Jenifer B. Walke, Ph.D.

Assistant Professor
Department of Biology, Eastern Washington University
258 Science Building, Cheney, WA 99004-2440
Phone: 509-359-7499; **E-mail:** jwalke@ewu.edu
Website: WalkeLab.com

ACADEMIC POSITIONS

2017-present **Assistant Professor**, Department of Biology,
Eastern Washington University, Cheney, WA

2015-2017 **Post-Doctoral Research Associate**, Department of Biological Sciences,
Virginia Tech, Blacksburg, VA

2016 **Post-Doctoral Research Associate**, Department of Entomology,
Virginia Tech, Blacksburg, VA

2014-2015 **Visiting Assistant Professor**, Department of Biology,
Roanoke College, Salem, VA

EDUCATION

Ph.D. Biological Sciences. Virginia Tech, Blacksburg, Virginia, 2014
Dissertation: "The Structure and Function of Amphibian Skin Bacterial Communities and Their Role in Susceptibility to a Fungal Pathogen." Advisor: Dr. Lisa Belden

B.S. Biology, with Distinction. James Madison University, Harrisonburg, Virginia, 2006
Honors thesis: "Symbiosis in Salamanders: The Role of Cutaneous Bacteria in Disease Prevention." Advisor: Dr. Reid Harris

TEACHING EXPERIENCE

Microbial Physiology Eastern Washington University, Fall 2020, 2021 upper-level lecture course with 30-40 students. This course has a substantial genetics component.

The Human Prospect Eastern Washington University, Winter 2021, upper-level cross-listed (biology and humanities) lecture and discussion course with ~30 students.

Senior Capstone in Environmental Microbiology Eastern Washington University, Spring 2019, 2020, 12-24 students. I developed this course which involves modern molecular and bioinformatic approaches to real-world ecosystem challenges.

Microbiology Eastern Washington University, Fall 2017, Winter 2018, Spring 2018, Winter 2019, Winter 2020, Winter 2021, upper-level lecture and lab course with 24-48 students.

Introduction to Environmental Science Eastern Washington University, Fall 2019, 2020, 2021, ~30 students.

General Biology	Eastern Washington University, Fall 2018, Fall 2019, 96 students.
Graduate Seminar- Current topics in Ecology and Evolution	Eastern Washington University, Fall 2018, 2021, 10-15 students.
Biol. Investigation	Eastern Washington University, Spring 2018, Winter 2019, 24 students.
First-year Honors Seminar	Virginia Tech, Fall 2016, co-led with student teaching assistant.
Microbial Ecology	Eastern Washington University, Spring 2021, Roanoke College, Spring 2015, upper-level course, integrated lecture and lab with 12-18 students.
Biodiversity	Roanoke College, Spring 2015, introductory course, one lab section with 16 students.
Principles of Biology	Roanoke College, Fall 2014, introductory course, two lecture sections with 30-35 students each and one lab section with 16 students.
Honors Biology Lab	Virginia Tech, Spring 2014, Teaching Assistant for the Honors Biology Lab (TA runs entire lab, including course content)

PUBLICATIONS

Walke JB, MH Becker, A Krinos, EA Burzynski, C Santiago, TP Umile, KPC Minbiole, LK Belden. (2021) Seasonal changes and the unexpected impact of environmental disturbance on skin bacteria of individual amphibians in a natural habitat. *FEMS Microbiology Ecology* doi:10.1093/femsec/fiaa248.

Jones KR, **JB Walke**, MH Becker, LK Belden, and MC Hughey. (2020) Time in the laboratory, but not exposure to a chytrid fungus, results in rapid change in spring peeper (*Pseudacris crucifer*) skin bacterial communities. *Ichthyology & Herpetology* 109(1): 75-83 https://doi.org/10.1643/h2020077.

Hernandez J, C Escallón, D Medina, BJ Vernasco, **JB Walke,** LK Belden, IT Moore. (2020) Cloacal bacterial communities of tree swallows (*Tachycineta bicolor*): similarity within a population, but not between pair-bonded social partners. *PLoS ONE* 15(2): e0228982 doi:10.1371/journal.pone.0228982.

