

CURRICULUM VITAE – NOVEMBER 2018

CONTACT INFORMATION

Departments of Biological Sciences and Pathology, Microbiology, and Immunology, Vanderbilt University, VU Station B, Box 35-1634, Nashville, TN 37235, <http://bordensteinlab.vanderbilt.edu>, phone: 615.322.9087, Twitter: @Symbioticism, email: s.bordenstein@vanderbilt.edu

DEGREES EARNED

2002	<i>Ph.D.</i> in Evolutionary Genetics, Department of Biology, The University of Rochester. Dissertation topic: Endosymbiosis and speciation
1999	<i>M.S.</i> Biology, Department of Biology, University of Rochester
1997	<i>B.S.</i> Biology: Ecology and Evolutionary Biology, cum laude and with distinction in research, University of Rochester

EMPLOYMENT HISTORY

2018-Present	Member, Vanderbilt Institute of Chemical Biology, Vanderbilt University, Nashville, TN
2017-Present	Director, Vanderbilt Microbiome Initiative, Trans-Institutional Programs, Vanderbilt University, Nashville, TN
2017-Present	Associate Director, Vanderbilt Institute for Infection, Immunology and Inflammation, Vanderbilt University, Nashville, TN
2017-Present	Member, Diabetes Research and Training Center, Vanderbilt University Medical Center, Nashville, TN
2015-Present	Member, Vanderbilt Genetics Institute, Vanderbilt University Medical Center, Nashville, TN
2013-Present	Associate Professor, Department of Biological Sciences, Vanderbilt University, Nashville, TN
2013-Present	Associate Professor, Department of Pathology, Microbiology, and Immunology, Vanderbilt University Medical Ctr, Nashville, TN
2013-Present	Member, Digestive Disease Research Center and Epithelial Integrity Group, Vanderbilt University Medical Ctr, Nashville, TN Member, Vanderbilt-Ingram Cancer Center, GI Program, Vanderbilt University Medical Center, Nashville, TN
2011-2013	Assistant Professor, Department of Pathology, Microbiology, and

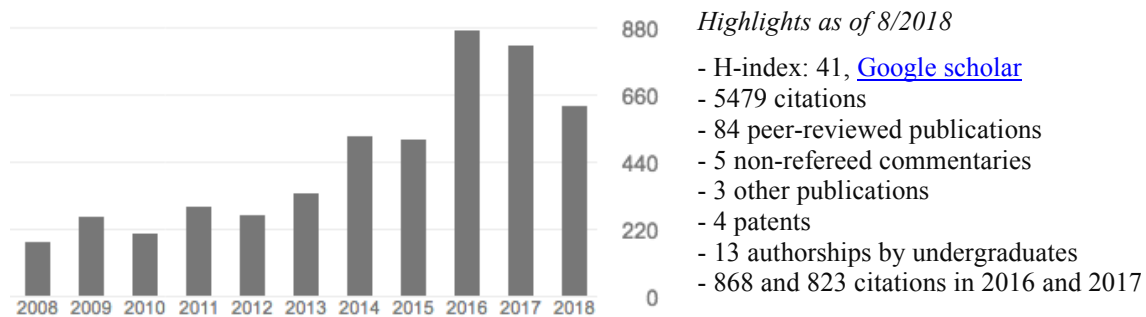
- Immunology, Vanderbilt University Medical Ctr, Nashville, TN
- 2008-2013 Assistant Professor, Department of Biological Sciences, Vanderbilt University, Nashville, TN
- 2008-2013 Adjunct appointment at Josephine Bay Paul Center for Comparative Molecular Biology and Evolution, The Marine Biological Laboratory, Woods Hole, MA
- 2005-2008 Adjunct appointment as Assistant Professor, Department of Ecology and Evol. Biology Brown University, Providence, RI
- 2005-2008 Assistant Scientist, Josephine Bay Paul Center for Comparative Molecular Biology and Evolution, The Marine Biological Laboratory, Woods Hole, MA
- 2003-2005 Assistant Research Scientist, Josephine Bay Paul Center for Comparative Molecular Biology and Evolution, The Marine Biological Laboratory, Woods Hole, MA
- 2002-2003 Postdoctoral Fellow of the National Research Council / NASA Astrobiology Associateship Program, The Marine Biological Laboratory, Woods Hole, MA

HONORS AND AWARDS

- 2018 Chancellor Faculty Fellow, Vanderbilt University
- 2018 Trans-Institutional Programs Award, The Initiative for Personalized Microbial Discovery and Innovation, Faculty Participant, Vanderbilt University
- 2017 Trans-Institutional Programs Award, Vanderbilt Microbiome Initiative, Founding Director, Vanderbilt University
- 2017 Vanderbilt Office for Equity, Diversity and Inclusion Research Award on the human microbiome and ethnicity
- 2015 Faculty Award for Excellence in Research, Department of Biological Sciences, Vanderbilt University
- 2014 Jeffrey Nordhaus Award for Excellence in Undergraduate Teaching, Vanderbilt University
- 2014 Chancellor's Award for Research, Vanderbilt University
- 2013 Research ranked as top science story in *Science News*
- 2013 Howard Hughes Medical Institute Professors' Competition, Finalist
- 2012 Best Teacher/Mentor Award, Department of Biological Sciences, Vanderbilt University
- 2012 Faculty Award for Excellence in Research, Department of Biological Sciences, Vanderbilt University
- 2010 Distinguished lecturer, Case Western Research University, Cellular and Molecular Biology Training Program
- 2010 Award recipient, new NSF Program: Dimensions of Biodiversity

2007	Founding Director, Howard Hughes Medical Institute Precollege Science Education Award
2004	Neal W. Cornell Endowed Research Fund, MBL
2002	National Research Council / NASA Astrobiology Institute Postdoctoral Fellowship
2001	Ernst Caspari Fellow, Department of Biology, University of Rochester, one annual recipient
1999	Edward Peck Curtis Award for Excellence in Teaching by a Graduate Student – one of five university-wide annual recipients
1999	Department of Biology Graduate Student Teaching Award, University of Rochester, one of two annual recipients
1997	Senior Research Scholar in Biology, University of Rochester
1995	de Kiewiet Research Fellow in Biology and Medicine, University of Rochester

RESEARCH



Articles in refereed journals

1. Bordenstein, S.R. and J.H. Werren. (1998) Effects of A and B *Wolbachia* and host genotype on interspecies cytoplasmic incompatibility in *Nasonia*. **Genetics** 148: 1833-1844.
2. Bordenstein, S.R. and J.H. Werren. (2000) Do *Wolbachia* influence fecundity in *Nasonia vitripennis*? **Heredity** 84:54-62.
3. Bordenstein, S.R., M.D. Drapeau, and J.H. Werren. (2000) Intraspecific variation in sexual isolation in the jewel wasp *Nasonia*. **Evolution** 54: 567-573.
4. Bordenstein, S.R., F.P. O'Hara, and J.H. Werren. (2001) *Wolbachia*-induced incompatibility precedes other hybrid incompatibilities in *Nasonia*. **Nature** 409: 707-710.
 - Featured in *Nature News and Views*, *Scientific American*, *Science News Online*, etc.

5. Bordenstein, S.R. and M.D. Drapeau. (2001) Genotype-by-environment interaction and the Dobzhansky-Muller model of postzygotic isolation. **Journal of Evolutionary Biology** 14: 490-501.
6. Wernegreen, J.J., P.H. Degnan, A.B. Lazarus, C. Palacios, and S.R. Bordenstein. (2003) Genome evolution in an insect cell: Distinct features of an ant-bacterial partnership. **Biological Bulletin** 204: 221-231.
7. Bordenstein, S.R., J.J. Uy[‡], and J.H. Werren. (2003) Host genotype determines cytoplasmic incompatibility type in the haplodiploid genus *Nasonia*. **Genetics** 163: 223-233.
 - [‡]University of Rochester undergraduate
8. Bordenstein, S.R., D.H.A. Fitch, and J.H. Werren. (2003) Absence of *Wolbachia* in nonfilarid nematodes. **Journal of Nematology** 35: 266-270.
9. Bordenstein, S.R. and J.J. Wernegreen. (2004) Bacteriophage flux in endosymbionts (*Wolbachia*): Infection frequency, lateral transfer, and recombination rates. **Molecular Biology and Evolution** 21: 1981-1991.
 - Featured in F1000
10. Reznikoff, W.S., S.R. Bordenstein and J. Apodaca. (2004) Comparative sequence analysis of IS50/Tn5 transposase. **Journal of Bacteriology** 186: 8240-8247.
11. Bordenstein, S.R. and W.S. Reznikoff. (2005) Mobile DNA in obligate intracellular bacteria. **Nature Reviews Microbiology** 3: 688-699.
12. Baldo, L., S.R. Bordenstein, J.J. Wernegreen and J.H. Werren. (2005) Widespread recombination throughout *Wolbachia* genomes. **Molecular Biology and Evolution** 23: 437-449.
 - Featured in F1000
13. Bordenstein, S.R. and R.B. Rosengaus. (2005) Discovery of a novel *Wolbachia* supergroup in Isoptera. **Current Microbiology** 51: 393-398.
14. Casiraghi M., S.R. Bordenstein, L. Baldo, N. Lo, T. Beninati, J.J. Wernegreen, J.H. Werren and C. Bandi. (2005) Phylogeny of *Wolbachia* based on *gltA*, *groEL* and *ftsZ* gene sequences: clustering of arthropod and nematode symbionts in the F supergroup and evidence for further diversity in the *Wolbachia* tree. **Microbiology** 151: 4015-4022.
15. Bordenstein, S.R., M.L. Marshall, A.J. Fry, U. Kim, and J.J. Wernegreen. (2006) The tripartite associations of bacteriophage, *Wolbachia*, and arthropods. **PLOS Pathogens** 2 (5): 384-393.
 - Featured in F1000, *The Scientist*
16. Paraskevopoulos, C., S.R. Bordenstein, J.J. Wernegreen, J.H. Werren, and K. Bourtzis. (2006) Towards a *Wolbachia* multilocus sequence typing system:

Discrimination of *Wolbachia* strains present in *Drosophila* species. **Current Microbiology** 53(5): 388-395.

17. Baldo, L., Dunning-Hotopp, J., Bordenstein, S.R., Biber, S.A., Jollie, K., Tettelin, H., Maiden M., Hayashi, C., and J.H. Werren. (2006) A multilocus sequence typing system for the endosymbiont *Wolbachia*. **Applied and Environmental Microbiology** 72(11): 7098-7110.
18. Lo, N., C. Paraskevopoulos, K. Bourtzis, S.L. O'Neill, J.H. Werren, S.R. Bordenstein, and C. Bandi. (2007) Taxonomic status of the intracellular bacterium *Wolbachia pipientis*. **International Journal of Systematics and Evolutionary Microbiology** 57: 654-657.
19. Sanogo, Y.O., S.L. Dobson, S.R. Bordenstein, and R.J. Novak. (2007) Disruption of the *Wolbachia* surface protein gene *wspB* by a transposable element in mosquitoes of the *Culex pipiens* complex (Diptera: Culicidae). **Insect Molecular Biology** 16(2): 143-154.
20. Bordenstein, S.R. and J.H. Werren. (2007) Bidirectional incompatibility among divergent *Wolbachia* and incompatibility level differences among closely related *Wolbachia* in *Nasonia*. **Heredity** 99: 278-287.
21. Panagiotis I., J. C. D. Hotopp, P. Sapountzis, S. Siozios, G. Tsiamis, S. R. Bordenstein, L. Baldo, J. H. Werren and K. Bourtzis. (2007) New criteria for selecting the origin of DNA replication of *Wolbachia* and closely related bacteria. **BMC Genomics** 8(182):1-15.
22. Bordenstein, S.R. (2007) Discover the microbes within: The *Wolbachia* project. **Focus on Microbiology Education** 14(1): 4-5.
 - Invited article, Special Issue on K-12 Education
23. Bordenstein, S.R. (2007) Evolutionary genomics: Transdomain gene transfers. **Current Biology** 17:R935-R936.
24. Bordenstein, S.R., C. Paraskevopoulos, J.C. Dunning Hotopp, P. Sapountzis, N. Lo, C. Bandi, H. Tettelin, J.H. Werren and K. Bourtzis. (2009) Parasitism and mutualism in *Wolbachia*: what the phylogenomic trees can and cannot say. **Molecular Biology and Evolution** 26(1): 231-241.
25. Ishmael, N., J.C. Dunning Hotopp, P. Iaconidis, S. Biber, J. Sakamoto, V. Nene, J. Werren, K. Bourtzis, S. R. Bordenstein, and H. Tettelin. (2009) Extensive genomic diversity of closely related *Wolbachia* strains. **Microbiology** 155: 2211-2222.
26. The *Nasonia* Genome Working Group (2010) Functional and evolutionary insights from the genomes of three parasitoid *Nasonia* species. **Science** 327: 343-348.
 - Featured in *National Geographic Daily News*, *Science Daily*, Vanderbilt Explorations site and press release

27. Chafee, M.E., D.J. Funk, R.G. Harrison, and S.R. Bordenstein. (2010) Lateral phage transfer in obligate intracellular bacteria (*Wolbachia*): Verification from natural populations. **Molecular Biology and Evolution** 27: 501-505.

