

CURRICULUM VITAE

Michael B. Wunder

05/31/2023

Department of Integrative Biology
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Education

2007 Ph.D., Colorado State University, Ecology

Dissertation title: Geographic Structure and Dynamics in Mountain Plover

1994 B.A., University of Colorado Boulder, Environmental and Population Biology

Positions Held

2014-present	Associate Professor, University of Colorado Denver
2008-2014	Assistant Professor, University of Colorado Denver
2007-2008	Post-doctoral Associate, Colorado State University
2003-2007	Graduate Research Associate, Colorado State University
1996-2003	Research Associate, CNHP, Colorado State University
1995-1996	Wildlife Biologist, Colorado Division of Wildlife
1994-1995	Biological Technician, Bureau of Land Management

Grants and Research Support Total \$9,475,860

- 2020 Dwyer, A. and M.B. Wunder. U.S.-Mexico MOPL Connectivity and Conservation, Phase I. Sponsor – U.S. Fish and Wildlife Service; \$192,910 Total; \$65,400 to UCD (2020-2021)
- 2017 Fritz L. Knopf PhD Fellowship. Gift to support PhD students in the Wunder Lab. Sponsor – Fritz L. Knopf; \$195,000
- 2016 Bowen, G.J., Vander Zanden, H.B., Wunder, M.B. and L. Zhao. Collaborative research: ABI Development: ORIGIN: Origin Inference from Geospatial Isotope Networks. Sponsor – NSF DBI Advances in Bioinformatics; \$1,506,679 Total; \$378,833 to UCD (2016-2022)
- Wunder, M.B. Conservation and research for species of greatest conservation need on shortgrass prairie in Colorado. Sponsor – Bird Conservancy of the Rockies; \$16,323 (2016)
- 2015 Augustine, D., Aldridge, C.L., Derner, J., Skagen, S., and M.B. Wunder. Adaptive grazing management to sustain beef production and bird diversity in rangeland ecosystems. Sponsor – USDA-National Institute of Food and Agriculture; \$350,000. Sub-award to UCD for “Grassland bird response to cattle management”; \$90,000 (2015-2017)
- Wunder, M.B. Office of Research Services Faculty Support Grant. Sponsor – University of Colorado Denver; \$15,000 (2015)
- Wunder, M.B. Faculty Development Grant to attend NSF workshop. Sponsor – University of Colorado Denver; \$1,200 (2015)
- Das, R. and M.B. Wunder. CLAS Advancing Curriculum and Teaching Grant. Sponsor – University of Colorado Denver; \$5,000 (2015)
- 2012 Wunder, M.B. Assessing habitat use and seasonal distributions of tree-roosting bats at risk from industrial wind energy development. Sponsor – USGS-BRD; \$101,673 (2012-2014)
- Wunder, M.B. CLAS research dissemination grant. Sponsor – University of Colorado Denver; \$750 (2012)
- Bowen, G.J. and J. Ehleringer et al. (Wunder: Key personnel) Collaborative Research: Integrated Training for Continental Ecology (ITCE): Bridging Scales and Systems with Isotopes; \$4,300,00 to University of Utah. Sponsor – NSF Macrosystems
- 2011 Wunder, M.B. Estimating seasonal diet composition in Steller sea lions from stable isotopes of carbon and nitrogen. Sponsor – Alaska Department of Game and Fish; \$221,039 (2011-2015)
- Bryan, R. and M.B. Wunder. Responses of mountain plovers and burrowing owls to black-tailed prairie dog alarm calls. Sponsor – Denver Audubon Society, Lois Webster Memorial Fund; \$1,400 (2011)
- Wunder, M.B. CLAS research dissemination grant. Sponsor – University of Colorado Denver; \$1,000 (2011)
- 2009 Wunder, M.B. Structured Decision Making in Seasonal Migratory Systems: The Mountain Plover Case Study. Sponsor – USFWS; \$17,697 (2009-2010)

Tomback, D.F. and M.B. Wunder. Tracking Clark's nutcracker movements and population structure using intrinsic markers: combining genetic and stable isotope signatures. Sponsor – University of Colorado Denver; \$9,985 (2009-2010)

Wunder, M.B. and D.F. Tomback. Exploring Clark's nutcracker population patterns using intrinsic markers. Sponsor – Denver Museum of Nature and Science; \$760 (2009)

Operational Support from collaborative grants

2016 Wunder, Lanctot, and Lagassé. Migration ecology of dunlin. Field support for MS student Ben Lagasse, including summer stipends, room and board, airfare to Alaska and Russia, tracking devices, and field supplies. Sponsors – U.S. Fish and Wildlife Service, BLM; \$295,000 (2016-2019)

2013 Dwyer, et al. Conservation of species of greatest conservation need in the short grass prairie of Nebraska and Colorado. Field support for two graduate student thesis projects (Woolley and Carver), including summer stipends, field housing and travel, radio telemetry supplies, and costs for experimental field manipulations. Sponsors – USFWS through Nebraska Department of Game and Parks; \$132,074 (2013-2015)

2011 Wunder and Beebe. Population ecology of olive-backed pocket mouse. Field support for MS student Chelsea Beebe, including summer stipends, housing and travel, radio telemetry equipment and field supplies. Sponsor – Colorado Parks and Wildlife; \$10,000 (2011-2012)

Wunder, Lanctot and Doll. Migration ecology of dunlin. Field support for MS student Andrew Doll, including summer stipends, room and board, and airfare to Barrow Alaska, and laboratory support for stable isotope analysis of bird tissues. Sponsors – U.S. Fish and Wildlife Service and Manomet Center for Conservation Sciences; \$154,560 (2011)

Grants and Contracts while at Colorado State University

2004 Wunder, M.B. Monitoring Mountain Plovers in Colorado. Sponsor – CDOW; \$163,684 (2004-2008)

Wunder, M.B. Evaluating the population structure of Mountain Plovers. Sponsor – CDOW; \$285,012 (2004-2006)

2001 Wunder, M.B., Knopf, F.L. and V.J. Dreitz. Resolving conflicts of *Charadrius montanus* breeding on private lands. Sponsors – USGS-BRD, CDOW; \$603,500 (2001-2004)

2000 Wunder, M.B. and F.L. Knopf. Status and conservation of Mountain Plover. Sponsor – USGS-BRD; \$155,600 (2000-2003)

1999 Wunder, M.B., Schorr, R.A., Wunder, B.A., and G. Florant. Monitoring small mammals at Pueblo Chemical Depot. Sponsor – USDOD-Army; \$411,000 (1999-2004)

Fayette, K., Rondeau, R.J., and M.B. Wunder. Eagle County biological assessment; Sponsors – Eagle Valley Land Trust, Eagle County, GOCO, BLM, USFS; \$81,200 (1999-2000)

Spackman, S. and M.B. Wunder. A Natural Heritage inventory of Staunton State Park, Jefferson and Park Counties, CO. Sponsor – CODNR-State Parks; \$20,800 (1999)

- 1998 Wunder, M.B. Mountain Plovers breeding in South Park and Moffat County. Sponsor – BLM; \$42,200 (1998-2002)
- Wunder, M.B. Development of rank specifications for occurrences of animals of concern. Sponsors – TNC, USFS; \$22,000 (1998-2000)
- Wunder, M.B. Zoological inventory of nine state parks. Sponsor – CODNR-State Parks; \$25,000 (1998)
- Wunder, M.B. Development of a potential habitat model for lynx in Colorado. Sponsor – USFS; \$25,000 (1998)
- Lyons, P. and M.B. Wunder. Uncompahgre Basin biological assessment. Sponsor – The Valley Land Conservancy, GOCO; \$52,500 (1998)
- Spackman, S. and M.B. Wunder. A Natural Heritage inventory of the Roaring Fork watershed. Sponsors – Pitkin County, GOCO; \$45,000 (1998)
- Rondeau, R.J. and M.B. Wunder. Biological Inventory of Mineral County and the Zapata Ranch. Sponsors – TNC, GOCO, Mineral County; \$45,000 (1998)
- Kittel, G. and M.B. Wunder. A Natural Heritage inventory of the Caribou Ranch. Sponsor – Boulder County Parks and Open Space; \$16,500 (1998)
- Pineda, P.M. and M.B. Wunder. Lepidoptera survey of Jefferson County lands. Sponsor – Jefferson County Open Space; \$8,800 (1998)

Synergistic Activities

- National Center for Ecological Analysis and Synthesis (NCEAS). Establishing an open-source animal-tracking analysis platform for archival geolocators. Santa Barbara, CA (2013)
- NSF Research Coordination Network (RCN). Migration Interest Group: Research Applied Toward Education (MIGRATE) program, based at University of Oklahoma (2005-2010)
- NSF Research Coordination Network (RCN). Biogeosphere-Atmosphere Stable Isotope Network (BASIN) program, based at University of California, Berkeley (2008)

Recognition and Honors

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| 2018 | College of Liberal Arts and Sciences Excellence in Research Award |
| 2013 | College of Liberal Arts and Sciences Excellence in Research Award |
| 2004-2006 | NSF IGERT fellow (Program in Mathematics, Ecology, and Statistics) |
| 1995 | Outstanding Contribution Award, Bureau of Land Management |
| 1988 | Regents Scholar, University of Colorado |

Refereed Publications (¹undergraduate, ²graduate, ³postdoc)

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<https://scholar.google.com/citations?user=IBVILGUAAAAJ&hl=en>

