

Clifton McKee

Ecologist

Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

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INTERESTS

wildlife disease ecology · phylogenetics · statistical modeling · population genetics · molecular biology

EDUCATION

- 2015-2020 **PhD in Ecology** Colorado State University · Fort Collins, CO
Advisor: Prof Colleen Webb
- 2013-2015 **MS in Ecology** Colorado State University · Fort Collins, CO
Advisor: Prof Colleen Webb
- 2007-2011 **BS in Ecology & BA in Environmental Studies** University of Pittsburgh · Pittsburgh, PA

PROFESSIONAL EXPERIENCE

- 2020- **Johns Hopkins Bloomberg School of Public Health** Postdoctoral Fellow · Baltimore, MD
Supervisor: Dr Emily Gurley
- 2015 & 2019 **Colorado State University** Research Assistant · Fort Collins, CO
Supervisor: Prof Colleen Webb
- 2014-2019 **CDC Division of Vector-Borne Diseases** Guest Researcher · Fort Collins, CO
Supervisor: Dr Michael Kosoy
- 2015-2017 **CDC Division of Vector-Borne Diseases** Regular Fellow · Fort Collins, CO
Supervisor: Dr Michael Kosoy
- 2010 & 2013 **Emory University** Field Assistant & Field Research Specialist · Atlanta, GA
PI: Prof Donna Maney
- 2011-2013 **WL Gore & Associates** Laboratory Technician · Newark, DE
- 2011 **University of California, Santa Cruz** Field Technician · Santa Cruz, CA
PI: Prof Marm Kilpatrick

FELLOWSHIPS · GRANTS · AWARDS

Total received: \$96,150

- 2018 **Colorado State University** Vice President for Research Fellowship · \$4,000
- 2015-2017 **CDC Division of Vector-Borne Diseases** Regular Fellowship · \$82,000
- 2014 & 2017 **Colorado State University** Department of Biology Travel Awards · \$2,000
- 2015 **Colorado State University** Sharon E and David E Kabes Scholarship · \$1,150
- 2014 **Colorado State University** Graduate Degree Program in Ecology Small Research Grant · \$2,000
- 2013 **Colorado State University** Graduate Fellowship · \$1,000
- 2011 **University of Pittsburgh** Phi Beta Kappa
- 2007 **University of Pittsburgh** Honors College Scholarship · \$4,000

