Curriculum Vitae for Dr. James R. Ehleringer

University Address:	School of Biological Sciences University of Utah, 257 S 1400 E Salt Lake City, Utah 84112-0840	Telephone: 801-971-6004 Web: http://ehleringer.net E-mail: jim.ehleringer@utah.edu

Dual citizenship: United State of America and Luxembourg (E.U.)

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, School of Biological Sciences, http://ecophys.utah.edu
2000-present	Adjunct Distinguished Professor of Geology & Geophysics
1984-2023	Director, Stable Isotope Ratio Facility for Environmental Research (SIRFER); http://sirfer.utah.edu
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:

2004-2020	Senior scientist or advisor	IsoForensics, Inc., Salt Lake City

Certifications:

- Certified Approved Forensic Practitioner, Forensic Isotope Ratio Mass Spectrometry Network, 2013-2024 (http://www.forensic-isotopes.org/fafp.html)

Research Expertise:

- Plant physiological ecology, plant 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 Experiences:

Agricultural	Amaranth, castor bean, common bean, cotton, sunflower
Alpine tundra	Colorado
Arid and semi-arid	Argentina, Arizona, Australia, California, Chile, Mexico, Nevada, Utah

Temperate forests	California, Canada, Maine, Massachusetts, Oregon, Utah, Washington
Tropical rainforests	Brazil, China, French Guiana, Puerto Rico
Urban	Salt Lake Valley, Utah

Forensic Stable Isotope Ratio Experiences:

Anthropology	Bones, food, hair, teeth
Beverages	Beer, juices, milk, coffees, soft drinks, spirits, wines, bottled water, coconut water
Biology - animals	Feathers, tissues, teeth, hair, wool
Biology - microbes	Culture media, spores
Biology - plants	Leaves, tree rings, wood, cellulose, inflorescences
Controlled substances	Cocaine, heroin, marijuana, pseudoephedrine
Explosives	High energy, military, nitrates, peroxides
Foods	Beer, carbohydrates, coconut waters, coffees, honeys, meats, oils, proteins, spirits, wines
Gases	Carbon dioxide, methane, water vapor
Humans	Body water, bone, diet history, fingernails, hair, teeth, travel history
Law enforcement	Controlled substances, explosives, food, fraud, manufactured materials, unidentified decedents,
Manufactured items	Clothing, counterfeits, currencies, documents, inks, paper products
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 1620	Fundamentals of Biology II YOUTUBE channel
Biology 3410	Principles of Ecology & Evolution
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) YOUTUBE channel
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). YOUTUBE channel
Sustainability 6000	Global Changes and Society (originally Biology 7961) (https://environment.utah.edu/students/gcsc-courses)
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:

1996-2023	IsoCamp, Stable Isotope Biogeochemistry and Ecology Lectures and Laboratory (Originator and coordinator)

1996-2014	Government applications of stable isotopes in forensics

Honors and Distinctions:

2017	Outstanding Education Program in Earth and Space Science Award, American Geophysical Union
2016-present	The Ehleringer Prize, annual named prize recognizing an outstanding graduate student ecological publication in *Oecologia* each year
2016	Rosenblatt Prize for Excellence, University of Utah
2016	Elected as member of 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
2006-2018	Biological and Environmental Research Advisory Committee (BERAC), DOE
2015-2018	Western Water Alliance, External Advisory Board
2018-2022	Friends of Alta, board member
2020-2022	Development of the Environmental Dashboard for the Central Wasatch Commission (with Phoebe McNealy, UU DIGIT Lab)

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, 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
2016-2022	Division of Environment and Life Sciences (DELS) Advisory Panel, U.S. National Academy of Sciences

Workshops and Events (Organizer or Co-organizer):

