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Educational History

B.A. with honors, 1989 Colorado College, Colorado Springs CO. Major field: Biology
Thesis Title: Reproductive biology of two species of alpine primroses
Thesis Advisor: Sylvia Kelso

Ph.D., 1998. University of Colorado, Boulder CO. Major field: Plant physiological ecology.
Dissertation Title: Ecological controls over the production and emission of non-methane hydrocarbons from plants and atmospheric chemistry implications.
Dissertation Advisor: Russell K. Monson

Employment History

- Full Professor, 2017- present, Department of Biology, University of New Mexico, Albuquerque, NM
- Co-Director, ARID Institute, 2023-2025, University of New Mexico, Albuquerque, NM
- Associate Professor, 2011-2017, Department of Biology, University of New Mexico, Albuquerque, NM
- Assistant Professor, 2006-2011, Department of Biology, University of New Mexico, Albuquerque, NM
- Adjunct Professor, 2005-2011, Section of Integrative Biology, University of Texas, Austin, TX
- Assistant Professor, 2001-2005, Section of Integrative Biology, University of Texas, Austin, TX
- Postdoctoral Research Associate, 1998-2001, Department of Earth System Science, University of California, Irvine, CA. Michael Goulden, advisor.
- Graduate Teaching Assistant, 1993-1997, University of Colorado, Boulder, CO. General Biology
- Full-time Teaching Assistant, 1989-1991, Biology Department, The Colorado College, Colorado Springs, CO.

Professional recognition, Honors, etc.

- Fulbright Specialist grantee 2011-2015
- UA Advance "Junior Scientist Lecture Series", 2010
- Reed Fellowship, University of Texas, 2005-2006
- NASA Global Change Graduate Fellowship, 1993-1997

- Boettcher Scholarship, Colorado College 1984-1989

ARTICLES PUBLISHED IN REFEREED JOURNALS

EG Reich, K Samuels-Crow, JB Bradford, M Litvak, DR Schlaepfer, K Ogle. 2026. Beyond optimality: Dryland ecosystems infrequently use water efficiently for carbon gain. *Agricultural and Forest Meteorology* 378, 110996
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<https://doi.org/10.1002/jeq2.70043>

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Webb, R., Knowles, J., Fox, A., Fabricus, A., Corrie, T., Mooney, K., Gallais, J., Frimpong, N., Akurugu, C., Barron-Gafford, G., Blanken, P., Burns, S., Frank, J. and Litvak, M. (2024), Energy-Water Asynchrony Principally Determines Water Available for Runoff From Snowmelt in Continental Montane Forests. *Hydrological Processes*, 38: e15297. <https://doi.org/10.1002/hyp.15297>

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Webb, R. M.E. Litvak, and P.D. Brooks 2023. The role of terrain-mediated hydroclimate

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- Samuels-Crow, K.E., D.M.P. Peltier, Y. Liu, J.S. Guo, J.M. Welker, W.R. L. Anderegg, G.W. Koch, C. Schwalm, M. Litvak, J.D. Shaw, K. Ogle. 2023. The importance of monsoon precipitation for foundation tree species across the semiarid Southwestern U.S. *Frontiers in Forests and Global Change* 6: DOI=10.3389/ffgc.2023.1116786
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Litvak_Current Funding:

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2. ERISE-RII Forest Research for New Mexico Water and Carbon Management (FOR-NM); NSF; Marcy Litvak (PI) 7/01/25-6/30/29; \$7,000,000.
3. High-Resolution Forest Carbon Monitoring and Modeling: Continued Prototype Development and Deployment to National and Global Scales, NASA, Litvak UNM PI, \$75,000, 1/25-12/27.
4. The role forest structure plays in regulating water availability and implications for natural resources and ecosystem function. USDA SC-CASC. 1/23-12/26. \$447,758. Marcy Litvak (PI), Matt Hurteau, Ryan Webb (University of Wyoming)
5. Collaborative Research: Empirical measurements and model representation of hydraulic redistribution as a control on function of semiarid woody ecosystems. DOE. 09/22-08/26. \$999,988. Will Pockman(PI), Marcy Litvak (Co-PI), Yiqi Luo (Cornell University)
6. LTER: Sevilleta Site - Environmental Variability at Dryland Ecotones, 1/2025-1/2031; Jenn Rudgers (PI), Marcy Litvak (Co-PI), Seth Newsome, Alex Webster, Tom Miller (Rice). \$7,650,000.
7. Technology Enhancement Fund Support from State for LTER, Jenn Rudgers (PI) Marcy Litvak (Co-PI) 1/2025-1/2031, \$5,000,000.

