

Insect Farming of Food Waste to Produce an Alternative Protein Source

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PROBLEM STATEMENT

As the global human population approaches nine billion, the associated demand for food products will double in the next 40 years ([Tilman et al., 2011](#)). However, increasing agricultural commodities to meet the demand for global food products exacerbates several issues of human concern. For example, there is concern about adequate, nutritious global food production (e.g., shortage in available protein) with continued population growth, due negative impacts from climate change, natural resources depletion, decreased livestock production, and conversation of land use from cultivation to residential areas. Presently, land use for livestock production directly or indirectly represents 70% of all agricultural land and 30% of the world's surface land area ([FAO, 2006](#)). Limitations of these social, economic, and natural resource will further manifest into amplified social pressures, such as, but not limited to, increased rates of disease and a lack of agricultural entrepreneurship in the following generations, which further weakens the global economy ([FAO, 2014](#)).

Insect-derived protein can, and often does, form a significant part of the local diet through direct or indirect (e.g., livestock feedstock for fish in aquaculture) consumption. It is very clear that limited protein intake leads to malnutrition in many parts of the world. Africa in general has the lowest annual protein intake per capita per day of all the major geographical regions in the world ([WHO/FAO, 2013](#)). When coupled with financial constraints on individuals, communities, and regions, the value of alternate sources of proteins, such as insects, becomes immediately apparent for poor rural communities in developing countries where inadequate intakes of energy and protein are common. Unlike in other countries, such as Thailand, where extensive work is performed on producing insects for human consumption, in Sub-Saharan Africa (SSA) there has been limited focus on the documentation, seasonality, processing, nutritive value, and acceptability of insects for human consumption or as a feedstock for livestock and aquaculture. Insects as food and feed is expected to be valued at \$1 billion by 2020, not only for human consumption, but perhaps more importantly, as feed for livestock, such as aquaculture (e.g., fish and shrimp) and poultry. Therefore, any initiative that addresses this knowledge gap is critical to determine the implementation of insects for feed in SSA. Empirical data are key to inform the knowledge of how to sustainably farm insects in an economically feasible manner to strategically incorporate nutritional interventions (i.e., increased protein consumption), while providing a new source of jobs and revenue for women and youth across local communities in SSA.

The *resulting need* is to minimize these anthropogenic impacts through sustainable practices and produce alternative sources of protein for a wide range of human communities, in both the develop and developing areas of the world. This project will address this need by improving a widely available, economically viable alternative, insects, to enhance food security and enhance nutrition of livestock (including poultry and aquaculture). Geographically expanding insect production into Africa is an ambitious and tenable solution to a global challenge. While this need is global, uncertainty

remains in how regionally and locally available sources of organic food waste affects insect production. Understanding the variation in resource quality among a wide range of sources (e.g., market wastes, crop residues), and the associated effects on insect production, will allow researchers to optimize insect farming based on regionally and locally available sources.

One specific method is using the ubiquitous and huge volumes of post-consumer food waste (PCFW) as organic matter food sources for farming the Black Soldier Fly (BSF), *Hermetia illucens* (Diptera: Stratiomyidae). BSF has been optimized to compost PCFW for use as feed for livestock and aquaculture with leftover material serving as rich compost for other agricultural practices. Furthermore, BSF can be mass-produced ([Sheppard et al., 2002](#)); represents no known harm to the environment or people ([Tomberlin et al., 2009](#)); can convert organic wastes ([Nguyen et al., 2013](#)), such as food ([FAO, 2011](#)), to protein and fat ([Myers et al., 2008](#)); and is known to suppress bacterial pathogens in manure ([Erickson et al., 2004](#); [Liu et al., 2008](#)). A new form of agriculture is particularly important in areas of the world, like SSA, where BSF farming has not been evaluated at household and small community scales of production. Improving and optimizing BSF bioconversion for use in small scale, but ubiquitous, farming operations will improve the livelihood of local communities in regions of the worlds such as SSA. ***This project advances the AAP priority research areas of agri-food systems, nutrition and health and water, energy and environment, with long-term goals for improving youth empowerment.***

OBJECTIVES AND HYPOTHESES

Our overall goal for this project is to determine how variation in PCFW quality and quantity affects the production of BSF. We aim to better understand and predict the best local or regional sources of organic matter for this new form of agriculture in SSA. The central hypothesis is that the optimal PCFW diet for increased BSF yields will comprise lower relative contributions from high-fatty (e.g., meat waste) and high lignin (e.g., maize husks) organic matter. We also predict that BSF response to PCFW quality variation will be density dependent, with intermediate densities being most efficient at using lower quality PCFW. We propose the following *objectives to test this hypothesis*:

Objective 1. Test PCFW quality effects on insect bioconversion. Using mixed sources of PCFW, we will provide consistent organic matter at low, intermediate and high-quality organic matter to rear and produce BSF. The quality will be defined by the ratios of plant-based to animal-based organic matter provided to the BSF for consumption and growth. High-quality PCFW diets will have more plant-based components, while low-quality PCFW diets will contain more animal- and high lignin-based products. The measured responses will be BSF survivorship, larval growth rates, time to reach each development stage, post-feeding larval body size and collective biomass. The outcome will be results that determine the quality of PCFW diet that maximizes larval growth, production and yield, while minimizing mortality during the life cycle.

Objective 2. Determine optimal BSF larval densities that maximize bioconversion of PCFW sources. Using the same PCFW quality types developed for Objective 1, we will also determine the optimal BSF larval population density for converting each PCFW type into BSF larvae. The same insect responses will be measured for three larval densities (low, intermediate, high) against the three PCFW diets. The outcome will be results that determine how BSF larval density affects larval

growth, production and total yield, while minimizing mortality during the life cycle when presented with different quality PCFW resources.

EXPERIMENTAL DESIGN AND PROCEDURES

The project will begin 31 August 2019. A full factorial design will be used that includes three levels of PCFW quality diets by three larval densities. Each combination will be tested with $N = 6$ replicates (called biopods). Each replicate will consist of a 0.5 m x 0.5 m bin, with 1 kg of PCFW added as a food resource. Subsamples of the food resource will be taken and dried to constant mass for an estimate of dry mass that will be standardized among all replicates. Deionized water will be applied by a spray bottle at a consistent volume during the experiments to ensure a consistently moist food source. For all experiments BSF will be reared using methods of our collaborators ([Tomberlin, 2002](#)). Briefly, eggs will be collected from a colony of adults at Texas A&M University. Eggs will be added to each replicate corresponding to the projected larval density for that unit.

The experiments will be performed at room temperature ($\sim 23^{\circ}\text{C}$). Each replicate will be evaluated daily for larval survivorship and to make observations of timing of life stage (i.e., instars) transitions. At the end of larval development (i.e., post-feeding stage) the larvae will be collected, weighed, and counted to assess survivorship. A subsample of the post-feeding larvae will be dried to constant mass for dry mass and then combusted at 550°C to measure ash-free dry mass (AFDM) of each individual to extrapolate the collective biomass of each replicate: AFDM provides a measure of the organic tissue mass of the insect less the inorganics associated with the exoskeleton and is a better measure of nutrient and energy assimilation.

PROPOSAL IMPACT ACTIVITIES

Upon the completion of this project, it is our *expectation* that we will have determined how PCFW diet quality affects BSF production, in addition to understanding better how larval densities may impact PCFW resource use with population level fitness effects that impact potential insect product quantity and quality. The postdoctoral associate will be responsible for giving scientific presentations at meetings, writing and submitting a manuscript for publication and collaborating on joint grant applications if/when they become available. As part of their training, they will also participate in the Department of Entomology courses and workshops associated with responsible conduct of research, that will also involve weekly laboratory meetings with student and other faculty. Additionally, the postdoctoral associate involved with this project will be asked to develop a small-scale BSF rearing container based on the biopod design and results of this project that will be constructed using local materials and PCFW in their home country. This last aspect of the project is intended to begin to field test BSF production at a local, individual household scale in a way that could potentially be adopted by other members of the local community. Importantly, the postdoctoral researcher will be co-mentored by an early career female assistant professor (Dr. Jennifer Pechal, PhD) over the course of the project. The proposed mentoring activity and research would also align well with the broader impact aspects of an initiative that my colleagues and I would like to develop

called '*Insects-4-Africa-By-Africa*' that would encompass capacity and livelihood development for using insects as food and feed in Africa.

LITERATURE CITED

- Erickson, M.C., Islam, M., Sheppard, C., Liao, J., and Doyle, M.P. (2004). Reduction of *Escherichia coli* O157:H7 and *Salmonella enterica* Serovar enteritidis in chicken manure by larvae of the black soldier fly. *Journal of Food Protection* 67, 685-690.
- FAO (2006). *Livestock's long shadow: Environmental issues and options* [Online]. Available: <http://www.fao.org/docrep/010/a0701e/a0701e00.htm>. [Accessed].
- FAO (2011). Global food losses and food waste - Extent, causes and prevention. *FAO, Rome*.
- FAO (2014). "The state of world fisheries and aquaculture", in: *FAO, Rome*.
- Liu, Q., Tomberlin, J.K., Brady, J.A., Sanford, M.R., and Yu, Z. (2008). Black soldier fly (Diptera: Stratiomyidae) larvae reduce *Escherichia coli* in dairy manure. *Environmental Entomology* 37(6), 1525-1530. doi: 10.1603/0046-225x-37.6.1525.
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- Nguyen, T.T.X., Tomberlin, J.K., and VanLaerhoven, S.L. (2013). Influences of resources on *Hermetia illucens* (Diptera: Stratiomyidae) larval development. *Journal of Medical Entomology* 50, 898-906.
- Sheppard, D.C., Tomberlin, J.K., Joyce, J.A., Kiser, B., and Sumner, S.M. (2002). Rearing methods for the black soldier fly (Diptera: Stratiomyidae). *Journal of Medical Entomology* 39, 695-698.
- Tilman, D., Balzer, C., Hill, J., and Befort, B.L. (2011). Global food demand and the sustainable intensification of agriculture. *Proc Natl Acad Sci U S A* 108(50), 20260-20264. doi: 10.1073/pnas.1116437108.
- Tomberlin, J.K., Adler, P.H., and Myers, H.M. (2009). Development of the black soldier fly (Diptera: Stratiomyidae) in relation to temperature. *Environmental Entomology* 38(3), 930-934.
- Tomberlin, J.K., D.C. Sheppard, and J.A. Joyce (2002). A comparison of selected lifehistory traits of the black soldier fly (Diptera: Stratiomyidae) when reared on three diets. *Ann. Entomol. Soc. Amer.* 95(379-387).
- WHO/FAO (2013). "3. Global and regional food consumption patterns and trends", in: *Diet, nutrition and the prevention of chronic diseases*.

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EDUCATION

Doctor of Philosophy, Biology, Aquatic Biology, 1999
UNIVERSITY OF DAYTON, Dayton, Ohio

Bachelor of Science, Biology, Psychology Minor, *cum laude* 1994
UNIVERSITY OF DAYTON, Dayton, Ohio

PROFESSIONAL APPOINTMENTS

2015 - Present: **Associate Professor**, Dept. of Entomology and Dept. of Osteopathic Medical Specialties, Michigan State University, E. Lansing, MI

2013 - Present: **Adjunct Professor**, Dept. of Entomology, Texas A&M University, College Station, TX

2014 - 2015: **Assistant Professor**, Dept. of Entomology and Dept. of Osteopathic Medical Specialties, Michigan State University, E. Lansing, MI

2008 - 2013: **Assistant Professor**, Dept. of Biology, University of Dayton, Dayton, OH

2008 - 2013: **Adjunct Professor**, Dept. of Entomology, Michigan State University, E. Lansing, MI

2008 - 2009: **Adjunct Professor**, Dept. of Entomology, Ohio State University, Columbus, OH

2006 - 2008: **Assistant Professor (fixed-term)**, Dept. of Entomology, Michigan State University, E. Lansing, MI

2005 - 2006: **Assistant Professor**, Dept. of Biology, DePauw University, Greencastle, IN

2003 - 2005: **Visiting Assistant Professor**, Dept. of Entomology, Michigan State University, E. Lansing, MI

2001 - 2003: **Visiting Research Associate**, Dept. of Entomology, Michigan State University, E. Lansing, MI

1999 - 2008: **Adjunct Research Assistant Professor**, Dept. of Biology, University of Dayton, Dayton, OH

1994 - 1999: **Graduate Research and Teaching Assistant**, Dept. of Biology, University of Dayton, Dayton, OH

1992 - 1994: **Undergraduate Research Assistant**, Dept. of Biology, University of Dayton, Dayton, OH

RESEARCH INTERESTS — *aquatic entomology/ecosystems; microbial-insect community interactions; disease and carrion decomposition ecology*

Research interests involve basic and applied multiscale and multidisciplinary studies of insect-microbial community interactions. Major efforts have been in the following areas: 1) aquatic entomology, ecology and energetics; 2) insect and microbial community ecology of aquatic ecosystems; 3) insect microbiomes; 4) ecology of Buruli ulcer disease; and, 4) carrion decomposition and forensic ecology.

HONORS AND AWARDS

- Fellow of the American Academy of Forensic Sciences, February 2019
- Invited Keynote Speaker – 6th Annual Meeting of Laboratoire d'Excellence Centre d'étude de la Biodiversité Amazonienne, Cayenne, French Guiana, 5 October 2017
- Fellow of the Academy for Global Engagement Program, Michigan State University, MI — 2016

- Invited Keynote Speaker – 60th Annual Meeting of the Michigan Entomological Society, Saginaw, MI, 15 June 2014
- Invited Plenary Speaker – Global Conference on Entomology, Chiang Mai, Thailand, 5-9 March 2011
- Invited Keynote Speaker – First Annual Meeting of the Malaysia Association of Forensic Entomology, Kuala Lumpur, Malaysia, 6 July 2011
- Invited Keynote Speaker – One Day Seminar on Forensic Entomology and It's Implications in Medicine, Kuala Lumpur, Malaysia, 5 July 2011
- Beta Beta Beta Biological Honor Society Honorary Member, Theta Kappa, University of Dayton — 2010
- Platinum Award for DVD entitled "*Forensic entomology: collection and preservation of entomological evidence for court*". Ava Awards — 2008
- Telly Award for DVD entitled "*Forensic entomology: collection and preservation of entomological evidence for court*" — 2007
- NSF Travel Grant Award through the Entomological Society of America for the 2004 International Congress of Entomology, Brisbane, Australia — 2004
- Invited Research Director for JASON Foundation Online Expedition — 2001
- Sigma Xi Graduate Research Award, University of Dayton Chapter — 1998
- University of Dayton Teaching Assistant Scholarship — 1995 - 1999
- University of Dayton Graduate Teaching Award — 1996
- Society of Sigma Xi Membership, University of Dayton Chapter — 1996
- University of Dayton Scholars Program — 1992 - 1994
- University of Dayton Special Achievement Award — 1992 - 1993
- Wittenberg University Alumni Scholarship — 1990 - 1991

PUBLICATIONS

(^ = Benbow as a corresponding author on that paper)
[IF = Impact factor for previous year or 5-year average]

Submitted Papers, Chapters, and Books

1. Merritt, RW, KW Cummins, ^**ME Benbow**. Sampling benthic macroinvertebrates for bioassessment studies: effects of within-reach variability in population, diversity and tolerance indices. (*in revisions at Rivers, Research and Applications*)
2. **Benbow, ME**, JL Pechal. 2018. Forensic Entomology and the Microbiome. *In: Forensic Entomology: The Utility of Arthropods in Legal Investigations*. J Byrd, J Tomberlin (Eds). CRC Press, Boca Raton, FL, pp. XX-XX. (*submitted to book editors*)
3. Stiegler, J, C von Hoermann, J Müller, **ME Benbow**, M Heurich. Carcass introduction for scavenger conservation in a temperate forest ecosystem. (*submitted to Ecological Applications*)
4. Doretto, A, J Receveur, EA Baker, **ME Benbow**, KT Scribner. Macroinvertebrate metacommunities along a river continuum: the roles of spatial scale and local habitat filters. (*submitted to Freshwater Science*)
5. Pechal, JL, **ME Benbow**, AW Kamng'ona, A Safalaoh, K Masamba, J Kang'ombe. The need for alternative insect protein in Africa. (*submitted to Annals of the Entomological Society of America*)
6. Barton, PS, MJ Evans, CN Foster, JL Pechal, JK Bump, MM Quaggiotto, **ME Benbow**. Out of sight, out of mind? Discovering the hidden importance of carrion biomass in ecosystems. (*in revisions at Ecology Letters*)
7. Cammack, JA, JL Pechal, ST Sweet, TL Crippen, AH Knap, **ME Benbow**, JK Tomberlin. Postmortem microbiomes and volatile organic compound emissions during salmon carrion decomposition. (*submitted to Frontiers in Physiology*)

8. Lang, JM, RW McEwan, **ME Benbow**. Coupled roles of bottom-up and top-down effects throughout stream microbial biofilm succession. (*submitted to ISME J*)
9. **^Benbow, ME**, JR Wallace, L Roach. The role of depth and temperature in structuring spongillafly, *Climacia areolaris* Hagen (Neuroptera: Sisyridae) populations in a temperate quarry. (*submitted to Great Lakes Entomologist*)

Peer-reviewed Publications

2019

1. Peng, Bo-Yu, Y Su, Z Chen; J Chen, X Zhou; **ME Benbow**, C Criddle, W-M Wu, Y Zhang. Biodegradation of polystyrene by dark (*Tenebrio obscurus*) and yellow (*Tenebrio molitor*) mealworms (Coleoptera: Tenebrionidae). *Environmental Science and Technology (in press)* [IF = 6.20]
2. Burcham, ZM, JL Pechal, CJ Schmidt, JL Bose, JW Rosch, **ME Benbow**, HR Jordan. 2019. Total RNA analysis of bacterial community structural and functional shifts throughout vertebrate decomposition *Journal of Forensic Sciences (in press)*
3. Burcham, ZM, JL Pechal, CJ Schmidt, JL Bose, JW Rosch, **ME Benbow**, HR Jordan. 2019. Bacterial community succession, transmigration and differential gene transcription in a controlled, vertebrate decomposition model. *Frontiers in Microbiology (in press)* [IF = 4.02]
4. Pechal, JL, TL Crippen, JA Cammack, JK Tomberlin, **ME Benbow**. 2019. Microbial communities of salmon resource subsidies and associated necrophagous consumers during decomposition: potential cross-ecosystem microbial dispersal. *Food Webs (in press)*
5. Jordan, HR, JW Rosch, ZM Burcham, C Baugher, C Cowick, **ME Benbow**, CJ Schmidt, JL Pechal. 2019. Total RNA analysis of bacterial Community structural and functional shifts throughout vertebrate decomposition. *Journal of Forensic Science (in press)*
6. Zhang, Y, JL Pechal, CJ Schmidt, HR Jordan, WW Want, **ME Benbow**, S-H Sze, AM Tarone. 2019. Machine learning performance in a microbial molecular autopsy context: A cross-sectional postmortem human population study. *PLoS ONE (in press)* [IF = 2.76]
7. **^Benbow, ME**, J Receveur, G Nowak. 2019. An Overview of the Aquatic Insect Ecological Tables. *In: An Introduction to the Aquatic Insects of North America*. RW Merritt, KW Cummins, MB Berg (Eds). Kendall Hunt Publishing, Dubuque, Iowa, pp. 165-174. (*in press*)
8. Burcham, ZM, CJ Schmidt, JL Pechal, CP Brooks, JW Rosch, **ME Benbow**, HR Jordan. 2019. Detection of critical antibiotic resistance genes through routine microbiome surveillance. *PLoS ONE* 14(3): e0213280 doi.org/10.1371/journal.pone.0213280 [IF = 2.76]
9. Pearson, AL, A Rzotkiewicz, Pechal, JL, CJ Schmidt, HR Jordan, A Zwickle, **^ME Benbow**. 2019. Initial evidence of the relationship between the human postmortem microbiome and neighborhood blight and greening efforts. *Annals of the American Association of Geographers (in press)*. 10.1080/24694452.2018.1519407 [IF = 2.76]
10. Javan, GT, SJ Finley, S Tuomistor, A Hall, **ME Benbow**, D Mills. 2019. An interdisciplinary review of the thanatomicrobiome in human decomposition. *Forensic Science, Medicine and Pathology* 15(1):75-83. [IF = 0.51]
11. **^Benbow, ME**, PS Barton, MD Ulyshen, JC Beasley, TL DeVault, MS Strickland, JK Tomberlin, HR Jordan, JL Pechal. 2019. The necrobiome: the community of organisms associated with death and decomposition in ecosystems. *Bulletin of the Ecological Society of America* 100: e01454, <https://doi.org/10.1002/bes2.1454> [IF = 0.29]
12. **^Benbow, ME**, PS Barton, MD Ulyshen, JC Beasley, TL DeVault, MS Strickland, JK Tomberlin, HR Jordan, JL Pechal. 2019. Necrobiome framework for bridging decomposition ecology of autotrophically and heterotrophically-derived organic matter. *Ecological Monographs* 89(1):e01331. 10.1002/ecm.1331 [IF = 7.83]

