

Kevin D. Kohl

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www.kohl-lab.com

RESEARCH INTERESTS

Digestive physiology, nutritional ecology, and symbiotic relationships between hosts and gut microbes in terrestrial vertebrates

EDUCATION, TRAINING, AND EMPLOYMENT

Associate Professor – Sept. 2023 - Present

University of Pittsburgh, Department of Biological Sciences

Assistant Professor – Sept. 2017 – Aug. 2023

University of Pittsburgh, Department of Biological Sciences

Postdoctoral Researcher – Jun. 2014 – Aug. 2017

Vanderbilt University

Universidad Nacional de San Luis

Co-advisor: Dr. Seth Bordenstein

Co-advisor: Dr. Enrique Caviedes-Vidal

Doctor of Philosophy, Biology – May 2014

University of Utah

Advisor: Dr. Denise Dearing

Bachelor of Science, Biology and Wildlife Ecology – May 2009

University of Wisconsin – Madison

Graduated with Honors in Research

AWARDS & HONORS

Young Scientist Award (2021)

Awarded by International Society of Zoological Sciences (ISZS)

G. Richard Riser Award for Outstanding Graduate Research (2014)

University of Utah - Department of Biology

Best Student Oral Presentation (2011)

Division of Comparative Physiology and Biochemistry

Society for Integrative and Comparative Biology Meeting, Salt Lake City, UT

PUBLICATIONS

Google Scholar Page: www.tinyurl.com/KohlGoogleScholar

Underlined names are Kohl Lab trainees, with superscripts denoting career stages

† Undergraduate researchers

‡ Graduate Students

§ Visiting Scholars and Technicians

¶ Postdoctoral Researchers

91. Barts, N.[¶], Bhatt, R.H., Toner, C., Meyer, W.K., Durrant, J., **Kohl, K.D.** (2024) Functional convergence in gastric lysozymes of foregut-fermenting rodents, ruminants, and primates is not attributed to convergent molecular evolution. *Comparative Biochemistry and Physiology, Part B*. Online Ahead of Print: 110949.
90. Rudzki, E.N.[‡], Antonson, N.D., Jones, T.M., Schelsky, W.M., Trevelline, B.K.[¶], Hauber, M.E. **Kohl, K.D.** (2024). Host avian species and environmental conditions influence the microbial ecology of brood parasitic Brown-headed Cowbird nestlings: What rules the roost?. *Molecular Ecology*. Online Ahead of Print: e17289
89. Maurer, M.[†], Goyco-Blas, J.[§], **Kohl, K.D.** (2023) Dietary tannins alter growth, development, behavior, and the gut microbiome of larval amphibians. *Integrative Zoology*. Online Early View.

88. Emerson, K.J., Fontaine, S.S.[‡], **Kohl, K.D.**, Woodley, S.K. (2023) Temperature and the microbial environment alter brain morphology in a larval amphibian. *Journal of Experimental Biology*. 226: jeb245333.
87. Fontaine, S.S.[‡], **Kohl, K.D.** (2023) Ectotherm heat tolerance and the microbiome: current understanding, future directions and potential applications. *Journal of Experimental Biology*. 226: jeb245761.
86. Rudzki, E.N.[‡], **Kohl, K.D.** (2023) Deficits in accessibility across field research stations for scientists with disabilities and/or chronic illness, and proposed solutions. *Integrative and Comparative Biology*. 63: 114–127.
85. Fontaine, S.S.[‡], **Kohl, K.D.** (2023) The microbiome buffers tadpole hosts from heat stress: a hologenomic approach to understand host-microbe interactions under warming. *Journal of Experimental Biology*. 226: jeb245191.
84. Rudzki, E.N.[‡], Kuebbing, S.E., Clark, D.R., Gharaibeh, B., Janecka, M.J., Kramp, R., **Kohl, K.D.**, Mastalski, T., Ohmer, M.E.B., Turcotte, M.M., Richards-Zawacki, C.L. (2022) A guide for developing a field research safety manual that explicitly considers risks for marginalized identities in the sciences. *Methods in Ecology and Evolution*. 13: 2318-2330.
83. Kramp, R.D., **Kohl, K.D.**, Stephenson, J.F. (2022) Skin bacterial microbiome diversity predicts lower activity levels in female, but not male, guppies, *Poecilia reticulata*. *Biology Letters*. 18: 20220167.
82. Yawitz, T.A.[†], Barts, N.[¶], **Kohl, K.D.** (2022) Comparative digestive morphology and physiology of five species of *Peromyscus* under controlled environment and diet. *Comparative Biochemistry and Physiology A: Molecular & Integrative Physiology*. 271: 111265.
81. **Kohl, K.D.**, Dieppa-Colón, E.[‡], Goyco-Blas, J.[§], Peralta-Martínez, K.[‡], Scafidi, L.[†], Shah, S.[†], Zawacki, E.[†], Barts, N.[¶], Ahn, Y., Hedayati, S., Secor, S.M., Rowe, M.P. (2022) Gut microbial ecology of five species of sympatric desert rodents in relation to herbivorous and insectivorous feeding strategies. *Integrative and Comparative Biology*. 62: 237-251.
80. Trevelline, B.K.[¶], **Kohl, K.D.** (2022) The gut microbiome influences diet selection behavior. *Proceedings of the National Academy of Sciences*. 119: e2117537119.
 ○ Profiled by *Medical News Today* – www.tinyurl.com/DietSelect
79. Fontaine, S.S.[‡], Mineo, P.M., **Kohl, K.D.** (2022) Experimental manipulation of microbiota reduces host thermal tolerance and fitness under heat stress in a vertebrate ectotherm. *Nature Ecology & Evolution*. 6: 405-417.
 ○ Profiled by *Phys.org* – www.tinyurl.com/TadpoleHeat
78. MacLeod, K.J., **Kohl, K.D.**, Trevelline, B.K.[¶], Langkilde, T. (2022) Context-dependent effects of glucocorticoids on the lizard gut microbiome. *Molecular Ecology*. 31: 185-196.
77. Stapleton, T.E., **Kohl, K.D.**, Dearing, M.D. (2022) Plant secondary compound- and antibiotic-induced community disturbances improve the establishment of foreign gut microbiota. *FEMS Microbiology Ecology*. 98: fiac005.
76. Jorge, F., Brealey, J.C., Brindley, P.J., Buysse, M., Cantacessi, C., Duron, O., Fichorova, R., Fitzpatrick, C.R., Hahn, M., Hunter, C., Hervé, V., Knoll, L.J., **Kohl, K.D.**, Lalle, M., Lukeš, J., Martínez, J.M., Perkins, S.L., Poulin, R., Rosario, K., Schneider, A.C., Schriml, L.M., Thompson, L.R., Walls, R.L., Dheilly, N.M. (2022). MlXS-SA: a MlXS extension defining the minimum information standard for sequence data from symbiont-associated micro-organisms. *ISME Communications*. 2: 1-5.
75. Weinstein, S.B., Martínez-Mota, R., Stapleton, T.E., Klure, D.M., Greenhalgh, R., Orr, T.J., Dale, C., **Kohl, K.D.**, Dearing, M.D. (2021) Microbiome stability and structure is governed by host phylogeny over diet and geography in woodrats (*Neotoma* spp.) *Proceedings of the National Academy of Sciences* 118: e2108787118.
74. Maurer, M.[†], Peralta Martínez, K.[‡], Trevelline, B.K.[¶], Tripoli, D.[†], Dearing, M.D., Derting, T., Martínez Mota, R., Pasch, B., **Kohl, K.D.** (2021) Diet alters rodent fecal pellet size: implications for paleoecological and demographic studies using fecal dimensions. *Journal of Mammalogy*. 102: 1619-1626.

