

DR. JOHANNA A. HARVEY

University of Maryland • 8127 Regents Drive, College Park, MD 20742
USGS Eastern Ecological Center • 12100 Beech Forest Road, Laurel, MD 20708
johannaaharvey@gmail.com
<https://johannaaharvey.wordpress.com>

EDUCATION

Ph.D., Department of Wildlife and Fisheries Sciences, Texas A&M University, 2018.

Dissertation Title: Avian Haemosporidians: detection, host, and climate association across contrasting regions of Africa. Committee chair: Dr. Gary Voelker

B.S., Department of Wildlife and Fisheries, Texas A&M University, 2010.

PROFESSIONAL APPOINTMENTS

Postdoctoral Researcher, April 2022- Present. Joint position at University of Maryland

Department of Environmental Science and Technology and the USGS Eastern Ecological Center within the Disease Decision and Analysis Research (DDAR) group. Mentors: Drs. Diann Prosser and Jennifer Mullinax

Research Associate, April 2022- Present. American Museum of Natural History, Division of Vertebrate Zoology.

Gerstner Scholar, September 2019- March 2022. American Museum of Natural History, Richard Gilder Graduate School & Division of Invertebrate Zoology. Mentors: Drs. Susan Perkins and Brian Tilston Smith

Career Breaks, September 25, 2018 – December 14, 2018; June 3, 2019 – September 21, 2019, Medical leave

Postdoctoral Research Associate, Full-time January 2018 – January 2019; Part-time January 2019 – June 2019. University of Connecticut, Department of Ecology and Evolutionary Biology. PI: Dr. Sarah Knutie

FELLOWSHIPS, GRANTS, AWARDS (\$285,258)

2021	Maxwell Hanrahan Award, Richard Gilder Graduate School, American Museum of Natural History, \$1,000
2019	Gerstner Scholar Postdoctoral Research Fellowship, American Museum of Natural History, Research award, \$135,530
2018	American Ornithological Society Research Award, \$2,492
2017	Tom Slick Professional Development Grant, Texas A&M University, \$1,000
2017-2016	Tom Slick Graduate Research Fellowship, Texas A&M University, \$32,298
2015	American Ornithologists' Union Research Award, \$2,481
2015	Marc Dresden Student Travel Grant, American Society of Parasitologists, \$300
2015	Frank M. Chapman Research Grant, American Museum of Natural History, \$900
2015	Aggies Commit Research Fellowship, Texas A&M University, \$1,000
2015	Graduate Students of WFSC Seed Grant, Texas A&M University, \$50
2012	MalariaRCN Travel Grant & Scholarship \$1000 (travel & lodging) \$1,000
2013-2011	Graduate Diversity Fellowship, Texas A&M University, \$103,707 (3 years)
2010	Undergraduate Diversity Fellowship: Evolution 2010, Portland, Oregon (travel & lodging) \$1000
2010	Applied Biodiversity Science NSF-IGERT Program Amazon Field School scholarship (travel & lodging) \$2500

PEER-REVIEWED PUBLICATIONS (*undergraduate author, †mentee)

