Curriculum Vitae

David R. Bowling

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Research Interests

Ecosystem ecology of forest, mountain, and arid biomes, biogeosciences, biosphere-atmosphere interactions, environmental change

Academic Positions (University of Utah)

2017 – present Division Head, Ecology and Physiology, School of Biological Sciences
2014 – present Professor, School of Biological Sciences
2006 – present Adjunct Professor, Dept. of Atmospheric Sciences
2008 – 2014 Associate Professor, Dept. of Biology
2003 – 2008 Assistant Professor, Dept. of Biology
2001 – 2002 Research Assistant Professor, Dept. of Biology
1999 – 2001 Postdoctoral Scientist, Dept. of Biology, with J. Ehleringer

Education

1999	Ph.D.	Biology	University of Colorado, Boulder, with R. Monson
1994	M.S.	Electrical Engineering	University of Colorado, Boulder, with D. Etter
1991	B.S.	Electrical Engineering	New Mexico State University

Peer-Reviewed Publications

(graduate students underlined, undergraduates underlined with *)

88. Egan JE, Bowling DR, Risk DA (2019) Technical Note: Isotopic corrections for the radiocarbon composition of CO_2 in the soil gas environment must account for diffusion and diffusive mixing, *Biogeosciences*, DOI: 10.5194/bg-16-3197-2019
87. Bares R, Mitchell L, Fasoli B, Bowling DR, Catharine D, Garcia M, Eng B, Ehleringer JR, Lin JC (2019) The Utah urban carbon dioxide (UUCON) and Uintah Basin greenhouse gas networks: Instrumentation, data and measurement uncertainty, *Earth System Science Data*, DOI: 0.5194/essd-11-1291-2019
86. Anderegg WRL, Trugman AT, Bowling DR, Salvucci G, Tuttle SE (2019) Plant functional traits and climate influence drought intensification and land-atmosphere feedbacks, *Proc. National Academy Sciences*, 10.1073/pnas.1904747116
85. Raczka BM, Porcar-Castell A, Magney T, Lee JE, Kohler P, Frankenberg C, Grossman K, Logan BA, Stutz J, Blanken PD, Burns SP, Duarte H, Yang X, Lin JC, Bowling DR (2019) Sustained non-photochemical quenching shapes the seasonal pattern of solar-induced fluorescence at a high-elevation evergreen forest, *JGR-Biogeosciences,* DOI:10.1029/2018JG004883
84. Magney TS, Bowling DR, Logan BA, Grossmann K, Stutz J, Blanken PD, Burns SP, Cheng R, Garcia MA, Köhler P, Lopez S*, Parazoo N, Raczka B, Schimel D, Frankenberg C (2019) Mechanistic evidence for tracking the seasonality of

photosynthesis with solar-induced fluorescence, *Proc. National Academy of Sciences*, DOI:10.1073/pnas.1900278116

83. Oerter EJ, Siebert G*, Bowling DR, Bowen G (2019) Soil water vapor isotopes identify missing water source for streamside trees, *Ecohydrology,* DOI:10.1002/eco.2083
82. Huth TE, Cerling TE, Marchetti DW, Bowling DR, Ellwein AL, Passey BH (2019) Seasonal bias in soil carbonate formation and its implications for interpreting high-resolution paleoarchives: evidence from southern Utah, *Journal of Geophysical Research - Biogeosciences*, 124:616-632, DOI:10.1029/2018JG004496
81. Lin, JC, and 17 others (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, DOI:10.1175/BAMS-D-17-0037.1
80. Anderegg WRL, Konings AG, Trugman AT, Yu K, Bowling DR, Gabbitas R*, Karp DS, Pacala S, Sperry JS, Sulman B, Zenes N (2018) Hydraulic diversity of forests regulates ecosystem resilience during drought, *Nature*, 10.1038/s41586-018-0539-7
79. Zuromski L, Bowling DR, Koehler P, Frankenberg C, Goulden M, Blanken PD, Lin JC (2018) Solar-induced fluorescence detects inter-annual variation in gross primary production of coniferous forests in the western United States, *Geophysical Research Letters,* DOI 10.1029/2018GL077906
78. Bowen GJ, Putman A, Brooks JR, Bowling DR, Oerter EJ, Good SP (2018) Inferring the source of evaporated waters using stable H and O isotopes, *Oecologia* 187:1025-1039, DOI 10.1007/s00442-018-4192-5
77. Fasoli B, Lin JC, Bowling DR, Mitchell L, Mendoza D (2018) Simulating atmospheric tracer concentrations for spatially distributed receptors: updates to the Stochastic Time-Inverted Lagrangian Transport model's R interface (STILT-R version 2), *Geoscientific Model Development*, 11, 2813-2824, https://doi.org/10.5194/gmd-11-2813-2018
76. Mitchell LE, Crosman ET, Jacques AA, Fasoli B, Leclair-Marzolf L*, Horel J, Bowling DR, Ehleringer JR, Lin JC (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.2018.05.044
75. Mitchell LE, Lin JC, Bowling DR, Pataki DE, Strong C, Schauer AJ, Bares R, Bush SE, Stephens BB, Mendoza D, Mallia D, Holland L, Gurney KR, Ehleringer JR (2018) Long-term urban carbon dioxide observations reveal spatial and temporal dynamics related to urban characteristics and growth. *Proc. National Academy of Sciences*, DOI 10.1073/pnas.1702393115
74. Bowling DR, Logan BA, Hufkens K, Aubrecht DM, Richardson AD, Burns SP, Anderegg WRL, Blanken PD, Eiriksson D (2018) Limitations to winter and spring photosynthesis of a Rocky Mountain subalpine forest, *Agricultural and Forest Meteorology*, 252:241-255, DOI: 10.1016/j.agrformet.2018.01.025
73. Duarte HF, Raczka BM, Ricciuto DM, Lin JC, Koven CD, Thornton PE, Bowling DR, Lai C-T, Bible KJ, Ehleringer JR (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
72. Jones AS, Aanderud ZT, Horsburgh JS, Eiriksson DP, Dastrup D, Cox C, Jones SB, Bowling DR, Carlisle J, Carling GT, Baker MA (2017), Designing and implementing a network for sensing water quality and hydrology across mountain to urban transitions, *J. American Water Resources Assoc.*, DOI 10.1111/1752-1688.12557