1984	Workshop on Future Needs in Physiological Ecology, Asilomar (product is article)
1986	Stable Isotopes in Ecology, Lake Arrowhead (product is book)
1990	Ecological Society of America, 75th Annual Meeting, Snowbird
1990	Workshop on Scaling in Ecology, Snowbird (product is book)
1992	Carbon & Water Relations Perspectives from Stable Isotopes, Riverside (book product)
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 (article product)
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
2000	CO_2 Boundary Layer Budget Flux Methods Workshop, Gubbio (article product)
2001	Atmospheric CO_2 and its Effects on Plants, Animals and Ecosystems, Snowbird (product is book)
2002	Stable Isotopes in Biosphere-Atmosphere Interactions, Banff (product is book)
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	Organized formation of a National Stable Isotope Network in NEON, Park City
2005	Lead development of 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 (now Rio Mesa Center)
2006 Chair of DOE-BERAC Subcommittee review of elevated CO_2 ecosystem research within the Department of Energy (product is report)
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 (product is book)
2009 Lead development of Global Change and Sustainability Center, University of Utah
2010 Co-lead development and implementation 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 (now a DOE program)

Publications 2017-current:

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 $\delta^{18}O$ and $^{87}Sr/^{86}Sr$ 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 $\delta^{13}C$ 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. Thornton, 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. https://doi.org/10.1016/j.talanta.2018.01.001.

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. https://doi.org/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. https://doi.org/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. https://doi.org/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. https://doi.org/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. https://doi.org/10.5194/acp=18-8529-2018.

498. Mancuso, C.J., and J.R. Ehleringer. 2019. Resident and non-resident fingernail isotopes reveal diet and travel patterns. Journal of Forensic Sciences 64:77-87. https://doi.org/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 C_4 plant evolution. Oecologia 187:941-966. https://doi.org/10.1007/s00442-018-419.

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. https://doi.org/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 187:933-940. https://doi.org/10.1007/s00442-018-4195-2.

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 187:1053-1075. https://doi.org/10.1007/s00442-018-4189-0.

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 187:1107-1118. https://doi.org/10.1007/s00442-018-4194-3.

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 https://doi.org/10.1111/gcb.14395.

505. Mancuso, C.J., and J.R. Ehleringer. 2019. Traveling there and back again: a fingernail's tale. Journal of Forensic Sciences 64:69-76. https://doi.org/10.1111/1556-4029.13852.

506. Mancuso, C.J., and J.R. Ehleringer. 2018. Strontium isotope ratios ($^{87}Sr/^{86}Sr$) of human fingernail clippings reveal multiple location signals. Rapid Communications in Mass Spectrometry 32:1922-1930. https://doi.org/10.1002/rcm.8270.

507. 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. 2018. CO_2 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 99:2325-2339. https://doi.org/0.1175/BAMS-D-17.0037.1.

508. Cobley, L.A.E., D.E. Pataki, H.R. McCarthy, S.A. Martin, and J.R. Ehleringer. 2018. Building housing age and affluence influence plant and soil carbon and nitrogen in two semi-arid cities. Journal of Geophysical Research Biogeochemistry 123:3178-3192. https://doi.org/10.1029/2018JG004424.

509. Tipple, B.J., L.O. Valenzuela, T.H. Chau, L. Hu, C.P. Bataille, L.A. Chesson, and J.R. Ehleringer. 2019. Strontium isotope ratios of human hair from the United States: patterns and aberrations. Rapid Communications in Mass Spectrometry 33:461-472.

https://doi.org/10.1002/rcm.8378.

510. Trammel, T., D.E. Pataki, C. Still, J.R. Ehleringer, M. Avolio, N. Bettez, J. Cavender-Bares, P. Groffman, M. Grove, S. Hall, J. Heffernan, S. Hobbie, K.L. Larson, J.L. Morse, C. Neill, K.C. Nelson, J. O'Neil-Dunne, W. Pearse, R.R. Chowdhury, M. Steele, and M.W. Wheeler. 2019. Biophysical and social factors control the distribution of C_4 plants in residential lawns across seven U.S. cities. Ecological Applications 29(4):e01884. https://doi.org/10.1002/eap.1884.

511. Bares, R., L. Mitchell, B. Fasoli, D. Catherine, M. Garcia, B. Eng, J.R. Ehleringer, and J. Lin. 2019. The Utah carbon dioxide network (UUCON) and Uintah Basin greenhouse networks: instrumentation, data, and measurement uncertainty. Atmospheric Measurement Techniques 11:1291-1308. https://doi.org/10.5194/essd-11-1291-2019.