11. **Harvey, J.A.**, Chernicky, K. †, Simons, S. †, Verrett, T. B. †, Chaves, J.A., and Knutie, S.A. 2021. Urban living can increase the reproductive success of Darwin's finches. *Ecology and Evolution*. 11: 5038-5048. (doi.org/10.1002/ece3.7360)
10. Adesso, A.M. *†, **Harvey, J. A.**, Vaziri, G.J., Verrett, T.B. †, Albert, L., Arthur, T., Chernicky, K. †, Simons, S.R. †, Chaves, J.A., Knutie, S.A. 2020. Effect of introduced parasites on the survival and microbiota of nestling cactus finches (*Geospiza scandens*) in the Galápagos Islands. *Journal of Ornithology* 161, 1011-1019. (doi.org/10.1007/s10336-020-01793-6)
9. Hibbitts, T.J., Ryberg, W.A., **Harvey, J.A.**, Voelker, G., Lawing, M.A., Adams, C.S., Neuhauser, D.B., Dittmer, D.E., Duran, C.M., Wolaver, B.D., Pierre, J.P., Labay, B.J., Laduc, T.J. 2019. Phylogenetic structure of *Holbrookia lacerata* (Cope 1880) (Squamata: Phrynosomatidae): one species or two? *Zootaxa* 4619: 139-154. (doi.org/10.11646/zootaxa.4619.1.6)
8. **Harvey, J.A.** and Voelker, G. 2019. Host associations and climate influence avian haemosporidian distributions in Benin. *International Journal of Parasitology* 49: 27-36. (doi.org/10.1016/j.ijpara.2018.07.004)
7. Huntley, J.W., **Harvey, J.A.**, Pavia, M., Boano, G., and Voelker, G. 2018. The systematics and biogeography of the Bearded Greenbuls (Aves: Criniger) reveals the impact of the Plio-Pleistocene forest fragmentation of Afro-tropical avian diversity. *Zoological Journal of the Linnean Society* 183: 672-686. (doi.org/10.1093/zoolinnean/zlx086)
6. **Harvey, J.A.** and Voelker, G. 2017. Avian Haemosporidian Detection Across Source Materials: Prevalence and Genetic Diversity. *Parasitology Research* 116(12), 3361-3371. (doi.org/10.1007/s00436-017-5654-0)
5. Pellegrino, I., Cucco, M., **Harvey, J.A.**, Liveratore, F., Pavia, M., Voelker, G., Boano, G. 2017. So similar and yet so different: taxonomic status of Pallid swift *Apus pallidus* and Common swift *Apus*. *Bird Study* 3: 344-352. (doi.org/10.1080/00063657.2017.1359235)
4. Outlaw, D.C., **Harvey, J.A.**, Drovetski, S. and Voelker, G. 2016. Diversity and distribution of avian haemosporidians in sub-Saharan Africa: an inter-regional biogeographic overview. *Parasitology* 144 (4): 394–402. (doi.org/10.1017/S0031182016001979)
3. Ryberg, W.A., **Harvey, J.A.**, Blick, A. * †, Hibbitts, T.J., and Voelker, G. 2015. Genetic structure is inconsistent with subspecies designations in the Western Massasauga (*Sistrurus tergeminus*). *Journal of Fish and Wildlife Management* 6: 350-359. (doi.org/10.3996/122014-JFWM-093)
2. Drovetski, S., Aghayan, S.A., Mata, V.A, Lopes, R.J., **Harvey, J.A.**, and Voelker, G. 2014. Does the niche breadth or trade-off hypothesis explain the abundance-occupancy relationship in avian Haemosporidia? *Molecular Ecology* 23: 3322–3329. (doi.org/10.1111/mec.12744)
1. Booth-Binczik, S.D., Bradley, R.D., Thompson, C.W., Bender, L.C., Huntley, J.W., **Harvey, J.A.**, Laack, L.L., and Mays, J.L. 2013. Ocelot Food Habits and Potential for Competition with Bobcats in Southern Texas. *The Southwestern Naturalist* 58: 403-410. (doi.org/10.1894/0038-4909-58.4.403)

MANUSCRIPTS IN PREPARATION / REVIEW (PDF's available upon request)

1. **Harvey, J.A.** and Knutie, S.A. Effect of RNA preservation methods on RNA quantity and quality of field collected avian whole blood. *In review* Avian Biology Research. (*bioRxiv* doi.org/10.1101/2021.11.16.468897)
2. **Harvey, J.A.**, Mullinax, J.M., Runge, M.C., and Prosser, D.J., The Changing Dynamics of Highly Pathogenic Avian Influenza H5N1: Next Steps for Science and Management in North America. Currently in internal USGS review. To be submitted to *Biological Conservation*.
3. Fariello, D., **Harvey, J.A.**, Hekkala, E., Perkins, S.L., Orestis-Kolokotronis, S. *Leucocytozoon* sp. Infection Absent in Gray Catbirds (*Dumetella carolinensis*) of the Greater New York Metroplex. To be submitted to *Journal of Parasitology*.