73. Alrubaye, H.[‡], **Kohl, K.D.** (2021) Abundance and compositions of B-vitamin producing microbes in the mammalian gut vary based on feeding strategies. *mSystems*. 6: e00313-21.
72. Bo, T.B.[§], **Kohl, K.D.** (2021) Stabilization and optimization of host-microbe-environment interactions as a potential reason for the behavior of natal philopatry. *Animal Microbiome*. 3: 26.
71. Fontaine, S.S.[‡], Mineo, P.M., **Kohl, K.D.** (2021) Changes in the gut microbial community of the eastern newt (*Notophthalmus viridescens*) across its three distinct life stages. *FEMS Microbiology Ecology*. 97: fiab021.
70. Newman, J.[†], Maurer, M.[†], Forbey, J.S., Brittas, R., Johansson, Ö, Nielsen, Ó.K., Willebrand, T., **Kohl, K.D.** (2021) Low activities of digestive enzymes in the guts of herbivorous grouse (Aves: Tetraoninae) *Journal of Ornithology*. 162: 477-485.
69. Fontaine, S.S.[‡], **Kohl, K.D.** (2020) Optimal integration between host physiology and functions of the gut microbiome. *Philosophical Transactions of the Royal Society B*. 375: 20190594.
68. Bo, T.B.[§], Zhang, X.Y., **Kohl, K.D.**, Wen, J., Tian, S.J., Wang, D.H. (2020) Coprophagy prevention alters microbiome, metabolism, neurochemistry, and cognitive behavior in a small mammal. *ISME Journal*. 14: 2625-2645.
67. Fontaine, S.S.[‡], **Kohl, K.D.** (2020) Gut microbiota of invasive bullfrog tadpoles responds more rapidly to temperature than a non-invasive congener. *Molecular Ecology*. 29: 2449-2462.
66. Trevelline, B.K.[¶], Stephenson, J.F., **Kohl, K.D.** (2020) Two's company, three's a crowd: exploring how host-parasite-microbiota interactions may influence disease susceptibility and conservation of wildlife. *Molecular Ecology*. 29: 1402-1405.
65. Trevelline, B.K.[¶], Sosa, J.[‡], Hartup, B.K., **Kohl, K.D.** (2020) A bird's eye view of phyllosymbiosis: weak signatures of phyllosymbiosis among all 15 species of cranes. *Proceedings of the Royal Society B*. 287: 20192988.
64. **Kohl, K.D.** (2020) Ecological and evolutionary mechanisms underlying patterns of phyllosymbiosis in host-associated microbial communities. *Philosophical Transactions of the Royal Society B*. 375: 20190251.
63. Martínez-Mota, R., **Kohl, K.D.**, Orr, T.J., Dearing, M.D. (2020) Natural diets promote retention of the native gut microbiota in captive rodents. *ISME Journal*. 14: 67-78.
62. Berlow, M., **Kohl, K.D.**, Derryberry, E.P. (2020) Evaluation of non-lethal gut microbiome sampling methods in a passerine bird. *Ibis*. 162: 911-923.
61. Dheilly, N.M., Martínez Martínez, J., Rosario, K., Brindley, P.J., Fichorova, R.N., Kaye, J.Z., **Kohl, K.D.**, Knoll, L.J., Lukeš, J., Perkins, S.L., Poulin, R., Schriml, L., Thompson, L.R. (2019) Parasite microbiome project: Grand Challenges. *PLoS Pathogens*. 15: e1008028.
60. Trevelline, B.K.[¶], MacLeod, K.J., Langkilde, T., **Kohl, K.D.** (2019) Gestation alters the gut microbiota of an oviparous lizard. *FEMS Microbiology Ecology*. 95: fiz086.
59. Marón, C.F., **Kohl, K.D.**, Chirife, A., Di Martino, M., Penadés Fons, M., Navarro, M.A., Beingsesser, J., McAloose, D., Uzal, F., Dearing, M.D., Rowntree, V.J., Uhart, M. (2019) Symbiotic microbes and potential pathogens in the intestine of stranded southern right whale calves (*Eubalaena australis*). *Anaerobe*. 57: 107-114.
58. Trevelline, B.K.[¶], Fontaine, S.S.[‡], Hartup, B.K., **Kohl, K.D.** (2019) Conservation biology needs a microbial renaissance: a call for the consideration of host-associated microbiota in wildlife management practices. *Proceedings of the Royal Society B: Biological Sciences*. 286: 20182448.
57. **Kohl, K.D.**, Brun, A., Caviedes-Vidal, E., Karasov, W.H. (2019) Age-related changes in the gut microbiota of wild House Sparrow nestlings. *Ibis*. 161: 184-191.
56. Li, G., Li, J., **Kohl, K.D.**, Yin, B., Wei, W., Wan, X., Xu, B., Zhang, Z. (2019) Dietary shifts influenced by livestock grazing shape the gut microbiota composition and co-occurrence networks in a local rodent species. *Journal of Animal Ecology*. 88: 302-314.
55. Fontaine, S.S.[‡], Navarro, A.J., **Kohl, K.D.** (2018) Environmental temperature alters the digestive performance and gut microbiota of a terrestrial amphibian. *Journal of Experimental Biology*. 221: 187559.

