

**CURRICULUM VITAE**  
**MATTHEW ROBERT ORR**

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Teaching Department:  
Department of Biology  
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Research & Home Department:  
Department of Integrative Biology  
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**Education**

1995 Ph.D., Population Biology, University of California, Davis.  
1987 B.A., Biology, Amherst College, Amherst, Mass. Magna Cum Laude, Phi Beta Kappa.

**Employment**

2019-Present - Associate Professor, Department of Integrative Biology, Oregon State University  
& Department of Biology, OSU-Cascades  
2014-2019 - Assistant Professor, Department of Integrative Biology, Oregon State University  
& Department of Biology, OSU-Cascades  
2003-2013 - Instructor, Biology & General Science, OSU-Cascades  
2000-2003 - Lecturer, Environmental Science, Policy, & Management, University of  
California, Berkeley  
1998-2000 - Visiting Scholar, University of California, Berkeley  
1994-1998 - Postdoctoral Researcher, University of Texas, Austin  
1991-1994 - Ph.D. Candidate, University of California, Davis  
1987-1988 - Faculty, Thayer Academy, Braintree, MA.

**Peer-Reviewed Publications**

26. Orr, M.R. 2022. The biodiversity dose-response curve translates theory and practice from ecological restoration into research and clinical priorities for fecal microbiota transplantation. *Frontiers in Medicine* 11 Nov. <https://doi.org/10.3389/fmed.2022.1059148>
25. Orr, M.R., A. Kirkegaard\* 2022. Peer-reviewed embedded pedagogy: A new approach to promote and improve active learning in science education. *Bulletin of the Ecological Society of America*. 103(4):e02006. <https://doi.org/10.1002/bes2.2006>
24. Prive, K., M.R. Orr, F.F. Kilkenny, R.J. Reuter, H.R. Prendeville 2021. Phenological variation in bluebunch wheatgrass (*Pseudoroegneria spicata*): Implications for Seed Sourcing, Harvest, and Restoration. *Land* 10, 1064. [doi.org/10.3390/land10101064](https://doi.org/10.3390/land10101064)
23. Orr, M.R., K.M. Kocurek, Y.J. Bakos, R.C. McDowell\* 2019. A Restoration Ecology Perspective on the Treatment of Inflammatory Bowel Disease. *Evolution, Medicine, and Public Health* [doi.org/10.1093/emph/eoz031](https://doi.org/10.1093/emph/eoz031)
22. Orr, M.R., N.P. Weber, W.N. Noone\*, M.G. Mooney\*, T.M. Oakes\*, H.M. Broughton 2019. Short-term stream and riparian responses to beaver dam analogs on a low-gradient channel lacking woody riparian vegetation. *Northwest Science* 93 (3-4) 171-184.

