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| Name:  Edward D. WALKER | | Address:  Department of Microbiology & Molecular Genetics  2215 Biomedical and Physical Sciences Building  Michigan State University  567 Wilson Road  East Lansing, MI 48824 | | |
| Email address and office telephone number:  [walker@msu.edu](mailto:walker@msu.edu)  517-884-5389 | |
| **EDUCATION**: INSTITUTION AND LOCATION | DEGREE | | YEAR(s) | FIELD OF STUDY |
| Ohio University, Athens | B.S. | | 1978 | Zoology |
| Ohio University, Athens | M.S. | | 1979 | Zoology |
| University of Massachusetts, Amherst | Ph.D. | | 1984 | Entomology |

**Employment**

2023-present University Distinguished Professor, Dept of Microbiology, Genetics, & Immunology, Michigan

State University

2004-present Professor, Dept of Microbiology & Molecular Genetics, and Dept of Entomology, Michigan

State University

2001-2004 Associate Professor, Dept of Microbiology & Molecular Genetics, Michigan State University

1995-2004 Associate Professor, Dept of Entomology, Michigan State University

1990-1995 Assistant Professor, Dept of Entomology, Michigan State University

1986-1990 Post-doctoral Research Associate, Dept of Entomology, Michigan State University

1983-1986 Post-doctoral Research Associate, Dept of Biological Sciences, University of Notre Dame

1979-1983 Graduate Research Assistant, University of Massachusetts, Amherst, Massachusetts

1979 Graduate Teaching Assistant, Ohio University, Athens, Ohio

**CURRENT POSITION: SCHOLARSHIP AND RESPONSIBILITIES**

My current position is full professor at Michigan State University, with primary appointment in the Department of Microbiology, Genetics, and Immunology (71%) and secondary appointment in the Department of Entomology, entirely in affiliation with AgBioResearch (29%). My work life and scholarship involve research, instruction and teaching, outreach, and service. My primary research area is in understanding the processes involved in emerging and opportunistic infectious diseases, particularly where pathogens are associated with arthropod vectors and zoonotic disease cycles (West Nile viral encephalitis, eastern equine viral encephalitis, Lyme disease). Coupled to this activity is outreach and service in relationship to surveillance and control of transmission. An allied research area relates to the phenomenon of bacterial-insect symbiosis, addressing the question how do bacteria colonize and adapt to the hostile gut environment? It involves genomics, transcriptomics, resistomics, opportunistic pathogenesis, and opportunistic symbiosis of *Elizabethkingia, Asaia,* *Serratia*, and *Flavobacterium* bacteria in mosquitoes. Additional long-term interests include significance of aquatic microbial ecology to larval mosquito growth and production, and plasticity of blood host selection by adult mosquitoes. International and global health is a strong area of interest, particularly with human malaria, focusing on landscape, ecological, and agricultural drivers of transmission, intersectoral relationships, and disease control. International research venues (malaria, filariasis) included Honduras, the Philippines, Uganda, Kenya, Malawi, Madagascar, and Papua New Guinea. I currently teach an undergraduate class in Microbial Ecology (MGI 425) and co-teach an undergraduate class in Microbial Physiology (MGI 421), as well as a graduate seminar in Opportunistic Pathogens (MGI 991), the latter every other fall term. In the recent past I have taught part or all of courses, or contributed to instruction, in Medical Entomology, Insect Behavior, Insect Ecology, Medical Microbiology, Veterinary Virology, Veterinary Parasitology, and graduate seminars in Microbe/Invertebrate Symbiosis, and Insect Population Data Analysis. Additional responsibilities and activities include graduate education and training, postdoctoral training, and participation in and administration of international graduate and postdoctoral training grants. Additionally, I contribute to a wide array of service within and outside of Michigan State University at departmental and higher levels.

**Honors and Awards**

2024 Michigan State University, Ralph H. Smuckler Award for Advancing International Studies and Programs

2023 Michigan State University, University Distinguished Professor

2016 Michigan State University, College of Natural Science, Meritorious Faculty Award

2015 Michigan State University, William A. Beal Outstanding Faculty Award

2014 Michigan State University, College of Natural Science, Outstanding Faculty Award

2013 George B. Craig Memorial Lecture Series Invited Speaker, University of Notre Dame

2009 Entomological Society of America, Founder’s Memorial Award

2007 Michigan Mosquito Control Association, H.D. Newson Service Award

2006 Port Clinton (Ohio) High School Academic Hall of Fame

2004 Ohio University Distinguished Alumni Award in Biological Sciences

**PROFESSIONAL EXPERIENCES, CONSULTANCIES, ASSIGNMENTS, AND SERVICE**

2025 Keynote speaker, Asia Pacific Leaders Malaria Alliance, Bali, Indonesia, June 2025

2024-2029 Member, Strategic Advisory Committee, International Centers for Excellence in Malaria Research, NIAID

2024 Speaker and participant, Mekong One Health Innovation Program capacity building symposium, Vientiane, Laos, May 2024

2024 Reviewer, Mekong One Health Innovation Program grants, July 2024

2024 Chairperson, Scientific Committee, Michigan Mosquito Control Association

2024 Reviewer, NSF-NIH Ecology of Infectious Diseases Pre-Review program, one proposal

2023 Reviewer, NIAID International Centers of Excellence in Malaria Research, November 2023

2023 Reviewer, Mekong One Health Innovation Program grants, July 2023

2023 Reviewer, CDC Center for Global Health Special Emphasis Panel, April 2023

2022 Reviewer, Swiss National Science Foundation, December 2022

2022 Reviewer, NSF CAREER Awards, October 2022

2022 Reviewer, ORAU Ralph E Powe Junior Faculty Enhancement Awards - 2022, Mathematics/Computer Science Panel, March 2022

2022 Member, NSF-PIPPS Pandemic Preparation Panel (February 2022 meeting)

2022 Member, NSF-NIH Ecology of Infectious Diseases Panel (January 2022 meeting)

2021 Member, NSF-NIH Ecology of Infectious Diseases Panel (January 2021 meeting)

2020 Member, NIAID, Infectious Diseases and Microbiology – M02 Eukaryotic Parasites and

Vectors Special Emphasis Panel (March 2020 meeting)

2020 Member, NIAID, Infectious Diseases and Microbiology – M02 Eukaryotic Parasites and

Vectors Special Emphasis Panel (July 2020 meeting)

2020 Chairperson, NIAID, Infectious Diseases and Microbiology – M02 Eukaryotic Parasites and

Vectors Special Emphasis Panel (November 2020 meeting)

2019-20 Michigan Mosquito Control Association, Chairperson, Annual Conference Planning Committee

2019 Rapporteur, presenter, participant: Gene Drive-Mosquito Monitoring and Surveillance Meeting

NIH Foundation, April 24-26, Washington DC

2019 Chairperson, NIAID, Infectious Diseases and Microbiology – M02 Eukaryotic Parasites and

Vectors Special Emphasis Panel (two meetings)

2018 Chairperson, NIAID, International Infectious Diseases Special Study Section

2016-18 Member, Vector Control Working Group, Roll Back Malaria, World Health Organization

2016-18 Chairperson, NIAID Vector Biology Study Section

2014-18 Member, NIAID Vector Biology Study Section

2014-15 Malaria vector control consultant, Toxic sugar bait development and evaluation, Kisumu,

Kenya, Kenya Medical Research Institute and Clarke Mosquito Control

2014 Research program review leader, USDA ARS, NP 104 Panel 2: Human Pests and Vectors

2014 Ad hoc reviewer, Career Development Awards applications, Microbiology and Infectious

Diseases Research Committee, NIAID

2013 Entomological Society of America, Chairman, Book Review Editor search committee

2013 Entomological Society of America, Founders’ Memorial Lecture selection committee

2013 Program reviewer, NIAID IDM extramural grants programs

2012-13 Chairman, USDA ARS Multistate Research Committee, Project NE-1043

2012 BARD US-Israel Collaboration, Grant Reviewer

2011, 2013 Grant Reviewer (guest), NIAID Vector Biology Study Section

2011 Grant Reviewer, NIAID Special Emphasis Panel/Scientific Review Group 2011/05 ZRG1 IDM-

A (02) M

2010-13 President-elect/President, Medical-Urban-Veterinary Entomology section, Entomological

Society of America

2010 BARD US-Israel Collaboration, Grant Reviewer

2009-11 Member, Spatial Repellents Working Group, Bill and Melinda Gates Foundation

2009-10 Member, Malaria Elimination and Insecticide Resistance Steering Committee, World Health Organization, Geneva, Switzerland

2009 Grant Reviewer, Infectious Diseases and Microbiology ZRG1 IDM-M (12) B, NIAID

2009 Grant Reviewer, Bill and Melinda Gates Foundation

2008 Grant Reviewer, Microbiology and Infectious Diseases Research Committee, NIAID MID\*

2008 Participant, Gates Foundation Vector Biology Conference, Seattle

2007 Integrated Vector Control Consortium, Gates Foundation, Repellents Workshop participant,

London, UK

2007 Wellcome Trust, Interdisciplinary Vector Biology Workshop participant, Kilifi, Kenya

2007 Grant Reviewer, International Infectious Diseases Research, NIH ZAI1 GSM-M (M1(1))\*

2007 Grant Reviewer, Vector Biology special panel, NIH IDM-M02

2007 Grant Reviewer, Wellcome Trust Fellowships Program

2007 Review team member, USDA ARS NR-104 medical, structural, veterinary entomology

2006 Grant Reviewer, NIH Topics in Vector Biology ZRG1 IDM-G-02B

2006 Grant Reviewer, NIH Microbiology and Infectious Diseases review committee

2004 Grant Reviewer, Armed Forces Medical Intelligence Center AIBS program

2004 Grant Reviewer, Deployed Uniformed Forces AIBS program

2003 Review Team leader, USDA ARS Center for Medical, Agricultural, & Veterinary Entomology

2002-2006 Member, American Committee on Medical Entomology, American Society of Tropical Medicine and Hygiene (Chairperson, 2005; organizer of two symposia)

2002-2004 Subject Editor, Journal of Medical Entomology

2003 Member, NIH Tropical Disease Research Unit grant review panel

2001-2002 Member, NIH SBIR ad hoc Infectious Diseases Study Section

2001 Ectoparasite control products consultant, Pharmacia, Kalamazoo, Michigan

1999 Member, NIH ICIDR grant review panel

1994-2001 Member, NIH Tropical Medicine and Parasitology Study Section, Vector Biology

1994-1995 Visiting Research Scientist, Research Institute for Tropical Medicine, Muntinlupa, Philippines

1991 AMCA Newsletter Editorial Board, MMCA Awards Committee chairperson

1990 AMCA Newsletter Editorial Board, MMCA Scientific Committee and Board of Directors

1989-1990 Malaria Vector Control Consultant, Vector Biology & Control Project, USAID & Ministry of Public Health, Republic of Honduras

**SERVICE TO MICHIGAN STATE UNIVERSITY**

2024-present Microbiology, Genetics, and Immunology, Undergraduate Curriculum Committee

2024-25 Search committee member, Entomology, new faculty search in Medical Entomology

2023-24 Search committee member, Microbiology and Molecular Genetics, new faculty search in

Microbial Ecology and Evolution

2023 Judge, Innovation Challenge, 2023 GARD Forum: Bridging Technologies and Market Needs

2021-23 College of Natural Science, Scholarships and Awards Committee – BIO District

2021-24 Microbiology and Molecular Genetics, Faculty Advisory Committee (chairperson, 2023-24)

2021-22 Search committee member, Microbiology and Molecular Genetics, new faculty search in

Microbe/Host Interactions

2020-21 Microbiology and Molecular Genetics, Curriculum Committee

2020-21 Entomology, Curriculum Committee

2018-20 College of Natural Science, Reappointment, Promotion and Tenure Committee member

2019-20 Search committee chairperson, Microbiology and Molecular Genetics, new faculty search in

Microbial Ecology and Evolution of Infectious Diseases

2018 Search committee member, Aquatic Animal Health, College of Veterinary Medicine

2017-18 Microbiology and Molecular Genetics, Faculty Advisory Committee

2016 Member, University Jurisdictional Appeal Panel, for the Faculty Grievance Officer

2014 Inquiry Panel Chairperson, Office of the Research Integrity Officer

2014 Co-faculty leader with Dr. Felicia Wu, Center for Health Impacts of Agriculture (CHIA)

2013-15 Microbiology and Molecular Genetics, Awards Committee member

2013 Search committee chairperson, Aquatic Ecosystems Entomologist search committee,

2013 University Jurisdictional Appeals Panel member

2012-13 Member, Water Initiative committee

2012-13 Search Committee member, KBS Microbial Ecology faculty position

2012-14 Microbiology and Molecular Genetics, Faculty Advisory Committee

2002-08 Chairperson, Institutional Biosafety Committee

2006 Inquiry Panel Chairperson, Office of the Research Integrity Officer

2001-05 Co-director with Dr. Steven Bolin, Center for Emerging Infectious Diseases

2001-21 Member, EEBB graduate committee

2000-01 Graduate Committee, Department of Entomology

1998-2000 Faculty Advisory Committee, Department of Entomology

1998-2000 Faculty Advisory Committee to the Dean, College of Natural Science

1998-99 Seminar Committee, Department of Entomology

1997 By-Laws Committee, Department of Entomology

1995-96 Faculty Advisory Committee, Department of Entomology

1994 Departmental Retreat Organizing Committee, Department of Entomology

1994 IPM in the Human Living Environment, Advisory Group to Michigan State Legislature

1992 Center for Integrative Studies, basic biology labs instruction committee

1991-92 Awards Committee, Department of Entomology

1991-92 Seminar Committee chairperson, Department of Entomology

1990-95 Michigan Representative, NCR-165 Insects and Public Health

**MEMBERSHIPS IN PROFESSIONAL SOCIETIES/CERTIFICATIONS**

* American Society for Microbiology
* International Society for Neglected Tropical Diseases
* American Association for the Advancement of Science
* American Society of Tropical Medicine and Hygiene
* Entomological Society of America
* Society of Vector Ecology
* American Mosquito Control Association
* Michigan Mosquito Control Association
* National Pest Management Association
* Certified pesticide applicator, Michigan categories 7F, 8, 10

**Peer-reviewed/REFEREED publications, book chapters, and reviewS**

First author is lead author. Senior author is last author. Authors in between contributed to the development of the content towards publication.