28. Kent, B.N. and S.R. Bordenstein. (2010) WO of *Wolbachia*: Lambda of the endosymbiont world. **Trends in Microbiology** 18(4): 173-181.

- Cover



29. Bordenstein, S.R., C. Brothers, G. Wolfe, M. Bahr, R. Minckley, M. Clark, J.J. Wernegreen, S.R. Bordenstein, W.S. Reznikoff, and J.H. Werren. (2010) Using the *Wolbachia* bacterial symbiont to teach inquiry-based science: A high school laboratory series. **American Biology Teacher** 72: 478-483.

- Journal for The National Association of Biology Teachers
- Special issue on Earth's Microbes
- Featured in *The Scientist* and on ABT's cover



30. Gangwer, K.A., C. L. Shaffer, S. Suerbaum, D.B. Lacy, T.L. Cover*, S.R. Bordenstein* (2010). Molecular evolution of the *Helicobacter pylori* vacuolating toxin gene *vacA*. **Journal of Bacteriology** 192: 6126-6135.

- *Co-corresponding authorships

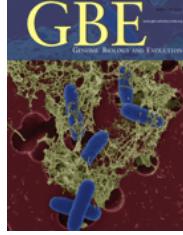
31. Chafee, M.E., C.N. Zecher, M.L. Gourley, V.T. Schmidt, John H. Chen^ψ, S.R. Bordenstein, M.E. Clark, and S.R. Bordenstein. (2011) Decoupling of host-symbiont-phage coadaptations following transfer to a new host species. **Genetics** 187: 203-215.

- ^ψVanderbilt undergraduate

32. Newton, I.G. and S.R. Bordenstein. (2011) Correlations between bacterial ecology and mobile DNA. **Current Microbiology** 62(1): 198-211.

33. Kent, B.N., L. Salichos, J.G. Gibbons, A. Rokas, I.L.G. Newton, M.E. Clark, and S.R. Bordenstein. (2011) Complete bacteriophage transfer in a bacterial endosymbiont determined by targeted genome capture. **Genome Biology and Evolution** 3: 209-218.

- Cover



34. Rosengaus, R.B., C.N. Zecher, K.F. Schultheis, R.M. Brucker, and S.R. Bordenstein. (2011) Disruption of termite gut microbiota and its prolonged fitness consequences. **Applied and Environmental Microbiology** 77(13):4303-4312.
 - Selected by American Society for Microbiology for a press release among all of the Society's journal articles in July
 - Featured by *ScienceDaily*, *MicrobeWorld*, ASM, in *Scientific American*, *GenomeWeb*, *New Scientist* cover story, etc
35. Kent, B.N., L.J. Funkhouser, S. Setia, and S.R. Bordenstein. (2011) Evolutionary genomics of a temperate bacteriophage in an obligate intracellular bacteria (*Wolbachia*). **PLOS One** 6(9): e24984.
36. Bordenstein, S.R. and S.R. Bordenstein (2011). Temperature affects the tripartite interactions between bacteriophage WO, *Wolbachia*, and cytoplasmic incompatibility. **PLOS One** 6(12): e29106.
37. Brucker, R.M. and S.R. Bordenstein. (2012) The roles of host evolutionary relationship (genus: *Nasonia*) and development in structuring microbial communities. **Evolution** 66(2): 349-362.
 - Featured in *Scientific American*, *GenomeWeb*, *New Scientist* cover story
38. Duncan, S.S., P.L. Valk, C.L. Shaffer, S.R. Bordenstein*, and T.L. Cover*. (2012) J-Western forms of *Helicobacter pylori* CagA constitute a major group with a widespread geographic distribution. **Journal of Bacteriology** 194(6): 1593-1604.
 - *Co-corresponding authorship
39. Brucker, R.M. and S.R. Bordenstein. (2012) Speciation by Symbiosis. **Trends in Ecology and Evolution** 27(8): 443-51.
 - Featured on several blogs, including *ASM's Small Things Considered*, 08/2012
 - 3rd most downloaded article in TREE in the period, September-October, 2012
 - 2nd most downloaded article in TREE in December, 2012 and January, 2013
 - Featured in *New Scientist* cover story, January, 2013
40. Metcalf, J. and S.R. Bordenstein. (2012) The complexity of viruses: The case of endosymbionts. **Current Opinion in Microbiology** 15(4): 546-552.
41. Brucker, R.M., L.J. Funkhouser, S. Setia, R. Pauly and S.R. Bordenstein. (2012) Insect Innate Immunity Database (IIID): An annotation tool for identifying immune genes in insect genomes. **PLOS ONE**, 7(9): e45125.

42. Duncan, S.S., P.L. Valk, M.S. McClain, C.L. Shaffer, J.A. Metcalf, S.R. Bordenstein*, and T.L. Cover* (2013) Comparative genomic analysis of East Asian and non-Asian *Helicobacter pylori* strains identifies rapidly evolving genes. **PLOS ONE** 8(1): e55120.
- *Co-corresponding authorship
43. Brucker, R.B. and S.R. Bordenstein (2012) *In vitro* cultivation of the Hymenoptera genetic model, *Nasonia*. **PLOS ONE** 7(12): E51269.
44. Funkhouser, L.J. and S.R. Bordenstein (2013) Mom knows best: The universality of maternal microbial transmission. **PLOS Biology** 11(8): e1001631.
- Featured in *New York Times* column by Carl Zimmer, DoubleXScience and PLOS Biologue post by Jonathan Eisen, Coffee Break Science blog post
45. LePage, D. and S.R. Bordenstein (2013) *Wolbachia*: Can we save lives with a great pandemic? **Trends in Parasitology** 29(8): 385-393.
- Cover



46. Brucker, R.M. and S.R. Bordenstein (2013) The hologenomic basis of speciation: Gut bacteria cause hybrid mortality in the genus *Nasonia*. **Science** 341(6146): 667-669. DOI: 10.1126/science.1240659.
- Recommended in F1000 Prime
 - Highlighted in top science story of 2013 by *Science News*
 - Radio: BBC Radio, NPR "Living on Earth" and Pacifica Radio Houston
 - Featured in *Discover Magazine*, *Nature News* and Comment, *Nature News* and Views, Vanderbilt Research News, *Science Now*, Futurity, io9, Newswise, GenomeWeb, Headlines and Global News, Le Telegramme (France), PlanetSave, phys.org, Pacific Standard, Science360, Science World Report, New Scientist, Science News, Medical News Today, PBS.org, Sportballa, etc.
47. Brucker, R.M. and S.R. Bordenstein (2013) The capacious hologenome. **Zoology** 116(5): 260-261.
- Certificated for Highly Cited Research; Top 5 most highly cited papers in Zoology during 2014, 2015, and 2016.
48. Jernigan, K.K. and S.R. Bordenstein (2014) Ankyrin Domains Across the Tree of Life. **PeerJ** 2:e264.
- Selected for PeerJ Top 20 Picks of 2015

49. Romano-Keeler, J., D.J. Moore, C. Wang, R.M. Brucker, C. Fongesbeck, J.C. Slaughter, H. Li, H. Correa, H.N. Lovvorn, S. Bordenstein, Y.W. Tang, A.L. George, J.H. Weitkamp (2014) Early life establishment of site-specific microbial communities in the gut. **Gut Microbes** 5:16-15.
50. Brucker, R.M. and S.R. Bordenstein (2014) Response to comment: The hologenomic basis of speciation: Gut bacteria cause hybrid mortality in the genus *Nasonia*. **Science** 345(6200):1011.
51. Metcalf, J.A., M. Jo^ψ, S.R. Bordenstein, J. Jaenike, and S.R. Bordenstein. 2014 Recent genome reduction of *Wolbachia* in *Drosophila recens* targets phage WO and narrows candidates for reproductive parasitism. **PeerJ** 2: e529.
- ^ψVanderbilt undergraduate
52. Metcalf, J.A., L.J. Funkhouser-Jones, K. Briley, A.L. Reysenbach, and S.R. Bordenstein (2014). Antibacterial Gene Transfer Across the Tree of Life. **eLife** 3:e04266.
- Featured at *National Geographic*, Not Exactly Rocket Science Blog by Ed Yong, How An Antibiotic Gene Jumped All Over the Tree of Life (10/14), *The Naked Scientists* podcast (12/14), eLife insight (11/14), Popular Science (11/14), Futurity (11/14), Vanderbilt Research News (11/14), Huffington Post (12/14), The Scientist (12/14), Cell Host and Microbe (12/14), Nature Reviews Microbiology (12/14), Aeon (12/14), BBC (6/15), Science & Vie (10/15, France)
53. Stilling, R.M., S.R. Bordenstein, T.G. Dinan, and J.F. Cryan. 2014. Friends with Social Benefits: Host-Microbe Interactions as a Driver of Brain Evolution and Development? **Frontiers in Cellular and Infection Microbiology** 4:147.
54. LePage, D.P., K.K. Jernigan, and S.R. Bordenstein (2014). The relative importance of DNA methylation and Dnmt2-mediated epigenetic regulation on *Wolbachia* densities and cytoplasmic incompatibility. **PeerJ** 2:e678.
55. Jernigan, K.K. and S.R. Bordenstein (2015). Tandem repeat domains across the tree of life. **PeerJ** 3:e732.
56. Flynn, C.R., V.L. Albaugh, S. Cai, J. Cheung-Flynn, P.E. Williams, R.M. Brucker, S.R. Bordenstein, D.H. Wasserman and N.N. Abumrad (2015) Bile diversion to the distal small intestine results in metabolic benefits and is an effective alternative to bariatric surgery. **Nature Communications** 6:7715.
- Collaboration with seven Vanderbilt colleagues
57. Bordenstein, S.R. and K.R. Theis (2015) Host biology in light of the microbiome: Ten principles of holobionts and hologenomes. **PLOS Biology** 13(8): e1002226.
- F1000 Prime recommendation - Exceptional

- Vanderbilt Research News (08/15), Science Daily (08/15), Futurity (08/15), RedOrbit (08/15), The Hindu (08/15), How Stuff Works (01/16), Gazeta Wyborcza news paper (01/16), Science News (03/16)
58. Van Opstal, E.J. and S.R. Bordenstein (2015) Rethinking heritability of the microbiome. **Science** 349(6253): 1172-1173.
- *Science* podcast interview (09/15)
59. Funkhouser-Jones, L.J., P. Martinez-Rodriguez, S. Sehnert^ψ, R. Toribio-Fernandez, M. Pita, J.L. Bella and S.R. Bordenstein (2015) *Wolbachia* co-infection in a hybrid zone: Discovery of horizontal gene transfers from two *Wolbachia* supergroups to an animal genome. **PeerJ** 3:e1479.
- ^ψVanderbilt University undergraduate
 - Featured in podcast, This Week in Microbiology, December 17, 2015, Episode sponsored by ASM Microbe 2016 and ASM Biodefense
60. Richmond, B.W., R.M. Brucker, W. Han, R.H. Duo, Y. Zhang, D.S. Cheng, L. Gleaves, R. Abdolrasulnia, D. Polosukhina, P.E. Clark, S.R. Bordenstein, T.S. Blackwell and V.V. Polosukhin (2016) Airway bacteria drive a progressive COPD-like phenotype in mice with polymeric immunoglobulin receptor deficiency. **Nature Communications** 7:11240.
61. Lindsey, A.R.I., S.R. Bordenstein, I.L.G. Newton and J.L. Rasgon (2016) *Wolbachia pipientis* should not be split into multiple species: A response to Ramírez-Puebla et al., "Species in *Wolbachia*? Proposal for the designation of 'Candidatus *Wolbachia bourtzisii*', 'Candidatus *Wolbachia onchocercicola*', 'Candidatus *Wolbachia blaxteri*', 'Candidatus *Wolbachia brugii*', 'Candidatus *Wolbachia taylori*', 'Candidatus *Wolbachia collembolicola*' and 'Candidatus *Wolbachia multihospitum*' for the different species within *Wolbachia* supergroups". **Systematic and Applied Microbiology** 39(3):220-222.
62. Theis, K.R., N.M. Dheilly, J.L. Klassen, R.M. Brucker, J.F. Baines, T.C.G. Bosch, J.F. Cryan, S.F. Gilbert, C.J. Goodnight, E.A. Lloyd, J. Sapp, P. Vandenkoornhuys, I. Zilber-Rosenberg, E. Rosenberg, and S.R. Bordenstein (2016) Getting the hologenome concept right: An eco-evolutionary framework for hosts and their microbiomes. **mSystems** 1(2):e00028-16.
- mSystems Editor's pick
 - Recommended as Good for Teaching in F1000
63. Kohl, K.D., A. Brun, M. Magallanes, J. Brinkerhoff, A. Laspiur, J.C. Acosta, S.R. Bordenstein, E. Caviedes-Vidal (2016) Physiological and microbial adjustments to diet quality permit facultative herbivory in an omnivorous lizard. **Journal of Experimental Biology** 219:1903-1912.
- Highlighted in Science (06/16), Journal of Experimental Biology (06/16)
64. Shropshire, J.D. and S.R. Bordenstein (2016) Speciation by symbiosis: The microbiome and behavior. **mBio** 7(2):e01785-15. doi:10.1128/mBio.01785-15.