21. Watson, J.W., M.S Vekasy, J.D. Nelson\*, M.R. Orr, 2019. Factors Affecting Visitation Rates of Eagles to Carrion in a Winter Scavenging Guild. *Journal of Wildlife Management* 83(8):1735-1743. DOI 10.1002/jwmg.21760.
20. Orr, M.R., J.D. Nelson\*, J.W. Watson, 2019. Heterospecific information supports a foraging mutualism between corvids and raptors. *Animal Behaviour* 153:105-113. <https://doi.org/10.1016/j.anbehav.2019.05.007>.
19. Orr, M.R., R.J. Reuter, S.J. Murphy\*, 2019. Solarization to control downy brome (*Bromus tectorum*) for small-scale ecological restoration. *Invasive Plant Science and Management* 12: 112-119. <https://doi.org/10.1017/inp.2019.8>.
18. Orr, M.R., K.M. Kocurek, D.L. Young\*, 2018. Gut Microbiota and Human Health: Insights from Ecological Restoration. *Quarterly Review of Biology* 93(2): 73-90. DOI 10.1086/698021.
17. E.G. LeBrun, P.J. Diebold, M.R. Orr, L.E. Gilbert, 2015. Widespread chemical detoxification of alkaloid venom by formicine ants. *Journal of Chemical Ecology* 41: 884-895. DOI 10.1007/s10886-015-0625-3.
16. D. H. Feener, M. R. Orr, K. M. Wackford, J. M. Longo\*, Benson, W. W. & L. E. Gilbert, 2008. Geographic variation in resource dominance-discovery in Brazilian ant communities. *Ecology* 89:1824-1836.
15. Orr, M. R. 2006. What is a scientific worldview, and how does it bear on the interplay of science and religion? *Zygon: Journal of Religion and Science* 41(2): 435-444. <https://doi.org/10.1111/j.1467-9744.2005.00748.x>
14. Orr, M. R. 2005. Is nature enough? Robert Frost replies in “The Most of It.” *Zygon: Journal of Religion and Science* 40(3): 759-768. <https://doi.org/10.1111/j.1467-9744.2005.00702.x>
13. Orr, M. R. 2003. Environmental decline and the rise of religion. *Zygon: Journal of Religion and Science* 38(4): 895-910. <https://doi.org/10.1111/j.1467-9744.2003.00545.x>
12. Orr, M. R., R. X. De Camargo\*, & W. W. Benson, 2003. Interactions between ant species increase arrival rates of an ant parasitoid. *Animal Behaviour* 65:1187-1193.
11. Orr, M. R., D. L. Dahlsten, & W. W. Benson, 2003. Ecological interactions among ants in the genus *Linepithema*, their phorid parasitoids, and ant competitors. *Ecological Entomology* 28:203-210.
10. Mattos, M. R. & M. R. Orr, 2002. Two new *Pseudacteon* (Diptera: Phoridae) parasitoids of ants in the genus *Linepithema* in Brazil. *Studia Dipterologica* 9:283-288.
9. Orr, M. R., D. L. Dahlsten, & W. W. Benson, 2001. Host specificity of *Pseudacteon* (Diptera: Phoridae) parasitoids that attack *Linepithema* (Hymenoptera: Formicidae) in South America. *Environmental Entomology* 30:742-747.
8. Orr, M. R. & T. B. Smith, 1998. Ecology and speciation. *Trends in Ecology and Evolution* 13 (12):502-506.
7. Orr, M. R. & S. H. Seike, 1998. Parasitic flies (Diptera: Phoridae) deter foraging by Argentine ants (*Linepithema humile*) in their native habitat in Brazil. *Oecologia* 117:420-425.
6. Orr, M. R., S. H. Seike, L. E. Gilbert, 1997. Foraging ecology and patterns of diversification in parasitoids (Diptera: Phoridae) of fire ants in south Brazil. *Ecological Entomology* 22:305-314.
5. Orr, M. R., 1996. Host manipulation by *Wolbachia* is a neutral trait in single populations. *Animal Behaviour* 51:1183-1185.

4. Orr, M. R., 1996. Life history adaptation and reproductive isolation in a grasshopper hybrid zone. *Evolution* 50:704-716.
3. Orr, M. R., S. H. Seike, W. W. Benson, L. E. Gilbert, 1995. Flies suppress fire ants. *Nature* 373:292-293.
2. Orr, M. R., A. H. Porter, T. A. Mousseau, H. Dingle, 1994. Molecular and morphological evidence for hybridization between two ecologically distinct grasshoppers (*Melanoplus sanguinipes* and *M. devastator*) in California. *Heredity* 72:42-54.
1. Orr, M. R., 1992. Parasitic flies (Diptera: Phoridae) influence foraging rhythms and caste division of labor in the leaf-cutter ant *Atta cephalotes*. *Behavioral Ecology and Sociobiology* 30:395-402.

### **Environmental Popular Writing**

- Orr, M. R. 2004. Intelligence lost: pitfalls of a tamed planet (essay). *Wild Earth: Journal of the Wildlands Project* 14(1):14-19.
- Orr, M. R. 2003. Seals from a sea cliff (poem). *Wild Earth: Journal of The Wildlands Project* 12(4):5.
- Orr, M. R. 2000. A thousand suns (poem). *Wild Earth: Journal of The Wildlands Project* 10(2):81.
- Orr, M. R. 1999. Thread (poem). *Wild Earth: Journal of The Wildlands Project* 9(4):7.

### **Popular Coverage of Scientific Work**

- 2019 - Hess, P. (2019). Corvids and Raptors: A Mutual Aid Society – *Birding, The Journal of the American Birding Association* 51(6):25-26. Describes my scavenger research.
- 2019 Video - A Corvallis crew filmed my beaver dam analog project to promote biology at OSU-Cascades (<https://www.youtube.com/watch?v=yXnSTHyZgwI>).
- 2018 Media - The University Network – Coverage of my research on gut microbiota and human health <https://tinyurl.com/yy2syn4u>.
- 2018 Press release, Oregon State University – OSU biologist advocates ecological approach to improving human health <https://tinyurl.com/y29ps6ff>.