Hughey MC, ER Sokol, **JB Walke**, MH Becker, LK Belden. (2019) Ecological correlates of large-scale turnover in the dominant members of *Pseudacris crucifer* skin bacterial communities. *Microbial Ecology* 78: 832-842 doi:10.1007/s00248-019-01372-0.

Estrada, A, MC Hughey, D Medina, EA Rebollar, **JB Walke**, RN Harris, LK Belden. (2019) Skin bacterial communities of neotropical treefrogs vary with local environmental conditions

at the time of sampling. *PeerJ - The Journal of Life and Environmental Sciences* 7:e7044 doi:10.7717/peerj.7044.

Medina D, MC Hughey, **JB Walke**, MH Becker, K Pontarelli, S Sun, B Badgley, LK Belden. (2019) Amphibian skin fungal communities vary across host species and do not correlate with infection by a pathogenic fungus. *Environmental Microbiology* 21(8): 2905-2920 doi:10.1111/1462-2920.14682.

Kueneman JG, MC Bletz, G Becker, M Joseph, JG Abarca, H Archer, L Areleno, A Bataille, MH Becker, LK Belden, A Crottini, R Geffers, CFB Haddad, RN Harris, W Holden, MC Hughey, R Ibañez, M Jarek, JL Kerby, J Kielgast, A Kurabayashi, A Longo, A Loudon, D Medina, JJ Nuñez, R.G. Bina Perl, A Pinto-Tomás, FCE Rabemananjara, EA Rebollar, A Rodríguez, L Rollins-Smith, R Stevenson, CC Tebbe, G Vargas Asensio, **JB Walke**, SM Whitfield, K Zamudio, I Zúñiga Chaves, V McKenzie, DC Woodhams, M Vences. (2019) Community richness of amphibian skin bacteria correlates with bioclimate at the global scale. *Nature Ecology & Evolution*. doi:10.1038/s41559-019-0798-1. **This article was in the news: Science Daily 21 Feb 2019.*

Rebollar EA, A Gutiérrez-Preciado, C Noecker, A Eng, MC Hughey, D Medina, **JB Walke**, E Borenstein, RV Jensen, LK Belden, RN Harris. (2018) The functional repertoire of the skin microbiome of the frog *Craugastor fitzingeri*: Inferring potential bacterial-host-pathogen interactions from metagenomic data. *Frontiers in Microbiology* 9: 466. doi:10.3389/fmicb.2018.00466.

Walke JB, MH Becker, MC Hughey, MC Swartwout, RV Jensen, LK Belden. (2017) Dominance-function relationships in the amphibian skin microbiome. *Environmental Microbiology* 19(8): 3387-3397. doi:10.1111/1462-2920.13850.

Medina D, **JB Walke**, Z Gajewski, MH Becker, MC Swartwout, LK Belden. (2017) Culture media and individual-hosts affect the recovery of culturable bacterial diversity from amphibian skin. *Frontiers in Microbiology*. doi:10.3389/fmicb.2017.01574. **Published in an e-book: Ecology of Amphibian-Microbial Symbioses*

Medina D, MC Hughey, MH Becker, **JB Walke**, TP Umile, EA Burzynski, A Iannetta, KPC Minbiole, LK Belden. (2017) Variation in metabolite profiles of amphibian skin bacterial communities across elevations in the Neotropics. *Microbial Ecology* 74(1): 227-238. doi:10.1007/s00248-017-0933-y.

Walke JB and LK Belden. (2016) Harnessing the microbiome to prevent fungal infections: lessons from amphibians. *PLoS Pathogens* 12(9): e1005796. doi:10.1371/journal.ppat.1005796. **Invited review article.*

Escallón C, MH Becker, **JB Walke**, RV Jensen, G Cormier, LK Belden, IT Moore. (2016) Testosterone levels are positively correlated with cloacal bacterial diversity and the relative abundance of Chlamydiae in breeding male rufous-collared sparrows. *Functional Ecology* doi**:**10.1111/1365-2435.12696.