ResearchGate score: 43.53. ResearchGate percentile: 97.5%

Reference: <https://www.researchgate.net/publicprofile.RGScoreFAQ.html>

Reference: https://scholar.google.com/citations?user=r3sSaxIAAAAJ&hl=en

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1. **Walker ED**, Romoser WS. Early events in the pupal-adult molt of *Aedes triseriatus* (Diptera: Culicidae): spatial and temporal considerations. Annals Entomol Soc Amer 1982; 75:395-399.
2. **Walker ED**. Occurrence of *Anopheles barberi* in Massachusetts. Mosq News 1983; 43:73.
3. **Walker ED**. Field evidence against rodent burrow entering by *Aedes triseriatus* (Diptera: Culicidae). Great Lakes Entomol 1984; 17:185-186.
4. Edman JD, Day JF, **Walker ED**. Field confirmation of laboratory observations on the differential antimosquito behavior of herons. Condor 1984; 86:91-92.
5. **Walker ED**, Romoser WS. Timing of pupal-adult apolysis in mosquitoes. J Amer Mosquito Cont Assoc 1984; 2: 224-225.
6. **Walker ED**, Edman JD. The influence of host defensive behavior on mosquito (Diptera: Culicidae) biting persistence. J Med Entomol 1985; 22:370-372.
7. **Walker ED**, Edman JD. Feeding site selection and blood feeding behavior of *Aedes* *triseriatus* (Diptera: Culicidae) on rodent (Rodentia: Sciuridae) hosts. J Med Entomol 1985; 22:287-294.
8. **Walker ED**, Crans WJ. A simple method for sampling *Coquillettidia perturbans* larvae. J Amer Mosquito Cont Assoc 1986; 2:239-240.
9. Copeland RS, **Walker ED**. Sewage-associated breeding of *Aedes dorsalis* and *Aedes* *sollicitans* in southwestern Michigan. J Amer Mosquito Cont Assoc 1986; 2:91.
10. **Walker ED**, Edman JD. Influence of eastern chipmunk and gray squirrel (Rodentia: Sciuridae) defensive behavior on feeding success of *Aedes triseriatus* (Diptera: Culicidae). J Med Entomol 1986; 23:1-10.
11. **Walker ED**, Poirier SJ, Veldman WT. Effects of *Ascogregarina barretti* (Eugregarinida: Lecudinidae) infection on emergence success, development time, and size of *Aedes triseriatus* (Diptera: Culicidae) in microcosms and tires. J Med Entomol 1987; 24:303-309.
12. **Walker ED**. Efficacy of sustained-release formulations of *Bacillus thuringiensis* var. *israelensis* and methoprene for control of *Coquillettidia perturbans* in Indiana. J Amer Mosquito Control Assoc 1987; 3:97-99.
13. **Walker ED**, Copeland RS, Paulson SL, Munstermann LE. Adult survivorship, population density, and body size in sympatric populations of *Aedes triseriatus* and *Aedes hendersoni* (Diptera: Culicidae). J Med Entomol 1987; 24:485-493.
14. **Walker ED**, Archer WE. Sequential organization of grooming behaviors of the mosquito, *Aedes* *triseriatus*. J Insect Behav 1988; 1:97-109.
15. **Walker ED**, Merritt RW, Wotton RS. Analysis of the distribution and abundance of *Anopheles quadrimaculatus* (Diptera: Culicidae) larvae in a marsh. Environ Entomol 1988; 17:992-999.
16. **Walker ED**, Olds EJ, Merritt RW. Gut content analysis of mosquito larvae (Diptera: Culicidae) using DAPI stain and epifluorescence microscopy. J Med Entomol 1988; 25:551-554.
17. **Walker ED**, Merritt RW. The significance of leaf detritus to mosquito (Diptera: Culicidae) productivity from tree holes. Environ Entomol 1988; 17:199-206.
18. Merritt RW, **Walker ED**, Wilzbach MA, Cummins DW, Morgan WT. A broad evaluation of *B.t.i.* for black fly (Diptera: Simuliidae) control in a Michigan river: efficacy, carry and nontarget effects on invertebrates and fish. J Amer Mosquito Cont Assoc 1989; 5:397-415.
19. Pumpuni CB, **Walker ED**. Population size and survivorship of adult *Aedes* *triseriatus* in a scrap tireyard in northern Indiana. J Amer Mosquito Cont Assoc 1989; 5:166-172.
20. Knepper RG, **Walker ED**. Effect of *Bacillus thuringiensis israelensis* (H-14) on the isopod *Asellus forbesi* and spring *Aedes* mosquitoes in Michigan. J Amer Mosquito Cont Assoc 1989; 5:596-598.
21. Olds EJ, Merritt RW, **Walker ED**. Sampling, seasonal abundance, and mermithid parasitism of larval *Coquillettidia perturbans* in south-central Michigan. J Amer Mosquito Cont Assoc 1989; 5:586-592.
22. **Walker ED**, Edman JD. Evaluation of fenoxycarb against spring *Aedes* mosquitoes in Massachusetts. J Amer Mosquito Cont Assoc 1990; 6:725-726.
23. Merritt RW, Olds EJ, **Walker ED**. Natural food and feeding behavior of *Coquillettidia perturbans* larvae. J Amer Mosquito Cont Assoc 1990; 6:35-42.
24. Grimstad PR, **Walker ED**. *Aedes* *triseriatus* and La Crosse virus. IV. Nutritional deprivation of larvae affects the adult barriers to infection and transmission. J Med Entomol 1991; 28:378-386.
25. **Walker ED,** Lawson DL, Merritt RW, Morgan WT, Klug MJ. Nutrient dynamics, bacterial populations, and mosquito productivity in tree hole ecosystems and microcosms. Ecology 1991; 72:1529-1546.
26. **Walker ED,** Merritt RW. Behavior of *Aedes triseriatus* (Diptera: Culicidae) larvae. J. Med. Entomol. 1991; 28:581-589.
27. Knepper RG, Wagner SA, **Walker ED**. Aerially applied, liquid *Bacillus* *thuringiensis* var. *israelensis* (H-14) for control of spring *Aedes* mosquitoes in Michigan. J Amer Mosquito Cont Assoc 1991; 7:307-309.
28. Merritt RW, Craig DA, **Walker ED**, Vanderploeg HA, Wotton RS. Interfacial feeding behavior and particle flow patterns of *Anopheles* *quadrimaculatus* larvae (Diptera: Culicidae). J Insect Behav 1992; 5:741-763.
29. Merritt RW, Dadd RH, **Walker ED**. Feeding behavior, natural food, and nutritional relationships of larval mosquitoes. Annu Rev Entomol 1992; 17:349-376.
30. Knepper RG, LeClair AD, Strickler JD, **Walker ED**. Evaluation of Altosid XR sustained-release briquets for control of *Culex* mosquitoes in urban catchbasins. J Amer Mosquito Cont Assoc 1992; 8:239-241.
31. **Walker ED**, Poplar ML, Russell HL. *Ixodes dentatus* (Acari: Ixodidae) in Michigan: first state records and occurrence on a human. Great Lakes Entomol 1992; 25:303-304.
32. **Walker ED**, Grayson MA, Edman JD. Isolation of Jamestown Canyon and Snowshoe Hare viruses (California serogroup) from *Aedes* mosquitoes in western Massachusetts. J Amer Mosquito Cont Assoc 1993; 9:131-134.
33. Miller JR, Spencer JL, Lentz AJ, Keller JE, **Walker ED**, Leykam JF. Sex peptides: important and useful regulators of insect reproduction? In P. Hedin, R. Hollingworth, and J. Menn (eds.). Natural and derived pest management agents. 1993; ACS Press.
34. Strickler JD, **Walker ED**. Seasonal abundance and species diversity of adult Tabanidae (Diptera) at Lake Lansing Park-North, Michigan. Great Lakes Entomol 1993; 26:107-112.
35. **Walker ED**, Merritt RW. Bacterial enrichment of the surface microlayer in an *Anopheles quadrimaculatus* (Diptera: Culicidae) larval habitat. J Med Entomol 1993; 30:1050-1052.
36. Blackmore, M.S., R.L. Berry, W.A. Foster, **E.D. Walker**, T.R. Wilmot, & G.B. Craig, Jr. Records of mosquito-parasitic mermithid nematodes in the north central United States. J Amer Mosquito Cont Assoc 1993; 9:338-343.
37. **Walker ED**, Landis DA. Straw itch mite, *Pymotes tritici*, infestation in brome seed related to acute dermatitis in Michigan granary workers. Great Lakes Entomol 1994; 27:125-128.
38. **Walker ED**, Smith TW, DeWitt J, Beaudo DC, Mclean RG. Prevalence of *Borrelia burgdorferi* in host-seeking ticks (Acari: Ixodidae) from a Lyme disease endemic area in northern Michigan. J Med Entomol 1994; 31:524-528.
39. Knepper RG, Wagner SA, Abel E, **Walker, ED**. Fixed-wing, aerial application of liquid *Bacillus thuringiensis* H-14 (Acrobe) for control of spring *Aedes* mosquitoes in Michigan. J Amer Mosquito Cont Assoc 1994; 10:42-44.
40. **Walker ED.** Transmission of virus in episodes of encephalomyelitis in swine. J Amer Vet Med Assoc 1994; 205:1511-2. (Letter to editor).
41. **Walker ED.** Effect of low temperature on feeding rate of *Aedes stimulans* larvae and efficacy of *Bacillus thuringiensis* var. *israelensis* (H-14). J Amer Mosquito Control Assoc 1995; 11:107-110.
42. **Walker ED**, McLean RG, Smith TW, Paskewitz SM. *Borrelia burgdorferi*-infected *Ixodes scapularis* (Acari: Ixodidae) and *Peromyscus leucopus* (Rodentia: Cricetidae) in northeast Wisconsin. J Med Entomol 1996; 33:165-168.
43. Silverman AL, McCray DG, Gordon SC, Morgan WT, **Walker ED**. Experimental evidence against replication or dissemination of Hepatitis C virus in mosquitoes (Diptera: Culicidae) using detection by reverse transcriptase polymerase chain reaction. J Med Entomol. 1996; 33:398-401.
44. **Walker ED**, Newson HD. Culicidae.  *In*: Merritt, R.W. and K. W. Cummins (eds.). An Introduction to the Aquatic Insects of North America, 3rd ed. 1996; Kendall-Hall, Dubuque, Iowa
45. Knepper RG, **Walker ED**, Wagner SA, Kamrin MA, Zabik MJ. Deposition of malathion and permethrin on sod grass after single, ultra-low volume applications in a suburban neighborhood in Michigan. J Amer Mosquito Cont Assoc 1996; 12:45-51.
46. Merritt RW, Craig DA, Wotton RS, **Walker ED**. Feeding behavior of aquatic insects: Case studies on black fly and mosquito larvae. Invertebrate Biology 1996; 115: pp. 206-217
47. **Walker ED**, O'Meara GF, Morgan WT. Bacterial abundance in larval habitats of *Aedes albopictus* (Diptera: Culicidae) in a Florida cemetery. J. Vector Ecol. 1996; 21: 173-177.
48. **Walker ED**, Kaufman MG, Ayres MP, Riedel MH, Merritt RW. Effect of variation in quality of leaf detritus on growth of the eastern tree hole mosquito, *Aedes* *triseriatus* (Diptera: Culicidae). Can J Zool 1997; 75:706-718.
49. **Walker ED**, Stobierski MG, Poplar ML, Smith TW, Murphy AJ, Smith PC, Schmitt SM, Cooley TM, Kramer CM. Geographic distribution of ticks (Acari: Ixodidae) in Michigan, with emphasis on *Ixodes* *scapularis* and *Borrelia burdgorferi*. J Med Entomol 1998; 35:872-882.
50. **Walker ED**, Torres EP, Villanueva RT. Components of the vectorial capacity of *Aedes poicilius* for *Wuchereria bancrofti* in Sorsogon province, Philippines. Annals Trop Med Parasitol 1998; 92:603-614.
51. Smith TW, **Walker ED**, Kaufman MG. Bacterial density and survey of cultivable heterotrophs in the surface water of a freshwater marsh habitat of *Anopheles quadrimaculatus* larvae (Diptera: Culicidae). J Amer Mosquito Cont Assoc 1998; 14:72-77.
52. Straif S, Mbogo CN, Toure AM, **Walker ED**, Kaufman M, Toure YT, Beier JC. Midgut bacteria in anopheline mosquitoes *Anopheles gambiae* and *An. funestus* (Diptera: Culicidae) from Kenya and Mali. J Med Entomol 1998; 35:222-226.
53. Strand RM, Herms DA, Ayres MP, Kubiske ME, Kaufman MG, **Walker ED**, Pregitzer KS, Merritt RW. Effects of atmospheric CO2, light availability, and tree species on the quality of leaf detritus as a resource for treehole mosquitoes. Oikos 1999; 84:277-283.
54. Kaufman MG, **Walker ED**, Smith TW, Merritt RW, Klug MJ. The effects of larval mosquitoes (*Aedes triseriatus*) and stemflow on microbial community dynamics in container habitats. Appl Env Microbiol 1999; 65:2661-2673.
55. Lindblade KA, **Walker ED**, Onapa AW, Katungu J, Wilson ML. Highland malaria in Uganda: Prospective analysis of an epidemic associated with El Niño. Trans Roy Soc Trop Med Hyg 1999;93:480-487. PMID: 10696401
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57. Kron MA, Hernandez L, Torres EP, **Walker ED**. Lymphatic filariasis in the Philippines. Parasitology Today 2000; 16:329-333.
58. Lindblade KA, **Walker ED**, Wilson ML. Early warning of malaria epidemics in African highlands using *Anopheles* (Diptera: Culicidae) indoor resting density. J Med Entomol 2000; 37:664-674. PMID: 11004777
59. Kaufman MG, **Walker ED**, Odelson DA, Klug MJ. Microbial community ecology and insect nutrition. Amer Entomol 2000; 46:173-184.
60. Guerra MA, Kitron U, **Walker ED**. Quantitative approach to diagnosis of canine Lyme disease by immunoblot. J Clin Microbiol 2000; 38:2628-2632.
61. Aultman K, **Walker E**, Gifford F, Severson D, Beard CB, Scott TW. Managing risks of arthropod vector research. Science 2000; 88:2321-2322.
62. Lindblade, KA , **Walker ED**, Onapa AW, Katungu J, Wilson ML. Land-use change alters malaria transmission patterns by modifying temperature in a highland area of Uganda. Trop Med Intl Hlth 2000; 5:263-274. PMID: 10810021
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64. Aultman KS, Beaty BJ, **Walker ED**. Genetically manipulated vectors of human diseases: a practical overview. Trends Parasitol 2001; 17:507-509. PMID: 11872381
65. Blow JA, Turell MJ, Silverman A, **Walker ED**. Stercorarial shedding and transtadial persistence of Hepatitis B virus in the common bed bug, *Cimex lectularius* (Hemiptera: Cimicidae). J Med Entomol 2001; 38:694-700.
66. Xu Y, Nagai M, Bagdasarian M, Smith TW, **Walker ED**. Expression of P20 from *Bacillus thuringiensis* H-14 synergizes Cry11A toxin production and enhances mosquito larvicidal activity in recombinant Gram negative bacteria. Appl Environ Microbiol 2001; 67:3010-3015.
67. Kaufman MG, Bland SJ, Worthen ME, **Walker ED**, Klug MJ Bacterial and fungal biomass responses to feeding by larval *Aedes triseriatus* (Diptera : Culicidae). J Med Entomol 2001; 38:711-719.
68. Silverman AL, Qu LH, Blow J, Zitron IM, Gordon SC, **Walker ED**. Assessment of hepatitis B virus DNA and hepatitis C virus RNA in the common bedbug (*Cimex lectularius* L.) and kissing bug (*Rhodnius* *prolixus* Stal). Amer J Gastroenterology 2001; 96:2194-2198.
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71. Masten SJ, Yang HK, **Walker ED**, Roman H, Yokoyama MT. Toxicity of ozonated animal manure to the house fly, *Musca domestica*. J Environ Qual 2001; 30: 1624-1630.
72. Foster WA, **Walker ED**. Mosquitoes (Culicidae), Chapter 12. Pp. 204-262. *In:* G. Mullen and L. Durden (eds.). Medical and Veterinary Entomology 2002; Academic Press, New York.
73. Blow JA, Turell MJ, Silverman A, **Walker ED**. Post-bloodmeal diuretic shedding of Hepatitis B virus by mosquitoes (Diptera: Culicidae). J Med Entomol 2002; 39:605-612. PMID: 12144291
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***In progress***