67. Brlík V, P. Procházka, B. Hansson, C.A Stricker, E. Yohannes, R.L. Powell, and M.B. Wunder (2023) Animal tracing with sulfur isotopes: Spatial segregation and climate variability in Africa likely contribute to population trends of a migratory songbird. *Journal of Animal Ecology* In Press
66. ³Contina, A., C.M. Bossu, D. Allen, M.B. Wunder, and K.C. Ruegg (2023) Genetic and ecological drivers of molt in a migratory bird. *Scientific Reports* 13:814 doi: 10.1038/s41598-022-26973-7
65. ³Contina, A., ²A.K. Pierce, ²S.W. Yanco, E.S. Bridge, J.F. Kelly, and M.B. Wunder (2022) Application of stable isotopes to study movement ecology and diet variation in a migratory songbird. *Journal of Field Ornithology* 93(4):6 doi: 10.5751/JFO-00179-930406
64. ²Lagassé, B.J., R.B. Lanctot, S. Brown, A.G. Dondue, S. Kendall, C.J. Latty, J.R. Liebezeit, E.Y. Loktionov, K.S. Maslovsky, A.I. Matsyna, E.L. Matsyna, R.L. McGuire, D.C. Payer, S.T. Saalfeld, J.C. Slaght, D.V. Solovyeva, P.S. Tomkovich, O.P. Valchuk, M.B. Wunder (2022) Migratory network reveals unique spatial-temporal migration dynamics of Dunlin subspecies along the East Asian-Australasian flyway. *PLoS ONE* 17(8): e0270957. doi: 10.1371/journal.pone.0270957
63. ³Contina A., S. Magozzi, H.B. Vander Zanden, G.J. Bowen, and M.B. Wunder (2022) Optimizing stable isotope sampling design in terrestrial movement ecology research. *Methods in Ecology and Evolution* 13:1237-1249
62. Jetz W, Tertitski G, Kays R, Mueller U, Wikelski M and supporting authors Åkesson S, Anisimov Y, Antonov A, Arnold W, Bairlein F, Baltà O, Baum D, Beck M, Belonovich O, Belyaev M, Berger M, Berthold P, Bittner S, Blake S, Block B, Bloche D, Boehning-Gaese K, Bohrer G, Bojarinova J, Bommas G, Bourski O, Bragin A, Bragin A, Bristol R, Brlík V, Bulyuk V, Cagnacci F, Carlson B, Chapple T K, Chefira K F, Cheng Y, Chernetsov N, Cierlik G, Christiansen S S, Clarabuch O, Cochran W, Cornelius J M, Couzin I, Crofoot M C, Cruz S, Davydov A, Davidson S, Dech S, Dechmann D, Demidova E, Dettmann J, Dittmar S, Dorofeev D, Drenckhahn D, Dubyanskiy V, Egorov N, Ehnbohm S, Ellis-Soto D, Ewald R, Feare C, Fefelov I, Fehérvári P, Fiedler W, Flack A, Froböse M, Fufachev I, Futoran P, Gabyshev V, Gagliardo A, Garthe S, Gashkov S, Gibson L, Goymann W, Gruppe G, Guglielmo C, Hartl P, Hedenström A, Hegemann A, Heine G, Hieber Ruiz M, Hofer H, Huber F, Iannarilli F, Illa M, Isaev A, Jakobsen B, Jenni L, Jenni-Eiermann S, Jesmer B, Jiguet F, Karimova T, Kasdin N J, Kazansky F, Kirillin R, Klinner T, Knopp A, Kölzsch A, Kondratyev A, Krondorf M, Ktitorov P, Kulikova O, Kumar R S, Künzer C, Larionov A, Larose C, Liechti F., Linek N, Lohr A, Lushchekina A, Mansfield K, Matantseva M, Markovets M, Marra P, Masello J F, Melzheimer J, Menz M H M, Menzie S, Meshcheryagina S, Miquelle D, Morozov V, Mukhin A, Müller I, Mueller T, Navedo J G, Nathan R, Nelson L, Németh Z, Newman S, Norris R, Okhlopkov I, Oleś W, Oliver R, O'Mara T, Palatitz P, Partecke J, Pavlick R, Pedenko A, Pham J, Piechowski D, ²Pierce A, Piersma T, Pitz W, Plettemeier D, Pokrovskaya I, Pokrovskaya L, Pokrovsky I, Pot M, Procházka P, Quillfeldt P, Rakhimberdiev E, Ramenofsky M, Ranipeta A, Rapczyński J, Remisiewicz

- M, Rozhnov V, Rienks F, Rozhnov V, Rutz C, Sakhvon V, Sapir N, Safi K, Schäuffelhut F, Schimel D, Schmidt A, Shamoun-Baranes J, Sharikov A, Shearer L, Shemyakin E, Sherub S, Shipley R, Sica Y, Smith T B, Simonov S, Snell K, Sokolov A, Sokolov V, Solomina O, Spina F, Spoelstra K, Storhas M, Sviridova T, Swenson Jr G, Taylor P, Thorup K, Tsvey A, Tucker M, Turner W, van der Jeugd H, van Schalkwyk L, van Toor M, Viljoen P, Visser M E, Volkmer T, Volkov A, Volkov S, Volkow O, von Rönn J A C, Vorneweg B, Wachter B, Waldenström J, Wegmann M, Wehr A, Weinzierl R, Weppler J, Wilcove D, Wild T, Williams H J, Wilshire J, Wingfield J, Wunder M, Yachmennikova A, Yanco S, Yohannes E, Zeller A, Ziegler C, Zięcik A, Zook C. (2022) Biological earth observation with animal sensors. *Trends in Ecology & Evolution* 37(4):293-298.
61. ²Yanco, S.W., ²A.K. Pierce, and M.B. Wunder (2022) Life history diversity in terrestrial animals is associated with metabolic response to seasonally fluctuating resources. *Ecography* 2022(3):e05900. doi: 10.1111/ecog.05900
60. Turbek, S.P., D.R. Schield, E.S.C. Scordato, A. Contina, X-W. Da, Y. Liu, Y. Liu, E. Pagani-Núñez, Q-M. Ren, C.C.R. Smith, C.A. Stricker, M.B.Wunder, D. Zonana, and R.J. Safran (2022) A migratory divide spanning two continents is associated with genomic and ecological divergence. *Evolution* 76(4):722-736. doi:10.1111/evo.14448
59. ²Yanco, S.W., B.D. Linkhart, P.P. Marra, M. Mika, M. Ciaglo, ²A. Carver, and M.B. Wunder (2022) Niche dynamics suggest ecological origins of migration in an insectivorous owl. *Ecology* 103(3):e3617. doi: 10.1002/ecy.3617
58. ²Costa, F.J.V., K.A. Hobson, M.B. Wunder, and G.B. Nardoto (2022) Linking environmental indicators to blood, feather, and claw $\delta^{18}\text{O}$ in the Saffron Finch (*Sicalis flaveola*) in the central Brazilian savannas. *Journal of Ornithology* 163:223-234 doi: 10.1007/s10336-021-01939-0
57. ²Schutt, D., R.L. Brasso, A.M. Vajda, and M.B. Wunder (2021) Comparison of feather mercury concentrations in live-caught vs. found-dead chick carcasses of Gentoo penguins (*Pygoscelis papua*). *Polar Biology* 44:1955-1960 doi: 10.1007/s00300-021-02929-x
56. Magozzi, S., C.P. Bataille, K.A. Hobson, M.B. Wunder, J.D. Howa, ³A. Contina, H.B. Vander Zanden, and G.J. Bowen (2021) Calibration chain transformation improves the comparability of organic hydrogen and oxygen stable isotope data. *Methods in Ecology and Evolution* 12:732-747
55. Ciaglo, M., R. Calhoun, ²S.W. Yanco, C.A. Stricker, M.B. Wunder, and B.D. Linkhart (2021) Evidence of fall prospecting in a long-distance migrant. *Ecology and Evolution* 11:599-611
54. Magozzi, S., H.B. Vander Zanden, M.B. Wunder, C.N. Trueman, K. Pinney, D. Peers, P.E. Dennison, J.J. Horns, C. Şekercioğlu, and G.J. Bowen (2020) Combining models of environment, behavior, and physiology to predict tissue hydrogen and oxygen isotope variance among individual terrestrial animals. *Frontiers in Ecology and Evolution* 8:536109. doi: 10.3389/fevo.2020.536109
53. ³Contina, A., ²S.W. Yanco, ²A.K. Pierce, ²M. DePrenger-Levin, M.B. Wunder, A.M. Neophytou, C.P. Lostroh, R.J. Telford, B.M. Benito, J. Chipperfield, R.B. O'Hara, and C.J. Carlson. (2020) Comment on "A global-scale ecological niche model to predict SARS-CoV-2 coronavirus infection rate", author Coro. *Ecological Modelling* 436:109288

52. ²Lagassé, B.J., R.B. Lanctot, M. Barter, S. Brown, C-Y Chiang, C-Y Choi, Y.N. Gerasimov, S. Kendall, J.R. Liebezeit, K.S. Maslovsky, A.I. Matsyna, E.L. Matsyna, D.C. Payer, S.T. Saalfeld, Y. Shigeta, I.M. Tiunov, P.S. Tomkovich, O.P. Valchuk, and M.B. Wunder (2020) Dunlin subspecies exhibit regional segregation and high site fidelity along the East Asian-Australasian Flyway. *The Condor: Ornithological Applications* 122:1-15
51. ³Ma, C., H.B. Vander Zanden, M.B. Wunder, and G.J. Bowen (2020) assignR: An R package for isotope-based geographic assignment. *Methods in Ecology and Evolution* 11:996-1001
50. ²Yanco, S.W., ²A. McDevitt, C.N. Trueman, L. Hartley, and M.B. Wunder (2020) A modern method of multiple working hypotheses to improve inference in ecology. *Royal Society Open Science* 7:200231
49. ²Pansing, E., D.F. Tomback, and M.B. Wunder (2020) Climate-altered fire regimes may increase extirpation risk in an upper subalpine conifer species of management concern. *Ecosphere* 11(8): e03220 doi: 10.1002/ecs2.2320
48. Scordato, E.S.C., C.C.R. Smith, G.A. Semenov, L. Yu, M.R. Wilkins, W. Liang, A. Rubtsov, G. Sundev, K. Koyama, S.P. Turbek, M.B. Wunder, C.A. Stricker, and R. Safran (2020) Migratory divides coincide with species barriers across replicated avian hybrid zones above the Tibetan Plateau. *Ecology Letters* 23:231-241
47. ³Magozzi, S., H.B. Vander Zanden, M.B. Wunder, and G.J. Bowen (2019) Mechanistic model predicts tissue-environment relationships and trophic shifts in animal hydrogen and oxygen isotope ratios. *Oecologia* 191:777-789
46. ²Parker R.P., C.J. Duchardt, A.M. Dwyer, C. Painter, ²A.K. Pierce, ²T.J. Michels, and M.B. Wunder (2019) Trophic ecology warrants multi-species management in a grassland setting: Proposed species interactions on black-tailed prairie dog colonies. *Rangelands* 41(3): 135-144
45. ²Pierce A.K., S.J. Dinsmore, and M.B. Wunder (2019) Decreased nest survival associated with low temperatures in a high-elevation population of Mountain Plover (*Charadrius montanus*). *Wilson Journal of Ornithology* 131(3): 502-513
44. Vander Zanden, H.B., Nelson, D.M., Wunder, M.B., Conkling, T.J., and T. Katzner (2018) Application of stable isotopes to determine geographic origin of terrestrial wildlife for conservation and management. *Biological Conservation* 228:268-280
43. Doll, A.C., B.D. Taras, C.A. Stricker, L.D. Rea, T.M. O'Hara, A.P. Cyr, S. McDermott, T.M. Loomis, B.S. Fadley, and M. Wunder (2018) Temporal records of diet diversity dynamics in individual adult female Stellar sea lion (*Eumetopias jubatus*) vibrissae. *Oecologia* 188:263-275
42. Lisovski, S., H. Schmaljohan, E.S. Bridge, S. Bauer, A. Farnsworth, S.A. Gauthreaux Jr., S. Hahn, M.T. Hallworth, C.M. Hewson, J.F. Kelly, F. Liechti, P.P. Marra, E. Rakhimberdiev, J.D. Ross, N.E. Seavy, M.D. Sumner, C.M. Taylor, D.W. Winkler, S.J. Wotherspoon, M.B. Wunder (2018) Inherent limits of light-level geolocation may lead to over-interpretation. *Current Biology* 28: R99-R102
41. ³Ceriani, S.A., J.F. Weishampel, L.M. Ehrhart, K.L. Mansfield, and M.B. Wunder (2017) Foraging and recruitment hotspot dynamics for the largest Atlantic loggerhead turtle rookery. *Scientific Reports* 7: 16894