54. **Kohl, K.D.**, Oakeson, K.F., Orr, T.J., Miller, A.W., Forbey, J.S., Phillips, C.D., Dale, C., Weiss, R.B., Dearing, M.D. (2018) Metagenomic sequencing provides insights into microbial detoxification in the guts of small mammalian herbivores (*Neotoma* spp.). *FEMS Microbiology Letters*. 94: fiy184.
53. Forbey, J.S., Liu, R., Caughlin, T.T., Matocq, M.D., Vucetich, J.A., **Kohl, K.D.**, Dearing, M.D., Felton, A.M. (2018) Using physiologically-based models to predict population responses to phytochemicals by wild vertebrate herbivores. *Animal*. 12: s383-s398.
52. Nadkarni, N.M., **Kohl, K.D.** (2018) Elements of disturbance that affect epiphyte vitality in a temperate rainforest: an experimental approach. *Journal of Plant Ecology*. 12: 306-313.
51. Trevelline, B.K.[†], MacLeod, K.J., Knutie, S.A., Langkilde, T., **Kohl, K.D.** (2018) *In ovo* microbial communities: a potential mechanism for the initial acquisition of gut microbiota among oviparous vertebrates. *Biology Letters*. 14: 20180225.
50. Wiebler, J.M., **Kohl, K.D.**, Lee, R.E., Costanzo, J.P. (2018) Urea hydrolysis by gut bacteria in a hibernating frog: Evidence for urea-nitrogen recycling in Amphibia. *Proceedings of the Royal Society B: Biological Sciences*. 285: 20180241.
49. **Kohl, K.D.** (2018) A microbial perspective on the 'Grand Challenges in Comparative Animal Physiology'. *mSystems*. 3: e00146-17.
48. **Kohl, K.D.**, Dearing, M.D., Bordenstein, S.R. (2018) Microbial communities exhibit host-species distinguishability and phyllosymbiosis along the length of the gastrointestinal tract. *Molecular Ecology*. 27: 1874-1883.
47. **Kohl, K.D.**, Brun, A., Bordenstein, S.R., Caviedes-Vidal, E., Karasov, W.H. (2018) Gut microbes limit growth in House Sparrow nestlings (*Passer domesticus*), but not through limitation in digestive capacity. *Integrative Zoology*. 13: 139-151.
46. Knutie, S.A., Gabor, C., **Kohl, K.D.**, Rohr, J.R. (2018) Do host-associated gut microbiota mediate the effect of an herbicide on disease risk in frogs? *Journal of Animal Ecology*. 87: 489-499.
45. **Kohl, K.D.**, Varner, J., Wilkening, J.L., Dearing, M.D. (2018) Gut microbial communities of American pikas (*Ochotona princeps*): evidence for phyllosymbiosis and adaptations to novel diets. *Journal of Animal Ecology*. 87: 323-330.
44. **Kohl, K.D.**, Oakeson, K., Dunn, D., Meyerholz, D.K., Dale, C., Weiss, R.B., Dearing, M.D. (2017) Patterns of host gene expression associated with harboring a foregut microbial community. *BMC Genomics*. 18:697.
43. Knutie, S.A., Wilkinson, C.L., **Kohl, K.D.**, Rohr, J.R. (2017) Early-life disruption of amphibian microbiota decreases later-life resistance to parasites. *Nature Communications*. 8: 86.
42. **Kohl, K.D.**, Dearing, M.D. (2017) With a little help from my friends: Microbial partners in integrative and comparative biology. *Integrative and Comparative Biology*. 57: 669-673.
41. Knutie, S.A., Shea, L.A., Kupselaitis, M., Wilkinson, C.L., **Kohl, K.D.**, Rohr, J.R. (2017) Early-life diet affects host microbiota and later-life defenses against parasites in frogs. *Integrative and Comparative Biology*. 57: 732-742.
40. **Kohl, K.D.** (2017) An introductory 'how-to' guide for incorporating microbiome research into integrative and comparative biology. *Integrative and Comparative Biology*. 57: 674-681.
39. Dearing, M.D., **Kohl, K.D.** (2017) Beyond Fermentation: Other important services provided to endothermic herbivores by their gut microbiota. *Integrative and Comparative Biology*. 57: 723-731.
38. **Kohl, K.D.**, Dearing, M.D. (2017) Intestinal lymphatic transport: an overlooked pathway for understanding absorption of plant secondary compounds in vertebrate herbivores. *Journal of Chemical Ecology*. 43: 290-294.
37. **Kohl, K.D.**, Brun, A., Magallanes, M., Brinkerhoff, J.D., Laspiur, A., Acosta, J.C., Caviedes-Vidal, E., Bordenstein, S.R. (2017) Gut microbial ecology of lizards: insights into diversity in the wild, effects of captivity, variation across gut regions, and transmission. *Molecular Ecology*. 26: 1175-1189.