512. Szejner, P., S. Belmecheri, J.R. Ehleringer, and R.K. Monson. 2019. Increasing drought frequency causes multi-year legacies in semi-arid forests. Oecologia 192:241-259. https://doi.org/10.1007/s00442-019-04550-6.

513. Driscoll, A.W., J.D. Howa, N.Q. Bitter, and J.R. Ehleringer. 2019. Oxygen stable isotopes of α-cellulose verify origins of roasted coffee beans. Rapid Communications in Mass Spectrometry 34(7): e8626. http://doi.org/10.1002/rcm.8626.

514. Valenzuela, L.O., L.A. Chesson, G. Bowen, T.E. Cerling, and J.R. Ehleringer. 2020. Spatial distribution of stable isotopes values of human hair: tools for region of origin and travel history assignment. In R. Parra, S.C. Zapico, and D.H. Ubelaker (editor), Forensic science and humanitarian action: Interacting with the dead and the living. John Wiley & Sons Ltd., New York. https://doi.org/10.1002/9781119482062.ch25.

515. Bitter, N.Q., D. Fernandez, A.W. Driscoll, J.D., Howa, and J.R. Ehleringer. 2020. Distinguishing the region-of-origin of roasted coffee beans with trace element ratios. Journal of Food Science 320: 126602, https://doi.org/10.1016/j.foodchem.2020.126602.

516. Nardoto, G.B., J.P. Sena-Souza, T.B. Kisaka, F.J. Viana Costa, P.J. Duarte-Neto, J.R. Ehleringer, and L.A. Martinelli. 2020. Increased carbon isotope ratios of Brazilian fingernails are correlated with increases in socioeconomic status. npj Science of Food 4:9. https://doi.org/10.1038/s41538-020-0069-1 .

517. Driscoll, A.W., N.Q. Bitter, D.R. Sandquist, and J.R. Ehleringer. 2020. Multi-decadal records of intrinsic water-use efficiency in the desert shrub *Encelia farinosa* reveal strong responses to climate change. Proceedings of the National Academy of Sciences USA 117:18161-18168. https://DOI.org/10.1073/pnas.2008345117 .

518. Ehleringer, J.R., S. Covarrubias, B.J. Tipple, L.O. Valenzuela, and T. E. Cerling. 2020. Stable isotopes in hair reveal dietary protein sources with links to socioeconomic status and health across the United States. Proceedings of the National Academy of Sciences USA 117:20044-20051.

http://doi.org/10.1073/pnas.1914087117.

519. Kannenberg, S., R.E. Fiorella, W. Anderegg, R. Monson, and J.R. Ehleringer. 2020. Seasonal and diurnal trends in progressive isotope enrichment along needles in two pine species. Plant Cell and Environment 44:43-55. https://doi.org/10.1111/pce.13915

520. Driscoll, A.W., N.Q. Bitter, and J.R. Ehleringer. 2021. Interactions among intrinsic water-use efficiency and climate influence growth and flowering in a common desert shrub. Oecologia https://doi.org/10.1007/s00442-020-04825-3.

521. Hambach, B., B.J. Tipple, and J.R. Ehleringer. 2021. Cuticular leaf wax concentrations and distributions of common flora of the Colorado Plateau, Great Basin, and Mojave Deserts. PANGEA https://doi.org/10.1594/PANGAEA.931950.

522. Bitter, N.Q., and J.R. Ehleringer. 2021. Machine learning prediction of mortality in the common desert shrub *Encelia farinosa*. Ecological Informatics 64: 101376. https://doi.org/10.1016/j.ecoinf.2021.101376

523. Driscoll, A.W., S.A. Kannenberg, and J.R. Ehleringer. 2021. Long-term nitrogen isotope dynamics in *Encelia farinosa* reflect plant demographics and climate. New Phytologist 232:1226-1237. https://doi.org/10.1111/nph.17668

524. Valenzuela, L.O., S.P. O'Grady, and J.R. Ehleringer. 2021. Variations in human body water isotope composition across the United States. Forensic Science International 327:110990. https://doi.org/j.forsciint.2021.110990

525. Kannenberg, S.A., A.W. Driscoll, P. Szejner, W.R.L. Anderegg, and J.R. Ehleringer. 2021. Rapid increases in shrubland and forest water-use efficiency during an ongoing megadrought. Proceedings of the National Academy of Sciences USA 118(52):e 2118052118 http://doi.org/10.1073/pnas.2118052118

