, T.E. Cerling, and J.R. Ehleringer. 2011. B-HIVE: Beeswax Hydrogen Isotopes as Validation of Environment. Part 1. Bulk honey and honeycomb stable isotope analysis. *Food Chemistry* 125:576-581; doi:10.1016/j.foodchem.2010.09.050.
424. Kennedy, C.D., G.J. Bowen, and J.R. Ehleringer. 2011. Temporal variations of oxygen isotope ratios ($\delta^{18}\text{O}$) in drinking water: Implications for specifying location of origin with human scalp

- hair. *Forensic Science International* doi:10.1016/j.forsciint.2010.11.021.
425. Martinelli, L.A., G.B. Nardoto, L.A. Chesson, F.D. Rinaldi, J.P.H.B. Ometto, T.E. Cerling, and J.R. Ehleringer. 2011. Worldwide stable carbon and nitrogen isotopes of Big Mac® patties: an example of a truly “glocal” food. *Food Chemistry* 127:1712-1718. doi:10.1016/j.foodchem.2011.02.046.
426. Barnette, J.E., M.J. Lott, J.D. Howa, D. W. Podlesak, and J.R. Ehleringer. 2011. $\delta^2\text{H}$ and $\delta^{18}\text{O}$ isotope values in hydrogen peroxide. *Rapid Communications in Mass Spectrometry* 25:1422-1428. doi:10.1022/rcm.5004
427. Dang, X., C.-T. Lai, D.Y. Hollinger, A.J. Schauer, J. Xiao, J.W. Munger, C. Owensby, and J.R. Ehleringer. 2011. Combining tower mixing ratio and community model data to estimate regional-scale net ecosystem carbon exchange by boundary layer inversion over four flux towers in the United States. *Journal of Geophysical Research - Biogeosciences* 116:G03036, doi:10.1029/2010JG001554.
428. Ehleringer, J.R., J.F. Casale, J.E. Barnette, X. Xu, M.J. Lott, and J.M. Hurley. 2011. ^{14}C analyses quantify time lag between coca leaf harvest and street-level seizure of cocaine. *Forensic Science International* doi:10.1016/j.forsciint.2011.05.003.
429. Strong, C., C. Stwertka, D.R. Bowling, B.B. Stevens, and J.R. Ehleringer. 2011. Urban carbon dioxide cycles within the Salt Lake Valley: a multiple box model validated by observations. *Journal of Geophysical Research - Atmospheres* 116:D15307, doi:10.1029/2011JD015693.
430. Valenzuela, L.O., Chesson, L.A., S. O’Grady, T.E. Cerling, and J.R. Ehleringer. 2011. Spatial distributions of carbon, nitrogen and sulfur isotope ratios in human hair across the central United States. *Rapid Communications in Mass Spectrometry* 25:861-868, doi:10.1002/rcm.4934.
431. Chesson, L.A., J.R. Ehleringer, and T.E. Cerling. 2011. Light-element isotopes (H, C, N, and O) as tracers of human diet: a case study on fast food meals, pages 707-723. Chapter 33. In M. Baskaran (ed.), *Handbook of Environmental Isotope Geochemistry*. Advances in Isotope Geochemistry. Springer Verlag, Berlin.
432. Chesson, L.A., L.O. Valenzuela, G.J. Bowen, T.E. Cerling, and J.R. Ehleringer. 2011. Consistent predictable patterns in the hydrogen and oxygen stable isotope ratios of animal proteins consumed by modern humans in the USA. *Rapid Communications in Mass Spectrometry* 25:3713-3722.
433. Ehleringer, J.R., J.F. Casale, J.E. Barnette, X. Xu, M.J. Lott, and J.M. Hurley. 2011. $\Delta^{14}\text{C}$ calibration curves for modern plant material from tropical regions of South America. *Radiocarbon* 53(4):585-594.
434. Podlesak, D.W., G.J. Bowen, S. O’Grady, T.E. Cerling, and J.R. Ehleringer. 2012. $\delta^2\text{H}$ and $\delta^{18}\text{O}$ of human body water: a GIS model to distinguish residents from non-residents in the contiguous USA. *Isotopes in Environmental and Health Studies* 48:259-279. doi:10.1080/10256016.2012.644283
435. Valenzuela, L.O., L.A. Chesson, G.J. Bowen, T.E. Cerling, and J.R. Ehleringer. 2012. Dietary heterogeneity among western industrialized countries reflected in the stable isotope ratios of human hair. *PLoS ONE* 7(3):e34234. doi:10.1371/journal.pone.0034234.