Hughey MC, **JB Walke**, MH Becker, TP Umile, EA Burzynski, KPC Minbiole, AA Iannetta, CN Santiago, WA Hopkins, LK Belden. (2016) Short-term exposure to coal combustion waste has little impact on the skin microbiome of adult spring peepers, *Pseudacris crucifer*. *Applied and Environmental Microbiology* doi:10.1128/AEM.00045-16.

Rebollar EA, RE Antwis, MH Becker, LK Belden, MC Bletz, RM Brucker, XA Harrison, MC Hughey, JG Kueneman, AH Loudon, V McKenzie, D Medina, KPC Minbiole, LA Rollins-Smith, **JB Walke**, S Weiss, DC Woodhams, RN Harris. (2016) Using "omics" and integrated multi-omics approaches to guide probiotic selection to mitigate chytridiomycosis and other emerging infectious diseases. *Frontiers in Microbiology* 7: 68. doi:10.3389/fmicb.2016.00068.

Walke JB, MH Becker, TL Teotonio, SC Loftus, LL House, KPC Minbiole, LK Belden. (2015) Community structure and function of amphibian skin microbes: an experimental test with bullfrogs exposed to a chytrid fungus. *PLoS ONE* 10(10): e0139848. doi:10.1371/journal.pone.0139848. **This article was in the news: The Scientist, Phys.org, Health News from HealthCanal.com, HealthNewsDigest.com, Microbiome Digest*

Belden LK, MC Hughey, EA Rebollar, TP Umile, SC Loftus, EA Burzynski, KPC Minbiole, LL House, RV Jensen, MH Becker, **JB Walke**, D Medina, R Ibáñez, and RN Harris. (2015) Panamanian frog species host unique skin bacterial communities. *Frontiers in Microbiology* 6:1171 doi:10.3389/fmicb.2015.01171. **This article is part of a Frontiers eBook "The Role of Microbial Communities in Tropical Ecosystems" www.frontiersin.org/books/b/1095.*

Walke JB, MH Becker, MC Hughey, MC Swartwout, RV Jensen, LK Belden. (2015) Most of the dominant members of amphibian skin bacterial communities can be readily cultured. *Applied and Environmental Microbiology* doi:10.1128/AEM.01486-15. **This article was in the news: American Society for Microbiology's website, ScienceDaily, Phys.org, UK News, Science NewsLine.*

Becker MH, **JB Walke**, S Cikanek, A Savage, N Mattheus, C Santiago, KPC Minbiole, RN Harris, LK Belden, B Gratwicke. (2015) Composition of symbiotic bacteria predicts survival in Panamanian golden frogs infected with a lethal fungus. *Proceedings of the Royal Society B* 282(1805): 20142881. **This article was in the news: National Geographic Phenomena, ScienceDaily, Smithsonian Science, Phys.org, EurekaAlert (AAAS), The Molecular Ecologist blog*

Becker MH, **JB Walke**, L Murrill, D Woodhams, L Reinert, L Rollins-Smith, E Burzynski, T Umile, KPC Minbiole, LK Belden. (2015) Phylogenetic distribution of symbiotic bacteria from Panamanian amphibians that inhibit growth of the lethal fungal pathogen *Batrachochytrium dendrobatidis*. *Molecular Ecology* 24(7): 1628-41.

Woodhams DC, R Alford RE Antwis, H Archer, MH Becker, LK Belden, SC Bell, M Bletz, JH Daskin, LA Davis, SV Flechas, A Lauer, AG Peña, RN Harris, WM Holden, MC Hughey, R Ibañez, R Knight, J Kueneman, F Rabemanajara, LK Reinert, LA Rollins-Smith, F Roman-Rodriguez, SD Shaw, **JB Walke**, V McKenzie. (2015) Antifungal isolates database to centralize data on amphibian skin-associated bacteria and function against emerging fungal pathogens. *Ecology* 96: 595-595.

Walke JB, MH Becker, SC Loftus, LL House, G Cormier, RV Jensen, LK Belden. (2014) Amphibian skin may select for rare environmental microbes. *The ISME Journal* 8: 2207-2217. doi:10.1038/ismej.2014.77.