4. McEachran, M., Bletz, M., Gonzales, F.A., **Harvey, J.A.**, Mummah, R., Rosenblatt, E., Rudolph, F.J., Teitelbaum, C., Yin, S., Prosser, D.J., Cook, J.D., Runge, C.M., and Grant, E.H. Structured Decision Making Translates Research to Action for Wildlife Disease Management. To be submitted to *Frontiers in Ecology*.

TECHNICAL REPORTS (* undergraduate author, † mentee)

Ryberg, W.A., Blick, A. **†, **Harvey, J.A.**, Hibbitts, T.J., and Voelker, G. 2013. Genetic determination of the Desert Massasauga (*Sistrurus catenatus catenatus*) distribution in Texas. Submitted to Texas Parks and Wildlife Department.
https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/nongame/grants-research/media/2013-massasauga.pdf

PROFESSIONAL AND FIELD EXPERIENCE

- 2022 Postdoctoral Researcher- Address the state of the current highly pathogenic avian influenza virus (Eurasian origin H5N1 of clade 2.3.4.4b) introduction into North America impacting wild birds, poultry, and mammals. Applying decision analysis and modeling of high pathogenicity avian influenza in North America to aid in disease management.
- 2021 Gerstner Scholar- Conducted field sampling for independent research project, AMNH. Carried out mist netting and blood sampling of passerine and near passerine birds across a latitudinal gradient during the breeding season in collaboration with bird banding stations as well as independently. Collaborators include Luke DeGroote - Powdermill Bird Banding Station, Chris Rimmer - Vermont Center for Ecostudies, and Mikaël Jaffré - Observatoire d'Oiseaux de Rimouski.
- 2018 Postdoctoral researcher in Knutie Lab, University of Connecticut. Led international field season including training and overseeing three post-baccalaureate field technicians. Led research project examining response to parasitism (*Philornis downsi*) in ground finches and common cactus finches on San Cristobal, Galapagos across urban and rural field sites. Data collection including fecal sampling, blood sampling for RNA, plasma, glucose and hemoglobin and measurements for adult birds and additionally growth and fledging success for hatchling birds.
- 2015 Conducted field sampling for avian malaria across the Piedmont Region, Italy in a diverse sampling of Passeriform birds. Collaborated with Dr. Marco Pavia, collection manager at the Dipartimento di Scienze della Terra of Torino University, Italy.
- 2015 Curatorial assistant in the bird and mammal divisions, Biodiversity and Research Teaching Collection, Texas A&M University. Process avian loan requests and returns. Assist in database management, updating data base for georeferencing of all specimen data points.
- 2009-11 Undergraduate student researcher for Drs. Gary Voelker and Ben Marks. Project examining intraspecific variation of the Red-throated Alethe (*Alethe poliophrys*).
- 2009-11 Research assistant to Dr. Dan Leavitt, Texas A&M University. Field technician on community sampling of reptiles in the Mescalero Sand Hills of New Mexico, targeting habitat of the Dunes Sage Brush lizard (*Sceloporus arenicolus*) to determine effects of habitat alteration and fragmentation from oil extraction. Worked with additional sampling arthropod to determine fragmentation effects.
- 2010 Amazon Field School in the Tambopata National Reserve & Bahuaja Sonene N.P., Dept. of Madre de Dios, Peru. Applied Biodiversity Science NSF-IGERT Program. Led by Dr. Amanda Stronza, Texas A&M University. Attended field school which offered multi-disciplinary training in biodiversity science and conservation. Course covered social and ecological complexities of conservation related science in the region, including gold mining, illegal logging, slash and burn agriculture, and interactions with local conservation practitioners.
- 2009 Assistant project manager for Dr. Kirk Winemiller. Recreational use attainability analysis of streams and rivers of the Texas Brazos River Basin.

- 2009 Undergraduate researcher under Dr. Gary Voelker. Examination of Ocelot/Bobcat scat and identification of avian prey species.

