CURRICULUM VITA

Name: Courtney Murdock
Current: Title: Associate Professor
College: College of Agriculture and Life Sciences
Department/Unit: Entomology
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BACKGROUND

Education

Year	Degree	Institution
2009	Ph.D., Disease Ecology	School of Natural Resources and Program in the Environment, University of Michigan, MI, U.S.A.
2002	B.S., Biology, Spanish Minor	University of Michigan, MI, U.S.A.

Academic ranks

Assistant Professor: October 2014 to May 2020
Associate Professor: May 2020 - present

Primary departmental/unit program area

Vector-borne disease, research, and teaching

Areas of expertise

Ecology and evolution of infectious diseases, ecological immunology / physiology, vector ecology / biology, population ecology, mosquito-pathogen interactions, medical entomology, statistical and mechanistic modeling

PROFESSIONAL EXPERIENCE

Year	Experience
May 2020-present	Associate Professor (60% Research, 40% Teaching), Department of Entomology, Cornell University
2014-May 2020	Assistant Professor (60% Infectious Diseases; 40% Odum School of Ecology; 75% Research, 25% Instruction), Department of Infectious Diseases, College of Veterinary Medicine, Odum School of Ecology, University of Georgia.
2010-2014	Postdoctoral Researcher, Center for Infectious Disease Dynamics, Department of Entomology, Pennsylvania State University.
2009-2010	Postdoctoral Researcher, Center for Infectious Disease Dynamics, Department of Biology, Pennsylvania State University.

Sabbaticals and study leaves

None.

HONORS & AWARDS

2018	University of Georgia's Life Science nominee for the Blavatnik Young Scholars
2017	University of Georgia's Life Science nominee for the Blavatnik Young Scholars
2017	John M. Bowen Award for Excellence in Animal / Biomedical Research
2008	Winner of best student paper at the Midwest Fish and Wildlife Conference

2008 Superior Graduate Student Teaching Award
2006-2008 NIH Interdisciplinary Perspectives of Infectious Diseases Training Grant

ACADEMIC RESPONSIBILITIES

Professional affiliations

2020-present Northeast Regional Center for Excellence in Vector-borne Diseases
2020-present Cornell Institute for Host-Microbe Interactions and Disease
2019-present Ecological Society of America
2017-present NSF RCN VectorBite
2017-present Center of Ecology of Infectious Diseases, University of Georgia
2015-present American Society of Tropical Medicine and Hygiene
2017-2020 Center of Vaccines and Immunology, University of Georgia
2016-2020 Center for Tropical Emerging and Global Diseases, University of Georgia
2016-2020 Riverbasin Center, University of Georgia

Professional service

Editorial board appointments:

2022-present *Current Research in Insect Science Board* (Editorial Board member)
2017-present *Ecohealth* (Review Editor)

Review for scholarly journals and publishers: PNAS, Nature Communications, Ecology Letters, PLoS Pathogens, PLoS Biology, PLoS Computational Biology, PLoS One, PLoS Neglected Tropical Diseases, Lancet Planetary Health, Communications Biology, Trends in Parasitology, Functional Ecology, Scientific Reports, Philosophical Transactions of the Royal Society B, Proceedings of the Royal Society of London Series B, Journal of Animal Ecology, Ecology, Climate Change, Evolutionary Applications, American Naturalist, BMC Evolutionary Biology, BMC Ecology, Frontiers in Microbiology, Frontiers in Cellular Biology, Philosophical Transactions, Heredity, Oikos, Malaria Journal, Biology Letters, International Journal of Parasitology, Global Change Biology, Parasites & Vectors, Ecosphere, EcoHealth, American Journal of Tropical Medicine and Hygiene, Basic and Applied Ecology, Journal of Medical Entomology, International Journal of Environmental Research and Public Health, Journal of Thermal Biology, Acta Parasitologia, Journal of Parasitology, and International Journal of Insect Science.

Service for national and international programs:

2023-present Secretary-treasurer, Disease Ecology Section, Ecological Society of America
2020: Judge for Young Investigator Awards at the annual American Society for Tropical Medicine and Hygiene Meeting, Virtual, MD (*November*)
2019-present Technical expert in the World Health Organization Technical Consultation on the spread of *Anopheles stephensi,* the Indian urban malaria vector, into Africa, Geneva, Switzerland
2019: Judge for Young Investigator Awards at the annual American Society for Tropical Medicine and Hygiene Meeting, Baltimore, MD (*November*)
2016-2020: Trainer (trapping methods, mosquito identification, and storage protocols) for the entomological surveillance program on St. Kitts and Nevis.

Granting agencies panels and reviews:

2024-2026 Chair of the National Institute of Allergies and Infectious Diseases Transmission of Vector-borne and Zoonotic Diseases study section
2022-2026 Standing committee member of the National Institutes of Allergies and Infectious Diseases Transmission of Vector-borne and Zoonotic Diseases study section
2021: Ad hoc member of Vector Biology Study Section, National Institutes of Allergies and Infectious Diseases

2019: Early-stage investigator invited reviewer for NIAID Vector Biology Study Section (*October*)

University service

2025: Faculty Advisory Committee on Athletics and Physical Education (*Cornell University*)
2020: Biosafety Level III Review Committee (*Cornell University*)
2019: Reviewer for the University of Georgia Global Research Collaboration Grants (*University of Georgia*)
2019: Interdisciplinary Life Science Program Candidate interviewer (*University of Georgia*)
2018: Reviewer for the University of Georgia Global Research Collaboration Grants (*University of Georgia*)
2018: Interdisciplinary Life Science Program Candidate interviewer (*University of Georgia*)
2017: Reviewer for the University of Georgia Global Research Collaboration Grants (*University of Georgia*)
2017: Interdisciplinary Life Science Program Candidate interviewer (*University of Georgia*)
2016: Interdisciplinary Life Science Program Candidate interviewer (*University of Georgia*)
2015: Interdisciplinary Life Science Program Candidate interviewer (*University of Georgia*)
2015: Ecology and Evolution of Infectious Diseases Annual Meeting Steering Committee member, Athens, Georgia, U.S.A.

Departmental service

2022-present Sarkaria Chair Search committee member (*Cornell University*)
2022-present Plagues and People lecturer search committee member (*Cornell University*)
2022: Cornell FIRST symposium active participant (*Cornell University*)
2021: Administrative Assistant III search committee member (*Cornell University*)
2021: Presentation Judge at the Department of Entomology's Graduate Student Symposium (*Cornell University*)
2020-present Department of Entomology Graduate Admissions Committee member (*Cornell University*)
2020-2024 Department of Entomology Awards Committee member (*Cornell University*)
2018-2020: Department of Infectious Diseases Undergraduate Curriculum Committee (*University of Georgia*)
2018-2020: Odum School of Ecology Committee for the Dean (*University of Georgia*)
2018: Academic Professional Search Committee (*University of Georgia*)
2017-2018: Odum School of Ecology Diversity Committee (*University of Georgia*)
2017: Presentation Judge Odum School of Ecology Graduate Student Symposium (*University of Georgia*)
2016-2020: NRT-IDEAS NSF Training Program Steering Committee member (*University of Georgia*)
2016: Poster Judge Department of Infectious Diseases Annual Retreat (*University of Georgia*)

Outreach / extension service

<u>Community services and media relations:</u>

2024: *Developing Innovative Solutions to Manage Urban Heat Stress and Mosquito-borne Disease.* Ahmedabad, Gujarat, India. Organizers: Courtney Murdock, Michael Wimberly (University of Oklahoma), Shomen Mukherjhee (Ahmedabad University).
2024: *Developing Innovative Solutions to Manage Urban Heat Stress and Mosquito-borne Disease.* Surat, Gujarat, India. Organizers: Courtney Murdock, Keshav Vaishnav (Surat Municipal Corporation), Vikas Desai (Urban Health and Climate Resilience Center).

2024: *Introduction of Data Science for Malaria Control and Elimination.* Surat, Gujarat, India. Organizers: Courtney Murdock, Mike Wimberly (University of Oklahoma), and Mercedes Pascual (New York University).
2025: Malaria No More Blog Contributor
2023: Televised interview with Voice of America, Alhurra network, "The Road to Zero," on climate change and vector-borne diseases as part of a larger documentary on climate change.
2022: Hosted a booth on mosquitoes with Laura Harrington at the Department of Entomology's Insectapalooza event (October 2022)
2022: Insect science exhibit consultant on *Aedes aegypti* for the American Museum of Natural History. Laura Moustakerski
2022: Consultant on a news feature article in PNAS: *Climate change hastens disease spread across the globe*. Amy McDermott (February 9, 2022)
2018: Presentation on working with BSL-3 pathogens in mosquitoes in ACL-3 containment to the Biosafety Community Liaison Committee
2017: Olli@UGA general public lecture on arbovirus and mosquito awareness
2015-present: Actively engaging citizens of Athens Clarke County in mosquito awareness through Athens mosquito surveillance – provide quarterly reports on the presence / absence and abundance of mosquito species sampled on citizens' properties.