71. Raczka BM, Biraud SC, Ehleringer JR, Lai C-T, Miller JB, Pataki DE, Saleska S, Torn MS, Vaughn BH, Wehr R, Bowling DR (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*, DOI: 10.1002/2017JG003795
70. Chan AM, Bowling DR (2017) Assessing the thermal dissipation sap flux density method for monitoring cold season water transport in seasonally snow-covered forests, *Tree Physiology*, 37, 984-995, doi: 10.1093/treephys/tpx049
69. Biederman JA, Scott RL, Bell TW, Bowling DR, and 17 others (2017) CO_2 exchange and evapotranspiration across dryland ecosystems of southwestern North America, *Global Change Biology*, DOI: 10.1111/gcb.13686
68. Bowling DR, Schulze ES, Hall SJ (2017) Revisiting streamside trees that do not use stream water: Can the two water worlds hypothesis and snowpack isotopic effects explain a missing water source?, *Ecohydrology*, 10:e1771; DOI 10.1002/eco.1771
67. Raczka B, Duarte H, Koven C, Riccuito D, Thornton P, Lin JC, Bowling DR (2016) An observational constraint on stomatal function in forests: evaluating coupled carbon and water vapor exchange with carbon isotopes in the Community Land Model (CLM4.5). *Biogeosciences* 13:5183–5204
66. Hall SJ, Ogata E, Weintraub SR, Baker MA, Ehleringer JR, Czimczik CI, Bowling DR (2016) Convergence in nitrogen deposition and cryptic isotopic variation across urban and agricultural valleys in northern Utah, *J. Geophysical Research Biogeosciences*, 121, doi:10.1002/2016JG003354
65. Hall SJ, Weintraub SR, Bowling DR (2016) Scale-dependent linkages between nitrate isotopes and denitrification in surface soils: implications for isotope measurements and models, *Oecologia*, DOI: 10.1007/s00442-016-3626-1
64. Maurer GE, Chan AM, Trahan NA, Moore DJP, Bowling DR (2016) Carbon isotopic composition of forest soil respiration in the decade following bark beetle and stem girdling disturbances in the Rocky Mountains, *Plant, Cell, and Environment*, DOI: 10.1111/pce.12716
63. Hall SJ, Baker MA, Jones SB, Stark JM, Bowling DR (2016) Contrasting soil nitrogen dynamics across a montane meadow and urban lawn in a semi-arid watershed, *Urban Ecosystems*, DOI 10.1007/s11252-016-0538-0
62. Hall SJ, Weintraub SR, Eiriksson D, Brooks PD, Baker MA, Bowen GJ, Bowling DR (2016) Stream nitrogen inputs reflect groundwater across a snowmelt-dominated montane to urban watershed, *Environmental Science and Technology*, 50:1137-1146, DOI: 10.1021/acs.est.5b04805
61. Moyes AB, Bowling DR (2015) Plant community composition and phenological stage drive soil carbon cycling along a tree-meadow ecotone, *Plant and Soil*, DOI 10.1007/s11104-015-2750-8.
60. Hall SJ, Hale RL, Baker MA, Bowling DR, Ehleringer JR (2015) Riparian plant isotopes reflect anthropogenic nitrogen perturbations: Robust patterns across land use gradients, *Ecosphere,* 6:art200. http://dx.doi.org/10.1890/ES15-00319.1
59. Maurer GE, Bowling DR (2015) Dust effects on snowpack melt and related ecosystem processes are secondary to those of forest canopy structure and interannual snowpack variability, *Ecohydrology,* 8:1005-1023, doi: 10.1002/eco.1558
58. Bowling DR, Egan JE, Hall SJ, Risk DA (2015) Environmental forcing does not induce diel or synoptic variation in carbon isotope content of forest soil respiration, *Biogeosciences*, 12:5143–5160, doi:10.5194/bg-12-5143-2015
57. Miller OL, Solomon DK, Fernandez DP, Cerling TE, Bowling DR (2014) Evaluating the use of strontium isotopes in tree rings to record the isotopic signal of dust deposited on the Wasatch Mountains, *Applied Geochemistry* 50:53-65.

56. Hall SJ, Maurer GE, Hoch SW, Taylor R, Bowling DR (2014), Impacts of anthropogenic emissions and cold air pools on urban to montane gradients of snowpack ion concentrations in the Wasatch Mountains, Utah, *Atmospheric Environment*, 98:231-241.
55. Maurer GE, Bowling DR (2014) Seasonal snowpack characteristics influence soil temperature and water content at multiple scales in interior western U.S. mountain ecosystems, *Water Resources Research*, 50, 5216-5234, doi: 10.1002/2013WR014452
54. Bowling DR, Ballantyne AP, Miller JB, Burns SP, Menzer O, Conway TJ, Stephens BB, Vaughn BH (2014) Ecological processes dominate the ^{13}C land disequilibrium in a Rocky Mountain subalpine forest, *Global Biogeochemical Cycles,* 28:352-370, doi:10.1002/2013GB004686.
53. Moyes AB, Bowling DR (2013) Interannual variation in seasonal drivers of soil respiration in a semi-arid Rocky Mountain meadow, *Biogeochemistry*, 113:683-697, DOI 10.1007/s10533-012-9797-x
52. Brooks, B-G J, Desai AR, Stephens BB, Bowling DR, Burns SP, Watt AS, Heck SL, Sweeney C (2012), Assessing filtering of mountaintop CO_2 mole fractions for application to inverse models of biosphere-atmosphere carbon exchange, *Atmospheric Chemistry and Physics*, 12:2099-2115.
51. Wilcox BP, Turnbull L, Young MH, Williams CJ, Ravi S, Seyfried MS, Bowling DR, Scott RL, Germino MJ, Caldwell TG, Wainwright J (2011) Invasion of shrublands by exotic grasses: ecohydrological consequences in cold versus warm deserts, *Ecohydrology* DOI: 10.1002/eco.247
50. Blonquist Jr JM, Montzka SA, Munger JW, Yakir D, Desai AR, Dragoni D, Griffis TJ, Monson RK, Scott RL, Bowling DR (2011) The potential of carbonyl sulfide as a proxy for gross primary production at flux tower sites, *Journal of Geophysical Research – Biogeosciences,* 116, G04019, doi:10.1029/2011JG001723.
49. Bowling DR, Massman WJ (2011) Persistent wind-induced enhancement of diffusive CO_2 transport in a mountain forest snowpack, *Journal of Geophysical Research – Biogeosciences,* 116, G04006, doi:10.1029/2011JG001722
48. Bowling DR, Grote EE, Belnap J (2011) Rain pulse response of soil CO_2 exchange by biological soil crusts and grasslands of the semiarid Colorado Plateau, United States, *Journal of Geophysical Research – Biogeosciences*, 116, G03028, doi:10.1029/2011JG001643
47. Strong C, Stwertka C, Bowling DR, Stephens BB, Ehleringer JR (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*
46. Gamnitzer U, Moyes AB, Bowling DR, Schnyder H (2011) Measuring and modeling the isotopic composition of soil respiration: insights from a grassland tracer experiment, *Biogeosciences* 8, 1333–1350, www.biogeosciences.net/8/1333/2011/
45. Riveros-Iregui DA, Hu J, Burns SP, Bowling DR, Monson RK (2011) An inter-annual assessment of the relationship between the stable carbon isotopic composition of ecosystem respiration and climate in a high elevation subalpine forest, *Journal of Geophysical Research – Biogeosciences* 116, G02005, doi:10.1029/2010JG001556.
44. Bowling DR, Bethers-Marchetti S, Lunch CK, Grote EE, Belnap J (2010) Carbon, water, and energy fluxes in a semi-arid cold desert grassland during and following multi-year drought, *Journal of Geophysical Research - Biogeosciences,* 115, G04026, doi:10.1029/2010JG001322
43. Moyes AB, Gaines S*, Siegwolf RTW, Bowling DR (2010) Diffusive fractionation complicates isotopic partitioning of autotrophic and heterotrophic sources of soil