INVITED SEMINARS

- 2022 **Harvey, J.A.** Searching for resilience: avian disease ecology in the Anthropocene. Department of Biological Sciences. University of Massachusetts Lowell
- 2021 **Harvey, J.A.** The Evolutionary Ecology of Avian Disease in the Anthropocene. EEOB Seminar Series. Iowa State University
- 2021 **Harvey, J.A.** Searching for resilience: Avian health in the Anthropocene. Richard Gilder Graduate School Comparative Biology Seminar Series. AMNH

PROFESSIONAL PRESENTATIONS (* undergraduate mentee)

- 2021 Woodward, M*, Kuse, J*, and **Harvey, J.A.** 2021. A bioinformatic pipeline to identify Avian MHC regions and copy number. Annual Symposium of Systematics and Evolutionary Biology. AMNH NSF REU Program (Oral presentation).
- 2019 Lepore, R. *, Knutie, S., Grames, E., **Harvey, J.A.**, and Davis, M. Effect of Fragmentation Size on Deer Tick (*Ixodes scapularis*) Abundance. 7th Annual Fall Frontiers Undergraduate Research Poster Exhibition, University of Connecticut, Storrs, CT (Poster presentation).
- 2019 **Harvey, J.A.**, Verrett, T.B.*, Boano, G., Pavia, M. and Voelker, G. Climate and host associations of avian malaria parasites. Evolution 2019 joint meeting of SSE/ASN/SSB, Providence, RI. (Oral presentation).
- 2017 **Harvey, J.A.** and Voelker, G., Avian haemosporidian diversification across contrasting regions of Africa. Evolution 2017 joint meeting of SSE/ASN/SSB, Portland, Oregon. (Oral presentation).
- 2017 Verrett, T.B.*, **Harvey, J.A.**, and Voelker, G., Assessment of prevalence and phylogenetic diversity in avian haemosporidians from Italy. Evolution 2017 joint meeting of SSE/ASN/SSB, Portland, Oregon. (Poster presentation).
- 2016 **Harvey, J.A.** and Voelker, G. Avian Malaria Detection: a story of blood, muscle, and birds. North American Ornithological Conference, Washington, D.C. (Oral presentation).
- 2016 Ryberg, W.A., **Harvey, J.A.**, Blick, A. *, Hibbitts, T.J., and Voelker, G., Genetic structure is inconsistent with subspecies designations in the Western Massasauga (*Sistrurus tergeminus*) Texas Chapter of the Wildlife Society, San Antonio, Texas (Oral presentation).
- 2015 Ryberg, W.A., **Harvey, J.A.**, Blick, A. *, Hibbitts, T.J., and Voelker, G. Genetic structure is inconsistent with subspecies designations in the Western Massasauga (*Sistrurus tergeminus*) Texas Herpetological Society, San Marcos, Texas (Oral presentation).
- 2015 **Harvey, J.A.**, and Voelker, G. Avian Malaria Parasite Diversification in Benin: from hosts to bioregions and habitats. American Ornithologist's Union & Cooper Ornithological Society, Norman, Oklahoma (Oral presentation).
- 2015 **Harvey, J.A.**, and Voelker, G. Avian Malaria Parasite Diversification in Benin: from hosts to bioregions and habitats. American Society of Parasitologists, Omaha, Nebraska (Oral presentation).
- 2015 Hibbitts, T.J., Garrett, T., Adams, C., **Harvey, J.A.**, and Voelker, G. Skinks of the South Texas Sand Sheet: do we have a new species? American Society of Ichthyologists and Herpetologists, Reno, Nevada (Oral presentation).
- 2015 **Harvey, J.A.** Avian Malaria Diversification in West Africa: from hosts to habitats. Ecological Integration Symposium, Texas A&M University, College Station, Texas (Oral presentation).
- 2015 Pope, A. *, **Harvey, J.A.**, Huntley, J.W., and Voelker, G. Evolutionary Relationships of Southern African Pipit Species. Ecological Integration Symposium, Texas A&M University, College Station, Texas (1st place undergraduate poster).
- 2014 Aghayan, S.A., Atoyan, H.A., **Harvey, J.A.**, Voelker, G., and Drovetski, S.V., Which Avian Haemosporidia are better colonizers? Proceedings of the conference: Biological diversity and