Matoke-Muhia DM, Athrey G, Kamau L, Shililu J, Bayoh MN, Gimnig JE, **Walker ED**. Changes in genetic structure of an *Anopheles gambiae* s.s. population in western Kenya during long term use of insecticide treated bed nets (in draft preparation).

Chen S, **Walker ED**. Effect of tannins on bacterial community structure in the mosquito midgut (in draft preparation).

Brown N, Keven JB, **Walker ED**. Influence of time of day and insecticide treatment on density of *Culiseta melanura* in black resting boxes in eastern equine encephalitis foci (in draft preparation).

Keven JB, **Walker ED** et al. Jamestown Canyon virus in Michigan mosquitoes: role of Aedes canadensis (in draft preparation).

**Walker ED** et al. Aerial application of *Bacillus thuringiensis* var. *israelensis* for spring Aedes control: long term effectiveness of granular formulations at low application rates.

**RESEARCH SUPPORT**

On-going research support

Gates Foundation (**Hakizimana, Walker, Rutayisire, Ingabire**) 7/01/25 – 6/30/28

Tech-Enabled Larval Source Management for Malaria Control in Rwanda

$4.5 million total costs

Background and major goals: This project will be funded, pending development of a finalized concept note and budget review with program officer Dr. Aysu Uygur of GF. Discussions began in November 2023, and evolved to present with a target start date of 1 May 2025 with the primary recipient being Rwandan agencies and with me at MSU in a funded advisory capacity. The primary goal is to develop an AI/ML and UAS (drone) system that identifies and targets *Anopheles* aquatic larval habitats associated with human agroecosystem activity for malaria control, using a combination of bacterial-based agents as larval control agents (*Bacillus thuringiensis*, *Saccharopolyspora spinosa*). Walker commitment: Two months calendar year salary sponsored per year for 3 years. Support costs to Michigan State University to be determined with finalization of the budget.

Global Grand Challenges, Gates Foundation (**Casseb, Irfan, Walker**) 10/01/24 – 9/30/26

One Health Approach to Data Modelling of *Aedes*-Transmitted Arboviruses in Brazil

$200,000 total costs

Major goals: The impact of climate change on *Aedes*-transmitted arboviral diseases will be holistically studied at multiple scales (meteorological, extreme events, land use change, vector, epidemiological, health policy, and population displacement) through the “One Health” approach. Role: Contributing scientifically to effects of variation in temperature and precipitation on *Aedes* population dynamics and vectorial capacity for dengue and other mosquito-borne viruses. No direct funding line except travel to Brazil.

U01 CK000651 Paskewitz S.; Bartholomay L. (University of Wisconsin); Tsao J.; **Walker E.D.** (Michigan State University under subcontract) 7/01/2022 – 5/31/2027

Midwest Center of Excellence for Vector-Borne Disease $10 million ($1,314,000 to Michigan State University, total costs, supporting Walker/Tsao lab)

Major Goals: This project is active to 2027. The major goals of this center application are to develop, test, and extend control systems for mosquito- and tick-borne diseases in the upper Midwest, to train a cadre of expertise in the area of surveillance and management of vector-borne diseases, and to extend knowledge to the user community and public. Walker commitment one month calendar year with salary sponsored, two months calendar commitment unsponsored.

COMPLETED

Rhode Island Department of Environmental Management (Couret**,** **Walker**) Michigan State University under subcontract) 3/01/23 – 2/28/2024

Innovating resting boxes for management of *Culiseta melanura* populations and to reduce EEE virus transmission $175,424.35 total costs ($94,801 to Michigan State

University

Major goals: This project ended in 2024. The major goals of this project were to extend completed proof of concept research on insecticide treated boxes to expanded formulations, field tests of durability of single treatment systems, cost effectiveness, and operational implementation coupled to mosquito-based virus surveillance at EEE endemic sites in Rhode Island. Walker commitment was two months calendar year salary sponsored.

U19AI089683 Taylor, Mathanga (PIs) 6/1/17-5/31/24

NIAID Int’l Ctrs of Excellence for Malaria Research $1.0 million/yr direct costs

The Intransigence of Malaria in Malawi: Understanding Hidden Reservoirs, Successful Vectors and Prevention Failures

Major goals: This project ended in 2024. The objective of this research was to characterize malaria transmission and epidemiological patterns to explain the resilience of malaria in the face of strong control measures imposed upon it in Malawi. Role: Co-Investigator on Projects 2 (Transmission) and 1 (Epidemiology). Walker commitment: one month calendar year.

U01CK000505 Paskewitz, Bartholomay, **Walker** (PIs) 4/01/17-12/31/21 NCE to 6/30/22

CDC Midwest Center of Excellence in Vector-Borne Disease $2,000,000/yr DC

The objective of this center is to establish a system of research and surveillance for tick- and mosquito-borne diseases in the upper Midwest. It involves collaborators at University of Wisconsin, Michigan State University, Iowa State University, University of Illinois, and with governmental agencies in Minnesota, Michigan, Wisconsin, and Chicago. Role: PI for Michigan State University subcontract. *MSU funding: $200,000/yr DC. 2018-19 supplement: $64,000 DC. Additional supplement in 2019-2020: $64,000 DC.*

1D43TW010075 Laufer (PI) 5/1/16-12/31/21

NIH Fogarty International Center $300,000/yr DC

Interdisciplinary malaria research training in Malawi

The purpose of this training program is to conduct training and research for doctoral fellows in the context of malaria transmission, epidemiology, and pathogenesis in Malawi. Role: Co-investigator and supervisor for one doctoral trainee in vector biology. $44,345 DC to Michigan State University to support one graduate student.

RC068038 **Walker** (PI) 9/30/18-9/29/21

Saginaw County Mosquito Abatement Commission $22,545/yr DC

The objective of this project is to survey select species of mosquitoes for infection with West Nile virus, Jamestown Canyon virus, La Crosse virus, St. Louis Encephalitis virus, for mosquitoes of Saginaw County, Michigan This work supplements efforts in 723K866 described above with 21% overhead charge.

RC073476 **Walker** (PI) 9/30/18-9/29/21

Multi-Agency Mosquito-Borne Encephalitis Surveillance $14,323/yr DC

The objective of this project is to survey Michigan and Illinois mosquitoes for infection with West Nile virus, Jamestown Canyon virus, and other medically important mosquito borne viruses. This work supplements efforts in 723K866 described above with 21% overhead charge. Agencies including Bay County Mosquito Control, Tuscola County Mosquito Control, and Clarke Environmental Mosquito Management.

BAA 75D301-20-R-67837 **Walker (PI)** 9/1/20-12/31/21

CDC Innovations in vector control $140,455 DC total project

Insecticide treated resting stations to control adults of the enzootic mosquito vector of EEE virus, *Culiseta melanura*

This research develops and tests lambda-cyhalothrin treated resting stations placed in perimeter habitats of the mosquito *Culiseta melanura* to reduce their vectorial capacity for EEE virus.

3U19AI089683 10S1 Mathanga (PI). 6/1/19-5/31/21

NIAID Int’l Ctrs of Excellence for Malaria Research $500,455/yr DC

The effectiveness of RTS,S vaccine and PBO nets in the context of other malaria interventions in Malawi. The objective of this program supplement to U19AI089683 (above) is to analyze the combined effects of a transmission protecting malaria vaccine and insecticide resistance-obviating bed nets to malaria transmission and infection in high transmission areas of Malawi. Role: Co-investigator for Project 2.

1D43TW009639 **Walker (PI)** 9/1/13-8/31/19

NIH Framework Programs for Global Health Innovation

Intersectoral Fellowships on Irrigated Agriculture and Human Health in Malawi

The purpose of this training program is to conduct training and research for postdoctoral fellows in the context of landscape transformation, irrigation, crop agriculture, and malaria transmission in Malawi. Role: Program coordinator and mentor of 7 postdoctoral fellows in Malawi.

2R37AI021884-27 **Walker (PI)** 7/01/08-12/31/18

NIH/NIAID MERIT award

Larval Mosquito Feeding and Microbial Interactions

This research examines tree hole mosquito growth performance using experimentation, germ-free mosquitoes, modeling, and microarray analysis of the functional roles of microbial communities in transforming organic matter into mosquito biomass. It also involves genetic transformation of *Flavobacterium* with genes encoding protein toxins of mosquito larvae. Beginning as an R01 grant in 1992, it converted to an R37 MERIT award in 2008.

U19AI089683 Taylor (PI) 10/1/10-9/30/17 0.5 calendar

NIAID Int’l Ctrs of Excellence for Malaria Research

Determinants of Malaria Disease in Malawi

The objective of this research is to characterize malaria transmission, epidemiological patterns, and clinical presentations across three disparate ecological settings of Malawi, in preparation for malaria control interventions. *Continued by U19AI089683, above.*

2D43 TW007377-06 Zimmerman (PI) 6/1/11-5/31/16 1.2 calendar

Fogarty International Center

Case-PNG Global Infectious Disease Research Training Program (D43) This GIDRTP addresses the needs for training and expertise in Epidemiology/Biostatistics and Entomology in public health practice and scientific research on infectious diseases in Papua New Guinea. This will be accomplished through linkage of the PNG Institute of Medical Research and academic partners with graduate degree programs at Case Western Reserve University and Michigan State University. NCE to August 2017.