40. ²Carver, A.R., J.D. Ross, D.J. Augustine, S.K. Skagen, A.M. Dwyer, D.F. Tomback, and M.B. Wunder (2017) Weather radar data correlate to hail-induced mortality in grassland birds. *Remote Sensing in Ecology and Conservation* 3(2): 90-101
39. ²Pansing, E.R., D.F. Tomback, M.B. Wunder, J.P. French, and ²A.C. Wagner (2017) Microsite and elevation zone effects on seed pilferage, germination, and seedling survival during early whitebark pine recruitment. *Ecology and Evolution* 7(21): 9027-9040
38. ³Magozzi, S., A. Yool, ³H.B. Vander Zanden, M.B. Wunder, and C.N. Trueman (2017) Using ocean models to predict spatial and temporal variation in marine carbon isotopes. *Ecosphere* 8(5): e01763 doi: 10.1002/ecs2.1763
37. ²Pierce, A.K., S.J. Dinsmore, D. Jorgensen, and M.B. Wunder (2017) Individual variation in migration routes, stopover use, and wintering grounds in Mountain Plovers. *Journal of Field Ornithology* 88(1): 30-38
36. Tomback, D.F., ²S. C. Blakeslee, ²A.C. Wagner, M.B. Wunder, L.M. Resler, ²J.C. Pyatt, and S. Diaz (2016) Whitebark pine facilitation at treeline: potential interactions for disruption by an invasive pathogen. *Ecology and Evolution* 6(15): 5144-5157
35. ²Pyatt, J.C., D.F. Tomback, ²S.C. Blakeslee, M.B. Wunder, L.M. Resler, ¹L. Boggs, and ¹H. Beveny (2016) Microclimate and microsites at treeline: conifer facilitation of tree island initiation. *Arctic, Antarctic, and Alpine Research* 48(2): 427-444
34. ³Vander Zanden, H.B., M.B. Wunder, K.A. Hobson, S.L. Van Wilgenburg, L.I. Wassenaar, J.M. Welker (2015) Space-time tradeoffs in the development of precipitation-based isotope models for determining migratory origin. *Journal of Avian Biology* 46(6): 658-667
33. ³Hayes, M.A., ¹K. Ozenberger, P.M. Cryan, and M.B. Wunder (2015) Not to put too fine a point on it – does increasing precision of geographic referencing improve species distribution models for a wide-ranging migratory bat? *Acta Chiropterologica* 17(1): 159–169
32. ³Hayes, M.A., P.M. Cryan, and M.B. Wunder (2015) Seasonally-Dynamic Presence-Only Species Distribution Models for a Cryptic Migratory Bat Impacted by Wind Energy Development. *PLoS ONE* 10(7): e0132599. doi:10.1371/journal.pone.0132599
31. ³Scherer, R.D., ²A.C. Doll, L.D. Rea, A.M. Christ, C.A. Stricker, B. Witteveen, T.C. Kline, C.M. Kurle, and M.B. Wunder (2015) Stable isotope values in pup vibrissae reveal geographic variation in diets of gestating Steller sea lions (*Eumetopias jubatus*). *Marine Ecology Progress Series* 527:261-274
30. ²Doll, A.C., R.B. Lanctot, C.A. Stricker, S. Yezerinac, and M.B. Wunder (2015) Improved arrival date estimates of arctic-breeding Dunlin (*Calidris alpina arctica*). *Auk* 132:408-421
29. Stricker, C.A., A.M. Christ, M.B. Wunder, ²A.C. Doll, S.D. Farley, L.D. Rea, D.A.S. Rosen, ³R.D. Scherer, and D.J. Tollit (2015) Carbon and nitrogen isotope discrimination for Stellers' sea lion (*Eumetopias jubatus*) vibrissae relative to milk and fish/invertebrate diets. *Marine Ecology Progress Series* 523:255-266
28. ³Vander Zanden, H. B., A.D. Tucker, K.M. Hart, M.M. Lamont, I. Fujisaki, D.S. Addison, K.L. Mansfield, K.F. Phillips, M.B. Wunder, G.J. Bowen, M. Pajuelo, A.B. Bolten, K.A.

- Bjorndahl (2015) Determining foraging area origin in a migratory marine vertebrate by integrating stable isotope analysis and satellite tracking: a novel approach. *Ecological Applications* 25:320-335
27. ³Vander Zanden, H.B., M.B. Wunder, K.A. Hobson, S.L. Van Wilgenburg, L.I. Wassenaar, J.M. Welker (2014) Contrasting assignment of migratory organisms to geographic origins using long-term versus year-specific precipitation isotope maps. *Methods in Ecology and Evolution* 5:891-900
 26. Cryan, P.M., C.A. Stricker, and M.B. Wunder (2014) Continental-scale, cross-seasonal movements of a heterothermic migratory tree bat. *Ecological Applications* 24:602-616
 25. ²Bryan, R.D. and M.B. Wunder (2014) Western burrowing owls (*Athene cunicularia hypugaea*) eavesdrop on alarm calls of black-tailed prairie dogs (*Cynomys ludovicianus*). *Ethology* 120:180-188
 24. Flockhart, D.T.T., L.I. Wassenaar, T.G. Martin, K.A. Hobson, M.B. Wunder, and D.R. Norris (2013) Tracking multi-generational migratory connectivity: colonization of the breeding grounds by monarch butterflies in eastern North America. *Proceedings of the Royal Society B* 280 (1768):20131087
 23. Rundel, C.W., M.B. Wunder, A.H. Alvarado, K.C. Ruegg, R. Harrigan, 3A. Schuh, J.F. Kelly, R. Siegel, T.B. Smith, and J. Novembre (2013) Novel statistical methods for integrating genetic and stable isotopic data to infer individual-level migratory connectivity. *Molecular Ecology* 22:4163-4176
 22. Wunder, M.B., J.R. Jehl, and C. Stricker (2012) The early bird gets the shrimp: confronting assumptions of isotopic equilibrium and homogeneity in a wild bird population. *Journal of Animal Ecology* 81:1223-1232
 21. Oyler-McCance, S.J., J.A. Fike, T.A. Castoe, D.F. Tomback, M.B. Wunder, and T.D. Schaming (2012) Development and characterization of thirteen microsatellite loci in Clark's nutcracker (*Nucifraga Columbiana*). *Conservation Genetics Resources* 5:303-305
 20. ²Barringer, L.E., D.F. Tomback, M.B. Wunder, and S. McKinney (2012) Whitebark pine stand condition, tree abundance, and cone production as predictors of visitation by Clark's nutcracker. *PLoS ONE* 7(5):e37663
 19. Wunder, M.B. (2012) Determining geographic patterns of migration and dispersal by analysis of stable isotopes in keratins. *Journal of Mammalogy* 93:360-367
 18. Cryan, P.M., C.A. Stricker, and M.B. Wunder (2012) Biologically structured isotopic variation in a sedentary population of bats. *Journal of Mammalogy* 93:381-389
 17. ¹Smith, S.M., M.B. Wunder, D.A. Norris, and Y.G. Shellman (2011) A simple protocol for using a LDH-based cytotoxicity assay to assess the effects of death and growth inhibition at the same time. *PLoS ONE* 6(11):e26908
 16. Dinsmore, S. J., M. B. Wunder, V. J. Dreitz, and F. L. Knopf (2010) An assessment of factors affecting population growth of the Mountain Plover. *Avian Conservation and Ecology* 5(1): 5
 15. Hobson, K.A., M.B. Wunder, S. VanWilgenburg, R. Clark, and L.I. Wassenaar (2009) A method for investigating population declines of migratory birds using stable isotopes: origins of harvested lesser scaup in North America. *PLoS ONE* 4(11): e7915

14. Gutowsky, S., Janssen, M.H., Arcese, P., Kyser, T.K., Ethier, D., Wunder, M.B., Bertram, D.F., Tranquilla, L.M., Loughheed, C., and D.R. Norris. (2009) Concurrent declines in nestling diet quality and reproductive success of a threatened seabird over 150 years. *Endangered Species Research* 9:247-254
13. Wunder, M.B., K.A. Hobson, J.F. Kelly, P.P. Marra, L.I. Wassenaar, C.A. Stricker, and R.R. Doucett (2009) Does a lack of design and repeatability compromise scientific criticism? A response to Smith et al. *Auk* 126:922-926
12. Sellick, M.J., T.K. Kyser, M.B. Wunder, D. Chipley, and D.R. Norris (2009) Geographic variation of strontium and hydrogen isotopes in avian tissue: implications for tracking migration. *PLoS ONE* 4(3): e4735.
11. Augustine, D.J., S.J. Dinsmore, M.B. Wunder, V.J. Dreitz, and F.L. Knopf (2008) Mountain plover response to plague-driven dynamics in black-tailed prairie dog landscapes. *Landscape Ecology* 23:689-697
10. Wunder, M.B. and D.R. Norris (2008) Improved estimates of certainty in stable isotope-based methods for tracking migratory animals. *Ecological Applications* 18:549-559
9. Schorr, R.A., J.L. Siemers, P.M. Lukacs, J.P. Gionfriddo, J.R. Sovell, R.J. Rondeau, and M.B. Wunder (2007) Using prairie rodent survival to evaluate habitats. *Southwestern Naturalist* 52:552-563
8. Norris, D.R., M.B. Wunder, and M. Boulet (2006) Perspectives in Migratory Connectivity. *Ornithological Monographs* 61:79-88.
7. Knopf, F.L. and M.B. Wunder (2006) Mountain Plover (*Charadrius montanus*). In *The Birds of North America Online* (A. Poole Ed.). Ithaca: Cornell Laboratory of Ornithology; Retrieved from *The Birds of North America Online* http://bna.birds.cornell.edu/BNA/account/Mountain_Plover doi:10.2173/bna.211
6. Schneider, S.C., M.B. Wunder, and F.L. Knopf (2006) Relationship between shrubs and foods in Mountain Plover habitat in Park County Colorado, USA. *Southwestern Naturalist* 51:197-202
5. Wunder, M.B., C.L. Kester, F.L. Knopf, and R.O. Rye (2005) A test of geographic assignment using isotope tracers in feathers of known origin. *Oecologia* 144:607-615
4. Dretiz, V.J., M.B. Wunder, and F.L. Knopf (2005) Movements and home ranges of Mountain Plovers raising broods in three Colorado landscapes. *Wilson Bulletin* 117:128-132
3. Wunder, M.B., F.L. Knopf and C.A. Pague (2003) The high elevation population of Mountain Plovers in Colorado. *Condor* 105:654-662
2. Wunder, M.B. and F.L. Knopf (2003) Imperial Valley of California is critical to wintering Mountain Plovers. *Journal of Field Ornithology* 74(1):74-80
1. Wunder, M.B., J.L. Siemers, and A.E. Ochs (1998) Geographic distribution: Spea bombifrons. *Herpetological Review* 29(1): 50