36. Brooks, A.W.[‡], **Kohl, K.D.**[‡], Brucker, R.M.[‡], van Opstal, E., Bordenstein, S.R. (2016) Phyllosymbiosis: relationships and functional effects of microbial communities across host evolutionary history. *PLoS Biology*. 14: e2000225. (‡ Co-first authors)
 - Profiled by *The Scientist* – www.tinyurl.com/Phyllosymbiosis
35. **Kohl, K.D.**, Carey, H.V. (2016) A place for host-microbe symbiosis in the comparative physiologist's toolbox. *Journal of Experimental Biology*. 219: 3496-3504.
34. **Kohl, K.D.**, Ciminari, M.E., Chediack, J.G., Leafloor, J.O., Karasov, W.H., McWilliams, S.R., Caviedes-Vidal, E. (2016) Modulation of digestive enzyme activities in the avian digestive tract in relation to diet composition and quality. *Journal of Comparative Physiology – B*. 187: 339-351.
33. **Kohl, K.D.**, Dearing, M.D. (2016) The woodrat gut microbiota as an experimental system for understanding microbial metabolism of dietary toxins. *Frontiers in Microbiology*. 7: 1165.
32. **Kohl, K.D.**, Connelly, J.W., Dearing, M.D., Forbey, J.S. (2016) Microbial detoxification in the gut of a specialist avian herbivore, the Greater Sage-Grouse. *FEMS Microbiology Letters*. 363: fnw144.
31. **Kohl, K.D.**, Brun, A., Magallanes, M., Brinkerhoff, J.D., Laspiur, A., Acosta, J.C., Bordenstein, S.R., Caviedes-Vidal, E. (2016) Physiological and microbial adjustments allow facultative herbivory in an omnivorous lizard. *Journal of Experimental Biology*. 219: 1903-1912.
 - Profiled by *Science* – www.tinyurl.com/KohlLizardGuts
30. **Kohl, K.D.**, Sadowska, E.T., Rudolf, A., Dearing, M.D., Koteja, P. (2016) Experimental evolution on a wild mammal species results in modification of gut microbial communities. *Frontiers in Microbiology*. 7: 634
29. **Kohl, K.D.**, Yahn, J. (2016) Effects of environmental temperature on the gut microbial communities of tadpoles. *Environmental Microbiology*. 18: 1561-1565.
28. **Kohl, K.D.**, Samuni-Blank, M., Izhaki, I., Gerchman, Y., Lymberakis, P., Kurnath, P., Arad, Z., Karasov, W.H., Dearing, M.D. (2016) Effects of fruit toxins on intestinal and microbial β -glucosidase activities of seed-predating and seed-dispersing rodents (*Acomys* spp.). *Physiological and Biochemical Zoology*. 89: 198-205.
27. **Kohl, K.D.**, Stengel, A., Dearing, M.D. (2016) Inoculation of tannin-degrading bacteria into novel hosts increases performance on tannin-rich diets. *Environmental Microbiology*. 18: 1720-1729.
26. Skopec, M.M., **Kohl, K.D.**, Schramm, K., Halpert, J.R., Dearing, M.D. (2015) Using the specialization framework to determine the degree of dietary specialization in a herbivorous woodrat. *Journal of Chemical Ecology*. 41: 1059-1068.
25. **Kohl, K.D.**, Coogan, S.C.P., Raubenheimer, D. (2015) Do wild carnivores forage for prey or for nutrients?: Evidence for nutrient specific foraging in vertebrate predators. *BioEssays*. 37: 701-709.
24. Chalmers, J.W., Mock, K.E., **Kohl, K.D.**, Madsen, K.J., Nadkarni, N.M. (2015) Clonality and dynamics of leaf abscission of Gambel oaks at small spatial scales in Utah. *Forest Science*. 61: 829-833.
23. **Kohl, K.D.**, Luong, K., Dearing, M.D. (2015) Validating the use of trap-collected feces for studying the gut microbiome of a small mammal (*Neotoma lepida*). *Journal of Mammalogy*. 96: 90-93.
22. **Kohl, K.D.**, Cary, T.L., Karasov, W.H., Dearing, M.D. (2015) Larval exposure to polychlorinated biphenyl 126 (PCB-126) causes persistent alteration of the amphibian gut microbiota. *Environmental Toxicology and Chemistry*. 34: 1113-1118.
21. **Kohl, K.D.**, Pitman, E., Robb, B.C., Connelly, J.W., Dearing, M.D., Forbey, J.S. (2015) Monoterpenes as inhibitors of digestive enzymes and counter-adaptations in a specialist avian herbivore. *Journal of Comparative Physiology – B*. 185: 425-434.
20. **Kohl, K.D.**, Miller, A.W., Dearing, M.D. (2015) Evolutionary irony: evidence that “defensive” plant spines act as a proximate cue to attract a mammalian herbivore. *Oikos*. 124: 835-841.
 - Profiled by *New Scientist* – www.tinyurl.com/KohlCactus
19. **Kohl, K.D.**, Marón, C.F., Chirife, A., Di Martino, M., Dearing, M.D., Rowntree, V.J. (2015) Intestinal lactase activity in southern right whale calves (*Eubalaena australis*). *Marine Mammal Science*. 31: 398-403.