2018

13. The National Academies of Sciences, Engineering and Medicine. 2018. Review of the Edwards Aquifer Habitat Conservation Plan: Report 3. Committee to Review Edwards Aquifer Habitat Conservation Plan. Water Science and Technology Board, Division on Earth and Life Studies. The National Academies of Sciences, Engineering and Medicine. 164 pg. The National Academies Press, Washington D.C. (**ME Benbow** as a member of 12 scientist committee that authored this report)
14. Yang, S-S, W Wu, AW Brandon; H-Q Fan, JP Receveur, Y Li, Z-Y Wang, R Fan, RL McClellan, S-H Gao, D Ning, DH Phillips, B-Y Peng, H Wang, S-Y Cai, P Li, W-W Cai, L-Y Ding, J Yang, J Ren, Y-L Zhang, J Gao, D Xing, N-Q Ren, RM Waymouth, J Zhou, H-C Tao, CJ Picard, **ME Benbow**, CS Criddle. 2018. Ubiquity of polystyrene digestion and biodegradation within yellow mealworms, larvae of *Tenebrio molitor* Linnaeus (Coleoptera: Tenebrionidae). *Chemosphere* 212:262-271 [IF = 4.55]
15. McNeish, RE, **ME Benbow**, RW McEwan. 2018. Riparian invasion of *Lonicera maackii* influences throughfall chemistry and rainwater availability. *Ecological Restoration* doi.org/10.1007/s11284-018-1620-2 [IF = 0.36]
16. ^Pechal, JL, CJ Schmidt, HR Jordan, ^**ME Benbow**. 2018. A large-scale survey of the postmortem human microbiome, and its potential to provide insight into the living health condition. *Nature Scientific Reports* 8:5724 DOI:10.1038/s41598-018-23989-w (**Media coverage by Live Science, Michigan NPR**) [IF = 4.61]
17. Receveur, J, JL Pechal, **ME Benbow**, G Donato, T Rainey, JR Wallace. 2018. Changes in larval mosquito microbiota reveal non-target effects of insecticide treatments in hurricane created habitats. *Microbial Ecology* 76:719-728 doi.org/10.1007/s00248-018-1175-3 [IF = 3.63]
18. Suwannapong, G, S Maksong, M Phainchajoen, **ME Benbow**, C Mayack. 2018. Survival and health improvement of *Nosema* infected *Apis florea* (Hymenoptera: Apidae) bees after treatment with propolis extract. *Journal of Asia-Pacific Entomology* 21(2):437-444. [IF = 1.05]
19. Vizza, C, JL Pechal, **ME Benbow**, JM Lang, DT Chaloner, SE Jones, GA Lamberti. 2018. Nitrate amendment reduces biofilm biomass and shifts microbial communities in remote, oligotrophic ponds. *Freshwater Science* 37(2):251-263. DOI:10.1086/697897 [IF = 2.20]
20. Yang, S-S, AM Brandon, JCA Flanagan, J Yang, D Ning, S-Y Cai, H-Q Fan, Z-Y Wang, J Ren, **ME Benbow**, N-Q Ren, RM Waymouth, J Zhou, CS Criddle, W-M Wu. 2018. Biodegradation of polystyrene wastes in yellow mealworms (larvae of *Tenebrio molitor* Linnaeus): factors affecting biodegradation rates and the ability of polystyrene-fed larvae to complete their life cycle. *Chemosphere* 191:979-989 [IF = 4.55]
21. Singh, B, KJ Minick, MS Strickland, K Wickings, TL Crippen, AM Tarone, **ME Benbow**, N Sufrin, JK Tomberlin, JL Pechal. 2018. Temporal and spatial impact of human cadaver decomposition on soil bacterial and arthropod community structure and function. *Frontiers in Microbiology* 8, 2616. doi: 10.3389/fmicb.2017.02616 [IF = 4.08]

2017

22. McNeish, RE, **ME Benbow**, RW McEwan. 2017. Removal of an invasive shrub (*Lonicera maackii*) from a headwater stream riparian zone shifts taxonomic and functional composition of the aquatic biota. *Invasive Plant Science and Management* 10(3):232-246. doi.org/10.1017/inp.2017.22 [IF = 1.21] (**Featured on Cover**)(**Highlighted in Cambridge Core Blog**)
23. Pheukpiboon, T, **ME Benbow**, G Suwannapong. 2017. Detection of *Nosema* spores contamination in commercial bee pollen of *Apis mellifera* in Thailand. *Journal of Apicultural Research* 56(4):376-386. 10.1080/00218839.2017.1327936 [IF = 2.08]
24. Pileggi, SM, HR Jordan, JA Clennon, E Whitney, **ME Benbow**, RW Merritt, MD McIntosh, RK Kimbirauskus, PLC Small, D Boakye, C Quaye, J Qi, L Campbell, J Gronseth, E Ampadu, W Opere, LA Waller. 2017. Landscape and environmental influences on *Mycobacterium ulcerans* among aquatic sites in Ghana. *PLoS ONE*: e0176375 doi.org/10.1371/journal.pone.0176375 [IF = 4.41]
25. Moore, HE, JL Pechal, **ME Benbow**, FP Drijfhout. 2017. The potential use of cuticular hydrocarbons analysis to age the puparial cases of *Calliphora vicina* and *Lucilia sericata*. *Nature Scientific Reports* 7:1933. doi.10.1038/s41598-017-01667-7 [IF = 5.53]

26. Weatherbee, CR, JL Pechal, TI Stamper, ^**ME Benbow**. 2017. Post-colonization interval estimate using multi-species Calliphoridae larval masses and spatially distinct temperature data sets: a case study. *Insects* 8(2), 40; doi:10.3390/insects8020040 **Invited** [IF = 1.85]
27. Yuan, Y, Y Zhang, S Fu, T Crippen, D Visi, **ME Benbow**, M Allen, JK Tomberlin, S-H Sze, AM Tarone. 2017. Genome sequence of a *Providencia stuartii* strain isolated from *Lucilia sericata* salivary glands. *Genome Announcements* 5(17), e00250-17, doi:10.1128/genomeA.00250-17 [IF = 1.18]
28. The National Academies of Sciences, Engineering and Medicine. 2017. Review of the Edwards Aquifer Habitat Conservation Plan: Report 2. Committee to Review Edwards Aquifer Habitat Conservation Plan. Water Science and Technology Board, Division on Earth and Life Studies. The National Academies of Sciences, Engineering and Medicine. 164 pg. The National Academies Press, Washington D.C. (**ME Benbow** as a member of 12 scientist committee that authored this report)
29. Barton, PS, MJ Evans, JL Pechal, **ME Benbow**. 2017. Necrophilous insect dynamics at small vertebrate carrion in a temperate eucalypt woodland. *Journal of Medical Entomology* 54(4):946-973. doi: 10.1093/jme/tjw242 [IF = 1.72]
30. Sanders, ML, HR Jordan, C Serewis-Pond, L Zheng, **ME Benbow**, PLC Small, JK Tomberlin. 2017. *Mycobacterium ulcerans* toxin, mycolactone may enhance host-seeking and oviposition behavior by *Aedes aegypti* (L.) (Diptera: Culicidae). *Environmental Microbiology* 19(5):1750-1760, doi:10.1111/1462-2920.13629 [IF = 5.93]
31. Pechal, JL, CJ Schmidt, HR Jordan, **ME Benbow**. 2017. Frozen: thawing and its effects on the postmortem microbiome in two pediatric cases. *Journal of Forensic Science* 62(5):1399-1405. doi: 10.1111/1556-4029.13419 [IF = 1.32]
32. Brundage, A, TL Crippen, B Singh, **ME Benbow**, W Liu, AM Tarone, TK Wood, JK Tomberlin. 2017. Interkingdom cues by bacteria associated with conspecific and heterospecific eggs of *Cochliomyia macellaria* and *Chrysomya rufifacies* (Diptera: Calliphoridae) potentially govern succession on carrion. *Annals of the Entomological Society of America* 110(10):73-82. **Invited** [IF = 1.22]
33. Zhu, G, Z Jia, X Yu, K Wu, L Chen, J Lv, **ME Benbow**. 2017. Predictable weathering of puparial hydrocarbons of necrophagous flies for determining the postmortem interval: A field experiment using *Chrysomya rufifacies*. *International Journal of Legal Medicine* 131(3):885-894. doi: 10.1007/s00414-016-1507-0 [IF = 2.86]
34. Weatherbee, CR, JL Pechal, ^**ME Benbow**. 2017. The dynamic maggot mass microbiome. *Annals of the Entomological Society of America* 110(1):45-53. doi: <http://dx.doi.org/10.1093/aesa/saw088> **Invited** [IF = 1.22]

2016

35. Morris, A, J-F Guégan, **ME Benbow**, H Williamson, PLC Small, C Quaye, D Boakye, RW Merritt, RE Gozlan. 2016. Functional diversity as a new framework for understanding the ecology of an emerging generalist pathogen. *EcoHealth* 13(3): 570-581. DOI: 10.1007/s10393-016-1140-x [IF = 2.49]
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9. ^***Benbow, ME**, JK Tomberlin, AM Tarone. 2015. Introduction to carrion ecology, evolution and their applications. *In: Carrion ecology, evolution and their applications*. ME Benbow, JK Tomberlin and AM Tarone (Eds). CRC Press, Boca Raton, FL, pp. 3-12.
10. ^***Benbow, ME**, JL Pechal, RM Mohr. Community and landscape ecology of carrion. 2015. *In: Carrion ecology, evolution and their applications*. ME Benbow, JK Tomberlin and AM Tarone (Eds). CRC Press, Boca Raton, FL, pp. 151-186.
11. *Crippen, TL, **ME Benbow**, JL Pechal. 2015. Microbial interactions during decomposition. *In: Carrion ecology, evolution and their applications*. ME Benbow, JK Tomberlin and AM Tarone (Eds). CRC Press, Boca Raton, FL, pp. 31-63.
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13. ^***Benbow, ME**, JK Tomberlin, AM Tarone. 2015. Frontiers in carrion ecology and evolution. *In: Carrion ecology, evolution and their applications*. ME Benbow, JK Tomberlin and AM Tarone (Eds). CRC Press, Boca Raton, FL, pp. 561-562.
14. ^*Pechal, JL, **ME Benbow**. Community Ecology. 2015. *In: Forensic Entomology: International Dimensions and Frontiers*. JK Tomberlin and ME Benbow (Eds). CRC Press, Boca Raton, FL, pp. 347-360.
15. ^*Tomberlin, JK, **ME Benbow**. Current global trends and frontiers. 2015. *In: Forensic Entomology: International Dimensions and Frontiers*. JK Tomberlin and ME Benbow (Eds). CRC Press, Boca Raton, FL, pp. 417-422.

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17. *Qi, J, L Campbell, J van Ravensway, AO Finley, RW Merritt, **ME Benbow**. 2013. Buruli ulcer disease: the unknown environmental and social ecology of an environmental pathogen. *In: Ecologies and Politics of Health*. BH King and KA Crews (Eds.). Taylor and Francis Books, London. Vol 41:75-97.

2012

18. Suwannapong, G, Eiri, DM, **ME Benbow**. 2012. Honeybee communication and pollination. *In: New Perspectives in Plant Pollination*. AR Bandani (Ed). InTech, 41-62, DOI: 10.5772/2299.

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19. Suwannapong, G, **ME Benbow**. 2011. Biology of insect odors: sources, olfaction and responses. *In: The Biology of Odors*. LE Weiss and JM Atwood (Eds.). Nova Science Publishers, Inc., Hauppauge, NY.
20. Suwannapong, G, **ME Benbow** and JC Nieh. 2011. Biology of Thai honeybees: natural history and threats. *In: Bees: Biology, Threats and Colonies*, RM Florio (Eds.). Nova Science Publishers, Inc., Hauppauge, NY. 1-101 pgs.

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21. Johnson, PDR, C Demangel, TP Stinear, **ME Benbow**, JAM Fyfe. 2010. Buruli ulcer (*Mycobacterium ulcerans* infection) – still mysterious. *In: Emerging Infections 9*. WM Michael, ML Grayson, JM Hughes (Eds.). ASM Press, Washington DC.

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22. Merritt, RW, **ME Benbow**. 2009. Entomology. *In: Wiley Encyclopedia of Forensic Science*. A Jamieson and A Moenssens (Eds.). John Wiley & Sons, Ltd., New Jersey, pp. 1-12.
23. **ME Benbow**. 2009. Annelida, Oligochaeta and Polychaeta. *In: Encyclopedia of Inland Waters: GE Likens* (Ed.). Vol. 2, pp. 124-127. Elsevier, Ltd., Oxford, England.
24. **ME Benbow**, MD McIntosh. 2009. Benthic Invertebrate Fauna, Tropical Stream Ecosystems. *In: Encyclopedia of Inland Waters: GE Likens* (Ed.). Vol. 2, pp. 216-231. Elsevier, Ltd., Oxford, England.
25. Wallace, JR, **ME Benbow**. 2009. Flatworms (Turbellarians). *In: Encyclopedia of Inland Waters: G.E. Likens* (Ed.). Vol. 2, pp. 315-316. Elsevier, Ltd., Oxford, England.

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26. **ME Benbow**, AJ Burky, MD McIntosh. 2005. A History of Hawaiian Freshwater Resources. *In: Water Encyclopedia: Oceanography; Meteorology; Physics and Chemistry; Water Law; and Water History, Art, and Culture*. Lehr, J, J Keeley (Eds.). John Wiley & Sons, Inc. 832 pgs.
27. **ME Benbow**, RW Merritt. 2005. Road Salt. *In: Water Encyclopedia: Water Quality and Resource Management*. Lehr, J, J Keeley and J. Lehr (Eds.). John Wiley & Sons, Inc. 717 pgs.

The National Academies of Sciences, Medicine and Engineering Reports (*peer-reviewed*)

2018

1. The National Academies of Sciences, Medicine and Engineering. 2018. Review of the Edwards Aquifer Habitat Conservation Plan: Report 3. Committee to Review Edwards Aquifer Habitat Conservation Plan. Water Science and Technology Board, Division on Earth and Life Studies. The National Academies of Sciences, Engineering and Medicine. 164 pg. The National Academies Press, Washington D.C. (**ME Benbow** as a member of 12 scientist committee that authored this report)

2017

2. The National Academies of Sciences, Engineering and Medicine. 2017. Review of the Edwards Aquifer Habitat Conservation Plan: Report 2. Committee to Review Edwards Aquifer Habitat Conservation Plan. Water Science and Technology Board, Division on Earth and Life Studies. The National Academies of Sciences, Engineering and Medicine. 164 pg. The National Academies Press, Washington D.C. (**ME Benbow** as a member of 12 scientist committee that authored this report)
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2015

1. National Research Council Committee, National Academy of Science. 2015. Review of the Edwards Aquifer Habitat Conservation Plan: Report 1. Committee to Review Edwards Aquifer Habitat Conservation Plan. Water Science and Technology Board, Division on Earth and Life Studies. National Research Council of the National Academies. 173 pg. The National Academies Press, Washington D.C. (**ME Benbow** member of a 12 scientist committee that authored this report)

Technical Reports

2013

1. **Benbow, ME**, T Blair, W Kmetz. 2013. Outfall drainage water quality assessment of the Great Miami River, Wolf Creek, and Mad River Dayton, Ohio 2013. Technical report prepared for the City of Dayton, Department of Water, Division of Environmental Management, Dayton, OH. February 19, 2013.

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2. **Benbow, ME**, T Blair, A Lewis, J White. 2011. Drainage water quality assessment of storm runoff, Dayton, Ohio 2011. Technical report prepared for the City of Dayton, Department of Water, Division of Environmental Management, Dayton, OH. December 20, 2011.

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3. **Benbow, ME**, J Lang, A Lewis, T Blair. 2010. Outfall drainage water quality assessment of the Great Miami River, Dayton, Ohio 2010. Technical report prepared for the City of Dayton, Department of Water, Division of Environmental Management, Dayton, OH. December 20.

2007

4. **Benbow, ME**, KR Jennings AJ Burky, A Oleson, T Holm. 2007. Field studies for evaluating the use of stream invertebrates for including in watershed assessments of Palau. Report prepared for the Palau Community College, Republic of Palau Bureau of Marine Resources, Republic of Palau Office of Environmental Response and Coordination and Belau National Museum. Oct. 2007.

2004

5. **Benbow, ME**, AJ Burky, KR Jennings, T Holm. 2004. A preliminary protocol for assessing stream condition in the Republic of Palau: An approach using Invertebrate Functional Group Rapid Bioassessment. Report prepared for the Palau Community College, Republic of Palau Bureau of Marine Resources, Republic of Palau Office

PEER-REVIEWED PUBLISHED PROCEEDINGS

1. **Benbow, ME**. 2018. Navigating and networking in forensic science in the emergence of using microbiomes in death investigation. *Proceedings of the 71st Annual Meeting of the American Academy of Forensic Science*, 18-23 February, Baltimore, MD.
2. Kaszubinski, S, JL Pechal, HR Jordan, CJ Schmidt, and **ME Benbow**. 2019. Evaluating bioinformatic pipeline performance for forensic microbiome analysis. *Proceedings of the 71st Annual Meeting of the American Academy of Forensic Science*, 18-23 February, Baltimore, MD.

3. Pechal, JL, CJ Schmidt, HR Jordan, and **ME Benbow**. 2019. International associations of the postmortem microbiome. *Proceedings of the 71st Annual Meeting of the American Academy of Forensic Science*, 18-23 February, Baltimore, MD.
4. Jordan, HR, ZM Burcham, JL Pechal, H Campbell, J Rosch, CJ Schmidt, and **ME Benbow**. 2018. Autopsy sampling to uncover human resistome diversity. *Proceedings of the 70th Annual Meeting of the American Academy of Forensic Science*, 19-24 February, Seattle, WA.
5. Burcham, ZM, JL Pechal, JL Bose, **ME Benbow**, CJ Schmidt and HR Jordan. 2018. Fluorescent bacteria in the gut of mice carcasses provides insight on postmortem microbial translocation. *Proceedings of the 70th Annual Meeting of the American Academy of Forensic Science*, 19-24 February, Seattle, WA.
6. **Benbow, ME**, Pechal, JL, HR Jordan, V Mesli, E Le Graff, V Hedouin, C Campobasso, V. Bugelli, S. Pittner, F Monticelli and CJ Schmidt. 2018. A global partnership to study geographic variation in the human postmortem microbiome (HPMM). *Proceedings of the 70th Annual Meeting of the American Academy of Forensic Science*, 19-24 February, Seattle, WA.
7. Pechal, JL, CJ Schmidt, HR Jordan, and **ME Benbow**. 2018. The ecology of the postmortem microbiome: insights from a large-scale study. *Proceedings of the 70th Annual Meeting of the American Academy of Forensic Science*, 19-24 February, Seattle, WA.
8. Pechal, JL, CJ Schmidt, HR Jordan, MM Brewer, and **ME Benbow**. 2017. Postmortem Microbiome Changes During Thaw for Autopsy: Two Pediatric Case Studies. *Proceedings of the 69th Annual Meeting of the American Academy of Forensic Science – Vol. XXVIII*, 13-18 February. New Orleans, LA.
9. **Benbow, ME**, JL Pechal, HR Jordan, MM Brewer, and CJ Schmidt. 2017. Coupled Microbiome and Insect Evidence in Death Investigation. *Proceedings of the 69th Annual Meeting of the American Academy of Forensic Science – Vol. XXVIII*, 13-18 February. New Orleans, LA.
10. Weatherbee, CR, JL Pechal, MM Brewer, TI Stamper, and **ME Benbow**. 2017 Forensic Implications of Multi-Species Blow Fly Larval Masses and Their Associated Microbiomes. *Proceedings of the 69th Annual Meeting of the American Academy of Forensic Science – Vol. XXVIII*, 13-18 February. New Orleans, LA.
11. Burcham, ZM, JL Pechal, J Rosch, JL Bose, CJ. Schmidt, **ME Benbow**, and HR Jordan. 2017. Internal Microbial Community Translocation Throughout Decomposition in a Controlled Vertebrate Model. *Proceedings of the 69th Annual Meeting of the American Academy of Forensic Science – Vol. XXVIII*, 13-18 February. New Orleans, LA.
12. Jordan, HR, ZM Burcham, JL Bose, JL Pechal, J Rosch, CJ Schmidt, and **ME Benbow**. 2017. Analyses of Necrobiome Structure and Function for Utility in Forensic Science. *Proceedings of the 69th Annual Meeting of the American Academy of Forensic Science – Vol. XXVIII*, 13-18 February. New Orleans, LA.
13. Pechal, JL, CJ Schmidt, HR Jordan, and **ME Benbow**. 2016. Drugs and Bugs (Bacteria): Does What You Use Relate to What You Grow? *Proceedings of the 68th Annual Meeting of the American Academy of Forensic Science – Vol. XXVII*, 22-27 February. Las Vegas, NV.
14. **Benbow, ME**, JL Pechal, CJ Schmidt, and HR Jordan. 2016. The Human Postmortem Microbiome and Manner of Death. *Proceedings of the 68th Annual Meeting of the American Academy of Forensic Science – Vol. XXVII*, 22-27 February. Las Vegas, NV.
15. Weatherbee, C, JL Pechal, TI Stamper, and **ME Benbow**. 2016. Using microbial communities to estimate the postmortem interval: a validation study. *Proceedings of the 68th Annual Meeting of the American Academy of Forensic Science – Vol. XXVII*, 22-27 February. Las Vegas, NV.
16. Burcham, ZM, JL Pechal, JL Bose, **ME Benbow**, CJ Schmidt, and HR Jordan. 2016. Decomposition of Mouse Carcasses Infected With Fluorescently Labeled Bacteria Provide Insight on Postmortem Microbial Translocation. *Proceedings of the 68th Annual Meeting of the American Academy of Forensic Science – Vol. XXVII*, 22-27 February. Las Vegas, NV.
17. Finley, SJ, JL Pechal, **ME Benbow**, BK Robertson, and GT Javan. 2016. Cadaver Gravesoil Microbial Profiles During Decomposition. *Proceedings of the 68th Annual Meeting of the American Academy of Forensic Science – Vol. XXVII*, 22-27 February. Las Vegas, NV.

