BRIAN PAUL LAZZARO

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JUMP TO HEADING:

EDUCATION

Ph.D., 2002 in Biology from the Pennsylvania State University.

B.S., 1995 in Genetics from the University of California, Davis.

APPOINTMENTS

Professor (2015 – present) Liberty Hyde Bailey Professor, College of Agriculture and Life Sciences.
Department of Entomology, Cornell University.
Department of Ecology and Evolutionary Biology, Cornell University.

Associate Professor (2009 – 2015) Department of Entomology, Cornell University.

Assistant Professor (2003 – 2009) Department of Entomology, Cornell University.

Mentor in Research Experiences for High School Students (2025 – present) Lumiere Education.
Provide one-on-one mentoring to high school students in academic research through the Lumiere program. Provide weekly guidance to students as they devise and execute a research project over a 3-month period, culminating in a student-written article.

Director, Cornell Institute of Host-Microbe Interactions and Disease; CIHMID (2016 – 2025)

Content Contributor, BFW Publishing "Biology for the AP Course, 1st edition" (2020 - 2022)
Crafted assessment questions for chapters and summative unit problem sets for the first edition of the high school textbook Biology for the AP Course.

Advance Placement (AP) Biology Exam Development Committee (2015 – 2018)
Outside Consultant for College Board and Educational Testing Services, responsible for creation of annual AP Biology test of college equivalency for high school students. Committee co-Chair, 2016 – 2018.

Director of Graduate Studies, Field of Entomology (2011 – 2014) Cornell University.

Visiting Scientist (2003) Department of Molecular Biology and Genetics, Cornell University, with Dr. Andrew Clark.

Graduate Research Fellow (1997 – 2002) Department of Biology, Pennsylvania State University; Thesis advisor: Dr. Andrew Clark.

Laboratory Manager and Research Assistant (1994 – 1997) Department of Evolution and Ecology, University of California, Davis, for Dr. Charles Langley.

PUBLICATIONS

Publication list with downloadable pdfs available on my lab website or *Google Scholar*

Peer Reviewed Journal Articles

78) Noronha, L.A., **B.P. Lazzaro**, and P. O'Grady (2026) Host plant nutrition drives fitness outcomes in the specialist *Drosophila mettleri*. *PLoS One* in press

77) Ellner, S.P., N. Buchon, T. Dörr, M.I. Kazi, **B.P. Lazzaro** and A. Vladimirsky (2026) Shielded by the dead: how killed bacteria shape the dynamics and evolution of innate immunity. *American Naturalist* in press

76) Keith, S.A., A.A. Kalukin, D.S. Vargas Solivan, M.R. Smee, and **B.P. Lazzaro** (2026) Strong GAL4 expression compromises *Drosophila* fat body function. *Genetics* 232:iyaf235

75) Adhikari, K., F. Ali, M.A. Malo, and **B.P. Lazzaro** (2025) Ovariole number does not predict reproductive output or trade off with immunity in *Drosophila melanogaster*. *PLoS One* 20: e0333046

74) Gordon, K.E., S. Ray, P. Gonzales, M. Li, C. Liang, J.M. Marcin, M.F. Wolfner and **B.P. Lazzaro** (2025) Trade-off between bacterial immune defense and oogenesis progression in female *Drosophila melanogaster*. *Genetics* 231:iyaf151

73) Adhikari, K. and **B.P. Lazzaro** (2025) Reciprocal costs of infection and reproduction in *D. melanogaster*. *Biology Letters* 21:20240475

72) Darby, A.M., S. Keith, A.A. Kalukin and **B.P. Lazzaro** (2025) Chronic bacterial infections exert metabolic costs in *Drosophila melanogaster*. *Journal of Experimental Biology* 228:jeb24924

71) Darby, A.M., D.O. Okoro, S. Aredas, A.M. Frank, W.H. Pearson, M.S. Dionne and **B.P. Lazzaro** (2024) High sugar diets can increase susceptibility to bacterial infection in *Drosophila melanogaster*. *PLoS Pathogens* 20:e1012447

70) Stone, E.K., E.S. Durkin, A. Cook, E.A. Richardson, **B.P. Lazzaro** and C.N. Keiser (2024) Facultatively ectoparasitic mites as vectors for bacterial infection in *Drosophila*. *Journal of Invertebrate Pathology* 204:108084

69) Gordon, K.E., P. Gonzales, C. Lee, J. Marcin, **B.P. Lazzaro** and M.F. Wolfner (2023) *Drosophila* dArc1 is not required for male fertility or sperm competition. *microPublication Biology* 10.17912/micropub.biology.001053

68) Rombaut, A., R. Gallet, K. Qitout, M. Samy, R. Guilhot, P. Ghirardini, **B.P. Lazzaro**, P.G. Becher, A. Xuéreb, P. Gilbert and S. Fellous (2023) Microbiota-mediated competition between *Drosophila* species. *Microbiome* 11:201

67) Radhika, R. and **B.P. Lazzaro** (2023) No evidence for trans-generational immune priming in *Drosophila melanogaster*. *PLoS One* 18: e0288342

66) Gordon, K.E., M.F. Wolfner and **B.P. Lazzaro** (2022) A single mating is sufficient to induce persistent reduction of immune defense in mated female *Drosophila melanogaster*. *Journal of Insect Physiology* 140:104414

65) Gupta, V., A.M. Frank, N. Matolka and **B.P. Lazzaro** (2022) Inherent constraints on a polyfunctional tissue lead to a reproduction-immunity tradeoff. *BMC Biology* 20:127

64) Gupta, V. and **B.P. Lazzaro** (2022) A robust method to isolate *Drosophila* fat body nuclei for transcriptomic analysis. *Fly*, 16:62-67

63) Shahrestani, P., M. Phillips, E. King, R. Ramezan, M. Riddle, M. Thornburg, Z. Greenspan, Y. Estrella, K. Garcia, P. Chowdhury, G. Malarat, M. Zhu, S.M. Rottshaefer, S. Wraight, M. Griggs, J. Vandenberg, A.D. Long, A.G. Clark and **B.P. Lazzaro** (2021) The genetic basis of *Drosophila melanogaster* defense against *Beauveria bassiana* explored through two approaches: experimental evolution with resequencing and quantitative trait locus mapping. *G3: Genes, Genomes, Genetics* 11:jkab324

62) Kapun, M., J.C.B. Nunez, M. Bogaerts-Márquez, J. Murga-Moreno, M. Paris, J. Outten, M. Coronado-Zamora, C. Tern, O. Rota-Stabelli, M.P. G. Guerreiro, S. Casillas, D.J. Orengo, E. Puerma, M. Kankare, L. Ometto, V. Loeschcke, B.S. Onder, J.K. Abbott, S.W. Schaeffer, S. Rajpurohit, E.L. Behrman, M.F. Schou, T.J.S. Merritt, **B.P. Lazzaro**, A. Glaser-Schmitt, E. Argyridou, F. Staubach, Y. Wang, E. Tauber, S.V. Serga, D.K. Fabian, K.A. Dyer, C.W. Wheat, J. Parsch, S. Grath, M.S. Veselinovic, M. Stamenkovic-Radak, M. Jelic, A.J. Buendía-Ruíz, M.J. Gómez-Julián, M.L Espinosa-Jimenez, F.D. Gallardo-Jiménez, A. Patenkovic, K. Eric, M. Tanaskovic, A. Ullastres, L. Guio, M. Merenciano, S. Guirao-Rico, V. Horváth, D.J. Obbard, E. Pasyukova, V.E. Alatortsev, C.P. Vieira, J. Vieira, J.R. Torres, I. Kozeretska, O.M. Maistrenko, C. Montchamp-Moreau, D.V. Mukha, H.E. Machado, A. Barbadilla, D. Petrov, P. Schmidt, J. Gonzalez, T. Flatt, A.O. Bergland (2021) Drosophila Evolution over Space and Time (DEST) - A New Population Genomics Resource. *Molecular Biology and Evolution* 38:5782-5

61) Machado, H. A.O. Bergland, R. Tayler, S. Tilk, E. Behrman, K. Dyer, D. Fabian, T. Flatt, J. Gonzalez, T. Karasov, I. Kozeretska, **B.P. Lazzaro**, T. Merritt, J. Pool, K. O'Brien, S. Rajpurohit, P. Roy, S. Schaeffer, S. Serga, P. Schmidt and D. Petrov (2021) Broad geographic sampling reveals predictable, pervasive and strong seasonal adaptation in *Drosophila*. *eLife* 10:e67577

60) Ellner, S.P., N. Buchon, T. Dörr and **B.P. Lazzaro** (2021) Host-pathogen immune feedbacks can explain widely divergent outcomes from similar infections. *Proceedings of the Royal Society B: Biological Science* 288:20210786

59) Chambers, M.C., E. Jacobson, S. Khalil and **B.P. Lazzaro** (2019) Consequences of chronic bacterial infection in *Drosophila melanogaster*. *PLoS One* 14:e0224440

58) Troha, K., P. Nagy, A. Pivovar, **B.P. Lazzaro**, P. Hartley and N. Buchon (2019) Nephrocytes remove microbiota-derived peptidoglycan from systemic circulation to maintain immune homeostasis. *Immunity* 51:625-37

57) Im, J.H. and **B.P. Lazzaro** (2018) Population genetic analysis of autophagy and phagocytosis genes in *Drosophila melanogaster* and *D. simulans*. *PLoS One* 13:e0205024

56) Shahrestani, P.* M. Chambers*, J. Vandenberg, K. Garcia, G. Malaret, P. Chowdhury, Y. Estrella, M. Zhu and **B.P. Lazzaro** (2018) Sexually dimorphic response to fungal infection depends on core immune signaling in *Drosophila melanogaster*. *Scientific Reports* 8:12501
*denotes equal contribution

55) Duneau, D.F. and **B.P. Lazzaro** (2018) Persistence of an extracellular systemic infection across metamorphosis in a holometabolous insect. *Biology Letters* 14:20170771

54) Troha K*, J.H. Im*, J. Revah, **B.P. Lazzaro**† and N. Buchon† (2018) Comparative transcriptomics reveals CrebA as a novel regulator of infection tolerance in *D. melanogaster*. *PLoS Pathogens* 14:e1006847
* denotes equal contribution † denotes equal contribution

53) Behrman, E.L., V.M. Howick, F. Staubach, A.O. Bergland, D.A. Petrov, **B.P. Lazzaro** and P.S. Schmidt (2018) Rapid seasonal adaptation in innate immunity of wild *Drosophila melanogaster*. *Proceedings of the Royal Society B: Biological Sciences* 285:20172599

52) Duneau, D.F., J.H. Im, G.A. Ortiz, H.C. Kondolf, C. Chow, M.A. Fox, A.T. Eugénio, N. Buchon* and **B.P. Lazzaro*** (2017) The Toll pathway underlies sexual dimorphism in response to both Gram-negative and Gram-positive bacteria in *Drosophila*. *BMC Biology* 15:124
*denotes equal contribution

51) Drott M.T, **B.P. Lazzaro**, D.L. Brown, I. Carbone and M.G. Milgroom (2017) Balancing selection for aflatoxin in *Aspergillus flavus* is maintained through interference competition with and fungivory by insects. *Proceedings of the Royal Society B: Biological Sciences* 284:20172408

50) Duneau, D.F., J.-B. Ferdy, J. Revah, H. Kondolf, G. Ortiz, **B.P. Lazzaro*** and N. Buchon* (2017) Stochastic variation in the initial phase of bacterial infection predicts the probability of survival in *D. melanogaster*. *eLife* 6:e28298
*denotes equal contribution

49) Schwenke, R.A. and **B.P. Lazzaro** (2017) Juvenile hormone mediates resistance to infection in female *Drosophila melanogaster*. *Current Biology* 27:596-601

48) Howick, V.M. and **B.P. Lazzaro** (2017) The genetic architecture of defense as resistance to and tolerance of bacterial infection in *Drosophila melanogaster*. *Molecular Ecology* 26:1533-1546

47) Sackton, T.B., **B.P. Lazzaro** and A.G. Clark (2017) Rapid expansion of immune-related gene families in the house fly, *Musca domestica*. *Molecular Biology and Evolution* 34:857-872

46) Crawford, J.E., M.M. Riehle, K. Markianos, E. Bischoff, W.M. Guelbeogo, A. Gneme, N. Sagnon, K.D. Vernick, R. Nielsen and **B.P. Lazzaro** (2016) Evolution of GOUNDRY, a cryptic subgroup of *Anopheles gambiae* s.l., and its impact on susceptibility to *Plasmodium* infection. *Molecular Ecology* 25:1494-1510

45) Unckless, R.L.*, V.M. Howick* and **B.P. Lazzaro** (2016) Convergent balancing selection on an antibacterial peptide in *Drosophila*. *Current Biology* 26:257-262
*denotes equal contribution

44) Crawford, J.E., M.M. Riehle, W.M. Guelbeogo, A. Gneme, N. Sagnon, K.D. Vernick, R. Nielsen and **B.P. Lazzaro** (2015) Reticulate speciation and barriers to introgression in the *Anopheles gambiae* species complex. *Genome Biology and Evolution* 7:3116-3131

43) Webster, C.L., F.M. Waldron, S. Roberston, D. Crowson, G. Ferrari, J.F. Quintana, J.-M. Brouqui, E.H. Bayne, B. Longdon, A.H. Buck, **B.P. Lazzaro**, J. Akorli, P.R. Haddrill and D.J. Obbard (2015) The discovery, distribution and evolution of viruses associated with *Drosophila melanogaster*. *PLOS Biology* 13:e1002210

42) Unckless, R.L., S.M. Rottschaefer and **B.P. Lazzaro** (2015) The complex contributions of genetics and nutrition to immunity in *Drosophila melanogaster*. *PLoS Genetics* 11(3): e1005030

41) Unckless, R.L., S.M. Rottschaefer and **B.P. Lazzaro** (2015) A genome-wide association study for nutritional indices in *Drosophila*. *G3: Genes, Genomes, Genetics* 5(3):417-425

40) Rottschaefer, S.M., J.E. Crawford, M.M. Riehle, W.M. Guelbeogo, A. Gneme, N. Sagnon, K.D. Vernick and **B.P. Lazzaro** (2015) Population genetics of *Anopheles coluzzii* immune pathways and genes. *G3: Genes, Genomes, Genetics* 5:329-339