### **OSU-Cascades Courses Taught**

#### **Present**

Zoology 477 Aquatic Entomology  
Biology 370 Ecology  
Biology 371 Ecological Methods  
Biology 375 Field Studies in Ecological Restoration

#### **Past**

Biology 311 Introductory Genetics  
Biology 380 Animal Behavior  
Biology 330 Microbiology  
Biology 322 Cell Biology  
Biology 320 Molecular Genetics  
Biology 455 Evolution  
Zoology 349 Biodiversity  
Honors 407 Science, Religion, & Sustainability

### **Awards**

- 2017 – OSU-Cascades Campus-Wide Teaching Award  
2012 – OSU Cascades Campus-Wide Outreach Award

**Funded Proposals**

<b>Proposal Title</b>	<b>Role</b>	<b>PIs/Co-PIs</b>	<b>Agency</b>	<b>Period / Funding</b>
20. Do aquatic macroinvertebrates support juvenile steelhead survival in low flow refugia?	Co-PI	Dave Lytle	Bella Vista Foundation	2022 \$27,097 Orr 75%
19. An Eastern Cascades nest-web: links between woodpeckers and secondary cavity nesters in central Oregon.	Co-PI	Kurt Trzcinski, Univ. of Victoria	East Cascades Audubon Society	2022 \$11,800 Orr 30%
18. (1) Effects of caching on discovery dynamics of carrion; (2) Testing altruism in corvids.	Faculty Advisor	Rob Murphy, Ryan Schwartz (undergraduate)	OSU-Cascades Layman Fellowships	2022 \$2,000, \$2,000
17. Bird diversity, abundance, and species interactions along an elevation gradient in Central Oregon, Yr. 2	Co-PI	Kurt Trzcinski, Univ. of Victoria	East Cascades Audubon Society	2021 \$5110 Orr 15%
16. Designing a device to measure prosocial behavior in ravens and crows.	PI	Kyle Webb, Engineering	East Cascades Audubon Society	2021 \$500 Orr 75%
15. Monitoring beaver dam analogs on the S. Fork Crooked River	PI	Ron Reuter, Skuyler Herzog	Oregon Watershed Enhancement Board	2020-2021 \$39,333 Orr 50%
14. Elevational patterns of bird diversity and vegetation in Central Oregon	Co-PI	Kurt Trzcinski	OSU-Cascades Academic Faculty Council	2020 \$1,521 Orr 25%
13. Pre-feasibility study of floodplain storage capacity and baseflow recharge potential of floodplain reconnection in the Upper Crooked River.	Researcher	Skuyler Herzog, Ron Reuter	Private donor	2020-2021 \$15,750 Orr 10%
12. Elevational range limits and interspecies correlations in bird diversity and	Co-PI	Kurt Trzcinski	Oregon Birding Association	2019-2021 \$1,000 Orr 30%

abundance along an elevation gradient in central Oregon				
10. Elevational range limits and interspecies correlations in bird diversity and abundance along an elevation gradient in central Oregon	Co-PI	Kurt Trczinski	East Cascades Audobon Society	2019-2021 \$2,560 Orr 30%
9. A field test of local adaptation in bluebunch wheatgrass	Co-PI, thesis advisor	Ron Reuter, Kathryn Prive	USFS	2018 \$10,000 Prive
8. Total station technology for experiential learning and outreach in stream restoration.	PI	Ron Reuter	OSU-Cascades Learning Innovation	2017 \$6,530 Orr 50%
7. A field test of local adaptation in bluebunch wheatgrass	Co-PI, thesis advisor	Ron Reuter, Kathryn Prive	USFS	2016-17 \$35,000 Prive
6. Undergraduate Grand Team Challenge	PI		OSU internal	2016 \$2,000
5. Beaver Dam Analogs for Riparian Restoration in the Upper Deschutes Watershed	PI		Bella Vista Foundation	2015-16 \$35,000
3. A field test of local adaptation in bluebunch wheatgrass	Co-PI, thesis advisor	Ron Reuter, Kathryn Prive	USFS	2015-16 \$35,000 Prive
3. A field course in riparian restoration (L.L. Stewart Course Development)	Co-PI	Ron Reuter	OSU internal	2015-16 \$4,399 50/50
2. The ecological restoration and environmental education initiative in Central Oregon	PI		Thomas Montag	2005-2013 \$250,000
1. Argentine ants in their native habitat: effects of diversity, competition, and parasitism	PI		U.S. Dept. of Agriculture	1998-2000 \$90,000