Teaching and advising responsibilities

Guest lectures

VETMI 6110 Public Health Seminar Series Trainee Group Discussion (Spring 2025)
VETMI 6111 Principles of Infectious Disease for Public Health, Cornell University (Fall 2021, Fall 2022)
ECOL 8510 Fundamentals in Disease Biology, University of Georgia (Fall 2016, 2017)
2 lectures: The effects of antigenic variation and immunity on malaria transmission
ECOL 8510 Fundamentals in Disease Biology, University of Georgia (Spring 2017)
1 lecture: Vector-virus Interactions
ECOL / BIOL 4150 / 6150 Population Biology of Infectious Diseases, University of Georgia (Spring 2015)
1 lecture: Vector-borne Disease
VTPEH 6111 Case Study: Malaria (Fall 2021, 2022, 2023)

Summary of Courses Taught (all courses co-taught, 50% responsibility each term)

Course	Institution	Title	Term	Enrollment	Credit Hours
IDIS 8900*	UGA	Special Topics in Infectious Diseases: Global Change & Vector-borne Diseases	Fall 2016	7	1
ECOL / BIOL 4150 / 6150	UGA	Population Biology of Infectious Diseases	Spring 2016	23	4
IDIS 8900*	UGA	Special Topics in Infectious Diseases: Global Change & Vector-borne Diseases	Spring 2017	6	1
ECOL 3500 / 3505 H	UGA	Ecology	Spring 2017	195	4
IDIS / ECOL* 8240	UGA	Global Change and Vector-borne Diseases	Spring 2018	10	1
ECOL / BIOL 4150 / 6150	UGA	Population Biology of Infectious Diseases	Spring 2018	40	4
ECOL 3500 /	UGA	Ecology	Spring 2019	96	4

3505 H					
IDIS / ECOL* 8240	UGA	Global Change and Vector-borne Diseases	Spring 2019	11	1
ECOL / IDIS 8510	UGA	Fundamentals in Disease Biology	Fall 2019	20	4
ECOL / BIOL 4150 / 6150	UGA	Population Biology of Infectious Diseases	Spring 2020	45	4
IDIS / ECOL* 8240	UGA	Global Change and Vector-borne Diseases	Spring 2020	10	1
ENTOM / BIOEE 6900	Cornell	Ecology and Evolution of Infectious Diseases Journal Club	Fall 2021	3	1
ENTOM / BIOEE 4940*	Cornell	Ecology and Evolution of Infectious Diseases	Spring 2022	7	4
ENTOM / BIOEE 6900	Cornell	Ecology and Evolution of Infectious Diseases Journal Club	Spring 2022	4	1
ENTOM / BIOEE 6900	Cornell	Ecology and Evolution of Infectious Diseases Journal Club	Fall 2022	6	1
ENTOM 7670	Cornell	Professional Development in Entomology	Fall 2022	6	2
ENTOM / BIOEE 6900	Cornell	Ecology and Evolution of Infectious Diseases Journal Club	Spring 2023	7	1
ENTOM 2100	Cornell	Plagues and People	Fall 2023	191	3
ENTOM 7670	Cornell	Professional Development in Entomology	Fall 2023	12	2
ENTOM / BIOEE 6900	Cornell	Ecology and Evolution of Infectious Diseases Journal Club	Fall 2023	5	1
ENTOM / BIOEE 4000 / 6000*	Cornell	Ecology and Evolution of Infectious Diseases	Spring 2024	13	4
ENTOM 7670	Cornell	Professional Development in Entomology	Fall 2024	11	2
ENTOM / BIOEE 6900	Cornell	Ecology and Evolution of Infectious Diseases Journal Club	Fall 2024	4, ~10 participants	1

*New course developed

Undergraduate student projects (29 undergraduates, 1 DVM student):

*indicates students were co-authors on published, under review, or pending papers

- Tongxiao Han, undergraduate research (Fall 2024-present)
- Elora Robeck, undergraduate research (Fall 2023-present)
- Adrienne Healy, undergraduate research (Fall 2023-present)
- Olivia Cheung, undergraduate research (Fall 2023-present)
- Anna Asomoah, undergraduate research (Spring 2023-Summer 2023)
- Sarah Smail, undergraduate research (Fall 2021-present)
- Hiba Jamil (January 2022-Spring 2022)
- Erin Connolly, undergraduate research (Summer 2021-Fall 2022)
- Emily Pearson, undergraduate research credit (Fall 2019)
- Prachi Patel, undergraduate research credit (Fall 2019)
- Courtney Schreiner, NSF REU student (Summer 2019)
- Taryn Waite, NSF REU student (Summer 2019)
- Clara Tucker, NSF REU student (Summer 2019)
- Lilith South, undergraduate research credit (Spring 2018 – Spring 2019)
- Sydney Habegger, undergraduate research credit (Summer 2018 – Spring 2019)
- Jenna Scott, undergraduate research volunteer (Spring 2018)
- Jenna Lea, undergraduate research credit (Spring 2018)

- Emily Cook, Georgia Veterinary Scholars program (Summer 2017)
- Lindsey Jones*, NSF REU student (Summer 2017)
- Carl Hintz*, NSF REU student (Summer 2017)
- Alyzeh Orakzia*, undergraduate research volunteer (Summer 2017)
- Olivia Volkert, undergraduate research credit (Summer 2017)
- Ugo Ugonabo, undergraduate research credit (Summer 2017)
- Abigail Lecroy, undergraduate research credit (Spring 2017 – Spring 2018)
- Nicole Solano*, NSF REU student (Summer 2016)
- Temitayo Andanlawo*, NSF REU student (Summer 2016)
- Harry Owen*, undergraduate research credit (Spring 2016 – Spring 2017)
- Kavya Balaji*, undergraduate research credit (Fall 2016 – Spring 2018)
- Hannah Feltner, undergraduate research volunteer (Fall 2016)
- Taylor McClanahan*, NSF REU student (Summer 2015)

Senior thesis advisory committee member (5)

- Olivia Cheung, Cornell University (Spring 2025)
- Erin Connolly, Cornell University (Spring 2022)
- Lilith South, University of Georgia (Spring 2019)
- Kavya Balaji*, University of Georgia (Spring 2018)
- Harry Owen*, University of Georgia (Spring 2016)

Doctoral students directed (8)

*indicates students are co-authors on published, under review, or pending papers

- Anna Shattuck, Cornell University. Department of Entomology. 2023-present. Supported on departmental fellowship, a NSF-GRFP Fellowship, and grant #4. Expected graduation Spring 2028.
- Britny Johnson, Cornell University. Department of Entomology. 2022-present. Supported on start-up, ENTOM TA, and grant #6. Expected graduation Spring 2027.
- Patrick Heffernan, Notre Dame University, 2022-present. Co-chair with Jason Rohr. Supported through an NIH F31 grant. Expected graduation Spring 2027.
- Nicole Solano*, University of Georgia. Odum School of Ecology. 2017-present. Co-chair with Craig Osenberg. Supported through IDEAS NSF funding and grant #7. Expected graduation December 2024.
- Philip Newberry*, University of Georgia. Odum School of Ecology. 2017-present. Co-chair with Sonia Altizer. Supported through IDEAS NSF funding, UGA Presidential fellowship, and a NSF-GRFP fellowship. Expected graduation December 2024.
- Kerri Miazgowicz*, University of Georgia. Infectious Diseases. 2015-present. Co-chair with Melinda Brindley. Supported through start-up funds and a NSF-GRFP fellowship. Graduated December 2020.
- Michelle Evans*, University of Georgia. Odum School of Ecology. 2015-present. Co-chair with John Drake. Supported through a NSF-GRFP fellowship and an UGA Presidential fellowship. Graduated October 2020.
- Blanka Tesla*, University of Georgia. Infectious Diseases. 2015-present. Co-chair with Melinda Brindley. Supported through start-up funds and grant #13. Graduated December 2019.

Masters students directed (0)

Postdoctoral Research Associates supervised (9)

- Jules Davis. Postdoctoral research associate (2023-present). Supported on an NSF Postdoctoral Fellowship. Co-mentor with Lynn Adler at University of Massachusetts.

- Brandy St Laurent. Postdoctoral research associate (2023-present). Supported by grant #3, 6. Now a research associate.
- Laura Multini. Postdoctoral research associate (2024-present). Supported by grant #1, 5.
- Anna Langmuller. Postdoctoral research associate (2021-present). Supported by Marie Curie Fellowship. Co-mentor with Philipp Messer.
- Joel Brown. Postdoctoral research associate (2021-2023). Supported by grant #6. Now a post-doctoral research associate in the College of Veterinary Medicine, Cornell University.
- Daniel Hartman. Postdoctoral research associate (2021-2023). Supported by Cornell start-up funds and grant #1, 5. Now a post-doctoral trainee at the Centers for Disease Control.
- Brandon Hollingsworth. Postdoctoral research associate (2021-2024). Supported by CIHMID T32 training grant, #4. Now a faculty member in the Department of Epidemiology, School of Public Health, University of South Carolina.
- Ashutosh Pathak. Postdoctoral research associate (2015-2016; now an Assistant research scientist). Supported by UGA start-up funds and grants #10, 12, and 15.
- Christine Reitmayer. Postdoctoral research associate. 2016-2018. Supported at UGA by grant #12.