EF-0813290 Goldberg (PI) 9/01/08-8/31/14 1.5 calendar

NSF/NIH Ecology of Infectious Diseases $122,078 (2013-2014 no cost extension year)

West Nile Virus: Eco-epidemiology of Disease Emergence in Urban Areas II

The overall goal of this project was to determine how ecological processes on fine spatial and temporal scales create localized foci of WNV transmission across urban landscapes. Role: Co-investigator.

0723770 **Walker** (PI) 9/01/07-8/31/13 2.7 calendar

NSF Ecology of Infectious Diseases $287,541 (2012-2013 no cost extension year)

Reducing Parasite Transmission Across a Varied Landscape: Ecological and Social Contexts of a Malaria Intervention.

The goals of this research were to quantify the effects of the use of insecticide treated bed nets, as a perturbation on the malaria transmission system, on population structure of human malaria vectors and malaria parasites in an area of high bed net use in western Kenya; and to quantify the social acceptability of these devices under conditions of high or low population education about them.

AN #2972998 Messina (PI) 10/1/07 – 9/30/11 1.0 calendar

NIH RFA-RM-07-004 $199,911

Dynamic Ecological Simulation Model of Tsetse-Transmitted Trypanosomiasis in Kenya

The aim of this research was to model the distribution of tsetse presence/absence, tsetse abundance, and *T. brucei* infection in tsetse across variable Kenyan landscapes in relation to an anti-tsetse intervention. Role: collaborator.

R01AI50703 **Walker** (PI) 7/01/02-6/30/07 3.0 calendar

NIH/NIAID $250,000

*Anopheles gambiae*: Microbial mediation of habitat selection and production

This research examined oviposition behavior of *Anopheles gambiae* mosquitoes in response to habitat and microbial cues, and quantified production of adult mosquitoes from larval habitats in relation to microbial and nutritional factors. It also related larval habitat distribution and production to landscape and land use characteristics.

U01AI0508542 **Walker** (PI) 7/01/03-6/30/08 3.0 calendar

NIH/NIAID $250,000

Insecticide treated nets and insecticide mosaics

This research examined behavioral elements of mosquito-insecticide treated net interactions, tested long lasting impregnated nets for effectiveness and spectrum of activity, and evaluated emergence of insecticide resistance in *Anopheles gambiae* s.s. populations in western Kenya.

R03TW001180 **Walker** (PI) 7/01/2000 – 6/30/03 1.0 calendar

NIAID/Fogarty International Center $50,000

Microbial mediation of habitat production

This research project aimed to develop a research collaboration with the Center for Vector Borne Disease Research of the Kenya Medical Research Institute in Kisumu, Kenya. The research aim was to develop studies focused on *Anopheles gambiae* larval population dynamics, larval habitat production, and microbial influences on larval growth and development.

R01 AI021884 **Walker** (PI) 7/01/92-6/30/08 3.0 calendar

NIH/NIAID $250,000

Larval Mosquito Feeding and Microbial Interactions

This research examines tree hole mosquito growth performance using experimentation, germ-free mosquitoes, modeling, and microarray analysis of the functional roles of microbial communities in transforming organic matter into mosquito biomass. It also involves genetic transformation of bacteria with genes encoding protein toxins of mosquito larvae.

0813290 Goldberg (PI) 9/01/03-8/31/08 1.5 calendar

NSF/NIH Ecology of Infectious Diseases $122,078 subcontract

West Nile Virus: Eco-epidemiology of Disease Emergence in Urban Areas

The overall goal of this project was to determine how ecological processes on fine spatial and temporal scales create localized foci of WNV transmission across urban landscapes. Role: Co-investigator.

6-8038 **Walker** (PI) 1990-2001 1.0 calendar

Saginaw County Mosquito Abatement Commission $16,100

Mosquito borne virus surveillance

The purpose of this annually renewed service subcontract is to provide mosquito borne virus testing services to a mosquito control agency.

R01 AI36917 Kitron (PI) 1996-2000 1.0 calendar

NIH/NIAID $40,000 subcontract

Environmental Determinants of Lyme Disease Foci

This research aimed to elucidate the landscape ecological determinants of foci of Lyme disease in the upper midwestern United States, using a combination of ground-truth and remotely sensed data. Role: collaborator.

U50 CCU-510303 Kitron (PI) 1991-94 2.0 calendar

CDC $30,070 subcontract

Cooperative Agreement to Conduct Research, Treatment, and Education on Lyme Disease

This project focused on a regional survey for *Ixodes scapularis* and associated *Borrelia burgdorferi* infection in the upper midwestern United States.

**Outreach AND PUBLIC SERVICE**

* Mosquito-borne encephalitis surveillance

-Member, Michigan Cooperative Interagency Encephalitis Surveillance Group, 1990-2023

-Laboratory and field surveillance activities in Michigan annually since 1990

-Development and application of surveillance tools

-Training personnel from other agencies in surveillance methods

* Applied mosquito-control research, directed toward improving operational programs

-Mosquito databases: database management, GIS applications, long-term spatial and temporal

trends

-Analysis of insecticide use patterns: resistance monitoring, efficacy, new insecticides trials

* Leadership in Michigan Mosquito Control Association and Michigan's public and private sector Mosquito control programs
* Member, Saginaw County Mosquito Control Commission, Technical Advisory Committee
* Past president, past vice-president, past board of directors member, active member, MMCA
* Perennial program contributor, annual conference
* Planning committee chairperson, 2019-2020
* Conference committee chairperson and EEE symposium organizer, Michigan Mosquito Control Association, February 2020
* Leadership in interagency interactions and extension of knowledge on ticks and Lyme Disease
* Interactions with and support for citizens (phone call referrals, identifications, etc.)
* Development of outreach and extension publications:

**1.**  "Lyme Disease in Michigan." Interagency pamphlet, revised 1991, E.D. Walker, co-author.

**2.**  Walker, E.D. 1991. "Michigan Mosquito Control Information Brochure." Department of Entomology, Michigan State University, Pest Profiles #PP-18.

**3.** Walker, E., D. Landis, and O. Hesterman. 1990. "Managing blister beetles to prevent horse poisonings." MSU Crops and Soils Newsletter 16: Nov./Dec., 6-7.

**4.**  Walker, E.D. 1992. "Dr. Ned Walker's biosynopsis of . . . The Eastern Treehole Mosquito, *Aedes* *triseriatus*." Wing Beats 3: 17.

**5.** Walker, E.D. 1992. "Fly season is upon us!" Crop and Soil Science Newsletter, June issue, Michigan State University.

**6.**  Extension Bulletin E-2180, "Mosquito Control: a training manual for commercial pesticide applicators." Certification manual for category 7F. E. D. Walker, contributing author.

**7.**  Extension Bulletin E-2492, "Pest Management for Small Animals, A Training Manual for Commercial Pesticide Applicators and Registered Technicians (category 7G)." Written with Julie Stachecki (MSUE).

**8.** Extension Bulletin E-2437 "Aquatic Pest Management: a training manual for commercial pesticide applicators." Certification manual for category 7F. E. D. Walker, contributing author.

**9.** Extension Bulletin E-2601, "Livestock Pest Management: A Training Manual for Commercial Pesticide Applicators (Category 1D)." Written with Julie Stachecki (MSUE).

1. Stobierski, M., S. Thompson, and E. Walker. 1995. Lyme disease educational slide set with text. Interdepartmental set of photographic slides on Lyme disease in Michigan. Primarily aimed at physicians and public health nurses for use in their educational programs.
2. Blow, J., T. Ellis, and E. Walker. 1997. Head louse integrated pest management: a primer for parents and teachers. Extension Bulletin, E-2620.
3. Walker, E. An Introduction to the Mosquitoes of Michigan: Their Biology and Control. <http://www.mimosq.org>. MMCA Website. (Article taken down).
4. Kaufman, M. and N. Walker. 2002. Mosquitoes and West Nile Virus. Extension Bulletin, E-2836.
5. Dubie, T.R. and E.D. Walker. 2018. Insecticide Resistance Monitoring. Midwest Center of Excellence in Vector Borne Diseases. Training Manual and Guide for Testing.

**Graduate Student Training**

**Student Degree program Advising capacity Year**

Kyle Davis MS, iBIO Committee member 2025-present

Brian Stoll MS, Entomology Committee member 2024-present

Lilly Conteh DVM/PhD Committee member 2024-present

Arpita Nayak DVM/PhD Committee member 2023-present

Mashal Copperman PhD, PMI Committee member 2023-present

Nicole Smith BS/MS, MMG Committee member 2023-present

Han Wen PhD, MMG Committee member 2022-present

Michelle Volk PhD, Fisheries & Wildlife Committee member 2021-present

Joanna Colovas BS/MS, MMG Committee member 2021-2022

Fina Binti PhD, MMG Committee member 2019-2022

Rex Mbewe PhD, Entomology Major advisor 2017-2021

John Bosco Keven PhD, MMG Major advisor 2014-2020

April Frake PhD, Geography Co-advisor 2015-2019

Jennifer Kirk PhD, MMG Co-advisor 2014-2021\*

Karla Vasco PhD, MMG Committee member 2019-2022

Joe Receveur PhD, Entomology Committee member 2018-2021

Alshae Logan PhD, MMG Committee member 2019-2020

Viva Kobbekaduwa PhD, Fisheries & Wildlife Committee member 2017-2023

Rebecca Vinit MS, Entomology Major advisor 2015-2017

Seungeun Han PhD, Comparative Med Committee member 2014-2018

Abdullah Alomar MS, Entomology Major advisor 2015-2017

Ari Grode MS, Entomology Committee member 2015-2017

Samantha Hoyle MS Plan B, MMG Major advisor 2015-2016

Veronica Uzalili MS, Entomology Major advisor 2013-2015

Placid Mpeketula PhD, Plant Sciences Committee member 2013-2015

Alita Burmeister PhD, MMG/EEBB Committee member 2013-2016

Jennifer Sidge PhD, Comparative Med Co-advisor 2012-2016

John B. Keven MS, Entomology Major Advisor 2011-2013

Nicole Smith MS, Geography Committee member 2010-2013

Matthew Lundquist MS, Entomology Co-Advisor 2011-2013

Isis Kucaj PhD, Fisheries and Wildlife Committee member 2010-2014

Masanori Fujimoto PhD, MMG Committee member 2010-2013

Jen Mayrberg PhD, MMG Committee member 2007-2011

Rob McCann PhD, Entomology Major Advisor 2008-2013

Rebecca Wright MS, Comparative Med Major Advisor 2009-2013

Megan Fritz PhD, Entomology Co-advisor 2007-2011

Sarah Hamer PhD, Fisheries and Wildlife Committee member 2004-2009

Danielle Donovan MS, Entomology Co-advisor 2008-2011

Emily Johnston MS, Fisheries and Wildlife Committee member 2009-2011

Eric Ochomo MS, Maseno University External advisor 2009-2011

Ben Abong’o MS, Maseno University External advisor 2009-2011

Jackline Jeruto MS, Maseno University External advisor 2009-2011

Damaris Matoke PhD, University of Nairobi External advisor 2008-2012

Amanda Lorenz MS, Entomology Committee member 2009-2011

Gabe Hamer PhD, Fisheries and Wildlife Major advisor 2004-2008

Francis Mutuku PhD, Kenyatta External advisor 2004-2008

Francis Mutuku MSc, Kenyatta External advisor 2002-2004

Simon Muriu MSc, University of Nairobi External advisor 2002-2004

Kirsten Pelz-Stelinski PhD, Entomology Co-advisor 2004-2007

Shireen Woodiga MS, Microbiology Co-advisor 2006-2009

Jaree Johnson MS, Entomology Committee member 2006-2008

Uri Levine PhD, Microbiology Committee member 2006-2008

Philip Otienoburu MS, U. Nairobi External advisor 2005-2006

Maurice Odiere MS, U. Nairobi External advisor 2005-2006

Cheng Yu Lee Ph.D., Forestry Committee member 2003-2006

Elizabeth Wanja M.S., Entomology Committee member 2005-2005

Isabella Moraa M.S., Kenyatta Committee member 2003-2004

Michael Petridis Ph.D., Entomology Major advisor 2001-2005

Shahnaz Maknojia Ph.D., Entomology Major advisor 2002-2006

Erik Foster M.S., Entomology Major advisor 2002-2004

Alicia King M.S., Entomology Co-advisor 2002-2003

Fred Amimo Ph.D., Entomology Co-advisor 2002-2006

Eric Hoffman M.S., Entomology Committee member 2000-2002

Jennifer Meese Ph.D., Biology, Notre Dame Committee member 1999-02

Justin Anderson Ph.D., Biology, Notre Dame Committee member 2000-20003

Ozzie Hernandez M.S., Entomology Committee member 2001-2003

Christian LeSage M.S., Entomology Committee member 2001-2003

Kelly Wessel Ph.D., Entomology Committee member 2000-2004

Dylo Pemba M.S., Entomology\* Major advisor 2000-01

Jennifer Van Dine Ph.D., Entomology Major advisor 2000

Marta Guerra Ph.D., Vet. Path., U. Ill. Committee member 2000

Karen Solis M.S., Vet. Path., U. Ill. Committee member 2000

Pia Macdonald Ph.D., Epid., Michigan Committee member 2000

Beth Johnston Marshall Ph.D., Entomology Co-advisor 1999

Kim Lindblade Ph.D., Epid., Michigan Committee member 1999

John Mugg M.S., Entomology Committee member 1999

Michael Higgins Ph.D., Entomology Committee member 1999

Jamie Blow Ph.D., Entomology Major advisor 1998

John Wallace Ph.D., entomology Committee member 1997

Randy DeJong M.S., zoology Committee member 1997

R.M. Strand Ph.D., Entomology Committee member 1996

Michael Emch Ph.D., Geography Committee member 1996

Mike Alexander M.S., entomology Committee member 1995

Joe Spencer Ph.D., entomology Committee substitute 1994

Anthony Lenz Ph.D., entomology Committee member 1994

Neal Dittmer M.S., entomology Committee member 1994

Marc Abramson M.S., entomology\* Major advisor 1993

Idris Abd-Ghani Ph.D., entomology Committee substitute 1993

Dorothy O'Hara M.S., entomology Committee member 1992

Martha Quentin M.S., entomology Committee member 1991

Jon DeNike M.S., entomology Committee member 1991

\*Withdrawn

**UNDERGRADUATE STUDENT MENTORING – RESEARCH EXPERIENCES (selective list of >100)**

Adam Hwan Bates: MMG Duvall Award, 2007. Coauthor on two publications.