PUBLICATIONS

- 2021 **CD McKee**, A Islam, SP Luby, H Salje, PJ Hudson, RK Plowright, ES Gurley. The ecology of Nipah virus in Bangladesh: a nexus of land-use change and opportunistic feeding behavior in bats. *Viruses*, **13** (2), 169.
- 2021 **CD McKee**, Y Bai, CT Webb, MY Kosoy. 2021. Bats are key hosts in the radiation of mammal-associated *Bartonella* bacteria. *Infection, Genetics and Evolution* **89**, 104719.
- 2020 I Goodrich, **C McKee**, M Kosoy. Trypanosoma (*Herpetosoma*) diversity in rodents and lagomorphs of New Mexico with a focus on epizootological aspects of infection in Southern Plains woodrats (*Neotoma micropus*). *PLOS ONE* **15** (12), e0244803.
- 2020 I Rudolf, H Blazejova, J Mendel, P Strakova, O Sebesta, F Rettich, V Cabanova, M Miterpakova, L Betasova, J Pesko, E Barbusinova, **C McKee**, L Osikowicz, S Sikutova, Z Hubalek, M Kosoy. 2020. *Bartonella* species in medically important mosquitoes, Central Europe. *Parasitology Research* **119** (8), 2713-2717.
- 2020 I Goodrich, **C McKee**, M Kosoy. Longitudinal study of bacterial infectious agents in a community of small mammals in New Mexico. *Vector-Borne and Zoonotic Diseases* **20** (7), 496-508.
- 2019 **CD McKee**, AI Krawczyk, AD Sandor, T Gorfol, M Foldvari, G Foldvari, D Dekeukeleire, A-J Haarsma, MY Kosoy, CT Webb, H Sprong. Host phylogeny, geographic overlap, and roost sharing shape parasite communities in European bats. *Frontiers in Ecology and Evolution* **7**, 69.
- 2018 Y Bai, MOV Osinubi, L Osikowicz, **C McKee**, NM Vora, MR Rizzo, S Recuenco, L Davis, M Niezgoda, AM Ehimiyein, GSN Kia, A Oyemakinde, OS Adeniyi, YH Gbadegesin, OA Saliman, A Ogunniyi, AB Ogunkoya, MY Kosoy, Idanre Bat Festival Investigation Team. Human exposure to novel *Bartonella* species from contact with fruit bats. *Emerging Infectious Diseases* **24** (12), 2317-2323.
- 2018 A Kellner, S Carver, V Scorza, **CD McKee**, M Lappin, KR Crooks, S VandeWoude, MF Antolin. Transmission pathways and spillover of an erythrocytic bacterial pathogen from domestic cats to wild felids. *Ecology and Evolution* **8** (19), 9779-9792.
- 2018 **CD McKee**, LM Osikowicz, TR Schwedhelm, SE Maes, RE Ensore, KL Gage, MY Kosoy. Acquisition of *Bartonella elizabethae* by experimentally exposed Oriental rat fleas (*Xenopsylla cheopis*; Siphonaptera, Pulicidae) and excretion of bartonella DNA in flea feces. *Journal of Medical Entomology* **55** (5), 1292-1298.
- 2018 M Kosoy, **C McKee**, L Albayrak, Y Fofanov. Genotyping of *Bartonella* bacteria and their animal hosts: current status and perspectives. *Parasitology* **145** (5), 543-562.
- 2018 EE Gorsich, **CD McKee**, DA Grear, RS Miller, K Portacci, T Lindstrom, CT Webb. Model-guided suggestions for targeted surveillance based on cattle shipments in the US. *Preventive Veterinary Medicine* **150**, 52-59.
- 2018 **CD McKee**, LM Osikowicz, TR Schwedhelm, Y Bai, KT Castle, MY Kosoy. Survey of parasitic bacteria in bat bugs, Colorado. *Journal of Medical Entomology* **55** (1), 237-241.
- 2017 **CD McKee**, MY Kosoy, Y Bai, LM Osikowicz, R Franka, AT Gilbert, S Boonmar, CE Rupprecht, LF Peruski. Diversity and phylogenetic relationships among *Bartonella* strains from Thai bats. *PLOS ONE* **12** (7), e0181696.
- 2017 L Urushadze, Y Bai, L Osikowicz, **C McKee**, K Sidamonidze, D Putkaradze, P Imnadze, A Kandaurov, I Kuzmin, M Kosoy. Prevalence, diversity, and host associations of *Bartonella* strains in bats from Georgia (Caucasus). *PLOS Neglected Tropical Diseases* **11** (4), e0005428.
- 2017 Y Bai, L Urushadze, L Osikowicz, **C McKee**, I Kuzmin, A Kandaurov, G Babuadze, I Natradze, P Imnadze, M Kosoy. Molecular survey of bacterial zoonotic agents in bats from the country of Georgia (Caucasus). *PLOS ONE* **12** (1), e0171175.
- 2016 **CD McKee**, DTS Hayman, MY Kosoy, CT Webb. Phylogenetic and geographic patterns of bartonella host shifts among bat species. *Infection, Genetics and Evolution* **44**, 382-394.
- 2015 WM Zinzow-Kramer, BM Horton, **CD McKee**, JM Michaud, GK Tharp, JW Thomas, EM Tuttle, SYi, DL Maney. Genes located in a chromosomal inversion are correlated with territorial song in white-throated sparrows. *Genes, Brain and Behavior* **14** (8), 641-654.
- 2015 Y Bai, DTS Hayman, **CD McKee**, MY Kosoy. Classification of *Bartonella* strains associated with straw-colored fruit bats (*Eidolon helvum*) across Africa using a multi-locus sequence typing platform. *PLOS Neglected Tropical Diseases* **9** (1), e0003478.

OTHER CONTRIBUTIONS

- 2021 2019 Novel Coronavirus Research Compendium (NCRC) · <https://ncrc.jhsph.edu/>.
2015 K Owers, **C McKee**, C Hallman, K Portacci, R Miller, T Lindstrom, C Webb. USAMM R Shiny Visualization · <https://usamm-gen-net.shinyapps.io/usamm-gen-net/>.

TEACHING

- 2020 **Epidemiology of Infectious Diseases** Teaching Assistant · Johns Hopkins Bloomberg School of Public Health
2018 & 2019 **Molecular and General Genetics** Teaching Assistant · Colorado State University
2018 **Introduction to Evolution** Teaching Assistant & Guest Lecturer · Colorado State University
2018 **Principles of Systematic Zoology** Guest Lecturer · Colorado State University
2017 **Ecology** Teaching Assistant · Colorado State University
2017 **Tropical Ecology and Evolution** Guest Lecturer · Colorado State University
2016 **Ecology of Infectious Diseases** Guest Lecturer · Colorado State University
2014 & 2015 **Ornithology** Teaching Assistant & Guest Lecturer · Colorado State University
2014 **Molecular and General Genetics** Teaching Assistant & Guest Lecturer · Colorado State University
2013 **Attributes of Living Systems** Teaching Assistant · Colorado State University