18. Sufrin, V, TL Crippen, JK Tomberlin, AM Tarone, JL Pechal, **ME Benbow**, and B Singh. 2016. The Utility of Soil Eukaryotes During Human Decomposition and Their Potential Forensic Applications. *Proceedings of the 68th Annual Meeting of the American Academy of Forensic Science* – Vol. XXVII, 22-27 February. Las Vegas, NV.
19. Pechal, JL, CJ Schmidt, **ME Benbow**. 2015. The First Use of Postmortem Microbiomes in Human Death Investigations. *Proceedings of the 67th Annual Meeting of the American Academy of Forensic Science*. Vol. XXVI 16-21 February. Orlando, FL.
20. Finley, SJ, JL Pechal, **ME Benbow**, GT Javan. 2015. Sequencing Approaches to Evaluate Soil Microbial Communities Associated With Human Death Scenes. *Proceedings of the 67th Annual Meeting of the American Academy of Forensic Science*. Vol. XXVI 16-21 February. Orlando, FL.
21. Pechal, JL, TL Crippen, **ME Benbow**, B Sing, AM Tarone, and JK Tomberlin. 2014. Collecting Microbiological Evidence From Cadavers: Techniques and Implications of Using Bacterial Communities in Decomposition Estimates. *Proceedings of the 66th Annual Meeting of the American Academy of Forensic Science*. Vol. XXV, p357 17-22 February. Seattle, WA. (*Invited Presentation*)
22. **Benbow, ME**, JL Pechal, B Singh, JK Tomberlin, AM Tarone, M Burke, R Rohde, and TL Crippen. 2014. An Initial Assessment of the Structure and Function of the Postmortem Human Microbiome: Forensic Applications. *Proceedings of the 66th Annual Meeting of the American Academy of Forensic Science*. Vol. XXV, p360, 17-22 February. Seattle, WA. (*Invited Presentation*)
23. Crippen, TL, **ME Benbow**, JL Pechal, B Singh, JK Tomberlin, AM Tarone, SE Dowd, R Rohde, and M Burke. Swine as a Model for Decomposition: A Comparison of Postmortem Microbiomes. *Proceedings of the 66th Annual Meeting of the American Academy of Forensic Science*. Vol. XXV, p362-363 17-22 February. Seattle, WA. (*Invited Presentation*)
24. Singh, B, TL Crippen, AM Tarone, JL Pechal, **ME Benbow**, M Burke, R Rohde, and JK Tomberlin. 2014. Utility of Bacteria Associated With Human Cadavers in Estimation of Postmortem Interval (PMI). *Proceedings of the 66th Annual Meeting of the American Academy of Forensic Science*. Vol. XXV, p360-361 17-22 February. Seattle, WA. (*Invited Presentation*)
25. Tomberlin, JK, **ME Benbow**, and DO Carter. 2014. Microbes and Decomposition: Foundations in Decomposition Ecology and Forensic Applications. *Proceedings of the 66th Annual Meeting of the American Academy of Forensic Science*. Vol. XXV, p357-358, 17-22 February 2014. Seattle, WA. (*Invited Presentation*)
26. Crippen, TL, **ME Benbow**, AM Tarone, TK. Wood, and JK Tomberlin. 2014. Quorum Sensing Regulates Blow Fly Attraction and Colonization of Human Remains: Greater Insight Into the Pre-Colonization Interval. *Proceedings of the 66th Annual Meeting of the American Academy of Forensic Science*. Vol. XXV 17-22, p365, 17-22 February 2014. Seattle, WA. (*Invited Presentation*)
27. **Benbow, ME**, *AJ Lewis, JL Pechal, T Blair, *MC Berg, *MF Diaz, JK Tomberlin, TL Crippen, A Tarone. 2012. The microbial ecology of carcass decomposition between habitats and through time. *Proceedings of the 64th Annual Meeting of the American Academy of Forensic Science*. Vol XXIII 20-25 February 2012. Atlanta, GA.
28. Berg MC, AJ Lewis*, M Shoda, T Blair, **ME Benbow**. 2012. Blow fly oviposition dynamics on liver bait and swine carcasses exposed at dusk. *Proceedings of the 64th Annual Meeting of the American Academy of Forensic Science*. Vol XXIII 20-25 February 2012. Atlanta, GA.
29. Pechal, JL, **ME Benbow**, TL Crippen, A Tarone, JK Tomberlin. 2012. Invertebrate species diversity, richness, and evenness indicate delayed colonization of remains. *Proceedings of the 64th Annual Meeting of the American Academy of Forensic Science*. Vol XXIII 20-25 February 2012. Atlanta, GA.
30. **Benbow, ME**, JK Tomberlin, TL Crippen, A Lewis*, J Pechal*. 2010. Using Biolog EcoPlates™ as an economical approach to determining postmortem body dump sites through microbial community level physiological profiling. *Proceedings of the 62nd Annual Meeting of the American Academy of Forensic Science*. Vol XXI 22-27 February 2010. Seattle, WA.
31. Tomberlin, JK, **Benbow, ME**, TL Crippen, F Ortiz, J Ross. 2010. Microbes associated with decomposing remains regulate insect colonization. *Proceedings of the 62nd Annual Meeting of the American Academy of Forensic Science*. Vol XXI 22-27 February 2010. Seattle, WA.

32. ^**Benbow, ME**, J Tomberlin, R Mohr. 2009. A new framework for guiding research in forensic entomology: improving the science relevant to PMI estimates. Proceedings of the 61st Annual Meeting of the American Academy of Forensic Science. Vol XX: 18-22 February 2009, Denver, CO.
33. Wallace, JR, RK Kimbirauskas, RW Merritt, **ME Benbow**, *MD McIntosh. 2007. Caddisfly cases assist homicide case: determining a postmortem submersion interval (PMSI) using aquatic insects. Proceedings of the 59th Annual Meeting of the American Academy of Forensic Science. Vol XIII:291-292.19-24 February 2007, San Antonio, TX.
34. Merritt RW, **ME Benbow**, JL deJong, R Snider, RK Kimbirauskas. 2006. Insects of the grave: a cold case history involving insects 27 years after death. Proceedings of the 58th Annual Meeting of the American Academy of Forensic Science. Vol XII:243. 20-25 February 2006, Seattle, WA.
35. Kimbirauskas RK, RW Merritt, **ME Benbow**, JR Wallace, JK Tomberlin. 2005. An instructional DVD on collecting entomological evidence for court. Proceedings of the 57th Annual Meeting of the American Academy of Forensic Science. Vol XII: 20-25 February 2006, Seattle, WA.

PROFESSIONAL PUBLICATIONS – BOOK REVIEWS, MANUALS, DVDS

1. **Benbow, ME**. 2014. Invited Book Review: Review of: “*The Science of Forensic Entomology*”, by RB Rivers and GA Dahlem. Journal of Forensic Sciences 59: 1451.
2. **Benbow, ME**. 2004. Invited Book Review: “*A problem-solving approach to aquatic chemistry*”, by JN Jensen. Journal of the American Water Resources Association 40(2): 547-549.
3. Pechal, JL, **ME Benbow**. 2012. *An Introductory Manual for Multivariate Statistical Analysis of Community Data Using PCORD*. Manual for North American Forensic Entomology Association Workshop. Las Vegas, NV, 17 July 2012.
4. **Benbow, ME**, JM Lang & AJ Burky. 2012. *Watershed Biomonitoring for Palau/MC Jurisdictions*. Manual for the 2nd Micronesian Challenge Terrestrial Measures Workshop. Koror, Palau, 18-21 June 2012.
5. Kimbirauskas, RK, RW Merritt, JK Tomberlin, **ME Benbow**, JW Wallace. 2008. Forensic Entomology: the collection and preservation of insect evidence from crime scenes. DVD. Independent Productions
6. **Benbow, ME** & AJ Burky. 2005. *Culture, Biodiversity, and Resources Management: Managing Natural Resources in Costa Rica*. 2005. Lecture and Lab Guide.
7. **Benbow, ME** & AJ Burky. 2002-2004 *Island Environmental Biology: A Brief History of Water Resource Issues of the Hawaiian Islands*. Lecture and Lab Guide. 113 pages.
8. **Benbow, ME** & AJ Burky. 2002-2003. *Island Environmental Biology: Mountain Stream – Ocean Connections in the Republic of Palau, Assessing Stream Quality as a Measure of Impact on Marine Communities*. Lecture and Lab Guide. 46 pages.
9. **Benbow, ME**. 1998. Evolution: how it happens. In “*SCI 230 Lab Manual: Organisms, Evolution and Environments*”. 2nd edition. Wolfe, C. (ed.). University of Dayton. The McGraw-Hill Companies, Inc., New York.

GRANTS, CONTRACTS AND FELLOWSHIPS

Successful Funding

1. **The Avielle Foundation (Neuroscience and Clinical Research Grant to Prevent Violence and Build Compassion)** — 2019. (\$100,000) AJ Robison (PI), C Kwiatkowski (co-PI), A Zeoloi (co-PI), **ME Benbow (co-PI)**, A Moeser (co-PI). Aggression and the gut-brain axis.
2. **Forensic Sciences Foundation, American Academy of Forensic Science Acorn Grant** — 2018. (\$1,497) BR Wydra (PI), **ME Benbow (co-PI)**, JC Wankmiller (co-PI), JL Pechal (co-PI). Necrophagous insect communities and how they associate with human decomposition at a new northern latitude outdoor forensic research facility.
3. **MSU CANR Professional Development Microgrant** — 2018 (\$3,000) **ME Benbow (PI)**. Travel funding to improve international collaborative NSF proposal.

4. **MSU-APP – Michigan State University Alliance for African Partnerships** — 2017-2019 (\$50,000) (**Benbow budget = \$50,000**) **ME Benbow (multi-PI)**, JL Pechal (multi-PI), J Kang'ombe (co-PI), K Masamba (co-PI), A Safalaoh (co-PI), AW Kamng'ona (co-PI): *Farming Insects for Feed: Developing Partnerships for Sustainable Food Security in Malawi*.
5. **CDC (Centers for Disease Control and Prevention: National Center for Emerging and Zoonotic Infectious Diseases)** — 12/31/2016 – 12/30/2021. (\$1,213,224) (**Benbow budget = \$0**) E Walker (PI), M Kaufman (co-PI), J Tsao (co-PI), Z Xi (co-PI), J Owen (co-PI), **ME Benbow (co-PI)**: *The Upper Midwest Regional Center of Excellence in Vector-borne Disease*.
6. **MSU CANR Professional Development Microgrant** — 2016 (\$3,000) **ME Benbow (PI)**. Travel funding to French Guiana for new research partnerships.
7. **NIJ (National Institute of Justice)** (2014-DN-BX-K008) — 2015 - 2018 (\$886,408) (**Benbow sub-award of \$391,832**): H Jordan (PI), **ME Benbow (co-PI)**, Postmortem changes and translocation of bacterial community structure and function for use in criminal investigations.
8. **USFS Forest Health Monitoring Program, Evaluation Monitoring** — 2015 – 2017 (\$126,043) (Benbow budget of \$63,022): DG McCullough (PI), **ME Benbow (co-PI)**. Conditions of riparian forest corridors invaded by Emerald Ash Borer.
9. **NSF (Population & Community Ecology)** (DEB-1352995) — 4/15/2013-3/15/2017 (\$541,964), (**Benbow sub-award of \$110,027**), R McEwan (PI) and **ME Benbow (co-PI)**. A mechanistic framework for bottom-up biodiversity effects: riparian forest invasion impacts on headwater stream microbial and macroinvertebrate communities.
10. **MSU VISTAS Program (Visiting Scholars to Advance Science Grants)** — 2015 (\$4,852) **ME Benbow (PI)**. VISTAS Grant to host visiting scholars from Penn State University, Texas A&M University and Mississippi State University.
11. **Forensic Sciences Foundation, American Academy of Forensic Science Lucas Grant** — 2014. (\$4,974) JL Pechal (PI), **ME Benbow (co-PI)**, CJ Schmidt (co-PI). Prediction of the postmortem interval using bacterial communities collected from human remains discovered in a major, metropolitan city.
12. **Forensic Sciences Foundation, American Academy of Forensic Science Lucas Grant** — 2012. (\$3,000) **ME Benbow (PI)**, JR Wallace (co-PI), JL Pechal (co-PI), JM Lang (co-PI). Aquatic microbial communities to estimate the postmortem submersion interval.
13. **NIJ (National Institute of Justice)** (2010-DN-BX-K243) — 2010 - 2012 (\$476,348), (**Benbow sub-award of \$163,972**): JK Tomberlin (PI), **ME Benbow (co-PI)** T Crippen (co-PI), A Tarone (co-PI). Development and validation of standard operating procedures for measuring microbial populations for estimating a postmortem interval
14. **City of Dayton (Department of Water, Division of Environmental Management)** — 2012. (\$30,000) **ME Benbow (PI)**. Storm water monitoring for the City of Dayton. City of Dayton, Dayton, OH.
15. **City of Dayton (Department of Water, Division of Environmental Management)** — 2011. (\$30,000) **ME Benbow (PI)**. Storm water monitoring for the City of Dayton. City of Dayton, Dayton, OH.
16. **City of Dayton (Department of Water, Division of Environmental Management)** — 2010. (\$30,000) **ME Benbow (PI)**. Storm water monitoring for the City of Dayton. City of Dayton, Dayton, OH.
17. **Hamilton County Park District** — 2011. (\$2,000) (**Benbow sub-award of \$1100**) MD McIntosh (PI) and **ME Benbow (co-PI)**. A temporal assessment of invertebrate structure and function within vernal pools of Southwestern Ohio.
18. **Hamilton County Park District** — 2010. (\$2,000) (**Benbow sub-award of \$1000**) MD McIntosh (PI) and **ME Benbow (co-PI)**, G Farnsworth (co-PI). A temporal assessment of invertebrate structure and function within vernal pools of Southwestern Ohio.
19. **Research Council SEED Grant: Summer Research Fellowship, Grant-In-Aid-Award and Equipment (University of Dayton)** — 2011. (\$11,000) **ME Benbow (PI)**. Vertebrate scavenging on microbial-insect interactions: potential influence on postmortem interval estimates in forensics.

- University of Dayton, Dayton, OH.
20. **Research Council SEED Grant: Summer Research Fellowship, Grant-In-Aid-Award and Equipment (University of Dayton)** — 2011. (\$6,500) **ME Benbow (PI)**. Effects of an antimicrobial agent on microbial-insect interactions: implications for potential pathogen dispersal by flies. University of Dayton, Dayton, OH.
 21. **Research Council SEED Grant: Summer Research Fellowship, Grant-In-Aid-Award and Equipment (University of Dayton)** — 2010. (\$11,000) **ME Benbow (PI)**. Microbial succession and potential pathogen dispersal by flies. University of Dayton, Dayton, OH.
 22. **Research Council SEED Grant: Summer Research Fellowship and Grant-In-Aid-Award (University of Dayton)** — 2009. (\$6000) **ME Benbow (PI)**. Ecology of carrion decomposition and application to forensic and medical entomology. University of Dayton, Dayton, OH.
 23. **Sustainability, Energy, and the Environment (SEE) Seed Grant (University of Dayton)** — 2009. (\$10,000) **ME Benbow (PI)**. Understanding invertebrate-microbial relationships for wetland bioassessment. University of Dayton, Dayton, OH.
 24. **NIH-BMRD (Biostatistical Methods) (1-R01 ES015525-01A1)** — 2008-2011 (\$1,541,922) (**Benbow sub-award of \$100,093**): L Waller (PI), LA Real (co-PI), **ME Benbow (co-PI)**, E Whitney (co-PI). Spatial statistics for disease ecology.
 25. **UBS Optimus Foundation** — 2008-2010 (\$661,699: **Benbow travel and supplies of \$60,000**): **Collaborator** with G Pluschke (PI), PLC Small, F. Portaéls, T Stinear, P. Johnson, C. Johnson, D Yeboah-Manu, A Um Boock. Investigations into the transmission of Buruli ulcer.
 26. **NIH (EID) Ecology of Infectious Diseases – Fogarty International Center (1R01 TW007550-01)** — 2005 - 2010 (\$2,000,000) (**Benbow sub-award of \$132,670**): RW Merritt (PI), **ME Benbow (co-PI)**, RJ Stevenson (co-PI), J Qi (co-PI), G Hickling (co-PI). Ecology of *Mycobacterium ulcerans*: evaluating landscape relationships with freshwater communities and disease occurrence.
 27. **USGS** — 2007 (**\$20,000 contract**): **ME Benbow (PI)**. Baseline studies of benthic macroinvertebrate communities in diverted streams of West Maui, Hawaii.
 28. **NIAD (RO3 A1062719-01 A1)** — 2005 - 2007 (\$132,670): RW Merritt (PI) and **ME Benbow (co-PI)**. The role of aquatic invertebrates in *Mycobacterium ulcerans* disease.
 29. **USDA-CSREES (2006-35101-16566)** — 2006-2008 (\$497,041; \$70,000 subcontract): GA Lamberti (PI), JL Tank (co-PI), DT Chaloner (co-PI), RW Merritt (co-PI), **ME Benbow (co-PI)**, RT Edwards (co-PI), DV D'Amore (co-PI), and SD Bridgham (co-PI). The role of salmon-derived nutrients in managed U.S. forests.
 30. **NSF Travel Grant Award** — 2004 (\$2,300): **ME Benbow (PI)**. Competitive award for postdoctoral associates through the Entomological Society of America for travel to the International Conference of Entomology, Brisbane, Australia.
 31. **World Health Organization** — 2004-2005 (\$91,200): RW Merritt (PI), PLC Small (co-PI), D Boakye (co-PI), **ME Benbow Collaborator**. Investigations into the role of aquatic reservoirs in the transmission of Buruli ulcer: Ecological relationships among aquatic invertebrates, habitat and *Mycobacterium ulcerans* in Ghana, West Africa.
 32. **Michigan Department of Transportation** — 2001 – 2004 (\$200,000): RW Merritt (PI) and **ME Benbow (co-PI)**. Road salt impact on marsh invertebrates.
 33. **The Christopher Hills Foundation** — 2001 (\$10,500): **ME Benbow (PI)** An assessment of aquatic research potentials in the Federated States of Micronesia and Republic of Palau.
 34. **The Center for Field Research at Earthwatch Institute** — 1999-2001 (\$108,910): **ME Benbow (PI)**, AJ Burky (co-PI), CM Way (co-PI). Impact of human development on isolated oceanic island streams: understanding seasonal recruitment and migration patterns of endemic, Hawaiian amphidromous gobies, shrimp, and limpets for stream restoration.
 35. **Ohio Biological Survey** — 1998, (\$500): **ME Benbow (PI)**. A comparative study of the aquatic macroinvertebrate composition of restored and natural wetlands in the Beavercreek Watershed, Beavercreek, OH.
 36. **University of Dayton Summer Research Fellowship** — 1995-1998 (\$1,200/summer). **ME Benbow (PI)**. Natural history of the endemic Hawaiian midge, *Telmatogeton torrenticola*: life-history

strategies for life in a harsh environment.

Pending Proposals

1. **Swedish Research Council, 2019** – L Chiwona-Karltun (PI), R Musundire (co-PI), M. Langton (co-PI) **ME Benbow (co-PI)**, M Matanda (co-PI), J Jackson (co-PI). *Demand driven evolution of traditional insect foods to branding and marketing* (Submitted April 2019)~\$433,000 (\$103,983)
2. **NIJ - National Institute of Justice (Research and Development in Forensic Science for Criminal Justice Purposes), 2019** – HR Jordan (PI), **ME Benbow (co-PI)**, JL Pechal (co-PI). *Microbial biomarker validation for early postmortem interval detection across the US* (Submitted April 2019).....~\$XXXXXX
3. **NIJ - National Institute of Justice (Research and Development in Forensic Science for Criminal Justice Purposes), 2019** – Brinkac (PI), **ME Benbow (co-PI)**, JL Pechal (co-PI). *Geosourcing potential of postmortem microbiota* (Submitted April 2019)~\$ XXXXXX
4. **NIH - National Institutes of Health (NIAID), (9/1/2019-8/31/2021)** — **ME Benbow (PI)**, H Jordan (co-PI). *The Role of Mosquitoes and Microbial Communities in the Poorly Understood Transmission and Environmental Dispersal of Mycobacterium ulcerans*. **\$415,532** (Submitted February 2019)
5. **MacArthur 100 & Change Competition White Paper to Michigan State University Competition for Proposal Preparation** — **ME Benbow (PI)**, JL Pechal (co-PI), W Liao, (co-PI), S Cho (co-PI), D Weatherspoon (co-PI), J Jackson-Malete (co-PI), C Effiong (co-PI), L Weatherspoon (co-PI). *IN4FOSE – Commercializing insects for food and feed to support a global African bioeconomy*. (Submitted March 2019)
6. **NSF - National Science Foundation (Ecology and Evolution of Infectious Diseases, 16-592), (7/1/2019-6/30/2023)** — **ME Benbow (PI)**, JF Guegan (co-PI), JL Pechal (co-PI), H Jordan (co-PI), and M Sandel (co-PI). *Novel weapon evolution in mycobacterial pathogenesis, dispersal and ecological persistence*. \$2,499,999 (**Benbow budget = \$946,696**) (Submitted November 2018)
7. **NSF - National Science Foundation INFEWS/T2** — JK Tomberlin (PI), **ME Benbow (co-PI)**, JL Pechal (co-PI), S Marquart-Pyatt (co-PI) HR Jordan (co-PI), S Khanal (co-PI), S Swiger (co-PI), T Crippen (co-PI), MT Holtzapple (co-PI), AH Knap (co-PI), G Murthy (co-PI): *INFEWS/T3: Sustainable insect farming contributing to food, water and energy security*, \$2,500,000 (**Benbow budget = \$615,132**) (Submitted August 2018)

Grant Efforts Not Funded in 2018

- USDA (National Institute of Food and Agriculture, Foundational and Applied Science Program), (1/2019-8/2021)** — MJ Grieshop (PD), JL Pechal (PI), and **ME Benbow (PI)**. *Evaluating fundamental microbe-spotted wing Drosophila interactions for identification of novel management tactics*. (Submitted August 2018): \$499,999
- International Development Research Centre of Canada (1/1/2019-12/31/2022)** — R Musundire (PI), K Masamba (co-PI), L Chiwona-Karltun, J Pechal (co-PI) **ME Benbow (PI)**, (co-PI). *Insects as a sustainable food and income source: community and market-led expansion of captive rearing of edible insects*. (submitted March 2018). \$2,312,679 (**Benbow budget = \$397,603**)