Kerri Miazgowicz: NIH Undergraduate Scholarship, 2010. Coauthor on one publication.

Alvin Makohon-Moore: CNS MPI undergraduate research award, 2010. Coauthor on one publication.

Garrett Berry: coauthor on one publication. CNS undergraduate research support grant, 2010.

Rachael Rudlaff: Professorial assistant, 2011.

Jeffrey Strickler: coauthor on two publications, 1990-1991.

Collin Fitzgerald: 2012-2013.

AJ Yunker: 2012-2013. Co-author on one publication.

Guillermo Moreno: 2013.

Georgia Artzberger, Mayo Clinic fellowship

Kayla Radosa, University of North Carolina vaccine development

Mary Louise Gillies

Lauren Stiffler

Gabe Simjanowski

Megan Pastrick

Molly Engelman

Jordyn Welsch

Rachael Gallap

Wiley Welsh

Justin Walter

Sydney Miller

Morgan Ramsdell

Alex Urlaub

Jay Wingle

Jared Merchant

Nick Brown

Emma Bush

Thomas Yan

Asher Howarth

Nick Demski

Saloni Shah

Liam Shine

Taylor Pettiway

Josilyn Slagter

**POSTDOCTORAL RESEARCH ASSOCIATES AND FELLOWS**

**Individual Tenure Current position**

Dr. John B. Keven 2020-2021 Assistant Professor, Rutgers University

Dr. Trisha Dubie 2017-2020 Analyst, ACT Laboratories, Lansing, Michigan

Dr. Beth Cheever Norman 2014-2018 Director, Science and Research, Lacawac Biological Station

Dr. Grivin Chipula 2014-2019 Lilongwe University of Agriculture and Natural Resources

Dr. Wezi Mkwaila 2014-2019 Lilongwe University of Agriculture and Natural Resources

Dr. Charles Mangani 2014-2019 University of Malawi, College of Medicine

Dr. Tasokwa Kakota 2014-2019 Lilongwe University of Agriculture and Natural Resources

Dr. Isaac Mambo 2014-2019 Lilongwe University of Agriculture and Natural Resources

Dr. Jerome Chim'gonda-Nkhoma 2014-2019 Lilongwe University of Agriculture and Natural Resources

Dr. Jobiba Chinkhumba 2014-2019 University of Malawi, College of Medicine

Dr. Megan Fritz 2012-2013 Assistant Professor, University of Maryland

Dr. Gabriel Hamer 2009-2011 Associate Professor, Texas A&M University

Dr. Derrick Mathias 2006-2009 Assistant Professor, University of Florida

Dr. Kelvin Chen 2003-18 Assistant Professor, Northern Illinois University

Dr. Juan Huang 2003-06 Research Asst Professor, Michigan State University

Dr. Nabie Bayoh 2002-2009 Associate Scientist, President’s Malaria

Initiative/VectorLink, Lusaka, Zambia

Dr. Yunling Xu 1999-2001 Staff Scientist, FDA, Maryland

Dr. Masaaki Nagai 1998-1999 Staff Scientist, Kitasato Institute, Japan

Dr. Celeste Mazzacano 1997-1998 Invertebrate biologist, CASM Environmental, LLC

Dr. Michael G. Kaufman 1992-2002 Retired, Research Associate Prof., Michigan State University

**Teaching Record (Michigan State University)**

2025 ENT 460 (Spring; Medical Entomology; 3 lectures)

2024 MMG 425 (Fall; Microbial Ecology, 28 lectures and responsibilities)

MMG 421 (Fall; Prokaryotic Physiology, 15 lectures, responsible for final exam)

2023 MMG 425 (Fall; Microbial Ecology, 28 lectures and responsibilities)

MMG 421 (Fall; Prokaryotic Physiology, 15 lectures, responsible for final exam)

MMG 991 (Fall; Opportunistic Pathogens, 13 class meetings/lectures)

` ENT 460 (Spring; Medical Entomology; 3 lectures)

2022 MMG 425 (Fall; Microbial Ecology, 28 lectures and responsibilities)

MMG 421 (Fall; Prokaryotic Physiology, 15 lectures, responsible for final exam)

ENT 890 (Spring; Insect Population Sampling and Data Analysis, 14 lectures)

MMG 813 (Spring; Molecular Virology, 2 lectures)

HRT/PHL486 (Fall; Biotechnology in Agriculture: Applications and Ethical Issues, one lecture)

2021 MMG 425 (Fall; Microbial Ecology, 7 lectures)

MMG 421 (Fall; Prokaryotic Physiology, 15 lectures)

MMG 991 (Fall; Opportunistic Pathogens, 13 class meetings/lectures)

ENT 460 (Spring; Medical Entomology; 17 lectures)

HRT/PHL486 (Fall; Biotechnology in Agriculture: Applications and Ethical Issues, one lecture)

2020 MMG 813 (Spring; Molecular Virology, 2 lectures)

MMG 425 (Fall; Microbial Ecology, 12 lectures, course co-coordinator)

MMG 421 (Fall; Prokaryotic Physiology, 11 lectures)

HRT/PHL486 (Fall; Biotechnology in Agriculture: Applications and Ethical Issues, one lecture)

2019 MMG 425 (Spring; Microbial Ecology, 12 lectures, course co-coordinator)

MMG 425 (Fall; Microbial Ecology, 12 lectures, course co-coordinator)

MMG 421 (Fall; Prokaryotic Physiology, 11 lectures)

MMG 991 (Fall; Opportunistic Pathogens, 13 class meetings/lectures)

ENT 460 (Spring; Medical Entomology; 8 lectures)

HRT/PHL486 (Fall; Biotechnology in Agriculture: Applications and Ethical Issues, one lecture)

2018 MMG 425 (Microbial Ecology, 14 lectures, course co-coordinator)

MMG 571 (Veterinary Parasitology, 4 lectures, 2 labs)

2017 MMG 425 (Microbial Ecology, 14 lectures, course coordinator)

MMG 571 (Veterinary Parasitology, 4 lectures, 2 labs)

2016 MMG 425 (Microbial Ecology, 10 lectures, course coordinator)

MMG 571 (Veterinary Parasitology, 4 lectures, 2 labs)

MMG 991 Opportunistic Pathogens graduate seminar

2015 MMG 425 (Microbial Ecology, 10 lectures, course coordinator)

MMG 571 (Veterinary Parasitology, 4 lectures, 2 labs)

ENT 815 (Insect Behavior, 2 lectures, one lab)

2014 MMG 425 (Microbial Ecology, 12 lectures, course co-coordinator)

MMG 571 (Veterinary Parasitology, 4 lectures, 2 labs)

2013 MMG 425 (Microbial Ecology, 10 lectures, course co-coordinator)

ENT 425 (Medical Entomology, 8 lectures)

MMG 571 (Veterinary Parasitology, 4 lectures, 2 labs)

CSS294 (International Agriculture seminar, 1 lecture)

MMG 892 (The Insect Microbiome, graduate seminar, 2 lectures)

2012 MMG 425 (Microbial Ecology, 8 lectures, course co-coordinator)

MMG 571 (Veterinary Parasitology, 4 lectures, 2 labs)

MMG 463 (Medical Microbiology, 4 lectures)

2011 MMG 425 (Microbial Ecology, 8 lectures, course co-coordinator)

MMG 571 (Veterinary Parasitology, 4 lectures, 2 labs)

ENT 844 (Insect Ecology, 2 lectures)

MMG 463 (Medical Microbiology, 4 lectures)

2010 MMG 425 (Microbial Ecology, 8 lectures, course co-coordinator)

MMG 571 (Veterinary Parasitology, 4 lectures, 2 labs)

ENT 844 (Insect Ecology, 2 lectures)

MMG 463 (Medical Microbiology, 4 lectures)

2009 MMG 425 (Microbial Ecology, 8 lectures, course co-coordinator)

MMG 463 (Medical Microbiology, 4 lectures)

MMG 571 (Veterinary Parasitology, 2 lectures, 2 labs)

MMG 813 (Molecular Virology, 1 lecture)

2008 MMG 425 (Microbial Ecology, 10 lectures course co-coordinator)

MMG 463 (Medical Microbiology, 7 lectures)

BOT/ENT/ZOOL 485 (Tropical Biology, one lecture)

MMG 571 (Veterinary Parasitology, 4 lectures, 2 labs)

ENT 844 (Insect Ecology, 1 lecture)

2007 MMG 425 (Microbial Ecology, 10 lectures, course coordinator)

MMG 463 (Medical Microbiology, one lecture)

MMG 569 (Principles of Animal Virology, 9 lectures, 2 labs)

MMG 559 (Virology and Immunology, 6 lectures, 1 lab)

BOT/ENT/ZOOL 485 (Tropical Biology, one lecture)

2006 MMG 425 (Microbial Ecology, 10 lectures, course coordinator)

MMG 463 (Medical Microbiology, one lecture)

MMG 569 (Principles of Animal Virology, 9 lectures, 2 labs)

BOT/ENT/ZOOL 485 (Tropical Biology, one lecture)

2005 MMG 425 (Microbial Ecology)

MMG 569 (Principles of Animal Virology, 9 lectures, 2 labs)

BOT/ENT/ZOOL 485 (Tropical Biology, one lecture)

2004 MMG 103 (one lecture)

MMG 425 (one lecture)

BOT/ENT/ZOOL 485 (Tropical Biology, one lecture)

MMG 569 (Principles of Animal Virology, 9 lectures, 2 labs)

2003 MMG 569 (Principles of Animal Virology, 9 lectures, 2 labs)

BOT/ENT/ZOOL 485 (Tropical Biology, one lecture)

MMG 892 (Emerging Infectious Diseases, graduate seminar)

ENT 815 (Insect Behavior, with J. Miller and R. Isaacs, 3 lectures, 2 labs)

MMG 103 (one lecture)

1. MMG 569 (Principles of Animal Virology, 9 lectures, 2 labs)

ENT 812 (Insect Ecological Data Analysis, graduate seminar)

BOT/ENT/ZOOL 485 (Tropical Biology, one lecture)

MMG 301 (one lecture)

2001 BOT/ENT/ZOOL 485 (Tropical Biology, one lecture)

ENT 812 (Insect Ecological Data Analysis)

ENT 815 (Insect Behavior, with J. Miller and R. Isaacs, 3 lectures, 2 labs)

1. ENT 401 and ENT 890 (Special problems, medical entomology)

ENT 844 (Insect Ecology, Evolution, and Conservation; with M. Scriber and R. Merritt)

ENT 812 (Insect Ecological Data Analysis)

BOT/ENT/ZOOL 485 (Tropical Biology, one lecture)

ENT 818 (Insect Systematics, two lectures, two labs, on the Diptera)

1. ENT 815 (Insect Behavior, with J. Miller and R. Isaacs, 3 lectures, 2 labs)

ENT 812 (Insect Ecological Data Analysis)

BOT/ENT/ZOOL 485 (Tropical Biology, one lecture)

1998 BOT/ENT/ZOOL 485 (Tropical Biology, one lecture)

ENT 818 (Insect Systematics, two lectures, two labs, on the Diptera)

1. ENT 815 (Insect Behavior, with J. Miller, R. Isaacs, 3 lectures, 2 labs)

ENT 812 (Insect Ecological Data Analysis)

ENT 401 (special problems in medical entomology)

ENT 844 (Insect Ecology and Evolution, 3 lectures)

HUM MED 818 (Epidemiology of Zoonotic Diseases, 2 lectures)

BOT/ENT/ZOOL 485 (Tropical Biology, one lecture)

1996 ENT 477 (Pest Management I, 2 lectures)

HUM MED 848 (Primary Health Care in Ecuador, 1 lecture)

ENT 460 (Medical Entomology)

BOT/ENT/ZOOL 485 (Tropical Biology, 1 lecture)

1. ENT 805 (IPM Concepts, 2 lectures)

ENT 844 (Insect Ecology and Evolution, 3 lectures)

1994 ENT 805 (IPM Concepts, 2 lectures)

ENT 477 (Pest Management I, 1 lecture)

ENT 460 (Medical Entomology)

1993 ENT 815 (Insect Behavior, 6 lectures and labs, with J. Miller)

ENT 812 (Insects and Foraging Concepts)

1992 ENT 420 (Aquatic Entomology, 2 lectures, for R. Merritt)

ENT 201 (Insects and Society, 1 lecture)

ENT 460 (Medical Entomology)

ISCS (Integrated Science, 1 lecture)

1991 ENT 412 (special topics in medical entomology)

1990 ENT 201 (1 lecture)

ENT 812 (Insects and Foraging Concepts)

**scientific presentations (abbreviated to 2008-2023)**

2008

Hamer, G. L., U. D. Kitron, J. D. Brawn, S. R. Loss, M. O. Ruiz, T. L. Goldberg, D. Hayes,

**E. D. Walker**. 2008. Host selection by *Culex pipiens* and West Nile virus amplification. Illinois Mosquito and Vector Control Association meeting, Peoria, Illinois.