18. **Kohl, K.D.**, Amaya, J., Passemment, C.A., Dearing, M.D., McCue, M.D. (2014) Unique and shared responses of the gut microbiota to prolonged fasting: a comparative study across five classes of vertebrate hosts. *FEMS Microbiology Ecology*. 90: 883-894.
17. **Kohl, K.D.**, Weiss, R.B., Cox, J., Dale, C., Dearing, M.D. (2014) Gut microbes of mammalian herbivores facilitate intake of plant toxins. *Ecology Letters*. 17: 1238-1247.
 - Science Editor's Choice article
 - Profiled by National Geographic – www.tinyurl.com/Kohlwoodrat
 - Featured in popular science book "*I Contain Multitudes*" by Ed Yong
16. **Kohl, K.D.**, Miller, A.W., Marvin, J.E., Mackie, R., Dearing, M.D. (2014) Herbivorous rodents (*Neotoma spp.*) harbor abundant and active foregut microbiota. *Environmental Microbiology*. 16: 2869-2878.
15. **Kohl, K.D.**, Skopec, M.M., Dearing, M.D. (2014) Captivity results in disparate loss of gut microbial diversity in closely related hosts. *Conservation Physiology*. 2: cou009.
14. Miller, A.W., **Kohl, K.D.**, Dearing, M.D. (2014) The gastrointestinal tract of the white-throated woodrat (*Neotoma albigula*) harbors distinct consortia of oxalate-degrading bacteria. *Applied and Environmental Microbiology*. 80: 1595-1601.
13. **Kohl, K.D.**, Dearing, M.D. (2014) Wild-caught rodents retain a majority of their natural gut microbiota upon entrance into captivity. *Environmental Microbiology Reports*. 6: 191-195.
12. Brzęk, P., **Kohl, K.D.**, Caviedes-Vidal, E., Karasov, W.H. (2013) Activity of intestinal carbohydrases responds to multiple dietary signals in nestling House sparrows. *Journal of Experimental Biology*. 216: 3981-3987.
11. **Kohl, K.D.**, Cary, T.L., Karasov, W.H., Dearing, M.D. (2013) Restructuring of the amphibian gut microbiota through metamorphosis. *Environmental Microbiology Reports*. 5: 899-903.
10. Samuni-Blank, M., Izhaki, I., Dearing, M.D., Karasov, W.H., Gerchman, Y., **Kohl, K.D.**, Lymberakis, P., Kurnath, P., Arad, Z. (2013) Physiological and behavioural effects of fruit toxins on seed-predating versus seed-dispersing congeneric rodents. *Journal of Experimental Biology*. 216: 3667-3673.
9. **Kohl, K.D.**, Stengel, A., Samuni-Blank, M., Dearing, M.D. (2013) Effects of anatomy and diet on gastrointestinal pH in rodents. *Journal of Experimental Zoology Part A*. 319:225-229.
8. Brzęk, P., Ciminari, M.E., **Kohl, K.D.**, Lessner, K., Karasov, W.H., Caviedes-Vidal, E. (2013) Effect of age and diet composition on activity of pancreatic enzymes in birds. *Journal of Comparative Physiology - B*. 183:685-697.
7. **Kohl, K.D.**, Dearing, M.D. (2012) Experience matters: prior exposure to plant toxins enhances diversity of gut microbes in herbivores. *Ecology Letters*. 15:1008-1015.
6. **Kohl, K.D.** (2012) Diversity and function of the avian gut microbiota. *Journal of Comparative Physiology B*. 182:591-602.
5. **Kohl, K.D.**, Dearing, M.D. (2011) Induced and constitutive responses of digestive enzymes to plant toxins in an herbivorous mammal. *Journal of Experimental Biology*. 214:4133-4140.
4. **Kohl, K.D.**, Weiss, R.B., Dale, C., Dearing, M.D. (2011) Diversity and novelty of the gut microbial community of an herbivorous rodent (*Neotoma bryanti*). *Symbiosis*. 54:47-54.
3. Brzęk, P., **Kohl, K.D.**, Caviedes-Vidal, E., Karasov, W.H. (2011) Fully reversible phenotypic plasticity of digestive physiology in young House sparrows: lack of long-term effect of early diet composition. *Journal of Experimental Biology*. 214:2755-2760.
2. **Kohl, K.D.**, Brzęk, P., Caviedes-Vidal, E., Karasov, W.H. (2011) Pancreatic and intestinal carbohydrases are matched to dietary starch level in wild passerine birds. *Physiological and Biochemical Zoology*. 84:195-203.
1. Brzęk, P., **Kohl, K.D.**, Caviedes-Vidal, E., Karasov, W.H. (2009) Developmental adjustments of House sparrow (*Passer domesticus*) nestlings to diet composition. *Journal of Experimental Biology*. 212:1284-1293.