436. Tipple, B.J., L.A. Chesson, B.R. Erkkila, T.E. Cerling, and J.R. Ehleringer. 2012. B-HIVE: Beeswax hydrogen isotopes as validation of environment. Part II. Compound-specific hydrogen isotope analysis. *Food Chemistry* 134(1):494-501. doi:10.1016/j.foodchem.2012.02.106
437. O'Grady, S.P., L.O. Valenzuela, C.H. Remien, L.E. Enright, M.J. Jorgensen, J. Kaplan, J.D. Wagner, T.E. Cerling, and J.R. Ehleringer. 2012. Hydrogen and oxygen isotope ratios in body water and hair: modeling isotope dynamics in nonhuman primates. *American Journal of Primatology* 74(7):651-660. doi:10.1002/ajp.22019
438. McKain, K., S.C. Wofsy, T. Nehrjorn, J. Eluszkiewicz, J. R. Ehleringer, and B.B. Stephens. 2012. Assessment of ground-based atmospheric observations for verification of greenhouse gas emissions from urban areas. *Proceedings of the National Academy of Sciences USA* 109:8423-8428.
439. Chesson, L.A., B.J. Tipple, G.N. Mackey, S.A. Hynek, D. Fernandez, and J.R. Ehleringer. 2012. Strontium isotope ratios of tap water from the coterminous USA. *Ecosphere* 3(7): <http://dx.doi.org/10.1890/ES1812-00122.00121>.
440. Kreuzer, H.W., J.B. West, and J.R. Ehleringer. 2012. Forensic applications of light-element stable isotope ratios of *Ricinus communis* seeds and ricin preparations. *Journal of Forensic Sciences* 58:S43-S51. doi:10.1111/1556-0429.12000.
441. Webb-Robertson, B.J., H. Kreuzer, G. Hart, J. Ehleringer, J. West, G. Gill, and D. Duckworth. 2012. Bayesian integration of isotope ratio for geographic sourcing of castor beans. *Journal of Biomedicine and Biotechnology* Volume 2012, Article ID 450967, doi:10.1155/2012/450967.
442. Tipple, B.J., M.A. Berke, C.E. Doman, S. Khachatryan, and J.R. Ehleringer. 2013. Leaf *n*-alkanes record the plant-water environment at leaf flush. *Proceedings of the National Academy of Sciences USA* 110(7):2659-2664. doi:10.1073/pnas.1213875110.
443. Domingues, T.F., L.A. Martinelli, and J.R. Ehleringer. 2013. Seasonal patterns of leaf-level photosynthetic gas exchange in an eastern Amazonian rain forest. *Plant Ecology & Diversity* doi:10.1080/17550874.2012.748849.
444. Hultine, K.R., K.G. Burtch, and J.R. Ehleringer. 2013. Gender specific patterns of carbon uptake and water use in a dominant riparian tree species in a warming climate. *Global Change Biology* 19:3390-3405. doi:10.1111/gcb.12230.
445. Tipple, B.J., T. Chau, L.A. Chesson, D.P. Fernandez, and J.R. Ehleringer. 2013. Isolation of strontium pools and isotope ratios in modern hair. *Analytica Chimica Acta* 798:64-73.
446. Chesson, L.A., B. Tipple, B. Erkkila, and J.R. Ehleringer. 2013. Hydrogen and oxygen stable isotope analysis of pollen collected from honey. *Grana* 52:305-315. doi:10.1080/00173134.2013.841751.
447. Chesson, L.A., B.J. Tipple, J.D. Howa, G.J. Bowen, J.E. Barnette, T.E. Cerling, and J.R. Ehleringer. 2014. Stable isotopes in forensic applications. In H.D. Holland and K.K. Turekian (eds.), *Treatise of Geochemistry, Second Edition*, vol. 14, pages 285-317. Oxford, London.