Hamer, G. L., U. D. Kitron, J. D. Brawn, S. R. Loss, M. O. Ruiz, T. L. Goldberg, D. Hayes,

**E. D. Walker**. 2008. Host selection by *Culex pipiens* and the relative importance of avian species to West Nile virus transmission. Michigan Mosquito Control Association meeting, Kalamazoo, Michigan.

**Walker, E.D**. 2008. Urban ecology of West Nile virus transmission. Invited seminar. Centers for Disease Control and Prevention, Fort Collins, Colorado.

**Walker, E.D**. 2008. Malaria vector population response to implementation of insecticide treated bed nets. Invited seminar. Msambweni District Hospital, Kenya.

Mutuku F, Bayoh MN, Hightower AW, Vulule JM, Gimnig JE, Mueke JM, Amimo FA, **Walker ED**. 2008. A supervised land cover classification of a western Kenya lowland endemic for human malaria: associations of land cover with larval *Anopheles* habitats. Poster. Annual conference, American Society of Tropical Medicine and Hygiene.

Mutuku F, Bayoh MN, Hightower AW, Vulule JM, Gimnig JE, Mueke JM, **Walker ED**. 2008. Habitat segregation and characterization of larval *Anopheles* in lowland western Kenya. Poster. Annual conference, American Society of Tropical Medicine and Hygiene.

**Walker, ED**. 2008. Behavioral response of *Anopheles gambiae* to insecticide treated bed nets mediates mortality outcomes. Invited symposium presentation. Annual conference, American Society of Tropical Medicine and Hygiene.

2009

**Walker, ED.** 2009. A locomotor stimulation model for contact mediated excito-repellency phenomena. Invited symposium presentation. Annual conference, American Society of Tropical Medicine and Hygiene.

**Walker, ED.** 2009. George B. Craig, Jr. : Tradition and Transition. Founder’s Memorial Award Lecture. Annual conference, Entomological Society of America.

Hamer GL, Goldberg TL, Anderson TK, Kitron UD, Brawn JD, Ruiz MO, Loss SR, **Walker ED**. Spatial variation in *Culex pipiens* host selection and avian community reservoir competence within an urban focus of West Nile virus transmission. 26 Dec. 2009. Entomological Society of America Conference. Indianapolis, IN.

Kelly P, Hamer GL, Focks D, **Walker ED**. A novel catch basin mosquito emergence trap. 26 Dec. 2009. Entomological Society of America Conference. Indianapolis, IN. Poster presentation.

Hamer GL, Goldberg TL, Anderson TK, Kitron UD, Brawn JD, Ruiz MO, Loss SR, **Walker ED**. Spatial variation in *Culex pipiens* host selection and avian community reservoir competence within an urban focus of West Nile virus transmission. 7 Dec. 2009. Midwest Fish and Wildlife Conference. Springfield, IL. Poster presentation.

Hamer GL, Goldberg TL, Anderson TK, Kitron UD, Brawn JD, Ruiz MO, Loss SR, **Walker ED**. Spatial variation in *Culex pipiens* host selection and avian community reservoir competence within an urban focus of West Nile virus transmission. 20 Nov. 2009. American Society of Tropical Medicine and Hygeine. Washington D.C. Poster presentation.

Wright RJ, Hamer GL, Goldberg TL, Andreadis T, **Walker ED**. *Wolbachia* in *Culex pipiens*: Is there a relationship between *Wolbachia* strain and population substructuring or host selection? 1 Oct. 2009. Phi Zeta Research Day. Michigan State University College of Veterinary Medicine. Poster presentation.

Hamer GL, Goldberg TL, Anderson TK, Kitron UD, Ruiz MO, **Walker ED**. Spatial variation of host selection by *Culex pipiens* mosquitoes and West Nile virus amplification. 4 Aug. 2009. Wildlife Disease Association Conference. Blaine, Washington.

Machiniak M, Hamer GL, **Walker ED**. A method for analysis of multiple blood meals in the West Nile virus mosquito vector, *Culex pipiens*. 16 Apr. 2009. University Undergraduate Research and Arts Forum, Michigan State University. Poster presentation.

Hamer GL, Kitron UD, Ruiz MO, Brawn JD, **Walker ED**, Goldberg TL. 31 Mar. 2009. Eco-epidemiology of West Nile virus II. Ecology and Evolution of Infectious Diseases Meeting. Park City, Utah.

2010

Hamer GL, Goldberg TL, Anderson TK, Kitron UD, Brawn JD, Ruiz MO, Loss SR, **Walker ED**. Spatial variation in*Culex pipiens* host selection and avian community reservoir competencewithin an urban focus of West Nile virus transmission. 4 Feb. 2010. Michigan Mosquito Control Association Meeting. Traverse City, MI.

Donovan DJ, Hamer GL, Ruiz MO, Goldberg TL, **Walker ED**. Sequential sampling and West Nile virus prediction. 3 Feb. 2010. Michigan Mosquito Control Association Meeting. Traverse City, MI.

Wright RJ, Hamer GL, Goldberg TL, Andreadis T, **Walker ED**. *Wolbachia* in *Culex pipiens*: Is there a relationship between *Wolbachia* strain and population substructuring or host selection? 3 Feb. 2010.

Michigan Mosquito Control Association Meeting. Traverse City, MI.

**Walker ED**. A locomotor stimulation model for contacted mediated excite-repellency phenomena. 3 Feb. 2010. Michigan Mosquito Control Association Meeting. Traverse City, MI.

McCann RS, Bayoh MN, Vulule JM, Gimnig JE, Hamel MJ, **Walker E**. Influence of landscape on distribution of adult *Anopheles* spp. in lowland, western Kenya. 13 Dec. 2010. Poster. Entomological Society of America, annual meeting. San Diego, CA.

Lorenz AR, **Walker ED**, Kaufman MG. The role of algae in the ecology of invasive mosquito species *Aedes japonicus*. 13 Dec. 2010. Poster. Entomological Society of America, annual meeting. San Diego, CA.

Donovan DJ, Hamer GL, Goldberg TL, Ruiz MO, **Walker ED**. Sequential sampling schemes for predicting West Nile virus epidemics utilizing *Culex* mosquito infection rates. 13 Dec. 2010. Poster. Entomological Society of America, annual meeting. San Diego, CA.

Morningstar RJ, Kaufman MG, **Walker ED**. Inhibition of larval *Aedes triseriatus* (Diptera: Culicidae) growth associated with fungal blooms and maple leaf detritus. 14 Dec. 2010. Poster. Entomological Society of America, annual meeting. San Diego, CA.

Fritz ML, **Walker ED**, Miller JR. Survivorship and fecundity of the malaria mosquito (*Anopheles arabiensis*) after feeding upon blood treated with cattle dewormers. 14 Dec . 2010. Poster. Entomological Society of America, annual meeting. San Diego, CA.

Kaufman MG, Brouhard EA, **Walker ED**. Microbial community responses to larval competition between *Aedes triseriatus* and *Ae. japonicus*. 15 Dec. 2010. Oral presentation. Entomological Society of America, annual meeting. San Diego, CA.

Hamer GL, Goldberg TL, Anderson TK, Kitron UD, Chaves LF, Brawn JD, Krebs B, Hood-Nowotny R, Donovan DJ, Kaufman MG, **Walker ED**. Dispersal of *Culex pipiens* in an urban focus of West Nile virus transmission: a mark-capture study using stable isotopes. 4 Nov. 2010. Poster presentation. American Society of Tropical Medicine and Hygiene, annual meeting. Atlanta, GA.

Ruiz MO, Krebs B, Hamer G, Gardner A, Brown WM, Brawn J, Small C, **Walker ED**. Vegetation characteristics and West Nile virus transmission potential in suburban neighborhoods. 6 Nov. 2010. Poster presentation. American Society of Tropical Medicine and Hygiene, annual meeting. Atlanta, GA.

Newman C, Cerutti F, Anderson T, Hamer G, **Walker ED**, Kitron U, Ruiz M, Brawn J, Goldberg TL. *Culex Flavivirus* enhances West Nile virus mosquito infection, Chicago USA. 6 Nov. 2010. Poster presentation. American Society of Tropical Medicine and Hygiene, annual meeting. Atlanta, GA.

Goldberg TL, Kitron UD, Ruiz MO, **Walker ED**, Brawn JA, Hamer GL, Anderson TK, Chaves L, Bertolotti L, Amore G, Cerutti F, Krebs B, Newman C. Transmission, amplification, and evolution of West Nile virus in Chicago, USA. 6 Nov. 2010. Poster presentation. American Society of Tropical Medicine and Hygiene, annual meeting. Atlanta, GA.

Anderson TK, Hamer GL, **Walker ED**, Chaves LF, Kitron UD, Brawn JD, Ruiz MO, Goldberg TL. Pattern formation in the dynamics of West Nile virus amplification in a transmission hot spot in Chicago, USA. 6 Nov. 2010. Poster presentation. American Society of Tropical Medicine and Hygiene, annual meeting. Atlanta, GA.

Mutuku FM, King CH, Mungai PL, Muchiri EM, **Walker ED**, Kitron UD. Spatial-temporal distribution of immature and adult malaria vectors in four ecological settings in coastal Kenya. 7 Nov. 2010. Poster presentation. American Society of Tropical Medicine and Hygiene, annual meeting. Atlanta, GA.

2011

**Walker ED**. Malaria and mosquitoes: Down but not out in western Kenya. Invited seminar, Department of Entomology, Michigan State University, 7 Feb. 2011.

**Walker ED**. Malaria and mosquitoes: Down but not out in western Kenya. Queen Elizabeth Central Hospital and Malawi College of Medicine, Blantyre, Malawi, 7 March 2011.

Hamer G, Chaves LF, Anderson TK, Kitron UD, Brawn JD, Ruiz MO, Loss SR, **Walker ED**, Goldberg TL. Fine-scale variation in vector host feeding preferences and force of infection drive localized patterns of West Nile virus transmission. Ecology and Evolution of Infectious Diseases conference. 19 Jun. 2011. Santa Barbara, CA. Poster presentation.

Berry GE, Hamer GL, **Walker ED**. Avian filarioid nematode barcoding. 8 Apr. 2011. University Undergraduate Research & Arts Forum. East Lansing, MI. First place in microbiology student competition.

Hamer GL, Berry GE, Makohon-Moore A, Crafton J, Anderson TK, Goldberg TL, **Walker ED**. Filarioid nematode infections in amplification hosts for West Nile virus. 27 Mar. 2011. Ecology and Evolution of Infectious Diseases Meeting Madison, WI. Poster presentation.

Ochomo E, Bayoh MN, Brogdon W, Gimnig JE, Ouma C, Vulule JM, **Walker ED**. October 2011. The status of insecticide resistance among malaria vector populations in western Kenya. 1st Kenya National Malaria Forum: “Moving from Evidence to Action.” Proceedings and abstract. Nairobi, Kenya.

**Walker E**, Fritz M, Miller J. October 2011. The potential of treatment with the cattle dewormer ivermectin to control vectors of malaria in western Kenya. 1st Kenya National Malaria Forum: “Moving from Evidence to Action.” Proceedings and abstract. Nairobi, Kenya.

Bayoh MN, Mathias DM, Gimnig JE, **Walker E**. 2011. Evaluation of extended release formulations of spinosad for larval *Anopheles* control in western Kenya. 1st Kenya National Malaria Forum: “Moving from Evidence to Action.” Proceedings and abstract. Nairobi, Kenya.

Ochomo E, Bayoh MN, Brogdon W, Gimnig JE, Ouma C, Vulule JM, **Walker ED**. December 2011. Reduced susceptibility to pyrethroid insecticides in *Anopheles gambiae* s.l. populations in western Kenya. American Society of Tropical Medicine and Hygiene, annual meeting. Philadelphia, PA. Poster Presentation.

**Walker ED**. Oviposition site selection by *Anopheles gambiae*: Environmental cues and ecological influences. Invited oral presentation for Symposium: Understanding Mosquito Behavior for Understanding Mosquito Control. December 5, 2011. American Society of Tropical Medicine and Hygiene, annual meeting. Philadelphia, PA.

Bayoh MN, **Walker ED**, Kosgei J, Ombok M, Olang G, Otieno P, Marwanga D, Desai M, Kariuki S, Vulule J, Hamel M, Gimnig JE. December 2011. The human landing catch: Risk of malaria among collectors and the temporality of indoor and outdoor biting by *Anopheles* vectors of malaria in western Kenya. American Society of Tropical Medicine and Hygiene, annual meeting. Philadelphia, PA. Poster Presentation.