- NIH - National Institute of Health (R03, PA-18-488), 2018 – JL Pechal (PI), ME Benbow (co-PI), HR Jordan (collaborator), CJ Schmidt (collaborator).** *Potential Microbial Biomarkers of Infant Development through a Postmortem Survey* (Submitted June 2018).....\$100,000 (Direct Costs)
- NIJ - National Institute of Justice (Research and Development in Forensic Science for Criminal Justice Purposes, NIJ-2018-13600), 2018 – JL Pechal (PI), ME Benbow (co-PI), AM Tarone (co-PI), and SH Sze (co-PI).** *Microbes and Machine Learning: Identifying and Evaluating Microbial Model Accuracy for Death Investigation* (Submitted April 2018)~\$975,000 (~\$665,000)
- NIJ - National Institute of Justice (Research and Development in Forensic Science for Criminal Justice Purposes, NIJ-2018-13600), 2018 – HR Jordan (PI), ME Benbow (co-PI), JL Pechal (co-PI), CJ Schmidt (Collaborator).** *Refining of Potential Microbial Biomarkers as Indicators for Post-Mortem Interval* (Submitted April 2018).....~\$940,00 (~\$320,000)
- Forensic Sciences Foundation, American Academy of Forensic Science Acorn Grant — 2018.** (\$6,000) SF Kaszubinski (PI), JL Pechal (co-PI), CJ Schmidt (co-PI), **ME Benbow (co-PI)**. Identifying microbial biomarkers of infant death during autopsy.
- National Institute of Justice (Research and Development in Forensic Science for Criminal Justice Purposes, NIJ-2018-13600), 2018 – ME Benbow (PI), JL Pechal (co-PI), J Wankmiller (co-PI), and M Van Grinsven (co-PI).** *Establishing bio-ecological baseline metrics for a new forensic research facility to understand human decomposition in a northern latitude environment* (Submitted April 2018) \$900,000 (**Benbow budget = \$625,000**)
- National Science Foundation (Ecology and Evolution of Infectious Diseases, 16-592), (7/1/2018-6/30/2022) — ME Benbow (PI), JF Guegan (co-PI), JL Pechal (co-PI), H Jordan, and M Sandel (co-PI).** *Novel weapon evolution in mycobacterial pathogenesis, dispersal and ecological persistence.* (submitted November 2017) \$2,499,999 (**Benbow budget = \$881,632**)
- Department of Defense Global Biosecurity Engagement Program (10/1/2018-9/30/2019) — ME Benbow (PI), JL Pechal (co-PI).** *Novel microbial communities to mediate Anthrax proliferation and improve risk event response.* (submitted January 2018). \$208,651 (**Benbow budget = \$208,651**)
- Great Lakes Fishery Commission — (1/1/2019-6/30/21) K Scribner (PI), ME Benbow (co-PI), C Riseng (co-PI), K Wehrly (co-PI), E Baker (co-PI):** “Modeling larval lake sturgeon predation risk and natural recruitment using stream invertebrate and standardized hydrological/landscape data”, (Submitted January 2018). *Preliminary Proposal.*
- Great Lakes Fish and Wildlife Restoration Act — (1/1/2019-6/30/21) K Scribner (PI), ME Benbow (co-PI), C Riseng (co-PI), K Wehrly (co-PI), E Baker (co-PI):** “Modeling larval lake sturgeon predation risk and natural recruitment using stream invertebrate and standardized hydrological/landscape data”, (Submitted January 2018). *Preliminary Proposal.*
- Great Lakes Fishery Trust — (1/1/2019-6/30/21) K Scribner (PI), ME Benbow (co-PI), C Riseng (co-PI), K Wehrly (co-PI), E Baker (co-PI):** “Modeling larval lake sturgeon predation risk and natural recruitment using stream invertebrate and standardized hydrological/landscape data”, (Submitted January 2018). *Preliminary Proposal.*

PROFESSIONAL EXPERIENCE & SERVICE

The National Academies of Sciences, Engineering and Medicine (formerly the National Research Council) Review Committee Member (2017-2019) — Appointed Member of the Review of the Edwards Aquifer Conservation Program – Phase III.

The National Academies of Sciences, Engineering and Medicine (formerly the National Research Council) Review Committee Member (2015-2016) — Appointed Member of the Review of the Edwards Aquifer Conservation Program – Phase II.

National Academy of Sciences, National Research Council Review Committee Member (2014-2015) — Appointed Member of the Review of the Edwards Aquifer Conservation Program – Phase I.

Federal Reviews as Ad hoc or on Panels:

French National Research Agency– Review Panel Committee Member (Health-Environment: Environment, pathogenic agents and emerging and re-emerging infectious diseases, adaptation and resistance to antimicrobials, 2018-2019)

French National Research Agency Foundation –ad hoc proposal reviewer (Challenge 4: Life, Health and Well-Being, 2017)

Biotechnology and Biological Sciences Research Council of the United Kingdom, Ad Hoc Proposal Reviewer (2017)

National Geographic Society, Ad Hoc Proposal Reviewer (2017)

United State Department of Agriculture – NIFA, Ad Hoc Proposal Reviewer (2016)

Romanian – USA Fulbright Commission, Ad Hoc Proposal Reviewer (2016)

National Science Foundation - DEB Preliminary Proposal Ad Hoc Review Panel (Population and Community Ecology, 2015)

National Science Foundation - Doctoral Dissertation Improvement Grants DDIG Panel (Population and Community Ecology, 2012)

Department of Energy - SCGF (Office of Science Graduate Fellowship, 2010)

Invited Speaker — *World Health Organization* (6), *Michigan State University* (4), *Ohio State University* (2), *University of California Berkeley*, *University of Notre Dame*, *Purdue University*, *Texas A&M University*, *University of Texas El Paso*, *Emory University*, *University of Surrey (United Kingdom)*, *University of Würzburg (Germany)*, *Waldgeschichtliche Museum at the Nationalparkverwaltung Bayerischer Wald (Bavarian National Forest) (Germany)*, *University of Malawi*, *Malawi University of Science and Technology*, *Bowling Green State University*, *Wright State University*, *Indiana University-Purdue University (Ft. Wayne)*, *DePauw University* (2), *University of Dayton* (3), *Central Michigan University* (2), *Oakland University*, *West Virginia University*, *Hope College*, *University of Toledo*, *Millersville University*, *Kellogg Biological Station*, *Lorain County Community College*, *The Freshwater Society*, *Burapha University (Thailand)* (6), *Ubon Ratchathani University (Thailand)*, *Texas State University (Forensic Anthropology Center)*, *Kettering College*, *Indiana University-Purdue University (Indianapolis)*, *Huazhong Agricultural University (China)*, *Zhejiang University (China)*, *Zhuhai Agricultural Center (China)*, *Universiti Teknologi Mara (Malaysia)*, *Guangdong Police College (China)*, *Northwest Agricultural and Forestry University (China)*, *Pacific Whale Foundation*, *National Research Council of the Republic of Palau*, *Christopher Hills Foundation*, *Maui Watershed Awareness Involvement Forum*,

Invited Keynote Speaker – 6th Annual Meeting of Laboratoire d'Excellence Centre d'étude de la Biodiversité Amazonienne, Cayenne, French Guiana, 5 October 2017

Invited Keynote Speaker – 60th Annual Meeting of the Michigan Entomological Society, Saginaw, MI, 13-15 June 2014

Invited Plenary Speaker – Global Conference on Entomology, Chiang Mai, Thailand, 5-9 March 2011

Invited Keynote Speaker – *First Annual Meeting of the Malaysia Association of Forensic Entomology, Kuala Lumpur, Malaysia, 6 July 2011*

Invited Keynote Speaker – *One Day Seminar on Forensic Entomology and It's Implications in Medicine, Kuala Lumpur, Malaysia, 5 July 2011*

Past President — *North American Forensic Entomology Association, Executive Committee (2013 - 2014)*

President — *North American Forensic Entomology Association, Executive Committee (2012 - 2013)*

President-Elect — *North American Forensic Entomology Association, Executive Committee (2011 - 2012)*

Associate Guest Editor — *Frontiers in Ecology and Evolution, Death and Decomposition in Aquatic Ecosystems Special Issue*

Editorial Board, Subject Editor — *World Journal of Clinical Infectious Diseases (2011 - 2015)*

Editorial Board, Subject Editor — *Lepcey – Bulletin on Entomological Studies of Tropical Asia (2011 - present)*

Editorial Board, Subject Editor — *Pan-Pacific Entomologist (2008 - 2013)*

Editorial Board, Subject Editor — *Entomology Digital Library of the AAAS - Medical and Veterinary Entomology/Forensics Section (2006 - 2009)*

Editorial Board, Section Editor (Invertebrates) — *Encyclopedia of Inland Waters. Elsevier Press. GE Likens (Editor-In-Chief) (2006-2008)*

Associate Subject Editor — *Journal of Medical Entomology (2003 - 2006)*

World Health Organization Buruli Ulcer Research Coordination Working Group: Transmission Sub-Working Group Committee Member — *Technical Advisory Committee to the WHO (2010 – 2012)*

Consultant for World Health Organization, Buruli ulcer Initiative — *Ecology of Buruli ulcer disease, Ghana, Africa (2004 – 2006): Invited research seminars annually from 2005-2010.*

Expert Reviewer — *Proposed Rule of Critical Habitat for U.S. Fish and Wildlife Service, Honolulu, HI*

Invited Workshop Member — *the Na Wai Eha Stream Biology Working Group, Maui, HI (2006)*

Invited Workshop Member — *Texas State University Forensic Entomology Workshop, San Marcos, TX (2011)*

Expert Scientific Witness — *Contested case on stream flow in Maui Streams (Earthjustice, Honolulu, HI) (2007 – 2009): Commission on Water Resource Management, State of Hawaii. `Īao Ground Water Management Area High Level Source Water Use Permit Applications and Petition to Amend Interim Instream Flow Standards of Waihe`e, Waiehu, `Īao, & Waikapū Streams. Contested Case Hearing Case No. CCH-MA06-01.*

Research Director — *Earthwatch Institute Hawaii's Mountain Streams Project 1999-2001 (110 volunteers). JASON Foundation 2001 Online Expedition (Hawaii's Mountain Streams); included mentoring 6 middle school students in field research, data analysis and conference presentation*

Michigan State University International Research and Teaching Delegation — one of three scientists that visited Can Tho University, Vietnam to evaluate/facilitate potential research and teaching opportunities for Michigan State University - 2006

Scientific Advisor (*Watershed Ecology*) — Watershed biomonitoring program for the Republic of Palau; Christopher Hills Foundation, Maui, HI (2002-Present)

Scientific Advisor (*Forensic Entomology*) — New Jersey Forensic Science Commission, Forensic Anthropology and Associated Forensic Specialties Sub-Committee (2005 – 2011)

Conference & Symposium Organizing Committees — First Annual Meeting of North American Forensic Entomologists (2003); Aquatic Entomology Symposium at the Annual Meeting of the Entomological Society of America (2004, 2005, 2011, 2012); International Congress of Entomology (2012); Committee Chair of the Local Arrangements Committee of the 11th Annual Meeting of the North American Forensic Entomology Association held in Dayton, OH (2013); Local Arrangements Committee for the 2018 Annual Meeting of the Society for Freshwater Science (2017-2018); Death and Decomposition in Aquatic Ecosystems Special Symposium at the Annual Meeting of the Society for Freshwater Science (2018)

Conference Session Moderator — Annual Meeting of the North American Benthological Society/Society for Freshwater Science (2007, 2015, 2018), Annual Meeting of the Entomological Society of America (2004, 2005, 2008, 2011, 2012, 2013); Annual Meeting of the American Academy of Forensic Science (2009, 2010, 2012, 2014, 2015, 2016, 2017, 2018, 2019), Annual Meeting of the World Health Organization Buruli Ulcer Initiative (2009, 2010), Annual Meeting of the North American Forensic Entomology Association (2009, 2010, 2011, 2012, 2013), European Association for Forensic Entomology (2012)

International Advisory Board — Global Conference on Entomology, Chiang Mai, Thailand, 5-9 March 2011

Webmaster — North American Forensic Entomology Association (2003-2011); Island Environmental Biology Course (2002-2009); Culture, Biodiversity and Resources Management Course (2003-2009)

Executive Committee Member — North American Forensic Entomology Association, Webmaster and Newsletter Editor (2004-2011), President-Elect (2011-2012) – *President (2012-2013)* – Member of the first Executive Committee that created this organization (2004)

Professional Service Committees — North American Forensic Entomology Association (NAFEA): Membership Survey Committee; Annual Conference Organization Committee Chair (2013); American Academy of Forensic Science, Awards Committee (2018-2019), Program Committee (2018-2019);

NSF HBCU-UP Advisory Committee — committee for Historically Black Colleges and Universities Undergraduate Program grant award to G. Javan, Alabama State University (2014-2016)

Visiting Scholar — Belau National Museum, Republic of Palau (2009-2012); Burapha University, Thailand (2010, 2011); Ubon Ratchatani University, Thailand (2010); Faculty of Medicine, Universiti Teknologi Mara, Malaysia (2011); Huazhong Agricultural University, China (2011); University of Surrey, United Kingdom (2012)

Ad hoc Reviewer (# of reviews) —

Funding Agencies

NSF (4) • USGS (3) • USDA-NIFA • US Forest Service • The French National Research Agency (ANR)(2) •

National Geographic Society (2) • BBSRC (Biotechnology and Biological Research Council [UK]) • Fulbright Commission • National Sciences and Research Council (NSERC) of Canada • National Institute of Justice • The Leverhulme Trust (UK)

Journals

Ecology Letters (2) • *Ecology* (4) • *Biological Reviews* • *ISME J (Nature)* • *Scientific Reports (Nature)* • *Scientific Data (Nature)* (2) • *Oikos* • *PLoS ONE* (2) • *PLoS Neg Trop Dis* (15) • *Ecosphere* (2) • *J N Am Benthol Soc/Freshwat Sci* (5) • *Freshwater Biology* • *Appl Environ Microbiol* • *Emerg Infect Dis* • *J Animal Ecology* • *Environ Microbiol* • *Peer J* (2) • *Ecological Processes* • *Front Microbiol* • *Environ Entomol* (3) • *EcoHealth* (3) • *J Environ Qual* • *J Am Wat Res Assoc* (6) • *Mar Freshwat Res* • *J Trop Ecol* • *Ecol Entomol* (4) • *J Am Mos Cont Assoc* • *Great Lakes Entomol* • *J Med Entomol* (13) • *Landscape Ecol.* • *Ann Limnol — Int J Lim* (2) • *Caribb J. Sci.* (2) • *J Vect Ecol* (2) • *J Insect* • *Aquat Sci* • *Pertanika J Trop Agric Sci* • *Wetlands* (2) • *Applied Herp* (2) • *Trans Am Fish Soc* • *Acta Oecol* (2) • *Hydrobiologia* (4) • *Environ Biol Fish* • *Aquat Sci* • *Environmental Pollution* • *Pan-Pac Entomol* (3) • *J Insect Sci* • *J East Afri Nat His* • *Entomologia Experimentalis et Applicata* • *BMC Public Health* (2) • *J Forensic Sci* (15) • *Forensic Sci Internat* (7) • *J Wat Sanit Develop* • *African J Agric Res* • *J Microbiol Methods* • *EcoHealth* • *Conservation Biology* • *Entomological News* • *BMC Research Notes* • *Waste Management* (2) • *The Canadian Field-Naturalist* • *Ulcers* • *J Mar Sci: Res and Develop* • *Aquatic Insects* • *Int J Legal Med* (4) • *J Insect Conserv* • *Acta Tropica* • *Appl Microbiol Biotechnol* • *J Mollusc Studies* • *Int J Health Geographics* (2) • *J Hydrol Reg Stud* (2) • *Bull Southern Calif Acad Sci* • *Rev Brasileira Entmol* • *Am J Trop Med Hyg* • *J Great Lakes Res* • *Pacific Science* • *J Insect Behav* • *Curr Opinion Insect Sci* • *Canadian J Infect Dis & Med Microbiol* • *Microbes and Environments* • *Behav* • *Southeast Nat* • *Southwest Entomol* • *Micronesica* (2)

Publishers

Elsevier • Harvard University Press

MEMBERSHIPS

American Association for the Advancement of Science • Ecological Society of America • Society for Freshwater Science (formerly the North American Benthological Society) • Entomological Society of America • American Academy of Forensic Science • North American Forensic Entomology Association • Ohio Academy of Science • Xerces Society • The Association for Tropical Biology • Malaysia Association of Forensic Entomology • European Association of Forensic Entomology

INVITED SEMINARS AND ADDRESSES

Bridging Ecology and Applications Through High Throughput Sequencing Technology. Invited Seminar at University of Turin, Italy, 14 March 2019. **International Invitation**

Sample Types and Validation in PMI Research: Bridging Basic and Applied Science in Forensics? Invited Presentation at the Stakeholder Meeting for Estimating the Postmortem Interval (PMI) using Microbes. Baltimore, MD, 18 February 2019.

Using High Throughput Sequencing Technologies to Advance Insect Science. Invited Seminar at Burapha University, Thailand, 7 February 2019. **International Invitation**

The Dark Side of the Necrobiome: The Role of Carrion in Ecosystems. Invited Seminar at Waldgeschichtliche Museum at the Nationalparkverwaltung Bayerischer Wald (Bavarian National Forest), Germany, 11 October 2018. **International Invitation**

The Ecological Importance of Carrion and the Necrobiome in Human and Natural Systems. Invited Seminar at University of Würzburg, Würzburg, Germany, 10 October 2018. **International Invitation**

Exploring Lake Midge Emergences to Determine Natural Aquatic Insect Colony Feasibility in Malawi. Next Generation of Food Security in Malawi Symposium, Salima, Malawi, 18-19 July 2018. **International Invitation**

The necrobiome and forensic science: understanding death and decomposition for societal good. Invited seminar at Northern Michigan University, Marquette, MI, 16 May 2018.

The human postmortem microbiome: past, present and future. Invited Seminar at University of Salzburg, Salzburg, Austria, 4 May 2018. **International Invitation**

Insects and human health: how studying aquatic insects has led from searching for a mysterious disease in Africa to observing autopsies in Michigan. Invited seminar at Lake Superior State University, Sault Ste. Marie, MI, 9 March 2017.

Microbiome Systems Ecology. Invited Address at Michigan State University Global Innovation Forum, East Lansing, MI, 5 November 2016.

Bugs, bacteria and bodies: potential applications of the necrobiome in forensic investigation. Invited seminar at Sam Houston State University, Huntsville, TX, 20 October 2016.

The human postmortem microbiome: potential applications in forensics and novel translations for investigating human health and disease. Invited seminar at College of Medicine, University of Malawi, Blantyre, Malawi, 8 June, 2016. **International Invitation**

The human postmortem microbiome: potential applications in forensics. Invited seminar at Malawi Institute of Technology, Malawi University of Science and Technology, Blantyre, Malawi, 7 June, 2016. **International Invitation**

The human postmortem microbiome and potential forensic applications. Invited address at Advances in Forensic Medicine & Pathology, Department of Pathology, University of Michigan, Ann Arbor, MI, 11-12 May, 2016.

More than marine derived nutrients: additional insights into the ecology of salmon carcass decomposition. Invited Seminar at Kellogg Biological Station, Michigan State, MI, April 29, 2016.

The human postmortem microbiome: a new frontier in forensics. Invited Seminar at Bowling Green State University, Bowling Green, OH, February 17, 2016.

Insect-microbe interactions of decomposition and forensics: a next-generation approach to integrating basic and applied science. Invited seminar in the Department of Biological Sciences, Burapha University, Thailand, December 16, 2015. **International Invitation**

Carrion decomposition, forensics and disease: tales of microbes and insects from death scenes to scenic streams. Invited Seminar at University of Notre Dame, South Bend, IN, November 25, 2015.

Riparian invader ripple effects in headwater stream ecosystems. Invited Seminar at Bowling Green State University, Bowling Green, OH, October 10, 2015.

Insights from the living dead: what flies and microbes can reveal about death, decomposition and incarceration. Invited Seminar at Central Michigan University Biological Research Station on Beaver Island, MI, June 3, 2015.

Salmon carcass effects on stream-riparian forest networks: bottom up effects from microbes and insects. Invited Seminar at Central Michigan University Biological Research Station on Beaver Island, MI, June 2, 2015.

So what, who cares? Why insects, microbes and their interactions are important in forensics and medicine. Invited Seminar for Future Forensic Scientists Club, Michigan State University, April 27, 2015.

Exotic plant invasions and salmon decomposition mediate insect-microbe interactions. Invited Seminar in the Department of Biological Sciences, University of Windsor, Canada, October 3, 2014. **International Invitation**

Insects and Microbiomes: An (un)likely intersection of ecology, disease and forensics. Invited Seminar in the Department of Entomology, Michigan State University, September 12, 2014.

Terrestrial invaders and aquatic insect-microbe interactions. Invited Keynote Speaker for the 60th Michigan Entomological Society Annual Meeting, Saginaw, MI, June 14, 2014.

New research in microbe-insect interactions. Invited Seminar at College of Plant Protection, Shandong Agricultural University, Shanghai, China, June 12, 2014. **International Invitation**

The insect microbiome within a biogeographic context. Invited Seminar at the Institute of Entomology, Northwest Agricultural and Forestry University, Yangling, Shaanxi, China, June 9, 2014. **International Invitation**

Microbe-insect partnerships: the importance of biogeographic variation. Invited Seminar at the State Key Laboratory of Agricultural Microbiology, Huazhong Agricultural University, Wuhan, China, June 7, 2014. **International Invitation**

Diverse applications in carrion decomposition ecology research. Invited Seminar at the State Key Laboratory of Agricultural Microbiology, Huazhong Agricultural University, Wuhan, China, June 6, 2014. **International Invitation**

Diverse applications in carrion decomposition ecology research. Invited Seminar at the College of Agricultural and Biotechnology, Zhejiang University, Hangzhou City, China, June 3, 2014. **International Invitation**

Emerging multidisciplinary research efforts in carrion ecology and forensic entomology. Invited Seminar in the Department of Entomology, Purdue University, March 6, 2014.