65. Dobson, S.L., S.R. Bordenstein, and R.I. Rose (2016) *Wolbachia* mosquito control: Regulated. **Science** 352(6285):526-527. SLD and RIR conceived the paper.
66. Newton, I.L.G., M.E. Clark, B.N. Kent, S.R. Bordenstein, J. Qu, S. Richards, Y.D. Kelkar and J.H. Werren (2016) Comparative genomics of two closely related *Wolbachia* with different reproductive effects on hosts. **Genome Biology and Evolution** 8(5): 1526-1542.
67. Bojanova, D.P. and S.R. Bordenstein (2016) Fecal transplants: What is being transferred? **PLOS Biology** 14(7): e1002503.
- July and August, 2016 (select media): New York Times (by Carl Zimmer), Scientific American PLOS Biology press release, Vanderbilt Research News, South China Morning Post, Univision Noticias, FOX WZTV Channel 17 Nashville News, Cosmos Magazine
 - May, 2017: Top 50 most downloaded article in PLOS Biology during 2016
68. Shropshire, J.D.*, E.J. van Opstal*, and S.R. Bordenstein (2016) An optimized approach to germ-free rearing in the jewel wasp *Nasonia*. **PeerJ** 4:e2316.
- *Co-first authors
69. Bordenstein, S.R. and S.R. Bordenstein. (2016) Eukaryotic association module in phage WO genomes from *Wolbachia*. **Nature Communications** 7:13155.
- October, 2016: Vanderbilt Research News, CNN, National Public Radio, The Atlantic, The Scientist, BBC News, The Washington Post, National Science Foundation 360 News, New Scientist, Live Science, Nature Communications press release
 - July, 2017: Virology and Immunology Journal Editorial – Two Hosts or One? Viruses are More Complex than Previously Thought
 - Patent, Phage-Mediated Manipulation of *Wolbachia*
70. J. Dittmer, E. van Opstal, J.D. Shropshire, S.R. Bordenstein, G.D.D. Hurst and R.M. Brucker. 2016. Disentangling a holobiont - recent advances and perspectives in *Nasonia* wasps. **Frontiers in Microbiology** 7:1478.
- Part of research topic “Experimental Models in Animal-Associated Microbiota” under review for Frontier’s First Annual Spotlight Award (\$100,000) for international conference at SwissTech Convention Center
71. Kohl, K.D., A. Brun, M. Magallanes, J. Brinkerhoff, A. Laspiur, J.C. Acosta, E. Caviedes-Vidal and S.R. Bordenstein (2016) Gut microbial ecology of lizards: insights into diversity in the wild, effects of captivity, variation across gut regions, and transmission. **Molecular Ecology** 26(4):1175-1189.
72. Brooks, A.W.*, K.D. Kohl*, R.M. Brucker*, E.J. van Opstal, and S.R. Bordenstein. (2016) Phylosymbiosis: Relationships and functional effects of microbial communities across host evolutionary history. **PLOS Biology** 14(11): e2000225.
- *Co-first authors
 - Select coverage: Vanderbilt Research News, The Scientist, Nature Ecology and Evolution, “Open Highlight” at PLOS Biology

- Recommended as Excellent in F1000
 - Top 50 most downloaded article in PLOS Biology during 2016
73. LePage, D.P.*, J.A. Metcalf*, S.R. Bordenstein. J. On[‡], J.I. Perlmutter, J.D. Shropshire, E.M. Layton[‡], L.J. Funkhouser-Jones, J.F. Beckmann, S.R. Bordenstein (2017) Prophage WO genes recapitulate and enhance *Wolbachia*-induced cytoplasmic incompatibility. **Nature** 543(7644):243-247 doi: 10.1038/nature21391.
- *Co-first authors
 - [‡]Vanderbilt University undergraduates
 - Select coverage: Vanderbilt Research News, Nature News and Views, The Scientist, AOL News, Science News, Nature Reviews Microbiology, This Week in Virology Podcast and Blog
 - Provisional patent, Cytoplasmic Incompatibility Factors and Methods for Controlling Arthropods
74. Saulsberry, A.[‡], M. Pinchas[‡], A. Noll[‡], J.A. Lynch, R.M. Brucker, and S.R. Bordenstein. (2017) Establishment of F1 hybrid mortality in real time. **BMC Evolutionary Biology** 17:37 doi: 10.1186/s12862-017-0879-1.
- [‡]Vanderbilt University undergraduates
75. Long, J., Cai, Q., Steinwandel, M., Hargreaves, M.K., Bordenstein S.R., Blot, W.J., Zheng W., and S.O. Shu (2017) Association of oral microbiome with Type 2 diabetes risk. **Journal of Periodontal Research** 52(3):636-643.
- Ranked in top 20 most downloaded between July 2016 and June 2018
76. Toribio-Fernandez, R., J.L. Bella, P. Martinez-Rodriguez, L.J. Funkhouser-Jones, S.R. Bordenstein, and M. Pita. (2017) Chromosomal location of *Wolbachia* inserts in the genome of two subspecies of *Chorthippus parallelus* forming a Pyrenean hybrid zone. **Chromosome Research** 25(3-4):215-225.
77. Dheilly, N., D. Bolnick, S.R. Bordenstein, P. Brindley, C. Figueres, E. Holmes, J. Martinez, A. Philips, R. Poulin and K. Rosario (2017) The parasite microbiome project: Systematic investigation of microbiome dynamics within and across parasite-host interactions. **mSystems** 2 (4) e00050-17.
78. Kohl, K.D., M.D. Dearing, and S.R. Bordenstein. (2017) Microbial communities exhibit host-species distinguishability and phylosymbiosis along the length of the gastrointestinal tract. **Molecular Ecology** 27(8):1874-1883.
79. Kohl, K.D., A. Brun, S.R. Bordenstein, E. Caviades-Vidal, and W.H. Karasov. (2018) Gut microbes limit growth in house sparrow nestlings (*Passer domesticus*), but not through limitations in digestive capacity. **Integrative Zoology** 13(2):139-151.
80. Lindsey, A.R.I., D.W. Rice, S.R. Bordenstein, A.W. Brooks, S.R. Bordenstein* and I.L.G. Newton*. (2018) Evolutionary genetics of cytoplasmic incompatibility genes *cifA* and *cifB*. **Genome Biology and Evolution** 10(2):434-451.
- *Co-corresponding authors
 - Recommended as Very Good in F1000

81. Shropshire, J.D., J. On, E.M. Layton[‡], H. Zhou[‡], and S.R. Bordenstein. (2018) One prophage WO gene rescues cytoplasmic incompatibility in *Drosophila melanogaster*. **Proceedings of the National Academy of Sciences**
<https://doi.org/10.1073/pnas.1800650115>.
- Select coverage: Vanderbilt Research News
 - [‡]Vanderbilt undergraduates
 - Provisional patent, Methods of Cytoplasmic Incompatibility-Based Transgenics for Pest or Vector Control
82. Funkhouser-Jones, L.J.*, E.J. van Opstal*, A. Sharma[‡], and S.R. Bordenstein. (2018) The maternal effect gene *Wds* controls *Wolbachia* titer in *Nasonia*. **Current Biology**. DOI: <https://doi.org/10.1016/j.cub.2018.04.010>.
- *Co-first authors
 - [‡]Vanderbilt undergraduate
 - Select coverage: Top Story at National Science Foundation Science 360 and Editor's Choice at *Science* (May 25, 2018); also covered in Science Daily, Technology Org, Vanderbilt Research News, etc.
84. Roux, S., E.M. Adriaenssens, B.E. Dutilh, E.V. Koonin, A.M. Kropinski, M. Krupovic, J.H. Kuhn, R. Lavigne, J.R. Brister, A. Vasani, R.A. Aziz, S.R. Bordenstein, and 47 other coauthors. Minimum information about uncultivated virus genomes (MIUViG): A community consensus on standards and best practices for describing genome sequences from uncultivated viruses. In press, **Nature Biotechnology**.
85. Taylor, M.J., S.R. Bordenstein, and B. Slatko. *Wolbachia*: a sex selector, a viral protector and a target to treat filarial nematodes. **Microbiology**
doi:10.1099/mic.0.000724.
86. Eisthen, H. et al. 2018. New NSF policy will stifle innovation. **Science**. (362)6412: 297-298.
87. Romano-Keeler J., M. Shilts, A. Tovchigrechko, C. Wang, R. Brucker, D. Moore, C. Fannesbeck, S. Meng, H. Correa, H. Lovvorn, Y.W. Tang, L. Hooper, S.R. Bordenstein, S. Das, J.H. Weitkamp. Distinct mucosal microbial communities in surgical necrotizing enterocolitis are determined by age and antibiotic exposure. In press, **PLOS One**.
88. Brooks, A.W., S. Priya, R. Blekhman, S.R. Bordenstein. Gut microbiota diversity across ethnicities in the United States. In press, **PLOS Biology**.
89. Leigh, B.A., S.R. Bordenstein, A.W. Brooks, A. Mikaelyan, and S.R. Bordenstein. Finer scale phylosymbiosis: insights from insect viromes. In press, **mSystems**.

Patents

S.R. Bordenstein and J.I. Perlmutter (2018) "Male Arthropod Killing Factors and Methods of Use Thereof" (Provisional Patent). Equal inventorship.

S.R. Bordenstein and J.D. Shropshire (2018) "Methods of Cytoplasmic Incompatibility-Based Transgenics for Pest or Vector Control" (Provisional Patent). Attorney Docket Number 10644-064PV1. Application number 62/655,389. VU18134. Equal inventorship.

Metcalf, J.A., D.L. Lepage, S.R. Bordenstein, S.R. Bordenstein, M. Hochstrasser, J. Beckmann, and J. Ronau (2016) "Cytoplasmic Incompatibility Factors and Methods for Controlling Arthropods" (Provisional Patent), VU16060P1, MCC Reference 10644-022PV1, 6/9/16. Equal inventorship.

- [Technology spotlight](#) by the Vanderbilt Center for Technology Transfer and Commercialization, January 2018

Bordenstein, S.R. and Bordenstein, S.R. (2016) "Phage-Mediated Manipulation of *Wolbachia*" (Full Patent), VU16116, Application No. 62/323,099, MCC Reference 10644-023PV1, 4/15/16. Equal inventorship.

Non-refereed articles, opinions, and commentaries

1. Bordenstein, S.R. (2012) Science of a Superorganism. **Bare Essentials**, May 1.
2. Bordenstein, S.R. (2014) Genomic and Cellular Complexity from Symbiotic Simplicity. **Cell** 158(6): 1236-1237.
3. Bordenstein, S.R. (2014) Book review of The Hologenome Concept: Human, Animal and Plant Microbiota. **Microbe** 9(11) 466-467.
4. Bordenstein, S.R. (2016) Book review of I Contain Multitudes (Ed Yong, Harper Collins) Lean on we: How eco-evolution permeates animal-microbe associations. **Trends in Ecology and Evolution** 31(11): 815-816.
5. Perlmutter, J.I. and S.R. Bordenstein (2018) Microbial misandry: discovery of a *Spiroplasma* male-killing toxin. **Cell Host & Microbe** DOI: <https://doi.org/10.1016/j.chom.2018.05.011>

Book chapter (invited)

1. Bordenstein, S.R. (2003) Symbiosis and the origin of species. In **Insect Symbiosis**, edited by K. Bourtzis and T. Miller. CRC Press: New York. Pages 283-304.