526. Mancuso, C.J., C.M. Cornwall, S. Robinson, L.O. Valenzuela, and J.R. Ehleringer. 2021. Breath stable isotope analysis serves as a non-invasive analytical tool to demonstrate dietary changes in adolescent students over time. Frontiers in Medicine 8:697557. http://doi.org/10.3389/fmed.2021.697557

527. Fiorella, R.P., S.A. Kannenberg. W.R.L. Anderegg, R.K. Monson, and J.R. Ehleringer. 2022. Heterogeneous isotope effects decouple conifer leaf and phloem sugar $\delta^{18}O$ and $\delta^{13}C$. Oecologia 198:357-370. http://doi.org/10.1007/s0442-022-05121-y.

528. Ehleringer, J.R., and A.W. Driscoll. 2022. Intrinsic water-use efficiency influences establishment in *Encelia farinosa*. Oecologia 199:563-578. http://doi.org/10.1007/s00442-022-05217-5.

529. Mitchell, L.E., J.C. Lin, L.R. Hutyra, et al. (31 authors). 2022. A multi-city urban atmospheric

greenhouse gas measurement data synthesis. Scientific Data 9:361. https://doi.org/10.1038/s41597-022-01467-3

530. Mancuso, C., J.R. Ehleringer, and S. Newsome. 2023. Examination of amino acid hydrogen isotope measurements of scalp hair for region of origin studies. Rapid Communications in Mass Spectrometry 37:e9442. http://doi.org/10.1002/rcm.9442

531. Strange, B.M., R.K. Monson, P. Szejner, J.R. Ehleringer, and Hu, J. 2023. The North American Monsoon buffers forests against the ongoing megadrought in the Southwestern United States. Global Change Biology 29:4354-4367. https://doi.org/10.1111/gcb/16762

532. Lerdau, M.T., R.K. Monson, and J.R. Ehleringer. 2023. The carbon balance of plants: economics, optimization, and trait spectra in a historical perspective. Oecologia 203:297-310. https://10.1007/s-0442-23-05458-y.

533. Ehleringer, J.R., and J.R. Brooks. 2024. In memoriam John Stephen Roden 1950-2023. Tree-Ring Research 80:27-29.

534. Ehleringer, J.R., and R.K. Monson. 2025. Plant Ecology in a Changing World. Taylor & Francis, Boca Raton, Florida. 605 pages (June 2025).

In preparation or in review:

Ehleringer, J.R., and A.W. Driscoll. $\delta^{15}N$ values reflect "island of fertility" development in the Mojave Desert.

Ehleringer, J.R., and J.D. Howa. Field experiments to characterize military explosives using stable isotopes analyses of residues.

Ehleringer, J.R., J.D. Howa, A.W Driscoll, and N. Bitter. Case study: element ratios and isotopes provide a Kona coffee fingerprint and rewarding Kona growers with $40+ million in suit against fraudulent sources.

Lengyel, T.E., I.K. Jahromi, A.W. Driscoll, and J.R. Ehleringer. Climate gradients underlie geographical variations in $\delta^{13}C$ and $\delta^{15}N$ values of *Encelia*.

Ryoo, J.-M., I. Fung, and J.R. Ehleringer. Short term energy and meteorological impacts on Thanksgiving CO_2 in Salt Lake City: Implications for urban emissions

Wright, W.E., S.A. Kannenberg, J.R. Ehleringer, and R.K. Monson. Tree ring ^{14}C and ^{13}C content reveal near complete reliance on fast cycling, young, stored carbon for growth in semiarid montane forests.

Today and over the years: undergraduate, staff, graduate, and postgraduate training:

Incredible staff:
*Sagarika Banerjee
Ryan Bares
Janet Barnette
*Suvankar Chakraborty
Thuan Chau
Lesley Chesson
Craig Cook
Tamsie Cooper
Kim Davis
Christine Doman
Avery Driscoll
Brad Erkkila
Lisa Fleisher
Lindy Funaki
Bastian Hambach
John Howa
Janet Hurley
Julie Johnsson
*Ming Li
Lori Long
Michael Lott
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Patents:

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