Hughey MC, MH Becker, **JB Walke**, MC Swartwout, LK Belden. (2014) *Batrachochytrium dendrobatidis* in Virginia amphibians: within and among site variation in infection. *Herpetological Review* 45: 428-438.

Walke JB, RN Harris, LK Reinert, LA Rollins-Smith, DC Woodhams. (2011) Social immunity in amphibians: evidence for vertical transmission of innate defenses. *Biotropica* 43(4): 396-400.

Lam BA, **JB Walke**, VT Vredenburg, RN Harris. (2010) Proportion of individuals with anti-*Batrachochytrium dendrobatidis* skin bacteria is associated with population persistence in the frog *Rana muscosa*. *Biological Conservation* 143: 529–531.

Harris RN, RM Brucker, **JB Walke**, MH Becker, CR Schwantes, DC Flaherty, BA Lam, DC Woodhams, CJ Briggs, VT Vredenburg, KPC Minbiole. (2009) Skin microbes on frogs prevent morbidity and mortality caused by a lethal skin fungus. *The ISME Journal* 3: 818-824.

Harris RN, A Lauer, MA Simon, **JL Banning**, RA Alford. (2009) Addition of antifungal skin bacteria to salamanders ameliorates the effects of chytridiomycosis. *Diseases of Aquatic Organisms* 83: 11-16.

Banning JL, A Weddle, GW Wahl III, MA Simon, A Lauer, RL Walters, RN Harris. (2008) Antifungal skin bacteria, embryonic survival, and communal nesting in four-toed salamanders, *Hemidactylium scutatum*. *Oecologia* 156: 423-429.

Lauer A, MA Simon, **JL Banning**, B Lam, RN Harris. (2008) Diversity of cutaneous bacteria with antifungal activity isolated from female four-toed salamanders. *The ISME Journal* 2008(2): 145-157.

Lauer A, MA Simon, **JL Banning**, E André, K Duncan, RN Harris. (2007) Common cutaneous bacteria from the eastern red-backed salamander can inhibit pathogenic fungi. *Copeia* 2007(3): 630-640.

GRANTS

2021 $10,000 One year, Eastern Washington University Faculty Grant for Research and Creative Works, "The role of skin bacteria in disease susceptibility of Inland Northwest amphibians." PI: **Jenifer Walke**

2019 $29,250 2019-2020, USGS State of Washington Water Research Center grant, "The contribution of water retention, nutrient loading, and microbial community to mosquito

breeding and West Nile virus transmission in Spokane County." PI: Krisztian Magori, Co-PIs: **Jenifer Walke**, Camille McNeely, and Christy Andrade (Gonzaga University)

2019 $2,500 Eastern Washington University Foundation, Start Something Big Grant, "Bringing the Buzz: Community Education and Engagement for Pollinator Health." PIs: **Jenifer Walke** and Jennifer Probert

2018 $208,415 2018-2022, NSF Division of Molecular and Cellular Bioscience (MCB), Systems and Synthetic Biology program, "Collaborative research: A systems approach to understanding metabolic signaling networks in host-microbiome-parasite interactions." PI: **Jenifer Walke (**Collaborative research with PIs Belden, Fell, Haak, and Murali at Virginia Tech. Full project award: $958,415)

2018 $10,000 One year, Eastern Washington University Faculty Grant for Research and Creative Works, "Identifying factors driving diversity in honey bee gut microbiomes." PI: **Jenifer Walke**

2016 $33,097 Two years, Virginia Agricultural Council, "Improving honey bee colony health: Assessing the role of honey bee gut microbiota in mediating pesticide effects." PI: **Jenifer Walke**, Co-PIs: Richard Fell and Lisa Belden.

2014 $500 travel grant, American Society for Microbiology, to present research at American Society for Microbiology's Conference on Beneficial Microbes, Washington DC.

2013 $500 travel grant, American Society for Microbiology, to present research at American Society for Microbiology, Denver, Colorado.

$500 travel grant, Morris Animal Foundation, to present research at American Society for Microbiology, Denver, Colorado.

2012 $600 research grant, Virginia Tech Graduate Research and Development Program, "Linking community structure and function of amphibian skin microbes."