39) Dobson, A.J., J.M Chaston, P.D. Newell, S.L. Ali, L. Donahue, D.R. Sannino, S. Westmiller, A. C.-N. Wong, A.G. Clark, **B.P. Lazzaro** and A.E. Douglas (2015) Host genetic determinants of microbiota-dependent nutrition revealed by genome-wide analysis in *Drosophila melanogaster*. *Nature Communications* 6:6312

38) Chambers, M.C. and **B.P. Lazzaro** (2014) Thorax injury reduces resistance to infection in *Drosophila melanogaster*. *Infection and Immunity* 82:4280-9

37) Howick, V.M. and **B.P. Lazzaro** (2014) Genotype and diet shape resistance and tolerance across distinct phases of bacterial infection. *BMC Evolutionary Biology* 14:56

36) Short, S.M. and **B.P. Lazzaro** (2013) Reproductive status alters transcriptomic response to infection in female *Drosophila melanogaster*. *G3: Genes, Genomes, Genetics* 3:827-840

35) Crawford, J.E., S.M. Rottschaefer, B. Coulibaly, M. Sacko, O. Niaré, M.M. Riehle, S.F. Traore, K.D. Vernick and **B.P. Lazzaro** (2013) No evidence for positive selection at two potential targets for malaria transmission-blocking vaccines in *Anopheles gambiae s.s.* *Infection, Genetics, and Evolution* 16:87-92

34) del Campo, M.L, R. Halitschke, S.M. Short, **B.P. Lazzaro** and A. Kessler (2013) Dietary plant phenolic mediates tolerance to bacterial infection in *Manduca sexta* caterpillars. *Entomologia Experimentalis et Applicata* 146:321-331

33) Crawford, J.E., E. Bischoff, T. Garnier, A. Gneme, K. Eiglmeier, I. Holm, M.M. Riehle, W.M. Guelbeogo, N. Sagnon, **B.P. Lazzaro** and K.D. Vernick (2012) Evidence for population-specific positive selection on immune genes of *Anopheles gambiae*. *G3: Genes, Genomes, Genetics* 2:1505-1519

32) Galac, M.R. and **B.P. Lazzaro** (2012) Comparative genomics of bacteria in the genus *Providencia* isolated from wild *Drosophila melanogaster*. *BMC Genomics* 13:612

31) Rottschaefer, S.M. and **B.P. Lazzaro** (2012) No effect of *Wolbachia* on resistance to intracellular infection by pathogenic bacteria in *Drosophila melanogaster*. *PLoS One* 7:e40500

30) Short, S.M., M.F. Wolfner and **B.P. Lazzaro** (2012) Female *Drosophila melanogaster* suffer reduced defense against infection due to seminal fluid components. *Journal of Insect Physiology* 58:1192-1201

29) Crawford, J.E. and **B.P. Lazzaro** (2012) Assessing the accuracy and power of population genetic inference from low-pass next-generation sequencing data. *Frontiers in Evolutionary and Population Genetics* 3:66

28) Rottschaefer, S.M., M.M. Riehle, B. Coulibaly, M. Sacko, O. Niaré, I. Morlais, S.F. Traoré, K.D. Vernick and **B.P. Lazzaro** (2011) Exceptional diversity, maintenance of polymorphism, and recent directional selection on the *APL1* malaria resistance genes of *Anopheles gambiae*. *PLoS Biology* 9:e1000600

27) Galac, M. and **B.P. Lazzaro** (2011) Comparative pathology of bacteria in the genus *Providencia* to a natural host, *Drosophila melanogaster*. *Microbes and Infection* 13:673-683

26) Fellous, S. and **B.P. Lazzaro (**2011) Potential for evolutionary coupling and decoupling of larval and adult immune gene expression. *Molecular Ecology* 20:1558-1567

25) Crawford, J.E., W.M. Guelbeogo, A. Sanou, A. Traore, K.D. Vernick, N. Sagnon and **B.P. Lazzaro** (2010) *De novo* transcriptome sequencing in *Anopheles funestus* using Illumina RNA-seq technology. *PLoS One*, 15:e14202

24) Short, S.M. and **B.P. Lazzaro** (2010) Female and male genetic contributions to female post-mating susceptibility to infection in *Drosophila melanogaster*. *Proceedings of the Royal Society, B: Biological Sciences* 277:3649-3657

23) Juneja, P. and **B.P. Lazzaro** (2010) Haplotype structure and expression divergence at the *Drosophila* cellular immune gene *eater*. *Molecular Biology and Evolution* 27:2284-2299

22) Crawford, J. and **B.P. Lazzaro** (2010) The demographic histories of the M and S molecular forms of *Anopheles gambiae s.s*. *Molecular Biology and Evolution* 27:1739-1744

21) Fellous, S. and **B.P. Lazzaro** (2010) Larval food quality affects adult (but not larval) immune gene expression independent of effects on general condition. *Molecular Ecology* 19:1462-1468

20) Sackton, T.B, **B.P. Lazzaro** and A.G. Clark (2010) Genotype and gene expression associations with immune function in *Drosophila*. *PLoS Genetics* 6:e1000797

19) Juneja, P. and **B.P. Lazzaro** (2009) *Providencia sneebia* sp. nov. and *P. burhodogranariea* sp. nov., novel species isolated from wild *Drosophila melanogaster*. *International Journal of Systematic and Evolutionary Biology* 59:1108-11

18) Hardstone, M.C., **B.P. Lazzaro** and J.G. Scott (2009) The effect of three environmental conditions on the fitness of cytochrome P450 monooxygenase-mediated permethrin resistance in *Culex pipiens quinquefasciatus*. *BMC Evolutionary Biology* 9:42

17) Riehle, M.M., J. Xu, **B.P. Lazzaro**, S.M. Rottschaefer, B. Coulibaly, M. Sacko, O. Niaré, I. Morlais, S.F. Traore and K.D. Vernick. (2008) *Anopheles gambiae* APL1 is a family of variable LRR proteins required for Rel1-mediated protection from the malaria parasite, *Plasmodium berghei*. *PLoS One* 3:e3672

16) McKean, K.A., C.P. Yourth, **B.P. Lazzaro** and A.G. Clark (2008) The evolutionary costs of immunological maintenance and deployment. *BMC Evolutionary Biology* 8:76

15) **Lazzaro, B.P.**, H.A. Flores, J.G. Lorigan and C.P. Yourth (2008) Genotype by environment interactions and adaptation to local temperature affect immunity and fecundity in *Drosophila melanogaster*. *PLoS Pathogens* 4:e1000025

14) Sackton, T.B., **B.P. Lazzaro**, T.A. Schlenke, J.D. Evans, D. Hultmark and A.G. Clark (2007) Dynamic evolution of the *Drosophila* innate immune system. *Nature Genetics* 39:1461-1468

13) *Drosophila* 12 Genomes Consortium (2007) Evolution of genes and genomes on the *Drosophila* phylogeny. *Nature* 450:203-218

12) **Lazzaro, B.P.**, T.B. Sackton and A.G. Clark (2006) Genetic variation in *Drosophila melanogaster* resistance to infection: a comparison across bacteria**.** *Genetics* 174:1539-1554

11) The Honey Bee Genome Sequencing Consortium (2006) Insights into social insects from the genome of the honey bee *Apis mellifera*. *Nature* 443:931-949

10) Rinkevich, F.D., L. Zhang, R.L. Hamm, S.G. Brady, **B.P. Lazzaro** and J.G. Scott (2006) Frequencies of the pyrethroid resistance alleles of *Vssc1* and *CYP6D1* in house flies from the eastern United States. *Insect Molecular Biology* 15:157-167

9) Braverman, J.M., **B.P. Lazzaro**, M. Aguadé and C.H. Langley (2005) DNA sequence polymorphism and divergence at the *erect wing* and *suppressor of sable* loci of *Drosophila melanogaster* and *D. simulans*. *Genetics* 170:1153-65

8) **Lazzaro, B.P.** (2005) Elevated polymorphism and divergence in the class C scavenger receptors of *Drosophila melanogaster* and *D. simulans*. *Genetics* 169:2023-34

7) **Lazzaro, B.P.**, B.K. Sceurman and A.G. Clark (2004) Genetic basis of natural variation in *D. melanogaster* antibacterial immunity. *Science* 303:1873-6

6) **Lazzaro, B.P.** and A.G. Clark (2003) Molecular population genetics of genes encoding inducible antibacterial peptides in *Drosophila melanogaster*. *Molecular Biology and Evolution* 20:914-23
5) **Lazzaro, B.P.**, B.K. Sceurman, S.L. Carney and A.G. Clark (2002) fRFLP and fAFLP: Medium-throughput genotyping by fluorescently post-labeling restriction digestion. *Biotechniques* 33:539-46
4) **Lazzaro, B.P.** and A.G. Clark (2001) Evidence for recurrent paralogous gene conversion and exceptional allelic divergence in the *Attacin* genes of *Drosophila melanogaster*. *Genetics* 159:659-71
3) Langley, C.H., **B.P. Lazzaro**, W. Phillips, E. Heikkinen and J. Braverman (2000) Linkage disequilibria and the site frequency spectra in the *su(s)* and *su(w^a)* regions of the *Drosophila melanogaster* X chromosome. *Genetics* 156:1837-52
2) Carvalho, A.B, **B.P. Lazzaro** and A.G. Clark (2000) Y-chromosomal fertility factors *kl-2* and *kl-3* of *D. melanogaster* encode dynein heavy chain polypeptides. *Proceedings of the National Academy of Sciences USA* 97:13239-44
1) Savolainen, O., C.H. Langley, **B.P. Lazzaro** and H. Frèville (2000) Contrasting patterns of nucleotide polymorphism at the *Alcohol Dehydrogenase* locus in the outcrossing *Arabidopsis lyrata* and the selfing *Arabidopsis thaliana*. *Molecular Biology and Evolution* 17:645-55

Book Chapters, Review Articles and Perspectives

27) **Lazzaro, B.P.** (2026) Dynamic feedback modeling to predict random infection outcomes. *Open Access Government* January 2026 issue, pp 38-39. https://doi.org/10.56367/OAG-049-11766
26) **Lazzaro, B.P.** (2025) The promise of antimicrobial peptides. *Open Access Government* October 2025 issue, pp 40-41. https://doi.org/10.56367/OAG-048-11766
25) **Lazzaro, B.P.** (2025) The critical role of infection tolerance. *Open Access Government* July 2025 issue, pp 98-99. https://doi.org/10.56367/OAG-047-11766
24) **Lazzaro, B.P.** (2025) The role of host condition and environment on infection outcome. *Open Access Government* January 2025 issue, pp 44-45. https://doi.org/10.56367/OAG-045-11749
23) Darby, A.M. and **B.P. Lazzaro** (2023) Interactions between innate immunity and insulin signaling in insects. *Frontiers in Immunology* 14:1276357
22) Hollingsworth, B.D., N.D. Grubaugh, **B.P. Lazzaro** and C.C. Murdock (2023) Leveraging the mosquito virome to understand mosquito ecology and mosquito-borne disease transmission. *PLoS Pathogens* 19:e1011588
21) **Lazzaro, B.P (**2023) Dispatch; Infection Biology: Molecular recognition of fungal spores stimulates host hygiene. *Current Biology* 33:R70-72
20) **Lazzaro, B.P.** and A.T. Tate (2022) Balancing sensitivity, risk, and immunopathology in immune regulation. *Current Opinion in Insect Science* 50:100874
19) **Lazzaro, B.P.**, M. Zasloff and J. Rolff (2020) Antimicrobial peptides: application informed by evolution. *Science* 368:eaau5480
18) Waterhouse, R.M., **B.P. Lazzaro** and T.B. Sackton (2020) Characterization of insect immune systems from genomic data. In Immunity in Insects, Springer Protocols Handbooks. Ch 1, pp 3-34
17) Wigby, S. S. Suarez, **B.P. Lazzaro**, T. Pizarri and M.F. Wolfner (2019) Sperm success and immunity. *Current Topics in Developmental Biology* 135:287-313

16) **Lazzaro, B.P (**2018) Detecting adaptation with genome-scale molecular evolutionary analysis: an educational primer for use with "RNA interference pathways display high rates of adaptive protein evolution in multiple invertebrates". *Genetics* 210:773-780

15) **Lazzaro, B.P.** and G.M. Fox (2017) Dispatch; Host-microbe interactions: Winning the colonization lottery. *Current Biology* 27:R642-644

14) Unckless, R.L. and **B.P. Lazzaro** (2016) The potential for adaptive maintenance of diversity in insect antimicrobial peptides. *Philosophical Transactions of the Royal Society B*, 371:20150291

13) Schwenke, R.A., **B.P. Lazzaro** and M.F. Wolfner (2016) Reproduction-immunity tradeoffs in insects. *Annual Review of Entomology* 61:239-256

12) Khalil, S., E. Jacobson, M.C. Chambers and **B.P. Lazzaro** (2015) Systemic bacterial infection and immune defense phenotypes in *Drosophila melanogaster*. *Journal of Visualized Experiments* 99:e52613

11) **Lazzaro, B.P (**2015) Adenosine signaling and the energetic costs of induced immunity. *PLOS Biology* 134:e1002136

10) **Lazzaro, B.P.** and D.S. Schneider (2014) The Genetics of Immunity. *Genetics* 197:467-470; *G3: Genes, Genomes, Genetics* 4:943-945

9) **Lazzaro, B.P.** and A.G. Clark (2012) "Rapid evolution of innate immune response genes." In Rapidly Evolving Genes and Genetic Systems, R.S. Singh, J. Xu and R.J. Kulathinal, eds. Oxford University Press, Oxford, UK

8) McKean, K.A. and **B.P. Lazzaro** (2011) "The costs of immunity and the evolution of immunological defense mechanisms." In Molecular Mechanisms of Life History Evolution, A. Heyland and T. Flatt, eds. Oxford University Press, Oxford, UK

7) **Lazzaro, B.P.** and J. Rolff. (2011) Danger, microbes and homeostasis. *Science* 332:43.