respiration, *Plant, Cell, and Environment*, 33:1804-1819, doi: 10.1111/j.1365-3040.2010.02185.x
42. Moyes AB, Schauer AJ, Siegwolf RTW, Bowling DR (2010) An injection method for measuring the carbon isotope content of soil carbon dioxide and soil respiration with a tunable diode laser absorption spectrometer, *Rapid Communications in Mass Spectrometry*, 24: 894-900.
41. Bowling DR, Miller JB, Rhodes ME*, Burns SP, Monson RK, Baer D (2009) Soil, plant, and transport influences on methane in a subalpine forest under high ultraviolet irradiance, *Biogeosciences*, 6:1311–1324, www.biogeosciences.net/6/1311/2009/.
40. Bowling DR, Massman WJ, Schaeffer SM, Burns SP, Monson RK, Williams MW (2009) Biological and physical influences on the carbon isotope content of CO_2 in a subalpine forest snowpack, Niwot Ridge, Colorado, *Biogeochemistry*, 95:37-59, doi 10.1007/s10533-008-9233-4.
39. Schwinning S, Belnap J, Bowling DR, Ehleringer JR (2008) Sensitivity of the Colorado Plateau to change: climate, ecosystems, and society. *Ecology and Society* 13(2): 28, http://www.ecologyandsociety.org/vol13/iss2/art28/
38. Schaeffer SM, Miller JB, Vaughn BH, White JWC, Bowling DR (2008) Long-term field performance of a tunable diode laser absorption spectrometer for analysis of carbon isotopes of CO_2 in forest air, *Atmospheric Chemistry and Physics*, 8:5263–5277.
37. Zobitz JM, Burns SP, Reichstein M, Bowling DR (2008) Partitioning net ecosystem carbon exchange and the carbon isotopic disequilibrium in a subalpine forest, *Global Change Biology*, 14:1785-1800, doi: 10.1111/j.1365-2486.2008.01609.x
36. Schaeffer SM, Anderson DE, Burns SP, Monson RK, Sun J, Bowling DR (2008) Canopy structure and atmospheric flows in relation to the $\delta^{13}C$ of respired CO_2 in a subalpine coniferous forest, *Agricultural and Forest Meteorology*, 148:592-605.
35. Bowling DR, Pataki DE, Randerson J (2008) Carbon isotopes in terrestrial ecosystem pools and CO_2 fluxes (Tansley Review), *New Phytologist*, 178:24-40, doi: 10.1111/j.1469-8137.2007.02342.x.
34. Zobitz JM, Moore DJP, Sacks WJ, Monson RK, Bowling DR, Schimel DS (2008) Integration of process-based soil respiration models with whole-ecosystem CO_2 measurements, *Ecosystems*, doi:10.1007/s10021-007-9120-1.
33. Zobitz JM, Burns SP, Ogee J, Reichstein M, Bowling DR (2007) Partitioning net ecosystem exchange of CO_2: comparison of a Bayesian/isotope approach to environmental regression methods, *Journal of Geophysical Research-Biogeosciences*, 112, G03013, doi:10.1029/2006JG000282.
32. Fuentes JD, Wang D, Bowling D, Potosnak M, Monson RK, Delany AC, Stockwell WR, Goliff WS (2007) Biogenic hydrocarbon chemistry within and above a mixed deciduous forest, *Journal of Atmospheric Chemistry*, DOI 10.1007/s10874-006-9048-4.
31. Zobitz JM, Keener JP, Schnyder H, Bowling DR (2006) Sensitivity analysis and quantification of uncertainty for isotopic mixing relationships in carbon cycle research, *Agricultural and Forest Meteorology*, 136:56-75.
30. Wahl EH, and 12 others (2006) Applications of cavity ring-down spectroscopy to high precision isotope ratio measurement of $^{13}C/^{12}C$ in carbon dioxide, *Isotopes in Environmental and Health Studies*, 42:21-35, doi:10.1080/10256010500502934.
29. Pataki DE, Bowling DR, Ehleringer JR, Zobitz JM (2006) High resolution atmospheric monitoring of urban carbon dioxide sources, *Geophysical Research Letters*, 33, L03813, doi:10.1029/2005GL024822.

28. Bowling DR, Burns SP, Conway T, Monson R, White JWC (2005) Extensive observations of CO_2 carbon isotope content in and above a high-elevation subalpine forest, *Global Biogeochemical Cycles*, 19, GB3023, doi:10.1029/2004GB002394.
27. Roden JS, Bowling DR, McDowell NG, Bond B, Ehleringer JR (2005) Carbon and oxygen isotope ratios of tree ring cellulose along a precipitation transect in Oregon, USA, *Journal of Geophysical Research - Biogeosciences*, 110, G02003, doi:10.1029/2005JG000033.
25. McDowell NG, Bowling DR, Schauer A, Irvine J, Bond BJ, Law BE, Ehleringer JR (2004) Associations between carbon isotope ratios of ecosystem respiration, water availability and canopy conductance, *Global Change Biology*, 10, 1767–1784, doi: 10.1111/j.1365-2486.2004.00837.x
24. McDowell NG, Bowling DR, Bond BJ, Irvine J, Law BE, Anthoni P, Ehleringer JR (2004) Response of the carbon isotopic content of ecosystem, leaf and soil respiration to meteorological and physiological driving factors in a *Pinus ponderosa* ecosystem, *Global Biogeochemical Cycles,* 18, GB1013, doi:10.1029/2003GB002049*.*
22. Bowling DR, McDowell NG, Welker JM, Bond BJ, Law BE, Ehleringer JR (2003) Oxygen isotope content of CO_2 in nocturnal ecosystem respiration: 1: Observations in forests along a precipitation transect in Oregon, USA, *Global Biogeochemical Cycles*, 17(4), 1120, doi:10.1029/2003GB002081.
21. Bowling DR, McDowell NG, Welker JM, Bond BJ, Law BE, Ehleringer JR (2003) Oxygen isotope content of CO_2 in nocturnal ecosystem respiration: 2: Short-term dynamics of foliar and soil component fluxes in an old-growth ponderosa pine forest, *Global Biogeochemical Cycles*, 17(4), 1124, doi:10.1029/2003GB002082.
20. Pataki DE, Bowling DR, Ehleringer JR (2003) The seasonal cycle of carbon dioxide and its isotopic composition in an urban atmosphere: anthropogenic and biogenic effects, *Journal of Geophysical Research- Atmospheres*, 108(D23), 4735, doi:10.1029/2003JD003865.
19. Bowling DR, Sargent SD, Tanner BD, and Ehleringer JR (2003) Tunable diode laser absorption spectroscopy for stable isotope studies of ecosystem-atmosphere CO_2 exchange, *Agricultural and Forest Meteorology*, 118, 1-19.
18. Schauer AJ, Lai C-T, Bowling DR, Ehleringer JR (2003) An automated sampler for collection of atmospheric trace gas samples for stable isotope analyses, *Agricultural and Forest Meteorology,* 118, 113-124.
17. Bowling DR, Pataki DE, and Ehleringer JR (2003), Critical evaluation of micrometeorological methods for measuring ecosystem-atmosphere isotopic exchange of CO_2, *Agricultural and Forest Meteorology*, 116, 159-179.
16. Pataki DE, Ehleringer JR, Flanagan LB, Yakir D, Bowling DR, Still CJ, Buchmann N, Kaplan JO, and Berry J (2003) The application and interpretation of Keeling plots in terrestrial carbon cycle research, *Global Biogeochemical Cycles*. 17(1), 1022, doi:10.1029/2001GB001850.
15. Baldocchi DD, and Bowling DR (2003) Modelling the discrimination of $^{13}CO_2$ above and within a temperate broad-leaved forest canopy on hourly to seasonal time scales, *Plant, Cell, and Environment*, 26:231-244.
14. Ehleringer JR, Bowling DR, Flanagan LB, Fessenden J, Helliker B, Martinelli LA, Ometto JP (2002) Stable isotopes and carbon cycle processes in forests and grasslands, *Plant Biology*, 4:181-189.
13. Bowling D, McDowell N, Bond B, Law B, and Ehleringer J (2002) ^{13}C content of ecosystem respiration is linked to precipitation and vapor pressure deficit, *Oecologia*, 131:113-124.