Aquatic community responses to riparian invaders. Invited Seminar in the Department of Entomology, Michigan State University, July 23, 2013.

Bugs and bodies: new frontiers and dimensions of forensic entomology. Invited Presentation for the 32nd Annual Empire State Association of Two Year College Biologists, Albany, New York, April 20, 2013.

Carrion ecology, evolution and their applications: new insights into microbe-insect interactions of ephemeral resources. Invited Graduate Luncheon Seminar in the Department of Integrative Biology, University of California Berkeley, April 15, 2013.

Insects and incarceration - maggots, medicine and microbes, oh my! Invited Seminar in the Division of Arts

and Sciences, Kettering College, February 14, 2013.

Watershed Biomonitoring for Pacific Ocean islands. Invited Workshop speaker for the Nature Conservancy, Koror, Republic of Palau, June 18-21, 2012. **International Invitation**

The mysteries of Mycobacterium ulcerans infection (Buruli ulcer) - a neglected tropical disease. Invited Seminar in the Department of Biology, Indiana University-Purdue University, Oct 5, 2012.

Ecological eavesdropping: implications for forensic science. Invited Seminar in the Department of Microbial and Molecular Science, University of Surrey, United Kingdom, May 31, 2012. **International Invitation**

A mysterious infectious disease system and a complex systems approach to understanding transmission of Mycobacterium ulcerans infection. Invited Seminar in the Faculty of Medicine, Universiti Teknologi Mara, Kuala Lumpur, Malaysia, July 5-6, 2011. **International Invitation**

Understanding the mechanistic role of blow flies in the microbial ecology of carrion decomposition: implications to food borne disease spread. Invited Keynote Speaker for “Forensic Entomology and It’s Implications in Medicine” at the Faculty of Medicine, Universiti Teknologi Mara, Kuala Lumpur, Malaysia, July 5, 2011. **International Invitation**

New approaches for understanding the mechanistic role of microbial community-blow fly interactions during carrion decomposition: applications to forensic science. Invited Seminar for the Department of Forensic Science and Technology, Guangdong Police College, Guangzhou, China, June 28, 2011. **International Invitation**

Understanding the mechanistic role of blow flies in the microbial ecology of carrion decomposition: implications to food borne disease spread. Invited Seminar at Zhuhai Agricultural Center, Zhuhai, China, June 27, 2011. **International Invitation**

Understanding the mechanistic role of blow flies in the microbial ecology of carrion decomposition: implications to food borne disease spread. Invited Seminar at the State Key Laboratory of Agricultural Microbiology, Huazhong Agricultural University, Wuhan, China, June 24, 2011. **International Invitation**

A mysterious infectious disease system and a complex systems approach to understanding transmission of Mycobacterium ulcerans infection. Invited Seminar at the State Key Laboratory of Agricultural Microbiology, Huazhong Agricultural University, Wuhan, China, June 23, 2011. **International Invitation**

Blow flies, bacteria and inter-kingdom ecological interactions during decomposition: implications for forensic science and beyond. Invited Plenary Speaker for the Global Conference on Entomology, Chiang Mai, Thailand, March 5-9 2011. **International Invitation**

A new approach to the mechanistic role of microbial community-blow fly interactions during carrion decomposition: applications to forensic science. Invited seminar in the Department of Biological Sciences, Burapha University, Thailand, January 10, 2011. **International Invitation**

Understanding the role of ecology in infectious disease systems: complex environmental interactions beyond medical entomology. Invited seminar in the Department of Biological Sciences, Ubon Ratchathani University, Thailand, July 24, 2010. **International Invitation**

Understanding carrion decomposition ecology for application to forensic science. Invited seminar in the Department of Biological Sciences, Burapha University, Thailand, January 2, 2009. **International Invitation**

Forensic Entomology: the collection and preservation of insect evidence from crime scenes. Invited seminar in the Department of Biological Sciences, Burapha University, Thailand, January 3, 2009. **International Invitation**

Mycobacterium ulcerans infection: the ecology of a neglected tropical disease. Invited seminar in the Department of Microbiology, The Ohio State University, January 21, 2009.

Large scale patterns of land use and aquatic invertebrate community structure as part of a West African disease system. Invited seminar in the Department of Entomology, Texas A&M University, April 23, 2009.

Multiple-scale and multi-disciplinary ecological studies on a mysterious emerging disease in West Africa. Invited seminar in the Department of Biology, West Virginia University, October 26, 2009.

The ecology of worldwide emerging diseases: how and why do infectious agents emerge from the environment. Invited seminar in the Department of Biological Sciences, Burapha University, Thailand, December 29, 2008. **International Invitation**

Complexities of studying a neglected tropical disease: Mycobacterium ulcerans infection. Invited seminar in the Department of Biological Sciences, Burapha University, Thailand, December 30, 2008. **International Invitation**

The ecology of an emerging infectious disease in West Africa. Invited seminar in the Department of Biology, University of Dayton, January 31, 2008.

The role of biting hemipterans in the emergence of a mysterious infectious disease in West Africa. Invited seminar in the Department of Entomology, Ohio State University, February 19, 2008.

Starting from ground zero: the first ecological studies of a worldwide emerging infectious disease. Invited seminar in the Department of Biological Sciences, Wright State University, October 20, 2008.

Deciphering a disease system by integrating ecosystem ecology and molecular biology. Invited seminar in the Department of Biological Sciences, Oakland University, November 25, 2008.

From satellites to gene probes: understanding the ecology of an emerging mycobacterial disease in tropical West Africa. Invited seminar in the Department of Biology, University of Texas El Paso, El Paso, TX. April 14, 2006.

Ecology of Mycobacterium ulcerans Infection: evaluating landscape relationships with freshwater food webs and disease occurrence. Invited seminar in the Department of Biology, DePauw University, Greencastle, IN. March 31, 2005.

Human impacts on freshwater ecosystems: the case study of Mycobacterium ulcerans Infection. Invited seminar in the Department of Biological Sciences, University of Toledo, Toledo, OH. March 1, 2005.

Environmental drivers of Buruli ulcer disease in West Africa. Invited seminar in the Department of Entomology, Michigan State University, East Lansing, MI. October 2004.

Water flow reduction effects on Hawaiian stream communities. Invited seminar in the Department of Biology, Hope College, Holland, MI. May 1999.

INVITED WORKSHOP SPEAKER/LEADER

Benbow, ME. Bridging Ecology and Applications Through High Throughput Sequencing Technology. Invited workshop at University of Turin, Italy, 14 March 2019.

Pechal, JL and **ME Benbow.** Collecting Entomological Evidence at Death Scenes. Invited workshop at Northern Michigan University for local law enforcement, Marquette, MI, 16 May 2018.

Tomberlin, JK, HR Jordan, S Bankson, **ME Benbow,** D Botluck, JA Cammack, S Domitrovich, RT Kennedy, PAW King, JJ Maltese, JL Pechal, HM Pitluck, L Sare, and DE Shelton. 2017. Viewing Research Through Different Lenses: How to Achieve Success in Court. 68th Annual Meeting of the American Academy of Forensic Science. New Orleans, LA, February 13-18, 2017.

Jordan, HR and **ME Benbow.** 2017. Forensic Microbiology and Its Applications Today. Meeting of the American Academy of Forensic Science. New Orleans, LA, February 13-18, 2017.

Pechal, JL, CJ Schmidt, HR Jordan, and **ME Benbow.** 2016. Human Postmortem Microbiomes: The Hows, Wheres and Whys. Advances in Forensic Medicine & Pathology, Ann Arbor, MI, 11-12 May.

Benbow, ME with G. Javan. American Academy of Forensic Science Workshop: Hands-On Evaluation of the Thanatomicrobiome and Epinecrotic Communities, Meeting of the American Academy of Forensic Science. Orlando, FL, February 16-21, 2015 (*co-chair for this workshop*)

Benbow, ME. 2015. The Importance of Thanatomicrobiome and Epinecrotic Communities for Forensic Entomology. In: Hands-On Evaluation of the Thanatomicrobiome and Epinecrotic Communities. 67th Annual Meeting of the American Academy of Forensic Science. Orlando, FL, February 16-21, 2015. (*co-chair for this workshop*)

Pechal, JL, **ME Benbow.** 2015. Bioinformatic Data Analysis and Multivariate Statistical Interpretation. In: Hands-On Evaluation of the Thanatomicrobiome and Epinecrotic Communities. 67th Annual Meeting of the American Academy of Forensic Science. Orlando, FL, February 16-21, 2015. (*co-chair for this workshop*)

Benbow, ME, TL Crippen. 2014. Why are Microbes Important to Pathology? Invited Speaker and Session Leader. In: Forensic Microbiology: Where do we begin? 66th Annual Meeting of the American Academy of Forensic Science. Seattle, WA, February 17-22, 2014. (*co-chair for this workshop*)

Pechal, JL, **ME Benbow.** 2014. Sampling, Data Collection and Equipment. Invited Speaker and Session Leader. In: Forensic Microbiology: Where do we begin? 66th Annual Meeting of the American Academy of Forensic Science. Seattle, WA, February 17-22, 2014. (*co-chair for this workshop*)

Benbow, ME, JL Pechal. 2014. Data Analysis and Interpretation. Invited Speaker and Session Leader. In: Forensic Microbiology: Where do we begin? 66th Annual Meeting of the American Academy of Forensic Science. Seattle, WA, February 17-22, 2014. (*co-chair for this workshop*)

Benbow, ME, JL Pechal. 2014. Experimental Design for Future Research. Invited Speaker and Session Leader. In: Forensic Microbiology: Where do we begin? 66th Annual Meeting of the American Academy of Forensic Science. Seattle, WA, February 17-22, 2014. (*co-chair for this workshop*)

Tomberlin, JK, **ME Benbow.** 2014. Research Opportunities. Invited Speaker and Session Leader. In: Forensic Microbiology: Where do we begin? 66th Annual Meeting of the American Academy of Forensic Science. Seattle, WA, February 17-22, 2014. (*co-chair for this workshop*)

Benbow, ME, JL Pechal. 2012. Multivariate statistical approaches for analyzing community succession in forensic entomology. Invited Speaker and Session Leader. 10th Annual Meeting of the Forensic Entomology Association. Las Vegas, NV, July 16-20, 2012.

Benbow, ME, J Lang, AJ Burky. 2012. An approach to rapid biological stream assessments for island watersheds. Invited Speaker and Session Leader. 2nd Micronesian Challenge Terrestrial Measures Workshop. Koror, Palau, June 18-21, 2012. *International Invitation*

Benbow, ME. 2011. The role of aquatic organisms in forensic investigations. Invited Speaker. Forensic Entomology Workshop. Forensic Anthropology Center at Texas State – Grady Early Forensic Anthropology Research Laboratory, Texas State University, San Marcos, TX, November 6, 2011.

SCHOLARLY PRESENTATIONS

Please see full list of presentation citations at the end of the CV.

TEACHING

Courses taught at Michigan State University:

Forensic Entomology (ENT 401) — Fall 2018

Forensic Entomology (ENT 812) — Spring 2017

Forensic Applications of the Necrobiome (ENT 812) — Spring 2016

Aquatic Entomology with Lab (ENT 422) — Fall 2015, 2017

Insects, Disease and Natural Resources Management (ENT 812) — Fall 2014

Graduate Independent Study (ENT 890) — Fall 2017

Honors Capstone Project (MMG 499H) — Fall 2017, Spring 2018

Guest Lecture in **Environmental Health** – Spring 2015

Guest Lecture in **Survey of Forensic Science** – Fall 2014, 2015, 2016, 2017, 2018

Guest Lectures in **Introduction to Forensic Science** – Fall 2014, 2015, 2016, 2017

Guest Lecture in **Pests, Society and the Environment (ENT 205)** – Spring 2014, 2015, 2016, 2017, 2018, 2019

Earth Systems Science (Honors Course – co-taught with other faculty) — 2007

Forensic Entomology (Freshman Seminar Course – co-developed) — 2005

Online Forensic Entomology (co-developed) — 2005

Aquatic Entomology, Tropical Biology, & Insect Ecology (Multiple Guest Lectures) — 2001 – 2006

Insect Production and Energetics (Graduate Seminar Course) — 2003

Guest Lectures at Other Universities/Institutions

Guest Lecture in *Health Science* - Northern Virginia Community College (virtual lecture via video conference) – Fall 2014

Lecture Courses taught at DePauw University and the University of Dayton:

Disease Ecology (BIO 465) — 2010-2013

Guest Lecture in Restoration Ecology – Multiple Semesters from 2009-2013

Guest Lecture in Ecology – Multiple Semesters from 2009-2013

Ecological Methods and Instrumentation (BIO 552 P2) — 2010

Introduction to Biology — Ecology and Evolution (BIO 152) — 2008-2013

Introduction to Multivariate Statistics (BIO 596) — 2009, 2013

Invertebrate Sampling and Identification (BIO 596) — 2010

Island Environmental Biology (BIO 360) - (co-developed) (*Study Abroad*) — 2002-2005, 2009
Culture, Biodiversity and Resources Management (BIO 340) (co-developed) (*Study Abroad*) — 2005, 2010
Sophomore Seminar (BIO 299) — 2009, 2011, 2013
Undergraduate Independent Study (BIO 421) — 2009-2013
Comparative Animal Physiology (BIO 465) — 1998 (5 weeks) & 2000
Science 230 Introductory Biology for non-majors (SCI 230) — 2000
General Biology (BIO 101, majors and non-majors)— 1998
Invertebrate Zoology — 1997 (5 weeks)
Introduction to Ecology and Evolution — 2005, 2006 (DePauw)
Senior Seminar — 2005 (DePauw)

Laboratory Courses taught at the University of Dayton:

Restoration Ecology (co-taught 2010) • Island Environmental Biology (2002-2004) • General Biology for majors (1999) • Ecology (1998) • Comparative Animal Physiology (1997–1998) • Physiological Ecology for General Biology (1994–1999) • Invertebrate Zoology (1994-1997) • Biology/Computer Development for non-majors (1997) • Microbiology (1996) • Bioinstrumentation (molecular/microbial research techniques) (1995)

Lab Development at the University of Dayton:

Island Environmental Biology (co-developed with AJ Burky) — 2001-2002; 2008-2011
Culture, Biodiversity and Resources Management (co-developed with AJ Burky)— 2004-2005; 2010

LECTURE/LABORATORY/WORKSHOP MANUALS & SUPPLEMENTAL TEACHING MATERIALS

- Pechal, JL, **ME Benbow**. 2012. *An Introductory Manual for Multivariate Statistical Analysis of Community Data Using PCORD*. Manual for North American Forensic Entomology Association Workshop. Las Vegas, NV, 17 July 2012.
- Benbow, ME**, JM Lang & AJ Burky. 2012. *Watershed Biomonitoring for Palau/MC Jurisdictions*. Manual for the 2nd Micronesian Challenge Terrestrial Measures Workshop. Koror, Palau, 18-21 June 2012.
- Benbow, ME** & AJ Burky. 2005. *Culture, Biodiversity, and Resources Management: Managing Natural Resources in Costa Rica*. 2005. Lecture and Lab Guide.
- Benbow, ME** & AJ Burky. 2002-2004 *Island Environmental Biology: A Brief History of Water Resource Issues of the Hawaiian Islands*. Lecture and Lab Guide. 113 pages.
- Benbow, ME** & AJ Burky. 2002-2003. *Island Environmental Biology: Mountain Stream – Ocean Connections in the Republic of Palau, Assessing Stream Quality as a Measure of Impact on Marine Communities*. Lecture and Lab Guide. 46 pages.

MENTORING & NON-COURSE TEACHING

Faculty Mentoring at MSU

Faculty Mentor Committees:

Peter White, PhD (Assistant Professor in Lyman Briggs and the Department of Entomology) (2014 – 2018)
Jennifer Pechal, PhD (Assistant Professor, fixed-term, Department of Entomology) (2015 – present)

Graduate and Post-Graduate Major Advisor or Co-Advisor

Postdoctoral Advisor or Co-Advisor: M. McIntosh, PhD (2008-2010); J. Pechal, PhD (2012-2014)

Graduate Advisor or Co-Advisor – Graduation Year:

Sanchai Naree (PhD) – present – major co-advisor, Burapha University, Thailand
Breanna Wydra (MS) – present – major advisor
Sierra Kaszubinski (MS) – present – major co-advisor
Joseph Receveur (PhD) – present – major advisor
Courtney Larson (PhD) – present – major advisor
Nicholas Babcock (MS) (2018)– major advisor
Courtney Weatherbee (MS) (2016) – major advisor
Gerald Nowak (MS) – (2016) – major advisor
Samrit Maksong (PhD) (2015) –major co-advisor, Burapha University, Thailand
Jennifer Lang (PhD) (2015) – major advisor at University of Dayton until move to MSU
Rachel Barker-McNeish (MS - 2011 and PhD - 2016) – major co-advisor
Kathleen Jennings-Gorbach (PhD) – (2012) – major co-advisor
Andrew Lewis (MS) – (2011) – major advisor
Megan Shoda (MS) – (2010) – major co-advisor

Graduate Committee Member:

Rex Mbewe (MS) – 2017 - present
Patrick Stillson (MS) – 2018 - present
Christine Kwiatkowski (MS) – 2017 - present
Joel Betts (MS) – 2017 – present
Samantha Tank (MS) – 2017 - present
Patrick Engelken (MS) – 2015 - present
Jason Matlock (PhD) – 2015 - 2018
Rebecca Vinit (MS) – 2015 - 2017
Ellen Jesmok (MS) – 2015

Service on Graduate Committees at Other Institutions and prior to 2014 at MSU (graduation year)

Jana Englmeier (PhD) – University of Würzburg (2019-present)
Alberto Doretto (PhD) – University of Turin, Italy (outside examiner) (2018-2019)
Tharindu Bambaradeniya (M.Phil) – University of Peradeniya, Sri Lanka (outside examiner) (2018-2019)
Zanthe Kotze (PhD) – Texas A&M University (2017-present)
Lindsay Harrison (PhD) – Mississippi State University (2017-2018)
Laxmi Dhungel (PhD) – Mississippi State University (2016-present)
Zachary Burcham (PhD) – Mississippi State University (2015-2019)
Supine Away Chankong (MS) – Burapha University, Thailand (2015-present)
Aumaporn Pongura (MS) – Burapha University, Thailand (2015-present)
Joseph Receveur (BS Honors Thesis) – Millersville University (2016)
Rachel McNeish (PhD) – University of Dayton (2016)
Tanawat Yemor (PhD) – Burapha University, Thailand (2015)
Jennifer Lang (PhD) – University of Dayton (2015)
Allison Blystone – University of Dayton (2014)
Jessica Davis (MS) – University of Dayton (2013)
Brandon King (MS) – University of Dayton (2013)
Sean Goins – University of Dayton (2012)
J. Chapman (MS) – University of Dayton (2012)
Jennifer Pechal (PhD) – Texas A&M University (2012)
Peter Levi (PhD) – University of Notre Dame (2012)
Ryan Kimbirauskas (PhD) – Michigan State University (2011)

Sarah Willson (MS) – Michigan State University (2011)
Lindsay Campbell (MS) – Michigan State University (2011)
Heloise Breton (PhD) – University of Ontario Institute of Technology (outside examiner) (2012)
Todd White (MS) – Michigan State University (2010)
Emily Campbell (MS) – Michigan State University (2010)
Kristi Zurawski (MS) – Michigan State University (2009)
Oswaldo Hernandez (PhD) – Michigan State University (2008)
Allison Oleson (MS) – Michigan State University (2007)
Sarah Wolf (MS) – Michigan State University (2007)

Visiting Faculty Scholars

Dr. Tatiana Oliveira – Federal University of Pernambuco (June-July, 2018)
Dr. Luc Djogbénu – Institut Régional de Santé Publique /University of Abomey-Calavi, Ouidah, Bénin (Sept., 2016)
Dr. Guang-hui Zhu – Shantou University Medical College, China (May 2015- May 2016)
Dr. Philip Barton – Australian National University, Australia (June 2015, October 2016)
Dr. Heather Jordan – Mississippi State University, MS, USA (March, 2014)
Dr. Rachel Simmonds - University of Surrey, United Kingdom (October, 2011)

Visiting Student Scholars

Alberto Doretto – PhD Student, University of Turin, Turin, Italy (August – December 2017)
Diego Oliveira – PhD Student, Universidade Federal De Pernambuco, Brazil (May – September 2017)
Juanjuan Guo – PhD Student, Xiangya School of Medicine, Ghansha, Hunan, China (September 2016-September 2017)
Andre Akira Yoshikawa – BS Student, University Federal of Santa Catarina, Florianopolis, SC, Brazil (May – August 2016)
Maiara Rodrigues Oliveira Leite – BS Student, University Federal of Viçosa, Brazil (May – August 2015)
Carmella Vizza - PhD Student, University of Notre Dame, IN (April, 2014)
Jennifer Mauer - BS Student, Kettering College, OH (May – August 2013)
Hannah Moore - PhD Student, Keele University, United Kingdom (June, 2012)
Jennifer Pechal - PhD Student, Texas A&M University, TX (June – July 2010 and June – July 2011)
Michael Diaz - BS Student, California State University, CA (May – August 2011)

Undergraduate Research Advisor, Co-Advisor or Supervisor: > 100 students

Mentor of Undergraduate Research Assistants (years in lab) (IS = Independent Study for Credit)

Michigan State University

Katelyn Smiles (2018-Present)
Makayla Scott (2018 – Present)
Brianna Timmons (2018)
Mack McGinn (2017-2018) (Honors Capstone Project and IS)
Ryan Walquist (2017)
Caleb Armstrong (2017)
Katie Kierczynski (2016-2017) (Honors Thesis and IS)
Benjamin Bejcek (2016-2017, IS)
Hadley O'brien (2016-2017)
McKinley Brewer (2014-2018)
Sydney Manning (2016)
Sadie Boyd (2014)

Lucy Schroeder (2014-2015)

University of Dayton

Patrick Vrablik (2012-2013)	Ali Wright (2012-2013, IS)	Carolyn Teter (2010-2011, IS)
Elizabeth Gleason (2012-2013)	Kevin Sullivan (2011-2013, IS)	Jessica Teater (2010-2011)
Olivia Hart (2013)	Jamie Alfieri (2010-2013, IS)	James Dawson (2010-2011)
Morgan McHugh (2013, IS)	Joe Roeckner (2010-2012)	Elizabeth Wetzel (2009)
Erica Watson (2012-2013)	Mary Timko (2011-2012, IS)	An Lai (2009-2010)
Amy Whitaker (2012-2013, IS)	Allison Gansel (2009-2012, IS)	Travis Greenwood (2010)
Kaitlin Fochesato (2012-2013)	Maureen Berg (2009-2012, IS)	Elizabeth Gazdick (2009-2010, IS)
Lauren Shewhart (2011-2013, IS)	Jon White (2010-2012)	Jessica Henry (2008-2009, IS)
Alexandra Calteaux (2011-2013)	Court Wille (2011)	Elise Malinowski (2008-2009, IS)
William Kmetz (2011-2013, IS)	Josie Arbogast (2011)	
Nichole Henger (2012-2013, IS)	Tiffany Blair (2009-2011, IS)	

K-12 Science Fair Mentoring

- Josephine Baudendistel - Middle School Student. Mentored from 2011 - 2013 for several county and regional science fairs that resulted in an invitation to the Ohio State Science Day. She received first place several times but was unable to present at state competition because of age restrictions.