6) Juneja, P. and **B.P. Lazzaro** (2009) "Population genetics of insect immune responses." In Insect Infection and Immunity, J. Rolff and S. Reynolds eds., Oxford University Press, Oxford, UK

5) **Lazzaro, B.P.** and T.J. Little (2009) Immunity in a variable world. *Philosophical Transactions of the Royal Society, B: Biological Sciences* 364:15-26

4) Schlenke, T.A. and **B.P. Lazzaro** (2008) Fruit flies like a (rotten) banana. Proceedings at the 49th annual Genetics Society of America *Drosophila* Research Conference. *Fly*, 2:159-164

3) **Lazzaro, B.P (**2008) Natural selection on the *Drosophila* antimicrobial immune system. *Current Opinion in Microbiology* 11:284-289

2) **Lazzaro, B.P.** and M.R. Galac (2006) Dispatch; Disease Pathology: Wasting energy fighting infection. *Current Biology* 16:R964-R965

1) Vernick, K.D., F. Oduol, **B.P. Lazzaro,** J. Glazebrook, J. Xu, M. Riehle and J. Li (2005) Molecular genetics of mosquito resistance to malaria parasites. *Current Topics in Microbiology and Immunology*: *Malaria: drugs, disease and post-genomic biology* 295:383-415

Papers from the lab on which I am not a coauthor

2) Keith, S.A. (2023) Steroid hormone regulation of innate immunity in *Drosophila melanogaster*. *PLoS Genetics*, 19:e1010782

1) Akhund-Zade, J.A., A.O. Bergland, S.O. Crowe and R.L. Unckless (2017) The genetic basis of natural variation in *Drosophila* (Diptera: Drosophilidae) virgin egg retention. *Journal of Insect Science* 17:5

GRANT SUPPORT

Current Support

Project Title:	Evolution and Engineering of Specificity in Antimicrobial Peptides
Investigator(s):	B.P. Lazzaro (PI)
Objectives:	To evaluate the mechanistic function, antibacterial specificity, and evolutionary dynamics of *D. melanogaster* antibacterial peptides, and to use that information to design custom antimicrobial peptides with desired activity.
Sponsor:	National Institutes of Health / NIAID (R01 AI200383)
Funding:	$3,709,694 ($2,386,098 direct; 7/1/26– 6/30/31)

Project Title:	Hierarchical Control in an Endocrine-mediated Gene Regulatory Network Supporting Innate Immunity
Investigator(s):	B.P. Lazzaro (PI)
Objectives:	To elucidate the role of the hormone 20-hydroxyecdysone (20E) in regulating the *D. melanogaster* immune response.
Sponsor:	National Institutes of Health / NIAID (R21 AI200399)
Funding:	$431,750 ($275,000 direct; 7/01/26– 6/30/28)

Project Title:	Mechanisms and Evolutionary Consequences of a Reproduction-Immunity Tradeoff
Investigator(s):	B.P. Lazzaro (PI)
Objectives:	To determine the mechanistic basis and evolutionary implications of a classical life history tradeoff, that between reproduction and immunity, with emphasis on endocrinological causation.
Sponsor:	National Institutes of Health / NIAID (R01 AI141385)
Funding:	$2,819,956 ($1,856,610 direct; 6/1/19– 5/31/25, unfunded extension to 5/31/26)

Completed Support

Project Title:	Role of dynamic interactions between innate immunity and bacterial stress responses in shaping infection outcomes
Investigator(s):	T. Doerr (PI) and B.P. Lazzaro (PI)
Objectives:	To determine the genomic and physiological basis of bacterial heteroresistance to host antimicrobial peptides.
Sponsor:	Cornell Center for Immunology
Funding:	$50,000 (03/01/25– 03/01/26)

Project Title:	Host-Microbe Interactions that Determine Host Traits and Disease
Investigator(s):	B.P. Lazzaro (PI)
Objectives:	To provide a highly interdisciplinary training program for postdoctoral scholars in how molecular interactions between host and microbe drive host traits; research training is coupled with substantial professional development to launch trainees into academic and non-academic careers.
Sponsor:	National Institutes of Health / NIAID (T32 AI145821)
Funding:	$1,822,691 ($1,687,678 direct; 5 years, 7/1/20– 6/30/25, unfunded extension to 02/01/26)

Project Title:	The Causes of Balancing Selection on Immunity Genes: From Populations to Molecular Interactions
Investigator(s):	R.L. Unckless (PI) and B.P. Lazzaro (co-I)
Objectives:	To use *in vitro* assays, functional genetic manipulations, and molecular evolutionary inference to determine how conflicting natural selective pressures can lead to balanced polymorphisms in antimicrobial peptide genes.
Sponsor:	National Institutes of Health / NIAID (R01 AI139154)
Funding:	$2,063,677 ($1,250,000 direct; 7/1/18– 6/30/23; Lazzaro subcontract $249,762 ($154,089 direct))

Project Title:	Cellular Basis for Diverse Multifunction of *Drosophila* Fat Body Tissue
Investigator(s):	B.P. Lazzaro (PI)
Objectives:	To investigate cellular heterogeneity in the RNA transcript level in how the insect fat body balances requirements of immune response, reproductive investment, and basal metabolism.
Sponsor:	National Institutes of Health / NIAID (R03 AI144882)
Funding:	$157,00 ($50,000 direct; 4/1/19– 3/31/21, extension to 3/31/22)

Project Title:	Genetic and Physiological Constraint on Immunity
Investigator(s):	B.P. Lazzaro (PI)
Objectives:	To determine how physiological conflicts can constrain immune defense and lead to life history tradeoffs as a function of host genotype and external environment.
Sponsor:	National Institutes of Health / NIAID (R56 AI083932)
Funding:	$248,149 ($159,070 direct; 5/1/17– 4/30/18)

Project Title:	The Roles of Host Immune System and Bacterial Genetics in Persistent Infection
Investigator(s):	B.P. Lazzaro and J.D. Helmann
Objectives:	The goal of this work is to initiate foundational research exploring the genetic basis for the capability of the bacterium *Bacillus subtilis* to establish both acutely lethal and chronically persistent infection in the *Drosophila melanogaster* host.
Sponsor:	Seed Funding for Discovery and Research, Cornell University Office of the Vice Provost for Research
Funding:	$250,000 (6/1/16– 5/31/18)

Project Title:	The Genomic Basis for Adaptation to a Fungal Pathogen
Investigator(s):	Lazzaro, B.P. and P. Shahrestani
Objectives:	Postdoctoral training fellowship awarded to P. Shahrestani to support an 'evolve-and-resequence' approach for determining the genomic basis for resistance to *Beauvaria bassiana* in *Drosophila melanogaster*.
Sponsor:	National Institutes of Health (F32 GM109700)
Funding:	$108,376 ($108,376 direct; 2/1/14– 8/15/15)

Project Title:	Effects of Rapid Consumer Evolution on Community Dynamics: Predictions and Tests in a (nearly) Natural Food Web
Investigator(s):	Hairston, N. (P.I.), S. Ellner, B.P. Lazzaro, G. Hooker
Objectives:	To characterize the evolution of *Daphnia* populations over ecological time in response to varying environmental levels of carbon and phosphorus.
Sponsor:	National Science Foundation (DEB-1256719)

Funding: $200,000 ($124,691 direct; 4/1/13– 3/31/15)

Project Title: Functional and Comparative Genomics of *Drosophila* Immunity
Investigator(s): Clark, A.G. (contact P.I.) and B.P. Lazzaro (P.I.)
Objectives: To define the regulatory network governing expression of the *Drosophila* immune response. To elucidate the role of microRNAs in innate immune regulation. To determine the life history consequences of misregulation of immunity.
Sponsor: National Institutes of Health / NIAID (R01 AI064950)
Funding: $1,942,922 ($1,250,000 direct; 5/1/12 – 4/30/17)

Project Title: Genetic Network Linking Immunity to Energetic Stress and Metabolism
Investigator(s): B.P. Lazzaro
Objectives: To determine the genetic basis for impact of nutritional environment on immune defense. To establish mechanisms of genotype-by-environment interactions in immune performance, with relevance for evolution of defense traits and clinical practice.
Sponsor: National Institutes of Health / NIAID (R01 AI083932)
Funding: $1,869,800 ($1,250,000 direct; 7/1/11– 6/30/16, extension to 4/30/17)

Project Title: The Protein Nutrition of the Symbiotic System Between *Drosophila* and Its Gut Microbes
Investigator(s): Douglas, A.E. (P.I), A.G. Clark and B.P. Lazzaro
Objectives: To determine the impacts of altering the symbiosis between *Drosophila melanogaster* and its gut microbial symbionts on host protein metabolism and nutrition. To identify the gene regulatory networks that regulate host protein metabolism as a function of interaction with microbial symbionts.
Sponsor: National Institutes of Health / NIAID (R01 GM095372)
Funding: $1,617,247 ($1,081,522 direct; 1/01/11 – 12/31/14, extension to 12/31/15)

Project Title: Comparative and Functional Genomics of Entomopathogenic Bacteria in the Genus *Providencia*
Investigator(s): Lazzaro, B.P.
Objectives: Comparative genomics across the genus *Providencia* in order to lay the foundation for functional genetic analysis of pathogenic interactions with insect hosts.
Sponsor: Priming Grant from the Cornell Center for Comparative and Population Genomics
Funding: $18,000 (1/1/10 – 12/31/10)

Project Title: Genomics of Mosquito Resistance to Plasmodium
Investigator(s): Lazzaro, B.P.
Objectives: To characterize quantitative genetic basis for natural resistance of wild *Anopheles gambiae* to *Plasmodium falciparum* in the field.
Sponsor: Subcontract issued by Institut Pasteur from National Institutes of Health / NIAID R01 AI042361 (PI: K.D. Vernick)
Funding: $192,115 ($125,000 direct; 8/1/09 – 2/28/13)

Project Title: Genetic Network Linking Immunity to Energetic Stress, Metabolism and Reproduction
Investigator(s): Lazzaro, B.P.

Objectives: To determine the degree of pleiotropy among immune, metabolic and reproductive systems. To determine the importance of genotype-by-environment interactions in shaping immune-related, metabolic and reproductive phenotypes. To use whole genome association mapping to identify genetic variation contributing to phenotypic variation in these traits. To infer how natural selection may act on these partially correlated, and sometimes conflicting, traits.
Sponsor: National Institutes of Health / NIAID (R01 AI083932)
Funding: $736,240 ($494,022 direct; 8/1/09 – 6/30/11)

Project Title: Evolutionary Genomics of Anti-Malaria Genes in Mosquito
Investigator(s): Lazzaro, B.P. (P.I.) and K.D. Vernick
Objectives: To characterize molecular evolutionary patterns in mosquito antimalarial defense genes and map genes that contribute to variation among wild *Anopheles gambiae* in suppression of malaria development.
Sponsor: National Institutes of Health / NIAID (R01 AI062995)
Funding: $1,893,279 ($1,311,875 direct; 8/1/06 – 7/31/11, extension to 7/31/12)

Project Title: Functional and Comparative Genomics of *Drosophila* Immunity
Investigator(s): Clark, A.G. (P.I.) and B.P. Lazzaro
Objectives: To use genome-scale molecular evolutionary analyses across 12 genome-sequenced *Drosophila* species to infer evolutionary pressures on immunity genes. To measure and model tradeoffs between immunity and other fitness components. To model the gene regulatory network underlying immunity in a systems context.
Sponsor: National Institutes of Health / NIAID (R01 AI064950)
Funding: $1,895,691 ($1,250,000 direct; 4/01/05 – 3/31/10, extension to 3/31/11)

Project Title: Evolutionary Genetics of Pathogen Recognition Genes and the Spectrum of Bacteria Associated with Wild *D. melanogaster*
Investigator(s): Lazzaro, B.P.
Objectives: To identify infectious bacteria from wild-caught *D. melanogaster* and to test temporal heterogeneity in prevalence of infection. To test geographic structuring of variation in *D. melanogaster* immunity genes, and to establish genetic determinants of resistance to infection in the field.
Sponsor: National Science Foundation (DEB-0415851)
Funding: $540,003 ($351,123 direct; 8/15/04 – 7/31/08, extension to 7/31/09)

Project Title: Dissertation Research: Genetic Variation in Induction Kinetics and Antibacterial Strength of *Drosophila* Immunity Genes
Investigator(s): Lazzaro, B.P. and A.G. Clark (P.I.)
Objectives: To identify genetic polymorphism associated with natural variation in immunocompetence in *Drosophila melanogaster*.
Sponsor: National Science Foundation (DEB-0073598)
Funding: $10,000 (9/1/00 – 8/31/02)

Project Title: Quantitative Analysis of Functional Variation in Promoter Activity
Investigator(s): A.G. Clark, B.P. Lazzaro, E.T. Dermitzakis
Objectives: To identify DNA sequences with gene regulatory functions, and to determine whether polymorphism in those sequences affects gene expression level.

Sponsor: Life Sciences Consortium Innovative Biotechnology Research (Pennsylvania State University)
Funding: $25,000 (1999 – 2000)

HONORS and AWARDS

Rising Star Faculty Award, CALS Alumni Association, Cornell University, 2017
Liberty Hyde Bailey Professorship, Cornell University, 2016 – present
College of Agriculture and Life Sciences Early Career Achievement Award, Cornell University, 2012
Provost's Award for Distinguished Scholarship, Cornell University, 2009
Homer F. Braddock Award for Continuing Graduate Student, Pennsylvania State University, 2000
National Science Foundation Doctoral Dissertation Improvement Grant, 2000
Invitation to speak in the Walter Fitch Graduate Student Presentation Competition at the annual meeting of the Society for Molecular Biology and Evolution, 2000
J. Ben and Helen D. Hill Award, Pennsylvania State University, 1998, 1999
Homer F. Braddock Award for Incoming Graduate Student, Pennsylvania State University, 1997
National Science Foundation Graduate Research Fellowship, 1997
Howard Hughes Medical Institute Graduate Research Fellowship (Honorable Mention), 1997
Departmental Citation for Outstanding Research and Academics, Genetics, University of California, Davis, 1995
Regents Scholar, University of California, Davis, 1992-1995
Fulmor Scholar, University of California, Davis, 1992-1995

TEACHING EXPERIENCE

Cornell University:

Bugs in Bugs: Insect Pathology and Immunity (Entom 3630), Instructor. Fall 2025.

Academic Placement Program for writing faculty job applications (CIHMID APP), Instructor. Summer 2021, 2022, 2023.

Ecological Genetics (Entom 4700 / BioEE 4800, 4 credits), Instructor. Springs 2005, 2007, 2008, 2009, 2011, 2013, 2017, 2019, 2021, 2023, 2025.

Introduction to Evolution and Diversity (BioEE 1780, 4 or 5 credits), Co-instructor with two to four others. Spring 2009, Fall 2009, Fall 2011, Fall 2012, Fall 2013, Spring 2014, Fall 2014, Spring 2015, Fall 2016, Fall 2017, Spring 2018, Fall 2018.

Tropical Field Ecology and Behavior (BioEE 2650, 4 credits), Assistant instructor for field course in experimental ecology. Course is based in central Kenya and is led by Prof. Irby Lovette. January intersession 2011, 2012, 2013, 2014.