Articles in conference proceedings

1. Goodrich-Blair, H., J.M. Ane, J. Bever, S.R. Bordenstein et al. (2010) Symbiosis research, technology, and education: An overview of the 6th International Symbiosis Society Congress. **Symbiosis** 51: 1-12.

2. Stock, S.P., S.R. Bordenstein, J. Odden, D. Oldenburg, W. Reznikoff, J.H. Werren, and M.A. Selosse. (2010) Symbiosis Instruction: Considerations from the Education Workshop at the 6th ISS Congress. *Symbiosis* 51:67-73.

Research grants received

2018-2020	Vanderbilt Trans-Institutional Programs, ViA, "The Initiative for Personalized Microbial Discovery and Innovation", Faculty participant, \$200,000 (years 1 and 2 total, direct costs)
2018-2020	Vanderbilt Trans-Institutional Programs, ViA, "Vanderbilt Initiative for the Study of Antimicrobial Resistance Drivers", Faculty participant, \$200,000 (years 1 and 2 total, direct costs)
2017-2022	National Institutes of Health, R01, "The Genetic Basis of Cytoplasmic Incompatibility", Principal Investigator: \$1,951,071 (total), \$1,250,000 (direct costs), \$707,071 (indirect costs)
2017-2019	National Institutes of Health, R21 " <i>Wolbachia</i> Genes That Mediate Male Killing", Principal Investigator: \$420,681 (total), \$275,000 (direct costs), \$145,681 (indirect costs)
2017-2019	Vanderbilt Trans-Institutional Programs, ViA, "The Vanderbilt Microbiome Initiative", Lead Investigator: \$175,000 (years 1 and 2 total, direct costs)
2015-2019	National Science Foundation IOS Symbiosis, Defense, and Self-Recognition, "The Genetic Architecture of Maternal Suppression of Symbionts" PI, \$957,524 (total), \$609,943 (direct costs), \$347,581 (indirect costs) <ul style="list-style-type: none"> Featured at GenomeWeb, News Medical, Phys.org, Vanderbilt Research News
2016-2018	National Institute of Health, R21 " <i>Wolbachia</i> Genes That Mediate Cytoplasmic Incompatibility", Principal Investigator: \$431,511 (total), \$275,000 (direct costs), \$156,511 (indirect costs)
2017	Vanderbilt Office of Equity, Diversity and Inclusion Research Award, "Population Diversity Shapes the Trillions of Microbes Inhabiting the Human Digestive Tract", Principal Investigator: \$4,526 (direct costs)
2017	Sponsor for DFG German Research Foundation Award for Individual Postdoctoral Fellowship to Dr. Aram Mikaelyan, \$49,302
2015-2017	Beckman Scholars Foundation "Vanderbilt University Beckman Scholars Program", Co-Investigator with Jeffrey Johnston as Principal Investigator: \$156,000 (total/direct costs) to support six scholars per year for three years
2015-2017	National Science Foundation Doctoral Dissertation Improvement Grant for Daniel LePage, "The Genetic Basis of Cytoplasmic Incompatibility" PI, \$20,410 (total)
2011-2017	National Science Foundation, "Dimensions: The Microbial Basis of Animal Speciation", Principal Investigator: \$1,268,861 (total), \$817,609 (direct costs), \$451,252 (indirect costs) <ul style="list-style-type: none"> New NSF program

- Featured in NSF press release 10-179
 - Featured in NSF project manual
 - Featured on Vanderbilt Home Page & Research News
- 2008-2014 National Institute of Health, R01, “Molecular evolution and lifecycle of *Wolbachia* bacteriophage”, Principal Investigator: \$1,228,000 (total), \$791,280 (direct costs), \$436,720 (indirect costs)
- Featured in NIH press release, *Taking the Bite Out of Vector-Borne Diseases*, 03/27/13
- 2012-2013 Sponsor for National Institute of Health F32 Ruth L. Kirschstein National Research Service Award for Individual Postdoctoral Fellowship to Dr. Kristin Jernigan, \$52,190
- 2011-2014 Sponsor for National Science Foundation, Graduate Research Fellowship to Lisa Funkhouser: \$90,000 (stipend total for three years), \$10,500 (cost-of-education allowance)
- 2011-2012 National Institute of Health S10, Shared Instrumentation Grant, Illumina HiSeq2000, Major User (Principal Investigator: Al George), \$515,00 (direct costs)
- 2010-2012 Discovery Grant, Vanderbilt “The infectious basis of hybrid mortality in an insect model”, Principal Investigator: \$50,000 (total), \$50,000 (direct costs), NA (indirect costs)
- 2008-2012 National Science Foundation, “Bacteriophages in endosymbiotic bacteria”, Principal Investigator: \$411,440 (total), \$268,039 (direct costs), \$143,401 (indirect costs).
- 2008 Howard Hughes Medical Institute Precollege Science Education Initiative, “The Muse of Fire Project”, Co-Director: \$50,000 (total), \$50,000 (direct costs), NA (indirect costs)
- 2007-2008 Howard Hughes Medical Institute Precollege Science Education Initiative, “The *Wolbachia* Project: Discover the Microbes Within!”, Founding Director: \$150,000 (total), \$150,000 (direct costs), NA (indirect costs)
- 2003-2008 NASA Astrobiology Institute NAI02-0026-0017, “From Early Biospheric Metabolisms to the Evolution of Complex Systems”, Co-Investigator: \$511,639 total of \$4,757,693 team grant (total), \$330,093 (direct costs), \$181,546 (indirect costs)
- 2003-2008 National Science Foundation, “Integrative Studies of *Wolbachia*-Eukaryotic Interactions: Genomes to Communities and Back”, PI on Subcontract to MBL: \$315,314 of \$4,990,738 team grant (w/J. Werren, PI) (total), \$203,427 (direct costs), \$111,887 (indirect costs)
- 2004 Neal W. Cornell Endowed Research Fund, PI, \$10,000 (total), \$10,000 (direct costs), NA (indirect costs)
- 2003 National Research Council and NASA Astrobiology Institute Postdoctoral Fellowship (Renewal of 2002 Award)
Fellow: \$50,000 total award (total), \$50,000 (direct costs), NA (indirect costs)
- 2002 National Research Council and NASA Astrobiology Institute Postdoctoral Fellowship, “Genomic determinants of mutualism

and parasitism in bacterial endosymbionts” Fellow: \$45,000 total award (total), \$45,000 (direct costs), NA (indirect costs)

INVITED SEMINARS (SINCE AT VANDERBILT)

- 2019
- Plenary lecture, Inaugural Purdue Microbiome Symposium, Purdue University, Beck Agricultural Center, West Lafayette, Indiana
- Trainee Speaker, U. Wisconsin, NIH T32 Training Grant Trainee Speaker for “Microbes in Health and Disease”, Madison, WI (full travel support)
- Vikki Monday Lectures, Faculty of Biological and Environmental Sciences, Organismal and Evolutionary Biology Research Program, Molecular and Integrative Biosciences Research Program, University of Helsinki, Finland (full travel support)
- U. Minnesota, Department of Genetics, Cell Biology, and Development, Minneapolis, MN
- 2018
- Plenary lecture, International Symbiosis Society Congress, The Mechanisms of Host-Microbiome Interactions, Oregon State University, Corvallis, Oregon USA
- Keynote session lecture, Suddath Symposium, The Chemical Ecology of Microbiome Interactions, “How Do Microbes Form Relationships with Animals?”, Parker H. Petit Institute for Bioengineering and Bioscience, Georgia Institute of Technology, Atlanta, GA (full travel support)
- Keynote session lecture, 11th annual Arthropod Genomics Symposium, “The genetic basis of reproductive parasitism” Carl Woese Institute for Genomic Biology, University of Illinois, Urbana, IL (full travel support)
- 59th annual *Drosophila* Research Conference, “Prophage WO Genes That Alter Sperm and Kill Males in *Drosophila*” Evolution and Population Genetics, Platform talk, Philadelphia, PA
- Symposium convener and keynote lecturer, Medicine and Evolution in Light of the Microbiome, 4th annual International Society for Evolution, Medicine, and Public Health, “Microbiomes, evolution, and medicine: What would Darwin think?” Park City, Utah

University of Chicago, Committee on Microbiology Seminar Series, Department of Biomedical Sciences, Chicago, IL

Vanderbilt Genetics Institute Seminar Series, “How Do Microbes Form Relationships with Animals?” Vanderbilt University Medical Center, Nashville, TN

Keynote session lecture, European Society for Evolutionary Biology Progress Meeting 2018, Topic on the Microbiome and Geographic Mosaic of Coevolution, Bruges, Belgium, (declined due to teaching conflict)

2017

Plenary lecture, Plant and Animal Genomes XXV Conference, “Microbes and the Origin of Animal Species” San Diego, CA (full travel support)

Symposium convener and lecturer, American Society for Microbiology - Microbe 2017, Symposium on Microbiome and Coevolution, “Evolution of Host-Microbiome Associations Across the Animal Kingdom” New Orleans, LA (partial travel support)

Keynote session lecture, European Society for Evolutionary Biology 2017, “On the Origin of Species: From Genes to Holobionts”, Symposium on Coevolution of Hosts and Their Microbiomes, Groningen, Netherlands

UC Berkeley, “Animal Speciation from the Microbe’s Perspective”, Department of Integrative Biology, Berkeley, CA (full travel support)

University of Alabama, “On the Origin of Animal Species in Light of Symbiosis”, Birmingham, AL (full travel support)

University of Mississippi, “The Microbial Basis of Animal Speciation”, Oxford, MS (full travel support)

Vanderbilt Genetics Institute Seminar Series, “How Do Microbes Form Relationships with Animals?”, Vanderbilt University, Nashville, TN

Austin Pea University, “Microbes and the Origin of Animal Species”. Department of Biology, Clarksville, TN

Plenary lecture, International Conference on Holobionts, Natural History Museum, Paris, France (full travel support; declined due to conflict with teaching)

Keynote lecture, Systems Biology Workshop, AgriBio, Centre for AgriBioscience, La Trobe University, Melbourne, Victoria 3083, Australia (partial travel support, declined due to substantial travel schedule)

Special speaker on host-microbe-virus interactions, Gordon Research Conference on Malaria, Diablerets, Switzerland (full travel support, declined due to travel conflict)

Research Workshop: The Metaorganism Frontier, King Abdullah University of Science and Technology, Thuwal, Red Sea, Saudi Arabia (full travel support, declined due to travel conflict)

Colloquium Series on the Microbiome, Integrative Research Institute, Humboldt University, Charite-University Hospital, Max Delbrück Center, Berlin, Germany (full travel support, declined due to teaching conflict)

New Frontiers Symposium on Microbiome, Radboud Institute for Molecular Sciences, Netherlands (full travel support, declined due to teaching conflict)

Workshop on Host-Microorganism Associations, University of Bordeaux, CNRS, France (full travel support, declined due to travel conflict)

2016

Plenary lecture, EMBO Conference on the Viruses of Microbes, International Society for Viruses of Microorganisms, Liverpool, UK (partial travel support)

Plenary lecture, German Zoological Society 109th annual meeting, Kiel University, "Darwin's Blind Spot: The Microbial Making Of A Species", Kiel, Germany (full travel support)

Keynote lecture, Microbiome Meeting, Centro de Ciencias de la Complejidad, Mexico City, Mexico (full travel support)

Evolution lecture, University of British Columbia, Biodiversity Research Center, Invitee of the life science graduate students, "Animal-Microbe Interactions and the Origin of Species" (full travel support)

Keynote lecture, American Society for Microbiology Conference for Undergraduate Education, "Host Biology in Light of the Microbiome: An Introduction to Holobionts and their Hologenomes" North Bethesda, MD (partial travel support)

University of Liverpool, "Bug in a Bug in a Bug: How a Virus in an Obligate Intracellular Bacterium Affects Eukaryotes"
Liverpool, UK (partial travel support)