2011 $600 research grant, Virginia Tech Graduate Research and Development Program, "The effects of bioaugmentation on disease susceptibility in the bullfrog, *Rana catesbeiana*"

2010 $450 research grant, Virginia Tech Graduate Research and Development Program, "The effects of cutaneous microbiota on pathogen load in the bullfrog, *Rana catesbeiana*."

2009 $550 research grant, Virginia Tech Graduate Research and Development Program, "The effects of cutaneous microbiota on disease susceptibility in the bullfrog, *Rana catesbeiana*."

2008 $500 travel grant, Integrated Research Challenges in Environmental Biology (amphibian disease) meeting at Arizona State University.

$600 research grant, Virginia Tech Graduate Research and Development Program, "Investigation of a potential amphibian-bacteria mutualism: the role of cutaneous microbiota in disease susceptibility."

AWARDS and HONORS

2019 Chairs' Excellence Award for Scholarship. College of Science, Technology, Engineering, and Mathematics at Eastern Washington University

2018 Community Engagement Fellow, Eastern Washington University

2012 Robert and Marion Patterson Scholarship, Department of Biological Sciences, Virginia Tech, $800. Graduate student award for excellence in research and progress towards degree.

Perry Holt Scholarship, Department of Biological Sciences, Virginia Tech, $800. Graduate student award for excellence in research and progress towards degree.

First Place Graduate Student Poster Presentation, Mid-Atlantic Chapter of the Ecological Society of America conference, Blacksburg, Virginia, $150, "The role of microbial communities on bullfrog skin in host disease resistance."

2008 Cunningham Doctoral Scholar Fellowship, Virginia Tech, ~$124,000.

2006 Best Honors Thesis in the Department of Biology, James Madison University.

Margaret A. Gordon Memorial Scholarship for excellence in undergraduate biological research, James Madison University, $200.

2005 Ralph S. Wolfe Award for best poster presentation at the American Society for Microbiology-Shenandoah Student Chapter.

INVITED PRESENTATIONS

2021 Featured Speaker for the Western Apicultural Society's Annual Conference on Honey Bee Health. Virtual presentation. "Zooming Down to the Bee Gut Microbiome."

2020 Keynote Speaker for the Eastern Washington University Research and Creative Works Symposium. "The Life We Cannot See: The Role of Microbes in Health and Disease"

2020 Panelist for Town Hall Seattle forum "Bees, Guts, Soil, and Cancer: The Microbiome." Seattle, WA. Audio available: https://townhallseattle.org/event/bees-guts-soil-and-cancer/

2019 Pacific Northwest Beekeeping Conference-Scientific Session, Cheney, WA. "Honey bee gut microbes and their influence on bee and colony health."

2018 Gonzaga University Biology Department seminar, Spokane, WA. "The structure and function of animal microbiomes – Who's there, and what are they doing?"

2018 Western Washington University Biology Department seminar, Bellingham, WA. "The structure and function of animal microbiomes – Who's there, and what are they doing?"

2014 5th annual American Society for Microbiology (ASM) conference on Beneficial Microbes meeting, Washington, D.C. "Community structure and function of amphibian skin microbes: an experimental test with bullfrogs exposed to chytrid fungus." One of 8 invited student talks.

2014 99th Ecological Society of America (ESA) annual meeting, Sacramento, California. Organized Oral Session (OOS) entitled "The role of the skin microbiome in amphibian health, from ecology and immunology to conservation applications." Presentation title: "Linking culture-dependent and –independent characterizations of amphibian skin microbial communities: important insights into the use of probiotics in amphibian conservation."

2014 Summer Seminar Series at the University of Virginia's Mountain Lake Biological Station, Pembroke, Virginia. "Amphibians and their microbial symbionts: the role of mutualistic bacteria in resistance to a fungal pathogen."

2013 Morris Animal Foundation headquarters, Denver, Colorado. "Beneficial bacteria and disease prevention in amphibians: can probiotics save our frogs?"

SCIENTIFIC PRESENTATIONS

2021 World Microbe Forum (joint meeting with American Society for Microbiology, ASM, and the Federation of European Microbiological Societies, FEMS), June 2021, virtual poster presentation: "Field and Laboratory Evaluation of the Effects of Pesticides on Honey Bee Gut Microbes."