Academic Advising (University of Dayton)

2008-2009: 8 Advisees
2009-2010: 12 Advisees
2010-2011: 20 Advisees
2011-2012: 22 Advisees
2012-2013: 24 Advisees
2013-2014: 24 Advisees

Student Achievements

- Courtney Larson (PhD) – Kellogg Biological Station Graduate Student Research Fellowship, Michigan State University, \$2000 (2019)
- Sierra Kaszubinski (MS) – The Forensic Science Foundation Student Travel Grant, \$1,500 (2018)
- Breanna Wydra (MS) – The Forensic Science Foundation Acorn Grant, \$1,500 (2018)
- Nick Babcock (MS) – The Merritt Endowed Fellowship in Entomology, Michigan State University, \$2,000 (2018)
- Joe Receuver (MS) – The Gordon E. Guyer Fellowship in Aquatic Entomology, Michigan State University, \$4,000 (2018)
- Courtney Larson (PhD) – Department of Entomology Eugenia McDaniel Award, Michigan State University, \$500 (2018)
- Courtney Larson (PhD) – Kellogg Biological Station Graduate Student Research Fellowship, Michigan State University, \$3500 (2018)
- Courtney Larson (PhD) – Kellogg Biological Station Graduate Student Research Fellowship, Michigan State University, \$1700 (2017)
- Joe Receuver (MS) – The Gordon E. Guyer Fellowship in Aquatic Entomology, Michigan State University, \$5,000 (2017)
- Courtney Larson (PhD) – Merritt Endowed Fellowship, Michigan State University, \$2000 (2017)
- Courtney Larson (PhD) – Lechel Memorial Scholarship Presentation Winner, Michigan Mosquito Control Association, \$600 (2016)

- Courtney Larson (PhD) – Graduate School Travel Fellowship, Michigan State University, \$350 (2016)
- Courtney Larson (PhD) – National Science Foundation Graduate Fellowship (2016-2019)
- Courtney Larson (PhD) – The Gordon E. Guyer Fellowship in Aquatic Entomology, Michigan State University, \$2000 (2016)
- Courtney Weatherbee (MS) – Merritt Endowed Fellowship, Michigan State University, \$2000 (2016)
- Courtney Larson (PhD) – General Fund Research Award, Society for Freshwater Science, \$1000 (2016)
- Courtney Weatherbee (MS) – Graduate School Travel Fellowship, Michigan State University, \$350 (2016)
- Courtney Larson (PhD) – The Gordon E. Guyer Fellowship in Aquatic Entomology, Michigan State University, \$1500 (2015)
- Courtney Larson (PhD) – 13th Annual Plant Science Graduate Research Symposium, Michigan State University, 3rd Place Winner of Applied Poster (2015)
- Scooter Nowak (MS) – The Gordon E. Guyer Fellowship in Aquatic Entomology, Michigan State University, \$1500 (2014)
- Lauren Shewhart (BS) – The Ohio Academy of Science: The Environmental Science & Engineering Scholarship Program, \$1500 (2013)
- Rachel McNeish (PhD) – Sigma Xi Grants-In-Aid of Research, \$1000 (2013)
- Lauren Shewhart (BS) – Sigma Xi Symposium, University of Dayton Chapter Best Poster Award, \$100 (2013)
- Lauren Shewhart (BS) – Lancaster-McDougal Undergraduate Research Award, \$1000 (2013)
- Alex Ulintz (BS) – Invited presentation at the 2013 National Collegiate Research Conference (2013)
- Jennifer Lang (MS) – Entomological Society of America Monsanto Student Travel Award, \$424 (2012)
- Andrew Lewis (MS) – Award for Best MS Student Presentation at the 9th Annual Meeting of the North American Forensic Entomology Association, College Station, TX, \$500 (2011)
- Maureen Berg (BS) – The Ohio Academy of Science: The Environmental Science & Engineering Scholarship Program, \$1500 (2011)
- Andrew Lewis (MS) – Award for Best MS Student Presentation at the 8th Annual Meeting of the North American Forensic Entomology Association, Windsor, Canada, \$500 (2010)
- Kathy Gorbach (PhD) – University of Dayton Dissertation Fellowship (2010)
- Allison Gansel (BS) – Invited Presentation on Vernal Pools at Cox Arboretum, Dayton, OH (2010)
- Tiffany Blair (BS) – Learn, Lead Serve Award, \$500 (2010)
- Elizabeth Gazdick (BS) & Allison Gansel (BS) – Posters on the Hill, Council for Undergraduate Research. Invited poster and meetings with congressional representatives and senators on Capitol Hill. (2010)
- Elizabeth Gazdick (BS) – International Learn, Lead Serve Award, \$1500 (2009)
- Andrew Lewis (MS) – Dean's Graduate Fellowship Award (2009)

University of Dayton Stander Symposium Presentations by students (beginning 2009)

- Alfieri, J, N Henger, J Pechal, T Blair, L Shewhart, A Calteux, J Baudendistel, ME Benbow. 2013. A Year-Long Study of Carrion, Insects, and Scavengers, University of Dayton Stander Symposium, April 17, 2013, Dayton, OH
- Henger, N, J Alfieri, J Pechal, E Watson, J Baudendistel, ME Benbow. 2013. Succession and Female Gravid Status of *Chrysomya rufifacies* and *Cochliomyia macellaria* on Carrion, University of Dayton Stander Symposium, April 17, 2013, Dayton, OH
- Kmetz, W, A Burky, J Lang, K Fochesato, A Wright, ME Benbow. 2013. A Functional Key to the Stream Benthic Macroinvertebrates of the Republic Palau, University of Dayton Stander Symposium, April 17, 2013, Dayton, OH
- Lang, JM, R Erb, W Kmetz, J Baudendistel, J Wallace, ME Benbow. 2013. Using Epinecrotic Biofilms for Applications in Forensic Science, University of Dayton Stander Symposium, April 17, 2013, Dayton, OH

- McNeish, RE, ME Benbow, RW McEwan. 2013. A Riparian Forest Invader, Alters Cross-System Subsidies That Change Ecosystem Processes, University of Dayton Stander Symposium, April 17, 2013, Dayton, OH
- Shewhart, L, R McEwan, ME Benbow. 2013. Impact of Amur Honeysuckle (*Lonicera maackii*) Leachate on *Culex pipiens* Survivorship, Growth, and Pupation, University of Dayton Stander Symposium, April 17, 2013, Dayton, OH
- Sullivan, K, ME Benbow. 2013. Bioassessment of an Outfall of the Mad River as well as Its Effects Downriver Using Aquatic Insects as an Index, University of Dayton Stander Symposium, April 17, 2013, Dayton, OH
- Ulitz, AJ, RE Simmonds, ME Benbow. 2013. The Role of Mycolactone in Suppression of the Innate Immune Response and Alteration of Aquatic Biofilm Metabolic Profiles: Implications for Buruli Ulcer Disease, University of Dayton Stander Symposium, April 17, 2013, Dayton, OH
- Wright, A, T Blair, W Kmetz, K Fochesato, L Shewhart, ME Benbow, Outfall Water Quality Assessments of the Major Rivers of Dayton, Ohio, University of Dayton Stander Symposium, April 17, 2013, Dayton, OH
- Alfieri, J, T Blair, A Calteux, L. Shewhart, J Baudendistel, ME Benbow. 2012. Effects of scavenging on blow flies to carrion. 2012 University of Dayton Stander Symposium, April 18, 2012, Dayton, OH.
- Berg, MC, AJ Lewis, ME Benbow. 2012. Blow fly oviposition dynamics on liver bait and swine carcasses exposed at dusk. 2012 University of Dayton Stander Symposium, April 18, 2012, Dayton, OH.
- Lang, JM, ME Benbow. 2012. Response of invertebrate grazers to the influence of abiotic factors on epilithic biofilm development. 2012 University of Dayton Stander Symposium, April 18, 2012, Dayton, OH.
- Timko, MV, JM Lang, ME Benbow. 2012. Influence of abiotic factors on biofilm succession in the Little Miami River. 2012 University of Dayton Stander Symposium, April 18, 2012, Dayton, OH.
- Kmetz, W, JM Lang, ME Benbow. 2012. Influences of disturbance factors on epilithic biofilm succession throughout the autumn season: stream flow and organic matter pulse dynamics. 2012 University of Dayton Stander Symposium, April 18, 2012, Dayton, OH.
- Shewhart, L, A Calteaux, J Alfieri, T Blair, J Baudendistel, ME Benbow. 2012. Scavenging effects on carrion decomposition (SSI: Swine Scene Investigation). 2012 University of Dayton Stander Symposium, April 18, 2012, Dayton, OH.
- Gansel, A, ME Benbow. 2012. Hydroperiod influence on bacterial communities assessed by way of metabolic profiling. 2012 University of Dayton Stander Symposium, April 18, 2012, Dayton, OH.
- White, JB, TB Blair, JM Lang, KR Gorbach, AJ Burky, ME Benbow. 2012. Comparative bioassessment of tropical watersheds relative to habitat degradation in the Republic of Palau. 2012 University of Dayton Stander Symposium, April 18, 2012, Dayton, OH.
- Barker, RE, RW McEwan, ME Benbow. 2012. Riparian forest invasion by a terrestrial shrub (*Lonicera maackii*) impacts aquatic organic matter processing and biota in headwater streams. 2012 University of Dayton Stander Symposium, April 18, 2012, Dayton, OH.
- Barker, RE, ME Benbow, RW McEwan. 2011. Linkages Between Terrestrial and Aquatic Communities: The Invasive Shrub *Lonicera maackii* Influences Ecosystem Processes and Macroinvertebrate Colonization. 2011 University of Dayton Stander Symposium, April 13, 2011, Dayton, OH.
- Braner, J, RE Barker, ME Benbow, RW McEwan. 2011. Ecological restoration of the terrestrial environment can influence aquatic ecosystems: a test using the ubiquitous non-native invasive shrub *Lonicera maackii* (Amur honeysuckle). 2011 University of Dayton Stander Symposium, April 13, 2011, Dayton, OH.
- Teter, C, A Lewis, ME Benbow. 2011. Growth rates of the blowfly, *Lucilia sericata*, on different bovine body tissues. 2011 University of Dayton Stander Symposium, April 13, 2011, Dayton, OH.
- Andrews RM, KR Gorbach, ME Benbow, AJ Burky. 2011. Comparing macroinvertebrate community composition between riffles and runs. 2011 University of Dayton Stander Symposium, April 13, 2011, Dayton, OH.
- Farrelly JC, KR Gorbach, ME Shoda, MD McIntosh, ME Benbow, AJ Burky. 2011. The effects of stream diversions on upstream and downstream Trichoptera and Chironomidae populations in the West Maui Mountains, Hawaii. 2011 University of Dayton Stander Symposium, April 13, 2011, Dayton, OH.

- Gorbach, K, ME Benbow, AJ Burky. 2011. Initial dispersal and upstream migration of a tropical neritid snail: Implications for restoring migratory pathways in tropical streams. 2011 University of Dayton Stander Symposium, April 13, 2011, Dayton, OH.
- Berg, Maureen; White, Jonathan, R Kearns, ME Benbow. 2011. Exploring Bacterial Antibiotic Resistance in Terrestrial and Aquatic Insects. 2011 University of Dayton Stander Symposium, April 13, 2011, Dayton, OH.
- Lewis, A, ME Benbow. 2011. Necrophagous Insect Community Assembly Associated with Replicate *Sus scrofa* Carcasses: An Exploration of Inter-Carcass Variation. 2011 University of Dayton Stander Symposium, April 13, 2011, Dayton, OH.
- Gansel, Allison, MD McIntosh, ME Benbow. 2011. Hydrology Effects on Invertebrate Communities in Artificial and Natural Vernal Pools. 2011 University of Dayton Stander Symposium, April 13, 2011, Dayton, OH.
- Lang, J, ME Benbow. 2011. Grazing, Flow, and Light Effects on Epilithic Stream Biofilm Succession During a Large Pulse of Organic Leaf Litter. 2011 University of Dayton Stander Symposium, April 13, 2011, Dayton, OH.
- Alfieri, J, A Lewis, ME Benbow. 2011. Successional Characteristics of Calliphoridae Colonization on *Sus scrofa*. 2011 University of Dayton Stander Symposium, April 13, 2011, Dayton, OH.
- Blair, T, RW McEwan, ME Benbow. 2011. Toxicity Effects of Native and Introduced Tree Species Leachate on *Daphnia Magna*. 2011 University of Dayton Stander Symposium, April 13, 2011, Dayton, OH.
- Gansel, A, E Gazdick, ME Benbow. 2010. Seasonal Water Fluctuation Effects on Invertebrate-Bacterial Community Associations in Vernal Pools. 2010 University of Dayton Stander Symposium, April 14, 2010, Dayton, OH.
- Berg, MC, A Lewis, ME Shoda, ME Benbow. 2010. Does microbial community structure influence nocturnal oviposition in southwestern Ohio blow flies? 2010 University of Dayton Stander Symposium, April 14, 2010, Dayton, OH.
- Lewis, A, ME Benbow. 2010. Microbial and necrophagous insect community assembly, succession, and species richness associated with *Sus scrofa* carcasses across multiple seasons. 2010 University of Dayton Stander Symposium, April 14, 2010, Dayton, OH.
- Teter, C, J White, K Gorbach, ME Benbow, AJ Burky. 2010 Comparative Time Series of Functional Group Stream Assemblages Relative to Habitat Degradation in the Republic of Palau. 2010 University of Dayton Stander Symposium, April 14, 2010, Dayton, OH.
- Blair, T, R McEwan, ME Benbow. 2010. Land Water Interfaces: Invasive Honeysuckle Effects on Stream Invertebrates. 2010 University of Dayton Stander Symposium, April 14, 2010, Dayton, OH.
- Ajdaharian, M, K Galaska, L Hellwig, K Gorbach, ME Benbow, AJ Burky. 2010. Habitat Hydraulic Variations Affect On Community Structure and Biomass of Macroinvertebrate Communities in the Little Miami River, Ohio. 2010 University of Dayton Stander Symposium, April 14, 2010, Dayton, OH.
- Lemier, R, K Gorbach, ME Benbow, AJ Burky. 2010. Assessing Habitat Quality Using Standing Stock Biomass in Diverted Mountain Streams. 2010 University of Dayton Stander Symposium, April 14, 2010, Dayton, OH.
- Ernst, M, K Gorbach, ME Shoda, ME Benbow, AJ Burky. 2010. Effects of Water Withdrawal on Terrestrial and Aquatic Drift in Four West Maui Streams. 2010 University of Dayton Stander Symposium, April 14, 2010, Dayton, OH.
- Gazdick, E, A Gansel, ME Benbow. 2010. Infectious Disease in West Africa: Buruli Ulcer and its Ecological Factors. 2010 University of Dayton Stander Symposium, April 14, 2010, Dayton, OH.
- Gorbach, K, ME Benbow, AJ Burky. 2010. When there is no flow: Changes in migratory movement and benthic community structure across Hawaiian watersheds of variable size and diversion impact. 2010 University of Dayton Stander Symposium, April 14, 2010, Dayton, OH.
- Henry J, E Malinowski, ME Benbow. 2009. Hydraulic and lunar influence on stream drift and amphidromous minimum reproductive potential in tropical streams. 2009 University of Dayton Stander Symposium, April 16, 2009, Dayton, OH.

- Shoda ME, KR Gorbach, ME Benbow, AJ Burky. 2009. Macroinvertebrate community response to water diversions in torrential, tropical stream habitats. 2009 University of Dayton Stander Symposium, April 16, 2009, Dayton, OH.
- Gorbach KR, ME Shoda, MM Ernst, AL Diaz, AJ Burky, ME Benbow. 2009. Stream size effects on benthic community response to water withdrawal. 2009 University of Dayton Stander Symposium, April 16, 2009, Dayton, OH.
- Barron IM, KR Jennings, ME Shoda, GA Diaz, JC Kurzawa, MI Ajdaharian, JB White, K Galaska, ME Benbow, AJ Burky. 2009. Hydraulic constraints on stream macroinvertebrate communities in the Little Miami River, Ohio. 2009 University of Dayton Stander Symposium, April 16, 2009, Dayton, OH.

Mentoring before 2009

- *Mentor of Independent Research Projects for 2 undergraduate students at DePauw University 2005-2006.*
- *Co-Mentor for 20 undergraduates from the University of Dayton and Michigan State University involved in various research projects where they were included as an author on national conference abstracts or referred publications*
- *Co-Mentor for 29 undergraduates who presented posters at University of Dayton's Stander Symposium*
- *Co-Mentor for 12 University of Dayton students that received institutional undergraduate Learn, Lead, Serve Awards*

PROFESSIONAL SERVICE

National Service:

The National Academies of Sciences, Engineering and Medicine (formerly the National Research Council) Review Committee Member (2016-2018) — Appointed Committee Member of the Review of the Edwards Aquifer Conservation Program.

The National Academies of Sciences, Engineering and Medicine (formerly the National Research Council) Review Committee Member (2015-2016) — Appointed Committee Member of the Review of the Edwards Aquifer Conservation Program.

National Academy of Sciences, National Research Council Review Committee Member (2014-2015) — Appointed Committee Member of the Review of the Edwards Aquifer Conservation Program.

American Academy of Forensic Sciences, Pathology/Biology Research Committee Member (2016-2018) — Committee member to review research efforts and conference abstracts.

American Academy of Forensic Sciences, Pathology/Biology Awards Committee (2018) — Committee member to review society award nominees.

American Academy of Forensic Sciences, Pathology/Biology Forensic Biologist Trainee Paper Award Committee (2018) — Committee member to review trainee papers.

Society for Freshwater Science: Local Arrangements Committee (Detroit 2018) (2016-2018) — Committee member for local arrangement planning and organization.

Regional and Local Service:

Saginaw County Mosquito Abatement Commission, Technical Advisory Committee (2014-present)
Promotion and Tenure Review for Ohio State University (2017)

Service at Michigan State University:

Medical Entomologist (Chairperson): Department of Entomology (2018-Present)

CANR Global Strategy Advisory Committee – (2018-present)
CANR College Advisory Council– (2017-present)
MSU Graduate School Panel: Effective Dissertation Writing (2018)
Ecology, Evolutionary Biology and Behavior Program Executive Committee – (2016-present)
Reappointment, Promotion and Tenure Committee – Lyman Briggs College (2016); College of Osteopathic Medicine, Department of Family and Community Medicine (2017)
Communications and Marketing Committee: Department of Entomology (2014 – 2017)
Awards Committee: Department of Entomology (2015 – 2016) (Chair: 2016 – 2017)
Graduate Committee: Department of Entomology (2014 – 2016) (Chair: 2016 – 2017)
Search Committee - Quantitative Entomologist (Chairperson): Department of Entomology (2015-2016)
Interview Committee (Administrative Assistant): Department of Entomology (2015)
Academic Program Review Coordinating Committee: Department of Entomology (2014 – 2015)
Plagiarism Inquiry Panel (Chairperson): General Legal Council, Office of Intellectual Integrity (2006-2007)
DOW Internship Program Development Committee Member: MSU-DOW New Era Internship Program (2006-2007)
Ethics and Academic Misconduct Panel Member: Michigan State University seminar series (2007)

Service at the University of Dayton:

Departmental Search Committee (2 faculty searches) — 2008/2009, 2011/2012
Undergraduate Curriculum Committee — 2012-2013
Graduate Admissions Committee — 2011/2012
Environmental Biology Program Steering Committee — 2008-2014
Undergraduate Recruitment Committee — 2010-2014
Career Seminars Committee — 2009/2010
Career Seminars Committee (Chairperson) — 2010-2011
Departmental By-laws Committee — 2009/2010
Discovery Day Lab Participant — 2011, 2012

PROFESSIONAL DEVELOPMENT ACTIVITIES (2015 – PRESENT)

16 May 2017 – Improvisation for Scientists to Strengthen Public Communication Skills. Michigan State University (*attendee*)
1 January 2016 – 31 December 2016 – MSU Academy for Global Engagement (*fellow*)
8 January 2015 - Write Winning Grant Proposals. Michigan State University (*attendee*)
13 February 2015 – CSTAT Workshop Hierarchical Linear Models (*attendee*)

FORENSIC CASEWORK AND EXPERT WITNESS SERVICE

Forensic Case: June - December 2018 — Evaluated evidence and executed an experiment to determine aquatic and terrestrial insect evidence related to postmortem submersion interval estimate range in Michigan.