2012

**Walker, ED.** Where do mosquitoes come from? Stable isotope technology tracks adults to their larval habitats. Michigan Mosquito Control Association, annual meeting. February 2012. Troy, Michigan.

Smith NJ, Messina JP, **Walker ED**. Downscaling TRMM precipitation estimate imagery using NDVI at a site in Western Kenya. American Association of Geographers (AAG), annual meeting. February 2012. New York, NY.

**Walker, ED**. Vector-borne diseases. Association of Veterinary Microbiologists Heartland Chapter, 18th annual meeting. East Lansing, MI. 30 March 2012. Invited oral presentation.

**Walker ED**. Malaria and mosquitoes: Down but not out in western Kenya. Papua New Guinea Institute of Medical Research, Madang. 17 May 2012. Invited seminar.

Chen S, Kaufman M, **Walker E**. 2012. Efficient production of larvicidal proteins in flavobacteria isolated from the natural larval habitats of the eastern tree hole mosquito, *Aedes triseriatus*. American Society for Microbiology 112nd General Meeting, May 2012, San Francisco. Poster presentation.

Ochomo E, Bayoh N, Ouma C, Gimnig Y, Afrane Y, Yan G, **Walker E**. Contribution of insecticide resistance to the presence of mosquitoes resting on ITNs in Bungoma, western Kenya. November 2012. American Society of Tropical Medicine and Hygiene, annual meeting. Atlanta, GA. Poster Presentation.

Ruiz M, Anderson T, Hamer GL, **Walker E**, Kitron U. Spatial dynamics of abundance and West Nile virus infection of mosquitoes in a suburban neighborhood. November 2012. American Society of Tropical Medicine and Hygiene, annual meeting. Atlanta, GA. Poster Presentation.

McCann R, Smith N, Messina JP, Bayoh N, Ombok M, **Walker E**. Predicting *Anopheles gambiae* larval habitat locations in lowland, western Kenya. November 2012. American Society of Tropical Medicine and Hygiene, annual meeting. Atlanta, GA. Oral Presentation.

Bayoh N, **Walker E**, Desai M, Kosgei J, Odero C, Olang G, Otieno P, Ombok M, Were V, Kariuki S, Vulule J, Gimnig J. Early morning biting by *Anopheles* vectors: A potential risk period for malaria infection in an area with high and sustained use of insecticide treated bed nets in western Kenya. November 2012. American Society of Tropical Medicine and Hygiene, annual meeting. Atlanta, GA. Oral Presentation.

Matoke D, Kamau L, Bayoh N, Gimnig J, **Walker E**. Decline in frequency of the 2La chromosomal inversion in an Anopheles gambiae s.s. population with increasing use of insecticide treated bed nets in western Kenya. November 2012. American Society of Tropical Medicine and Hygiene, annual meeting. Atlanta, GA. Oral Presentation.

Kaufman M, Bateman C, **Walker E**. Growth of *Aedes triseriatus* larvae on individual strains or assemblages of microorganisms. November 2012. Entomological Society of America, annual meeting. Knoxville, TN. Oral Presentation.

Morningstar R, Kaufman M, **Walker E**. Mortality of larval *Aedes triseriatus* and *Aedes japonicus* associated with fungal strains in laboratory and natural environments. November 2012. Entomological Society of America, annual meeting. Knoxville, TN. Poster Presentation.

Fritz, M, LeValley S, **Walker E**, Dworkin I. Incomplete unidirectional cytoplasmic incompatibility and *Wolbachia* *pipientis* diversity in two populations of *Culex pipiens* from metropolitan Chicago, IL. November 2012. Entomological Society of America, annual meeting. Knoxville, TN. Poster Presentation.

2013

**Walker E.** Amplification of West Nile virus in mosquito populations and risk of human infection: Processes and patterns. One Health State-of-the-Art Session, Merial-NIH Veterinary Scholars Symposium, Michigan State University, 2 August 2013. Invited presentation.

**Walker E.** Amplification of West Nile virus in mosquito populations and risk of human infection: Processes and patterns. International Congress for Invertebrate Reproduction and Development, Invertebrate Impacts on Human Health symposium, 18 July 2013. Invited speaker.

**Walker E.** Towards Malaria Elimination: Precedents, Antecedents, and Processes. George B. Craig Memorial Lecture Series, University of Notre Dame, Department of Biological Sciences, August 2013. Invited seminar speaker.

**Walker E.** Towards Malaria Elimination: Precedents, Antecedents, and Processes. Ohio State University, Department of Entomology. September 2013. Invited seminar speaker.

**Walker E.** Ecoepidemiology of West Nile virus transmission in urban areas: Processes and Predictions of Disease Outbreaks. November 2013. One Health Summit, Davos, Switzerland. Invited plenary speaker.

**Walker E.** Vector invasion, range expansion, and models of habitat receptivity. November 2013. Entomological Society of America, annual meeting. Austin, Texas. Invited symposium speaker, *Environmental Determinants and Ecological Consequences of Invasions by Arthropod Disease Vectors*, B. Allen, organizer.

McCann RS, Ochomo E, Bayoh MN, Vulule JM, Gimnig JE, **Walker ED**. Reemergence of *Anopheles funestus* as a vector of *Plasmodium falciparum* in western Kenya. November 2013. American Society of Tropical Medicine and Hygiene, annual meeting. Oral presentation.

2014

**Walker E.** Malaria Elimination. University Lutheran Church, “Forum,” East Lansing, Michigan. April 2014. Invited speaker.

**Walker E.** Malaria Elimination. Michigan State University Alumni Reunion Days, East Lansing, Michigan. April 2014. Invited speaker.

Chen S, Bagdasarian M, **Walker ED**. Development of tools for molecular manipulation of *Elizabethkingia* *anophelis*, a mosquito symbiont. May 2014. American Society for Microbiology, annual meeting. Poster presentation.

**Walker ED.** Towards Malaria Elimination: Precedents, Antecedents, and Processes. North Carolina State University, Department of Entomology. September 2014. Invited seminar speaker.

Chen S, Bagdasarian M, **Walker ED**. Development of tools for molecular manipulation of *Elizabethkingia* *anophelis*, a mosquito symbiont. November 2014. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

**Walker ED**. The agriculture - malaria relationship and the contributions of Delos Lewis Van Dine to the malaria problem in the southern U.S. November 2014. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

**Walker ED**. Mosquito production, population size, and dispersal: New approaches from stable isotope technology. November 2014. Fifth International Forum for Sustainable Vector Management, Qingdao, China. Invited seminar speaker.

2015

**Walker ED**. Mosquitoes and blood feeding: The problem of host selection. Michigan State University, Department of Entomology. January 2015. Invited seminar speaker.

**Walker ED**. Mosquitoes and host selection: environmental and genetic influences. Centre for Global Health Research, Kenya Medical Research Institute, Kisumu, Kenya. February 2015. Invited seminar speaker.

**Walker ED.** Mosquito biology and mosquito borne disease. Medical School Forum, Michigan State University. August 2015. Invited webinar speaker.

**Walker ED**. Towards Malaria Elimination: Precedents, Antecedents, and Processes. University of Illinois, Department of Entomology. September 2015. Invited seminar speaker.

**Walker ED**. Spatial and temporal variation in vector-borne viral disease: Lessons from a West Nile virus system. Sun-Yat Sen University, Department of Parasitology. November 2015. Invited seminar speaker.

Kaufman, MG, Baker M, **Walker ED**. How do different microbial groups affect growth and development of *Aedes triseriatus* larvae? September 2015. Society for Vector Ecology, annual meeting. Oral presentation.  
Chen S, Johnson BK, **Walker ED**. 2015. Transcriptomic analysis of the mosquito symbiont *Elizabethkingia anophelis* in response to iron stress. November 2015. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

Chen S, Uzalili V, Hoyle S, **Walker ED**. 2015. When flavobacteria meet mosquitoes: molecular manipulation, interactions, and biocontrol. *Flavobacterium*2015 international meeting. Auburn, AL, USA. Invited speaker.

Norman BC**,**Ruhs A, Van Alst A , **Walker ED**. Effects of leaf condition on larvae-microbe interactions in water-filled tree holes. September 2015. Society of Vector Ecology, annual meeting. Oral presentation.

Norman BC**,**Ruhs A, Van Alst A , **Walker ED**. Top-down and bottom-up interactions in water-filled tree holes: Implications for microbial diversity and mosquito emergence. May 2015. Society for Freshwater Science, annual meeting. Oral presentation.

Keven JB, Reimer L, Koimbo G, Katusele M, Vinit R, Thomsen E, Siba P, Foran D, Kazura J, Zimmerman PA, **Walker ED**. The host feeding patterns of *Anopheles* mosquitoes from malaria endemic villages in the Madang Province of Papua New Guinea. November 2015. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

2016

**Walker ED**. Mosquitoes and blood feeding: The problem of host selection. Louisiana State University, Department of Pathobiology. April 2016. Invited seminar speaker.

**Walker ED**. Malaria control: Reducing transmission to reduce infection. 24 August 2016. Papua New Guinea Biomedical and Social Science Society, Malaria Colloquium. Keynote speaker.

Norman BC, Ruhs A, Van Alst A, **Walker ED**. Influence of mosquito larvae grazing on leaf-associated microbial community structure. May 21-26 2016. Oral presentation, Society for Freshwater Science Annual Meeting. Sacramento CA.

Keven JB, Reimer L, Katusele M, Koimbu G, Siba P, Robinson L, Kazura J, Zimmerman P, **Walker ED**. Host selection and biting behaviors of malaria vectors in Papua New Guinea: Implications for residual transmission and control. September 2016. International Congress for Tropical Medicine and Malaria, Brisbane, Australia. Oral presentation.

2017

Chen S, Blom J, Loch T, Faisal M, **Walker ED**. The emerging fish pathogen *Flavobacterium spartansii* isolated from Chinook salmon: Genome analysis and molecular manipulation. May 2017. The American Fishery Society - Fish Health Section and Great Lakes Fishery Commission. Annual meeting. Poster presentation.

Chen S, Blom J, Loch T, Faisal M, **Walker ED**. The emerging fish pathogen *Flavobacterium spartansii* isolated from Chinook salmon: Genome analysis and molecular manipulation. May 2017. Michigan Branch, American Society of Microbiology, annual meeting. Poster presentation.

Grode A, Chen S, **Walker ED**, Zsendrei Z. Onion thrips (Thysanoptera: Thripidae) feeding promotes infection by *Pantoea ananatis* in onion. May 2017. Michigan Branch, American Society of Microbiology, annual meeting. Poster presentation.

Norman B, **Walker ED**. Leaf conditioning and mosquito feeding effects on microbial communities. May 2017. Michigan Branch, American Society of Microbiology, annual meeting. Poster presentation.

**Walker ED**. Landscape Ecology, Insect Vectors, and Vector-Borne Diseases: Moving Beyond Risk Mapping to Processes in Space and Time. July 2017. Invited speaker, European Molecular Biology Organization, Molecular and Population Biology of Mosquitoes and Other Disease Vectors.

Chen S, Uzalili V, **Walker ED**. Resistance to antibiotics in the mosquito microbiome: *Serratia* *marcescens* in the gut of *Anopheles stephensi*. August 2017. 4th International Symposium on the Environmental Dimension of Antibiotic Resistance. Poster presentation.

Dear N, Kadangwe C, MzilahowaT, Bauleni A, MathangaDP, Seydel K, Taylor TE, **Walker ED**, Wilson ML. Spatial patterning and fine-scale heterogeneity of malaria risk along an urban-rural continuum in Blantyre, Malawi. November 2017. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.  
CoalsonJE, FrechtlingD, CoheeL, Kadangwe C, Seydel K, Nyambalo A, Valim C, Taylor TE, Mathanga DP, Bauleni A, Pike A, **Walker ED**, Mzilahowa T, Laufer MK, Wilson ML. Human, parasite and environmental factors associated with *Anopheles* mosquito heterogeneity among households of Southern Malawi. November 2017. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

Mangani C, **Walker ED**, Taylor TE, Mzilahowa T, Zulu L, Mathanga DP. Proximity of Human Residence to Irrigation Determines Malaria Risk at an Irrigated Agro-ecosystem in Malawi. November 2017. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.  
Norman BC, **Walker ED.** Mosquito-microbe Interactions in Container Habitats: Effects of Detritus Condition on Mosquito Production and Microbial Communities. November 2017. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.  
Chen S, **Walker ED.** Genomic and physiologic characterization of *Serratia marcescens* isolated from the gut of *Anopheles stephensi*. November 2017. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.  
Pike A, Kadangwe C, CoalsonJE, CoheeL, Bauleni A, Valim C, Taylor TE, Mathanga DP, Kapito-Tembo A, Wilson ML, **Walker ED**, Laufer M, Mzilahowa T. Distribution, infection status and blood-feeding behavior of *Anopheles* spp. mosquitoes in Southern Malawi. November 2017. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.  
Liu Y, SergentSB, Abong'o B, Otieno K, Gimnig JE, **Walker ED**, Kariuki S, Desai M, Shi YP, Zhou Z.Decline of multiple infections of *Plasmodium falciparum* from 2007 to 2012 and difference in multiple infections between humans and mosquitoes in western Kenya. November 2017. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.  
Frake A, Messina J, **Walker ED**, Zulu L, Mangani C, Mkwaila W, Chipula G, Taylor TE, Mzilahowa T, Mathanga. Scaling Irrigation and Malaria Risk in Malawi. November 2017. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.  
Mkwaila W, **Walker ED**, Mangani C, Zulu L, Taylor TE, Mathanga DP, Mzilahowa T. Malaria Vector Density and Proximity of Human Residence to an Irrigated Agro-ecosystem in Malawi. November 2017. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

2018

~**Walker ED**. Malaria, *Anopheles*, landscapes, and the human dwelling: Historical and contemporary perspectives. January 2018. Dept of Entomology, Michigan State University. Invited seminar.