Past Funding:

1. Collaborative Research: Ecohydrological controls on evapotranspiration across a semiarid elevation gradient, NSF-Ecosystems. Marcy Litvak (PI) 04/19-3/23. \$203,444.
2. LTER: Sevilleta Site - Climate Variability at Dryland Ecotones, Jenn Rudgers (PI), Marcy Litvak, Seth Newsome, Yiqi Luo (Cornell University), Tom Miller (Rice). 05/18-04-23. \$5,400,000.
3. Collaborative Research: Hydrological tipping points and desertification of semi-arid woodlands. NSF-Ecosystems. Marcy Litvak (PI), Will Pockman, Susan Schwinning; Andy Fox; April 1, 2016- March 31, 2019. \$1,234,148.
4. RAPID: Leveraging the 2015-2016 El Nino to evaluate drought legacy effects on tree growth responses to rare wet events; NSF. Kiona Ogle (PI), G. Koch, C. Schwalm, F. Biondi, W. Anderegg, M.E. Litvak. June 15, 2016- June 14, 2017. \$ 190,873.
5. Determining the impact of forest mortality in semi-arid woodlands on local and regional carbon dynamics. M. Litvak (PI), R.L. Sinsabaugh, A. Fox, N. McDowell. DOE BER. 7/1/2012-6/30/17. \$1,049,194.
6. Transformative Behavior of Energy, Water and Carbon in the Critical Zone II: Quantifying the Interactions between Long- and Short-term Processes that Control Critical Zone Services. NSF-EAR Subaward to: Marcy Litvak 10/1/13-9/31/18. \$202,202.
7. Sevilleta Long Term Ecological Research V: Long term ecological research in a biome transition zone. WT Pockman (PI), SL Collins, ME Litvak, J. Rudgers, K. Vanderbilt and (+ 17 non-signatory co-PIs), NSF-DEB, LTER Program, 4/01/2015 – 3/31/2017, \$1,970,000
8. Sevilleta Long Term Ecological Research V: Long term ecological research in a biome transition zone. WT Pockman (PI), SL Collins, ME Litvak, J. Rudgers, K. Vanderbilt and (+ 17 non-signatory co-PIs), NSF-DEB, LTER Program, 10/01/2012 – 3/31/2015, \$2,520,000.
9. Sevilleta Long Term Ecological Research IV: Long term ecological research in a biome transition zone. SL Collins (PI), CN Dahm, WT Pockman, K. Vanderbilt and ME Litvak (+ 17 non-signatory co-PIs), NSF-DEB, LTER Program, 10/01/2006 – 9/30/2011, \$5,040,000.
10. Improving the estimation of carbon stocks and fluxes in semi-arid ecosystems of the southwestern US using full-waveform lidar measurements. M. Litvak (PI), A. Neuwenschwander- PI, A. Fox, J. Heilman. NASA – ROSES, Carbon cycle processes, 5/1/2011-4/30/15. \$1,338,361.
11. Ecosystem reconstruction under climate change conditions following fire. S. Collins (PI), M Litvak, W. Pockman, B. Wolf, R. Sinsabaugh. NSF-RAPID, 8/25/2010, \$150,055.
12. Quantifying the role of summer vs. winter precipitation on carbon uptake of montane forests in the Valles Caldera. M. Litvak (PI). NSF Critical Zone Observatory Subcontract through University of Arizona, 6/10-5/11, \$35,000.

13. Linking ecosystem scale vegetation change to shifts in carbon and water cycling: the consequences of piñon mortality in the Southwest. M. Litvak (PI), Bob Sinsabaugh, Nate McDowell, Thom Rahn and Mike Ryan, DOE-EPSCoR University-Lab, 6/1/08-5/31/12, \$495,000.
14. Do vegetation-microclimate feedbacks promote shrub encroachment in the Southwestern United States? Marcy Litvak (PI), Scott Collins and William Pockman, NSF-Ecosystems, 3/1/08-2/31/11, \$289,008.
15. Woody Plant Encroachment into Karst Terrain: Implications for Regional Cycles of Carbon, Water and Energy. Marcy Litvak (PI), James Heilman, Kevin McInnes and Keith Owens, DOE -National Institute for Climate Change Research. 8/2007-7/2010, \$395,000.
16. Carbon and water fluxes in burned and unburned pinon-juniper woodland M. Litvak, W. Pockman, S. Collins, R. Pendleton, B. Pendleton US Forest Service 7/06-9/10, \$87,000.
17. Quantifying the role of summer vs. winter precipitation on carbon uptake of montane forests. M. Litvak SAHRA – Sustainability of semi-Arid Hydrology and Riparian Areas 6/06-12/09, \$170,000.
18. Juniper encroachment on the Edwards Plateau - Changes in carbon dynamics in a key savanna ecosystem of the US. Marcy Litvak, PI NASA Global Change Fellowship to Ann Thijs 9/05-8/08, \$54,000.
19. Quantifying changes in ecosystem structure and function associated with woody plant expansion on the Edwards Plateau. M. Litvak, PI. National Institute of Global Environmental Change 9/04-8/05, \$35,000.
20. Texas Water Development Board, TWDB Enhanced Playa Recharge Monitoring System. B. Scanlon PI, M. Litvak, V. Kelley, Co-PI's. 9/04- 7/05, \$70,000.
21. Net Ecosystem Production Along a Boreal Forest Chronosequence, National Science Foundation, S.T. Gower, M. Goulden, M. Litvak, S. Trumbore, J. Harden. 6/00– 5/05, \$1,000,000.
22. Department of Energy, M. Goulden, PI, M. Litvak, S. Trumbore, co-PI's. 7/0-06/05, \$600,000
23. NSF REU for Environmental Science Institute, University of Texas, J. Brodbelt PI, M. Litvak and others Co-I. 6/02-6/05.