Forensic Case: September 2017 — Identified arthropod evidence and constructed a minimum postmortem interval estimate range with Dr. Jennifer Pechal for a death scene investigation in Kalamazoo, MI.

Forensic Case: September 2014 — Identified arthropod evidence and constructed a minimum postmortem interval estimate range with Dr. Jennifer Pechal for a death scene investigation in Lansing, MI.

(<http://www.lansingstatejournal.com/story/news/local/2014/09/24/body-found-tuesday-belonged-lansing-man/16161747/>)

Forensic Case: December 2013 — Identified arthropod evidence and constructed a minimum postmortem interval estimate range with Dr. Jennifer Pechal for a death scene investigation in Summit County, OH.

Forensic Case: October 2013 — Identified arthropod evidence and constructed a minimum postmortem interval estimate range with Dr. Jennifer Pechal for a death scene investigation in Summit County, OH

Forensic Case: August 2011 — Identified and examined arthropod evidence with Mr. Andrew Lewis from a suspected stored product case in Dayton, OH

COMMUNITY OUTREACH & EXTENSION

Outreach Activities

- EVO Conversion Systems Blog Post. A Developing Partnership to Promote Insects for Food, Feed and Health in Sub-Saharan Africa: The Global Alliance for Insect Farming in Africa. (<https://www.evoconsys.com/blog>). (April 2018)
- JASON STEM Role Model Online Interview, JASON Learning (www.jason.org). JASON STEM Role Model Online Interview, JASON Learning (www.jason.org). (<https://www.youtube.com/watch?v=ArZ5QbhFBjA>) (Nov. 2016)
- CSI Fright After Dark, Cranbrook Institute of Science, Bloomfield Hills, MI (<http://science.cranbrook.edu/find-program-event/cis-after-dark-October>) *Maggot Art Activity* (Oct. 2015)
- Michigan State University Science Festival (April 2015)
- Science Reviewer for Indiana University's PODcast, A Moment of Science (2013-present)
- Michigan State University Honors College Fireside Chat, Faculty Host (Oct. 2014)
- Michigan State University Bug House Halloween Open House – *Maggot Art Activity* (Oct. 2014)
- Michigan State University Middle School Girls' Math & Science Day – *Maggot Art Activity* (Mar. 2014)
- ShamROCK Science Day, Boonshoft Museum of Discovery – *Maggot Art Activity* (Mar. 2013)
- Family Science Fest, Liebold Catholic High School – *Maggot Art Activity* (Feb. 2013)
- STEMM Celebration for Families, Ignite Innovation, Dayton Regional Science Festival, Chaminade Julianne Catholic High School – *Maggot Art Activity* (Nov. 2012)
- Chemistry and Cocktails, Ignite Innovation, Dayton Regional Science Festival, Boonshoft Museum of Discovery – *Maggot Art Activity* (Nov. 2012)

Outreach Presentations

The Living Dead: Using postmortem microbiomes to solve crimes and monitor public health. Lansing Torch Club, East Lansing, MI: April 2019

Frontiers in Forensic Entomology. MSU Bug Club, Michigan State University, East Lansing, MI: April 2019

The Living Dead: Tales of Science and Crimes. Kinawa Middle School, Okemos, MI: Oct. 2018

The Dark Side of the Necrobiome: The Role of Carrion in Ecosystems. Waldgeschichtliche Museum at the Nationalparkverwaltung Bayerischer Wald (Bavarian National Forest), Germany: Oct. 2018

The Living Dead: Tales of Science and CSI — Science on Tap, The Loft, Lansing, MI: Oct. 2017

Bugs, Bacteria and Bodies: New Dimensions of Forensic Biology — Pub Science Series, Boonshoft Museum of Discovery at Blind Bob's, OH: Aug. 2013

An Introduction to Forensic Entomology — Oakwood High School, Oakwood, OH: Oct. 2011

Buruli ulcer: A Mysterious Infectious Disease — West Carrolton Middle School, West Carrolton, OH: April 2011

Road Salt Effects on Aquatic Invertebrates — Minnesota Road Salt Symposium: Feb. 2008

Hawaiian Mountain Streams: Life in Limbo — Maui Ocean Center, Maui, Hawaii: Feb. 2003

The Secret Life of Maui Streams — Maui Community College, Maui, Hawaii: Sept. 2003

Applied Forensic Entomological Research — Lorain County Community College, Cleveland, OH: Oct. 2003

The Hawaiian Invertebrates — Pacific Whale Foundation, Maui, Hawaii: July 2000

Media Interviews

- Television Interview, Spartan News Room, MSU (<https://www.youtube.com/watch?v=tYjx3n8h8f8>) (April 2019)
- Television Show and Interview, Oxygen Channel (<https://www.oxygen.com/smiley-face-killers-the-hunt-for-justice/crime-time/todd-geib-decomposition-test>) (Feb. 2019) Show premiered on 23 February 2019
- Online Magazine Article, Forensic News Daily (<https://www.forensicmag.com/news/2019/01/msu-forensic-entomologist-helping-solve-cold-case>) (Jan. 2019)
- Online Media Interview, MSU Today (<https://msutoday.msu.edu/news/2019/msu-forensic-entomologist-is-helping-solve-a-cold-case/>) (Jan. 2019)
- Newspaper Interview, Lansing State Journal, (Jan 2019) <https://www.lansingstatejournal.com/story/news/local/2019/01/18/msu-researcher-looks-into-drowning-smiley-face-killers-tv-show/2613769002/>
- Television Show Filming, 44 Blue Productions for the Oxygen Channel (<https://www.oxygen.com/smiley-face-killers-the-hunt-for-justice/crime-time/todd-geib-decomposition-test>) (June-August 2018) Show premiered on 23 February 2019
- Radio Interview, Michigan Radio WKAR, National Public Radio, Lansing, MI (Sept. 2018)
- Online Media Interview, Vice Magazine (https://tonic.vice.com/en_us/article/in-every-murder-there-are-millions-of-tiny-witnesses) (May 2017)
- Newspaper Interview, Chicago Tribune, (May 2017) (<http://www.chicagotribune.com/news/obituaries/ct-bernard-greenberg-obituary-20170512-story.html>)
- New York Times Magazine, Featured Article, (Jan. 2016) (http://www.nytimes.com/2016/01/24/magazine/the-living-dead.html?_r=0)
- Magazine Interview, MSU's College of Osteopathic Medicine Communiqué Magazine, (Nov. 2015)
- Magazine Interview, MSU's AgBioResearch Futures Magazine, lab spotlight (http://agbioresearch.msu.edu/news/mystery_solved_thanks_to_insects) (Oct. 2015)
- Online Media Interview, MSU Today (<http://msutoday.msu.edu/feature/2015/spartan-crime-fighters/>) (Oct. 2015)
- Online Media Interview, Smithsonian.com (<http://www.smithsonianmag.com/science-nature/11-reasons-love-bacteria-fungi-and-spores-180955627/?no-ist>) (June 2015)
- Online Media Interview, BBC - Future, UK, (<http://www.bbc.com/future>) (<http://www.bbc.com/future/story/20150317-the-ales-our-bacteria-tell>) (Jan. 2015)
- Faculty Voice, “*Why I Study Dead People*”, Michigan State University, (<http://msutoday.msu.edu/360/2014/m-eric-benbow-why-do-you-study-dead-people/>), East Lansing, MI (Nov. 2014)
- Online Media Interview, MSU Today, East Lansing, MI (Nov. 2014)
- Online Media Interview, Wired Magazine, www.wired.com (Nov. 2014)
- Radio Interview, Michigan Radio WKAR, National Public Radio, Lansing, MI (Nov. 2014)
- Radio Interview, Michigan Business Network, Lansing, MI (Nov. 2014)
- Radio Interview, Detroit Public Radio, Detroit, MI (Oct. 2014)
- Online Media Interview, Science for the People (www.scienceforthepeople.ca/) (April 2014)
- Online Media Interview, DugDug.com (Oct. 2013)
- Online Media Interview, Wired Magazine, www.wired.com (Sept. 2013)
- Magazine Interview, Science News (Sept. 2013)
- Magazine Interview, University of Dayton Alumni Magazine (May 2012)
- Newspaper Interview, The Villages Daily Sun (Mar. 2012)
- Television Interview, WDTN, Dayton, Ohio (Feb. 2012)
- Newspaper Interview, Kettering-Oakwood Times (Mar. 2010)
- Phone Interview, Scripps Howard Foundation Wire, Washington, DC (Feb. 2010)

- Television Interview, WHIO, Dayton, Ohio (Aug. 2009)
- Television Interview, WHIO, Dayton, Ohio (Sept. 2009)
- Television Interview, AKAKU Public Broadcasting, Maui Community Television, Maui, Hawaii (Oct. 2006)
- Radio Interview, National Public Radio, El Paso, Texas (Apr. 2006)
- Radio Interview, National Public Radio, Maui, Hawaii (Sept. 2003)
- Television Interview, AKAKU Public Broadcasting, Maui Community Television, Maui, Hawaii (Feb. 2003)
- Radio Interview, NPR Honolulu, Hawaii (Apr. 2001)
- Internet Interview, The JASON Foundation, Needham Heights, MA (Apr. 2001)

SCHOLARLY PRESENTATIONS

Papers and presentations for learned professional organizations and societies from 2014-Present (244 citations from 1994 - 2013 are available upon request)

2019

1. Wu, W, S-S Yang, A Brandon, B-Y Peng, JP Receveur, Y-R Li, R. Fan, Z-Y Wang, S-Y Cai, S-H Gao, D Ning, DH Phillips, H-T Wang, D-F Xing, Y-L Zhang, J Ren, H Tao, NQ Ren, J-Z Zhou, **ME Benbow**, C Criddle. 2019. Microbiota-dependent biodegradation of polystyrene and polyethelene by yellow- and dark-mealworms (Coleoptera: Tenebrionidae: *Tenebrio molitor* and *Tenebrio obscurus*). ASM Microbe, San Francisco, CA, 20-24 June.
2. Larson, C, **ME Benbow**. 2019. Insects, microbes and leaf litter decomposition in a Michigan headwater stream: changing riparian subsidies alter stream communities. North Central Branch of the Entomological Society of America Scientific Meeting, Cincinnati, OH, 17-20 March.
3. Pechal, JL, J Kang'ombe, A Safalaoh, K Masamba, AW Kamng'ona, **ME Benbow**. 2019. Using insects to decompose and recycle organic matter for developing alternative sources of protein in Malawi. North Central Branch of the Entomological Society of America Scientific Meeting, Cincinnati, OH, 17-20 March.
4. **Benbow, ME**. 2019. Insects, microbes and decomposition. 74th North Central Branch of the Entomological Society of America Scientific Meeting, Cincinnati, OH, 17-20 March.

2018

5. Pechal, JL, MW DuPont, JA Cammack, TL Crippen, HR Jordan, JK Tomberlin and **ME Benbow**. 2018. Does indigenous microorganism management impact the Calliphoridae microbiome? 66th Entomological Society of American Annual Meeting, 11-14 November, Vancouver, BC, Canada.
6. **Benbow, ME**, P Magni. 2018. Life after death: thanatomicrobiome and its application in forensic science. Global Microbiome Symposium, Perth, Australia, 17 August.
7. Pechal, JL, J Kang'ombe, K Masamba, A Safalaoh, AW Kamng'ona, and **ME Benbow**. 2018. Insects as an Alternative Protein in Malawi: Successes, Challenges, and Future Directions. Next Generation of Food Security in Malawi Symposium, Salima, Malawi, 18-19 July. (*International invitation*)
8. Mesli, V, JL Pechal, H Jordan, E Le Garff, V Hedouin, C Campobasso, V Bugeli, S Pittner, F Monticelli, C Schmidt, D Gosset, **ME Benbow**. 2018. International collaborative project of the geographic variations in the human postmortem microbiome [Oral communication in French] Projet collaboratif international d'étude des variations géographiques du microbiote cadavérique. Session of the French Society of Legal Medicine, Lyon, France. 11 June.
9. **Benbow, ME**, GA Lamberti. 2018. Death and decomposition in aquatic ecosystems. Annual Meeting of the Society for Freshwater Science, Detroit, MI, 20-24 May

10. Lamberti, GA, **ME Benbow**, DT Chaloner. 2018 Animal mass mortalities in aquatic ecosystems: how common and influential. Annual Meeting of the Society for Freshwater Science, Detroit, MI, 20-24 May
11. Larson, C, C Weatherbee, JL Pechal, B Gerig, DT Chaloner, GA Lamberti, **ME Benbow**. 2018. Short and long-term impacts of salmon carcass decomposition on stream microbial community structure: allochthonous microbial subsidies to downstream foodwebs. Annual Meeting of the Society for Freshwater Science, Detroit, MI, 20-24 May
12. **Benbow, ME**, Weatherbee, J Receveur, JL Pechal. 2018. The postmortem microbiome associated with necrophagous insects during decomposition. 15th European Association for Forensic Entomology Annual Meeting, Munich, Germany, 25-28 April
13. **Benbow, ME**, CJ Schmidt, HR Jordan, JL Pechal. 2018. The human postmortem microbiome: past, present and future. Institute of Forensic Medicine and Forensic Neuropsychiatry, University of Salzburg, Salzburg, Austria, 4 May. (*International invitation*)
14. Pechal, JL, CJ Schmidt, HR Jordan, **ME Benbow**. 2018. Postmortem microbiota variability from a large-scale survey. Institute of Forensic Medicine and Forensic Neuropsychiatry, University of Salzburg, Salzburg, Austria, 4 May. (*International invitation*)
15. McCabe, RA, KL Thomas, JP Receveur, **ME Benbow**, JL Pechal, JR Wallace. 2018. Characterization of the microbiome of parasitic louse flies on migratory raptors. 27th *International Ornithological Congress*, 19-26 August, Vancouver, BC, Canada.
16. Pechal, JL, J Kang'ombe, K Masamba, A Safalaoh, AX Kamng'ona and **ME Benbow**. 2018. Developing alternative sources of protein in the developing world. Symposium on Insects and Food and Feed: How to Save the Planet and get protein too!, 22 March, Indianapolis, IN. (*invited*)
17. Wu, W, S-S Yang, A Brandon, Y Yang, D Ning, S-H Gao, H-Q Fan, Y-R Li, R. Fan, Z-Y Wang, S-Y Cai, B-Y Peng, Y-M Su, Q-Q Wu, L-Y Ding, L-J Zhang, W-W Cai, DH Phillips, J Gao, D-F Xing, G-Q Zhuang, X-L Zhuang, J Yang, Y-L Zhang, J Ren, H Tao, N Ren, J-Z Zhou, **ME Benbow**, C Criddle. 2018. Ubiquity of consumption and microbe-dependent biodegradation of petroleum-based plastic by yellow mealworms (Coleoptera: Tenebrionidae: *Tenebrio molitor*). *ASM Microbe*, Atlanta, GA, 7-11 June.
18. Jordan, HR, ZM Burcham, JL Pechal, H Campbell, J Rosch, CJ Schmidt, and **ME Benbow**. 2018. Autopsy sampling to uncover human resistome diversity. *Proceedings of the 70th Annual Meeting of the American Academy of Forensic Science*, 19-24 February, Seattle, WA.
19. Burcham, ZM, JL Pechal, JL Bose, **ME Benbow**, CJ Schmidt and HR Jordan. 2018. Fluorescent bacteria in the gut of mice carcasses provides insight on postmortem microbial translocation. *Proceedings of the 70th Annual Meeting of the American Academy of Forensic Science*, 19-24 February, Seattle, WA.
20. **Benbow, ME**, Pechal, JL, HR Jordan, V Mesli, E Le Graff, V Hedouin, C Campobasso, V. Bugelli, S. Pittner, F Monticelli and CJ Schmidt. 2018. A global partnership to study geographic variation in the human postmortem microbiome (HPMM). *Proceedings of the 70th Annual Meeting of the American Academy of Forensic Science*, 19-24 February, Seattle, WA.
21. Pechal, JL, CJ Schmidt, HR Jordan, and **ME Benbow**. 2018. The ecology of the postmortem microbiome: insights from a large-scale study. *Proceedings of the 70th Annual Meeting of the American Academy of Forensic Science*, 19-24 February, Seattle, WA.

2017

22. Receveur, J, L Djogbenou, **ME Benbow**. 2017. Building capacity for NGS data analysis in sub-Saharan Africa to improve public health research. Annual Meeting of the Entomological Society of America, Denver, CO, 5-8 November.

23. Pechal, JL, C Weatherbee, **ME Benbow**. 2017. Calliphoridae microbiome dynamics during decomposition. Annual Meeting of the Entomological Society of America, Denver, CO, 5-8 November.
24. Larson, C, P Engelken, JL Pechal, DG McCullough, **ME Benbow**. 2017. Shedding light on emerald ash borer (*Agilus planipennis*) indirect effects on aquatic ecosystem function. Annual Meeting of the Entomological Society of America, Denver, CO, 5-8 November.
25. **Benbow, ME**, JL Pechal, C Larson, P Engelken, DG McCullough, R McEwan, K Custer. 2017. The ecological importance of resource subsidies on insect-microbe interactions in aquatic ecosystems: The dispersal of novel microbes and their genomes in insect communities. Annual Meeting of the Entomological Society of America, Denver, CO, 5-8 November. (*Invited*)
26. Cammack, JA, JL Pechal, S Sweet, T Crippen, A Knap, **ME Benbow**, JK Tomberlin. 2017. Insects and microbes drive VOC emission from decomposing carrion resources. Annual Meeting of the Entomological Society of America, Denver, CO, 5-8 November.
27. Engelken, P, DG McCullough, C Larson, **ME Benbow**. 2017. Effects of emerald ash borer on riparian forest structure. Annual Meeting of the Entomological Society of America, Denver, CO, 5-8 November.
28. Merritt, RW, **ME Benbow**, MB Berg, K Cummins 2017. An Introduction to the Aquatic Insects of North America: A new edition. Annual Meeting of the Entomological Society of America, Denver, CO, 5-8 November.
29. Thomas, K, R McCabe, J Receveur, **ME Benbow**, JL Pechal, JR Wallace. 2017. The characterization of louse fly microbiomes on migrating raptors: Implications for avian pathogen dispersal. Annual Meeting of the Entomological Society of America, Denver, CO, 5-8 November.
30. Rzotkiewicz A, Pearson AL, Pechal JL, Zwickle A, **Benbow ME**, and Schmidt CJ (2017) Assessing the potential effect of urban decay and recovery on the residents of Detroit, Michigan: A novel utilization of the postmortem microbiome. *American Association of Geographers Conference*, Boston, Massachusetts, 5 – 9 April.
31. Pearson AL, Rzotkiewicz A, Pechal JL, Zwickle A, Schmidt CJ, Jordan HR, and **Benbow ME** (2017) Relationships between neighborhood blight, urban green remediation and the postmortem human microbiome in Detroit, Michigan. *International Medical Geography Symposium*, Angers, France, 1-7 July
32. **Benbow, ME**, Jordan, HR, JL Pechal. 2017. Towards an integrative OneHealth approach to better understand Buruli ulcer and other neglected tropical diseases. 6th Annual Meeting of Laboratoire d'Excellence Centre d'étude de la Biodiversité Amazonienne, Cayenne, French Guiana, 5 October. (*International Invitation*)
33. Wu, W-M, S-S Yang, AM Brandon, J Yang, D Ning, S Gao, **ME Benbow**, D Xing, J Zhou, CS Criddle. 2017. Microbe-dependent plastic degradation by yellow mealworms (larvae of *Tenebrio molitor*). Annual Meeting of the China Microbial Ecology Society, China.
34. **Benbow, ME**, CR Weatherbee, JL Pechal. 2017. Maggot masses and microbiomes: The interactions of insects and microbes in the necrobiome. 14th European Association for Forensic Entomology Annual Meeting, Treviso, Italy, 8-9 June.
35. Pechal, JL, CR Weatherbee, **ME Benbow**. 2017. Community assembly of carrion and calliphorid microbiomes. 14th European Association for Forensic Entomology Annual Meeting, 8-9 June, Treviso, Italy.
36. Pechal, JL, J Kang'ombe, K Masamba, A Safalaoh, AW Kamng'ona, **ME Benbow**. 2017. Farming Insects for Feed: Developing Partnerships for Sustainable Food security in Malawi. *Michigan State University Alliance for African Partnership Launch Event*, Dar es Salaam, Tanzania. (*Invited*)
37. Receveur, J, L Djogbenou, **ME Benbow**. 2017. Building capacity for NGS data analysis in Sub-Saharan Africa to improve public health research. *Ecology, Evolutionary Biology and Behavior*

- Program First Annual Research Symposium, Michigan State University, 1 May, East Lansing, MI.
38. Kierczynski, K, Larson, C, **ME Benbow**. 2017. Terrestrial vines on submerged woody debris influence macroinvertebrate community structure. Annual Meeting of the Society for Freshwater Science, Raleigh, NC, 4-9 June.
 39. Larson, C, JL C Weatherbee, Pechal, B Gerig, DT Chaloner, **ME Benbow**. 2017. Short and long-term impacts of salmon carcass decomposition on stream macroinvertebrate and microbial community structure. Annual Meeting of the Society for Freshwater Science, Raleigh, NC, 4-9 June.
 40. **Benbow, ME**. 2017. New dimensions of insect-microbe interactions in aquatics, disease and forensics. Ecology, Evolutionary Biology and Behavior Program First Annual Research Symposium, Michigan State University, 1 May, East Lansing, MI.
 41. Kierczynski, KE, CE Larson, **ME Benbow**. 2017. Effects of terrestrial vines on macroinvertebrate communities surrounding partially submerged trees. *Michigan State University Undergraduate Research and Arts Forum* 8 April, East Lansing, MI.
 42. Thomas, K, R McCabe, **ME Benbow**, JL Pechal, JP Receveur, R Wallace. The characterization of louse fly micro biomes on migrating raptors: implications for avian pathogen dispersal. Commonwealth of Pennsylvania University Biologists Conference, April 8, 2017, Kutztown, PA.
 43. Pechal, JL, CJ Schmidt, HR Jordan, MM Brewer, **ME Benbow**. 2017. Postmortem Microbiome Changes During Thaw for Autopsy: Two Pediatric Case Studies. *69th Annual Meeting of the American Academy of Forensic Science*, 13-18 February. New Orleans, LA.
 44. **Benbow, ME**, JL Pechal, HR Jordan, MM Brewer, CJ Schmidt. 2017. Coupled Microbiome and Insect Evidence in Death Investigation. *69th Annual Meeting of the American Academy of Forensic Science*, 13-18 February. New Orleans, LA.
 45. Weatherbee, CR, JL Pechal, MM Brewer, TI Stamper, **ME Benbow**. 2017 Forensic Implications of Multi-Species Blow Fly Larval Masses and Their Associated Microbiomes. *69th Annual Meeting of the American Academy of Forensic Science*, 13-18 February. New Orleans, LA.
 46. Burcham, ZM, JL Pechal, J Rosch, JL Bose, CJ. Schmidt, **ME Benbow**, HR Jordan. 2017. Internal Microbial Community Translocation Throughout Decomposition in a Controlled Vertebrate Model. *69th Annual Meeting of the American Academy of Forensic Science*, 13-18 February. New Orleans, LA.
 47. Jordan, HR, ZM Burcham, JL Bose, JL Pechal, J Rosch, CJ Schmidt, **ME Benbow**. 2017. Analyses of Necrobiome Structure and Function for Utility in Forensic Science. *69th Annual Meeting of the American Academy of Forensic Science*, 13-18 February. New Orleans, LA.
 48. Receveur, J, G Donato, T Rainey, JL Pechal, **ME Benbow**, JR Wallace. 2017. ENSO related storm event impact on mosquitoes: ecological implications on larval habitats and microbial community response to control methods. Michigan Mosquito Control Association Annual Meeting, 1-2 Feb, Ann Arbor, MI.