448. Thompson, A.H., A.S. Wilson, and J.R. Ehleringer. 2014. Hair as a geochemical recorder: ancient to modern, pages 371-393. In H.D. Holland and K.K. Turekian (eds.), *Treatise of Geochemistry*, Second Edition, vol. 14. Oxford, London
449. Remien, C., F.R. Adler, L.A. Chesson, L.O. Valenzuela, J.R. Ehleringer, and T.E. Cerling. 2014. Deconvolution of isotope signals from bundles of multiple hairs. *Oecologia* 175:781-789. doi: 10.1007/s00442-014-2945-3
450. Howa, J.D., M.J. Lott, L.A. Chesson, and J.R. Ehleringer. 2014. Carbon and nitrogen isotope ratios of factory produced RDX and HMX. *Forensic Science International* 240:80-87. Doi:10.1016/j.forsciint.2014.04.013
451. Howa, J.D., M.J. Lott, L.A. Chesson, and J.R. Ehleringer. 2014. Isolation and stable nitrogen isotope analysis of ammonium ions in ammonium nitrate prills using sodium tetraphenylborate. *Rapid Communications in Mass Spectrometry* 28:1530-1534, <http://dx.doi.org/10.1002/rcm.6929>
452. Chesson, L.A., B.J. Tipple, J.E. Barnette, T.E. Cerling, and J.R. Ehleringer. 2014. The potential for application of ink stable isotope ratio analysis in questioned document examination. *Science & Justice*, doi:10.1016/j.scijus.2014.05.010
453. Ehleringer, J.R., and D.R. Sandquist. 2014. Photosynthesis: physiological and ecological considerations, pages 245-268. In L. Taiz, E. Zeiger, I.M. Moller, and A. Murphy (eds.), *Plant physiology and development*, 6th edition, Sinauer Associates, Sunderland, MA.
454. Howa, J.D., M.J. Lott, and J.R. Ehleringer. 2014. Observations and sources of carbon and nitrogen isotope ratio variation of pentaerythritol tetranitrate (PETN). *Forensic Science International* 244:152-157.
455. Bender, R.L., D. L. Dufour, L.O. Valenzuela, T.E. Cerling, M. Sponheimer, J.C. Reina, and J.R. Ehleringer. 2014. Stable isotopes (carbon, nitrogen, sulfur), diet, and anthropometry in urban Colombian women: investigating socioeconomic differences. *American Journal of Human Biology* doi:10.002/ajhb.2264
456. Tipple, B, M. Berke, B. Hambach, J.S. Roden, and J.R. Ehleringer. 2014. Predicting leaf wax *n*-alkane ²H/¹H ratios: controlled water source and humidity experiments with hydroponically grown trees confirm predictions of Craig-Gordon model. *Plant, Cell and Environment* 38:1035-1047. doi:10.1111/pce.12457.
457. Good, S.P., C. D. Kennedy, J.C. Stalker, L. A. Chesson, L. O. Valenzuela, M. M. Beasley, J. R. Ehleringer, and G.J. Bowen. 2014. Patterns of local and non-local water resource use across the western United States determined via stable isotope intercomparisons. *Water Resource Research* 50(10):8034-8049. doi:10.1002/2014WR015884.
458. Bush, S.E., F.M. Hopkins, J.T. Randerson, C.T. Lai, and J.R. Ehleringer. 2015. Design and application of a mobile ground-based observatory for continuous measurements of atmospheric trace-gas and criteria pollutant species. *Atmospheric Measurement Techniques Discussions* 8:33-63. doi:10.5194/amtd-8-33-2015.
459. Mallia, D.V., J.C. Lin, S. Urbanski, J.R. Ehleringer, and T. Nehrkorn. 2015. Impacts of upstream wildfire emissions on CO, CO₂, and PM_{2.5} concentrations in Salt Lake City, Utah. *Journal of Geophysical Research: Atmospheres* doi: 10.1002/2014JD022472.