Laboratory rotation students hosted (6 PhD)

- Judith Reyes, Interdisciplinary Life Science program (Fall 2019)
- Marco Notorangelo, Interdisciplinary Life Science program (Fall 2016)
- Jennifer Cyr, Interdisciplinary Life Science program (Fall 2015)
- Kerri Miazgowicz, Interdisciplinary Life Science program (Fall 2015)
- Michelle Evans, Odum School of Ecology (Fall 2015)
- Christine Huertas, Interdisciplinary Life Science program (Summer 2015)

Masters advisory committee member (1 committees)

- Joseph Poggi, Cornell University, Department of Entomology (May 2022)

Doctoral advisory committee member (5 committee)

- Leah Valdes, Cornell University, Department of Entomology (in progress)
- Lindsay Martin, Vanderbilt University, Biological Sciences (in progress)
- Maria Theissen, University Georgia, Odum School of Ecology (August 2024)
- Talya Shragai, Cornell University, Department of Entomology (May 2018)

SCHOLARLY ACTIVITIES

Grants

$14,811,922 total funds earned.
$7,514,676 received for my research program
Totals include indirect and direct costs

Grants Received (totals include indirect and direct costs)

1. 2023-2027: **NIH-R01.** *Arbovirus population biology: temperature impacts on selection and collective dynamics*. Greg Ebel (PI) and Courtney Murdock (Co-I). Total Award: $1,962,500; Award to Murdock: $483,688. **Role: Co-I.**
2. 2023-2027: **NIH-R01.** *A novel approach of age-grading mosquitoes using SERS and machine learning models.* Lili He (PI) and Courtney Murdock (Co-I). Total Award: $2,012,500; Award to Murdock: $269,757. **Role: Co-I.**
3. 2023-2024: **NIH-R01 Climate Health Administrative Supplement.** *Redefining thermal suitability for urban malaria transmission in the context of humidity.* Courtney Murdock (PI). Total Award: $495,373. **Role: PI.**

4. 2022-2025: **Hatch Funding.** *Taming the tiger: understanding mosquito population connectivity to improve control*. Courtney Murdock (PI). Total Award: $90,000. **Role: PI.**
5. 2022-2027: **NIH-R01.** *Quasispecies dynamics in arbovirus persistence emergence and fitness.* Greg Ebel (PI) and Courtney Murdock (Co-I). Total Award: $1,962,500; Amount to Murdock: $637,457. **Role: Co-I.**
6. 2020-2026: **NIH-R01.** *Redefining thermal suitability for urban malaria transmission in the context of humidity.* Courtney Murdock (PI). Total Award: $3,868,329. **Role: PI.**
7. 2017-2018: **Ceva Industry Sponsored Project.** *Modeling the effects of Vectra3D on mosquito population dynamics and heartworm prevalence*. Courtney Murdock (PI). Total Award: $37,837. **Role: PI.**
8. 2017-2018: **UGA Grants on the Edge**. *Determining the relative importance of genetic and environmental variation on the capacity of Aedes albopictus to transmit arboviruses.* Courtney Murdock (PI), Melinda Brindley (Co-I), Kelly Dyer (Co-I). Total Award: $10,000. **Role: PI.**
9. 2017-2018: **FAPEMIG-UGA Research Mobility Grant.** *Effects of environmental temperature on the mosquito-Zika interaction*. Courtney Murdock (PI), Tiago Mendes (Co-PI), Melinda Brindley (Co-PI), Laila Nuhn (Co-PI). Total Award: $15,000; Amount to Murdock: $7500. **Role: PI.**
10. 2016-2019: **Department of Defense**. *Using VacSim delivery to enhance malaria vaccine efficacy*. Don Harn (PI), Lisa Schollenberg (Co-I), Courtney Murdock (Co-I), Don Champagne (Co-I). Total Award: $1,017,724; Amount to Murdock: $152,658. **Role: Co-I.**
11. 2016-2018: **National Institutes of Health R21.** *The role of African Green monkeys in the epidemiology of dengue and chikungunya on St. Kitts, West Indies*. Patrick Kelly (PI), Courtney Murdock (Co-I), Dana Vanlandingham (Co-I). Total Award: $319,919; Amount to Murdock: $80,330. **Role: Co-I.**
12. 2016-2018: **National Institutes of Health R21.** *Acoustic mating signals in the dengue vector Aedes aegypti*. Lauren Cator (PI), Courtney Murdock (Co-I), Laura Harrington (Co-I). Total Award: $386,923; Amount to Murdock: $234,927. **Role: Co-I.**
13. 2016-2018: **National Science Foundation RAPID Award.** *Environmental drivers of Zika transmission and control.* Courtney Murdock (PI), Melinda Brindley (Co-PI), Erin Mordecai (Co-PI), Matt Bonds (Co-PI). Total Award: $200,000. **Role: PI.**
14. 2016-2017: **UGA Grants on the Edge Award.** *Characterizing the thermal performance of chikungunya in American Aedes mosquitoes and implications for transmission*. Courtney Murdock (PI), Melinda Brindley (Co-I). Total Award: $10,000. **Role: PI.**
15. 2015-2019: **National Institutes of Health R01.** *Influence of environmental temperature on malaria transmission and prospective vector control*. Matthew B. Thomas (PI), Anthony James (Co-I), Courtney Murdock (Co-I). Total Award: $2,025,467; Amount to Murdock: $531,470. **Role: Co-I.**
16. 2011-2013: **National Institutes of Health R21.** *Effects of temperature on mosquito immunity and vector competence.* Matthew B. Thomas (PI), Courtney Murdock (Co-I), Andrew F. Read (Co-I), Diana Cox-Foster (Co-I). Total Award: $405,350.

<u>Grants Pending</u>

17. Submitted June 2024: **National Institutes of Health R21.** *Moving toward targeted arbovirus control: using the virome to determine Aedes dispersal and population structure.* Courtney Murdock (PI), Brandon Hollingsworth (Co-I, Cornell University), Brian Lazzaro (Co-I, Cornell University), Matthew Valentine (Co-I, Ross University School of Veterinary Medicine), Patrick Kelly (Co-I, Ross University School of Veterinary Medicine). Total Award: $434,590. **Role: PI – fundable score, JIT information requested and anticipated start date 9/1/2025.**
18. Submitted August 2024: **National Institute of Health Global Infectious Diseases Training Grant D43.** *Building an India-Africa Network to Support Research and Control of Urban Malaria.* Courtney Murdock (PD), Praveen Bharti (PI, National Institute of Malaria Research, India). Total Award: $1,222,400. **Role: PD – fundable score, JIT information requested and anticipated start date 9/1/2025.**

19. Submitted December 2024: **Federal Capacity Funds**, Hatch. Buzz off: Leveraging mathematical models and behavior to control an invasive mosquito species. In collaboration with Vector Control, Suffolk County, NY. Total Award: $90,000. **Role: PI. Review pending (June 2025)**.
20. Submitted April 2025: **National Institute of Health R21.** *Whole genome sequencing of Anopheles stephensi: a pathway to improved vector control through genetic insights.* Courtney Murdock (PI), Brandy St Laurent (Co-I), Rajendra Baharia (Co-I, National Institute of Malaria Research, India), Martin Donnelly (Co-I, Liverpool School of Tropical Medicine). Total Award: $434,590. **Role PI. – review pending (August 2025)**
21. Submitted April 2025: **Wellcome Trust Climate Impact Award.** *The role of climate and control on current and future mosquito-borne disease transmission in Indian cities.* Courtney Murdock (PI), Mercedes Pascual (co-I, New York University), Mike Wimberly (co-I, University of Oklahoma), Rajendra Baharia (co-I, NIMR). Total Award: $3,158,000. **Role: PI. Review pending (July 2025).**
22. Submitted April 2025: **Medical Research Council.** *Whole genome sequencing of Anopheles stephensi: a pathway to improved vector control through genetic insights.* Courtney Murdock (co-I), Brandy St Laurent (Co-I), Rajendra Baharia (Co-I, National Institute of Malaria Research, India), Martin Donnelly (PI, Liverpool School of Tropical Medicine). Total Award: $1,136,880. **Role co-I submitting to MRC with LSTM as lead due to uncertainty of NIH reviews and future awards.**
23. To be submitted October 2025: **National Institute of Health R01.** *Understanding the thermal suitability of arbovirus transmission in the context of relative humidity.* Courtney Murdock (PI), Mercedes Pascual (Co-I, University of Chicago), Michael Wimberly (Co-I, University of Oklahoma), Leah Johnson (Co-I, Virginia Tech). Total Award: $3,868,329. **Role: PI**

Publications (underlined names indicate trainees, * invited)

Book chapters (2):

1. Reitmayer, C., Evans, M., Miazgowicz, K., Newberry, P., Tesla, B., Solano, N., and **Murdock, C. C.** Vector-virus interactions (2021). *In Population Biology of Vector-borne Diseases* (eds. Drake, J. and Strand, M.) Oxford University Press.
2. Evans, M., Newberry, P., and **Murdock, C.C.** Carry-over effects of the larval environment in mosquito-borne disease systems (2021). *In Popultion Biology of Vector-borne Diseases* (eds. Drake, J. and Strand, M.) Oxford University Press.

Peer-reviewed journal articles (61 total):

1. Ferreira, P.G., Fernandes, M., Profeta, C.A., Barbosa, R.C., **Murdock, C.C.**, Martins, G.F., and T. Mendes. Temperature-dependent alternative splicing affects gene expression in *Aedes aegypti* mosquitoes midgut. (*in press*) *Insect Molecular Biology*.
2. Wang, D., Yang, J., Pandya, J., Clark, J.M., Harrington, L., **Murdock, C.C.**, and L. He. Determining mosquito age using surface-enhanced Raman spectroscopy and artificial neural networks: insights into the influence of origin and sex (*in press*) *Parasites & Vectors*.
3. Shocket, M.S., Berhnardt, J.R., Miazgowicz, K.L., Orakzai, A., Savage, V.M., Hall, R.J., Ryan, S.J., and **C.C. Murdock**. Mean daily temperatures can predict the thermal limits of malaria transmission better than rate sumation (2025). *Nature Communications*.
4. Pathak, A.K., Quek, S., Sharma, R., Shiau, J.C., Thomas, M.B., Hughes, G.L., and **C.C. Murdock.** Thermal variation influences the transcriptome of the major malaria vector *Anopheles stephensi* (2025). *Communications Biology.*
5. Langmueller, A.M., Hermisson, J., **Murdock, C.C.**, and P.W. Messer. Catching a wave: on the suitablity of a traveling-wave solutions in epidemiological modeling (2024). *Theoretical Population Biology.*
6. Hollingsworth, B.D., Grugbuagh, N.D., Lazzaro, B.P., and **C.C. Murdock**. Leveraging insect-specific viruses to elucidate mosquito population structure and dynamics (2023). *PLoS Pathogens*.