Skills in Proposal Writing (BioMG 7800, 1 credit), with Prof. Jeff Roberts. Fall 2013.

Population Genetics (BioMG 4810, 4 credits), Co-instructor with Prof. Charles Aquadro. Fall 2005, 2006.

Seminar in the Ecology and Evolution of Infectious Disease (Entom 6900, 1 credit), Faculty coordinator. Fall 2008, 2009, 2011, 2016, Spring 2019.

Current Topics in Entomology (Entom 7670, 1 credit), Faculty coordinator. Fall 2006, Spring 2007, Fall 2018.

Problems in Genetics, Genomics and Development (BioMG 7810, 1 credit), Team-taught graduate course by Genetics, Genomics and Development faculty, responsible for single paper discussion. Fall 2008, 2012, 2015.

Advanced Immunology (VetMI 7050, 3 credits), Team-taught course coordinated by Vet School faculty, responsible for single lecture. Spring 2006, 2008, 2010, 2012.

Guest Lecture in Comparative Immunology: Innate Immunity in Action (Entom 4500, Dr. Nicolas Buchon). Spring 2014.

Guest Lecture in Innate Immunity in Plants, Flies and Humans (BioG 1250, Dr. Greg Martin). Fall 2008, 2009.

Guest Lecture in Invertebrate Pathology (Entom 4630, Dr. Ann Hajek). Spring 2006, Fall 2008.

Other Institutions:

Mentor in Research Experiences for High School Students (2025 – present) Lumiere Education.

Masters Course on Developmental Endocrinology and Metabolism, lecture on reproductive endocrinology and immunity in *Drosophila*. Universidade de Lisboa, Lisbon, Portugal. November 22, 2023.

Short Graduate Course in Host-Microbe Interactions, lecture on Evolutionary Genomics of Host-Microbe Interactions. Instituto Gulbenkian de Ciência, Oeiras, Portugal. November 13, 2023.

Short Graduate Course in Evolutionary Ecology of Infection, co-instructor with Dr. Sylvain Gandon. Instituto Gulbenkian de Ciência, Oeiras, Portugal. April 9-14, 2013.

Population Genetics (Biol 428), Teaching Assistant. Instructed by Drs. Andrew Clark and Hiroshi Akashi, Pennsylvania State University, Spring 2002, Spring 1999.

Biology of Molecules and Cells (Biol 230W), Teaching Assistant, Laboratory Instruction. Instructed by Drs. Esther Siegfreid and Graham Thomas, Pennsylvania State University, Fall 1999.

Guest Lectures in Population Genetics (Drs. Andrew Clark and Hiroshi Akashi, Pennsylvania State University, 2002), Genetic Analysis (Dr. Stephen Schaeffer, Pennsylvania State University, 2000), Evolutionary Immunogenetics (Dr. Austin Hughes, Pennsylvania State University, 1999), Population Genetics (Dr. Andrew Clark, Pennsylvania State University, 1999).

Peer Tutor in Biology, University of California, Davis, 1993-1994; Peer Tutor in English Composition for native and non-native English speakers, UC Davis, 1993-1994.

PROFESSIONAL SERVICE

Editorial, Review, and other Professional Service

Editorial Board, *PLoS Pathogens* (2025 – present)
Editorial Board, *Journal of Insect Physiology* (2025 – present)
Junior Faculty Mentor, Genetics Society of America FlyCROSS program (2025 – present)
Great Lakes Regional Representative to the North American *Drosophila* Board (2021 – 2024)
Associate Editor, *Genetics* (2012 – 2019)
Associate Editor, *Frontiers in Evolutionary and Population Genetics* (2011 – 2017)
Editorial Board, *Ecological Parasitology and Immunology* (2011 – 2016)
Editorial Advisory Board, *Developmental and Comparative Immunology* (2008 – 2012)
Special Issue Editor, *Insects*; Special issue on "Insect Immunity" (2011-2012)

Special Issue Editor, *Insect Biochemistry and Molecular Biology*; Special issue on "Insect Immunity and Responses to Infection" (2018-2019)
Guest Associate Editor, *eLife* (2018)
Guest Associate Editor, *PLoS Pathogens* (2015, 2017, 2020, 2024-5)
Guest Associate Editor, *Proc. Natl. Acad. Sci. USA* (2016, 2108)
Guest Associate Editor, *PLoS Genetics* (2010, 2014)

Ad hoc peer reviewer for primary journals *American Naturalist* (2012), *Annals of the Brazilian Academy of Science* (2020), *Animal Behavior* (2017), *Behavior Genetics* (2015), *Biocontrol* (2006), *Bioinformatics* (2004), *Biology Letters* (2008), *BMC Evolutionary Biology* (4x, 2009 – 2015), *BMC Genomics* (5x, 2007 – 2014), *Current Biology* (8x, 2005 – 2022), *Developmental and Comparative Immunology* (11x, 2006 – 2013), *DNA and Cell Biology* (2009), *Ecology* (2012), *Ecology and Evolution* (2024), *Ecology Letters* (2017), *eLife* (4x, 2016 – 2021), *Evolution* (9x, 2009 – 2025), *Evolution Letters* (2019, 2021), *Evolutionary Ecology Research* (2007), *Experimental Gerontology* (2011), *FEMS Microbiology Letters* (2003), *Fly* (2025), *Frontiers in Evolutionary and Population Genetics* (2013), *Frontiers in Immunology* (2019), *Frontiers in Zoology* (2012), *Functional Ecology* (3x, 2011 – 2014), *G3: Genes, Genomes, Genetics* (2019,2024), *Gene* (2015), *Genetics* (12x, 1998 – 2017), *Genome* (2004), *Genome Biology and Evolution* (2013, 2025), *Genome Research* (2020), *Heredity* (2012, 2020), *Insect Molecular Biology* (2010, 2013), *Insect Biochemistry and Molecular Biology* (3x, 2007 – 2020), *International Journal of Evolutionary Biology* (2012), *Journal of Applied Microbiology* (2005), *Journal of Biological Chemistry* (2003, 2008), *Journal of General and Applied Microbiology* (2012), *Journal of Evolutionary Biology* (3x, 2011 – 2017), *Journal of Experimental Biology* (2019, 2025), *Journal of Heredity* (2002, 2020), *Journal of Innate Immunity* (2014), *Journal of Insect Physiology* (3x, 2020 – 2025), *Journal of Medical and Veterinary Entomology* (2008, 2012), *Journal of Medical Entomology* (2017), *Journal of Molecular Evolution* (3x, 2004), *Journal of Visualized Experiments* (2019); *Molecular Biology and Evolution* (10x, 2003 – 2026), *Molecular Ecology* (7x, 2006 – 2024), *mBio* (2019), *mSystems* (2016), *Nature* (2026), *Nature Communications* (2014, 2018, 2026), *Nature Genetics* (2006), *npj Antimicrobials and Resistance* (2026), *Parasitology* (2012), *Parasite Immunology* (2013), *Philosophical Transactions of the Royal Society B* (2015), *Physiological and Biochemical Zoology* (2008), *Physiological Entomology* (2016), *PLoS Biology* (8x, 2006 – 2024), *PLoS Genetics* (17x, 2007 – 2021), *PLoS One* (5x, 2011-2016), *PLoS Pathogens* (23x, 2007 – 2026), *Proc. Natl. Acad. Sci. USA* (10x, 2006 – 2026), *Proceedings of the Royal Society B Biological Sciences* (7x, 2012 – 2024), *Review Commons* (2026), *Science* (4x, 2007 – 2013), *Scientific Reports* (2020), *Trends in Evolution and Ecology* (2017), *Trends in Genetics* (3x, 2004 – 2009)

National Institutes of Health/CSR Genetic Variation and Evolution panel permanent member, 3 meetings per year (2022 – 2027); panel Chair (2025-2027)

National Institutes of Health/CSR *ad hoc* review panelist (2011, 2012, 2014, 2015, 2016, 2017, 2019, 2020)

National Science Foundation review panelist (2009)

Ad hoc reviewer for California Department of Food and Agriculture (2006), European Research Council (2011), Leverhume Trust (2009), British Biotechnology and Biological Sciences Research Council (3x, 2011 – 2012), British National Environment Research Council (4x, 2004 – 2012), Carver Trust (2016), Czech Science Foundation (2016), German Research Foundation (2021), National Institutes of Health ARRA Challenge Grants (2009), National Science Foundation (17x, 2005 – 2024), Portuguese Foundation for Science and Technology (2011), Swiss National Science Foundation (2022), Swiss Federal Institute of Technology - ETH Zurich

(2015), United Kingdom Medical Research Council (2014, 2022), United States Department of Agriculture (2005, 2006), Wellcome Trust (4x, 2007 – 2013)

Ph.D. Defense Opponent/Outside Examiner: Binghamton University (2012, Rui Zhang, major advisor: Anthony Fiumera); Stockholm University (2012, Zhi Wang, major advisor: Ulrich Theopold); Stockholm University (2019, Naomi Keehnen, major advisors: Christopher Wheat and Ulrich Theopold); Instituto Gulbenkian de Ciência (2023, Tânia Paulo, major advisor: Élio Sucena); Instituto Gulbenkian de Ciência (2024, Miguel Landum, major advisor: Luis Teixeira)

External Ph.D. Committee Member: University of Nebraska (Justin Buchanan, major advisor Kristi Montooth; 2014 – 2019), University of Arizona (Emily Burke, major advisor Todd Schlenke; 2024 – present)

External Evaluator of Tenure and Promotion Packages: Columbia University, Imperial College London, Michigan State University, New Mexico State University, Pacific Biosciences Research Center, Qatar University, Texas A&M University, Tulane University, University of Alabama at Birmingham, University of Central Florida, University of Cypress, University of Edinburgh, University of Kansas, University of Nebraska, University of Virginia (2012-2025)

Conference and Symposium Organization

Organizer of 14th annual Ecology and Evolution of Infectious Disease Conference. Ithaca, NY, June 3-5, 2016.

Co-organizer of NESCent/TriCEM Catalysis Meeting "Ecological Immunology Applied to Vector Biology and Vector-Borne Disease". Durham, NC, Aug 18-20, 2015. Co-organized with L.C. Bartholomay (University of Wisconsin, Madison).

Co-organizer of a symposium on "Principals in Population Genetics: A coalescence of community to celebrate Andy Clark". Ithaca, NY, July 10-12, 2014. Co-organized with N.D. Singh (North Carolina State University).

Co-organizer of bilateral symposia with Stockholm University on "Insect Science". Stockholm, Sweden, Nov 9-14, 2011. Ithaca, NY, Oct 13-15, 2013. Co-organized with M.F. Wolfner (Cornell University) and Y. Engström (Stockholm University).

Co-organizer of a symposium on "Host Population Genetics: Natural Selection and Immunity" at the annual meeting of the Society for Molecular Biology and Evolution. Lyon, France, Jul 4-8, 2010. Co-organized with L. Quintana-Murci (Institut Pasteur).

Co-organizer of Cornell Center for Comparative and Population Genomics research symposium. Hosted at Cornell University, June 21, 2010.

Organizing committee for 8th annual Ecology and Evolution of Infections and Disease conference. Hosted at Cornell University, NY, June 3-5, 2010.

Co-organizer of "Diptera Day" research symposium. Hosted at Cornell University, Mar 24, 2010. Co-organized with A.E. Douglas (Cornell University).

Co-organizer of Workshop on "Immunity, Hematopoiesis, and Pathogenesis" at the 49th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA, Apr 2-6, 2008. Co-organized with L. Wu (University of Maryland).

Co-organizer of Workshop on "Immunity, Hematopoiesis, and Pathogenesis" at the 48th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Philadelphia, PA, Mar 7-11, 2007. Co-organized with T. Schlenke (Emory University).

Organizing committee for Eastern Great Lakes Molecular Evolution Meeting. Hosted at Cornell University, Apr 24, 2004.

Cornell University Service:

Advisory Board, Office of Postdoctoral Affairs (2026 – present)
Executive Committee, Cornell Center for Immunology (2019 – present)
McClintock Life Sciences Lecture Series Committee (2021 – present)
Director, Cornell Institute of Host-Microbe Interactions and Disease (2016 – 2025)
Co-Chair, Provost's Task Force on Infection Biology, Cornell University (2016 – 2018)
CALS Strategic Planning Task Force, Cornell University (2016)
Cornell Life Sciences Genomic Core Facility faculty advisory committee (2011 – 2017)
Life Sciences Planning Task Force, Cornell University (2009)
Executive Committee, Cornell Center for Comparative and Population Genomics (2008 – 2018)
Cornell Center for Comparative and Population Genomics seminar series coordinator (2008 – 2009)
Curriculum Committee, College of Agriculture and Life Sciences (2007 – 2008)
DNA Sequencing and Genotyping Core Facility Review Team (2007)

Service Related to Graduate Education

Admissions Committee, Graduate Field of Ecology and Evolutionary Biology (2020 – 2021)
Director of Graduate Studies, Field of Entomology (2011 – 2014)
Presidential Life Sciences Graduate Fellowship selection committee (2010, 2011)
Finance Committee, Graduate Field of Genetics, Genomics and Development (2006 – 2010)
Faculty Advisor to "Jugatae" Entomology Graduate Student Association (2006 – 2010)
Admissions Committee, Graduate Field of Entomology (2003 – 2006)

Faculty Search and Promotion Committees

Faculty Search Committee Member, Assistant Professor of Plant Microbiome and Plant Health in a Changing Climate, School of Integrative Plant Science (2024-25)
Faculty Search Committee Member, Sarkaria Assistant Professor of Insect Physiology, Department of Entomology (2022-23)
Faculty Search Committee Chair, Professor of Vector Biology and Vector-Borne Disease, Department of Entomology (2017-18, 2018-19)
Faculty Search Committee Member, Assistant Professor of Mathematical Biology of Infectious Disease, Department of Ecology and Evolutionary Biology (2018-19)
Faculty Search Committee Chair, Assistant Professor of Host-Microbe Interactions, College of Agriculture and Life Science (2016-17)
Faculty Search Committee Member, Assistant Professor of Evolutionary Biology, Department of Ecology and Evolutionary Biology (2016-17)
Faculty Search Committee Member, Assistant Professor of Insect Immunology, Department of Entomology (2011-12)
Faculty Search Committee Member, Assistant Professor of Evolution of Development, Department of Ecology and Evolutionary Biology (2011-12)
Faculty Search Committee Member, Assistant Professor of Population Genetics/Genomics, Department of Biological Statistics and Computational Biology (2007-08)
Faculty Search Committee Member, Sarkaria Endowed Professor of Insect Physiology, Department of Entomology (2006-2007)
Chair, *ad hoc* committee to review Promotion and Tenure, CALS (2022)
Member, *ad hoc* committee to review Promotion and Tenure, CALS (2011, 2020)
Member, *ad hoc* committee to review Promotion and Tenure, College of Veterinary Medicine (2012)
Member, *ad hoc* committee to review Promotion and Tenure, College of Arts and Science (2010)