460. Taylor, A.J., C.T. Lai, F. Hopkins, S. Wharton, K. Bible, X. Xu, C. Phillips, S. Bush, and J. R. Ehleringer. 2015. Radiocarbon-based partitioning of soil respiration in an old-growth coniferous forest. *Ecosystems* doi:10.1007/s10021-014-9839-4
461. Gorski, G., C. Strong, S.P. Good, R. Bares, J.R. Ehleringer, and G.J. Bowen. 2015. Vapor hydrogen and oxygen isotopes reflect water of combustion in the urban atmosphere. *Proceedings of the National Academy of Sciences USA* 112:3247-3252. Doi:10.1073/pnas.1424728112.
462. Walsh, T.C., O.L. Miller, B.B. Bowen, Z.A. Levine, and J.R. Ehleringer. 2015. The sphere of sustainability: lessons from the University of Utah's Global Change and Society. *Journal of Water Resources Planning and Environment*. doi 10.1061/(ASCE)WR.1943-5452.0000514.
463. Hale, R.L., A. Armstrong, M.A. Baker, S. Bedingfield, D. Betts, C. Buahin, M. Buchert, T.A. Crowl, R.R. Dupont, J. R. Ehleringer, J. Endter-Wada, C. Flint, J. Grant, S. Hinners, Daniel Horns, J. Horsburgh, D. Jackson-Smith, A. S. Jones, C. Licon, S. E. Null, A. Odame, D.E. Pataki, D. Rosenberg, M. Runburg, P. Stoker, and C. Strong. 2015. iSAW: Integrating structure, actors, and water to study socio-hydro-ecological systems. *Earth's Future* 3:110-132. doi: 10.1002/2014EF000295
464. Lott, M.J., J.D. Howa, L.A. Chesson, and J.R. Ehleringer. 2015. Improved accuracy and precision in $\delta^{15}\text{N}_{\text{AIR}}$ measurements of explosives, urea, and inorganic nitrates by EA-IRMS using thermal decomposition. *Rapid Communications in Mass Spectrometry* 29:1381-1388.
465. Zazzo, A., T.E. Cerling, J.R. Ehleringer, A. Mooney, F.J. Monahan, and O. Schmidt. 2015. Isotopic composition of sheep wool records seasonality of climate and diet. *Rapid Communications in Mass Spectrometry* 29:1357-1369.
466. Ehleringer, J.R., L.A. Chesson, L.O. Valenzuela, B.J. Tipple, and L.A. Martinelli. 2015. Stable isotopes trace the truth: from adulterated foods to crime scenes. *Elements* 11:259-264.
467. Hall, S.J., R.L. Hale, M.A. Baker, D.R. Bowling, and J.R. Ehleringer. 2015. Riparian plant isotopes reflect anthropogenic nitrogen perturbations: robust patterns across land use gradients. *Ecosphere* 6(10):article200. <http://www.esajournals.org/doi/pdf/10.1890/ES15-00319.1>
468. Berke, M.A., B.J. Tipple, B. Hambach, and J.R. Ehleringer. 2015. Life-form specific gradients in compound specific $\delta^2\text{H}$ of modern leaf waxes along a North American monsoonal transect. *Oecologia* 179:981-997. doi: 10.1007/s00442-015-3432-1
469. Gurney, K.R., P. Romero-Lankao, K.C. Seto, L.R. Hutyrá, R. Duren, C. Kennedy, N.B. Grimm, J.R. Ehleringer, P. Marcotullio, S. Hughes, S. Pincetl, M.V. Chester, D.M. Runfola, J.J. Feddema, and J. Sperling. 2015. Tracking urban emissions on a human scale. *Nature* 525:179-181.
470. Hopkins, F.M., E.A. Kort, S. E. Bush, J.R. Ehleringer, C.T. Lai, D.R. Blake, and J.T. Randerson. 2016. Spatial patterns and source attribution of urban methane in the Los Angeles Basin. *Journal of Geophysical Research Atmospheres* 121: doi:10.1002/2015JD024429.
471. Patarasuk, R., K.R. Gurney, D. O'Keefe, Y. Song, J. Huang, P. Rao, M. Buchert, J. Lin, D. Mendoza, and J.R. Ehleringer. 2016. Urban high-resolution fossil fuel CO₂ emissions quantification and exploration of emission drivers for potential policy questions. *Urban Ecosystems* 19:1013-1039. doi: 10.1007/s11252-016-0553-1.