University of North Carolina at Charlotte, "The Hologenome Concept: Host Biology In Light of the Microbiome", Department of Biological Sciences, Charlotte, NC (full travel support)

Plenary lecture, International Society for Evolution, Medicine, & Public Health, 2nd annual conference, Triangle Center for Evolutionary Medicine, Duke University, NC (full travel support, declined due to scheduling conflict)

Plenary lecture, 2nd Summer Symposium on Systems Biology, National Institute of Medical Genomes, INMEGEN, Mexico City, Mexico (full travel support, declined due to teaching conflict)

Keynote lecture, American Society for Microbiology Meeting on Beneficial Microbes, 6th conference, Seattle, WA (partial travel support, declined due to scheduling conflict)

Podium talk, Gordon Research Conference on Marine Microbes, Session on Host-Associated Microbiome Communities, Gorina, Spain (partial travel support, declined due to scheduling conflict)

Microbiome and Host Metabolism, Symposium at The Academy Palace of Sciences in Brussels, Belgium (declined due to scheduling conflict)

University of Louisville, Microbiology and Immunology Student Organization, Louisville, KY (declined due to teaching conflict)

2015

Keynote session lecture, American Society for Microbiology Meeting, New Orleans, LA, "Phage Wormholes: Hacking Symbiosis to Scatter across the Tree of Life" (partial travel support)

Plenary lecture, 11th Early Career Scientists Symposium, University of Michigan, Department of Ecology and Evolutionary Biology, "The Microbiome and Darwin's Mystery of Mysteries", Ann Arbor, MI (full travel support)

Symposium convener, "Holobionts and Their Hologenomes", 115th American Society for Microbiology General Meeting, New Orleans, LA (partial travel support)

Podium talk, Gordon Research Conference on Microbial Population Biology, Proctor Academy, NH (partial travel support)

Podium talk, Gordon Research Conference on Animal-Microbe Symbioses, Waterville Valley, NH (partial travel support)

Keynote session lecture, Evergreen International Phage Meeting, "Phages in Obligate Intracellular Bacteria", Olympia, WA (no travel support)

North Carolina State University, "Phage Wormholes: Hacking Symbiosis to Dwell in the Bacterial and Eukaryotic Worlds", Department of Plant and Microbial Biology, Raleigh, NC (full travel support)

University of Alaska, "The Symbiotic Basis of Animal Speciation", Department of Biology and Wildlife, Fairbanks, AK (full travel support)

National Institute for Mathematical and Biological Synthesis, University of Tennessee, Computational Advances in Microbiome Research Workshop, Knoxville, TN (full travel support)

University of Pittsburgh, Department of Medicine. "Host Biology in Light of the Microbiome" Pittsburgh, PA (full travel support)

San Diego State University, Department of Biology, "Symbiosis, Evolution, and Biology's Innate Complexity" San Diego, CA (full travel support)

University of Tennessee, Department of Microbiology. "Microbes and the Origin of Species", Knoxville, TN (full travel support)

Arizona State University, Center for Evolution and Medicine, "The Microbiome and Darwin's Mystery of Mysteries", Tempe, AZ (full travel support)

Eastern Tennessee State University, Department of Biological Sciences, "Microbes and the Origin of Species", Johnson City, TN (full travel support)

2014

Plenary lecture, Dalhousie University, Evolutionary Genomics of Symbiosis Workshop "The Urge to Merge: Towards a Unified Theory of The Origin of Species" Halifax, Nova Scotia, Canada (full travel support)

Plenary lecture, National Evolutionary Synthesis Center, catalysis meeting for Evolution and Community Ecology of Host Associated Microbiota, "10 Principles of the Hologenome", Durham, NC (full travel support)

Western Kentucky State University, "The Entangled Bank in Animals: Virus Transfer Between Bacterial Symbionts", Bowling Green, KY (full travel support)

Vanderbilt Univ, Human Genetics , "Rethinking Animal Evolution and Genetics in Light of the Microbiome", Nashville, TN

University of Utah, Department of Biology Super Seminar, "The Microbiology of Animal Speciation", Salt Lake City, UT (full travel support)

Bridgewater State University, Discover the Microbes Within! The *Wolbachia* Project, two lectures, Bridgewater, MA (full travel support)

Session Chair, 8th International *Wolbachia* Conference, "Speciation by Symbiosis: What Have We Learned So Far?", Innsbruck, Austria (no travel support)

Keynote lecture, Multilevel Selection Workshop, "Darwin's Blind Spot: The Microbial Making Of A Species" University of Munster, Germany (full travel support)

University of Kiel, Zoological Institute, "The Hologenome Concept of Evolution", Kiel, Germany (full travel support)

Finalist, Howard Hughes Medical Institute Professors Competition, "Next Generation Flipped Courses: Active Learning With A Three Fold Advantage", Chevy Chase, MD (full travel support)

University of Illinois, Department of Biological Sciences, "Darwin's Blind Spot: The Microbial Making of a Species", Chicago, IL (full travel support)

Vanderbilt University, Digestive Disease Research Center, "Darwin's Blind Spot: The Microbial Making of Animals", Nashville, TN

Michigan State University, Department of Microbiology and Molecular Genetics, "An Evolutionary Framework for Microbial Pathogenesis", East Lansing, MI (full travel support)

University of Michigan, Department of Microbiology and Immunology, "Life Looks for Life: Underexplored Dimensions of the Microbiome" Ann Arbor, MI (full travel support)

Vanderbilt University, Department of Medicine, Dinner and Data
 "Darwin's Blind Spot: The Microbial Making of a Species"
 Nashville, TN

Vanderbilt University, Digestive Disease Research Center,
 Microbial-Host Interactions, "Animal Microbes and the Origin of
 Species", Nashville, TN

2013

Session chair and speaker, Evolution Society Meeting, "Animal
 Speciation and the Gut Microbiome", Snowbird, UT (full travel
 support)

- Featured in *Science News*, July 2, 2013, Gut microbes may
 put barrier between species

University of Illinois, Department of Animal Biology, "Symbionts
 as Targets and Agents of Change", Urbana-Champaign, IL (full
 travel support)

University of Oregon, Department of Biology, "Mainlining the
 Hologenome into Biology", Eugene, OR (full travel support)

University of Indiana, Department of Biology, "Mainlining the
 Hologenome into Biology", Bloomington, IN (full travel support)

San Diego State University, Department of Biology, "Mainlining
 the Hologenome into Biology", San Diego, CA (full travel
 support)

Plenary lecture, National Science Foundation, Dimensions of
 Biodiversity PI Meeting, "The Underexplored Dimensions of
 Speciation Symbionts" (grant travel support)

2012

University of Idaho, Department of Biological Sciences,
 "Symbionts as Targets and Agents of Change" Moscow, Idaho
 (full travel support)

7th International Symbiosis Society Conference, Symposium
 Session on Horizontal Gene Transfer and the Role of Viruses,
 "The Entangled Bank in Animals: Viral Transfer Between
 Bacterial Symbionts", Krakow, Poland (no travel support)

Advances in Genome Biology and Technology Conference,
 Microbial Genomics session, "Targeted Genome Capture of
 Microbial Symbionts", Marco Island, FL (no travel support)

Vanderbilt University Medical Center, Department of Pathology,
 Microbiology, and Immunology, "Virus Evolution in Host-
 Restricted Bacteria", Nashville, TN

North Central Branch of the Entomological Society of America, Student Affairs Committee invitation for symposium, “Odd Couples: Symbioses in Insects and Their Consequences”, Lincoln, NE, Declined due to conflict

Murray State University, Department of Biology, “Speciation by Symbiosis”, Murray, KY (no travel support)

2011

Georgia Institute of Technology, Department of Biology, “The Entangled Bank in Animals: Gene Transfer Between Bacterial Symbionts”, Atlanta, GA (full travel support)

Vanderbilt University Medical Center, Department of Pediatrics, Pediatric Infectious Disease Research Conference, “Evolutionary and Ecological Genomics of Intracellular Bacteria”, Nashville, TN

University of Vienna, Austria, Lecture Series on Symbiosis, “Horizontal Gene Transfer Between Intracellular Bacteria” (full travel support)

Keynote lecture, American Society for Microbiology Conference, Session on Coevolution, “The Entangled Bank Within Eukaryotes: Bacteriophage in Bacterial Endosymbionts” New Orleans, LA (partial travel support).

Graduate student invitation, Emory University, Population Biology, Ecology, and Evolution graduate program, “Horizontal Gene Transfer Between Intracellular Bacteria in Animals”, Atlanta, GA (full financial support)

2010

Keynote speaker, 8th Ecological Genomics Symposium, “Microbial Symbiosis and Mobile Genetic Elements”, Kansas City, MO (full travel support)

Distinguished lecturer, Symposium series presented by the students of the Case Western Reserve University Cellular and Molecular Biology Training Program, “Symbiotic Control of Human Diseases” and “Mobile Elements in Obligate Intracellular Bacteria” (full travel support)

Keynote speaker, EU COST Action meeting - Arthropod symbiosis: From basic research to pest and disease management, “The *Wolbachia*-Invertebrate Symbiosis as a Platform for Integrative Education”, Zurich, Switzerland (full travel support)

Keynote speaker, 7th Okazaki Biology Conference on Evolution of Symbiotic Systems, “The Entangled Bank of an Intracellular

Symbiosis: Mobile Genetic Elements in *Wolbachia*” National Institute for Basic Biology, Kakegawa, Japan (full travel support)

Keynote speaker, International symposium on Microbial Interactions Leading to Novel Biological Functions, “Nature's Matryoshka Doll: Bacteriophage in Bacterial Endosymbionts of Eukaryotes”, Tsukuba, Japan (full travel support)

2009 University of Arizona, Department of Entomology, “Mobile DNA in Bacterial Symbionts”, Tucson, AZ (full travel support)

Vanderbilt University Medical Center, Department of Microbiology and Immunology, “Mobile Elements in Symbiotic Bacteria”, Nashville, TN

1st Nematode-Bacterium Symbioses Research Coordination Network Meeting, “Phylogenomics of Parasitism and Mutualism in *Wolbachia*”, University of Wisconsin, Madison, WI (partial travel support)

Session chair and speaker, International Symbiosis Society Meeting, “Mobile DNA in Symbiotic Bacteria”, Madison, WI (partial travel support)

Keynote lecture, Invited workshop director/speaker for HHMI high school lab series “Discover the Microbes Within! The *Wolbachia* Project”, Marine Biological Laboratory, Woods Hole, MA (full travel support)

Nasonia Genome Meeting, “The Genetic basis of Symbiont titers in *Nasonia*”, University of Rochester, Rochester, NY

2008 Keynote lecture, The National Conference on Science, Technology, Education, and Math, “Discover the Microbes Within! The *Wolbachia* Project”, University of Maine, Orono, ME

Keynote lecture, HHMI workshop, “Discover the Microbes Within! The *Wolbachia* Project”, University of Mississippi, Jackson, MS (full travel support)

4th International *Wolbachia* Conference, “Phylogenomics of *Wolbachia*: What the Trees Can and Can Not Say”, Crete, Greece

Keynote lecture, Falmouth Hospital Lecture Series, “The Use of Invertebrate Symbionts to Control Human Disease”, Falmouth, MA 02536 (stipend support)

Vanderbilt University, “Bacteriophage, Bacteria, and Bugs: The Evolution of a Widespread Tripartite Symbiosis”, Department of Biological Sciences, Nashville, TN

NSF Workshop, “The Future of the Tree of Life Program”, Washington DC (full travel support)

SOCIETIES

American Academy of Arts and Science
American Society for Microbiology
Genetics Society of America
International Society for Viruses of Microorganisms
International Symbiosis Society
Society for the Study of Evolution

TEACHING-RELATED ACTIVITIES (AT VANDERBILT UNIVERSITY)