2020 Ecological Society of America (ESA) Annual Meeting, Aug. 2020, virtual oral presentation: "Pesticides can influence host-microbe-parasite interactions in a bee pollinator."

2020 Entomological Society of America Annual Meeting-Pacific Branch, Spokane, WA, Oral presentation: "The effects of environmental factors on the honey bee gut microbiome." Abstract accepted, cancelled due to COVID-19.

2018 Entomological Society of America Annual Meeting, Vancouver, B.C. Oral presentation: "Environmental factors can alter the honey bee gut microbiome."

2018 8th annual Symbiosis Workshop, Yosemite, CA. Oral presentation: "Stability of amphibian skin symbionts and their metabolites across seasons and disturbance."

2016 American Society for Microbiology (ASM) conference on Beneficial Microbes, Seattle, WA. Poster presentation: "Culturability and pathogen inhibition of the amphibian skin microbiome."

2013 American Society for Microbiology's General Meeting, Denver, Colorado. Poster presentation: "Symbiotic Microbial Assemblages on Amphibian Skin and Their Relationship to Environmental Microbes."

Virginia Tech Department of Biological Sciences Research Day. Poster presentation: "Variation in Symbiotic Microbial Assemblages on Amphibian Skin."

2012 Southwest Virginia Life Science Forum, Virginia Tech, Blacksburg, Virginia. Poster presentation: "Bullfrog skin microbes."

Mid-Atlantic Chapter of the Ecological Society of America conference, Blacksburg, Virginia. Poster presentation: "The role of microbial communities on bullfrog skin in host disease resistance."

Virginia Tech Department of Biological Sciences Research Day. Poster presentation: "Bullfrog skin microbes and their role in disease."

2011 American Society for Microbiology-Virginia Branch Meeting, Blacksburg, Virginia. Poster presentation: "Bullfrog skin microbes and their role in disease."

2010 Ecological Society of America's Annual Meeting, Pittsburgh, Pennsylvania, Poster presentation: "Amphibian host-symbiont interactions."

Ecology and Evolution of Infectious Diseases meeting, Cornell University, Ithaca, New York, Poster presentation: "Amphibian host-symbiont interactions."

Virginia Tech Department of Biological Sciences Research Day. Poster presentation: "Skin microbiota as an innate immune defense in amphibians."

2009 American Society for Microbiology's General Meeting, Philadelphia, Pennsylvania. Poster presentation: "Cutaneous microbiota as an innate immune defense in the American Bullfrog, *Rana catesbeiana*."

Virginia Tech Department of Biological Sciences Research Day. Poster presentation: "Cutaneous microbiota as an innate immune defense in the American Bullfrog, *Rana catesbeiana*."

2008 American Society for Microbiology's General Meeting, Boston, Massachusetts. Poster presentation: "Cutaneous antifungal microbiota may explain variation in susceptibility to chytridiomycosis in Panamanian amphibians."

2007 Center for Biodiversity and Conservation's Annual Symposium at the American Museum of Natural History, New York, New York. Small Matters: Microbes and Their Role in Conservation. Poster presentation: "Antifungal bacteria, embryonic survival, and communal nesting in the four-toed salamander, *Hemidactylium scutatum*."

2006 James Madison University's Biosymposium. Oral presentation: "Symbiosis in salamanders: the role of cutaneous bacteria in disease prevention."

2005 American Society for Microbiology - Shenandoah Student Chapter. Poster presentation: "Cutaneous bacterial flora as a factor in joint nesting behavior of the four-toed salamander, *Hemidactylium scutatum*."

James Madison University's Biosymposium. Poster presentation: "Cutaneous bacterial flora as a factor in joint nesting behavior of the four-toed salamander, *Hemidactylium scutatum*."