472. Tipple, B.J., B. Hambach, J.E. Barnette, L.A. Chesson, and J.R. Ehleringer. 2016. The influences of cultivation setting on inflorescence lipid distributions, concentrations, and carbon isotope ratios of *Cannabis* sp. *Forensic Science International* 262:233-241. doi:10.1016/j.forsciint.2016.03.029
473. Cerling, T.E., J.E. Barnette, G.J. Bowen, L.A. Chesson, J.R. Ehleringer, C.H. Remien, P. Shea, B.J. Tipple, and J.B. West. 2016. Forensics stable isotope biogeochemistry. *Annual Review of Earth and Planetary Sciences* 44:175-206.
474. Ehleringer, J.R., J. Barnette, Y. Jameel, B.J. Tipple, and G.J. Bowen. 2016. Urban water – a new frontier in isotope hydrology. *Isotopes in Environmental and Health Studies* 52:477-486. doi: 10.1080/10256016.2016.1171217.
475. Szejner, P., W.E. Wright, F. Babst, S. Belmecheri, V. Trouet, S.W. Leavitt, J.R. Ehleringer, and R.K. Monson. 2016. Latitudinal gradients in tree-ring carbon and oxygen isotopes reveal differential climate influences of the North American Monsoon System. *Journal of Geophysical Research: Biogeosciences* doi 10.1002/2016/JG003460
476. Howa, J.D., M.J. Lott, L.A. Chesson, and J.R. Ehleringer. 2016. Isolation of components of plastic explosives for isotope ratio mass spectrometry. *Forensic Chemistry* doi 10.1016/j.forc.2016.07.003
477. Jameel, Y., S. Brewer, S.P. Good, B.J. Tipple, J.R. Ehleringer, and G.J. Bowen. 2016. Tap water isotope ratios reflect urban water system structure and dynamics across a semi-arid metropolitan area. *Water Resources Research* 52: doi:10.1002/2106WR019104.
478. Chesson, L.A., J.D. Howa, M.J. Lott, and J.R. Ehleringer. 2016. A component-specific approach for applying isotope ratio mass spectrometry to explosives. *Forensic Chemistry* 2:9-14. doi:10.1016/j.forc.2016.08.003.
479. Hopkins, F.M., J.R. Ehleringer, S.E. Bush, R.M. Duren, C.E. Miller, C.-T. Lai, Y.-K. Hsu, V. Carranza, and J.T. Randerson. 2016. Mitigation of methane emissions in cities: how new measurements and partnerships can contribute to emissions reductions strategies. *Earth Futures* DOI 10.1002/2016EF000381.
480. Mallick, K., I. Trebs, E. Boegh, L. Giustarini, M. Schlerf, D. Drewery, L. Hoffman, C. von Randow, B. Kruijt, A. Arujo, S. Saleska, J.R. Ehleringer, T. Domingues, J.P. Ometto, A. Nobre, O. Morales, M. Hayek, J.W. Munger, and S. Wofsy. 2016. Canopy-scale biophysical controls of transpiration and evaporation in the Amazon Basin. *Hydrology and Earth System Sciences* 20:4237-4264. Doi:10.519/hess-20-4237-2016
481. Kimball, S., J.L. Funk, D.R. Sandquist, and J.R. Ehleringer. 2016. Ecophysiological considerations for restoration, pages 153-181. In Palmer, M.A., J.B. Zedler, and D.A. Falk (eds.), *Foundations of Restoration Ecology*. Second Edition. Island Press, New York.
482. Ehleringer, J.R., S. Daniel, S. Torti, B. Bowen, and T. Parks. 2016. *Embedded in Nature: The University of Utah Field Stations*. University of Utah, Salt Lake City. 120 pages. ISBN 978-0-692-81221-1.
483. Chau, T.H., B.J. Tipple, L. Hu, D.P. Fernandez, T.E. Cerling, and J.R. Ehleringer. 2017.