7. Brown, J., Pascual, M.M., Wimberly, M.C., Johnson, L.R., and **C.C. Murdock**. Humidity – the overlooked variable in thermal biology of mosquito-borne disease (2023). *Ecology Letters.*
8. Ryan, S.J., Lippi, C.A., Villena, O.C., Sing, A., **Murdock, C.C.**, and L.R. Johnson. Mapping current and future thermal limits to suitability for malaria transmission by the invasive mosquito *Anopheles stephensi* (2023). *Malaria Journal*.
9. Evans, M.V., Bhatnager, S., Drake, J.M., **Murdock, C.C.**, and S. Mukherjee. The mismatch of narratives and local ecologies in the everyday governance of water access and mosquito control in an urbanizing community (2023). *Health and Place*.
10. Pathak, A.K., Shiau, J.C., Fayard, F.B., Schollenberger, L.M., Harn, D.A., Kyle, D.E., and **Murdock C.C.** Streamlining sporozoite isolation from msoquitoes by leveraging the dynamics of migration to the salivary glands (2022). *Malaria Journal*.
11. Evans, M.V., Bhatnagar, S., Drake, J.M., **Murdock, C.C**., Mukherjee, S. Socio-ecological dynamics in urban systems: an integrative approach to mosquito-borne disease in Bengaluru, India (2022). *People and Nature*.
12. Villena, O.C., Ryan, S.J., **Murdock, C.C.**, and L.R. Johnson. Temperature impacts the environmental suitability for malaria transmision by *Anopheles gambiae* and *Anopheles stephensi* (2022). *Ecology.*
13. Wang, D., Yang, J., Pandya, J., Clark, J.M., Harrington, L., **Murdock, C.C.**, and He, L. Quantitative age grading of mosquitoes using surface-enhanced Raman spectroscopy (2021). *Analytical Science Advances.*
14. League, G.P., Harrington, L.C., Pritcher, S.A., Geyer, J.K., Baxter, L.L., Montijo, J., Rowland, J.G., Johnson, L.M., **Murdock, C.C.**, and L.J. Cator. Sexual selection theory meets disease vector control: testing harmonic convergence as a "good" genes signal in *Aedes aegypti* mosquitoes (2021). *PLoS Neglected Tropical Diseases*.
15. Reitmayer, C.M., Pathak, A.K., Harrington, L.C., Brindley, M.A., Cator, L.J., **C.C. Murdock**. Sex, age, and parental harmonic convergence behavior affect the immune performance of *Aedes aegypti* offspring (2021). *Communications Biology*.
16. Ngonghala, C.N., Ryan, S.J., Tesla, B., Demakovsky, L.R., Mordecai, E.A., **Murdock, C.C.**, and M.H. Bonds. Effects of changes in temperature on Zika dynamics and control (2021). *Journal of the Royal Society Interface*.
17. Evans, M.V., Bonds, M.H., Cordier, L., Drake, J.M., Ihatamalala, F., Haruna, J., Miller, A., **Murdock, C.C.**, Randriamanambtsoa, M., Raza-Fanomezanjanajary, E., Razafinjato, B., and Garchitorena, A. Socio-demographic, not environmental, risk factors explain fine-scale spatial patterns of diarrheal disease in Ifanadiana, rural Madagascar (2021). *Proceedings of the Royal Society London Series B.*
18. Evans, M.V., Drake, J.M., Jones, L., and **Murdock, C.C.** Assessing temperature-dependent competition between two invasive mosquito species. (2021). *Ecological Applications.*
19. Ryan, S.J., Carlson, C.J., Tesla, B., Bonds, M. H., Ngonghala, C.N., Mordecai, E.A., Johnson, L.R., and **Murdock, C.C.** Warming temperatures could expose 1.3 billion new people to Zika virus risk by 2050. (2020). *Global Change Biology.*
20. Valentine, M.J., Ciraola, B., Jacobs, G.R., Arnot, C., Kelly, P.J., and **Murdock, C.C.** Effects of seasonality and land use on the diversity, relative abundance, and distribution of mosquitoes on St. Kitts, West Indies. (2020) *Parasites & Vectors.*
21. Valentine, M.J., Ciraola, B., Aliota, M.T., Vandenplas, M., Marchi, S., Tenebray, B., Leparc-Goffart, I., Gallagher, C.A., Beierschmitt, A., Corey, T., Dore, K.M., de Lamballerie, X., Wang, C. **Murdock, C.C.**, and Kelly, P.J. No evidence for sylvatic cycles of chikungunya, dengue, and Zika viruses in African green monkeys (*Chlorocebus aethiops sabaeus*) on St. Kitts, West Indies. (2020). *Parasites & Vectors.*
22. Wimberly, M.C., Davis, J.K., Evans, M.V., Hess, A., Newberry, P.M., Solano-Asamoah, N., and **Murdock, C.C.** Land cover affects microclimate and determines the spatial pattern of temperature suitability for arbovirus transmission in an urban landscape (2020). *PLoS Neglected Tropical Diseases.*

23. Miazgowicz, K.L., Shocket, M.S., Ryan, S.J., Villena, O.C., Hall, R.J., Owen, J., Andanlawo, T., Balaji, K., Johnson, L.R., Mordecai, E.A., and **Murdock, C.C.** Age influences the thermal suitability of *Plasmodium falciparum* transmission in the Asian malaria vector *Anopheles stephensi* (2020). *Proceedings of the Royal Sociecty London Series B*.
24. Ferreira, P.G., Tesla, B., Horácio, E.C., Nahum, L.A., Brindley, M.A., Mendes, T.A., and **Murdock, C.C.** Temperature dramatically shapes mosquito gene expression with consequences for mosquito-Zika virus interactions (2020). *Frontiers in Microbiology.*
25. Johannson, M. et al. An open challenge to advance probabilistic forecasting for dengue epidemics (2019). *Proceedings of the National Academy of Sciences of the United States of America.*
26. Pathak, A.K., Shiau, J.C., Thomas, M.B., and **Murdock, C.C.** Field relevant variation in ambient temperature modifies density-dependent establishment of *Plasmodium falciparum* gametocytes in mosquitoes (2019). *Frontiers in Microbiology.*
27. Valentine, M.J., **Murdock, C.C.**, and P.J. Kelly. Sylvatic cycles of arboviruses in non-human primates (2019). *Parasites & Vectors*.
28. Evans, M., Hintz, K., Jones, L., Shiau, J., Solano, N., Drake, J., and **Murdock, C.C.** Microcliamte and larval habitat predict adult *Aedes albopictus* abundance in urban areas (2019). *American Journal of Tropical Medicine and Hygiene*.
29. Pathak, A., Shiau, J. C., Thomas, M. B., and **Murdock, C. C**. Cryogenically preserved red blood cells support gametocytogenesis of *Plasmodium falciparum in vitro,* gametogenesis, and sporogony in mosquitoes (2018) *Malaria Journal*.
30. Kaul, R., Evans, M. V., **Murdock, C. C**., and Drake, J. M. Spatio-temporal spillover risk of yellow fever in Brazil. *Parasites & Vectors* (2018).
31. Tesla, B., Demakovsky, L.R., Mordecai, E.A., Bonds, M.H., Ngonghala, C., Brindley, M.A., & **Murdock, C.C**. Temperature drives Zika virus transmission. Evidence from empirical and mathematical models. *Proceedings of the Royal Society of London Biological Sciences* (2018)
32. Tesla, B., Demakovsky, L.R., Mordecai, E.A., Rodriguez, A., Bonds, M.H., Brindley, M.B., and **Murdock, C.C**. Estimating the effects of variation in viremia on mosquito susceptibility, infectiousness, and Ro of Zika in *Aedes aegypti*. *PLoS Neglected Tropical Diseases* (2018)
33. Evans, M.V., Shiau, J.C., Solano, N., Brindley, M.A., Drake, J.M., and **Murdock, C.C.** Carry-over effects of urban larval environments on the transmission potential of dengue-2 virus. *Parasites & Vectors* (2018).
34. Evans, M. V., **Murdock, C. C**. & Drake, J. M. Anticipating emerging mosquito-borne flaviviruses in the USA: What comes after Zika? *Trends in Parasitology*, doi:https://doi.org/10.1016/j.pt.2018.02.010 (2018).
35. Johnson, L. R., Gramacy, R. B., Cohen, J., Mordecai, E., **Murdock, C**., Rohr, J., Ryan, S. J., Stewart-Ibarra, A. M. & Weikel, D. Phenomenological forecasting of disease incidence using heteroskedastic gaussian processes: A dengue case study. *Annals of Applied Statistics* **12**, 27-66, doi:10.1214/17-AOAS1090 (2018).
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37. Mordecai, E., Cohen, J., Evans, M. V., Gudapati, P., Johnson, L. R., Lippi, C. A., Miazgowicz, K., **Murdock, C. C**., Rohr, J. R., Ryan, S. J., Savage, V., Shocket, M., Ibarra, A. S., Thomas, M. B. & Weikel, D. P. Detecting the impact of temperature on transmission of Zika, dengue, and chikungunya using mechanistic models. *PLoS Neglected Tropical Diseases* **11**, e0005568, doi:https://doi.org/10.1371/journal.pntd.0005568 (2017).
38. **Murdock, C. C**., Evans, M. V., McClanahan, T. D., Miazgowicz, K. L. & Tesla, B. Fine-scale variation in microclimate across an urban landscape shapes variation in mosquito population dynamics and the potential of *Aedes albopictus* to transmit arboviral disease. *PLoS Neglected Tropical Diseases* **11**, e0005640, doi:10.1371/journal.pntd.0005640 (2017).