Refereed Books and Book Chapters

4. Wunder, M.B. and D.R. Norris (2018) Design and analysis for isotope-based study of migratory animals. In: Tracking animal migration with stable isotopes, 2nd edition (Hobson, K.A. and L.I. Wassenaar, Eds.). Elsevier, Inc. San Diego, CA
3. Wunder, M.B. (2010) Using isoscapes to model probability surfaces for determining geographic origins. In: Isoscapes: Understanding movement, pattern, and process on Earth through isotope mapping (Bowen, G., West, J., Tu, K, and Dawson, T. eds.) Springer-Verlag, New York.
2. Wunder, M.B. and D.R. Norris (2008) Analysis and design for isotope-based studies of migratory animals. In: Tracking animal migration using stable isotopes (Hobson, K.A. and L.I. Wassenaar, Eds.). Elsevier, Inc. San Diego, CA
1. Kelly, J.F., S. Bearhop, G.J. Bowen, K.A. Hobson, D.R. Norris, L.I. Wassenaar, J.B. West, and M.B. Wunder (2008) Future directions and challenges for using stable isotopes in advancing terrestrial animal migration research. In: Tracking animal migration using stable isotopes (Hobson, K.A. and L.I. Wassenaar, Eds.). Elsevier, Inc. San Diego, CA

Software

1. Bowen G. J., Ma C.*, Vander Zanden H. B. and Wunder M. B. (2019) assignR: Infer geographic origin from isotopic data.
<https://cran.rproject.org/web/packages/assignR/index.html>

Publications in Progress

Brlík, V., P. Procházka, L. Bontempo, F. Camin, F. Jiguet, G. Osváth, C.A. Stricker, M.B. Wunder, and R.L. Powell (2023) Geographic distribution of feather $\delta^{34}\text{S}$ in Europe. *In Revision Ecosphere*

³Contina A., S.W. Yanco, ²A.K. Pierce, H.B. Vander Zanden, C.A. Stricker, G.J. Bowen, and M.B. Wunder (2023) Dynamic environments generate geographic fluctuations in population structure of an inland shorebird. *In Revision Ecology Letters*

²Michelson, C. I., M.J. Polito, M.B. Wunder, S.D. Emslie, M. McCarthy, W.P. Patterson, and K.W. McMahon (2023) Holocene climate change shifted Southern Ocean biogeochemical cycling and predator trophic dynamics. *In Review Limnology and Oceanography*

Invited Seminars, Lectures and Workshops

19. Wunder, M.B. (2019) A 2020 Perspective on Avian Migration Ecology. *Plenary* given at the 17th International Conference of the Society for the Study and Conservation of Birds in Mexico. Mérida, Mexico (09/19)
18. Pierce, A.K., S.W. Yanco, and M.B. Wunder. (2019) Habitat Occupancy Models. *Workshop* given at the 17th International Conference of the Society for the Study and Conservation of Birds in Mexico. Mérida, Mexico (09/19)

17. Wunder, M.B., G.J. Bowen, and H.B. Vander Zanden (2018) ORIGIN: Origin Inference from Geospatial Isotope Networks – software and tools associated with a cyberinfrastructure for building and using isoscapes to estimate geographic origins of tissues. *Workshop* given at the 11th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Vina del Mar, Chile (07/18)
16. Wunder, M.B. (2017) On the use of geographically indexed stable isotope models in wildlife ecology. *Invited keynote lecture* presented at annual Front Range Isotope Day Symposium. University of Wyoming. Laramie, WY (08/17)
15. Wunder, M.B. (2017) STATEMIG workshop – the big questions in migration ecology: migration at the population level. *Invited facilitator*. University of Exeter, Penryn Campus. Falmouth, Cornwall, UK (06/17)
14. Wunder, M.B. (2017) Beware the expert: on the relative importance of teaching students to quantify and articulate uncertainty. *Invited seminar* presented as part of the Departmental Seminar Series. Department of Mathematical and Statistical Sciences, University of Colorado Denver. Denver, CO (02/17)
13. Wunder, M.B. (2014) Stable isotopes for space-time inferences in migratory systems. *Invited seminar* presented as part of the Departmental Seminar Series. Department of Biology, Brigham Young University. Provo, UT (12/14)
12. Wunder, M.B. (2014) Principles of design and analysis that strengthen inferences in studies using natural abundances of stable isotopes. *Invited keynote lecture* presented at international workshop entitled “Coming of age? Stable isotopes in archaeology”. Kiel University. Kiel, Germany (11/14)
11. Wunder, M.B. (2014) Stable isotopes for space-time inferences in migratory systems. *Invited seminar* presented as part of the Departmental Seminar Series. Department of Biology, University of Oklahoma. Norman, OK (04/14)
10. Bowen, G., K. Hobson, and M.B. Wunder (2012) Isotope applications for geospatial assignment. *Workshop* given at the 8th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Brest, France (08/12)
9. Wunder, M.B. and J. Shamoun-Baranes (2010) Data Fusion. *Workshop* given at Max Planck Institute for Ornithology. Radolfzell, Germany (06/10)
8. Kelly, J., Wikelski, M., Mabee, S., Wunder, M.B., Bridges, E., and F. Moore (2010) Joint North American and European Workshop on Bird Migration. Max Planck Institute for Ornithology, Radolfzell, Germany (06/10)
7. Wunder, M.B. (2009) Isotope forensics in wildlife population studies. *Invited seminar* presented as part of the Natural Resource Ecology Lab seminar series, Colorado State University. Fort Collins, CO (12/09)
6. Wunder, M.B. (2009) Putting Feathers on the Map: A Study in Stable Isotope Forensics. *Invited seminar* presented for Earth and Environmental Sciences Division of Los Alamos National Laboratory. Los Alamos, NM (06/09)
5. Wunder, M.B. (2009) Modeling geographic provenance of migratory birds using stable hydrogen isotopes in feathers. *Invited seminar* presented for Department of Mathematical and Statistical Sciences, University of Colorado Denver. Denver, CO (03/09)

4. Wunder, M.B. (2007) Geographic structure and dynamics in mountain plover. Ph.D. defense seminar given in the department of Fish, Wildlife, and Conservation Biology, Colorado State University. Fort Collins, CO (03/07)
3. Wunder, M.B. (2004) Biogeography of Mountain Plovers. *Invited seminar* presented at Center for Tropical Research, University of California, Los Angeles, CA (05/04)
2. Wunder, M.B. (2001) Preliminary investigations of Mountain Plovers breeding on a montane grassland. *Invited seminar* for Department of Fish, Wildlife and Conservation Biology spring seminar series, Colorado State University. Fort Collins, CO (03/01)
1. Wunder, M.B. (1998) Mapping potential habitat for lynx in Colorado. *Invited seminar* for Department of Fish, Wildlife and Conservation Biology fall seminar series, Colorado State University, Fort Collins, CO (10/98)

Refereed Presentations (¹undergraduate, ²graduate, ³postdoc)

102. ²Pierce A.K., Yanco S.W., and M.B. Wunder (2023) Migration strategy alters optimization of energetic trade-offs that drive variation in life history and pace of life. *Contributed poster* presented at 3rd Gordon Research Conference and Seminar on Animal Movement Ecology. Lucca, Italy (06/23)
101. ²Yanco, S.W., ²A.K. Pierce, and M.B. Wunder (2021) Life history diversity in terrestrial animals is associated with metabolic response to seasonally fluctuating resources. *Contributed paper* presented at Ecology Across Borders: Annual Joint Meeting of the British Ecological Society and the French Society for Ecology and Evolution. Liverpool, UK (12/21)
100. ²Yanco, S.W., B.L. Linkhart, P.P. Marra, and M.B. Wunder (2020) Niche dynamics and ecological drivers of migration in an insectivorous owl. *Invited symposium contribution* presented at North American Ornithological Conference VII. San Juan, Puerto Rico (08/20) Remote Meeting due to COVID-19 **Won A. Brazier Howell Award for Best Presentation on any Topic*
99. ²Pierce A.K., Dinsmore S.J., and M.B. Wunder (2020) Decreased nest survival associated with low temperatures in a high-elevation population of Mountain Plover. *Contributed poster* presented at North American Ornithological Conference VII. San Juan, Puerto Rico (08/20) Remote Meeting due to COVID-19
98. ³Contina, A., B. Goachanour, J.L. Alcantara and M.B. Wunder (2020) Stable isotopes in conservation biology: case studies in migratory birds. *Contributed paper* presented at North American Congress for Conservation Biology. Denver, CO (07/20) Remote Meeting due to COVID-19
97. ³Magozzi, S. ³A. Contina, M.B. Wunder, H.B. Vander Zanden, and G.J. Bowen (2020) A global compilation of known-origin keratin hydrogen and oxygen isotope data for wildlife forensic research. *Contributed paper* presented at European Geosciences Union. Vienna, Austria (05/20) Remote Meeting due to COVID-19
96. ²Yanco, S.W., B.D. Linkhart, M. Micah, ²A. Carver, M. Ciaglo, P.P. Marra, and M.B. Wunder (2019) Towards a full annual biogeography of the flammulated owl. *Contributed paper* presented at the Raptor Research Foundation Annual Conference, Fort Collins, CO (11/19)