- Reconstruction of travel history using coupled $\delta^{18}\text{O}$ and $^{87}\text{Sr}/^{86}\text{Sr}$ measurements of hair. *Rapid Communications in Mass Spectrometry* 31:583-589.
484. Hall, S.J., E. Ogata, S.R. Weintraub, M.A. Baker, J.R. Ehleringer, C. Czimczik, and D.R. Bowling. 2016. Convergence in nitrogen deposition and cryptic isotope composition across urban and agricultural valleys in northern Utah. *Journal of Geophysical Research – Biogeochemistry* 121:2340-2355.
485. Tipple, B.J., Y. Jameel, T.H. Chau, C.J. Mancuso, G.J. Bowen, A. Dufour, L.A. Chesson, and J.R. Ehleringer. 2017. Stable hydrogen and oxygen isotopes of tap water reveal structure of the San Francisco Bay Area's water systems and adjustments during a major drought. *Water Research* 119:212-224.
486. Ehleringer, J.R. Interpreting stable isotope ratios in plants and plant-based foods. 2017. In J.F. Carter and L.A. Chesson (eds.), *Food Forensics – Stable Isotopes as a Guide to Authenticity and Origin*, pages 46-62. CRC Press Taylor & Francis Group, Boca Raton.
487. Raczka, B., S.C. Biraud, J.R. Ehleringer, C.-T. Lai, J.B. Miller, D.E. Pataki, S.R. Saleska, M.S. Torn, B.H. Vaughn, R. Wehr, and D.R. Bowling. 2017. Does vapor pressure deficit drive the seasonality of $\delta^{13}\text{C}$ of the net land-atmosphere CO_2 exchange across the United States? *Journal of Geophysical Research, Biogeosciences* 122: doi:10.1002/2017JG003795.
488. Mouteva, G.O., J.T. Randerson, S.M. Fahrni, S.E. Bush, J.R. Ehleringer, X. Xu, G.M. Santos, R. Kuprov, B.A. Schichtel, and C.I. Czimczik. 2017. Using radiocarbon to constrain black and organic carbon aerosol sources in Salt Lake City. *Journal of Geographical Research – Atmospheres* 122, doi:10.1022/2017JD026519.
489. Duarte, H.F., B.M. Raczka, D.M. Ricciuto, J.C. Lin, C.D. Koven, P.E. Thorton, D.R. Bowling, C.-T. Lai, K.J. Bible, and J.R. Ehleringer. 2017. Evaluating the Community Land Model (CLM 4.5) at a coniferous forest site in northwestern United States using flux and carbon-isotope measurements. *Biogeosciences* 14:4315-4340. doi: /10.5194/bg-14-4315-2017.
490. Cook, C.S., B. Erkkila, S. Chakraborty, B.J. Tipple, T.E. Cerling, and J.R. Ehleringer. 2017. *Stable isotope biogeochemistry and ecology laboratory manual*. First Edition. Kindle Direct Publishing, Seattle. Available at Amazon.com. 181 pages. ISBN 978-1-973-34908-2.
491. Chesson, L.A., B.J. Tipple, J.R. Ehleringer, T. Park, and E.J. Bartelink. 2018. Forensic applications of isotope landscapes ('isoscapes'): a tool for predicting region-of-origin in forensic anthropology cases, pages 127-148. Chapter 8. In C.C. Boyd and D.C. Boyd (eds.), *Forensic Anthropology: Theoretical Framework and Scientific Basis*. John Wiley and Sons, Ltd., New York.
492. Howa, J., J.E. Barnette, L.A. Chesson, M.J. Lott, and J.R. Ehleringer. 2018. TATP isotope ratios as influenced by worldwide acetone variation. *Talanta* 181:125-131.
493. Valenzuela, L.O., S. P. O'Grady, L. E. Enright, M. Murtaugh, C. Sweeney, and J.R. Ehleringer. 2018. Evaluation of childhood nutrition by dietary survey and stable isotope analyses of hair and breath. *American Journal of Human Biology* e23103. doi:10.1002/ajhb.23103
494. Tipple, B.J., L.O. Valenzuela, and J.R. Ehleringer. 2018. Strontium isotope ratios of human hair record intra-city variations in tap water source. *Scientific Reports* 8:3334. DOI:10.1038/s41598-