2016

49. Schmidt, CJ, JL Pechal, **ME Benbow**, and HR Jordan. 2016. A Practical Application of the Postmortem Microbiome. *Michigan Association Of Medical Examiners Annual Meeting*, Mt. Pleasant, MI, 4-6 November.
50. Pechal, JL and **ME Benbow**. 2016. Resource subsidy influence on necrobiome networks. *25th International Congress of Entomology Meeting*, Orlando, FL, 25-30 September. (*invited*)
51. **Benbow, ME**, JL Pechal, P Barton, and CR Weatherbee. 2016. The dynamic necrobiome: The interacting web of organisms associated with animal death and decomposition. *25th International Congress of Entomology Meeting*, Orlando, FL, 25-30 September. (*invited*)

52. Weatherbee, CR, JL Pechal, CE Larson, M Brewer, and **ME Benbow**. 2016. Nested biodiversity: The importance of the insect microbiome in carrion food webs and implications for the forensic sciences. 25th *International Congress of Entomology Meeting*, Orlando, FL, 25-30 September. (*invited*)
53. Receveur, J, G Donato, T Rainey, JL Pechal, **ME Benbow**, and JR Wallace. 2016. The characterization of microbiota changes after larval mosquito treatment in post-Hurricane Sandy tree divot habitat in Hunterdon County, NJ. Commonwealth of Pennsylvania University Biologists meeting. Millersville, PA. March 2016.
54. Larson, CE, JL Pechal, DG McCullough, and **ME Benbow**. 2016. Legacy effects of emerald ash borer (*Agrilus planipennis*) on stream ecosystems. 25th *International Congress of Entomology Meeting*, Orlando, FL, 25-30 September. (*invited*)
55. Pechal, JL, CJ Schmidt, HR Jordan, and **ME Benbow**. 2016. Drugs and Bugs (Bacteria): Does What You Use Relate to What You Grow? *Proceedings of the 68th Annual Meeting of the American Academy of Forensic Science* – Vol. XXVII, 22-27 February. Las Vegas, NV.
56. **Benbow, ME**, JL Pechal, CJ Schmidt, and HR Jordan. 2016. The Human Postmortem Microbiome and Manner of Death. *Proceedings of the 68th Annual Meeting of the American Academy of Forensic Science* – Vol. XXVII, 22-27 February. Las Vegas, NV.
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58. Burcham, ZM, JL Pechal, JL Bose, **ME Benbow**, CJ Schmidt, and HR Jordan. 2016. Decomposition of Mouse Carcasses Infected With Fluorescently Labeled Bacteria Provide Insight on Postmortem Microbial Translocation. *Proceedings of the 68th Annual Meeting of the American Academy of Forensic Science* – Vol. XXVII, 22-27 February. Las Vegas, NV.
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60. Sufirin, V, TL Crippen, JK Tomberlin, AM Tarone, JL Pechal, **ME Benbow**, and B Singh. 2016. The Utility of Soil Eukaryotes During Human Decomposition and Their Potential Forensic Applications. *Proceedings of the 68th Annual Meeting of the American Academy of Forensic Science* – Vol. XXVII, 22-27 February. Las Vegas, NV
61. Larson, C, JL Pechal, DG McCullough, and **ME Benbow**. 2016. A terrestrial invader, Emerald Ash Borer (*Argilus planipennis*), influences stream community species sorting. Annual Meeting of the Society for Freshwater Science, Sacramento, CA, 21-26 May.
62. Larson, CE, DG McCullough, and **ME Benbow**. 2016. Legacy effects of emerald ash borer, *Agrilus planipennis*, on stream ecosystem function. 30th Annual Meeting of the Michigan Mosquito Control Association, Ann Arbor, MI, 3-4 February.
63. **Benbow, ME**, JL Pechal, HR Jordan, and CJ Schmidt. 2016. The Human Postmortem Microbiome and Potential Forensic Applications. *Advances in Forensic Medicine & Pathology*, Ann Arbor, MI, 11-12 May.
64. McNeish, RE, **ME Benbow**, RW McEwan. 2016. Terrestrial-aquatic connections: the riparian invasive shrub, *Lonicera maackii*, alters ecosystem subsidies and shifts in aquatic biota and ecosystem processes. Ohio Invasive Plant Council Meeting, Columbus, OH, 11 February.

2015

65. Pechal, JL and **ME Benbow**. 2015. Insects, salmon and their microbiomes: The influence of resource pulses on ecological networks. 63rd Entomological Society of America Annual Meeting, Minneapolis, MN, 15-18 November.
66. Larson, C, CR Weatherbee, JL Pechal, B Gerig, G Lamberti, and **ME Benbow**. 2015. Aquatic macroinvertebrate and microbial community responses to salmon carrion introduction into a

- headwater stream. 63rd Entomological Society of America Annual Meeting, Minneapolis, MN, 15-18 November.
67. Pizarro, JM, **ME Benbow**, SC Grady, EF McGarrell, JL Pechal, AM Zeoli. 2015. Crime, Education, Maternal Health, and the Microbiome: An integration of criminology, public health, medical geography, and biological discourses in the explanation of criminality. 71st Annual Meeting of the American Society of Criminology, Washington DC, 18-21 November.
 68. Weatherbee, CR, JL Pechal, TI Stamper, and **ME Benbow**. 2015. Mysteries of the maggot mass microbiome: Microbial communities of Calliphoridae larvae throughout carrion decomposition. 63rd Entomological Society of America Annual Meeting, Minneapolis, MN, 15-18 November.
 69. Receveur, J, G Donato, T Rainey, JL Pechal, **ME Benbow**, and JR Wallace. 2015. Potential impacts of a Hurricane Sandy sized storm event on tree divot mosquito habitat and population in New Jersey. Entomological Society of Pennsylvania. Climbers Run, PA. 15 September.
 70. Receveur, J, G Donato, T Rainey, JL Pechal, **ME Benbow**, and JR Wallace. 2015. The characterization of microbiota changes pre/post larval mosquito treatment in post-Hurricane Sandy tree divot habitat. 63rd Entomological Society of America Annual Meeting, Minneapolis, MN, 15-18 November. (*Poster*)
 71. Pechal, JL, CJ Schmidt, HR Jordan, and **ME Benbow**. 2015. Postmortem Microbiome and its Role in Health and Disease. Michigan Association Of Medical Examiners Annual Meeting, Mt. Pleasant, MI, 23-25 October. (*invited*)
 72. Burcham, ZM J.A. Hood, J.L. Pechal, J.L. Bose, C.J. Schmidt, **M.E. Benbow**, and H.R. Jordan. The Microbial Clock: Tracking Bacterial Translocation through Successional Host Decomposition (Poster). American Society for Microbiology South Central Branch Meeting, Hattiesburg, Mississippi, September, 2015.
 73. McEwan, RW, **ME Benbow**, KW Custer, RE McNeish. 2015. A mechanistic framework for cross-habitat bottom-up effects of the invasive terrestrial shrub *Lonicera maackii* on the biology of headwater streams. 100th Ecological Society of America Meeting, Baltimore, MD, 9-14 August.
 74. McNeish, RE, **ME Benbow**, RW McEwan, EM Moore. 2015. Removal of the invasive shrub, *Lonicera maackii*, from riparian forests influences headwater stream biota and ecosystem function. 100th Ecological Society of America Meeting, Baltimore, MD, 9-14 August.
 75. Burcham, ZM*, JA Hood, JL Pechal, JL Bose, CJ Schmidt, **ME Benbow**, and HR Jordan. 2015. Fluorescently Labeled Bacteria Provide Insight on Postmortem Microbial Translocation. 7th European Academy of Forensic Science Conference, Prague, Czech Republic, 6–11 September.
 76. Jordan, HR, JL Pechal, ZM Burcham, CJ Schmidt, **ME Benbow**. 2015. Utility of microorganisms for forensics and health. 2015 Summer Conference of the Mississippi Coroner-Medical Examiner's Association, Biloxi, MS, 2 July. (*invited*)
 77. Burcham, ZM, JL Pechal, **ME Benbow**, HR Jordan. 2015. Investigating Resistomes of the Human Microbiome. 115th Annual Meeting of the American Society for Microbiology, New Orleans, LA, 30 May – 2 June.
 78. Lang, JM, RW McEwan, **ME Benbow**. 2015. Abiotic autumnal organic matter deposition and grazing disturbance effects on epilithic biofilm succession. 115th Annual Meeting of the American Society for Microbiology, New Orleans, LA, 30 May – 2 June.
 79. Pechal, JL, **ME Benbow**. 2015. Influence of resource pulses on ecological networks: insects, salmon and their microbiomes. Society for Freshwater Science Annual Meeting, Milwaukee, WI, 17-21 May.
 80. Garner, CM, RE McNeish, **ME Benbow**, RW McEwan. 2015. *Lonicera maackii* riparian invasion impacts macroinvertebrates biomass and secondary production in a headwater stream. Society for Freshwater Science Annual Meeting, Milwaukee, WI, 17-21 May.
 81. Vrablik, PM, RE McNeish, **ME Benbow**, RW McEwan. 2015. The removal of a riparian forest invader (*Lonicera maackii*) alters macroinvertebrate abundance and dynamics. Society for Freshwater Science Annual Meeting, Milwaukee, WI, 17-21 May.

82. McNeish, RE, **ME Benbow**, RW McEwan. 2015. Removal of the invasive shrub, *Lonicera maackii*, from riparian forests influences headwater stream biota and ecosystem function. Society for Freshwater Science Annual Meeting, Milwaukee, WI, 17-21 May.
83. Pechal, JL, **ME Benbow**. 2015. Influence of resource pulses on cadaver networks: insects, microbiomes and their potential use in forensic entomology. 12th European Association for Forensic Entomology Annual Meeting, Huddersfield, UK, 6-9 May.
84. Garner, CM, RE McNeish, **ME Benbow**, RW McEwan. 2015. Environmental factors are greater than frequent disturbance in driving epilithic biofilm succession. Midwest Ecology and Evolution Conference, Bloomington, IN, 28-29 March.
85. McNeish, RE, EM Moore, **ME Benbow**, RW McEwan. 2015. Removal of the invasive shrub, *Lonicera maackii*, from riparian forests influences headwater stream biota and ecosystem function. Midwest Ecology and Evolution Conference, Bloomington, IN, 28-29 March.
86. Garner, CM, RE McNeish, **ME Benbow**, RW McEwan. 2015. *Lonicera maackii* riparian invasion impacts macroinvertebrates biomass and secondary production in a headwater stream. Midwest Ecology and Evolution Conference, Bloomington, IN, 28-29 March.
87. Lang, JM, RW McEwan, and **ME Benbow**. 2015. Environmental factors are greater than frequent disturbance in driving epilithic biofilm succession. Midwest Ecology and Evolution Conference, Bloomington, IN, 28-29 March.
88. Jordan, HR, JL Pechal, **ME Benbow**. 2015. Utility of Carrion Microorganisms for Forensics and Health...and a bit from the living. Anthropology and Middle Eastern Cultures Brown Bag Event, Mississippi State University, Starkville, MS, 9 April.
89. Pechal, JL, HR Jordan, Z Burcham, JK Tomberlin, MD McIntosh, E Anagonou, PLC Small, Y Barogui, G Sopoh, C Johnson, and **ME Benbow**. 2015. Associations of Microbial Community Structure with *Mycobacterium ulcerans*. World Health Organization – Global Buruli Health Initiative, Geneva, Switzerland, 23-25 March. *International invitation*.
90. Pechal, JL, Jordan, **ME Benbow**, PLC Small, JK Tomberlin, M. Sanders, E. Adogonou, Y Barogui, G Sopoh, C Johnson, and HR Jordan. 2015. Detection of *Mycobacterium ulcerans* DNA on Human Skin. World Health Organization – Global Buruli Health Initiative, Geneva, Switzerland, 23-25 March. *International invitation*.
91. **Benbow, ME**, HR Jordan, R Simmonds, PCL Small, and JL Pechal. Microbial community ecology and the *Mycobacteria ulcerans* niche: Implications for a One Health Initiative approach to understanding transmission. World Health Organization – Global Buruli Health Initiative, Geneva, Switzerland, 23-25 March. *International invitation*.
92. **Benbow, ME**. 2015. The living dead of invasive plant leaf litter leachate effects on *Culex pipiens*. 29th Annual Meeting of the Michigan Mosquito Control Association. Bellaire, MI, 4-5 February.
93. Larson, CE, CR Weatherbee, JL Pechal, GA Lamberti, B Gerig, **Benbow, ME**. 2015. Salmon carrion decomposition influences surrounding headwater stream community over time. 29th Annual Meeting of the Michigan Mosquito Control Association. Bellaire, MI, 4-5 February.

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94. **Benbow, ME**, JL Pechal. 2014. The living dead of Alaskan salmon marine derived nutrients: insights from the Calliphoridae microbiome. 62nd Entomological Society of America Annual Meeting, Portland, OR, 16-19 November.
95. **Benbow, ME**, JL Pechal. 2014. Stream organic matter processing and the insect microbiome. 3rd Science of the Northwoods Meeting, Boulder Junction, WI, 15-17 October.
96. **Benbow, ME**, JL Pechal. 2014. Animal-microbe interactions of water-related diseases: the potential of aquatic ecological theory and next-generation metagenomic tools in disease prevention. Joint Aquatic Sciences Meeting, Portland, OR, 18-23 May. (*Invited Presentation*)

97. Vizza, C, JM Lang, DT Chaloner, **ME Benbow**, GA Lamberti. 2014. Nutrient limitation and inhibition of biofilms in ponds of the Copper River Delta, Alaska. Joint Aquatic Sciences Meeting, Portland, OR, 18-23 May.
98. Lang, JM, RW McEwan, **ME Benbow**. 2014. Do grazers respond to and influence epilithic biofilm successional trajectories? Joint Aquatic Sciences Meeting, Portland, OR, 18-23 May.
99. McNeish, RE, **ME Benbow**, RW McEwan. 2014. Cross-system subsidy changes associated with the removal of a riparian forest invader (*Lonicera maackii*) alter ecosystem processes and macroinvertebrate dynamics. Joint Aquatic Sciences Meeting, Portland, OR, 18-23 May.
100. Pechal, JL, R Erb, JM Lang, JR Wallace, **ME Benbow**. 2014. Living on the Dead: Microbial Community Succession on Decomposing Carrion in a Headwater Stream and Possible Applications for Forensics. Joint Aquatic Sciences Meeting, Portland, OR, 18-23 May. (*poster*)
101. **Benbow, ME**, JL Pechal. 2014. An Ecoregion Perspective of Calliphoridae Microbiome Diversity. 11th European Association for Forensic Entomology Annual Meeting, Lille, France, 19-11 April.
102. Gemmellaro, D, **ME Benbow**, JL Pechal, V Cervenka, L Weidner. 2014 Forensic Entomology's First Steps in Sicily: Lava Fields and Caves. 11th European Association for Forensic Entomology Annual Meeting, Lille, France, 19-11 April.
103. Whitaker, AN, M McHugh, JL Pechal, **ME Benbow**. 2014. Appalachian Ecoregions: A Calliphoridae Survey. 2013 Beta Beta Beta Regional Convention, Findlay, OH, 29 March. (*Poster*)
104. Shewhart, L, RW McEwan, **ME Benbow**. 2014. Impact of Amur Honeysuckle (*Lonicera maackii*) leachate on *Culex pipiens* life history attributes. Midwest Ecology and Evolution Conference, Dayton, OH. 1-2 March.
105. Lang, JM, RW McEwan, **ME Benbow**. 2014. Grazer response and influence on epilithic biofilm community composition. Midwest Ecology and Evolution Conference, Dayton, OH. 1-2 March.
106. *Pechal, JL, TL Crippen, **ME Benbow**, B Sing, AM Tarone, JK Tomberlin. 2014. Collecting Microbiological Evidence From Cadavers: Techniques and Implications of Using Bacterial Communities in Decomposition Estimates. 66th American Academy of Forensic Science Annual Meeting, Seattle, WA, 17-22 February.
107. ***Benbow, ME**, JL Pechal, B Singh, JK Tomberlin, AM Tarone, M Burke, R Rohde, TL Crippen. 2014. An Initial Assessment of the Structure and Function of the Postmortem Human Microbiome: Forensic Applications. 66th American Academy of Forensic Science Annual Meeting, Seattle, WA, 17-22 February.
108. *Crippen, TL, **ME Benbow**, JL Pechal, B Singh, JK Tomberlin, AM Tarone, SE Dowd, R Rohde, M Burke. Swine as a Model for Decomposition: A Comparison of Postmortem Microbiomes. 66th American Academy of Forensic Science Annual Meeting, Seattle, WA, 17-22 February.
109. *Singh, B, TL Crippen, AM Tarone, JL Pechal, **ME Benbow**, M Burke, R Rohde, JK Tomberlin. 2014. Utility of Bacteria Associated With Human Cadavers in Estimation of Postmortem Interval (PMI). 66th American Academy of Forensic Science Annual Meeting, Seattle, WA, 17-22 February.
110. McNeish, R, EE Moore, **ME Benbow**, RW McEwan. 2014. Riparian zone invasion of Amur Honeysuckle alters headwater stream biota and ecosystem function. Midwest Ecology and Evolution Conference, Dayton, OH. 1-2 March.
111. *Pechal, JL, TL Crippen, **ME Benbow**, B Sing, AM Tarone, JK Tomberlin. 2014. Collecting Microbiological Evidence From Cadavers: Techniques and Implications of Using Bacterial Communities in Decomposition Estimates. Proceedings of the 66th Annual Meeting of the American Academy of Forensic Science. Vol. XXV, p357 17-22 February. Seattle, WA. (*Invited Presentation*)
112. ***Benbow, ME**, JL Pechal, B Singh, JK Tomberlin, AM Tarone, M Burke, R Rohde, TL Crippen. 2014. An Initial Assessment of the Structure and Function of the Postmortem Human Microbiome: Forensic Applications. Proceedings of the 66th Annual Meeting of the American

- Academy of Forensic Science. Vol. XXV, p360, 17-22 February. Seattle, WA. (*Invited Presentation*)
113. *Crippen, TL, **ME Benbow**, JL Pechal, B Singh, JK Tomberlin, AM Tarone, SE Dowd, R Rohde, and M Burke. 2014. Swine as a Model for Decomposition: A Comparison of Postmortem Microbiomes. Proceedings of the 66th Annual Meeting of the American Academy of Forensic Science. Vol. XXV, p362-363 17-22 February. Seattle, WA. (*Invited Presentation*)
 114. *Singh, B, TL Crippen, AM Tarone, JL Pechal, **ME Benbow**, M Burke, R Rohde, JK Tomberlin. 2014. Utility of Bacteria Associated With Human Cadavers in Estimation of Postmortem Interval (PMI). Proceedings of the 66th Annual Meeting of the American Academy of Forensic Science. Vol. XXV, p360-361 17-22 February. Seattle, WA. (*Invited Presentation*)
 115. *Tomberlin, JK, **ME Benbow**, DO Carter. 2014. Microbes and Decomposition: Foundations in Decomposition Ecology and Forensic Applications. Proceedings of the 66th Annual Meeting of the American Academy of Forensic Science. Vol. XXV, p357-358, 17-22 February. Seattle, WA. (*Invited Presentation*)
 116. *Crippen, TL, **ME Benbow**, AM Tarone, TK. Wood, JK Tomberlin. 2014. Quorum Sensing Regulates Blow Fly Attraction and Colonization of Human Remains: Greater Insight Into the Pre-Colonization Interval. Proceedings of the 66th Annual Meeting of the American Academy of Forensic Science. Vol. XXV 17-22, p. 365, February. Seattle, WA. (*Invited Presentation*)