12. Bowling DR, Cook CS, and Ehleringer JR (2001) Technique to measure CO_2 mixing ratio in small flasks with a bellows/IRGA system, *Agricultural and Forest Meteorology,* 109, 61-65.
11. Bowling DR, Tans PP, and Monson RK (2001) Partitioning net ecosystem carbon exchange with isotopic fluxes of CO_2, *Global Change Biology*, 7:127-145.
10. Bowling DR, Baldocchi DD, and Monson RK (1999) Dynamics of isotopic exchange of carbon dioxide in a Tennessee deciduous forest, *Global Biogeochemical Cycles*, 13:903-922.
9. Bowling DR, Delany AC, Turnipseed AA, Baldocchi DD, and Monson RK (1999) Modification of the relaxed eddy accumulation technique to maximize measured scalar mixing ratio differences in updrafts and downdrafts, *Journal of Geophysical Research- Atmospheres*, 104:9121-9133.
8. Baldocchi D, Fuentes J, Bowling D, Turnipseed A, and Monson R (1999) Scaling isoprene fluxes from leaves to canopies: test cases over a boreal aspen and a mixed species temperate forest, *Journal of Applied Meteorology*, 38:885-898.
7. Katul G, Hsieh C-I, Bowling D, Clark K, Shurpali N, Turnipseed A, Albertson J, Tu K, Hollinger D, Evans B, Offerle B, Anderson D, Ellsworth D, Vogel C, and Oren R (1999) Spatial variability of turbulent fluxes in the roughness sublayer of an even-aged pine forest, *Boundary-Layer Meteorology,* 93:1-28.
6. Singsaas E, Laporte M, Shi J, Monson R, Bowling D, Johnson K, Lerdau M, Jasentuliytana A, and Sharkey T. (1999) Kinetics of leaf temperature fluctuation affects isoprene emission from red oak (*Quercus rubra* L.) leaves, *Tree Physiology*, 19:917-924.
5. Bowling DR, Turnipseed AA, Delany AC, Baldocchi DD, Greenberg JP, and Monson RK (1998) The use of relaxed eddy accumulation to measure biosphere- atmosphere exchange of isoprene and other trace gases, *Oecologia*, 116:306- 315.
4. Demmig-Adams B, Adams III WW, Barker DH, Logan BA, Bowling DR, and Verhoeven AS (1996) Using chlorophyll fluorescence to assess the fraction of absorbed light allocated to thermal dissipation of excess excitation, *Physiologia Plantarum* 98:253-264.

book chapters:

26. Baldocchi DD, and Bowling DR (2005) Theoretical examination of Keeling-plot relationships for carbon dioxide in a temperate broadleaved forest with a biophysical model, CANISOTOPE*,* in, Flanagan LB, Ehleringer JR, Pataki DE, Eds. *Stable Isotopes and Biosphere-Atmosphere Interactions: Processes and Biological Controls*, Elsevier, Amsterdam, pp 109-124.

technical reports:

23. American Institute of Biological Sciences. (2004) Ecological Aspects of Biogeochemical Cycles: Report from a NEON Science Workshop. Washington, DC: AIBS.
3. Durand S and Bowling D (1990) *Data Acquisition for Photovoltaic Power Plants*, EPRI Publication GS-7082, Electric Power Research Institute.
2. Durand S, Bowling D, and Risser V (1990) Lessons Learned From Testing Utility Connected PV Systems, *Proc. 21st IEEE PV Specialists Conference*, 909-913.
1. Rosenthal A, Lane C, and Bowling D (1990) *Photovoltaic System Performance Assessment for 1988*, EPRI Publication GS-6696, Electric Power Research Institute.

Awards

2016 Leopold-Franzens-Universität (Univ. of) Innsbruck, Vienna, Austria, Guest Professorship
2007 Editors' Citation for Excellence in Refereeing, Journal of Geophysical Research-Atmospheres
1999 Best Student Poster in Physiological Ecology, Ecological Society of America
1995 STAR Graduate Student Fellow, US Environmental Protection Agency

Extramural Grant Support

MRA: Seasonality of photosynthesis of temperate and boreal conifer forests across North America, NSF Emerging Frontiers, Macrosystems Biology and NEON-Enabled Science, **$525k**, 1/1/20-12/31/22.

Consequences of seasonal snow cover for carbon cycling of world forests: direct and legacy effects, NSF Division of Environmental Biology, Ecosystem Science, **$400k**, 1/1/20-12/31/21.

Ecophysiological and physical mechanisms linking solar-induced fluorescence and vegetation reflectance to boreal forest productivity, NASA Terrestrial Ecology: Arctic-Boreal Vulnerability Experiment - Phase 2, PIs Frankenberg, Bowling, Logan, Parazoo, Stutz, Magney, **$788k** (**$57k** U of U subcontract), 4/26/19-4/25/22.

Towards a Complex Terrain Carbon Monitoring System (CMS-Mountains): Development and Testing in the Western U.S., NASA ROSES A.7 Carbon Monitoring System, PIs Lin, Bowling, Anderson, **$1.18M**, 8/16-7/19.

Predicting CO_2 Emissions Associated With Urban Development in the Western U.S., NOAA, PIs Lin, Bowling, Buchert, Pataki, Strong, **$848k**, 1/15-12/17.

Multi-scale carbon cycle observations and ecosystem process modeling at Niwot Ridge, Colorado, U. S. Dept of Energy, Terrestrial Ecosystem Science, PIs Bowling, Koven, Stephens, Williams, **$988k**, 9/13-8/16.

Acquisition of an Isotope Ratio Mass Spectrometer for Tracing Human-Environment Interactions, NSF Division of Biological Infrastructure - Major Research Instrumentation, **$687k**, PIs: Bowen, Bowling, Cerling, Ehleringer, Pataki, 9/13-8/16.

Observing Snow and Wind: Using the Environment to Engage Students in Science and Engineering, NSF D. Undergraduate Educ., PIs Horel, Bowling, Pardyjak, Perry, Whiteman, **$135k**, 7/10-6/12.

Carbon cycling dynamics in response to pine beetle infection and climate variation, U. S. Dept of Energy, Terrestrial Carbon Cycle Research, PIs Monson, Bowling, Grandy, Lehman, Moore, Townsend, **($416k** U of U subcontract), 10/10-9/13.

Isotope Ratio Mass Spectrometers for Environmental Research, NSF Major Research Instrumentation, **$405k**, PIs: Ehleringer, Cerling, Bowling, 9/07-8/10.