018-21359-0.

495. Mitchell, L.E., J.C. Lin, D.R. Bowling, D.E. Pataki, C. Strong, A.J. Schauer, R. Bares, S.E. Bush, B.B. Stephens, D. Mendoza, D. Mallia, L. Holland, K.R. Gurney, and J.R. Ehleringer. 2018. Long-term urban carbon dioxide observations reveal spatial and temporal dynamics related to urban characteristics and growth. *Proceedings of the National Academy of Sciences USA* 115:2912-2917. DOI:10.1073/pnas.1702393115.
496. Mitchell, L.E., E.T. Crossman, A.A. Jacques, B. Fasoli, L. Leclair-Marzolf, J. Horel, D.R. Bowling, J.R. Ehleringer, and J.C. Lin. 2018. Monitoring of greenhouse gases and pollutants across an urban area using a light rail public transit platform. *Atmospheric Environment* 187:9-23. Doi:10.1016/j.atmosenv.2018.044.
497. Fiorella, R.P., R. Barnes, J.C. Lin, J.R. Ehleringer, and G.J. Bowen. 2018. Detection and variability of combustion-derived vapor in an urban basin. *Atmospheric Chemistry and Physics* 18:8529-8547. Doi:10.5194/acp=18-8529-2018.
498. Mancuso, C.J., and J.R. Ehleringer. 2018. Resident and non-resident fingernail isotopes reveal diet and travel patterns. *Journal of Forensic Sciences* doi: 10.1111/1556-4029.13856
499. Sage, R.F., R.K. Monson, J.R. Ehleringer, S. Adachi, and R.W. Pearcy. 2018. Some like it hot: the physiological ecology of C₄ plant evolution. *Oecologia* (in press)
500. Ehleringer, J.R., and D.R. Sandquist. 2018. A tale of ENSO, PDO, and increasing aridity impacts on drought-deciduous shrubs in the Death Valley Region. *Oecologia* 187:879-895. DOI: 10.1007/s00442-018-4200-9
501. Domingues, T.F., J.P.H.B. Ometto, D.C. Nepstad, P.M. Brando, L.A. Martinelli, and J.R. Ehleringer. 2018 Ecophysiological plasticity of Amazonia trees to long-term drought. *Oecologia*
502. Tipple, B.J., and J.R. Ehleringer. 2018. Distinctions in heterotrophic and autotrophic-based metabolism as recorded in the hydrogen and carbon isotope ratios of *normal*-alkanes. *Oecologia*
503. Smith, R.M., J.C. Williamson, D.E. Pataki, J.R. Ehleringer, and P. Dennison. 2018. Soil carbon and nitrogen accumulation in residential lawns of the Salt Lake Valley, Utah. *Oecologia*
504. Szejner, P., D. Meko, W.E. Wright, S. Belmecheri, S. Leavitt, J.R. Ehleringer, and R.K. Monson. 2018. Disentangling seasonal and interannual lag effects on forest water demand and carbon assimilation using tree-ring isotopes. *Global Change Biology*
505. Mancuso, C.J., and J.R. Ehleringer. 2018. Traveling there and back again: a fingernail's tale. *Journal of Forensic Sciences* doi:10.1111/1556-4029.13852.