INVITED PRESENTATIONS

- 2023 Keynote Speaker for “*Horizons in Metaorganism Research*” Conference. Kiel, Germany.
2023 Center for Evolutionary Hologenomics, Copenhagen, Denmark
2022 Beneficial Microbes Conference, Madison, WI
2022 University of Nevada – Reno [virtual]
2022 University of Calgary [virtual]
2021 University of Maine
2021 Duquesne University, Pittsburgh, PA
2021 Invited Speaker to session “Moving toward a Mechanistic Understanding of Wildlife Microbiomes” at American Society of Microbiology’s World Microbe Forum [virtual]
2021 Bielefeld University, Germany [virtual]
2021 Microbiome Centers Consortium Seminar Series [virtual]
2021 University of Groningen, The Netherlands [virtual]
2020 North Carolina State University, Raleigh, NC [virtual]
2020 Cornell University, Ithaca, NY [virtual]
2020 University of Tennessee – Knoxville, Knoxville, TN [virtual]
2020 Auburn University, Auburn, AL [virtual]
2020 University of Texas at Arlington, Arlington, TX
2020 Invited Speaker to symposium “*Cultivating Communities: Making Sense of Host-Microbe Interactions Through the Lens of Genetics*”. Genetic Society of America Virtual Conference
2019 University of Rhode Island, Providence, RI
2019 Jagiellonian University, Kraków, Poland
2019 Muséum National d’Histoire Naturelle, Paris, France
2019 Invited Speaker to symposium “*Meals, Metabolism, Microbes, and Management: Linking Foraging Behavior and Physiology to Predict Demographics in Wildlife*”. Annual meeting of The Wildlife Society in Reno, NV
2019 The Ohio State University, Columbus, OH
2019 West Virginia University, Morgantown, WV
2019 Invited to participate in ‘Parasite Microbiome Project Workshop’, Clearwater, FL
2018 University of California – Irvine, CA
2018 University of Connecticut, Storrs, CT
2018 Plenary speaker at Duquesne Biology Department Retreat, Pittsburgh, PA
2017 Pennsylvania State University, State College, PA
2017 University of Alabama, Tuscaloosa, AL
2017 9th Meeting of the International Society of Zoological Sciences, Xining, China
2017 University of Oregon, Eugene, OR
2017 Gordon Research Conference on Plant-Herbivore Interactions, Ventura, CA
2017 University of Minnesota, Minneapolis, MN
2017 University of South Florida, Tampa, FL
2016 University of Pittsburgh, Pittsburgh, PA
2016 University of Alberta, Edmonton, AB
2016 University of Mississippi, Oxford, MS
2016 Austin Peay State University, Clarksville, TN
2015 Early Career Scientists Symposium – University of Michigan, Ann Arbor, MI
2014 Iowa State University, Ames, IA
2014 Workshop on Microbiology of Animals in the Built Environment – Univ. of California, Davis, CA

ACTIVE RESEARCH GRANTS

- National Science Foundation** (Apr. 2020 – Mar. 2025) Role: PI
“*CAREER: Microbial contributions to host phenotypic flexibility*”
Total Direct Costs: \$881,563
- National Science Foundation** (Sept. 2020 – Aug. 2024) Role: Co-PI
“*Epigenetic potential and range expansion in the house sparrow*”

Total Direct Costs to KDK: \$200,954

Morris Animal Foundation (Jun. 2019 – May 2023)

Role: PI

“Impact of Artificial Rearing on the Microbiota and Health of Endangered Whooping Cranes”