Long-term assessment of isotopic exchange of carbon dioxide in a subalpine forest (Niwot Ridge AmeriFlux site), U. S. Department of Energy, DE-FG02-04ER63904, **$649.8k**, PIs Bowling and Miller, 9/04-9/07.

Field-deployable gas analyzer for MMV applications (Phase I), U. S. Department of Energy, SBIR program, PI: Anthony O'Keefe, Los Gatos Research, Bowling subcontract **$14.8k**, 2/07-3/07.

Technical proposal for the development of a Fourier-transform infrared gas analyzer to measure carbon isotopes of CO_2, U.S. Department of Energy, SBIR program, PI: Larry Jacobsen, Campbell Scientific, Inc., Bowling subcontract **$15.2k**, 8/05-7/06.

Ultra-sensitive portable isotope ratio analyzer, US Department of Energy, SBIR DE-FG03-01ER83250-A002, PI: Dmitri Permogorov, Picarro, Inc., Bowling subcontract **$122k**, 5/02-5/04.

Graduate student fellowships (I contributed as graduate advisor):

Comparison and assessment of methods to partition net ecosystem exchange of CO_2 in heterogeneous environments, US Department of Energy Global Change Education Program, Graduate Research Environmental Fellowship, **$54k**, (2005-2008), (awarded to John Zobitz)

Quantifying evapotranspiration and snowmelt dynamics of montane coniferous forests in the Wasatch region, NSF iUTAH EPSCoR Program, **$114k** (2012/15) (awarded to Allison Chan)

Global Change and Sustainability Center Graduate Fellowship, **$27k**, 2013/14 (awarded to Emily Schulze)

Intramural Grant Support

Leveraging the Wasatch Environmental Observatory to improve prediction of western US forest carbon and water cycling, Interdisciplinary Faculty Research Seed Grant, Global Change and Sustainability Center and the Society, Water and Climate Research Group (SWC), University of Utah, co-Is Anderegg, Bowling, Brooks, Lin, **$35k**, 2/18-2/19.

Trace Gas Analyzer for Gas Calibration Facility, Research Instrumentation Fund, University of Utah, PI Bowling, **$37.3k**, 4/15-3/16.

Acquisition of an Ion Chromatograph for Natural Water Samples, Research Instrumentation Fund, University of Utah, PI Solomon, co-Is Cerling, Johnson, Fernandez, Bowling, **$35.5k**, 7/11-6/12.

Salt Lake City inversions and ionic deposition in snow in the Wasatch Mountains, University of Utah Funding Incentive Seed Grant Program, PI Bowling, **$32k**, 7/10-6/11.

Environmental instrumentation, University of Utah Interdisciplinary Teaching Seed Grant Program**, $12k**, PIs Horel, Bowling, Pardyjak, 7/10-6/11.

Development of a novel real-time method to measure the stable isotope content of carbon dioxide respired from soil, University of Utah Funding Incentive Seed Grant Program, **$27k**, PI: Bowling, 7/06-6/07.

System upgrade for Biology's shared tunable diode laser absorption spectrometer, Research Instrumentation Fund Award, University of Utah, **$7.1k**, PI: Bowling, 7/05.

Instrumentation purchase for a shared tunable diode laser absorption spectrometer, Research Instrumentation Fund Award, University of Utah, **$77.6k**, PI: Bowling, 6/03.

Ecosystem carbon cycling in a desert grassland, University Research Committee Faculty Research and Creative Grant, University of Utah, **$5.4k**, PI: Bowling, 5/03-5/04.

Teaching

Primary courses (main instructor or significant role):

Ecosystem Ecology (2004/06/08/10/12/14/17/19, BIOL 5490): This lecture course for upper division and graduate students examines the biological, physical, and

chemical factors that control storage and cycling of the major elements (carbon, nitrogen, and phosphorus) within terrestrial ecosystems.

Biophysical Ecology (2005/07/11/13/15/18, BIOL/ATMOS/GEO 5495): This lecture and laboratory course for upper division and graduate students examines the physical environment in which plants, animals, and soil organisms live, how the physical environment affects their physiological function, and how organisms in turn affect their physical environment.

Stable Isotope Ecology (team-taught summers 2003-2019, GEO 5470/6470): This summer 2-week course attracts top-notch graduate students, postdocs, and faculty from around the world, including Univ. of Utah students. The course focuses on environmental science applications of stable isotope theory, methods, instrumentation, experimental design, lab and fieldwork.

Graduate courses (varying roles):

Adv. Topics Ecology and Evolution (BIOL 7964): main instructor 2018, lecture contributor 2011, 2012, 2013, 2015, 2016, 2019

SpeakerFest (2011, BIOL 7406): main instructor

Bootcamp (2010, 2012, 2014, 2015 BIOL 7964): lecture contributor

Hydrology and Water Resources (2017, 2018, 2019 GEO 5650): lecture contributor

Environmental Instrumentation (2012, 2014, ATMOS 6050): lecture contributor

Global Changes and Society (2013, BIOL 7961): lecture contributor

Geochemistry (2013, GEO 6660): lecture contributor

Carbon Cycle (2015, GEO 6680): lecture contributor

Mountain Meteorology (2015, ATMOS 6250): lecture contributor

Special topics courses (varying roles):

Individual Research (2011, BIOL 4955): Supervision of undergraduate research projects.

Current Topics in Biogeosciences (2009, BIOL 7406): This graduate core seminar examines current topics in biogeosciences, including drought, fire, climate change, and insects.

Biological Responses to Climate Change (2005, BIOL 7406): This graduate core seminar examines observed responses of biological systems to climate change, such as increased growing season length, altered migration patterns, changes in species abundance, etc.

Water and Ecology of Western Ecosystems (2003, BIOL 7406): This graduate core seminar examines the importance of water to animals, plants, insects, and microbes in ecosystems of the western U.S.

Summer Course on Flux Measurements and Advanced Modeling (team-taught, Summers 2008-2012, www.fluxcourse.org): This summer 2-week course at the University of Colorado attracts graduate students and postdocs from around the world. It was modeled after the Utah stable isotope course (GEO 5470 above) and focuses on forest micrometeorology.