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40. ****Murdock, C. C**., Luckhart, S. & Cator, L. J. Immunity, host physiology, and behaviour in infected vectors. *Current Opinion in Insect Science* **20**, 28-33, doi:https://doi.org/10.1016/j.cois.2017.03.001 (2017).
41. Evans, M. V., Dallas, T. A., Han, B. A., **Murdock, C. C**. & Drake, J. M. Data-driven identification of potential zika virus vectors. *eLife* **6**, e22053, doi:10.7554/eLife.22053 (2017).
42. Shapiro, L. L. M., **Murdock, C. C**., Jacobs, G. R., Thomas, R. J. & Thomas, M. B. Larval food quantity affects the capacity of adult mosquitoes to transmit human malaria. *Proceedings of the Royal Society B: Biological Sciences* **283**, doi:10.1098/rspb.2016.0298 (2016).
43. **Murdock, C. C**., Sternberg, E. D. & Thomas, M. B. Malaria transmission potential could be reduced with current and future climate change. *Scientific Reports* **6**, 27771, doi:10.1038/srep27771 (2016).
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45. Laubach, Z. M., Perng, W., Lombardo, M., **Murdock, C**. & Foufopoulos, J. Determinants of parental care in mountain white-crowned sparrows (*Zonotrichia leucophrys oriantha*). *The Auk* **132**, 893-902, doi:10.1642/AUK-15-9.1 (2015).
46. Cator, L. J., Pietri, J. E., **Murdock, C. C**., Ohm, J. R., Lewis, E. E., Read, A. F., Luckhart, S. & Thomas, M. B. Immune response and insulin signalling alter mosquito feeding behaviour to enhance malaria transmission potential. *Scientific Reports* **5** (2015).
47. **Murdock, C. C**., Adler, P. H., Frank, J. & Perkins, S. L. Molecular analyses on host-seeking black flies (diptera: Simuliidae) reveal a diverse assemblage of *Leucocytozoon* (Apicomplexa: Haemospororida) parasites in an alpine ecosystem. *Parasites & Vectors* **8**, 343, doi:10.1186/s13071-015-0952-9 (2015).
48. Moller-Jacobs, L., **Murdock, C.** & Thomas, M. Capacity of mosquitoes to transmit malaria depends on larval environment. *Parasites & Vectors* **7**, 593 (2014).
49. Hughes, G. L., Dodson, B. L., Johnson, R. M., **Murdock, C. C**., Tsujimoto, H., Suzuki, Y., Patt, A. A., Cui, L., Nossa, C. W., Barry, R. M., Sakamoto, J. M., Hornett, E. A. & Rasgon, J. L. Native microbiome impedes vertical transmission of *Wolbachia* in *Anopheles* mosquitoes. *Proceedings of the National Academy of Sciences U. S. A.* **111**, 12498-12503 (2014).
50. **Murdock, C. C**., Blanford, S., Luckhart, S. & Thomas, M. B. Ambient temperature and dietary supplementation interact to shape mosquito vector competence for malaria. *Journal of Insect Physiology.* **67**, 37-44 (2014).
51. **Brock, P. M., **Murdock, C. C**. & Martin, L. B. The history of ecoimmunology and its integration with disease ecology. *Integrative and Comparative Biology* **16** (2014).
52. **Murdock, C. C**., Blanford, S., Hughes, G. L., Rasgon, J. L. & Thomas, M. B. Temperature alters *Plasmodium* blocking by *Wolbachia*. *Scientific Reports* **4** (2014).
53. **Murdock, C. C**., Foufopoulos, J. & Simon, C. P. A transmission model for the ecology of an avian blood parasite in a temperate ecosystem. *PLoS ONE* **8**, e76126, doi:10.1371/journal.pone.0076126 (2013).
54. **Murdock, C. C**., Moller-Jacobs, L. L. & Thomas, M. B. Complex environmental drivers of immunity and resistance in malaria mosquitoes. *Proceedings of the Royal Society B: Biological Sciences* **280**, doi:10.1098/rspb.2013.2030 (2013).
55. Cator, L. J., George, J., Blanford, S., **Murdock, C. C**., Baker, T. C., Read, A. F. & Thomas, M. B. "Manipulation" without the parasite: Altered feeding behaviour of mosquitoes is not dependent on infection with malaria parasites. *Proceedings of the Royal Society B: Biological Sciences* **280**, doi:10.1098/rspb.2013.0711 (2013).

56. Paaijmans, K. P., Heinig, R. L., Seliga, R. A., Blanford, J. I., Blanford, S., **Murdock, C. C**. & Thomas, M. B. Temperature variation makes ectotherms more sensitive to climate change. *Global Change Biology* **19**, 2373-2380 (2013).
57. Dietz, M. S., **Murdock, C. C**., Romero, L. M., Ozgul, A. & Foufopoulos, J. Distance to a road is associated with reproductive success and physiological stress response in a migratory landbird. *The Wilson Journal of Ornithology* **125**, 50-61, doi:10.1676/11-201.1 (2013).
58. **Murdock, C. C**., Paaijmans, K. P., Bell, A. S., King, J. G., Hillyer, J. F., Read, A. F. & Thomas, M. B. Complex effects of temperature on mosquito immune function. *Proceedings of the Royal Society B-Biological Sciences* **279**, 3357-3366, doi:10.1098/rspb.2012.0638 (2012).
59. **Murdock, C. C**., Paaijmans, K. P., Read, A. F., Cox-Foster, D. & Thomas, M. B. Rethinking vector immunology: The role of environmental temperature in shaping resistance. *Nature Reviews Microbiology* **10**, 869-876 (2012).
60. **Murdock, C. C**., Olival, K. J. & Perkins, S. L. Molecular identification of host feeding patterns of snow-melt mosquitoes (diptera: Culicidae): Potential implications for the transmission ecology of Jamestown canyon virus. *Journal of Medical Entomology* **47**, 226-229, doi:10.1603/me09137 (2010).
61. Foxman, B., Goldberg, D., **Murdock, C**., Xi, C. & Gilsdorf, J. R. Conceptualizing human microbiota: From multicelled organ to ecological community. *Interdisciplinary Perspectives on Infectious Diseases* **2008**, doi:10.1155/2008/613979 (2008).

Conference abstracts (not listed; 70 total oral and poster presentations)
Dr. Murdock has presented her research extensively at both national and international scientific meetings, including the Ecological Society of America, the American Society of Tropical Medicine and Hygiene, the Entomological Society of America, and the Ecology and Evolution of Infectious Diseases.

Technical reports
None.

Book reviews None.

Popular articles None.

Creative contributions other than Formal Publications
Online Databases

2016-present: Accumulating data that will eventually be contributed to the VectorBehavior in Transmission Ecology Research Coordination Network (VectorBiTE RCN) online platform. This RCN seeks to build collaborative networks of researchers working in vector-borne diseases to provide them with better tools and resources to better explore how variation in vector behavior and life history drive transmission dynamics. This RCN will provide an online database for published data on vector trait (including behavior and life history) variation (VecTrait) and for recording the spatially and temporally explicit presence / absence abundance data and density and dynamic data (VecDyn): http://vectorbite.org/databases/.

Conferences and Symposia Organized

2025: *Malaria in the Metropolis: Building Global Networks to Address the Expanding Risk of Urban Transmission.* American Society of Tropical Medicine and Hygiene, Toronto, Canada (Organizers: **Courtney Murdock** and Michael Wimberly.
2022: *Understanding, anticipating, and responding to vector-borne disease transmission in a rapidly changing world*. Society of Vector Ecology, Honolulu, Hawaii (Organizers: **Courtney Murdock** and Andy MacDonald).
2015: Participated in the organization of the annual Ecology and Evolution of Infectious Diseases Conference, Athens GA

2015: *Vector-borne Pathogens Session*. International One Health Congress, Amsterdam, Netherlands (Organizers: Rick Ostfeld and **Courtney Murdock**)
2013: *Thermal Biology of Mosquito Vectors of Disease: Ecology and Epidemiological Consequences.* Entomological Society of America MUVE Symposium in Austin, TX (Organizers: **Courtney Murdock** and Michael Reiskind).
2010: Coordinator for the Center for Infectious Disease Dynamics Seminar Series, Pennsylvania State University, State College, PA
2008: *Understanding the Human Microbiome* Symposium, University of Michigan, Ann Arbor MI (graduate student coordinator)
2008: Leader of a student group coordinating the American Congress of Epidemiology Conference, Tucson, AZ
2007: *Understanding the Human Microbiome* Symposium, University of Michigan, Ann Arbor MI (graduate student coordinator)