Total Direct Costs: \$126,587

PREVIOUS RESEARCH GRANTS

University of Pittsburgh Central Research Development Fund (Jul. 2019- Jun. 2021) Role: PI

“Can we learn from the past?: Validating the use of museum specimens to study the gut microbiome”

Total Costs: \$16,000

University of Pittsburgh Central Research Development Fund (Jul. 2018 – Jun. 2020) Role: PI

“Developing an Experimental System to Investigate Microbial Contributions to Host Physiology”

Total Costs: \$16,000

Winters Foundation (2018) Role: PI

“Molecular Mechanisms Controlling Assembly of the Gut Microbiota In Early Life”

Total Costs: \$10,000

NIH T32 Training Grant in Gastroenterology (Oct. 2016 – Aug. 2017)

“Genetic mechanisms underlying development of the gut microbiome”

Total Costs: \$47,000

NSF Conference, Symposia, and Workshop Support (2016)

“Meeting: Microbial Partners in Integrative and Comparative Biology, a Symposium for the Society for Integrative and Comparative Biology (SICB)”

Total Costs: \$12,450

NSF International Postdoctoral Research Fellowship in Biology (Nov. 2014 – Sept. 2016)

“The role of maternal transmission of the gut microbiota in stabilizing host-microbe interactions and facilitating co-evolution”

Total Costs: \$140,000

NSF Doctoral Dissertation Improvement Grant (2012)

“Biodiversity and community ecology of the gut microbiota in herbivores with respect to dietary toxins”

Total Costs: \$14,999

NSF Graduate Research Fellowship Award (Sept. 2010 – Aug. 2014)

“Investigating the role of intestinal microbes in the metabolism of plant toxins”

Total Costs: \$125,500

American Museum of Natural History Theodore Roosevelt Memorial Grant (2010)

Total Costs: \$2000

Southwest Association of Naturalists Howard McCarley Research Award (2010)

Total Costs: \$1000

Society for Integrative and Comparative Biology Grant in Aid of Research (2010)

Total Costs: \$1000

TEACHING

Environmental Animal Physiology – BIOSC 1435 (3 cr) – Univ. of Pittsburgh

Instructor Spring 2019 – 34 students

Spring 2020 – 31 students [*partial virtual instruction*]

Spring 2021 – 45 students [*virtual instruction*]

Spring 2022 – 53 students

Mammalogy - Biology 5370 (3 cr) – University of Utah

Instructor Spring 2012, Spring 2013

MENTORSHIP

Postdoctoral Researchers

Dr. Emily Hardison Nov. 2023 – Present
 -NSF Postdoctoral Research Fellow
 Dr. Mauna Dasari January 2022 – Sept 2022
 -NSF Postdoctoral Research Fellow
 -Currently a Grant Writer at California Academy of Sciences
 Dr. Nicholas Barts August 2020 – August 2022
 -Currently an Assistant Professor at University of Central Missouri
 Dr. Brian Trevelline Oct 2017 – June 2020
 -Currently an Assistant Professor at Kent State University

Graduate Students

Samantha Fontaine (NSF GRFP Fellow) September 2017 – May 2023
 -Currently an NSF Postdoctoral Research Fellow
 Elizabeth Rudzki (NSF GRFP Fellow) May 2019 - present
 Karen Peralta Martinez (NSF GRFP Fellow) May 2020 - present
 Jessica Diaz (NSF GRFP Fellow) Aug. 2022 – present
 Jason Aguirre Jan 2023 - present

Service on PhD Committees

Veronica Iriart University of Pittsburgh (2018-present)
 Kayla Komondor University of Pittsburgh (2019-present)
 Rachael Kramp University of Pittsburgh (2019-present)
 Crystal Lara University of Pittsburgh (2022-present)
 Rachel Verdi University of Pittsburgh (2023-present)
 Louis Freeland-Haynes University of Pittsburgh (2023-present)

Kyle Emerson Duquesne University (current)

Past PhD Committees

Dr. Mae Berlow University of Tennessee – Knoxville (2020)
 Dr. Veronica Saenz University of Pittsburgh (2021)
 Dr. Tess Stapleton University of Utah (2022)
 Dr. Rachel Reeb University of Pittsburgh (2023)
 Dr. Nevin Cullen University of Pittsburgh (2023)
 Dr. Kaitlyn Murphy Auburn University (2023)

PROFESSIONAL SERVICE

Service to the University

Sep. 2017 Speaker at UPitt 'Microbiome Bootcamp' hosted by Center for Medicine and the Microbiome (CMM)

Service to the Department

Sep. 2022 – present Member of Graduate Recruitment and Admissions Committee (GRAC)
 Sep. 2018 - present Member of Departmental Retreat Committee
 [Chaired Departmental Retreat "The Art of Science" - Oct. 2022]
 Nov. 2020 Represented department at the Annual Biomedical Research Conference for Minority Students (ABRCMS) [virtual]
 Sep. 2020 - present Volunteer Member for the Graduate Subcommittee of CODIE (Committee on Diversity, Inclusion and Equity)

Sep. 2019 - 2021 Member of the Graduate Mentoring and Advising Committee (GMAC)
Sep. 2018 - Jan. 2019 Member of Microbiology Faculty Search Committee
Sep. 2017- Aug. 2018 Member of Undergraduate Research Committee