95. Ciaglo, M., R. Calhoun, ²S.W. Yanco, M.B. Wunder, C.A. Sticker, and B.D. Linkhart (2020) Evidence of post- breeding prospecting in a migratory raptor. *Contributed paper* presented at the Raptor Research Foundation Annual Conference, Fort Collins, CO (11/19)
94. Lanctot, R.B., ²B.J. Lagassé, S. Yezerinac, S.C. Brown, A. Dondua, S. Kendall, C. Latty, J. Liebezeit, A. Matsyna, E. Matsyna, R.L. McGuire, M. Robards, S.T. Saalfeld, J. Slaght, D. Solovyeva, P.S. Tomkovich, O.P. Valchuk, S. Zack, and M.B. Wunder (2019) Migratory dynamics of beringian dunlin on the east Asian-Australasian flyway. *Contributed paper* presented at the 137th stated meeting of the American Ornithological Society. Anchorage, AK (06/19)
93. ²Lagassé, B.J., R. Lanctot, S. Yezerinac, S. Brown, A. Dondua, S. Kendall, C. Latty, J. Liebezeit, E. Loktionov, A. Matsyna, E. Matsyna, R. McGuire, M. Robards, S. Saalfeld, J. Slaght, D. Solovyeva, P. Tomkovich, O. Valchuk, S. Zack, and M. Wunder (2019) Migratory dynamics of Beringian Dunlin on the East Asian-Australasian Flyway. *Contributed paper* presented at the 18th Alaska Bird Conference. Fairbanks, AK (03/19)
92. ²Pierce A.K., ²Yanco S.W., and M.B. Wunder (2019) Simulating animal movement using genetic algorithms and agent-based modeling. *Contributed poster* presented at 2nd Gordon Research Conference and Seminar on Animal Movement Ecology. Lucca, Italy (03/19)
91. ²Yanco S.W., ²Pierce A.K., and M.B. Wunder (2019) Using genetic algorithms and agent-based models to explore landscapes and life histories which give rise to migration. *Contributed poster* presented at 2nd Gordon Research Conference and Seminar on Animal Movement Ecology. Lucca, Italy (03/19)
90. ²Pansing, E., D. Tomback, and M. Wunder (2018) Managing whitebark pine under climate-altered fire regimes: assessing extirpation risk in the Greater Yellowstone using a demographic projection model. *Invited paper* presented at the 11th Annual Whitebark Pine Ecosystem Foundation Science and Management Conference. Stanley, ID (09/18)
89. ²Pansing, E.R., D.F. Tomback, and M.B. Wunder (2018) Assessing the impacts of climate-altered fire regimes on projected extirpation risk of whitebark pine in the Greater Yellowstone Ecosystem. *Contributed paper* presented at the 14th Biennial Scientific Conference on the Greater Yellowstone Ecosystem: Tracking the Human Footprint. Big Sky, MT (09/18)
88. ²Pierce A.K., S.J. Dinsmore, C.J. Duchardt, A.D. Dwyer, D. Jorgensen, P.P. Marra, and M.B. Wunder (2018) Tracking Mountain Plover migration: conservation implications of non-breeding habitat. *Contributed poster* presented at the 27th International Ornithological Congress. Vancouver, BC, Canada. (08/18)
87. Doll, A.C., B.D. Taras, C.A. Stricker, L.D. Rea, T.M. O'Hara, A.P. Cyr, S. McDermott, T.M. Loomis, B.S. Fadely, and M.B. Wunder (2018) Temporal records of diet diversity dynamics in individual adult female Steller sea lion (*Eumetopias jubatus*) vibrissae. *Contributed poster* presented at the 11th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Vina del Mar, Chile (08/18)
86. Magozzi, S.³H.B. Vander Zanden, M.B. Wunder, C.N. Trueman, K. Pinney, and G.J. Bowen (2018) How do behavior, the environment and physiology interact to produce variance in tissue isotopic compositions? *Contributed paper* presented at

- the 11th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Vina del Mar, Chile (08/18)
85. ²Pansing, E., D. Tomback, and M. Wunder (2018) Assessing the impact of climate-altered fire regimes on extirpation risk of whitebark pine in the Greater Yellowstone Ecosystem. *Contributed paper* presented at the 103rd stated meeting of The Ecological Society. New Orleans, LA (08/18)
84. ²Yanco, S.W., ²A.L. McDevitt, L.M. Hartley, B.D. Linkhart, and M.B. Wunder (2018) Check yourself: using agent-based models to test the logic of hypotheses. *Contributed paper* presented at the 103rd stated meeting of The Ecological Society. New Orleans, LA (08/18)
83. ²Pansing E., D. Tomback, and M. Wunder (2018) Assessing the impacts of climate-altered fire regimes on projected extinction risk of whitebark pine in the Greater Yellowstone Ecosystem. *Contributed poster* presented at the 61st Annual Symposium for International Association for Vegetation Science. Bozeman, MT (07/18)
82. ²Parker, R., A. Dwyer, D. Tomback, L. Hartley, C. Painter, and M.B. Wunder (2018) Trophic Ecology Warrants Multi-Species Management in a Grassland Setting: Modeling Swift Fox–Burrowing Owl–Mountain Plover Interactions on Black-tailed Prairie Dog Colonies. *Contributed poster* presented at Research and Creative Activities Symposium. Denver, CO (04/18)
81. ²Carver, A., D.J. Augustine, S.K. Skagen, and M.B. Wunder. (2018) Context-dependent influences of vegetation structure on nest survival in the shortgrass steppe. *Invited paper* presented at the 136th stated meeting of the American Ornithological Society. Tucson, AZ (04/18)
80. ²Michels, T., A. Dwyer, K. Philbrook, and M.B. Wunder (2018). Spatiotemporal patterns of habitat use during incubation by a uniparental shorebird in a heterogeneous landscape. *Contributed poster* presented at the 136th stated meeting of the American Ornithological Society. Tucson, AZ (04/18)
79. ²Pierce A.K., S.J. Dinsmore, C.J. Duchardt, A.D. Dwyer, D. Jorgensen, P.P Marra, and M.B. Wunder (2018) Tracking Mountain Plover migration: conservation implications of non-breeding habitat. *Invited symposium contribution* presented at the 136th state meeting of the American Ornithological Society. Tucson, AZ (04/18)
78. ²Yanco, S.W., B.D. Linkhart, and M.B. Wunder (2018) Home-range scale habitat selection patterns do not necessarily imply home-range scale decisions. *Contributed paper* presented at the 136th stated meeting of the American Ornithological Society. Tucson, AZ (04/18)
77. ²Yanco, S.W., ²A. McDevitt, L. Hartley, and M.B. Wunder (2018) Non-inferential approaches to agent-based modeling. *Contributed paper* presented at the 24th annual Front Range Student Ecology Symposium, Fort Collins, CO (02/18)
76. ²Lagassé, B., L. Wright, L. McKinnon, E. Nol, R. Lanctot, and M. Wunder (2017) Subspecific migration ecology and regional conservation priorities for the Dunlin (*C. a. hudsonia*). *Invited paper* presented at Alaska Shorebird Group Meeting. Anchorage, AK (12/17)
75. ³Ma, C., G.J. Bowen, H.B. Vander Zanden, and M.B. Wunder (2017) Uncertainty estimation using bootstrapped kriging predictions for precipitation isoscapes.

- Contributed poster* presented at the annual meeting of the American Geophysical Union. New Orleans, LA (12/17)
74. ²Lagassé, B., L. Wright, L. McKinnon, E. Nol, R. Lanctot, and M. Wunder (2017) Subspecific migration ecology and regional conservation priorities for the Dunlin (*C. a. hudsonia*). *Contributed paper* presented at the 7th Western Hemisphere Shorebird Group Meeting. Paracas, Peru. (11/17)
 73. ²Carver, A., D.J. Augustine, S.K. Skagen, and M.B. Wunder. (2017) Nest microhabitat and survival in ground-nesting shortgrass prairie songbirds. *Contributed paper* presented at biennial America's Grasslands Conference, hosted by National Wildlife Federation. Fort Worth, TX (11/17)
 72. ²Parker, R., A. Dwyer, D. Tomback, L. Hartley, C. Painter, and M.B. Wunder (2017) Influences on occupancy probability of three prairie dog associated species in eastern Wyoming. *Contributed poster* presented at the 24th stated meeting of The Wildlife Society. Albuquerque, NM (09/17)
 71. ²Carver, A., D.J. Augustine, S.K. Skagen, and M.B. Wunder. (2017) Adaptive breeding strategies in a structurally simple but spatiotemporally variable ecosystem. *Contributed paper* presented at the 101st stated meeting of The Ecological Society of America. Portland, OR (08/17)
 70. ²Schutt, D., A. Vajda, and M. Wunder (2017) Mercury exposure in penguins: A review. *Contributed paper* presented at 12th quadrennial Biology Symposium for the Scientific Committee on Antarctic Research. Leuven, Belgium (07/17)
 69. ²Carver, A., D.J. Augustine, S.K. Skagen, and M.B. Wunder. (2017) Role of nest-site vegetation in reproductive success of grassland birds. *Contributed paper* presented at Research and Creative Activities Symposium. Denver, CO (04/17)
 68. ²Lagassé, B., R. Lanctot, and M. Wunder (2017) Subspecific migration ecology and regional conservation priorities for the Dunlin (*Calidris alpina*) revealed by light-level geolocators. *Contributed poster* presented at Research and Creative Activities Symposium. Denver, CO (04/17)
 67. ²Michels, T., K. Philbrook, A. Dwyer, and M.B. Wunder (2017) Spatial Patterns of habitat use by incubating mountain plovers in a mixed habitat and ownership landscape. *Contributed poster* presented at Research and Creative Activities Symposium. Denver, CO (04/17)
 66. ²Schutt, D., A. Vajda, and M. Wunder (2017) A comparison of mercury exposures in Gentoo penguins (*Pygoscelis papua*) across a wide spatial gradient. *Contributed poster* presented at Research and Creative Activities Symposium. Denver, CO (04/17)
 65. ²Lagassé, B. J., R. Lanctot, C-Y Chiang, S. Yoshimitsu, and M. Wunder. 2017. Nonbreeding site fidelity and migratory connectivity of Dunlin on the East Asian-Australasian flyway revealed by band resightings (2017) *Contributed paper* presented at Front Range Student Ecology Symposium, Fort Collins, CO (02/17)
 64. ²Parker, R., ²T. Michels, ²A. Pierce, ²C. Duchardt, A. Dwyer, and M.B. Wunder (2017) Predator-prey interactions? Plovers, owls, and foxes on Thunder Basin and Pawnee National Grasslands. *Contributed paper* presented at Front Range Student Ecology Symposium. Fort Collins, CO (02/17)