~Norman B, **Walker ED**. Labile and recalcitrant carbon pools during leaf decomposition: who is using what when? May 2018. Society of Freshwater Science, annual meeting. Poster Presentation.

~Kirk J, **Walker ED**. The mosquito tree hole ecosystem as a hypoxic reducing environment: implications for vector control. May 2018. Society of Freshwater Science, annual meeting. Poster Presentation.

**~Walker ED**. Malaria, irrigation, and agriculture: A case study in Malawi. February 2018. Michigan Mosquito Control Association. Oral presentation.

~Tedrow RE, Ratovonjato J, Ratsimbasoa A, **Walker ED**, Zimmerman PA. Application of a novel multiplex assay to assess *Anopheles* malaria transmission ecology in the central highlands of Madagascar. October 2018. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

~Chen S, **Walker ED**. Genomic and symbiotic analyses of *Asaia* sp. W12 isolated from the gut of the mosquito *Anopheles stephensi*. October 2018. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

~Keven JB, Katusele M, Vinit R, Rodriguez DR, Hetzel MW, Laman M, Robinson LJ, Karl S, **Walker ED**. Plasticity of host selection, non-random human feeding and spatial heterogeneity of exposure to malaria vectors in Papua New Guinea. October 2018. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

~Frake AN, Chipula G, Messina JP, Zulu L, Mzilahowa T, **Walker ED**. Multi-scalar analysis of *Anopheles* mosquito larval distribution in a gravity-fed irrigation system in Malawi. October 2018. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

~Frake AN, Peter BG, Messina JP, **Walker ED**. Leveraging big data for public health: Mapping malaria vector habitat suitability in Malawi with Google Earth Engine. October 2018. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

~Mkwaila W, **Walker ED**, Mangani C, Zulu L, Taylor TE, Mathanga DP, Mzilahowa T. Seasonality of malaria vector abundance along an irrigation gradient in Bwanje Valley Scheme in Malawi. October 2018. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

~Mangani C, Chinkhumba J, Chipula G, Mzilahowa T, Mathanga DP, **Walker ED**. Irrigation and Malaria in Malawi: Malaria Infection Interacts with Poverty at Bwanje Valley Irrigation Scheme. October 2018. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

2019

~**Walker ED**. California serogroup viruses: Overview and emphasis on emerging Jamestown Canyon virus. February 2019. Michigan Mosquito Control Association. Oral presentation.

~**Walker ED**. Malaria, *Anopheles*, landscapes, and the human dwelling: Historical and contemporary perspectives. April 2019. Dept of Entomology, University of California, Riverside. Invited seminar.

~**Walker ED**. The Midwest Center of Excellence in Vector Borne Diseases. April 2019. Dept of Entomology, University of California, Riverside. Invited seminar.

~**Walker ED.** Geospatial analysis and *Anopheles* habitat suitability modeling. Gene Drive-Mosquito Monitoring and Surveillance Meeting, NIH Foundation, April 24-26, Washington DC. Invited oral presentation.

**~Walker ED.** California serogroup viruses: Overview and emphasis on emerging Jamestown Canyon virus. October 2019. Ohio Mosquito and Vector Control Association. Oral presentation.

**~Walker ED.** Jamestown Canyon virus associations with mosquitoes, Michigan, 2018-2019. November 2019. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

~Frake AN, Peter BG, Messina JP, **Walker ED**. Leveraging big data for public health: Mapping malaria vector habitat suitability in Malawi with Google Earth Engine. November 2019. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

**~Walker ED.** EEE and mosquitoes in southwest Michigan: History, biology, and epidemiology. Kalamazoo County Health Department, Environmental Health Council, December 2019.

2020

**~Walker ED.** EEE in Michigan: Historical context. Michigan Mosquito Control Association, annual conference, February 2020.

**~Walker ED.** EEE in Michigan: Towards surveillance and control. Kalamazoo County Health Department, Environmental Health Council, February 2020, invited presentation.

~ Keven JB, Katusele, M, Vinit R, Rodriguez D, Hetzel MW, Laman M, Robinson LJ, Karl S, **Walker ED**. Opportunistic blood host utilization and spatial heterogeneity of Anopheles bites promote

persistent malaria transmission in Madang, Papua New Guinea. November 2020. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

2021

~**Walker ED**. Sampling *Culiseta melanura* mosquitoes(or *Culiseta* in the time of Covid). Michigan Mosquito Control Association, annual conference, February 2021.

~**Walker ED**. Spatial relationships and localization of endemic EEE foci in the Michigan landscape. EEE Northeastern Eastern Equine Encephalomyelitis Symposium, May 2021, invited presentation.

~**Walker ED.** Mosquito borne diseases of Michigan. Michigan Pest Management Association, annual conference, Frankenmuth, MI, July 2021, invited presentation.

~**Walker ED**. Mosquito borne diseases of Michigan. Category 7F training, October 2021, Bay County, Michigan.

~Chen S, **Walker ED**. Gut microbiota in *Aedes triseriatus* (say) contribute to detoxification of tannic acid. November 2021. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

~Keven JB, … **Walker ED**. Population genetic structure of the *Anopheles punctulatus* complex in Papua New Guinea. November 2021. American Society of Tropical Medicine and Hygiene, annual meeting. Poster presentation.

Mbewe RB, … **Walker ED**. Biased human host selection by *Anopheles* vectors of malaria in Malawi. November 2021. American Society of Tropical Medicine and Hygiene, annual meeting. Oral presentation.

2022

**~Walker ED.** The alphabet soup of emerging mosquito-borne viruses in Michigan: EEE, JCV, WNV. January 2022. Dept of Entomology, Michigan State University. Invited seminar.

~**Walker ED**. Insecticide treated black resting stations to control *Culiseta melanura* populations and EEE virus transmission. Michigan Mosquito Control Association, annual conference, February 2022.

**~Walker ED.** Ticks and Mosquitoes: Risks to the forester. ARBORCON, February 2022. Invited presentation, one hour.

**~Walker ED.** Mosquito update. Rose Pest Control conference, April 2022. Invited presentation, one hour.

~**Walker ED**. Insecticide treated black resting stations to control *Culiseta melanura* populations and EEE virus transmission. North Central Mosquito Control Association, April 2022.

**~Walker ED.** Relational, Relevant, Reciprocal, Resourceful, Risk-tolerant: Guiding R’s for the Dynamic Future of Entomology and Nematology. University of Florida, Invited Seminar, August 2022.

**~Walker ED.** Mosquitoes and insecticide resistance. Keynote speaker. Ohio Mosquito and Vector Control Association, October 2022. Invited presentation, one hour.

Mbewe RB, Keven JB, Mangani C, Wilson M, Mzilahowa T, Mathanga D, Valim C, Laufer MK, **Walker ED**, Cohee LM. Genotyping of *Anopheles* mosquito blood meals reveals nonrandom human host selection: implications for Plasmodium falciparum transmission, Malawi. November 2022. American Society of Tropical Medicine and Hygiene, annual meeting, Seattle. Oral presentation by former graduate student Rex Mbewe, travel grant awardee.

2023

~**Walker ED**. Variation in susceptibility to permethrin in populations of *Culex pipiens* and *Culex restuans* in the Great Lakes region. Michigan Mosquito Control Association, annual conference, February 2023.

~**Walker ED**. Mosquitoes and insecticide resistance. Michigan Pest Management Association, annual conference, February 2023.

~**Walker ED**. EEE in Michiana: Vulnerable landscapes and focused control. Indiana Vector Control Association, annual conference, March 2023.

~**Walker ED**. EEE in Michigan: Vulnerable landscapes and ideas for community-based control. Calvin University, Invited Seminar, April 2023.

**~Walker ED.** Invasion Biology of Vectors and Vector-Borne Pathogens. Mekong One Health Innovation Program, Invited Presentation, April 2023.

~**Walker ED**, Keven JB. Insecticide treated resting stations reduce parity rate of the enzootic mosquito vector of EEE virus, *Culiseta melanura*. American Society of Tropical Medicine and Hygiene, annual meeting, Chicago, November 2023. Poster presentation, abstract submitted for consideration.

~ Silas Agumba, Vincent Moshi, Margaret Muchoki, **Edward Walker**, John Grieco, Bernard Abong’o, Eric Ochomo. Experimental hut and field evaluations of the Thermacell® based metofluthrin spatial repellent against pyrethroid resistant *Anopheles funestus* in Siaya, western Kenya. American Society of Tropical Medicine and Hygiene, annual meeting, Chicago, November 2023. Poster presentation.

~ Silas Agumba, Vincent Moshi, Margaret Muchoki, **Edward Walker**, John Grieco, Bernard Abong’o, Eric Ochomo. Experimental hut and field evaluations of the Thermacell® based metofluthrin spatial repellent against pyrethroid resistant *Anopheles funestus* in Siaya, western Kenya. Pan African Mosquito Control Association, annual meeting, Addis Ababa, September 2023. Oral presentation, abstract submitted for consideration.

**~Walker ED**. Grant Writing and Reviewing: Shared Experiences and Perspectives. ASEAN Grant Writing Workshop, October 2023. Oral presentation.

**2024**

**~Walker ED.** Malaria in the millennium: Transmission reduction as an elimination paradigm and its consequences. Invited seminar, Department of Microbiology, Genetics, and Immunology; Michigan State University, January 2024. Oral presentation.

**~Walker ED.** Biology and control of *Culiseta melanura* mosquitoes in Michigan’s EEE hot spots.

Michigan Mosquito Control Association, February 2024. Oral presentation.

~Brown N, **Walker ED**. *Culiseta melanura* resting behavior over the 24-hour diel cycle in black boxes.

Michigan Mosquito Control Association, February 2024. Oral presentation.

**~Walker ED.** Invasion biology of vectors and vector-borne pathogens. Mekong One Health Innovation Program (MOHIP), February 2024. Oral presentation.

**~Walker ED**, Yuill TM. Snowshoe hare virus: Discovery, distribution, vector and host associations, and medical significance. Invited participant. Symposium on Endemic and Emerging Mosquito-Borne Viruses. Annual meeting, American Mosquito Control Association, Dallas TX. March 2024. Oral presentation.

**~Walker ED**, Keven JB. Insecticide treated resting stations reduce parity rate of the enzootic mosquito vector of EEE virus, *Culiseta melanura*. Annual meeting, American Mosquito Control Association, Dallas TX. March 2024. Oral presentation.

**~Walker ED.** Grant writing and reviewing: Shared experiences and perspectives. Association of Southeast Asian Nations university workshop, sponsored by MOHIP, May 2024. Oral presentation.

**~Walker ED**. Vector-borne diseases and one health. MOHIP One Health Conference, Vientiane, Laos May 2024. Oral presentation.

~**Walker ED**. EEE in Michigan: Vulnerable landscapes and ideas for community-based control. Invited Seminar, Kellogg Biological Station. September 2024. Oral presentation.

~Chen S, **Walker ED**. Shifts in the microbiota associated with *Aedes triseriatus* (Say) exposed to tannic acid. Midwest Molecular Pathogenesis Conference, Indiana University, September 2024. Poster presentation.

~**Walker ED**, Chen S. Comparative genome analysis and resistance determinants of three clinical *Elizabethkingia miricola* strains Isolated from Michigan patients. Midwest Molecular Pathogenesis Conference, Indiana University, September 2024. Poster presentation.

~Frake A, Hession S, Chipula G, Mbewe R, Messina JP, **Walker ED**. *Anopheles arabiensis* larval distribution in irrigated rice fields: Significance of water circulation network and rice growth stage. American Society of Tropical Medicine and Hygiene, annual meeting, New Orleans, November 2024. Poster presentation.

~Chen S, Terrapon N, Blom J, **Walker ED**. Molecular characterization of *Elizabethkingia anophelis* isolated from *Anopheles* *stephensi*. American Society of Tropical Medicine and Hygiene, annual meeting, New Orleans, November 2024. Poster presentation.

**~Walker ED.** Diversity and abundance of mosquitoes and biting midges at CMERC. 2nd annual Corey Marsh Ecological Research Center Fall Research Symposium. October 2024. Oral presentation.

**~Walker ED**. Timing and location of *Anopheles* biting: A conservative view of a complex problem with relevance to malaria control. Asia Pacific Malaria Elimination Network, Vector Control Working Group Annual Conference, Invited symposium participant (“Outdoor Biting and Malaria Elimination”). December 2024. Oral presentation.

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**~Walker ED.** Melanura in the hood! Michigan Mosquito Control Association, February 2025. Oral presentation.

**~Walker ED.** Ticks and Mosquitoes: Existing and Emerging Concerns in Michigan, Stine Turf & Snow Spring Kickoff Meeting (21 attendants, staff training session). March 2025.

**~Walker ED.** Transmission reduction as a paradigm for malaria vector control: challenges and opportunities. Keynote address, Asia Pacific Leaders Malaria Alliance 9th annual conference, Bali, Indonesia. June 2025.