University of Utah Service

University Committees

- Transformative Excellence Program – Society, Water, and Climate Faculty Cluster Hire Search Committee (Co-chair) – 2014-2015, (member) 2015-2016
- College of Science Council, 2017-2019
- Hydrology and Water Resources Graduate Certificate, Steering Committee, 2017-present

- College of Science Integrated Curriculum Development for Crocker Science Center 2015-2016
- Social and Behavioral Science Intellectual Explorations Gen. Ed. Requirement Committee; 2012–2015
- Rio Mesa Center (formerly Entrada Field Station) Faculty Advisory Committee, spring 2008-2011
- International Gen. Ed. Requirement Committee, 2005–2009

Global Change and Sustainability Center
- Founding Member
- Seminar Series Director 2010-2011
- Faculty Recruitment Search Committee member 2011
- Seminar Committee member 2011-2012
- Executive Committee Biology Representative 2011-2012
- Graduate Student Recruitment Committee (chair) 2011-2012
- Executive Committee College of Science Representative 2012-2015
- Graduate Travel Grant Review Committee 2012-2013
- Postdoc Mentoring Program (founder and co-chair) 2013-14
- Graduate Student Fellowship Selection Committee (College of Science Rep) 2014
- Red Butte Canyon RNA Oversight Committee (chair) 2018-present

iUTAH NSF-EPSCoR Project (Utah State-Wide)
- Research Focus Area 1 Science Co-Lead, 2014-2016
- Faculty Instrumentation Lead for Red Butte Canyon Watershed, 2012-2018
- U. of Utah Hydrology Technician Search Committee (Chair) 2012
- Utah State U. Hydrology Technician Search Committee 2012
- Brigham Young U. Hydrology Technician Search Committee 2012
- Research Focus Area 1 Postdoc Selection Committee 2013
- iFellow Undergraduate Research Program Mentor (summer 2013)

Science Overnight Orientation, Faculty Volunteer, 2005-2009

Proposal Reviews for Funding Incentive SEED Grant Program

Department of Biology / School of Biological Sciences Committees
- 2002/03 Graduate Admission
- 2003/04 Graduate Admission, Communication, BioURP Steering, Red Butte Canyon
- 2004/05 Graduate Admission, BioURP Steering, Red Butte Canyon
- 2005/06 Graduate Admission, Curriculum and Teaching, Red Butte Canyon,
- Riser Award
- 2006/07 Graduate Admission, Curriculum and Teaching, Red Butte Canyon
- 2007/08 Graduate Admission (co-chair), Curriculum and Teaching, Red Butte Canyon
- 2008/09 Graduate Admission (co-chair), Web Site, Red Butte Canyon, Environmental Biology Faculty Search
- 2009/10 Sabbatical Leave
- 2010/11 Executive, Curriculum, Microbial Biology Faculty Search
- 2011/12 Executive, Communications, Microbial Ecology Faculty Search, RPT Advocate
- 2012/13 Executive (alt), Red Butte Canyon (co-chair), Communications

- 2013/14 Red Butte Canyon, Communications
- 2014/15 Graduate Admission (co-chair)
- 2015/16 Graduate Admission (co-chair), Red Butte Canyon (chair)
- 2016/17 Sabbatical Leave
- 2017/18 Division Head (Ecology and Physiology), RPT
- 2018/19 Division Head (Ecology and Physiology), RPT (co-chair), Red Butte Canyon (chair), Animal Care
- 2019/20 Division Head (Ecology and Physiology)

Professional Service

Utah Governor Jon Huntsman's Blue Ribbon Advisory Council on Climate Change:
Member of Climate Change Science Advisory Panel, 2007

Mountain Accord Environmental Dashboard Technical Committee member at request of Salt Lake County Mayor Ben McAdams, 2016

National Ecological Observatory Network (NEON, http://www.neoninc.org/)
- Member, Domain Science and Education Coordination Committee for Great Basin Domain 13, since 2009
- Member, Domain Science and Education Coordination Committee for Southern Rockies Domain 15, since 2009
- Site evaluation/establishment visits to Onaqui-Benmore area in Utah for Great Basin Domain 15 Core Site, 2007 and 2008.
- Rocky Mountain Ecological Observatory Network (ROMEOnet) Regional Meetings, Ft. Collins, CO, 2004, Boulder, CO, 2004.
- Invited participant, NEON Workshop, Boulder, CO, 2004 – co-authored an associated publication (in list above)

Editorial Boards:
- Oecologia, 2014-present
- Biogeosciences (European Geosciences Union), 2017-present
- Agricultural and Forest Meteorology, 2008-2014
- Journal of Geophysical Research – Biogeosciences (American Geophysical Union), two terms: 2004-2008, 2010-2014

AmeriFlux Network Scientific Steering Committee member, which oversees a national flux tower CO_2 monitoring network, 2004-2016 (http://ameriflux.ornl.gov/organization.html)

Manuscript reviews:
Agricultural and Forest Meteorology, Analytical Chemistry, Applied Geochemistry, Applied Spectroscopy, Atmospheric Environment, Atmospheric Measurement Technology, Australian J. of Plant Physiology, Biogeochemistry, Biogeosciences, Chemical Geology, Ecohydrology, Ecological Applications, European J. of Soil Biology, Functional Ecology, Geochimica et Cosmochimica Acta, Global Biogeochemical Cycles, Global Change Biology, Hydrological Processes, Isotopes in Environmental and Health Studies, J. of Applied Meteorology, Nature, Nature Climate Change, Nature Ecology and Evolution, New Phytologist, Oecologia, Plant,

Cell, and Environment, PLoS One, PNAS, Rangeland Ecology and Management, Rapid Communications in Mass Spectrometry, Soil Biology and Biochemistry, Tellus, Tree Physiology

Grant proposal reviews (U.S.)
- NSF Directorate for Biological Sciences, Division of Environmental Biology
  - Ecosystem Science cluster
  - Instrumentation and Instrumentation Development
  - Major Research Instrumentation
- NSF Directorate for Geosciences
  - Division of Atmospheric Sciences
  - Division of Earth Sciences, Instrumentation and Facilities
  - Division of Ocean Sciences, Ocean Technology and Interdisciplinary Coordination Program
- NSF Division of Behavioral and Cognitive Sciences
  - Geography and Spatial Sciences Program
- DOE Terrestrial Ecosystem Science Program
- DOE National Institute for Global Environmental Change
  - Northeast Regional Center
  - Southeast Regional Center
  - Great Plains Regional Center
- DOE National Institute for Climatic Change Research
  - Northeast Regional Center
  - Southeast Regional Center
- DOE Small Business Innovation Research
- NOAA Climate and Global Change Program
- NOAA Climate - Earth System Science - Global Carbon Cycle Program
- Kearney Foundation for Soil Science (U. California system)
- Illinois Water Resources Center

Grant proposal reviews (international)
- Austrian Science Fund (Austria)
- Deutsche Forschungsgemeinschaft (Germany)
- Experimentation in Ecosystem Research (ExpeER, European Union)
- Israel Science Foundation (Israel)
- Minerva Weizmann Foundation of the Max Planck Society (Germany)
- Natural Environment Research Council (United Kingdom)
- Natural Sciences and Engineering Research Council (Canada)
- Swiss Federal Institute of Technology (ETH) Zürich (Switzerland)
- Swiss National Science Foundation (Switzerland)
- US-Israel Binational Science Foundation (Israel)

Grant proposal review panels:
US National Science Foundation (2007, 2010, 2016)
US Environmental Protection Agency (2012)

Tenure/promotion reviews:
Universities in Finland, Israel, United Kingdom, United States

Scientific award assessments:
2019 Japan Prize, Biological Production, Ecology

Book chapter and technical report reviews:
- Phenology of Ecosystem Processes, Springer
- United States Geological Survey

External dissertation reviews:
- Australian National University, Research School of Biological Sciences (Australia)
- Dalhousie University, Dept. of Earth Sciences (Canada)
- Technische Universität München (Germany)
- University of Göttingen (Germany)