External Service

External Thesis Reviewer

Oct. 2021 Dr. Aura Raulo, University of Oxford
July 2021 Dr. Jia Zhou, University of Adelaide, Australia
Oct. 2018 Mr. Elliot Schmidt, Laurentian University, Ontario, Canada (MSc thesis)

Service to the Field

2022 Organized a symposium at the annual meeting of American Physiological Society meeting for Comparative Physiology, titled "*Microbial contributions to organismal responses in a changing world*"
2022 Member of Organizing Committee for the Beneficial Microbes Conference [July 10-14, 2022 in Madison, WI]
2021 Organized a symposium and roundtable discussion at the annual meeting of the American Ornithological Society, titled "*A bird's-eye view of the microbiome*"
2019 Organized a Special Session at Society for Integrative and Comparative Biology in honor of Dr. William Karasov
2017 Organized a symposium on host-microbe interactions at annual meeting for Society for Integrative and Comparative Biology – <http://tinyurl.com/KohlSICB>

Ad-Hoc Reviewer for National Science Foundation

Integrative Organismal Systems: 2016, 2020, 2022, 2023
Division of Environmental Biology: 2015, 2018
Molecular and Cellular Biosciences: 2023

Panel Member for National Science Foundation

Directorate for Biological Sciences: 2021
Division of Molecular and Cellular Biosciences: 2022

Peer Reviewer for Other Funding Agencies

2020 Czech Science Foundation
2019 Barton Springs Salamander Conservation Fund (City of Austin, TX)
2019 Center for Health Effects of Environmental Contamination , University of Iowa

Peer Reviewer

2023: (3 papers) *mBio*, *Proceedings of the National Academy of Sciences*, *Philosophical Transactions of the Royal Society B: Biological Sciences*

2022: (6 papers) *eLife*, *Proceedings of the National Academy of Sciences*, *Ecology Letters*, *Microbial Ecology*, *Functional Ecology*, *Journal of Mammalogy*

2021: (8 papers) *Science*, *Ecology Letters*, *Proceedings of the Royal Society B: Biological Sciences*, *Functional Ecology*, *Animal Microbiome*, *Global Ecology and Biogeography*, *Journal of Comparative Physiology B: Biochemical Systematic*, and *Environmental Physiology, Integrative Zoology*

2020: (6 papers) *Proceedings of the Royal Society B: Biological Sciences*, *Biology Letters*, *ISME Journal*, *Molecular Ecology* (x2), *Journal of Experimental Biology*

2019: (10 papers) *Proceedings of the National Academy of Sciences, Biology Letters, Proceedings of the Royal Society B: Biological Sciences (x2), Philosophical Transactions of the Royal Society B: Biological Sciences, ISME Journal, FEMS Microbiology Letters (x2), Journal of Comparative Physiology B: Biochemical Systematic, and Environmental Physiology, Frontiers in Microbiology*

2018: (11 papers) *Nature Ecology & Evolution, Nature Communications, Microbial Ecology (x2), ISME Journal, Journal of Comparative Physiology B: Biochemical Systematic, and Environmental Physiology, Molecular Ecology, Applied and Environmental Microbiology, FEMS Microbiology Letters, Heliyon, PeerJ*

2017: (9 papers) *Nature Ecology & Evolution, ISME Journal, Current Biology, Integrative and Comparative Biology, Journal of Animal Ecology, Journal of Chemical Ecology, Molecular Ecology Resources, Journal of Experimental Biology, Current Biology*

Service to the Community (Scientific Outreach)

- | | |
|-----------|--|
| Mar. 2022 | Kohl lab managed a table conveying our research to high-school students at the Carnegie Science Center's Animals & Local Wildlife SciTech Day |
| Nov. 2021 | Kohl Lab hosted a table conveying our research to the general public at Market Science, a scientific outreach event at a local Pittsburgh farmer's market |
| Dec. 2019 | Presented my path through science and had a luncheon discussion with a group of ~20 students from Pittsburgh Allderdice High School who were visiting Pitt BioSci. |
| Sep. 2019 | Kohl Lab hosted a table conveying our research to the general public at Market Science, a scientific outreach event at a local Pittsburgh farmer's market |

DIVERSITY, EQUITY, & INCLUSION

- | | |
|------------|--|
| Current | 5/7 courses complete for the Global Competence Certificate Program, offered by UPitt's Office of Equity, Diversity, and Inclusion |
| May 2022 | Led Pitt BioSci Departmental Diversity Book Club on <u> Holding Space </u> by Dr. Aminata Cairo |
| Apr. 2022 | Seminar Speaker for the PEER Mentoring program – a program led by Pitt BioSci to integrate research experiences and belonging across career stages |
| Jul. 2021 | Completion of the Diversity and Inclusion Certificate Program, a 7-course program offered by UPitt's Office of Equity, Diversity, and Inclusion |
| 2020, 2021 | Participant in "Out to Lunch" series at the Society of Integrative and Comparative Biology (SICB) annual conference, where LGBT+ professors meet and discuss their path in science with LGBT+ trainees |
| July 2020 | Participant in 'Virtual Faculty Panel' for Summer Gene Team (a high school outreach program led by UPitt BioSci) |