STUDENT MENTORING

- 2018 **Paul Lazarus** Undergraduate Research Assistant · Colorado State University
2016-2017 **Alexis Cannella** Undergraduate Research Assistant · Colorado State University
2014-2015 **Jake Doyle** Undergraduate Research Assistant · Colorado State University
2014-2015 **Madison Leming** Undergraduate Research Assistant · Colorado State University

PRESENTATIONS

- 2019 **Evolution** Providence, RI
Contributed talk: Comprehensive time tree analysis identifies bats as key to the radiation of mammal-associated *Bartonella* bacteria
- 2019 **Ecology and Evolution of Infectious Disease Conference** Princeton, NJ · **Best poster award**
Poster: Manipulating vector transmission reveals local processes in bacterial communities of bats
- 2019 **Front Range Student Ecology Symposium** Fort Collins, CO · **Best poster award**
Poster: Dispersal of hosts and vectors predicts bacterial community structure across an island chain
- 2018 **Ecological Society of America Annual Meeting** New Orleans, LA
Contributed talk: Timing the diversification of a mammal parasite, *Bartonella*
- 2018 **Front Range Student Ecology Symposium** Fort Collins, CO
Contributed talk: Timing the diversification of a mammal parasite, *Bartonella*
- 2018 **Vice President for Research Three Minute Challenge** Fort Collins, CO
Invited talk: Bad roommates? Inferring bacterial interactions in coinfecting individuals
- 2017 **Colorado State University Graduate Student Showcase** Fort Collins, CO
Poster: Timing the diversification of a mammal parasite, *Bartonella*
- 2017 **Ecological Society of America Annual Meeting** Portland, OR
Contributed talk: Long-term monitoring of *Bartonella* spp. bacteria in a captive colony of fruit bats and experimental evidence of bat flies as vectors of bartonella
- 2017 **International Symposium on Infectious Diseases of Bats** Fort Collins, CO
Contributed talk: Long-term monitoring of *Bartonella* spp. bacteria in a captive colony of fruit bats and experimental evidence of bat flies as vectors of bartonella
- 2017 **Ecology and Evolution of Infectious Disease Conference** Santa Barbara, CA
Poster: Linking patterns of bacterial parasite diversity across host and vector communities
- 2017 **Front Range Student Ecology Symposium** Fort Collins, CO
Contributed talk: Host phylogenetic distance and ectoparasite overlap predict *Bartonella* sharing in European bats
- 2015 **Ecological Society of America Annual Meeting** Baltimore, MD
Contributed talk: Phylogeography of *Bartonella* bacteria in *Eidolon* spp. fruit bats across Africa
- 2015 **Ecology and Evolution of Infectious Disease Conference** Athens, GA
Poster: Phylogeography of *Bartonella* bacteria in *Eidolon* spp. fruit bats across Africa
- 2015 **Front Range Student Ecology Symposium** Fort Collins, CO
Contributed talk: Phylogeography of *Bartonella* in *Eidolon* fruit bats across Africa

PRESENTATIONS (CONTINUED)

- 2014 **Ecological Society of America Annual Meeting** Sacramento, CA
Poster: Large-scale patterns of *Bartonella* prevalence and diversity in African fruit bats
- 2014 **Ecology and Evolution of Infectious Disease Conference** Fort Collins, CO
Poster: Large-scale patterns of *Bartonella* prevalence and diversity in African fruit bats
- 2014 **Front Range Student Ecology Symposium** Fort Collins, CO
Poster: A novel method of isolating multi-locus sequence data for characterizing *Bartonella* diversity in bats

PROFESSIONAL SERVICE

Peer review: *Acta Chiropterologica*, *BMJ*, *Frontiers in Microbiology*, *Frontiers in Veterinary Science*, *Infection*, *Genetics and Evolution*, *Journal of Medical Entomology*, *Journal of Zoological Systematics and Evolutionary Research*, *Microbial Ecology*, *PLOS Neglected Tropical Diseases*, *PLOS ONE*, *The Science of Nature*, *Tropical Biomedicine*, *Viruses*, *Zoonoses and Public Health*

- 2019 **American Society of Naturalists** Member
- 2019 **Society for the Study of Evolution** Member
- 2014-2019 **Ecological Society of America** Member
- 2014-2019 **Front Range Student Ecology Symposium** Volunteer
- 2015 **Front Range Student Ecology Symposium** Vice President
- 2014 **Ecological Society of America** Volunteer

COMMUNITY ENGAGEMENT

2018 & 2019 **Rocky Mountain Regional Middle School Science Bowl** Loveland, CO · Moderator
2018 **National Science Olympiad** Fort Collins, CO · Workshop on Disease Ecology
2015 **O'Dea Elementary School Science Fair** Fort Collins, CO · Judge