New courses/sections introduced and/or currently being taught

- Biological Sciences 1510 – Introduction to Biological Sciences, Role: Instructor (50%), 3 cr. This introductory course is foundational for all biological sciences courses and majors. Material in this section covers cell diversity and evolution, synthesis of macromolecules, membrane-bound organelles, metabolism and energy production. Fall 2017: 191 students.
- Biological Sciences 234/3234 – Microbiology, Role: Instructor (100%), 3 cr. This course brought microbiology to the Department of Biological Sciences curricula. It covers the origin and universality of microbial life, microbial diversity, microbial genomics, and human health applications of microbes. Spring 2010: 16 students, Spring 2011: 10 students, Spring 2012: 43 students, Spring 2014: 48 students, Spring 2015: 46 students, Spring 2016: 45 students, Spring 2017: 45 students
- Biological Sciences 275/3695 - Living In Symbiosis, Undergraduate Seminar, Instructor (100%), 2 cr. This seminar style course teaches execution in science by reading, observing, and discussing research and methods. The conceptual focus is on the molecular, evolutionary, biochemical, and systems biology of symbioses. Fall 2010: 12 students, Fall 2011: 13 students, Fall 2014: 11 students, Fall 2015: 13 students
- Foundations in Microbiology and Immunology 332 – Microbial Genetics and Pathogenesis, Instructor for two 90 minute lectures (100%). This course is designed for graduate students interested in microbial genetics and pathogenesis. Course directors are Profs. Lacy and Cover in Department of Pathology, Microbiology, and Immunology. Summers 2012, 2013, 2014, 2015: 10-12 students. Spring 2016: 15 students
- Interdisciplinary Graduate Program 300 - Bioregulation, Genetics Section, Instructor (100%) for three 60 minute lectures on next generation sequencing, microbial genomics, and the human microbiome. It also includes one help session. Bioregulation is a lecture style course for 1st year graduate students in the Biomedical Sciences. Fall 2011 and Fall 2012: 90 students

Other courses taught

- Biological Sciences 280/3860 – Research Internship. Mentor in Spring 2009 (1 student), Fall 2010 (1 student), Spring 2011 (1 student), Fall 2011 (1 student), Fall 2012 (1 student)
- Biological Sciences 283/3861 – Directed Laboratory Research. Mentor in Fall 2009 (1 student), Spring 2010 (2 students), Summer 2010 (1 student), Spring 2011 (2 students), Fall 2011 (1 student), Spring 2013 (1 student), Summer 2014 (2 students), Fall 2013 (2 students), Spring 2016 (2 students), Fall 2017 (2 students), Spring 2018 (1 student)
- Biological Sciences 286/3961 – Independent Laboratory Research. Mentor in Fall 2009 (1 student), Fall 2010 (1 student), Spring 2010 (2 students), Fall 2011 (1 student), Spring 2012 (1 student), Fall 2012 (1 student), Spring 2014 (2 students), Fall 2014 (1 student), Spring 2015 (1 student), Fall 2017 (1 student), Spring 2018 (1 student), Fall 2018 (1 student)
- Biological Sciences 296/4999 - Honors in Biological Sciences in Fall 2012 (1 student; 6 cr), Fall 2014 (1 student), Spring 2015 (1 student)
- Biological Sciences 3850 - Independent Reading. Mentor in Fall 2015 (1 student)
- Biological Sciences 110B/1511 – Introduction to Biological Sciences, Guest lecture on Coevolution, Fall 2011 (260 students), Primary Instructor – Prof. Abbot
- Biological Sciences 205/2205 – Evolution, Instructor for two 75 min lectures. Fall 2010 (60 students) Primary Instructors – Profs. Funk and Rokas
- Biological Sciences 275/3965 – Cell Biology: Vector Biology and Global Health, Guest lecture on symbiont-control of insect vectors, Spring 2008, 2010, 2011 (12 students). Primary Instructor – Prof. Zweibel.
- Biological Sciences 275/3965 – Biology of Host-Parasite Interactions, Guest lecture on symbiont-control of insect vectors, Spring 2008 (8 students). Primary Instructor – Prof. Zweibel.
- Biological Sciences 320/6320 – Graduate Seminar in Biological Sciences, Instructor (100%). This entry-level course for graduate students brings the first and second year students of the Biological Science Department together for a journal club in which students read, critique, discuss, and present the course readings. Spring 2009: 23 students
- Biological Sciences 336 – Seminar in Ecology and Evolutionary Biology, Instructor (100%). This course is designed for graduate students with an interest in the patterns and processes of ecology and evolution. This seminar style course fosters pedagogical interactions between the faculty and students on a weekly basis. Spring 2009 and Fall 2011.

Graduate student dissertation committees

(i) Graduate students directly advised by SRB

Brucker, Rob 2008 – 2013 Dept. of Bio. Sci. Vanderbilt University

- Ann Bernard Martin Award for Excellence in Graduate Research, 2010
- Hickory Stick Award for Outstanding Teaching in Biological Sciences, 2011

- Graduate Student Association Vice President, BSCI, 2010-2014
- Volunteer for numerous BSCI recruitment weekends

Metcalf, Jason 2011 – 2014 Dept. of Bio. Sci. Vanderbilt MSTP

- M.D./Ph.D. Student in Medical Scientist Training Program
- Ann Bernard Martin Award for Excellence in Graduate Research, 2012
- Richard B. Johnston, Jr. Award for excellence in academic scholarship and clinical medicine, 2016
- Graduate Student Association Social Chair, BSCI, 2011-2012
- Graduate Student Association Vice President, BSCI, 2012-2013
- Graduate Student Association President, BSCI, 2013-2014
- Communications Director, Vand. Microbes & Defense Society, 2012-2013
- Tutorial Coordinator, Vanderbilt Microbes & Defense Society, 2011-2012

Funkhouser, Lisa 2009 – 2016 Dept. of Bio. Sci. Vanderbilt University

- NSF Graduate Research Fellowship, 2011
- Ann Bernard Martin Award for Excellence in Graduate Research, 2011
- Vanderbilt Prize Scholar - university wide competition for best female graduate student in biomedical sciences, 2013
- Graduate Student Association Social Chair, BSCI, 2010-2012
- Graduate Student Association President, BSCI, 2012-2013
- Vanderbilt Student Volunteers for Science, BSCI, Fall 2012

LePage, Daniel 2012 – 2016 Dept. of Bio. Sci. Vanderbilt University

- NSF Doctoral Dissteration Improvement Grant
- Best Seminar Award, International *Wolbachia* Conference, Australia, 2016
- Graduate Student Association Treasurer, BSCI, 2012-2014
- Graduate Student Association President, BSCI, 2014-2015
- Volunteer for numerous IGP and BSCI recruitment weekends

Van Opstal, Edward 2013 – Dept. of Bio. Sci. Vanderbilt University

- American Society for Microbiology Young Ambassador to Tennessee, 2018
- AAAS General Meeting Student ePoster, Honorable Mention (runner up), 2018, Austin, TX
- ASM Microbe Seminar Slot in Eco-Evolution Session, Outstanding Student Abstract Award, Seminar Slot in Up-Goer Five Session and Travel Award, New Orleans, 2017
- Selected attendee of the Vanderbilt DC Policy Trip, 10/2016
- Selected author in NIH BEST PhD/Postdoc Blog Series, 3/2017-8/2017
- Graduate Student Association Treasurer, BSCI, 2014-2015
- Graduate Student Association Vice President, BSCI, 2015-2016
- Graduate Student Association President, 2016-2017
- Coordinator for Life Science Tennessee (Middle TN) Academic Alliance Beer and Biotechnology, 2016-2017
- Inequality in the Biosciences Association, Speaker Chair, 2017-Present
- Graduate Research Excellence Award, BSCI, 2018

Brooks, Andrew 2013 – Human Genetics Vanderbilt University

- ASM Microbe 2017 Speaker in Electronic Poster Session, Travel Award for Outstanding Abstract and Two Poster Presentations, New Orleans
- Vanderbilt Genetics Institute Training Grant, 2015-2018
- Human Genetics Student Association, Vice President, 2015-2016
- Human Genetics Student Association, President, 2016-2017
- Organizer of Life Sciences Tennessee Academic Alliance - Beer and Biotech Events, 2018
- VI4 Mini-Sabbatical Award Recipient, \$4000 research collaboration, 2018

Perlmutter, Jessamyn 2015 – Dept. of Bio. Sci. Vanderbilt University

- Best Poster Award, 9th International *Wolbachia* Conference, Australia, 2016
- Graduate Student Association Treasurer, BSCI, 2015-2016
- Inequality in the Biosciences Associations, 2016-Present, Director of Outreach
- Instructor for Discover the Microbes Within! The *Wolbachia* Project lab series
- Richard and Mary Finkelstein Student Travel Award, American Society for Microbiology Meeting, 2018, One of six student attendees at the conference to receive the award
- President, Co-Founder, Vanderbilt University Student Branch of American Society for Microbiology, 2018
- Top Speaker Award at American Society for Microbiology KY/TN local branch meeting, 2018

Shropshire, Dylan 2015 – Dept. of Bio. Sci. Vanderbilt University

- NSF Graduate Research Fellowship, Honorable Mention, 2016
- NSF Graduate Research Fellowship, Recipient, 2017
- Ann Bernard Martin Award for Excellence in Graduate Research, BSCI, 2017
- Graduate Student Association Treasurer, BSCI, 2016-2017
- Top Speaker Award at American Society for Microbiology KY/TN local branch meeting, 2018
- 1st Place Award for Microbiology Student Oral Presentation, Tennessee Academy of Science, 2018

(ii) Graduate students for which SRB serves on the thesis committee

Choudhury, Ray	2007 – 2011	Dept. of Biology	Univ. of Rochester
Erickson, Daniel	2009 – 2011	Dept. of Bio. Sci.	Vanderbilt University
Gibbons, John	2009 – 2012	Dept. of Bio. Sci.	Vanderbilt University
King, Jonas	2009 – 2012	Dept. of Bio. Sci.	Vanderbilt University
Shaffer, Carrie	2009 – 2012	Dept. of Micro & Im.	Vanderbilt University
Salichos, Leonidas	2010 – 2014	Dept. of Bio. Sci.	Vanderbilt University
Ma, Peijun	2010 – 2014	Dept. of Bio. Sci.	Vanderbilt University
Beachboard, Dia	2010 – 2014	Dept. of Micro & Im.	Vanderbilt University
Haley, Kathryn	2010 – 2014	Dept. of Micro & Im.	Vanderbilt University
Cobbs, Cassidy	2011 – 2014	Dept. of Bio. Sci.	Vanderbilt University
Colby, Greg	2011 – 2012	Dept. of Bio. Sci.	Vanderbilt University
Belovich, Andrea	2013 – 2016	Dept. of Pharmacol.	Vanderbilt University

Sigle, Leah	2015 – 2018	Dept. of Bio. Sci.	Vanderbilt University
Carrier, Tyler	2016 –	Dept. of Bio. Sci.	UNC at Charlotte
Gitschlag, Bryan	2016 –	Dept. of Bio. Sci.	Vanderbilt University
• Chair			
Graepel, Kevin	2016 –	Dept. of Pediatrics	Vanderbilt Univ. Med Ctr
Hahn, Megan	2018 –	Marine & Atmosph. Sci	Stony Brook University
Joose, Bryan	2018 –	Dept. of Bio. Sci.	Vanderbilt University
• Chair			

Advisor for Postdocs

Newton, Irene	2008-2011	Assistant Prof.	Indiana Univ, Bloomington
Kent, Bethany	2008-2010	Clinical Lab Scientist	Centennial Hospital
Jernigan, Kristin	2010-2013	Assistant Prof.	Columbia State Comm. Coll.
Brucker, Robert	2013-2014	Junior Fellow	Harvard Rowland Institute
Kohl, Kevin	2014-2017	Assistant Prof.	Univ. of Pittsburgh
•			Postdoctoral Fellow on NIH Gastroenterology Training Grant T32DK007663, Vanderbilt University, 11/1/16 - 10/31/17, PI of T32: Dr. Richard Peek
•			International Postdoc Fellow of National Science Foundation, 2014-2016
•			Honorable Mention, Postdoc of the Year Award, Vanderbilt University, 2017
•			Assistant Professor, U. Pittsburgh, Dept. of Biological Sciences, 2017
Funkhouser-Jones, L.	2016-2016	Postdoc	Washington U. St. Louis
Mikaelyan, Aram	2016-2018	Assistant Prof.	NC State University
•			German Research Foundation Postdoctoral Fellowship, DFG, 2017
Leigh, Brittany	2017-Current	Postdoc	Vanderbilt University

Scholarly oversight committees for Clinical Fellows, Postdocs, and Junior Professors

Romano-Keeler, J.	2010 – 2012	Neonatology	Vand. Children's Hospital
Smith, Clint	2011 – 2013	Pediatric Inf. Disease	Vand. Univ. Medical Center
Newton, Irene	2013 – 2015	Biology	Indiana Univ., Bloomington
•			Woodrow Wilson Career Enhancement Fellowship for Minority Junior Faculty
Drown, Devin	2016	Biology & Wildlife	University of Alaska
Waterhouse, Stephanie	2018 – Current	Pediatric Care Fellow	Vand. Univ. Med Center