Collaborative Working Groups and Workshops

2025: *Climate Change on Emerging and Re-emerging Diseases*. Organizers: Drs. Vanessa Sperandio (University of Wisconsin, Madison) and Jay T. Lennon (Indiana University).Washington D.C., United States (American Society of Microbiology)
2024: *Developing Innovative Solutions to Manage Urban Heat Stress and Mosquito-borne Disease.* Ahmedabad, Gujarat, India. Organizers: Courtney Murdock (Cornell University), Michael Wimberly (University of Oklahoma), Shomen Mukherjhee (Ahmedabad University).
2024: *Developing Innovative Solutions to Manage Urban Heat Stress and Mosquito-borne Disease.* Surat, Gujarat, India. Organizers: Courtney Murdock, Keshav Vaishnav (Surat Municipal Corporation), Vikas Desai (Urban Health and Climate Resilience Center).
2024: *Introduction of Data Science for Malaria Control and Elimination.* Surat, Gujarat, India. Organizers: Courtney Murdock, Mike Wimberly (University of Oklahoma), and Mercedes Pascual (New York University).
2023: *Workshop focused on Resources Network for Vector-borne Diseases and Vector Biology*. Entomological Society of America, Union Harbor, Maryland, U.S.A.: Organizers: Shirley Luckhart and Ken Vernick.
2023: *RBM Vector Control Working Group, Workstream 3 on Implementing Global Vector Control Response, Modeling Task Team on Anopheles stephensi*. RBM Partnership to End Malaria.
2023: *Workshop focused on Integrating Data Across Biological Scales in VBD Systems to Improve Prediction in Relation to Climate Change.* National Institutes of Allergies and Infectious Diseases.
2023: *Workshop focused on Mosquitoes and Other Vector.* National Science Foundation Research Coordination Network Integrating Organismal Biology into NEON. Archibold Field Station, Florida, U.S.A.: Organizers: Courtney Murdock.
2019: World Health Organization Technical Consulting Meeting on the invasion of *Anopheles stephensi* into Africa. Geneva, Switzerland. Role: Organizers: Jan Kolaczinski; Role: Technical expert.
2019: *Assessing the Power of Rate Summation to Predict Performance in a Thermally Fluctuating Environment.* VectorBiTE RCN, Trento, Italy. Organizers: **Courtney Murdock** and Erin Mordecai.
2018: *Vector Life History Trade-offs and Consequences for Transmission*. VectorBiTE RCN, Alisomar, CA. Organizers: **Courtney Murdock**, Lauren Cator, Leah Johnson.
2017: *Assessing the Power of Rate Summation to Predict Performance in a Thermally Fluctuating Environment.* VectorBiTE RCN, Imperial College, UK. Organizers: **Courtney Murdock** and Erin Mordecai)
2017: *Human and Animal Health, Bioinformatics and Genomics Research Development Workshop*, Tiradentes, Brazil. Organizers Rafaella Fortnini Grenfell, Role: Participant.

2016: *Ecological Immunology: Applied to Vector Biology and Vector-borne Diseases* TriCEM Workshop, Raleigh, NC. Organizers Brian Lazzaro and Lyric Bartholomay, Role: Participant.

Convention Papers

*post-baccalaureate students, graduate students, and post-doctoral researchers and **undergraduate students advised by Dr. Murdock

Keynote and Plenary Addresses (6)

2025: Indo-US Conference Climate Change Impacts on Occupational Health and Environmental Health. Ahmedabad, Gujarat, India. (*February 2025*). **Murdock, C.C.,** Miazgowicz, K.*, Johnson, L.R., Ryan, S.J., Pascual, M.M., Wimberly, M.C., Brown, J.*, St Laurent, B.*, Johnson, B.*, Huxley, P.*, Baharia, R., Vaishnav, K., Sharma, R., Kohli, V. *Landscapes of infection: the effect of relative humidity on the thermal biology of mosquito-borne pathogen transmission.*

2024: Fiocruz-National Institute of Allergies and Infectious Diseases Climate Health Impacts, Belem, Brazil (*October 2024*). **Murdock, C.C.,** Miazgowicz, K.*, Johnson, L.R., Ryan, S.J., Pascual, M.M., Wimberly, M.C., Brown, J.*, St Laurent, B.*, Johnson, B.*, Huxley, P.*, Baharia, R., Vaishnav, K., Sharma, R., Kohli, V. *Landscapes of infection: the effect of relative humidity on the thermal biology of mosquito-borne pathogen transmission.*

2024: Ecology and Evolution of Infectious Diseases Meeting. **Murdock, C.C.,** Miazgowicz, K.*, Johnson, L.R., Ryan, S.J., Pascual, M.M., Wimberly, M.C., Brown, J.*, St Laurent, B.*, Johnson, B.*, Huxley, P.*, Baharia, R., Vaishnav, K., Sharma, R., Kohli, V. *Landscapes of infection: the effect of relative humidity on the thermal biology of mosquito-borne pathogen transmission.* Stanford, CA.

2019: 13th Annual NIAID Fellows Workshop, **Murdock, C.C.**, Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., Pathak, A., Shiau, J.**, Thomas, M.B., Reitmayer, C., Cator, L., and Harrington, L. *The role of the environment in shaping host-pathogen interactions, life history, and vector-borne diseases.* Baltimore, MD.

2017: American Society for Microbiology, *Microbes and Climate Change*, **Murdock, C.C.**, Thomas, M., Evans, M.*, Miazgowicz, K.*, and Tesla, B.* *Estimating vector-borne disease transmission in a human-modified world*, New Orleans, LA

2013: Society of Invertebrate Pathology, **Murdock, C.C.**, Paaijmans, K., Blanford, S., Hughes, G., Rasgon, J., Hillyer, J., Read, A., and Thomas, M. *The role of environmental variability in shaping insect immunity and resistance,* Pittsburg, PA

Invited Symposium and Conference Talks (30)

2024: *Invited Speaker*, **Murdock, C.C.,** Miazgowicz, K.*, Johnson, L.R., Ryan, S.J., Pascual, M.M., Wimberly, M.C., Brown, J.*, St Laurent, B.*, Johnson, B.*, Huxley, P.*, Baharia, R., Vaishnav, K., Sharma, R., Kohli, V. *Landscapes of infection: the effect of relative humidity on the thermal biology of mosquito-borne pathogen transmission.* American Society of Tropical Medicine and Hygiene Meeting (*November 2024*).

2024: *Invited Speaker,* **Murdock, C.C.,** Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., Pathak, A.*, Shiau, J.**, Thomas, M.B., Evans, M.*, Solano-Asamoah, N.*, Newberry, P.*, Wimberly, M*. *Predicting vector-borne disease transmission in environmentally variable world.* Global Health Threats in a Changing Environment Symposium, Belem, Brazil (*November 2024*).

2024: *Invited Speaker*, **Murdock, C.C.,** Brown, J.J., St Laurent, B., Pascual, M.M., Wimberly, M.C., Baharia, R., Mohanty, A., Sharma, R., and Viashnav, K. A data-driven framework to forecast urban malaria transmission by the invasive mosquito, *Anopheles stephensi*. Pan African Malaria Initiative Meeting, Rwanda, Africa. (*April 2024*)

2024: *Invited Speaker*, Landscape Ecology Meeting, Oklahoma City, Oklahoma (*April 2024*)

2023: *Invited Speaker,* **Murdock, C.C.**, Brown, J.J., St Laurent, B., Pascual, M.M., Wimberly, M.C., Baharia, R., Mohanty, A., Sharma, R., and Viashnav, K. Leveraging insights from the *An. stephensi* urban malaria system in India to better understand malaria risk in Africa. AMMNet Seminar on How can Modelling be Used in the Fight Against Invasive Malaria Mosquito, *Anopheles stephensi* in Africa.

2023: *Invited Speaker,* **Murdock, C.C.**, Brown, J.J., and B. Johnson. The role of humidity in shaping the thermal performance of mosquito population dynamics and malaria transmission potential. Symposium on Modelling and Forecasting the Impacts of Climate Change on Host-Parasite Dynamics and Disease. International Society for Ecological Modelling Global Conference. Toronto, Canada. (*May 2023)*

2022: *Invited Speaker,* Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., Pathak, A.*, Shiau, J.**, Thomas, M.B., Evans, M.*, Solano-Asamoah, N.*, Newberry, P.*, Wimberly, M*. *Predicting vector-borne disease transmission in environmentally variable world.* American Society for Tropical Medicine and Hygiene Annual Meeting.

2022: *Invited Speaker,* Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., Pathak, A.*, Shiau, J.**, Thomas, M.B., Evans, M.*, Solano-Asamoah, N.*, Newberry, P.*, Wimberly, M*. *Predicting vector-borne disease transmission in environmentally variable world.* Intercampus symposium between Weill Cornell Medical College and Cornell University, New York City, NY.

2019: **Murdock, C.C.** and Pathak, A.*. *Estimating malaria transmission in an environmentally variable world*: *implications for control*. March Malaria Madness Meeting, Gainesville, University of Florida, FL.

2018: **Murdock, C.C.,** Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, H., Brindley, M. *Temperature drives Zika virus transmission: evidence from empirical and mathematical models*. American Society of Tropical Medicine and Hygiene, New Orleans, LA.

2018: **Murdock, C.C.**, Evans, M.*, Miazgowicz, K.*, Tesla, B.*, Shiau, J.**, McClanahan, T.**, Solano, N**. *Estimating arbovirus transmission in the city: variation in microclimate and effects on vectorial capacity* MPE3 Urban Environmental Sustainability in a Smart and Connected World. Athens, GA.

2018: *Invited speaker*, Experimental Biology Meeting, SCVP-ASIP Joint Symposium, *Vector-borne Diseases: Bridging Scales*. **Murdock C.C.**, Tesla, B.*, Evans, M.*, Miazgowicz, K.*, Shiau, J.**, Mordecai, E., and Brindley, M. *Experimental approaches to studying impacts of global climate change on mosquito-borne disease transmission* San Diego, CA (*upcoming April 2018*)

2018: *Invited speaker*, Population Biology of Vector-borne Diseases, *The effects of environmental variation on vector-virus interactions*, **Murdock, C.C.**, Tesla, B.*, Demakovsky, L.*, Mordecai, E., Bonds, M., Ngonghala, C., and Brindley M., University of Georgia, Athens, GA.