Mentoring Committee Chair for Asst. Prof. Megan Greischar, Ecology and Evolutionary Biology (2020 – present)
Mentoring Committee Chair for Asst. Prof. Joeva Barrow, Nutritional Sciences (2018 – present)
Mentor for Asst. Prof. Charles Danko, Biomedical Sciences (2015 – 2020)
Mentoring Committee Chair for Asst. Prof. Nicolas Buchon, Entomology (2012 – 2018)

Department Service

Department of Entomology Committee on Diversity, Equity and Inclusion (2020 – 2023)
Department of Entomology COVID Response Committee (2020 – 2021)
Executive Committee, Department of Entomology (2016, 2019 – 2023)
Entomology Department Space Committee (2014 – 2015, 2016 – 2020)
Entomology Strategic Planning Committee (2013 – 2014)
Faculty Coordinator of Entomology Department seminar series (2006 – 2010)
Library Committee, Department of Entomology (2003 – 2007, 2010)
Computer Support Committee, Department of Entomology (2003 – 2007)
Griswold & Rogoff Funds Allocation Committee, Department of Entomology (2003 – 2007)

Undergraduate Advising

Entomology: Kenneth Li (2025-present), Felicia West (2025-present), Anna Lovat (2024-present), Anna Labiner (2021-2025), Kaitlyn Fang (2020-2024), Sabrina Celis (2017-2021), Abby Davis (2017-2019), Brandon Everhart (2015-2017), Abigail Heleba (2014-2015), Madeline Ostwald (2012-2013), Erin McCourt (2008-2012), Alexander Heleba (2008), Nicholas Ledesma (2004-2008), Keith Bayless (2003-2007)

Biology: Paul Hofmeister (2021-22), Samantha Josephs (2021-22), Rebecca Kalik (2021-22), Danielle Koutsainis (2021-22), Sharvanika Kumaran (2021-22), Brianna Le (2018-19), Julie Lewis (2018-19), Benjamin Libov (2018-19), Ashley Loke (2018-19), Jessie Lou (2018-19), Sanweda Mahagabin (2018-19), Hannah Mirando (2018-19), Gregory Schoeman (2018-19), Mathew Burnett (2017-18), Shayla Lugay (2017-18), Jake Lustig (2017-18), Sophie Malki (2017-18), Alan Mezheritsky (2017-18), Jacob Moore (2017-18), Ryan Mulloy (2017-18), Benjamin Nace (2017-18), Melissa Schaefer (2017-18), Emma Birch (2016-17), Ivan Falsztyn (2016-17), Jean Jimenez (2016-17), Caroline Kelly (2016-17), Dylan Lee (2016-17), Mitchell Plesser (2016-17), Grace Welle (2016-17), Lydia Zamidar (2016-17)

Graduate Thesis Committees

In Progress

Zhenying Chen (Ph.D., Ecology and Evolutionary Biology; Major Advisor: Megan Greischar)
Xuerong Jin (Ph.D., Entomology; Major Advisor: Nicolas Buchon)
Britny Johnson (Ph.D., Entomology; Major Advisor: Courtney Murdock)
Lidane Noronha (Ph.D., Entomology; Major Advisor: Patrick O'Grady)

Completed

Carl St. John (Ph.D., Natural Resources, 2024; Major Advisors: Peter McIntyre and Nina Therkildsen)
Maria Teresa Reinoso-Perez (Ph.D., Natural Resources, 2024; Major Advisor: André Dhondt)
Andrew Murtha (Ph.D., Microbiology, 2023; Major Advisor: Tobias Dörr)
Karin Van der Burg (Ph.D., Ecology and Evolutionary Biology, 2020; Major Advisor: Robert Reed)
Ian Voorhees (Ph.D., Comparative Biomedical Sciences, 2020; Major Advisor: Colin Parrish)

Sofie Delbare (Ph.D., Genetics, Genomics and Development, 2020; Major Advisors: Mariana Wolfner and Andrew Clark)
Leticia Smith (Ph.D., Entomology, 2109; Major Advisor: Jeff Scott)
Allison Tracy (Ph.D., Ecology and Evolutionary Biology, 2109; Major Advisor: Drew Harvell)
Milton Drott (Ph.D., Plant Pathology and Plant-Microbe Biology, 2018; Major Advisor: Michael Milgroom)
Philip Houtz (Ph.D., Entomology, 2018; Major Advisor: Nicolas Buchon)
Ezra Lencer (Ph.D., Ecology and Evolutionary Biology, 2018; Major Advisor: Amy McCune)
Simone White (M.S., Genetics, Genomics and Development, 2017; Major Advisors: Mariana Wolfner and Andrew Clark)
Jennifer Apger (Ph.D., Genetics, Genomics and Development, 2016; Major Advisor: Mariana Wolfner)
Zachary Cohen (M.S., Entomology, 2015; Major Advisor: Ping Wang)
Jae Young Choi (Ph.D., Genetics, Genomics and Development, 2015; Major Advisor: Chip Aquadro)
Angela Early (Ph.D., Ecology and Evolutionary Biology, 2014; Major Advisor: Andrew Clark)
Laura Eirman (Ph.D., Natural Resources, 2014; Major Advisor: Mathew Hare)
Lucy Kafui Kavi (M.S., Entomology, 2014; Major Advisor: Jeff Scott)
Morgan Mouchka (Ph.D., Ecology and Evolutionary Biology, 2013; Major Advisor: Drew Harvell)
Adam Wong (Ph.D., Entomology, 2013; Major Advisor: Angela Douglas)
Findley Ransler Finseth (Ph.D., Ecol. and Evol. Biol., 2013; Major Advisor: Rick Harrison)
Erica Larson (Ph.D., Ecology and Evolutionary Biology, 2012; Major Advisor: Rick Harrison)
Eric van Fleet (M.S., Entomology, 2011; Major Advisor: Angela Douglas)
Jessica Litman (Ph.D., Entomology, 2011; Major Advisor: Bryan Danforth)
George Lin (Ph.D., Entomology, 2010; Major Advisor: Jeff Scott)
Ben Hamilton (Ph.D., Ecology and Evolutionary Biology, withdrew 2010; Major Advisor: Rick Harrison)
Kirk Lohmueller (Ph.D., Genetics and Development, 2009; Major Advisor: Andrew Clark)
Melissa Hardstone (Ph.D., Entomology, 2009; Major Advisor: Jeff Scott)
Erin Hill (Ph.D., Genetics and Development, 2009; Major Advisor: Andrew Clark)
Gerry Lorigan (M.S., Genetics and Development, 2009; Major Advisor: Jason Mezey)
Frank Rinkevich (M.S., Entomology, 2004; Major Advisor: Jeff Scott)

INVITED RESEARCH PRESENTATIONS

2026

Department of Molecular Biosciences annual symposium, University of Kansas. Lawrence, KS. August 21. Student-invited keynote speaker.

2025

CIHMID Summer Symposium. Ithaca, NY. July 29. Plenary speaker.

Gordon Research Conference on Animal-Symbioses. Portland, ME. June 15-20. Plenary speaker.

2024

Free University of Berlin. Berlin, Germany. June 24.

CBR Days of the Centre for Biomedical Research of the Católica Medical School. Sintra, Portugal. June 6. Keynote speaker.

Department of Biochemistry, Cambridge University. Cambridge, UK. March 5.

2023

Encontro Nacional de Biologia Evolutive, organized by the Portuguese Evolution Society, Lisbon, Portugal. December 18-19. Plenary speaker.

Instituto Gulbenkian de Ciência, Oeiras, Portugal. September 26.

2022

Department of Biological Sciences, Vanderbilt University. Knoxville, TN. November 7.

Institute of Ecology and Evolution, University of Edinburgh. Edinburgh, UK. September 21.

Department of Natural Sciences, Imperial College. London, UK. September 16.

ESF Conference on "Ecological Immunology." Blossin, Germany. Sept 7-11. Plenary speaker.

7th annual CIHMID Summer Symposium. Ithaca, NY. August 10. Plenary speaker.

~~XXVI International Congress of Entomology, symposium on "Insect Immune Interactions" Helsinki, Finland. July 18-23. Symposium speaker.~~ – *cancelled due to covid-19 pandemic*

Department of Microbiology, Cornell University. Ithaca, NY, March 17.

2021

Biology Graduate Student Symposium, University of Maryland Baltimore County, Baltimore, MD, March 26.

Immunology and Microbiology Program, University of Massachusetts Medical School. Worcester, MA, March 25.

2019

Department of Zoology, University of Stockholm. Stockholm, Sweden. December 12.

Jacques Monod Conference on "Integrated Insect Immunology: Controlling Infections." Roscoff, France. June 24-28. Plenary speaker.

"EvoDay: Evolutionary Biology of Interacting Organisms." Cornell University. Ithaca, NY, May 9.

2018

Public Health Research Institute, Rutgers University. Newark, NJ. October 23.

Department of Biological Sciences, University of Idaho. Moscow, ID. April 20.

Seminar in Immunogenetics, Genetics Training Program, University of Michigan. Ann Arbor, MI. April 4.

Department of Biological Sciences, Indian Institute of Science Education and Research, Mohali. Mohali, India. January 26.

2017

Department of Ecology and Evolutionary Biology, University of Toronto. Toronto, CA. September 29.

Ecological Immunology Workshop. Insect immunity: genomics, microbiome, applications. Blossin, Germany. Aug 28-Sept 1. Plenary speaker.

Department of Biology, University of Nebraska. Lincoln, NE. March 30. Suzanne Ott Prather Lecture.

2016

Department of Biology, Drexel University. Philadelphia, PA. October 18.

Department of Entomology, University of Arizona. Tucson, AZ. April 11.

2015

Symposium on "Molecular Population Genetics and Evolution: Genes, Genomes, and Models" Conference. Asilomar, CA. May 21-24. Plenary speaker.

Symposium on host defense and pathogen-mediated selection at the annual meeting of the European Society for Evolutionary Biology. Lausanne, Switzerland. August 10-14.Symposium speaker.

Department of Microbiology and Immunology, University of Rochester Medical Center. Rochester, NY. April 20.

2014

Jacques Monod Conference on "Infectious diseases as drivers of evolution: the challenges ahead." Roscoff, France. September 6-10. Plenary speaker.

"Principals of Population Genetics" Conference. Ithaca, NY. July 10-12. Co-organizer and plenary speaker.

Department of Biology, University of Pennsylvania. February 27.

Keystone Symposium on Mechanisms and Consequences of Invertebrate-Microbe Interactions. Tahoe City, CA. January 26-30. Plenary speaker.

2013

Center for Infectious Disease Dynamics, Pennsylvania State University. October 17.

Cornell University – Stockholm University symposium on Insect Science. Ithaca, NY. October 13-14. Plenary speaker.

Division of Biological Sciences, University of Missouri. September 17.

Annual meeting of the Society for Invertebrate Pathology, Pittsburgh, PA. Aug 11-15. Plenary speaker.

Seventh annual Arthropod Genomics Consortium Symposium, Notre Dame, IN. June 13-15. Plenary speaker.

Instituto Gulbenkian de Ciência, short course on evolutionary ecology, Oeiras, Portugal. April 9-14.

Program in Infection and Pathobiology, Cornell University. March 8.

2012

Symposium on "Nutrition, Metabolism, and Disease." Cornell University. October 9. Plenary speaker.

Department of Biology and Biochemistry, University of Houston. February 29.

2011

Stockholm University – Cornell University symposium on Insect Science. Stockolm, Sweden. Nov 9-14. Plenary speaker.

9th Annual Ecological Genomics Symposium. Kansas City, MO. Nov 4 - 6. Plenary speaker.

EMBO/Institut Pasteur conference on Host Genetic Control of Infectious Diseases. Paris, France. Sept 28 - 30. Plenary speaker.

52nd annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. March 30 - April 3. Plenary speaker.

2010

Program in Population Biology, Ecology and Evolution, Emory University. November 5.

Department of Molecular Microbiology and Immunology, Johns Hopkins University. October 28.

Department of Microbiology and Immunology, Stanford University. May 5.

Department of Ecology and Evolutionary Biology, Cornell University. April 26.

Department of Biology, SUNY Albany. April 23.

Keystone conference on "Molecular Targets for Control of Vector-Borne Diseases: Bridging Lab and Field Research." Copper Mountain, CO. April 11-16. Plenary speaker.

2009

Royal Entomological Society conference on "Insect Infection and Immunity: Evolution, Ecology and Mechanisms." Sheffield, United Kingdom. July 15-17. Plenary speaker and session chair.

Department of Genetics, North Carolina State University, March 30.

2008

Department of Entomology, North Carolina State University, September 15.

Wellcome Trust conference on "Genomic Epidemiology of Malaria," Hinxton, United Kingdom, June 15-18. Plenary speaker.

International workshop on "Asking Questions with Genomics," Edinburgh, UK, June 4. Plenary speaker.

Department of Entomology, Cornell University, April 28.

2007

Fifth Annual Ecology and Evolution of Infectious Disease conference. Ithaca, NY, May 29-30. Plenary speaker.

European Science Foundation conference on "The Impact of the Environment on Innate Immunity," Obergurgl, Austria, April 22-27. Plenary speaker.

2006

Department of Ecology and Evolutionary Biology, University of Arizona, October 9.

International Congress of Developmental and Comparative Immunology symposium on "Ecoimmunity," Charleston, SC, July 1-6. Session speaker.

77th annual meeting of the Eastern Branch of the Entomological Society of America symposium on "Recent Advances in Insect Pathology in the Northeast," Charlottesville, VA, March 12-14. Session speaker.

Department of Entomology, University of Georgia, February 20.

Gordon Conference on Molecular Evolution, Ventura, CA, February 5-10. Plenary speaker.

2005

Department of Biological Sciences, University of Maryland, Baltimore County, November 10.

Department of Plant Pathology, Cornell University, October 26.

Institutes of Evolutionary Biology and Immunology and Infection Research, University of Edinburgh, July 30.

Department of Biological Sciences, University of Buffalo, March 24.

Department of Entomology, Texas A&M University, February 17.