Training grant preceptor for:

(i) Reproductive Biology: Training for the 21st Century (\$271,361 in direct costs), PI: Kevin Osteen, 2009-2011, Postdoc support, Dr. Kristin Jernigan

(ii) Training Program in Cellular, Biochemical and Molecular Sciences | NIH T32 GM008554, PI: Dr. Jim Patton 2010 - Current, PhD students Lisa Funkhouser and Daniel LePage

(iii) Medical Scientist Training Program, NIH T32 GM0734, PI: Dr. Terence Dermody, 2011-Current, 2011-2014 MD/PhD student Jason Metcalf

(iv) Cellular & Molecular Microbiology Training Program (\$353,294 in direct costs), PI: Dr. Eric Skaar, 2011 - 2014, Department of Microbiology and Immunology

(v) Preventing Prematurity and Poor Pregnancy Outcomes Training Grant, National Institute of Child Health and Development, PI: Dr. Jeff Reese

(vi) Training Program on Genetic Variation and Human Phenotypes, Vanderbilt Genetics Institute, PI: Nancy Cox, 2014-Current PhD student Andrew Brooks

Undergraduate research projects supervised in BSCI

(i) Undergraduates directly advised by SRB (S: Spring semester, F: Fall, Su: Summer)

1. Carolyn Foley Class of 2011 Su/2009
2. Ross Tollkansen Class of 2011 Su/2009
3. John Chen Class of 2012 S&F/2008, S&F/2009, S/2010
 - Coauthor on publication in *Genetics*, 2011
 - Awarded a Vanderbilt Undergraduate Summer Research Fellowship, 2010
 - Awarded Early Entry in Vanderbilt University Medical School, start in 2012
4. Aaron Noll Class of 2012 S&Su/2010
 - Vanderbilt University Medical School, start in 2012
 - Coauthor on publication in *BMC Evolutionary Biology*, 2017
5. Marisa Pinchas Class of 2012 S&F/2011, S&F/2012
 - Coauthor on publication in *BMC Evolutionary Biology*, 2017
6. Zhongyang Cao Class of 2013 F/2009, S/2010
7. Jonathan Herrick Class of 2013 F/2011
8. Emma Steigerwald Class of 2013 F/2012
 - Awarded Michael B. Keegan Travelling Fellowship, 2013
 - Awarded Truman Scholarship, 2012
9. Stephanie Sehnert Class of 2014 F/2010, S/2011, S&F/2012
 - Coauthor on publication in *PeerJ*, 2015
10. Caitlyn Le Class of 2015 F/2012, S/2013
11. Ashley Saulsberry Class of 2015 S&F/2013, S&F/14, S&F/15
 - Awarded 2014 Littlejohn Summer Research Scholarship, VUSRP
 - First author on publication in *BMC Evolutionary Biology*, 2017
12. Brad Roche Class of 2016 S/2013
13. Paul Snider Class of 2016 S&F/2014, F/2015, S/2015
14. Minhee Jo Class of 2016 S&F/2013, S/2014
 - Coauthor on publication in *PeerJ*, 2013
15. Jungmin (Danny) On Class of 2016 S/2016
16. Gina Qin Class of 2018 F/2015
17. Ananya Sharma Class of 2019 F/2015, S&F/2016, F/2017, S/2018\
 - Coauthor on publication in *Current Biology*, 2018
18. Katherine Carbonell Class of 2019 S/2016
19. Melissa Halstead Class of 2019 S&F/2016
20. Emily Layton Class of 2020 F/2016, S,Su,F/2017, S/2018
 - Coauthor on publication in *Nature*, 2017 and *PNAS*, 2018

- SyBBURE Searle Undergraduate Research Scholar, 2017-2020
 - Poster presentation award, 2018 *Wolbachia* Conference
21. Helen Zhou Class of 2018 S,Su,F/2017, S/2018
- Coauthor on publication in *PNAS*, 2018

(ii) Service for other student Honors Research Committees

1. Kim, Elliott	2009	Honors Res. Cmte.	Dr. K. Friedman (PI)
2. Park, Arick	2009	Honors Res. Cmte.	Dr. L. Solnica-Krezel (PI)
3. Mezzanotte, J.	2010	Honors Res. Cmte.	Dr. P. Abbot (PI)
4. Thurman, T.	2011	Honors Res. Cmte.	Dr. Dan Funk (PI)
5. Wittgrove, C.	2012	Honors Res. Cmte.	Dr. Jim Patton (PI)
6. Brady, J.	2013	Honors Res. Cmte.	Dr. Chris Janetopoulos (PI)
7. Grasch, J.	2013	Honors Res. Cmte.	Dr. Doug McMahon (PI)
8. Malpartida, J.	2013	Honors Res. Cmte.	Dr. Lawrence Zwiebel (PI)
9. McMann, C.	2015	Honors Res. Cmte.	Dr. Carl Johnson (PI)

(iii) Co-mentor for students in non-BSCI labs

1. Comstock, Jordan	Class of 2014	F/2012	PI: Alyssa Hasty
2. Albert, Shawn	Class of 2016	S&F/2013,2014,2015	PI: Eric Skaar
3. Kator, Jamie	Class of 2016	F&S/2014	PI: Christina Fiske
4. Risemberg, Ellen	Class of 2016	S/2014, F/2015, S/2016	PI: Kathy Gould
5. Li, Anqing	Class of 2018	F/2015, S/2016	PI: Peggy Kendall
6. Bullock, Kennady	Class of 2018	F/2016	PI: Timothy Cover
7. Danielle Cahoon	Class of 2017	F/2016	PI: Fang Yan
8. Lunden Cunningham	Class of 2018	S/2017	PI: Eric Skaar
9. Claire Weinstein	Class of 2019	F/2017, S/2018, F/2018	PI: Eric Skaar
10. Marc Bernstein	Class of 2018	F/2017, S/2018	PI: Pierre Massion
11. Jeremy Mani	Class of 2018	F/2017, S/2018	PI: James Crowe
12. Thayer Taft	Class of 2020	F/2017, F/2018	PI: Mark Denison
13. Anica Mohammadkhah	Class of 2021	F/2018	PI: Jane Ferguson
14. Channing Chi	Class of 2021	F/2018	PI: Jeff Rathmell

SERVICE (WHILE AT VANDERBILT UNIVERSITY)Service To Department

- i. 2008, Faculty Friday Lecture to graduate direct admission students, “Animal-microbe interactions”
- ii. 2008, Retreat Lecture, “*Wolbachia pipientis*: The global heritable pandemic”
- iii. 2008-Current, Interviewer for prospective graduate students
- iv. 2008, 2010, 2011 - Lectures for undergraduate seminar BSCI275A-2 Cell Biology: Vector Biology and Global Health
- v. 2008, Guest lecture for BSCI 275 Biology of Host-Parasite Interactions
- vi. 2009, Guest lecture for undergraduate seminar BSCI275 Biology of Host-Parasite Interactions
- vii. 2009, Introduction to what it is like to be a scientist – BSCI111a

- viii. 2009-2011, Biological Sciences Curriculum Committee
- ix. 2010, Two guest lectures for BSCI 205 Evolution.
- x. 2010, Conceived lab project and supplied biological specimens (wasps and their fly hosts) for BSCI 237 Ecology Lab to Denise Due-Goodwin
- xi. 2010-2011, Biological Sciences Faculty Secretary
- xii. 2011, Guest lecturer for BSCI 110, Coevolution
- xiii. 2011-2013, Biological Sciences Seminar Committee
- xiv. 2012, Lecture on Social Media in Science, Dept of Biological Sciences Retreat
- xv. 2012, Scribe and presenter at Department of Biological Sciences Faculty Retreat
- xvi. 2013-2015, Interdisciplinary Graduate Program Admissions Committee
- xvii. 2014-2015, Faculty Search Committee for two Assistant Professors in Biological Sciences (Systems Biology and Biochemistry)
- xviii. 2015, Preliminary Faculty Search Committee for Assistant Professor in Biological Sciences (Microbiology)
- xix. 2015-Current, Faculty Mentoring Committee for Assistant Professor Maulik Patel
- xx. 2015-2017, Biological Sciences Graduate Student Admissions Committee
- xxi. 2016-2017, Biological Sciences Advisory Committee to Director of Graduate Studies
- xxii. 2017-2019, Biological Sciences Committee on Faculty Awards
- xxiii. 2017, Chair of Search Committee for Assistant Professor in Microbiome
- xxiv. 2018, Associate Director of Graduate Studies, Department of Biological Sciences
- xxv. 2018, Advisory Committee to Director of Graduate Studies, Department of Biological Sciences
- xxvi. 2018, Graduate Admissions Committee, Department of Biological Sciences

Service To College

- i. 2008-Current, Host lab for students in The School of Science and Math at Vanderbilt, a joint venture between Vanderbilt University Medical Center and Metropolitan Nashville Public Schools
- ii. 2010, Faculty panelist in graduate student workshop, Prof 101: Launching Successful Faculty Careers/ The Natural Sciences and Engineering session / "Writing for Publication: Pleasures and Problems in the Academic Writing Process"
- iii. 2010, Faculty panelist for career development meeting for assistant professors
- iv. 2013, Laboratory guide and leadership lecturer for a group 20 high school students from Huntsville, Alabama
- v. 2015, Faculty representative for dinner with Commons freshmen at Dean Beasley's house on undergraduate research experiences

Service To University

- i. 2008-Current, IGP prospective student interviewer
- ii. 2009 & 2011, Seminars for Department of Pathology, Microbiology and Immunology
- iii. 2009, Letter of support for Dr. Louise Rollins-Smith's NSF grant, Department of Microbiology and Immunology, "MSB: The contribution of microbial communities to amphibian skin defense"

- iv. 2010, 2011, 2015, 2016, IGP graduate student recruiting dinners at Dr. Roger Chalkley's home
- v. 2010-Current, Member of Superfly - a joint group of Vanderbilt *Drosophila* labs
- vi. 2010-2016, Seminars for NIH CBMS training grant journal club
- vii. 2010-2012, Panel member for reviewing graduate student "topping up" awards
- viii. 2011, Letter of support for Dr. Al George (Chief, Division of Genetic Medicine) and Dr. Hendrik Weitkamp (Division of Neonatology); 2011 DDRC and CTSA Pilot & Feasibility Translational Research grant application entitled "'Intestinal microbiota as a risk factor in necrotizing enterocolitis (NEC)'"
- ix. 2011, Prospective MOSAIC undergraduates invited to observe BSCI 234: Microbial Population Biology (March 17th). The MOSAIC program promotes ethnic diversity and cultural understanding at Vanderbilt.
- x. 2011, Recruitment talk for prospective IGP graduate students at Vanderbilt
- xi. 2011, Guest Lecturer on Evolution to 9th graders at School of Science and Math
- xii. 2011, Instructor for IGP 300 course, three lectures and a review session on Genomics
- xiii. 2011, Seminar for CBMS training grant journal club
- xiv. 2011, Co-organizer of Vanderbilt Microbiome Research Meeting
- xv. 2012, MSTP program review, advisory board representing assistant professors
- xvi. 2012, Review of Mini-Sabbatical Fellowships for students in the Department of Pathology, Microbiology, and Immunology
- xvii. 2012, Seminar for CBMS training grant journal club
- xviii. 2012, Lecture on genomic resources; Retreat of Department of Pathology, Microbiology and Immunology
- xix. 2012, Advisor for Vanderbilt Institute of Chemical Biology | Target Identification and Validation Initiative
- xx. 2013, Member, Vanderbilt Digestive Disease Research Center and Epithelial Integrity Group
- xxi. 2013, Lecture and mentor for Community-Engaged Research Project with School for Science and Math at Vanderbilt
- xxii. 2013, Seminar for CBMS training grant journal club
- xxiii. 2013, Instructor for one CBMS student-led journal club
- xxiv. 2013, Reviewer for VICTR Grant Studio (PI: Phillip Budge, MD, PhD, Medicine)
- xxv. 2013, Reviewer for VICTR Grant Studio (PI: Qiuyin Cai, MD, PhD, Epidemiology)
- xxvi. 2013-2015, IGP Graduate Admissions Committee
- xxvii. 2014, Lecture: "Darwin's Blind Spot: The Microbial Making of a Species", Department of Medicine, Dinner and Data
- xxviii. 2014, Department of Pathology, Microbiology, and Immunology: Authored article on social media to myHPI division news (August 5)
- xxix. 2014, Human Genetics seminar: "Rethinking Animal Evolution and Genetics in Light of the Microbiome" (September 25)
- xxx. 2014, Lecturer and mentor for Community-Engaged Research Project with Peabody School, School for Science and Math at Vanderbilt
- xxxi. 2014, Lecture for Digestive Disease Research Center, Host-Microbial Interactions, "Animal Microbiomes and the Origin of Species"