2018: *Invited speaker*, North American Black Fly Association Meeting, **Murdock, C.C.**, Evans, M.*, McClanahan, T.**, Miazgowicz, K.*, and Tesla, B.* *Estimating arbovirus transmission in the city: variation in microclimate and effects on vectorial capacity*, University of Georgia, Athens GA.

2017: *Invited speaker,* American Society of Tropical Medicine and Hygiene, *Science is Real: the Impacts of Climate Change on Vector-borne Diseases*. Miazgowicz, K.* and **Murdock, C.C.**, *Estimating vector-borne disease transmission in a variable world*, Baltimore, MD.

2017: *Invited speaker,* Entomological Society of America, *Insect Microclimates in a Changing World.* Evans, M.*, Jones, L.**, Solano, N.**, Drake, J., and **Murdock, C.C.** *Fine-scale microclimate variation across an urban landscape shaped both mosquito population dynamics and arbovirus transmission potential,* Denver, CO.

2017: Ecology and Evolution of Infectious Diseases, **Murdock, C.C.**, Evans, M.*, McClanahan, T.**, Miazgowicz, K*, and Tesla, B.* *Fine-scale variation in microclimate affects mosquito population dynamics and arbovirus transmission potential*, University of California, Santa Barbara, CA.

2017: Impact of Environmental Changes on Infectious Diseases, **Murdock, C.C.**, Evans, M.*, McClanahan, T.**, Miazgowicz, K*, and Tesla, B.* *Fine-scale variation in microclimate affects mosquito population dynamics and arbovirus transmission potential*, Triestes, Italy.
2017: *Invited Speaker*, Center for the Ecology of Infectious Diseases Annual Retreat, **Murdock, C.C.**, Thomas, M., Evans, M.*, Miazgowicz, K*, McClanahan, T.**, and Tesla, B.* *Estimating vector-borne disease transmission in an environmental variable world*, University of Georgia, Athens GA.
2016: *Invited speaker*, Science of Veterinary Medicine Symposium, **Murdock, C.C.** and Brindley, M. *Environmental drivers of Zika transmission and control*, University of Georgia, Athens GA.
2016: *Invited speaker*, International Congress of Entomology, *Ecoimmunology: Trade-offs in Immunity and Life History*, **Murdock C.C.,** Cator, L., George, J., Blanford, S., Pieteri, J., Ohm, J., Lewis, E., Luckhart, S., Baker, T., Read, A., and Thomas, M. *"Manipulation," but not as we know it: altered feeding behavior of mosquitoes is not dependent on malaria infection*, Orlando, FL
2016: *Invited speaker*, Cities, Climate Forcing, and Infectious Disease Dynamics, **Murdock, C.C.**, Miazgowiz, K.*, and Evans, M.* *Estimating vector-borne disease transmission in a variable world*, Delhi, India
2016: *Invited speaker*, Society of Integrative and Comparative Biology, *Beyond the Mean: Biological Impacts of Changing Patterns of Temperature Variation*, **Murdock, C.C.**, Thomas, M., Miazgowicz, K.*, Evans, M.*, McClanahan, T.**, and Tesla, B.* *Estimating vector-borne disease transmission in a thermally variable environment*, Portland, OR
2015: Impact of Environmental Changes on Infectious Diseases, **Murdock, C.C.**, Sternberg, E., and Thomas, M. *Diverse environmental drivers of malaria infection in Anopheles mosquitoes*, Sitges, Spain.
2015: *Co-chair*, International One Health Congress 2015, *Vector-borne Pathogens,* **Murdock, C.C.**, Sternberg, E., and Thomas, M. *Diverse environmental drivers of malaria infection in Anopheles mosquitoes*, Amsterdam, Netherlands.
2015: Parasitology and Vector Biology Meeting, Center for Tropical Global Emerging Diseases, **Murdock C.C.**, Sternberg, E., and Thomas, M. *Diverse environmental drivers of malaria infection in Anopheles mosquitoes*, University of Georgia, Athens GA.
2013: *Invited speaker*, Entomological Society of America, MUVE Symposium, *Thermal Biology of Mosquito Vectors of Disease: Ecology and Epidemiological Consequences*, **Murdock, C.C.**, Austin, TX.
2013: The European Science Foundation – European Molecular Biology Organization Meeting, *Integrated Insect Immunology: From Basic Biology to Environmental Applications*, **Murdock, C.C.**, Paaijmans, K., Bell, S., Blanford, S., Moller-Jacobs, L., King, J., Hughes, G., Rasgon, J., Hillyer, J., Read, A., and Thomas, M. *Rethinking vector immunity: the role of the environment in shaping resistance*, Pultusk, Poland.
2013: *Invited speaker*, Research Coordination Network Ecoimmunology, **Murdock, C.C.**, Paaijmans, K., Bell, S., Blanford, S., Moller-Jacobs, L., King, J., Hughes, G., Rasgon, J., Hillyer, J., Read, A., and Thomas, M. *Role of the environment in shaping host immunity and resistance: insights from the malaria system*, Blossin, Germany
2012: *Invited speaker*, International Consortium for Neglected Tropical Diseases, **Murdock C.C.,** Blanford, S., and Thomas, M. *Temperature has complex effects on mosquito immunity* London, United Kingdom

<u>Invited Seminars at Universities and Institutes (34)</u>
2025: **Murdock, C.C.,** Miazgowicz, K.*, Johnson, L.R., Ryan, S.J., Pascual, M.M., Wimberly, M.C., Brown, J.*, St Laurent, B.*, Johnson, B.*, Huxley, P.*, Baharia, R., Vaishnav, K., Sharma, R., Kohli, V. *Landscapes of infection: the effect of relative humidity on the thermal biology of mosquito-borne pathogen transmission.* Center for the Ecology of Infectious Diseases, Odum School of Ecology, University of Georgia, GA.

2025: **Murdock, C.C.,** Miazgowicz, K.*, Johnson, L.R., Ryan, S.J., Pascual, M.M., Wimberly, M.C., Brown, J.*, St Laurent, B.*, Johnson, B.*, Huxley, P.*, Baharia, R., Vaishnav, K., Sharma, R., Kohli, V. *Landscapes of infection: the effect of relative humidity on the thermal biology of mosquito-borne pathogen transmission.* EPPICenter, University of California, San Francisco, CA.

2025: **Murdock, C.C.,** Miazgowicz, K.*, Johnson, L.R., Ryan, S.J., Pascual, M.M., Wimberly, M.C., Brown, J.*, St Laurent, B.*, Johnson, B.*, Huxley, P.*, Baharia, R., Vaishnav, K., Sharma, R., Kohli, V. *Landscapes of infection: the effect of relative humidity on the thermal biology of mosquito-borne pathogen transmission.* College of Veterinary Medicine, Purdue University, IN.

2024: **Murdock, C.C.,** Miazgowicz, K.*, Johnson, L.R., Ryan, S.J., Pascual, M.M., Wimberly, M.C., Brown, J.*, St Laurent, B.*, Johnson, B.*, Huxley, P.*, Baharia, R., Vaishnav, K., Sharma, R., Kohli, V. *Landscapes of infection: the effect of relative humidity on the thermal biology of mosquito-borne pathogen transmission.* Johns Hopkins, School of Public Health, Baltimore, MD.

2024: **Murdock, C.C.,** Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, Pascual, M.M., Wimberly, M.C. *Landscapes of infection: the role of the environment in shaping host-pathogen interactions, life history, and pathogen transmission.* Pennsylvania State University, State College, PA.

2024: **Murdock, C.C.,** Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, Pascual, M.M., Wimberly, M.C. *The role of the environment in shaping host-pathogen interactions, life history, and mosquito-borne disease transmission*. Cornell University, Ithaca, NY.

2024: **Murdock, C.C.,** Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, Pascual, M.M., Wimberly, M.C. *The role of the environment in shaping host-pathogen interactions, life history, and vector-virus transmission*. Notre Dame, South Bend, IN.

2023: **Murdock, C.C.**, Miazgowicz, K.*, Shocket, M., Hall, R.J., Ryan, S.J., Johnson, L.R., Evans, M.*, Solano-Asamoah, N.*, Newberry, P.*, Wimberly, M*, Pascual, M.M. *Predicting mosquito-borne disease transmission in a human-modified world.*, Vanderbilt University, Biological Sciences

2023: **Murdock, C.C.**, Miazgowicz, K.*, Shocket, M., Hall, R.J., Ryan, S.J., Johnson, L.R., Evans, M.*, Solano-Asamoah, N.*, Newberry, P.*, Wimberly, M*, Pascual, M.M. *Predicting mosquito-borne disease transmission in a human-modified world.*, Liverpool School of Tropical Medicine, Liverpool, United Kingdom.

2023: **Murdock, C.C.** *Integrating data across biological scales in vector-borne disease systems to improve prediction.* National Institutes of Allergies and Infectious Diseases Online Workshop on Climate Change and Infectious Diseases.

2023: Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., Pathak, A.*, Shiau, J.**, Evans, M.*, Solano-Asamoah, N.*, Newberry, P.*, Wimberly, M*. *Predicting mosquito-borne disease transmission in a rapidly changing world.* Harvard Radcliff Institute, Harvard University, Climate Change and Vector-borne Diseases.

2021: Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., Pathak, A.*, Shiau, J.**, Thomas, M.B., Evans, M.*, Solano-Asamoah, N.*, Newberry, P.*, Wimberly, M*. *Predicting vector-borne disease transmission in a human-modified world.* Center for Infectious Disease Dynamics Seminar Series, Pennsylvania State University, PA.