Interaction with public/press
- Articles and interviews about Magney et al. (2019) PNAS paper
    - KPCW radio, https://www.npr.org/podcasts/608606098/k-p-c-w-this-green-earth
    - Utah Public Radio, Science Utah, https://www.upr.org/post/glow-tree-leaves-invisible-humans-can-be-used-track-photosynthesis, 5/30/19
    - Utah Public Radio, Undisciplined, https://www.upr.org/programs/undisciplined, 8/9/19
    - Poem: https://thepoetryofscience.scienceblog.com/829/glowing-green/
    - https://www.sierraclub.org/sierra/fluorescent-evergreen-glow-tells-when-trees-are-taking-carbon
- Washington Post and Deseret News articles about CO_2 emissions in Salt Lake City, 3/8/18, https://www.washingtonpost.com/news/energy-environment/wp/2018/03/08/scientists-just-showed-what-building-new-suburbs-does-to-the-atmosphere/?utm_term=.0ce78517a8a2, https://www.deseretnews.com/article/900012768/co2-sensors-detail-surprises-about-urban-growth.html
- op-ed about climate change, Salt Lake Tribune, 6/4/17
- presentation about climate change to Salt Lake Oasis (community organization), Utah, 4/2017
- University of Innsbruck article about visiting professorship (in German), 10/2016 https://www.uibk.ac.at/newsroom/internationale-zusammenarbeit.html.de
- Panel discussion about forests for Utah Film Center associated with IUFRO World Congress 2014, 10/7/2014
- KCPW radio article about iUTAH EPSCoR Project, 5/8/2014 (http://exploreutahscience.org/science-topics/science-and-society/item/146-from-pristine-to-polluted-following-the-journey-of-an-urban-stream)
- EPA STAR Fellow Success Story 7/2013 (http://www.scgcorp.com/fellowship/stories.aspx/)
- global change public discussion panel for KCPW radio, 6/16/2006
- KCPW radio article, 3/16/2006
- Newspaper article, Salt Lake Tribune, 8/7/2006
- Newspaper article, Daily Utah Chronicle, 4/11/2006
- Op-ed article, Daily Utah Chronicle, 9/17/2004

Professional Society Membership:
- American Geophysical Union

- Ecological Society of America

Public Datasets Generated by Research

Forest carbon dioxide stable isotope composition, Niwot Ridge, Colorado
- funded by U.S. Dept of Energy and National Science Foundation
- period of record summer 2003, 2005-2016
- http://biologylabs.utah.edu/bowling/niwot_data.html
- DOI: 10.17190/AMF/1246088

Gradients Along Mountain to Urban Transitions, northern Utah
- funded by National Science Foundation
- climate and stream monitoring instrumentation network
- located in Logan River, Provo River, and Red Butte Creek watersheds
- period of record 2013-present
- http://data.iutahepscor.org/mdf/Data/Gamut_Network/

Forest transpiration fluxes, northern Utah
- funded by National Science Foundation
- Knowlton Fork and TWDEF sites, using Granier sapflux method
- Aspen, white fir, and subalpine fir
- Period of record 2013-2015
- Chan, A., Bowling, D. (2015), T.W. Daniels Sapflux Aspen, 1.0, iUTAH Modeling & Data Federation, http://repository.iutahepscor.org/dataset/t-w-daniels-sapflux-aspen
- Chan, A., Bowling, D. (2015), Knowlton Fork Sapflux, 1.0, iUTAH Modeling & Data Federation, http://repository.iutahepscor.org/dataset/knowlton-fork-sapflux

Desert grassland carbon dioxide, water, and energy fluxes, Corral Pocket, Utah
- part of the AmeriFlux network of towers
- funded by University of Utah and U. S. Geological Survey
- period of record 2001–2007
- http://ameriflux.ornl.gov/fullsiteinfo.php?sid=210
- DOI: 10.17190/AMF/1246129, DOI: 10.18140/FLX/1440100

Graduate Students Trained (D. Bowling as graduate advisor)

Julia Yang, PhD student since fall 2019

Seth Arens (MS 2010), “Ion deposition in Wasatch mountain snow: influence of Great Salt Lake and Salt Lake City” (now at Western Water Assessment)

Mark Blonquist (MS 2012), “The potential of carbonyl sulfide as a proxy for gross primary production at flux tower sites” (now a scientist at Apogee Instruments)

Allison Chan (MS 2015) “Tree transpiration from two forests in the Wasatch Mountains, Utah” (now a scientist at Los Alamos National Laboratory)

Dr. Greg Maurer (PhD 2014), “The influence of seasonal snowpack variability on biogeochemical processes in western U.S. montane ecosystems” (now a scientist at U.C. Berkeley)

Dr. Andrew Moyes (PhD 2010), “The contribution of recently-assimilated carbon to soil respiration” (now a scientist at U.C. Berkeley)

Emily Schulze (MS 2015) "Revisiting streamside tree water use in the context of the two water worlds hypothesis" (now a scientist at Los Alamos National Laboratory)
Dr. John Zobitz (PhD 2007), "Mathematical approaches to partition net ecosystem exchange of carbon dioxide in a high-elevation subalpine forest" (now a faculty member at Augsburg College, Minnesota)

Postdoctoral Scientists Trained

Dr. Steven Hall (2013-2015), now a faculty member at Iowa State University
Dr. Brett Raczka (2014-2016), now Research Asst. Prof. at U. of Utah
Dr. Sean Schaeffer (2005-2008), now a faculty member at U. of Tennessee
Dr. Samantha Weintraub (co-advised, 2014-2016), now staff scientist at National Ecological Observatory Network

Other Students and Employees Trained

Undergraduates: Jessica Baker, Brett Boyer, Susan Bush, Ryan Dillingham, Sarah Gaines, Matt Gamon, Claire Hall, Adrian Harrison, Simone Jackson, Zach James, Tina Jensen, John Lillquist, Lori Long, Sophia Lopez, Richard Malyn, Brianne Palmer, Stephanie Plummer, Harrison Quinn, Sarah Reed, Christian Ryser, Raili Taylor, Jillian Turner, Tina Woltz

High School Students: Davis Unruh, Tasha Heilweil

Graduate Student Supervisory Committees (underlined = current):

- Biology: Susan Bush, La'Shaye Cobley, Tomas Domingues, Sylvia Englund, Ethan Frehner, Carolina Gomez-Navarro, Erin Hanlon, Coleson Kastelic, David Love, Anthony Macharia, Jessica Pearce, Duncan Smith, Christy Turnbull, Yujie Wang, Adam West, Jeb Williamson, Brett Wolfe, Nicole Zenes
- Atmospheric Sciences: Ben Fasoli, Carolyn Stwertka, Lauren Zuromski
- Civil and Environmental Engineering: Dasch Houdeshel, Austin Orr
- Mechanical Engineering: Prathap Ramamurthy
- Geography: Yi Qi
- Geology and Geophysics: Greg Carling, Mike Davis, Brenden Fischer-Femal, Tyler Huth, Olivia Miller
- Professional Master of Science and Technology: Ryan Campbell, Michelle Mooy
- Brigham Young University: Biology, Lafe Connor, Kerri Russell

Technicians: Suzanne Bethers, Dave Eiriksson, David Galvez, Dr. Maria Garcia, Dr. Shashi Kalaskar, Shannon Kincaid, Claire Lunch, Andy Schauer

Invited Lectures (D. Bowling)