Department of Microbiology and Immunology, College of Veterinary Medicine, Cornell University, February 11.

2004

Department of Molecular Biology and Genetics, Cornell University, October 8, 2004.

Department of Entomology, New York State Agricultural Experiment Station at Geneva, Cornell University, March 4, 2004.

2003

P.E.G.G. Seminar Series, Harvard University, April 24, 2003.

Department of Entomology, Cornell University, March 27, 2003.

Department of Medical Molecular Parasitology, New York University Medical School, February 11, 2003.

Department of Biology, University of Rochester, February 7, 2003.

2002

Donald Danforth Plant Center, St. Louis, MO, March 27, 2002.

SUBMITTED RESEARCH PRESENTATIONS (*presenting author)

2026

B.P. Lazzaro.* "Infection outcome is determined by reciprocal effects of *D. melanogaster* AMP-mediated immunity and *S. marcescens* anti-AMP counter-defenses." Oral presentation at the Jacques Monod conference "Insect immunity: the guardian of homeostasis and symbiosis" sponsored by CNRS. Roscoff, France. June 23-26.

Keith, S.A.*, V. Gupta, A.A. Kalukin, B.P. Lazzaro. "Juvenile Hormone acts during metamorphosis and post-mating to suppress immunity" Poster presentation at the Jacques Monod conference "Insect immunity: the guardian of homeostasis and symbiosis" sponsored by CNRS. Roscoff, France. June 23-26.

Browning, K.L.*, B.P. Lazzaro. "Testing the contributions of *Thor* to gene expression and protein translation after *E. faecalis* infection." Poster presentation at the 66th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 4-8.

Browning, K.L.*, J. Loor, B.P. Lazzaro. "Genetic dissection reveals region of 2R as basis of severe immune susceptibility to Gram-negative bacterial pathogens previously attributed to *Thor* flies." Poster presentation at the 66th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 4-8.

Kalukin, A.A.*, S.A. Keith, B.P. Lazzaro. "Host genotype impacts metabolic response to chronic bacterial infection." Poster presentation at the 66th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 4-8.

Keith, S.A.*, V. Gupta, A.A. Kalukin, B.P. Lazzaro. "Juvenile Hormone acts during metamorphosis and post-mating to suppress immunity" Oral presentation at the 66th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 4-8.

2025

Gray, E.M.*, M.R. Smee, B.P. Lazzaro, and B.J. Sinclair. "What is the metabolic cost of fighting infection?" Poster presentation at 10th International Symposium on the Environmental Physiology of Ectotherms and Plants. Vancouver, Canada. July 14-18.

Keith, S.A.*, V. Gupta, and B.P. Lazzaro. "Juvenile Hormone acts during metamorphosis and post-mating to suppress innate immunity in *Drosophila melanogaster*". Poster presentation at the International Insect Hormone Workshop. Copenhagen, Denmark. June 15-21.

Browning, K.A.* and B.P. Lazzaro. "Recharacterizing the role of *thor* in *Drosophila* immune dynamics" Poster presentation at the 65th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. March 19-23.

Kalukin, A.A.*, S.A. Keith, A.M. Darby, and B.P. Lazzaro. "*Drosophila melanogaster* genotype impacts metabolic response to chronic bacterial infection." Poster presentation at the 65th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. March 19-23.

Keith, S.A.*, A.A. Kalukin, D. Vargas Solivan, and B.P. Lazzaro. "GAL4 overexpression impairs adult fat body function." Poster presentation at the 65th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. March 19-23.

Keith, S.A.*, V. Gupta, and B.P. Lazzaro. "Ecdysone and Juvenile Hormone regulate intertwined developmental and innate immune processes." Poster presentation at the 65th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. March 19-23.

Browning, K.A.*, and B.P. Lazzaro. "Recharacterizing the role of *thor* in *Drosophila* immune dynamics." Poster presentation at the Binghamton University Biology Symposium. Binghamton, NY. January 17-18.

Keith, S.A.*, and B.P. Lazzaro. "Endocrine regulation of immune and developmental transcriptional programs in the *Drosophila* fat body." Oral presentation at the Binghamton University Biology Symposium. Binghamton, NY. January 17-18.
*award for best oral presentation

Smee, M.R.*, and B.P. Lazzaro. "Deciphering bacterial decisions that lead to vastly different outcomes for hosts." Oral presentation at the Binghamton University Biology Symposium. Binghamton, NY. January 17-18.

2024

Hollingsworth, B.D.*, A.V. Shattuck, N.D. Grubaugh, S.R. Campbell, C.L. Romano, B.P. Lazzaro, and C.C. Murdock. "Population structure of the *Aedes albopictus* virome in Suffolk County, Long Island, NY." Poster presentation at the annual meeting of the American Society of Tropical Medicine and Hygiene. New Orleans, LA. November 13-17.

Loor, J. K. Browning, and B.P. Lazzaro. "Background genetic effects influencing the $Thor^2$ immunosuppression phenotype in *Drosophila melanogaster*." Poster presentation at the SACNAS NDiSTEM conference. Phoenix, AZ. October 2024
*award for best poster presentation

Loor, J. K. Browning, and B.P. Lazzaro. "Background genetic effects influencing the $Thor^2$ immunosuppression phenotype in *Drosophila melanogaster*." Poster presentation at the Leadership Alliance National Symposium. Hartford, CT. July 2024.

Lazzaro, B.P.*, P. Nagy, A.M. Frank, M. Kazi, S.A. Keith, H.D. Lazzaro, C. Lee-Coudouel, N. Nikulin, I. Real-Ramirez, E.J. Sanford. J.-Ho Shin, M. Smolka, A. Vladmirsky, S.P. Ellner, N. Buchon, and T. Doerr. "*Serratia marcescens* uses anti-immune defenses to infection *Drosophila*

melanogaster." Oral presentation at SymbNET International Conference on Host-Microbe Symbiosis. Olhão, Portugal. June 10-13.

Darby, A.M., S. Keith, A.A. Kalukin, and B.P. Lazzaro "Metabolic consequences of chronic bacterial infection increase susceptibility to starvation in *Drosophila melanogaster*." Oral presentation at The Allied Genetics Conference. Washington, DC. March 6-10.

2023

Lazzaro, B.P.*, A.M. Frank, J.-H. Shin, T. Doerr. "Genetic basis for *S. marcescens* infectivity and virulence to *D. melanogaster*." Poster presentation at the 7th annual CIHMID Summer Symposium. Ithaca, NY. August 9.

Lazzaro, B.P.* "Genetic basis for *S. marcescens* infectivity and virulence to *D. melanogaster*." Oral presentation at the Jacques Monod conference on "Insect Models for Infection Biology". Roscoff, France. June 26-30.

Keith, S.*, V. Gupta, D.V. Solivan and B.P. Lazzaro. "Mechanisms of immune regulation by ecdysone and juvenile hormone." Poster presentation at the Jacques Monod conference on "Insect Models for Infection Biology". Roscoff, France. June 26-30.

Lazzaro, B.P.*, A.M. Frank, J.-H. Shin, T. Doerr. "Genetic basis for *S. marcescens* infectivity and virulence to *D. melanogaster*." Poster presentation at the 20th annual Ecology and Evolution of Infectious Disease conference. State College, PA. May 22-25.

Keith, S.*, V. Gupta, D.V. Solivan and B.P. Lazzaro. "Mechanisms of immune regulation by ecdysone and juvenile hormone." Poster presentation at the 20th annual Ecology and Evolution of Infectious Disease conference. State College, PA. May 22-25.

Loor, J., K. Browning, and B.P. Lazzaro. "Effects of *Lentilactobacillus parabuchneri* on systemic infection in *Drosophila melanogaster*." Poster presentation at the National Conference for McNair Scholars and Undergraduate Research. College Park, MD. March.

Browning, K. and B.P. Lazzaro. "Characterizing translational shifts and restricting dietary yeast during bacterial infection." Poster presentation at the 64th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 1-5.

Darby, A.M.*, D.O. Okoro, A.M. Frank and B.P. Lazzaro. "High dietary sugar post-development increases susceptibility to bacterial infection in *Drosophila melanogaster*." Poster presentation at the 64th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 1-5.

Gordon, K.E.*, S.R. Ray, P. Gonzales, M. Li, C. Liang, M.F. Wolfner and B.P. Lazzaro. "Does varying investment in egg production modify immune defense in mated female *Drosophila melanogaster*?" Poster presentation at the 64th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 1-5.

Keith, S.*, V. Gupta, D.V. Solivan and B.P. Lazzaro. "Mechanisms of immune regulation by ecdysone and juvenile hormone." Poster presentation at the 64th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 1-5.

Browning, K. and B.P. Lazzaro. "Characterizing translational shifts and restricting dietary yeast during bacterial infection." Poster presentation at the annual Biology Symposium organized by the Binghamton University Biology Graduate Student Organization. Binghamton, NY. January 13-14.

Darby, A.M.*, D.O. Okoro, A.M. Frank and B.P. Lazzaro. "High dietary sugar post-development increases susceptibility to bacterial infection in *Drosophila melanogaster*." Poster presentation at the annual Biology Symposium organized by the Binghamton University Biology Graduate Student Organization. Binghamton, NY. January 13-14.
*award for best poster presentation

2022

Aredas, S.*, A.M. Darby and B.P. Lazzaro. "Investigating the Effects of a High Sugar Diet on the Gut Microbiome and Immunity in *Drosophila melanogaster*." Poster presentation at the Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS). Anaheim, CA. November 9-12.

Noronha, L.*, B.P. Lazzaro and P. O'Grady. "Developmental effects of cactus on *D. mettleri*." Poster presentation at the annual meeting of the Society for the Study of Evolution. Cleveland, OH. June 24-28.

Darby, A.M.* and B.P. Lazzaro. "Short-term feeding on high sugar increases susceptibility to infection." Poster presentation at the 63rd annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. April 6-10.

Gordon, K.E.*, M.F. Wolfner and B.P. Lazzaro. "A single mating is sufficient to induce persistent reduction of immune defense in mated female *Drosophila melanogaster*." Virtual poster presentation at the 63rd annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. April 6-10.

Gupta, V.* and B.P. Lazzaro. "Role of Juvenile Hormone in mediating tradeoffs between immunity and reproduction." Virtual poster presentation at the 63rd annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. April 6-10.

Keith, R.*, B.P. Lazzaro and B.M. McCartney. "Endocrine regulation of metabolism and immunity in response to commensal and pathogenic bacteria." Poster presentation at the 63rd annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. April 6-10.

Noronha, L.*, B.P. Lazzaro and P. O'Grady. "Developmental effects of cactus on *D. mettleri*." Poster presentation at the 63rd annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. April 6-10.

Ravikumar, R.* and B.P. Lazzaro. "Exploring transcriptional signatures of antimicrobial peptides early in infection to predict infection outcomes." Poster presentation at the 63rd annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. April 6-10.

2021

Ravikumar, R.* and B.P. Lazzaro. "Exploring the role of injury in infection response and outcomes in *Drosophila melanogaster*." Poster presentation at the Ecology and Evolution of Infectious Disease annual conference. Virtual conference. June 14-17.

Darby, A.M.* and B.P. Lazzaro. "Investigating the immediate effects of high sugar diets on infection survival in *Drosophila*." Poster presentation at the Genetics Society of America Allied Genome Conference. Virtual conference. March 23-Apr 1.

Gordon, K.E.*, M.F. Wolfner and B.P. Lazzaro. "A single mating triggers persistent suppression of *Drosophila melanogaster* female immune defense." Poster presentation at the Genetics Society of America Allied Genome Conference. Virtual conference. March 23-Apr 1.

Gupta, V.*, A.M. Frank, N. Matolka and B.P. Lazzaro. "Constraints in protein biosynthesis by multi-functional fat body tissue lead to a trade-off between reproduction and immunity." Poster presentation at the Genetics Society of America Allied Genome Conference. Virtual conference. March 23-Apr 1.

Ravikumar, R.* and B.P. Lazzaro. "Exploring the role of injury in infection response and outcomes in *Drosophila melanogaster*." Poster presentation at the Genetics Society of America Allied Genome Conference. Virtual conference. March 23-Apr 1.

2020

Gupta, V.* and B.P. Lazzaro. "Heterogeneity in the fat body tissue revealed using single-cell RNA sequencing." Poster presentation at the Genetics Society of America Allied Genome Conference. Virtual conference. April 22-26.

Gordon, K.E.*, M.F. Wolfner and B.P. Lazzaro. "Regulation of post-mating immune response in female *Drosophila melanogaster*." Poster presentation at the Genetics Society of America Allied Genome Conference. Virtual conference. April 22-26.

Ravikumar, R.* and B.P. Lazzaro. "No evidence for transgenerational immune priming in *Drosophila melanogaster*." Poster presentation at the Genetics Society of America Allied Genome Conference. Virtual conference. April 22-26.

2019

Gupta, V.* and B.P. Lazzaro. "Cellular heterogeneity underlying poly-functional *Drosophila* fat body tissue." Poster presentation at the Jacques Monod Conference on "Integrated Insect Immunology: Controlling Infections." Roscoff, France. June 24-28.

Gupta, V.* and B.P. Lazzaro. "Cellular heterogeneity underlying poly-functional *Drosophila* fat body tissue." Poster presentation at the Ecology and Evolution of Infectious Disease conference. Princeton, NJ. June 10-13.

Gordon, K.E.*, M.F. Wolfner and B.P. Lazzaro. "Regulation of post-mating immune response in female *Drosophila melanogaster*." Poster presentation at the Ecology and Evolution of Infectious Disease conference. Princeton, NJ. June 10-13.

Ravikumar, R.* and B.P. Lazzaro. "Kinetics of antimicrobial peptide production predicts stochastic outcomes of infection." Poster presentation at the Ecology and Evolution of Infectious Disease conference. Princeton, NJ. June 10-13.

Gupta, V.* and B.P. Lazzaro. "Cellular heterogeneity underlying poly-functional *Drosophila* fat body tissue." Poster presentation at the 60th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Dallas, TX. Mar 27-31.

Gordon, K.E.*, M.F. Wolfner and B.P. Lazzaro. "Regulation of post-mating immune response in female *Drosophila melanogaster*." Poster presentation at the 60th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Dallas, TX. Mar 27-31.

2018

Im, J.H.* and B.P. Lazzaro. "*Drosophila* genes involved in internalizing pathogens are shaped by recent and recurrent positive selection." Poster presentation at the Population, Evolutionary and Quantitative Genetics meeting of the Genetics Society of America. Madison, WI. May 14-17.