63. ²Schutt, D., A. Vajda, and M. Wunder (2017) A comparison of mercury concentrations in Gentoo penguins (*Pygoscelis papua*) across a wide latitudinal range. *Contributed poster* presented at the annual meeting of the Colorado Chapter of The Wildlife Society. Fort Collins, CO (02/17)
62. ²Michels, T., K. Philbrook, A. Dwyer, and M.B. Wunder (2017) Spatial Patterns of habitat use by incubating mountain plovers in a mixed habitat and ownership landscape. *Contributed poster* presented at the annual meeting of the Colorado Chapter of The Wildlife Society. Fort Collins, CO (02/17)
61. ²Lagassé, B., R.B. Lanctot, C-Y. Chiang, Y. Shigeta, and M. Wunder. 2017. Non-breeding site fidelity and migratory connectivity of *arctica* Dunlin revealed by band resightings. *Contributed poster* presented at the 9th Meeting of the Partners of the East Asian-Australasian Flyway. Singapore (01/17)
60. ²Lagasse, B., R. Lanctot, C. Chiang, Y. Shigeta, and M.B. Wunder (2016) Non-breeding site fidelity and migratory connectivity of arctica dunlin revealed by band resightings. *Contributed poster* presented at Alaska Bird Conference. Cordova, AK (12/16)
59. ²Parker, R., ²T. Michels, ²A. Pierce, C. Duchardt, A. Dwyer, and M.B. Wunder (2016) Trophic interactions between mountain plover, burrowing owl, and swift fox on prairie dog colonies on Thunder Basin and Pawnee National grasslands. *Contributed paper* presented at the annual meeting of the Wyoming chapter of The Wildlife Society. Cody, Wyoming. (11/16)
58. ²Pansing, E., D. Tomback, M. Wunder, and ²A. Wagner (2016) Use of direct seeding to restore subalpine and treeline whitebark pine in the greater Yellowstone ecosystem: planting site influences germination and survival. *Contributed paper* presented at the 13th biennial scientific conference on the greater Yellowstone ecosystem: building on the past, leading into the future: sustaining the greater Yellowstone ecosystem in the coming century. Grand Teton National Park, Wyoming. (10/16)
57. Bowen, G., A. Putman, E. Oerter, H. Vander Zanden, J. Woo, M. Wunder and L. Zhao (2016) Exploring physical and biological connections using IsoMAP. *Contributed paper* presented at the annual meeting of the Geological Society of North America. Denver, CO (09/16)
56. Wunder, M., ²A. Pierce, ²C. Woolley, and A. Dwyer (2016) Integration by parts: toward the estimation of spatially explicit population processes in Mountain Plovers. *Invited symposium contribution* presented at the 6th North American Ornithological Council. Washington, D.C. (08/16)
55. ²Pierce, A., ²C. Woolley, ²R. Parker, ²T. Michels, A. Dwyer, and M. Wunder (2016) How land ownership, land use, and the potential for a trophic cascade impact conservation models for Mountain Plover. *Invited symposium contribution* presented at the 6th North American Ornithological Council. Washington, D.C. (08/16)
54. ²Pansing, E., D. Tomback, M. Wunder, J. French, and ²A. Wagner (2016) Efficacy of Clark's nutcracker dispersal varies with community type and geographic region. *Contributed paper* presented at the 6th North American Ornithological Council. Washington, D.C. (08/16)

53. ²Carver, A., J. Ross, D. Augustine, S. Skagen, D. Tomback, and M. Wunder (2016) Weather radar data correlate to hail-induced mortality in grassland birds. *Contributed paper* presented at the 6th North American Ornithological Council. Washington, D.C. (08/16)
52. ²Carver, A., D.J. Augustine, S.K. Skagen, and M.B. Wunder. (2016) The importance of content and pattern to birds that breed in grassland ecosystems. *Contributed paper* presented at Creative Activities Symposium. Denver, CO (04/16)
51. ³Vander Zanden, H., M. Wunder, and G. Bowen (2016) Accounting for ecophysiology in predicting animal $\delta^2\text{H}$ and $\delta^{18}\text{O}$ values. *Contributed paper* presented at the 10th International Conference on Applications of Stable Isotope Techniques to Ecological Studies, Toyko, Japan (04/16)
50. ²Carver, A., A. Dwyer, D.J. Augustine, S.K. Skagen, D. Tomback, and M.B. Wunder. (2015) Relative importance of vegetation and weather to nest survival of shortgrass steppe Passerines. *Contributed poster* presented at biennial America's Grasslands Conference, hosted by National Wildlife Federation. Fort Collins, CO (09/15)
49. Wunder, M.B. (2015) Continental-scale seasonal movements of a heterothermic migratory tree bat. *Invited paper* presented at Front Range Isotope Day, Lakewood, CO (08/15)
48. Wunder, M.B., ²A.K. Pierce, C.A. Stricker, and F.L. Knopf (2015) Geographic structure of population dynamics in mountain plover. *Invited paper* presented at the joint meeting of the American Ornithologists' Union (133rd Stated Meeting) and the Cooper Ornithological Society (85th Stated Meeting), Norman, OK (07/15)
47. ³Hayes, M., P.M. Cryan, and M.B. Wunder (2014) Modeling and mapping the seasonal whereabouts of a cryptic migratory bat species impacted by wind energy development. *Contributed paper* presented at the annual meeting of the North American Society for Bat Research, Albany, NY (10/14)
46. ²Doll, A. C., M.B. Wunder, R.B. Lanctot, and C.A. Stricker (2014) Arctic climate events reveal tradeoff between timing of migratory and nesting behavior. *Contributed paper* presented at the joint meeting of the American Ornithologists' Union (132nd Stated Meeting), the Cooper Ornithological Society (84th Stated Meeting), and the Society of Canadian Ornithologists, Estes Park, CO (09/14)
45. ³Vander Zanden, H.B., M.B. Wunder, K.A. Hobson, S.L. VanWilgenburg, L.I. Wassenaar, J.M. Welker, and G.J. Bowen (2014) Do year-specific precipitation isoscapes improve predictions of migratory origin? *Contributed paper* presented at the joint meeting of the American Ornithologists' Union (132nd Stated Meeting), the Cooper Ornithological Society (84th Stated Meeting), and the Society of Canadian Ornithologists, Estes Park, CO (09/14)
44. Tomback, D.F., ²J.D. Scott, M.B. Wunder, and S.T. McKinney (2014) Whitebark pine cone production and the probability of stand visitation by Clark's nutcracker: assessments from Glacier and Waterton National Parks. *Contributed paper* presented at the joint meeting of the American Ornithologists' Union (132nd Stated Meeting), the Cooper Ornithological Society (84th Stated Meeting), and the Society of Canadian Ornithologists, Estes Park, CO (09/14)
43. ²Pansing, E.R., D.F. Tomback, M.B. Wunder, ²A.C. Wagner, and J.P. French (2014) Germination and seedling survival of common Clark's nutcracker cache locations

- and consequences of cache pilferage. *Contributed paper* presented at the joint meeting of the American Ornithologists' Union (132nd Stated Meeting), the Cooper Ornithological Society (84th Stated Meeting), and the Society of Canadian Ornithologists, Estes Park, CO (09/14)
42. ²Pierce, A. K., S.J. Dinsmore, D. Jorgenson, and M.B. Wunder (2014) Mountain plovers migrate short distances and use stopover sites. *Contributed poster* presented at the joint meeting of the American Ornithologists' Union (132nd Stated Meeting), the Cooper Ornithological Society (84th Stated Meeting), and the Society of Canadian Ornithologists, Estes Park, CO (09/14)
41. Fike, J.A., D.F. Tomback, M.B. Wunder, A.M. Siepielski, T.D. Schaming, and S.J. Oyler-McCance (2014) Examining genetic structure across the range of Clark's nutcracker. *Contributed poster* presented at the joint meeting of the American Ornithologists' Union (132nd Stated Meeting), the Cooper Ornithological Society (84th Stated Meeting), and the Society of Canadian Ornithologists, Estes Park, CO (09/14)
40. ²Woolley, C.A., R.Y. Conrey, A.M. Dwyer, J. Jorgenson, K. Stoner, and M.B. Wunder (2014) Habitat use by mountain plovers during nest incubation. *Contributed poster* presented at the joint meeting of the American Ornithologists' Union (132nd Stated Meeting), the Cooper Ornithological Society (84th Stated Meeting), and the Society of Canadian Ornithologists, Estes Park, CO (09/14)
39. ³Vander Zanden H.B., M.B. Wunder, K.A. Hobson, S.L. Van Wilgenberg, L.I. Wassenaar, J.M. Welker, and G.J. Bowen (2014) Which water matters: how spatio-temporal characteristics of precipitation isoscapes affect geographic assignments to origin for migratory species. *Contributed paper* presented at the 9th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Perth, Australia (08/14)
38. ³Vander Zanden, H.B., A.D. Tucker, K.M. Hart, M.M. Lamont, I. Fujisaki, D.S. Addison, K.L. Mansfield, K. Phillips, M.B. Wunder, G.J. Bowen, M. Pajuelo, A.B. Bolten, and K.A. Bjorndal (2014) Determining foraging area origin with stable isotope analysis and satellite tracking for loggerheads nesting in the Gulf of Mexico. *Contributed paper* presented at the International Symposium on Sea Turtle Biology and Conservation, New Orleans, LA (04/14)
37. ²Collier, K.E., P. Anthematten, R. Moreno, and M.B. Wunder (2014) Analysis of spawning habitat site selection among chinook salmon. *Contributed poster* presented at the annual meeting of the Association of American Geographers. Tampa Bay, FL (04/14)
36. ³VanderZanden, H.B., K.A. Hobson, L.I. Wassenaar, M.B. Wunder, J.M. Welker, and G.J. Bowen (2013) Incorporating climate variability into precipitation isoscapes for interpreting animal migration. *Contributed poster* presented at the 46th annual fall meeting of the American Geophysical Union. San Francisco, CA (12/13)
35. Cryan, P., E. Valdez, C.A. Stricker, M.B. Wunder, R. Barclay, E. Baerwald, C. Willis, J. Jameson, E.A. Snider, and E. Crichton (2012) Carcass ecology: forensic techniques shed light on the possible causes of bat susceptibility to turbines. *Contributed paper* presented at the 19th annual meeting of the Wildlife Society, Portland, OR (10/12)
34. ²Doll, A.C., M.B. Wunder, R.B. Lanctot, and C.A. Stricker (2012) Estimating temporal movements of a migratory species using stable carbon isotopes. *Contributed paper*