2019 Center for Ecosystem Science and Society, Northern Arizona University
2018 Dept. of Environmental Science & Engineering, California Institute of Technology
2016 Weizmann Institute of Science, Rehovot, Israel
University of Innsbruck, Institute of Ecology, Innsbruck, Austria
2015 European Geosciences Union General Assembly, Vienna, Austria
University of Innsbruck, Institute of Ecology, Innsbruck, Austria
American Geophysical Union Fall Meeting, San Francisco, CA

2014 Dept. of Watershed Sciences, Utah State University
2013 Stable Isotopes in Biosphere-Atmosphere Earth System Research, Wroclaw, Poland
Max Planck Institute for Biogeochemistry, Jena, Germany
2012 University of Innsbruck, Institute of Ecology, Innsbruck, Austria
University of Nevada, Reno and Desert Research Institute, Joint Graduate Program in Hydrologic Sciences and Ecology, Evolution, and Conservation Biology
2011 American Geophysical Union Fall Meeting, San Francisco, CA
2010 Dept. of Geology and Geophysics, University of Utah
2008 Dept. of Meteorology, Mountain Meteorology Group, University of Utah
Dept. of Biology, Utah Valley University
Dept. of Geography, University of Utah
2007 Biosphere-Atmosphere Stable Isotope Network Meeting, Berkeley, CA
AmeriFlux Network Annual Meeting, Boulder, CO
School of Biological Sciences, Washington State University
Technische Universität München, Freising, Germany
2006 Department of Ecology and Evolutionary Biology, University of Arizona
2005 American Society of Agronomy Annual Meeting, Salt Lake City, UT
Dept. of Geography, University of Utah
Dept. of Environmental Sciences, University of Virginia
2004 Biosphere-Atmosphere Stable Isotope Network, Marshall, CA
Dept. of Biology, Bowdoin College, ME
ESF Scientific Programme, Stable Isotopes in Biospheric-Atmospheric Exchange (SIBAE), Interlaken, Switzerland
2003 Ecological Society of America Annual Meeting, Savanna, GA
ESF Scientific Programme, Stable Isotopes in Biospheric-Atmospheric Exchange (SIBAE), Orvieto, Italy
2002 Fluxnet Synthesis Workshop, Orvieto, Italy
Stable Isotopes and Biosphere-Atmosphere Interactions International Workshop, Banff, Alberta, Canada
2001 Columbia University's Biosphere2 Center, Oracle, AZ
Dept. of Geology and Geophysics, University of Utah
Mathematical Biology Seminar Series, University of Utah
1999 American Geophysical Union Fall Meeting, San Francisco, CA
1997 AmeriFlux Network Annual Meeting, St. Louis, MO

Other Lectures (various presenters, only the presenter listed)
(students underlined)

2018 Anderegg W, European Geosciences Union General Assembly, Vienna, Austria
Cheng R, American Geophysical Union Fall Meeting, Washington, DC
Stutz J, American Geophysical Union Fall Meeting, Washington, DC
Huth T, American Geophysical Union Fall Meeting, Washington, DC
2017 Bowling D, American Geophysical Union Fall Meeting, New Orleans, LA
Anderegg W, American Geophysical Union Fall Meeting, New Orleans, LA
Raczka B, American Geophysical Union Fall Meeting, New Orleans, LA
Huth T, American Geophysical Union Fall Meeting, New Orleans, LA
Bowen G, American Geophysical Union Fall Meeting, New Orleans, LA
Lin, J, 10th International Carbon Dioxide Conference, Interlaken, Switzerland

Raczka, B, Joint North American Carbon Program and AmeriFlux PI Meeting, North Bethesda, MD
Raczka, B, US Dept. of Energy Terrestrial Ecosystem Science PI Meeting, Potomac, MD
Logan B, Ecological Society of America Annual Meeting, Portland, OR
Huth, T, Geological Society of America Annual Meeting, Seattle, WA

2016 Mitchell, L, American Geophysical Union Fall Meeting, San Francisco, CA
Raczka, B, American Geophysical Union Fall Meeting, San Francisco, CA
Bowling, D, 22nd Symposium on Boundary Layers and Turbulence, American Meteorological Society, Salt Lake City, UT
Mitchell, L, 22nd Symposium on Boundary Layers and Turbulence, American Meteorological Society, Salt Lake City, UT
Mitchell, L, NOAA Global Monitoring Annual Conference, Boulder, CO
Huth, T, Geological Society of America Annual Meeting, Denver, CO

2015 Huth, T, Geological Society of America Annual Meeting, Baltimore, MD
Weintraub, S, American Geophysical Union Fall Meeting, San Francisco, CA
Lin, J, American Geophysical Union Fall Meeting, San Francisco, CA
Mitchell, L, American Geophysical Union Fall Meeting, San Francisco, CA

2014 Bowling, D, American Geophysical Union Fall Meeting, San Francisco, CA
Hall, S, American Geophysical Union Fall Meeting, San Francisco, CA
Ballantyne, A, American Geophysical Union Fall Meeting, San Francisco, CA

2013 Bowling, D, American Geophysical Union Fall Meeting, San Francisco, CA

2012 Bowling, D, American Geophysical Union Fall Meeting, San Francisco, CA
Maurer G, American Geophysical Union Fall Meeting, San Francisco, CA

2011 Blonquist M, American Geophysical Union Fall Meeting, San Francisco, CA
Monson, R, American Geophysical Union Fall Meeting, San Francisco, CA

2010 Blonquist M, American Geophysical Union Fall Meeting, San Francisco, CA
Maurer G, American Geophysical Union Fall Meeting, San Francisco, CA
Trahan N, American Geophysical Union Fall Meeting, San Francisco, CA
Wilcox B, American Geophysical Union Fall Meeting, San Francisco, CA

2009 Gamnitzer U, European Geosciences Union General Assembly, Vienna, Austria

2008 Moyes A, American Geophysical Union Fall Meeting, San Francisco, CA

2007 Bowling D, American Geophysical Union Fall Meeting, San Francisco, CA
Moyes A, Ecological Society of America annual meeting, San Jose, CA
Schaeffer S, Ecological Society of America annual meeting, San Jose, CA

2006 Bowling D, American Geophysical Union Fall Meeting, San Francisco, CA
Moyes A, American Geophysical Union Fall Meeting, San Francisco, CA
Schaeffer S, American Geophysical Union Fall Meeting, San Francisco, CA
Zobitz J, US. Dept. of Energy Global Change Education Program Summer Orientation Workshop, Portland, Oregon

2005 Zobitz J, American Geophysical Union Fall Meeting, San Francisco, CA
Roden J, Annual Meeting of the American Society of Plant Biologists

2004 Crosson E, International Workshop on Stable Isotope Ratio Infrared Spectrometry: New Developments and Applications, Vienna, Austria

2003 McDowell N, American Geophysical Union Fall Meeting, San Francisco, CA

2002 Baldocchi D, Stable Isotopes and Biosphere-Atmosphere Interactions International Workshop, Banff, Alberta

2001 Bowling D American Geophysical Union Fall Meeting, San Francisco, CA
Baldocchi D, American Geophysical Union Fall Meeting, San Francisco, CA
McDowell N, American Geophysical Union Fall Meeting, San Francisco, CA
McDowell N, IUFRO Canopy Processes Workshop

2000 Bowling D, American Geophysical Union Fall Meeting, San Francisco, CA