2017

Gupta, V.* and **B.P. Lazzaro**. "Role of Juvenile Hormone in mediating trade-off between immunity and reproduction in *Drosophila melanogaster*." Ecological Immunology Workshop. Insect immunity: genomics, microbiome, applications. Blossin, Germany. Aug 28-Sept 1.

J.H. Im* and **B.P. Lazzaro**. "Genes involved in internalizing pathogens in *Drosophila* are shaped by recent and recurrent positive selection." Poster presentation at the annual meeting of the Society for Molecular Biology and Evolution. Austin, TX. July 2-6.

J.H. Im, K. Troha, J. Revah, N. Buchon and **B.P. Lazzaro** *. "Comparative transcriptomics of the *D. melanogaster* response to bacterial infection." Poster presentation at the 58th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. Mar 30-Apr 2.

K. Troha*, J.H. Im, J. Revah, **B.P. Lazzaro** and N. Buchon. "The transcription factor CrebA promotes disease tolerance upon bacterial infection." Poster presentation at the 58th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. Mar 30-Apr 2.

D. Duneau, J.-B. Ferdy, J. Revah, H. Kondolf, G. Ortiz, **B.P. Lazzaro** and N. Buchon*. "Dynamic interplay between bacterial growth and the host immune response generates a stochastic outcome of infection." Poster presentation at the 58th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. Mar 30-Apr 2.

2016

J. Pfannerstill* and **B.P. Lazzaro***. "The AP Curriculum meets vision and change: incorporating active learning in small classrooms and large lecture halls." Oral presentation at the National Association of Biology Teachers annual conference. Denver, CO. Nov 3-5.

J.H. Im* and **B.P. Lazzaro**. "Population genetic analysis of autophagy and phagocytosis genes in *Drosophila melanogaster*." Poster presentation at The Allied Genetics Conference. Orlando, FL. July 13-17.

T.B. Sactkton*, **B.P. Lazzaro**, and A.G. Clark "Rapid acquisition of novel immune system genes via duplication and *de novo* origin in dipterans." Poster presentation at The Allied Genetics Conference. Orlando, FL. July 13-17.

E.L. Behrman*, V.M. Howick, **B.P. Lazzaro** and P.S. Schmidt. "Seasonal change in *Drosophila melanogaster* innate immunity." Poster presentation at the annual meeting of the Society for the Study of Evolution. Austin, TX. June 17-21.

J.H. Im* and **B.P. Lazzaro**. "Population genetic analysis of autophagy and phagocytosis genes in *Drosophila melanogaster*." Poster presentation at the 14th annual Ecology and Evolution of Infectious Disease meeting. Ithaca, NY. June 3-5.

2015

E.L. Behrman*, V.M. Howick, **B.P. Lazzaro** and P.S. Schmidt. "Seasonal and latitudinal immune trade-offs in wild *Drosophila*." Poster presentation at the annual meeting of the Society for the Study of Evolution. Guarujá, Brazil. June 26-30.

J.E. Crawford*, M.M. Riehle, W.M. Guelbeogo, A. Gneme, N'F. Sagnon, K.D. Vernick, R. Nielsen, and **B.P. Lazzaro**. "Evolution of GOUNDRY, a cryptic subgroup of *Anopheles*, and its impact on susceptibility to *Plasmodium* infection." Oral presentation at the 9th annual Arthropod Genomics Symposium. Manhattan, KS. June 17-19.

B.P. Lazzaro*, R.A. Schwenke, N. Buchon, and D.F. Duneau. "Sexual dimorphism and costs of reproduction in the *Drosophila* immune system." Poster presentation at the 13th annual Ecology and Evolution of Infectious Disease meeting. Athens, GA. May 27-29.

R.L. Unckless*, V.M. Howick and **B.P. Lazzaro**. "Balancing selection and convergent evolution in an antimicrobial peptide." Poster presentation at Ecology and Evolution of Infectious Disease. Athens, GA. May 27-29.

M.C. Chambers*, E. Jacobson, S. Khalil and **B.P. Lazzaro**. "Tolerating chronic infection in *Drosophila melanogaster*." Poster presentation at the annual meeting of the American Society for Microbiology. New Orleans, LA. May 20-June 2.

B.P. Lazzaro*, D.F. Duneau, and R.A. Schwenke "Sexual dimorphism and costs of reproduction in the *Drosophila* immune system." Oral presentation at the 56th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 4-8.

V. Howick* and **B.P. Lazzaro** "The genetic architecture of defense as tolerance and resistance." Poster presentation at the 56th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 4-8.

R. Schwenke* and **B.P. Lazzaro** "Post-mating reduction of immune defense in *Drosophila melanogaster* females: testing the hormonal pleiotropy hypothesis." Poster presentation at the 56th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 4-8.

D. Duneau, R.A. Schwenke and **B.P. Lazzaro*** "Sexual dimorphism in the *D. melanogaster* immune system." Workshop presentation at the 56th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 4-8.

2014

D. Duneau* and **B.P. Lazzaro** "Host sexual dimorphism and its consequences for parasite evolution." Poster presentation at CNRS Jacques Monod Conference on "Infectious diseases as drivers of evolution: the challenge ahead." Roscoff, France. September 6-10.

P. Shahrestani*, J. Vandenberg, M. Griggs, S. Wraight, Y. Estrella, S.M. Rottschaefer, A.G. Clark and **B.P. Lazzaro**. "The genomic basis for evolved resistance to a fungal pathogen in *Drosophila melanogaster*." Poster presentation at the annual meeting of the Society for Invertebrate Pathology. Mainz, Germany. August 3-8.

S. Khalil*, M.C. Chambers and **B.P. Lazzaro**. "The effect of chronic infection on resource allocation." Poster presentation at the annual meeting of the Society for the Study of Evolution. Raleigh, NC. June 20-24. Undergraduate presenter and travel award winner.

V. Howick and **B.P. Lazzaro.** "The genetic architecture of defense as tolerance and resistance against a bacterial pathogen in *Drosophila melanogaster*." Poster presentation at the annual meeting of the Society for Molecular Biology and Evolution. San Juan, Puerto Rico. June 8-12.

R.L. Unckless*, V.M. Howick, and **B.P. Lazzaro**. "Convergent balancing selection on an antimicrobial peptide in *Drosophila*." Poster presentation at the annual meeting of the Society for Molecular Biology and Evolution. San Juan, Puerto Rico. June 8-12.

D.F. Duneau* and **B.P. Lazzaro**. "Batemen's Principle and sexual dimorphism in resistance to infection." Poster presentation at the 55th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. March 26-30.

R.L. Unckless*, V.M. Howick, and **B.P. Lazzaro**. "Convergent balancing selection on an antimicrobial peptide in *Drosophila*." Oral presentation at the 55th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. March 26-30.

M.C. Chambers*, S. Khalil, E. Jacobson, and **B.P. Lazzaro**. "Physiological trade-offs during chronic infection of *Drosophila melanogaster*." Poster presentation at the 55th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. March 26-30.

E.L. Berhman*, V.M. Howick, **B.P. Lazzaro** and P. Schmidt. "Spatial and temporal variation in innate immunity." Poster presentation at the 55th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. March 26-30.

M.C. Chambers*, S. Khalil and **B.P. Lazzaro**. "Physiological trade-offs during chronic infection of *Drosophila melanogaster*." Poster presentation at the Keystone Symposium on "Mechanisms and Consequences of Invertebrate-Microbe Interactions." Tahoe City, CA. January 26-30.

V.M. Howick* and **B.P. Lazzaro**. "Genotype and diet mediate tolerance of and resistance to bacterial infection in *Drosophila melanogaster*." Poster presentation at the Keystone Symposium on "Mechanisms and Consequences of Invertebrate-Microbe Interactions." Tahoe City, CA. January 26-30.

2013

B.P. Lazzaro*. "Complexity in the function and evolution of insect immunity." Oral presentation at the European Science Foundation conference on "Integrated Insect Immunology: From Basic Biology To Environmental Applications." Poltusk, Poland. September 23-28.

D. Duneau*, D. Ebert, and B.P. Lazzaro. "The role of host sex in parasite evolution." Poster presentation at the annual meeting of the European Society of Evolutionary Biology. Lisbon, Portugal. August 19-24.

P. Shahrestani, M. Griggs, S. Wraight, **B.P. Lazzaro**, and J. Vandenberg*. "Sexually dimorphic response of *Drosophila melanogaster* to infection by two strains of *Beauvaria bassiana*." Poster presentation at the annual meeting of the Society for Invertebrate Pathology. Pittsburgh, PA. August 11-15.

P. Shahrestani*, J. Vandenberg, M. Griggs, A.G. Clark and **B.P. Lazzaro.** "The genomic basis for adaptation to a fungal pathogen." Poster presentation at the annual meeting of the Society for Molecular Biology and Evolution. Chicago, IL. July 7-11.

E. Behrman*, V. Howick, **B.P. Lazzaro** and P. Schmidt. "Seasonal and temporal immune adaptations in wild *Drosophila*." Oral presentation at the annual meeting of the Society for the Study of Evolution. Snowbird, UT. June 21-25.

V.M. Howick* and **B.P. Lazzaro**. "The dynamics of tolerance and resistance in heterogeneous environments." Oral presentation at the 54th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Washington, DC. April 3-7.

P. Shahrestani* and **B.P. Lazzaro**. "Effects of host diet on the tradeoff between mating and immunity in *Drosophila melanogaster*." Poster presentation at the 54th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Washington, DC. April 3-7.

R. Schwenke* and **B.P. Lazzaro**. "Elucidating the mechanistic basis for the trade-off between reproduction and immunity in female *D. melanogaster*." Poster presentation at the 54th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Washington, DC. April 3-7.

D. Duneau *and **B.P. Lazzaro**. "Sex-specific immune response to bacterial infection." Poster presentation at the 54th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Washington, DC. April 3-7.

R.L. Unckless*, S. Rottschaefer and **B.P. Lazzaro**. "The genetic architecture of diet-by-immune interaction in *Drosophila*." Poster presentation at the 54th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Washington, DC. April 3-7.

M.C. Chambers*, C. Ota, I. Porges and **B.P. Lazzaro**. "Severity of chronic infections depends on the amount of dietary sugar." Poster presentation at the 54th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Washington, DC. April 3-7.

2012

J.E. Crawford* and **B.P. Lazzaro**. "Assessing the accuracy and power of population genetic inference from low-pass next-generation sequencing data." Poster presentation at the annual meeting of the Society for Molecular Biology and Evolution. Dublin, Ireland, June 23-26.

R.L. Unckless*, S.M. Rottschaefer and **B.P. Lazzaro**. "Interaction between diet and genotype in immune defense." Poster presentation at the 53rd annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 7-11.

S.M. Short*, M.F. Wolfner and **B.P. Lazzaro**. "Trade-offs and immune defense: the effect of mating and reproduction on immunity in female *D. melanogaster*." Poster presentation at the 53rd annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 7-11.

2011

S. Fellous and **B.P. Lazzaro**. "A link between the communities of parasites of insect larvae and adults mediated by the host's immune system." Oral presentation at the 96th annual meeting of the Ecological Society of America. Austin, TX. August 7-12.

M.R. Galac* and **B.P. Lazzaro**. "Elucidating virulence mechanisms of *Providencia* infections in *Drosophila melanogaster* through pathology and whole genome comparisons of closely related bacteria species." Poster presentation at the annual meeting of the American Society for Microbiology. New Orleans, LA. May 21-24.

S.M. Short*, M.F. Wolfner and **B.P. Lazzaro**. "Sick from sex: How mating affects the function and evolution of immune defense in female *Drosophila melanogaster*." Oral presentation at the 52nd annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. March 30-Apr 3.

V.M. Howick *, A.C.N. Wong, A.E. Douglas and **B.P. Lazzaro**. "The interactions of gut microbiota and the innate immune system in response to pathogenic infection." Poster presentation at the 52nd annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. March 30-Apr 3.

2010

S.M. Short* and **B.P. Lazzaro**. "Female *D. melanogaster* harbor significant genetic variation for reduction in immune resistance due to mating." Poster presentation at the 8th annual Ecology and Evolution of Infectious Disease meeting. Ithaca, NY. June 3-5.

J.S. Comstock* and **B.P. Lazzaro**. "Relationships between pathogen, immune response, diet and metabolic state in *Drosophila melanogaster*." Poster presentation at the 8th annual Ecology and Evolution of Infectious Disease meeting. Ithaca, NY. June 3-5.

J. Crawford* and **B.P. Lazzaro**. "*De novo* sequencing and analysis of the adult *Anopheles funestus* transcriptome using the Illumina GAIIx platform." Poster presentation at the 8th annual Ecology and Evolution of Infectious Disease meeting. Ithaca, NY. June 3-5.

M.R. Galac* and **B.P. Lazzaro**. "*Providencia* species as natural pathogens of *Drosophila melanogaster*." Poster presentation at the annual meeting of the American Society for Microbiology. San Diego, CA. May 23-27.

S.M. Short* and **B.P. Lazzaro**. "Female *D. melanogaster* harbor significant genetic variation for reduction in immune resistance due to mating." Poster presentation at the 51st annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Washington, DC. April 7-11.

J.S. Comstock* and **B.P. Lazzaro**. "Relationships between pathogen, immune response, diet and metabolic state in *Drosophila melanogaster*." Poster presentation at the 51st annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Washington, DC. April 7-11.

2009

P. Juneja* and **B.P. Lazzaro**. "Population genetics of Eater, a recognition molecule that promotes phagocytosis by the cellular immune response." Oral presentation at Royal Entomological Society conference "Insect Infection and Immunity: Evolution, Ecology and Mechanisms." Sheffield, United Kingdom. July 15-17.

S. Short*, M.F. Wolfner and **B.P. Lazzaro**. "Understanding resistance: the effects of mating on pathogen defense in *Drosophila melanogaster*." Poster presentation at Royal Entomological Society conference "Insect Infection and Immunity: Evolution, Ecology and Mechanisms." Sheffield, United Kingdom. July 15-17. Awarded 1st prize for Best Student Poster.

J. Crawford* and **B.P. Lazzaro**. "Inferring the demographic histories of the molecular forms of *Anopheles gambiae sensu strictu*." Poster presentation at the annual meeting of the Society for Molecular Biology and Evolution. Iowa City, IA. June 3-7.

M. Galac* and **B.P. Lazzaro**. "*Providencia* species as natural pathogens of *Drosophila melanogaster*." Poster presentation at the CNRS Jacques Monod conference "Insect immunity in action: from fundamental mechanisms of host defense to resistance against infections in nature." Aussois, France. May 23-27.