- xxxii. 2015, Lecturer and mentor for Community-Engaged Research Project with Peabody School, School for Science and Math at Vanderbilt
- xxxiii. 2015, Grant reviewer, Vanderbilt Diabetes Center Discovery Pilot Grant
- xxxiv. 2015, Search committee member for microbiome scientist, VANTAGE core
- xxxv. 2015, Faculty Salon with Chancellor Zeppos
- xxxvi. 2015, Panel member for NSF Graduate Research Fellowship workshop
- xxxvii. 2016, Instructor for two classes on the microbiome in graduate-level Foundations 3, Microbiology and Immunology
- xxxviii. 2015-2016, Search Committee for Director of Center of Bioinformatics, Department of Biomedical Informatics, Vanderbilt
- xxxix. 2016, Open Doors: Two Days of Teacher Visits, Living in Symbiosis class open for faculty visits
 - xl. 2016, Invited participant for Vanderbilt NSF Center for Chemical Communication Workshop
 - xli. 2016, Invited expert for Dr. Mona Mashayekhi's *Wolbachia* presentation at "Fox and Hedgehog", Department of Medicine Weekly Conference
 - xlii. 2017, Interviewee for Neuroscience student conducting a microbiome report for an anthropology class
 - xliii. 2017, Host for invited speaker John Rawls (Duke) in the Digestive Disease Research Seminar Series
 - xliv. 2017, Invited organizer for mini-symposia on "Fecal Transplantation and the Microbiome" for Vanderbilt's Program in Molecular Medicine; attended by 3rd year medical students and postdoctoral fellows
 - xlv. 2017-Current, Strategic Planning Committee for Vanderbilt Institute of Infection, Immunology, and Inflammation
 - xlvi. 2017, Seminar in Vanderbilt Genetics Institute Seminar Series, "How Do Microbes Form Relationships with Animals?"
 - xlvii. 2017-Current, Associate Director and Executive Committee of Vanderbilt Institute for Infection, Immunology and Inflammation
 - xlviii. 2017-Current, Founding Director of Vanderbilt Microbiome Initiative which involves organizing workshops, websites, social media feeds, pilot fund program, clinical research and outreach and hosting seminar speakers and assisting recruitments in this area.
 - xlix. 2017, Panel member for Vanderbilt Trans-Institutional Programs Proposal Development Session
 - 1. 2018, Reviewer for VICTR Grant Studio (PI: Suman Das, PhD, Medicine)
 - li. 2018, Convener and Lecturer for Bench to Bedside Symposium for Ph.D. and M.D. students, Medicine and Evolution in Light of the Microbiome, Vanderbilt Program in Molecular Medicine
 - lii. 2018, Co-organizer of Vanderbilt Ingram Cancer Center Scientific Retreat, Featured theme and speakers on Microbiome and Cancer.
 - liii. 2018, Reviewer for VICTR Grant Studio (PI: Hua Xie, PhD, Oral Biology at Meharry Medical College)
 - liv. 2018, Recruitment interview for Assistant Professor of Medicine, Division of Allergy/Pulmonary and Critical Care Medicine
 - lv. 2018, Panel member for career event on Academic Interview: What Do Search Committees Want?
 - lvi. 2019, Member of review committee for Discovery Grants, Vanderbilt University

Service To Profession

- i. Reviewed manuscripts for the following journals: American Naturalist, Animal Behavior, Applied and Environmental Microbiology, Biological Bulletin, Bioscience, Biotechnic and Histochemistry, BMC Biology, BMC Evolutionary Biology, Current Biology, Current Microbiology, DNA and Cell Biology, eLife, Entomologia Experimentalis et Applicata, Environmental Entomology, Environmental Microbiology, Environmental Microbiology Reports, Evolution, Experimental and Applied Acarology, FEMS Microbiology Reviews, Frontiers in Microbiology, Genetics, Genetica, Genome Biology and Evolution, Genome Research, Heredity, Insect Biochemistry and Molecular Biology, Insect Molecular Biology, Interface Focus, International Journal of Parasitology, International Society of Microbial Ecology, Journal of Bacteriology, Journal of Evolutionary Biology, Journal of Invertebrate Pathology, Journal of Microbiological Methods, Letters in Applied Microbiology, mBio, Molecular Biology and Evolution, Molecular Ecology, Molecular Genetics and Genomics, Molecular Microbiology, Molecular Phylogenetics and Evolution, Nature Microbiology, Nature Communications, PeerJ, PLOS Biology, PLOS Genetics, PLOS Neglected Tropical Diseases, PLOS Pathogens, Proceedings of the National Academy of Science, Nature Reviews Genetics, Scientific Reports, Symbiosis, Trends in Microbiology, Trends in Biotechnology
- ii. Reviewed national and international grants as either ad hoc reviewer or panel reviewer for the following agencies: National Science Foundation (various panels and divisions below), U.S. Department of Agriculture, Human Frontier Science Program, Netherlands Organization for Scientific Research, Austrian Science Foundation, German Research Foundation - Collaborative Research Centers, onsite evaluation.
- iii. 2010, Guest associate editor: *PLOS Genetics*
- iv. Consultant for *Current Biology* Editors on submission covering *Wolbachia* and microbiome sciences
- v. 2013, invited participant for American Academy of Microbiology Colloquium on The Uncharted Viral World
- vi. 2013-Current, Informal advisor for microbiome/evolution articles submitted to *Trends in Ecology and Evolution* and *Current Biology*
- vii. 2014, Scientific committee member for *Wolbachia* Conference in Innsbruck, Austria
- viii. 2015, Invited participant for Computational Advances in Microbiome Research Workshop, National Institute for Mathematical and Biological Synthesis, University of Tennessee, Knoxville, TN
- ix. 2015-Current, Editor for *mSystems* by American Society for Microbiology (invited by National Academy Member and Senior Editor)
- x. 2015, Convener for session at the American Society for Microbiology General Meeting, Holobionts and Their Hologenomes
- xi. 2016-2018, Conference Co-Organizer for 2018 International *Wolbachia* Meeting
- xii. 2017, Abstract Reviewer on "Comparative and evolutionary genomics" for 2017 American Society for Microbiology Microbe General Meeting

- xiii. 2017, Convener for plenary session at the American Society for Microbiology Microbe General Meeting, Coevolution of Hosts and Microbiomes
- xiv. 2018, Assisted Editor/Academy Member with submission to Proceedings of the National Academy of Sciences

Service To Community:

- i. Invited participant for two NSF workshops in 2009 and 2004 and invited speaker for 2012 Dimensions of Biodiversity PI meeting
- ii. 2005-Current, Director of international science education program for high school and college students – Discover the Microbes Within! The *Wolbachia* Project
- iii. Select websites created and/or maintained by the Bordenstein Laboratory:
 - 1. [Discover the Microbes Within! The *Wolbachia* Project](#) (Est. 2007), Discovery-based project on *Wolbachia* symbiosis for precollege and college science education; includes labs, videos, and lectures, and other resources
 - 2. [Bioinformatics, An Interactive Introduction to NCBI](#) (Est. 2007), Online educational modules for undergraduate and high school students, Microbial Life Educational Resources,
 - 3. [Wolbachia pipientis](#), An Exemplar Species Page for the Encyclopedia of Life (Est. 2008)
 - 4. [Wolbachia, A Heritable Pandemic](#) (Est. 2008), Online resources to informational websites, news, primary literature, WebQuest, and educational modules
 - 5. [Bordenstein Lab website](#) (Est. 2008)
 - 6. [Insect Innate Immunity Database](#) (Est. 2011)
 - 7. [Vanderbilt Microbiome Initiative](#) (Est. 2018), website to coordinate and accelerate microbiome scholarship at Vanderbilt University
- iv. Social media outlets used to disseminate research and education
 - 1. [@Symbioticism](#) twitter (Est. 2012), professional account, 6092 followers
 - 2. [@WolbachiaProj](#) twitter (Est. 2018), professional account to disseminate news and activities related to bringing biotechnology and real-world symbiosis research to high school and college classrooms worldwide, 178 followers
 - 3. [@VuBiome](#) twitter (Est. 2018), professional account to disseminate announcements, research, and education events to the Vanderbilt microbiome community, 195 followers
 - 4. [Wolbachia Project Facebook Page](#) (Est. 2011), community page for the international, discovery-based lab series, 445 subscribers
 - 5. [Nasonia Research Facebook Page](#) (Est. 2011), community page for disseminating papers, tools, contact information for *Nasonia* research, 123 subscribers
 - 6. [Symbioticism Blog](#) (Est. 2012) – A blog about microbial symbiosis, evolution, and medicine, 339,200 page views
 - 7. [YouTube Channel](#) (Est. 2012), research seminars and video blogs, 82 subscribers
- v. Supervisor for community-engaged project in which the following high school students from the Vanderbilt School of Science and Math were mentored to bring

- Discover the Microbes Within! The *Wolbachia* Project lab series to their teachers and classrooms in the Metro Nashville Public School System.
- 2012-2013: Will Cox, Havisha Munjal, Meera Patel, Jacob Seloff, Jonathan Davies (Overton High School)
- 2013-2014: Qiozhi Guo, Emma Bilbrey and Young-Hun Kim (Overton High School)
- 2014-2015: Yae Eun Yang, Catherine English and Dheeraj Namburu (Glencliff High School, Teacher: Mr. Cardwell)
- 2015-2016: Cyndy Corea, Eduardo Franklin and Vincent Harris (Glencliff High School)
- vi. High school research projects supervised
- | | | | |
|------------------|-------------|--------------------------------|------------------------|
| Hugus, Pia | 2005 – 2006 | | |
| Batter, Merry | 2006 – 2007 | Graduate of Harvard University | |
| Johnson, Andrew | 2007 – 2008 | Now undergraduate | University of Virginia |
| Martin, Rachel | 2008 – 2009 | Now undergraduate | U. Mass., Amherst |
| Winters, Jordan | 2009 – 2010 | HS Student | School of Sci & Math |
| Jin, Hyunjeong | 2009 – 2010 | HS Student | School of Sci & Math |
| Mwenya, Kanyanta | 2009 – 2010 | HS Student | School of Sci & Math |
| Cela, Ronnie | 2009 – 2011 | HS Student | School of Sci & Math |
| Kiev, Maya | 2017 – 2018 | HS Student | Hillsboro High Sch. |
- vii. 2011, June 14-17, Host of International *Nasonia* Conference, Vanderbilt, 35 participants
- viii. 2013, Participant in Woodrow Wilson Career Enhancement Fellowship Retreat on behalf of fellow Dr. Irene Newton from Indiana University
- ix. 2013, October 16, Host to Brentwood High School student for her Career Shadow Day
- x. 2014, June 6-11, Scientific selection committee for International *Wolbachia* Conference, Innsbruck, Austria
- xi. 2014, January, Speaker at Brentwood High School, TN on outreach project Discover the Microbes Within! The *Wolbachia* Project
- xii. 2014, November 12, Q&A session on Google+ Hangout with freshman from the Univ. of Puget Sound, Dr. Martin
- xiii. 2015, March 23, [People Behind the Science \(podcast\)](#) - Dr. Bordenstein: Seeing Science and Symbiosis Through the Lens of an Evolutionary Microbiologist.
- xiv. 2015, April 12, [This Week in Virology \(video and podcast\)](#) - Vanderbilt Virology This Week in Virology episode 332.
- xv. 2015, September 10, *Science* podcast interview
- xvi. 2016, Visit to Hillsboro High School to teach students about *Wolbachia* symbionts in their Interdisciplinary Science and Research (ISR) program
- xvii. 2017, Host lab for Day of Discovery which immerses middle school students in a research-based STEM curriculum
- xvii. 2017, 15 minute lecture to Vanderbilt School for Science and Math on human gut microbiome research
- xviii. 2018, Supervisor for community-engaged project in which Metro Nashville high school students from the Vanderbilt School of Science and Math were mentored to develop a web-based application for Vanderbilt's first clinical microbiome study