- presented at the 8th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Brest, France (08/12)
33. Stricker, C.A., A.M. Christ, L.D. Rea, D.A.S. Rosen, D.J. Tollit, S.D. Farley, M.B. Wunder, and ³R.D. Scherer (2012) Carbon and nitrogen isotope discrimination factors for Stellar sea lions (*Eumetopias jubatus*) vibrissae relative to milk and fish/squid diets. *Contributed poster* presented at the 8th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Brest, France (08/12)
 32. Christ A.M., L.D. Rea, J.N. Waite, C.A. Stricker, M.B. Wunder, and ³R.D. Scherer (2012) Discrimination factors for $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ profiles of vibrissae from adult Steller sea lion females and their pups in utero and post parturition. *Contributed poster* presented at the 8th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Brest, France (08/12)
 31. ³Scherer, R.D., L.D. Rea, C.A. Stricker, A.M. Christ, and M.B. Wunder (2012) Spatial variation in the diets of female Steller sea lions inferred from ¹³C and ¹⁵N values of vibrissae from pups. *Contributed poster* presented at the 8th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Brest, France (08/12)
 30. Christ, A.M., L.D. Rea, C.A. Stricker, J.N. Waite, M.B. Wunder, and ³R.D. Scherer (2012) Estimating locations for local extrema of stable isotope signatures in Stellar sea lion vibrissae. *Contributed paper* presented at International Statistical Ecology Conference, Oslo, Norway (07/12)
 29. ²Doll, A.C., M.B. Wunder, R. Lanctot, and C.A. Stricker (2012) Determining individual arrival times of migratory birds using stable carbon isotopes. *Contributed poster* presented at Research and Creative Activities Symposium, Denver, Colorado (04/12)
 28. ²Beebe, C.K. and M.B. Wunder (2012) An ecological study of *Perognathus fasciatus*: examining population parameters using mark-recapture and radio telemetry. *Contributed poster* presented at Research and Creative Activities Symposium, Denver, Colorado (04/12)
 27. ²Doll, A.C., M.B. Wunder, R. Lanctot, and C. Stricker (2012) Estimating migration times using stable carbon isotopes. *Contributed paper* presented at 18th annual Front Range Ecology Symposium, Colorado State University, Fort Collins, Colorado (02/12)
 26. ²Beebe, C.K. and M.B. Wunder (2012) Estimating population abundance, density, seasonal survival and home range size of *Perognathus fasciatus*. *Contributed Poster* presented at the 18th annual Front Range Ecology Symposium, Colorado State University, Fort Collins, Colorado (02/12)
 25. ²Bryan, R.D. and M.B. Wunder. (2012) Burrowing owl responses to black-tailed prairie dog alarm calls. *Contributed paper* presented at 18th annual Front Range Ecology Symposium, Colorado State University, Fort Collins, Colorado (02/12)
 24. ²Doll, A.C., M.B. Wunder, R. Lanctot, and C.A. Stricker (2011) Estimating arrival times of arctic-breeding dunlin using stable isotopes. *Contributed paper* presented at the 4th meeting of the Western Hemisphere Shorebird Group, Simon Fraser University, Burnaby, British Columbia (08/11)

23. Wunder, M.B., R. Lanctot, C. Stricker, L. Wassenaar, B. Casler, A. Dey, P. Doherty, S. Drovetski, D. Edwards, R. Gates, B. Hill, O. Lane, J. Liebezeit, D. Poppe, B. Schwartz, P. Tomkovitch, D. Tracy, O.P. Valchuk, and S. Zack (2011) Using stable isotopes in primary feathers to classify dunlin subspecies. *Contributed paper* presented at the 4th meeting of the Western Hemisphere Shorebird Group, Simon Fraser University, Burnaby, British Columbia (08/11)
22. ²Doll, A.C., M.B. Wunder, R. Lanctot, and C.A. Stricker (2011) Using tissue isotope values ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) to characterize a population level diet transition and to estimate arrival times of dunlin. *Contributed poster* presented at Research and Creative Activities Symposium, Denver, Colorado (04/11)
21. ²Bryan, R.D. and M.B. Wunder (2011) Cynomys says: Characteristics of Black-tailed Prairie Dog (*Cynomys ludovicianus*) Alarm Calls in Response to Simulated Predator Stimuli. *Contributed poster* presented at Research and Creative Activities Symposium, Denver, Colorado (04/11) **Chancellor's award for Excellence in Graduate Research*
20. ²Bryan, R.D. and M.B. Wunder (2011) Rumors on the prairie: Do birds eavesdrop on alarm calls of black-tailed prairie dogs? *Contributed poster* presented at the 17th Annual Front Range Student Ecology Symposium, Colorado State University, Fort Collins, Colorado (02/11)
19. Cryan, P.M., C.A. Stricker, and M.B. Wunder (2010) Migratory structure and geographic origins of hoary bats (*Lasiurus cinereus*) inferred from stable isotope analysis. *Contributed paper* presented at the 15th International Bat Research Conference, Prague, Czech Republic (08/10)
18. Wunder, M.B. (2010) Overview of studying migration using stable isotope values in keratin. *Invited paper* presented as part symposium at the 90th Annual Meeting of the American Mammalogists Society. University of Wyoming, Laramie, WY (06/10)
17. Cryan, P.M., C.A. Stricker, and M.B. Wunder (2010) Migratory structure and geographic origins of hoary bats (*Lasiurus cinereus*) inferred from stable isotope analysis. *Contributed paper* presented at the 90th Annual Meeting of the American Society of Mammalogists, Laramie, Wyoming (06/10)
16. ²Barringer, L., D.F. Tomback, and M.B. Wunder (2010) The relationship between whitebark pine health, cone production, and nutcracker occurrence across four national parks. *Invited paper* presented at High-Five symposium: The future of high-elevation five-needle white pines in western North America. Whitebark Pine Ecosystem Foundation, University of Montana, Missoula (06/10)
15. ²Scott, J., D.F. Tomback, M.B. Wunder, and M. Maier (2010) Determining Clark's nutcracker use of whitebark pine communities in the Waterton-Glacier Peace Park. *Invited paper* presented at High-Five symposium: The future of high-elevation five-needle white pines in western North America. Whitebark Pine Ecosystem Foundation, University of Montana, Missoula (06/10)
14. Cryan, P.M., C.A. Stricker, and M.B. Wunder (2009) Stable isotope inferred geographic constraints on origins of hoary bats (*Lasiurus cinereus*) killed at wind turbine facilities. *Contributed paper* presented at the 39th Annual Meeting of the North American Society for Bat Research, Portland, Oregon (11/09)

13. Wunder, M.B., Jehl, J.R., Parnell, A., Jackson, A., Inger, R., and S. Bearhop (2008) Estimating proportional mixtures of hydrogen and oxygen sources in a highly restricted avian system. *Contributed paper* presented at the 6th International Conference on Applications of Stable Isotope Techniques to Ecological Studies, Honolulu, HI (08/08)
12. Wunder, M.B. (2008) Using isoscapes to model probabilities of origin. *Invited paper* presented at Isoscapes2008, an NSF-sponsored (BASIN RCN) symposium, Santa Barbara, CA (03/08)
11. Wunder, M.B. and F.L. Knopf (2007) Geographic structure and dynamics in mountain plover. *Contributed paper* presented at 125th meeting of the American Ornithologists' Union. Laramie, WY (08/07)
10. Wunder, M.B. and J.R. Jehl, Jr. (2007) Stable isotopes in feathers grown under extreme natural constraints. *Contributed paper* presented at 125th meeting of the American Ornithologists' Union. Laramie, WY (08/07)
9. Wunder, M.B. (2007) Generalized spatial resolution limits for inferring geographic limits from stable hydrogen isotopes. *Contributed paper* presented at 125th meeting of the American Ornithologists' Union. Laramie, WY (08/07)
8. Wunder, M.B. (2007) Distance sampling to estimate abundance of mountain plovers. *Invited paper* given as part of symposium titled Bird Monitoring and Detectability: Understanding and Applying Appropriate Methods. Fort Collins, CO (02/07)
7. Wunder, M.B., C.L. Kester, C.T. Webb (2006) Error propagation and resolution limits for inferring geographic origins from stable hydrogen isotopes. *Contributed paper* presented at the 5th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Belfast, Northern Ireland (08/06)
6. Wunder, M.B., J.R. Jehl, Jr. (2006) Natural variation in isotope composition veils simplistic migratory system. *Contributed poster* at the 5th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Belfast, Northern Ireland (08/06)
5. Wunder, M.B., F.L. Knopf, C.L. Kester, R.O. Rye (2004) Avian migration: Pitfalls and promises of stable isotope tracers. *Contributed poster* at the 4th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Wellington, New Zealand (04/04) **Best Student Poster*
4. Wunder, M.B. (2004) Analytical options for stable isotope studies of migration patterns. *Invited paper* presented at symposium for Southwestern U.S. and Northern Mexico Landbird Migration, Tucson, AZ (01/04)
3. Wunder, M.B. and F.L. Knopf (2003) Mountain Plover population mixing during winter in the Imperial Valley of California. *Contributed paper* presented at 73rd Annual Meeting of the Cooper Ornithological Society. Flagstaff, AZ (05/03)
2. Wunder, M.B. and F.L. Knopf (2002) A population of montane Mountain Plovers. *Invited paper* presented at annual meeting of the Colorado chapter of The Wildlife Society. Colorado Springs, CO (01/02)
1. Wunder, M.B. and F.L. Knopf (2001) A population of Mountain Plovers breeding at high elevation in Colorado. *Contributed paper* presented at 71st Annual Meeting of the Cooper Ornithological Society. Albuquerque, NM (04/01)

Courses Taught (enrollment)