Manuscripts in press:

1. Lin, J., L. Mitchell, E. Crossman, D. Mendoza, M. Buchert, R. Bares, B. Fasoli, D. Bowling, D. Pataki, D. Catherine, C. Strong, K. Gurney, R. Patarasuk, M. Baasandorj, A. Jacques, S. Hoch, J. Horel, and J.R. Ehleringer. CO₂ and carbon emissions from cities: linkages to air quality, socioeconomic activity and stakeholders in the Salt Lake City urban area. *Bulletin of the American Meteorological Society* (in press)
2. Mancuso, C.J., and J.R. Ehleringer. Strontium isotope ratios (⁸⁷Sr/⁸⁶Sr) of human fingernail clippings reveal multiple location signals. *Rapid Communications in Mass Spectrometry* (in review)

Manuscripts in review:

3. Bush, S.E., K.R. Hultine, and J.R. Ehleringer. Sap-flux scaled transpiration of co-occurring riparian tree species differing in native status and wood anatomy in northern Utah. USA. *Agricultural and Forest Meteorology* (in review)
4. Cogley, L.A.E., D.E. Pataki, H.R. McCarthy, S. Martin, and J.R. Ehleringer. Building housing age and affluence influence plant and soil carbon and nitrogen in two semi-arid cities. *Journal of Geophysical Research Biogeochemistry* (in review)
5. Mancuso, C.J., C.M. Cornwall, S. Robinson, L.O. Valenzuela, and J.R. Ehleringer. Fingernail and breath biomarkers reveal dietary patterns in high school students. *American Journal of Human Biology* (in review)
6. Szejner, P., S. Belmecheri, J.R. Ehleringer, and R.K. Monson. Increasing drought frequency causes multi-year legacies in semi-arid forests. *Ecology Letters* (in review)
7. Trammel, T., D.E. Pataki, C. Still, Christopher; J.R. Ehleringer, M. Avolio, N. Bettez, J. Cavender-Bares, P. Groffman, M. Grove, S. Hall, J. Heffernan, James, S. Hobbie, K. Larson, J. Morse, C. Neill, K. Nelson, J. O'Neil-Dunne, W. Pearse, R. Roy Chowdhury, M. Steele, and M. Wheeler. Biophysical and social factors control the distribution of C₄ plants in residential lawns across seven U.S. cities. *Ecological Applications*

Graduate and Postgraduate Training:

Current graduate students:
None

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Lawrence Flanagan
Renate Gebauer
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Kevin Hultine
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John Marshall
Daniel Mendoza
Logan Mitchell
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David Podlesak
John Roden
William Schuster
Susan Schwinning
Alexandra Thompson
Brett Tipple
Luciano Valenzuela
Julia Verville
Joy Ward
Jason West
David Williams

Patents:

Podlesak, D., J.R. Ehleringer, and T.E. Cerling. Device and system to reconstruct travel history of an individual. U.S. Patent No. US20110125413A1, May 26, 2011.

Ehleringer, J.R., L. Chesson, R. Dunn, J.H. Ehleringer, P. Shea, and B.J. Tipple. Cannabis cultivation test. U.S. Patent No. 20170299564, October 19, 2017.