S. Fellous* and **B.P. Lazzaro**. "Links between immunities at different life stages." Poster presentation at the European Science Foundation conference on "The impact of the environment on innate immunity: the threat of diseases." Obergurgl, Austria. May 4-9.

P. Juneja* and **B.P. Lazzaro**. "Population genetics of Eater, a recognition molecule that promotes phagocytosis by the cellular immune response" Poster presentation at the 50th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL. March 4-8.

2008

M.C. Hardstone*, **B.P. Lazzaro**, and J. G. Scott. "Fitness of cytochrome P450 monooxygenase-mediated permethrin resistance in mosquitoes." Poster presentation at the 40th annual Society of Vector Ecology meeting. Ft. Collins, CO. September 28-October 2.

B.P. Lazzaro*, S.M. Rottschaefer, M.M. Riehle and K.D. Vernick. "Population genetics of the *APL1* malaria resistance gene cluster of *Anopheles gambiae*." Poster presentation at the annual meeting of the Society for Molecular Biology and Evolution. Barcelona, Spain. June 5-8.

S. Fellous* and **B.P. Lazzaro**. "Divergent effect of larval food richness on larval and adult constitutive immunity." Poster presentation at the 6th annual Ecology and Evolution of Infectious Disease workshop and conference. Fort Collins, CO. June 1-6.

S.M. Short* and **B.P. Lazzaro**. "The effects of accessory gland proteins and sperm on immune response in female *Drosophila melanogaster*." Poster presentation at the 49th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA. April 2-6.

Hardstone, M.C.*, **B.P. Lazzaro**, and J.G. Scott. "Fitness of cytochrome P450 monooxygenase-mediated permethrin resistance in the mosquito under three environmental conditions." Poster presentation at the 79th annual Eastern Branch of the Entomological Society of America meeting. Syracuse, NY. March 18-20.

2007

T.B. Sackton*, **B.P. Lazzaro**, T.A. Schlenke, J.E. Evans, D. Hultmark and A.G. Clark. "Comparative genomics of innate immune pathways in *Drosophila*." Poster presentation at the European Science Foundation conference on "The impact of the environment on innate immunity." Obergurgl, Austria. April 22-27.

B.P. Lazzaro*. "Quantitative Genetics of Antibacterial Immunity in *Drosophila*." Poster presentation at the 48th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Philadelphia, PA. March 7-11.

M.R. Galac* and **B.P. Lazzaro**. "Infection of *Drosophila melanogaster* with *Providencia* species, natural bacterial pathogens." Poster presentation at the 48th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Philadelphia, PA. March 7-11.

P. Juneja* and **B.P. Lazzaro**. "Epidemiology of bacterial disease in wild *Drosophila melanogaster*." Oral presentation at the 48th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Philadelphia, PA. March 7-11.

T.B. Sackton, **B.P. Lazzaro**, T.A. Schlenke, J.E. Evans, D. Hultmark and A.G. Clark. "Comparative genomics of innate immune pathways in *Drosophila*." Oral presentation at the 48th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Philadelphia, PA. March 7-11.

2006

B.P. Lazzaro*. "Linking functional and evolutionary genetics in the study of *Drosophila* antibacterial immunity." Oral presentation at the CNRS Jacques Monod conference on "Insect Immunity: the Post-Genomic Era." Roscoff. France, June 10-14.

P. Juneja* and **B.P. Lazzaro**. "Spectrum of bacteria associated with wild *D. melanogaster*." Poster presentation at the Jacques Monod conference on "Insect Immunity: the Post-Genomic Era." Roscoff, France, June 10-14.

K.A. McKean*, C.P. Yourth, **B.P. Lazzaro** and A.G. Clark. "The immunological costs of reproduction." Poster presentation at the Jacques Monod conference on "Insect Immunity: the Post-Genomic Era." Roscoff, France, June 10-14.

T.B. Sackton, **B.P. Lazzaro** and A.G. Clark*. "Gene expression determinants of immunocompetence in the innate immune system of *Drosophila melanogaster*." Poster presentation at the annual meeting of the Society for Molecular Biology and Evolution. Tempe, AZ, May 24-28.

K.A. McKean*, C.P. Yourth, **B.P. Lazzaro** and A.G. Clark. "The immunological costs of reproduction." Poster presentation at the Eastern Great Lakes Molecular Evolution meeting. Buffalo, NY, May 6.

B.P. Lazzaro* and P. Juneja. "Polymorphism for virulence in entomopathogenic bacteria of the genus *Providencia*." Oral presentation at the 47th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Houston, TX. March 29-April 2.

P. Juneja* and **B.P. Lazzaro**. "Spectrum of bacteria associated with wild *D. melanogaster*." Poster presentation at the 47th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Houston, TX, March 29-April 2.

T.B. Sackton*, **B.P. Lazzaro** and A.G. Clark. "Gene expression determinants of the innate immune system of *Drosophila melanogaster*." Poster presentation at the 47th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Houston, TX, March 29-April 2.

2005

C.P. Yourth* and **B.P. Lazzaro**. "Does circadian expression of immunity genes in *Drosophila* affect their ability to deal with infections at different times of day?" Poster presentation at the 10th Congress of the European Society for Evolutionary Biology. Krakow, Poland, August 15-20.

B.P. Lazzaro*. "Evolution of antimicrobial immunity in *Drosophila*." Poster presentation at the Gordon Conference on Evolutionary and Ecological Functional Genomics. Oxford, United Kingdom, July 31-August 5.

P. Juneja* and **B.P. Lazzaro**. "Polymorphism for virulence in the bacterium *Providencia rettgeri*." Poster presentation at the Eastern Great Lakes Molecular Evolution conference. Toronto, Canada, April 30.

2004

B.P. Lazzaro*, T.B. Sackton, T.A. Schlenke and A.G. Clark. "Evolutionary and Quantitative Genetics of *Drosophila* Innate Immunity." Poster presentation at the annual meeting of the Society for Molecular Biology and Evolution. State College, PA, June 17-20, 2004.

T.B. Sackton*, A.G. Clark and **B.P. Lazzaro**. "Specificity in innate immunity? Association mapping of resistance to diverse bacterial pathogens." Poster presentation at the international workshop "Innate Immunity: Bridging the Gap Between Ecology and Molecules." Plön, Germany, May 6-9, 2004.

T.B. Sackton*, A.G. Clark and **B.P. Lazzaro**. "Specificity in innate immunity? Association mapping of resistance to diverse bacterial pathogens." Poster presentation at the 45th annual *Drosophila*

Research Conference sponsored by the Genetics Society of America. Washington, D.C., March 24-28, 2004.

2003

B.P. Lazzaro*, B.K. Sceurman, T.B. Sackton and A.G. Clark. "Effects of natural polymorphism on resistance to bacterial pathogenesis in *D. melanogaster*." Poster presentation at the 44th annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Chicago, IL, March 5-9, 2003.

2002

B.P. Lazzaro*, B.K. Sceurman and A.G. Clark. "Naturally occurring variation in *D. melanogaster* immunocompetence." Oral presentation at the 43rd annual *Drosophila* Research Conference sponsored by the Genetics Society of America. San Diego, CA, April 10-14, 2002.

B.P. Lazzaro*, B.K. Sceurman and A.G. Clark. "Naturally occurring variation in *Drosophila melanogaster* immunocompetence." Poster presentation at Keystone Symposium on "Innate Immunity: Evolution and Link to Adaptive Immunity." Taos, NM, February 12-16, 2002.

2001

B.P. Lazzaro* and A.G. Clark. "The implications of long genealogical branches in *D. melanogaster* antibacterial peptide genes." Poster presentation at the 42nd annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Pittsburgh, PA, March 21-25, 2001.

D.L. Cox-Foster*, **B.P. Lazzaro**, and C.Y. Li. "*FAD-Glucose dehydrogenase*: Essential role in encapsulation in *Drosophila*." Poster presentation at the Keystone Symposium on "Genetic Manipulation of Insects." Taos, NM, February 5-11, 2001.

2000

B.P. Lazzaro*. "Molecular population genetics of the *Attacin* antibacterial peptide family in *Drosophila*." Walter Fitch Competition, Oral presentation at the annual meeting of the Society for Molecular Biology and Evolution Meeting. New Haven, CT, June 17-20, 2000.

B.P. Lazzaro*. and A.G. Clark. "Molecular and phenotypic variation in *Drosophila* immunity." Poster presentation at 41st annual *Drosophila* Research Conference sponsored by the Genetics Society of America. Washington, D.C., March 22-26, 2000.

1999

B.P. Lazzaro*. and A.G. Clark. "Variation in the antibacterial response of *Drosophila melanogaster*." Oral presentation at American Genetics Association symposium on "Genomic Diversity and Evolution." State College, PA, June 12-13, 1999.

1998

D.L. Cox-Foster*, J.A. Fenimore, and **B.P. Lazzaro.** "Biochemistry of oxidative free radical production during innate immunity by insect hemocytes." Poster presentation at 5th Annual Meeting of The Oxygen Society. Washington, D.C., November 19-23, 1998.

LAB MEMBERS and ALUMNI

Graduate Students

Kate Browning (Ph.D., Entomology, 2021 – present)
Lidane Audrey Cruz Noronha (M.S., Entomology, 2020 – 2022, co-advised with Patrick O'Grady)
Andrea Darby (Ph.D., Entomology, 2019 – 2024)
Kathleen Gordon (Ph.D., Genetics, Genomics and Development, 2017 – 2023)
Radhika Ravikumar (Ph.D., Entomology, 2017 – 2022)
Joo Hyun Im (Ph.D., Genetics, Genomics and Development, 2013 – 2018)
Katia Sotelo-Troha (Ph.D., Comparative Biomedical Sciences, 2012 – 2018)
Robin Schwenke (Ph.D., Genetics, Genomics and Development, 2011 – 2016)
Virginia Howick (Ph.D., Entomology, 2010 – 2015)
Jennifer Comstock (Genetics and Development, 2008 – 2010)
Susan Rottschaefer (M.S., Entomology, 2008 – 2015)
Sarah Short (Ph.D., Genetics and Development, 2006 – 2012)
Jacob Crawford (Ph.D., Entomology, 2006 – 2012)
Madeline Galac (Ph.D., Genetics and Development, 2005 – 2012)
Punita Juneja (Ph.D., Entomology, 2004 – 2010)

Postdoctoral Associates

Scott Keith (2021 – present; CIHMID Fellow)
Kiran Adhikari (2021 – 2022)
Brandon Hollingsworth (2021 – 2024; CIHMID Fellow, co-advisor: Courtney Murdock)
Vanika Gupta (2017 – 2022)
Moria Chambers (2012 – 2015)
Parvin Shahrestani (2012 – 2015)
David Duneau (2011 – 2015)
Robert Unckless (2011 – 2016)
Simon Fellous (2008)
J. Gerardo Marquez (2007 – 2010)
Christopher Yourth (2005 – 2007)

Research Professionals

Melanie Smee (2024 – 2025)
Ashley Frank (2017 – 2022)
Jeremy McIntyre (2017 – 2019)
Gabriel Fox (2016 – 2017)
Charlotte Renne (2015 – 2016)
Chloe Ota (2009 – 2011)
Mark Jandricic (2009 – 2011)
Susan Rottschaefer (2005 – 2015)
Cheryl Seidel (2004)

Undergraduate and High School Students Involved in Research

João Xavier de Carvalho (2025 – present)
Claire Kurisko (2025 – present)
Sophia Sushko (2025 – present)
Cloe Lee (2025)

Tyler Thomas (2025)
Ananda Kalukin (2023 – present)
Jailyn Loor (2023 – 2025)
Fajr Ali (2022 – 2023)
Marco Malo (2022)
Sophia Aredas (2022; CHIMID MFF REU summer student)
Dana Vargas (2022; CHIMID MFF REU summer student)
Jeremy Marcin (2021 – 2023)
Destiny Okoro (2020 – 2023; CHIMID Undergraduate Research Experience, Research Honors)
Shravasti Ray (2020 – 2023, Research Honors)
Lauren Prudholm (2020 – 2022)
Atharv Garje (2019 – 2021)
Nick Matolka (2019 – 2021)
Ashlyn Amsden (2018 – 2021; CHIMID Undergraduate Research Experience)
Olivia Piscano (2018 – 2019; CHIMID Undergraduate Research Experience)
Amisha Agarwala (2018; intern from Indian Institute of Science Education and Research, Mohali)
Sayyed Hussain (2017 – 2019; CHIMID Undergraduate Research Experience, McNair Scholar)
Miguel Gomez (2016 – 2019)
Matthew Ming (2016 – 2017)
Sarah Crowe (2015 – 2018; Research Honors)
Manuel Duarte (2015)
Ololade Olawale (2015)
Kenneth Serrano (2015 – 2016)
Tayyaba Arshad (2014 – 2015)
Janilya Baizack (2014 – 2015)
Pratik Chowdhury (2014 – 2015)
Eliana Jacobson (2014 – 2016)
Helen Kim (2014)
Mariam Zade (2014 – 2015)
Ming Zhu (2014 – 2015)
Adesanya Akinleye (summer 2013; City University of New York)
Austin Milunovich (summer 2013; Research Apprenticeship in Biological Sciences program)
Gerardo Ortiz (2013 – 2015)
Alireza Edraki (2013 – 2014)
Yonathan Estrella (2013 – 2015)
Sarah Khalil (2013 – 2015)
Alexandra Gresov (2012 – 2014)
Megan Alzona (2012)
Glen Malaret (2012 – 2015)
Kelly Garcia (2012 – 2015)
Christopher Chow (2012 – 2014)
Michael Fox (2012 – 2015)
Ilana Porges (summer 2011; Research Apprenticeship in Biological Sciences program)
Jamilla Akhund-Zade (2011 – 2014; Research Honors)
Richard Yeom (2010 – 2012; Research Honors)
Christine Tolias (2010 – 2012; Research Honors)
Maria-Rosario Driscoll (2009 – 2010)
Miguel Rosado (2008 – 2010)

Gabriel Lahue (2007 – 2010; Howard Hughes undergraduate scholar, Research Honors)
Rumi Sologuren (2007)
Nicholas Ledesma (2006 – 2008; Research Honors)
Dorian Batt (2006 – 2007)
Grace Leonard (2006) w
Sarah Phillips (2005 – 2007)
Michael Bosmeny (2004)
Laura Goetz (2003 – 2004)