Spring 2023 BIOL 6764 Biological Data Analysis, Instructor, UCD (17)
 Summer 2022 Isotopes in Spatial Ecology and Biogeochemistry, Lecturer, U. Utah (20)
 Spring 2022 BIOL 6764 Biological Data Analysis, Instructor, UCD (16)
 BIOL 7050 Hierarchical Data Structures, Instructor, UCD (6)
 Summer 2021 Isotopes in Spatial Ecology and Biogeochemistry, Lecturer, U. Utah (19)
 Spring 2021 BIOL 6764 Biological Data Analysis, Instructor, UCD (15)
 BIOL 7050 Bayesian Models, Instructor, UCD (6)
 Fall 2020 BIOL 3763 Biostatistics, Instructor, UCD (60)
 BIOL 6705 Biological Research Workshop, Instructor, UCD (8)
 Spring 2020 BIOL 6764 Biological Data Analysis, Instructor, UCD (12)
 Fall 2019 BIOL 3763 Biostatistics, Instructor, UCD (59)
 Summer 2019 Isotopes in Spatial Ecology and Biogeochemistry, Lecturer, U. Utah (21)
 Spring 2019 BIOL 6764 Biological Data Analysis, Instructor, UCD (14)
 BIOL 6705 Biological Research Workshop, Instructor, UCD (7)
 Fall 2018 BIOL 3763 Biostatistics, Instructor, UCD (57)
 Summer 2018 Isotopes in Spatial Ecology and Biogeochemistry, Lecturer, U. Utah (21)
 Spring 2018 BIOL 6764 Biological Data Analysis, Instructor, UCD (16)
 BIOL 7050 Hierarchical Bayesian Models (13)
 Fall 2017 BIOL 3763 Biostatistics, Instructor, UCD (67)
 Summer 2017 Isotopes in Spatial Ecology and Biogeochemistry, Lecturer, U. Utah (16)
 Spring 2017 BIOL 6764 Biological Data Analysis, Instructor, UCD (13)
 BIOL 7050 Occupancy Modeling, Instructor, UCD (9)
 Fall 2016 BIOL 3763 Biostatistics, Instructor, UCD (63)
 Summer 2016 Isotopes in Spatial Ecology and Biogeochemistry, Lecturer, U. Utah (23)
 Spring 2016 BIOL 6764 Biological Data Analysis, Instructor, UCD (17)
 Fall 2015 BIOL 3763 Biostatistics, Instructor, UCD (63)
 Spring 2015 BIOL 5705 Principles of Biological Research, Instructor, UCD (12)
 BIOL 6764 Biological Data Analysis, Instructor, UCD (14)
 Fall 2014 BIOL 3763 Biostatistics, Instructor, UCD (43)
 Summer 2014 Isotopes in Spatial Ecology and Biogeochemistry, Lecturer, U. Utah (24)
 Spring 2014 BIOL 3763 Biostatistics, Instructor, UCD (41)
 BIOL 6764 Biological Data Analysis, Instructor, UCD (10)
 Fall 2013 BIOL 3763 Biostatistics, Instructor, UCD (42)
 Summer 2013 Isotopes in Spatial Ecology and Biogeochemistry, Lecturer, U. Utah (26)
 Spring 2013 BIOL 6764 Biological Data Analysis, Instructor, UCD (9)
 Fall 2012 BIOL 3763 Biostatistics, Instructor, UCD(27)
 Spring 2012 BIOL 5705 Principles of Biological Research, Instructor, UCD (14)
 Fall 2011 BIOL 4425/5425 Biogeography, Instructor, UCD (14)
 BIOL 4764/5764 Biostatistics, Instructor, UCD (25)
 Spring 2011 BIOL 4764/5764 Biostatistics, Instructor, UCD (26)
 Fall 2010 BIOL 4425/5425 Biogeography, Instructor, UCD (17)
 BIOL 4764/5764 Biostatistics, Instructor, UCD (29)
 Spring 2010 BIOL 4990/6655 Seminar in Biology, Instructor, UCD(21)
 Fall 2009 BIOL 4425/5425 Biogeography, Instructor, UCD (19)
 BIOL 4764/5764 Biostatistics, Instructor, UCD (21)
 Spring 2009 BIOL 4990/6655 Seminar in Biology, Instructor, UCD(29)
 Fall 2008 BIOL 4050/5050 Biostatistics, Instructor, UCD (14)
 Spring 2006 FW 370 Design of Fishery and Wildlife Projects, Co-Instructor, CSU (24)

Fall 2005 FW 471 Wildlife Data Collection and Analysis, Co-Instructor, CSU (33)

Post-Doctoral Researchers Advised

Andrea Contina (2019 – 2021; Postdoctoral Fellow, University of Texas, Austin)

**Jointly with Dr. Gabe Bowen (U Utah)*

Sarah Magozzi (2017 – 2020; Postdoctoral Researcher, Fano Marine Center)

**Jointly with Dr. Gabe Bowen (U Utah)*

Chao Ma (2017 – 2019; Assistant Professor, Chengdu Univ. of Technology)

**Jointly with Dr. Gabe Bowen (U Utah)*

Hannah Vander Zanden (2013 – 2016, Assistant Professor, University of Florida)

**Jointly with Drs. Gabe Bowen (U Utah) and Keith Hobson (UWO)*

Mark Hayes (2012 – 2013; Senior Bat Ecologist, Normandeau Associates)

**Jointly with Dr. Paul Cryan (USGS)*

Richard Scherer (2011 –2012; Senior Scientist, Conservation Science Partners)

Graduate Students Advised

Alyssa Davidge (M.S., current)

Michelle Depregner-Levin (Ph.D., current)

Allison Pierce (Ph.D., current)

Casey Weissburg (Ph.D., current)

Zoe Erkenbeck (M.S., 2022)

** 2022 CLAS Outstanding M.S. Student*

Scott Yanco (Ph.D., 2021; Postdoctoral Fellow, Max Planck-Yale Center for Biodiversity Movement and Global Change)

Elizabeth Pansing (Ph.D., 2019; Senior Manager of Western Forest Science, American Forests)

** 2019 CLAS Outstanding Ph.D. Student*

Tyler Michels (M.S., 2019)

Ben Lagassé (M.S., 2019, Ph.D. student, University of Alaska Fairbanks)

David Schutt (M.S., 2019, Ph.D. student, Colorado State University)

Ryan Parker (M.S., 2019, Grasslands Coordinating Wildlife Biologist, Quail Forever)

Allison Pierce (M.S., 2017, Ph.D. candidate, University of Colorado Denver)

** 2017 CLAS Outstanding M.S. Student*

Colin Woolley (M.S., 2016, Banding Manager, Bird Conservancy of the Rockies)

Amber Carver (M.S., 2015)

Chelsea Beebe (M.S., 2014, Natural Resources Senior Specialist, Jefferson Co Open Space)

Andrew Doll (M.S., 2013, Assistant Collections Manager, Denver Museum Nature & Science)

** 2013 CLAS Outstanding M.S. Student*

Rebecca Bryan (M.S., 2012; Instructor, Metro State University)

Graduate Committee Service

Selina Vong (Ph.D., current)

Logan Derderian (M.S. Environmental Sciences, 2023)

Casey Weissburg (M.S. Colorado State University Pueblo, 2023)

Katherine Hayes (Ph.D., 2022)

Andres Andrade (Ph.D., 2022)

Tommy McLaren (M.S., Integrated Sciences, 2022)

Adam Duster (Ph.D., 2021)

Alex Romero (M.S., 2021)

Amanda Miller (M.S., 2021)
Kyle Turchick (M.S. 2021)
Julio Merayo (M.S. Universidad Autónoma de Nuevo León, 2020)
Fábio Costa (Ph.D. Universidade de Brasília, 2019)
Kyle Kenyon (M.S. Bioengineering, 2018)
Jared Mastin (M.S., 2017)
Tyler Williams (M.S., 2017)
Kevin Hoover (M.S., 2016)
Joshua Sackett (M.S., 2015)
Mark Visel (M.S., 2015)
Elizabeth Pansing (M.S., 2014)
Kara Collier (M.S. Environmental Sciences, 2014)
Jill Pyatt (M.S., 2013)
Jennifer Scott (M.S., 2013)
Sarah Blakeslee (M.S., 2012)
**2012 CLAS Outstanding M.S. Student*
Lauren Barringer (M.S., 2010)

Undergraduates Mentored

Joshua Morrison (2014)
Allison Pierce (2013)
Katharine Ozenberger (2013)
Mallory O'Malley (2013)
Christopher Henderson (2013)
Bincy Varghese (2013)
Logan Thompson (2012)
Artur Ergashev (2009 – 2010)
Matt Ericksen (2009)

Visiting Scholar Residencies Hosted

Vojtěch Brlík (2019-2020; PhD candidate, Czech Academy of Sciences)
Chantel Michelson (2018; Ph.D. candidate, Louisiana State University)
Lyndsay Rankin (2018; Ph.D. candidate, Northern Illinois Univ)
Sarah Magozzi (2015; Ph.D. candidate, University of Southampton)
Simona Ceriani (2014; Ph.D. candidate, University of Central Florida)

Service to the Profession

Associate Editor, *Frontiers in Bird Science* (2022 – present)
Associate Editor, *Avian conservation and Ecology* (2018 – present)
Associate Editor, *Journal of Animal Ecology* (2009-2016)

Referee (2001-present): *Aquatic Biology, Auk, Avian Conservation and Ecology, Journal of Avian Biology, Biology Letters, Canadian Journal of Zoology, Condor, Current Biology, Ecology, Ecological Applications, Ecological Monographs, Ecosphere, Elsevier Publishing, Freeman Publishing, Journal of Field Ornithology, German Research Foundation (DFG), Journal of Herpetology, Ibis, Journal of Mammalogy, Marine Biology, Methods in Ecology and Evolution, National Science Centre (Poland), National Science Foundation, Oecologia, Ornithological*

Monographs, PeerJ, Proceedings of the National Academy of Sciences, Rapid Communications in Mass Spectrometry, Roberts and Company Publishing, Scientific Reports, Studies in Avian Biology, Trends in Ecology and Evolution, University of Colorado Press, Waterbirds, Wilson Journal of Ornithology

Organizing Committee – Joint North American and European Workshop on Bird Migration, Max Planck Institute for Ornithology, Radolfzell, Germany (2010)

Co-Chair – Scientific Program Committee, Joint Conference of the American Ornithologists' Union, Cooper Ornithological Society, and the Society for Canadian Ornithologists, Estes Park, CO (2014)

Session Chair, American Ornithologists' Union Conference, Laramie, WY (2007)

Award Selection Committee – Painton Award, Cooper Ornithological Society (2007)

Science and Conservation Committee – Colorado Audubon Society (1999-2010)

Chair – Colorado Committee of The Western Bat Working Group (1999-2000)

Executive Board – Colorado chapter of The Wildlife Society (1998-1999)

Service to the University

Integrative Biology Director of Graduate Studies (2022-present)

Integrative Biology Outcomes Assessment Committee, co-chair (2018-present)

Integrative Biology Graduate Advisory Committee, chair (2014-16; 2022-present), member (2012-present)

Integrative Biology Director of Graduate Studies (2015-16)

Integrative Biology Faculty Search Committee, member (2011, 2018, 2019, 2022)

Integrative Biology Curriculum Committee, co-chair (2014-16), member (2010-11)

Integrative Biology Advisor for Academic Probation Students (2011-14)

Integrative Biology PhD Program Steering Committee, member (2012)

Integrative Biology Merit Review Committee, member (2009-12)

Integrative Biology Teaching Effectiveness Committee, member (2011)

CLAS Budget Priorities Committee (2021-23)

CLAS Excellence in Research Award Committee (2014, 2019, 2020)

CLAS Academic Standards Committee (2019)

CLAS Committee of Graduate Program Directors and Advisors (2015-16)

CLAS CRISP Grant Review Committee (2011)

CLAS Scholarship Committee (2009-11)

UCD Graduate Council (2014-16)

UCD Excellence in Research Award Committee (2014, 2019)