2021: **Murdock, C.C.,** Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., Pathak, A.*, Shiau, J.**, Thomas, M.B., Evans, M.*, Solano-Asamoah, N.*, Newberry, P.*, Wimberly, M*. *The role of the environment in shaping host-pathogen interactions, life history, and vector-borne disease transmission.* Climate Change and Emerging Infectious Disease Seminar Series, University of Albany, New York, NY.

2021: **Murdock, C.C.,** Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., Pathak, A.*, Shiau, J.**, Thomas, M.B., Evans, M.*, Solano-Asamoah, N.*,

Newberry, P.*, Wimberly, M*. *Predicting vector-borne disease transmission in a human-modified world*. Cornell Weill School of Medicine Climate Change Seminar Series., New York, NY.

2021: **Murdock, C.C.** *The role of mosquitoes in vector-borne disease transmission*. Anti-malaria Group Seminar, Cornell University, Ithaca, NY.

2021: **Murdock, C.C.,** Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., Pathak, A.*, Shiau, J.**, Thomas, M.B., Evans, M.*, Solano-Asamoah, N.*, Newberry, P.*, Wimberly, M*. *The role of the environment in shaping host-pathogen interactions, life history, and vector-borne disease transmission*. Climate Change-Emerging Infectious Diseases Seminar Series. New York, NY.

2019: **Murdock, C.C.**, Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., Pathak, A.*, Shiau, J.**, Thomas, M.B., Reitmayer, C.*, Cator, L., and Harrington, L. *The role of the environment in shaping host-pathogen interactions, life history, and vector-borne diseases.* Cornell University, Ithaca, NY

2019: **Murdock, C.C.,** Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., M., Evans, M.*, Solano, N.**, Shiau, J.**, Miazgowicz, K.*, McClanahan, T.**, Reitmayer, C.*, Cator, L., and Harrington, L. *In sickness and in health: mosquito love songs, mating behavior, and vector-borne disease transmission.* University of Illinois, Champaigne, IL

2019: **Murdock, C.C.**, Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., M., Evans, M.*, Solano, N.**, Shiau, J.*, Miazgowicz, K.*, McClanahan, T.**, *The role of the environment in shaping host resistance, life history, and vector-borne disease transmission.* University of Georgia, Odum School of Ecology, Athens GA

2019: **Murdock, C.C.,** Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., M., Evans, M.*, Solano, N.**, Shiau, J.*, Miazgowicz, K.*, McClanahan, T.**, Reitmayer, C.*, Cator, L., and Harrington, L. *In sickness and in health: mosquito love songs, mating behavior, and vector-borne disease transmission.* University of Chicago, Chicago, IL.

2018: **Murdock, C.C.,** Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, M., Evans, M.*, Solano, N.**, Shiau, J.**, Miazgowicz, K.*, McClanahan, T.**, Owen, H*. *Estimating vector-borne disease transmission in a human-modified world.* Clemson University, Clemson, SC.

2018: **Murdock, C.C.,** Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., M., Evans, M.*, Solano, N.**, Shiau, J.**, Miazgowicz, K.*, McClanahan, T.**, Reitmayer, C.*, Cator, L., and Harrington, L. *In sickness and in health: mosquito love songs, mating behavior, and vector-borne disease transmission.* University of Georgia, Environmental Health, Athens, GA.

2018: **Murdock, C.C.,** Tesla, B.*, Demakovsky, L.*, Mordecai, E., Ryan, S., Ngonghala, C., Bonds, Brindley, M., M., Evans, M.*, Solano, N.**, Shiau, J.**, Miazgowicz, K.*, McClanahan, T.**, Reitmayer, C.*, Cator, L., and Harrington, L. *In sickness and in health: mosquito love songs, mating behavior, and vector-borne disease transmission.* North Carolina State University, Raleigh, NC

2018: **Murdock, C.C.** *The role of African green monkeys in the epidemiology of dengue and chikungunya transmission in St. Kitts, West Indies,* Ross University School of Veterinary Medicine, St. Kitts & Nevis

2017: **Murdock, C.C.,** Sternberg, E., Thomas, M., Miazgowicz, K.*, Evans, M.*, McClanahan,T.**, and Tesla, B. *Estimating vector-borne disease transmission in an environmental variable world*, Emory University, Atlanta, GA.

2016: **Murdock, C.C.**, Miazgowizc, K.*, Cator, L., Thomas, M., Evans, M.*, McClanahan, T.**, and Tesla, B.*, *The role of mosquitoes in vector-borne disease transmission,* Kennisaw State University, Kennisaw, GA

2015: **Murdock, C.C.**, Thomas, M., James, T., Brindley, M., Miazgowicz, M.*, Evans, M.*, McClanahan, T.**, and Tesla, B.*, *Influence of the environment on vector-borne disease transmission and control*, University of Georgia, Center for Tropical Emerging and Global Diseases, Athens GA.

2015: **Murdock, C.C.**, Sternberg, E., Thomas, M., Hughes, G., Rasgon, J., Evans, M.*, Miazgowicz, K.*, McClanahan, T.**, and Tesla, B.*, *Influence of the environment on vector-borne disease transmission and control*, Ross University School of Veterinary Medicine, St. Kitts and Nevis.

2015: **Murdock, C.C.,** Sternberg, E., Thomas, M., Miazgowicz, K.*, Evans, M.*, McClanahan,T.**, and Tesla, B. *Estimating vector-borne disease transmission in an environmental variable world*, University of Georgia, Department of Entomology, Athens GA.

2015: **Murdock, C.C.**, Paaijmans, K., Bell, S., Blanford, S., Moller-Jacobs, L., King, J., Hughes, G., Rasgon, J., Hillyer, J., Read, A., and Thomas, M. *Role of the environment in shaping host immunity and resistance: insights from the malaria system,* Georgia Regents University, Augusta, GA.

2015: **Murdock, C.C.**, Paaijmans, K., Bell, S., Blanford, S., Moller-Jacobs, L., King, J., Hughes, G., Rasgon, J., Hillyer, J., Read, A., and Thomas, M. *Role of the environment in shaping host immunity and resistance: insights from the malaria system,* Imperial College, Silwood Park campus, Ascot, United Kingdom.

2015: **Murdock, C.C.**, Paaijmans, K., Bell, S., Blanford, S., Moller-Jacobs, L., King, J., Hughes, G., Rasgon, J., Hillyer, J., Read, A., and Thomas, M. *Role of the environment in shaping host immunity and resistance: insights from the malaria system,* University of Georgia, Department of Infectious Diseases, University of Georgia, Athens GA

2014: **Murdock, C.C.**, Paaijmans, K., Bell, S., Blanford, S., Moller-Jacobs, L., King, J., Hughes, G., Rasgon, J., Hillyer, J., Read, A., and Thomas, M. *Role of the environment in shaping host immunity and resistance: insights from the malaria system,* Connecticut Agricultural Experiment Station, New Haven, CT.

2014: **Murdock, C.C.**, Paaijmans, K., Bell, S., Blanford, S., Moller-Jacobs, L., King, J., Hughes, G., Rasgon, J., Hillyer, J., Read, A., and Thomas, M. *Role of the environment in shaping host immunity and resistance: insights from the malaria system,* University of Georgia, Odum School of Ecology, University of Georgia, Athens GA.

2013: **Murdock, C.C.**, Paaijmans, K., Bell, S., Blanford, S., Moller-Jacobs, L., King, J., Hughes, G., Rasgon, J., Hillyer, J., Read, A., and Thomas, M. *Role of the environment in shaping host immunity and resistance: insights from the malaria system,* Department of Pathobiology, College of Veterinary Medicine, University of Wisconsin, Madison, WI.

2012: **Murdock, C.C.**, Paaijmans, K., Blanford, S., and Thomas, M. *Temperature has complex effects on mosquito innate immune function,* Imperial College, South Kensington campus, London, United Kingdom.

PROFESSIONAL OVERVIEW AND OBJECTIVES

The deadliest organism on the planet next to humans is the mosquito due to the many diseases it transmits. Among mosquito transmitted diseases, malaria is the leading killer, resulting in approximately 216 million cases and approximately 500,000 deaths annually primarily in children under the age of 5. In addition to malaria, recent emerging infectious diseases (dengue, chikungunya, and Zika) are mosquito-borne viruses. The ecology of the arthropod vector is central to the transmission of vector-borne diseases within wildlife and human populations and consequently, vector-borne disease transmission is strongly driven by variation in both abiotic and biotic environmental variables. Yet, we know very little mechanistically about how environmental variation impacts mosquito and pathogen fitness, the mosquito-pathogen interaction, transmission risk, disease dynamics, or the efficacy of interventions that target mosquito populations. These knowledge gaps significantly impair our ability to understand the factors

governing disease emergence or re-emergence, the effects of climate and land use change on disease risk, and the success of novel interventions targeting the mosquito across variable environments. A consistent theme of my research has been the application of ecological and evolutionary theory to inform which knowledge gaps are crucial to fill, to improve the performance of predictive models of vector-borne disease transmission, as well as our disease management strategies. Research conducted in my group typically span multiple scales of ecological organization (from within-host processes up to population and community-level dynamics). Consequently, our research is trans-disciplinary and integrative, adopting theory and techniques from the fields of ecology, evolutionary biology, behavioral ecology, genetics, virology, parasitology, medical entomology, statistics, immunology, and mathematical modeling. My approach involves carefully designed, rigorous experiments in the lab and under semi-field conditions, combined with field studies and modeling to provide insight into relevant mechanisms driving mosquito-borne disease transmission in the field. I am very passionate about mentoring students at all levels of education and maintaining a diverse and inclusive research / teaching environment.