PROFESSIONAL MEMBERSHIPS and SERVICE

Member: American Society for Microbiology (ASM), Northwest Branch of ASM, Ecological Society of America, Entomological Society of America, Pacific Branch of Ent. SA

Manuscript Reviewer: *Frontiers in Microbiology, The ISME Journal, Microbial Ecology, Applied and Environmental Microbiology, Microorganisms, Ecology and Evolution, Austral Ecology, Journal of Aquatic Animal Health, Herpetological Review, Diseases of Aquatic Organisms, Functional Ecology, Royal Society Open Science*

Research Grant Reviewer: NSF Review Panelist for the Division of Molecular and Cellular Bioscience (MCB) 2019, NSF Review Panelist for Microbiome Interactions 2021, M. J. Murdock Charitable Trust, Swiss National Science Foundation (SNSF)

LEADERSHIP and OUTREACH

2021 (Nov) Invited presenter for "Suds and Science" Seminar Series, The Golden Handle Project, Spokane, WA.

2021 (Mar) Invited presenter at Big Island Beekeepers Association meeting, Pāpa'ikou, HI (virtual).

2019-present Co-founder and co-facilitator of "SNAPS: Student Network for Amphibian Pathogen Surveillance" (A multi-institution network of CUREs, or Course-based Undergraduate Research Experiences, in cooperation with the Bsal Task Force and USGS)

2019-present Co-leader of an international professional working group, the Bsal Surveillance & Monitoring Working Group of the North American Bsal Task Force (https://www.salamanderfungus.org/surveillance-monitoring-working-group/)

2019-2020 Member of the organizing committee for the inaugural Women of Eastern in STEM (WE-STEM) Symposium, March 6-7, 2020 at EWU. https://inside.ewu.edu/news/inaugural-we-stem-symposium-was-a-success/

2019 (Oct)	Community Book It! outreach event for ~60 elementary school kids, Southside Community Center, Spokane, WA.
2019 (Sept)	Invited presenter at Backyard Beekeepers meeting, Deer Park, WA.
2017-2019	Member of the organizing committee for the inaugural Pacific Northwest Beekeeping Conference, Feb. 9, 2019 at EWU.
2018	Obtained $1800 co-sponsorship from Associated Students of EWU (ASEWU) for bee outreach campaign
2018 (May)	Participant in the 2018 Inland Northwest Community Engagement Institute (CEI), Partners in Campus Community Engagement (PICCE), Gonzaga University, Spokane, WA.
2018 (May)	Honey bee research featured in The Inlander Newspaper's Scholastic Fantastic series, "Five Cool Discoveries Local Universities Made This Year". Article title: "Honey and Tummies: Can we harness the microbes in bee guts to create stronger bees?"
2018	Event Supervisor for State and Regional Science Olympiad, Spokane, WA.
2018 (Mar)	Judge for Franklin Elementary School Science Fair, Spokane, WA.
2017 (Nov)	Invited presenter at West Plains Beekeepers Association meeting, Medical Lake, WA.
2016 (Oct)	"Mentoring the diverse undergraduate" workshop participant, Virginia Tech, Blacksburg, VA.
2016 (June)	Outreach presentation and activity for SPARCLS Girls Camp (Simple Physics, Applied Robotics, Chemistry, and Life Science), Science Museum of Western Virginia, Roanoke, VA.
2014 (July)	Guest Lecturer, Field Herpetology Course, University of Virginia's Mountain Lake Biological Station, Pembroke, VA. Instructor: Caitlin Fisher-Reid
2010-2012	Research Assistant, Smithsonian Tropical Research Institute, Panama. I sampled amphibian skin microbes in the field, and trained personnel in culturing methods for skin microbes in the laboratory.
2011 (Nov)	Fralin Life Science Institute (Virginia Tech's interdisciplinary research center) outreach event: "Virginia Amphibians."
2011 (Mar)	Kids' Tech University STEM outreach event: "Amphibian Biodiversity and Threats to Amphibians."

2010-2011	Department of Biological Sciences delegate to the Graduate Student Assembly of Virginia Tech.
2010 (Mar)	Blue Ridge Highlands Regional Science Fair judge.
2010	Science education outreach program. I assisted in the development and implementation of multiple events for local third grade classes (for ~120 students, 3 times/year) on Amphibian and Parasite Life Cycles, Aquatic Food Webs, Threats to Amphibians.