- conservation problems of the fauna of the Caucasus, p. 25. Yerevan, Republic of Armenia (Oral presentation).
- 2014 Blick, A.*, Ryberg, W., **Harvey, J.A.**, Hibbitts, T., and Voelker, G. Interspecific Genetic Determination of the Massasauga Distribution in Texas. Ecological Integration Symposium & Student Research Week, Texas A&M University, College Station, Texas (1st place, Undergraduate poster).
- 2013 **Harvey, J.A.** Malaria Parasite Diversification and Host-switching across Biomes in Birds and Reptiles of Africa. Wildlife and Fisheries Sciences Graduate Seminar, Texas A&M University, College Station, Texas (Oral presentation).
- 2013 Blick, A.*, Ryberg, W., **Harvey, J.A.**, Hibbitts, T. G., and Voelker, G. Interspecific Genetic Determination of the Massasauga Distribution in Texas. Herpetological Society Fall Symposium. Midwestern State University, Wichita Falls, Texas. (Poster).
- 2012 Harvey, J.A. Malaria in Africa: Diversification Across the Continent and Biomes. MalariaRCN Workshop, Shepherdstown, West Virginia. (Oral presentation).
- 2011 Bates, J. M., Engel, J., **Harvey, J.**, Marks, B., Voelker, G., Kahindo, C. and Bowie, R. Contrasting patterns of genetic differentiation in Albertine Rift birds and the potential causes. American Ornithologists' Union meeting, Jacksonville, Florida. (Oral presentation).
- 2010 **Harvey, J.A.**, Marks, B.D., Bates, J.M., and Voelker, G. Diversification of *Alethe poliophrys*, an endemic bird in the Albertine Rift. Evolution joint meeting of SSE/ASN/SSB, Portland, Oregon. (Undergraduate poster presentation)
- Systematic Biologists/American Soc. Naturalists meeting, Portland, Oregon. (Poster).
- 2010 **Harvey, J.A.** and Leavitt, D.J. Subterranean Termite Presence in a Fragmented Landscape. Student Research Week /Ecological Integration Symposium, Texas A&M University, College Station, Texas (1st place, Undergraduate Poster).

WORKSHOPS AND COURSES ATTENDED

- 2021 Introduction to Structured Decision Making, ALC 3171, led by Mike Runge, National Conservation Training Center, National Fish and Wildlife Service, Shepherdstown, West Virginia
- 2020 Introductory Python Workshop, American Museum of Natural History, led by Victor Sojo
- 2017 UConn Computation Biology Core RNA-Seq Bioinformatic Workshop, led by Jill Wegrzyn
- 2016 Nantucket Phylogeny developer bootcamp, led by Liam Revell, Klaus Schliep and April Wright, University of Massachusetts
- 2016 Network Analysis using R, North American Ornithological Conference, Washington, DC
- 2015 BioGeoBEARS OSOS Workshop taught by Nick Matzke, EEB Program, Texas A&M University, College Station, Texas.
- 2015 Software Carpentry Workshop: Unix shell, Bash, version control with Git, statistical analysis in R. University of Texas, Arlington.
- 2014 Open-Source Open Science Workshop: Introduction to OSOS and R, R in Phylogenetics, NGS data processing. EEB Program, Texas A&M University, College Station, Texas.
- 2014 Open-Source Open Science Workshop: Introduction to R, Publication quality graphics, Open-source GIS. EEB Program, Texas A&M University, College Station, Texas.
- 2014 Bodega Applied Phylo Workshop, University of California, Davis. Bodega Bay, California.
- 2012 MalariaRCN Workshop, Shepherdstown, West Virginia. Training in the biology of malaria (Haemosporidia) parasites of vertebrate wildlife populations

TEACHING EXPERIENCE

Invited lectures

- “Impacts of Climate Change on Parasites”, Parasitology, The City College of New York, Spring 2022
- “Avian Malaria”, Disease & History, The City College of New York, Spring 2021
- “Avian Disease Ecology: effects on fitness”, Ornithology WFSC 402, Texas A&M, Spring 2016
- “Avian Disease Ecology”, Ornithology WFSC 402, Texas A&M, Spring 2015

“Avian Physiology & Fitness Effects of Malaria”, Ornithology WFSC 402, Texas A&M, Spring 2014

Courses

Graduate teaching assistant, Big Bend Field Course, Ecology and Evolutionary Biology Program, Texas A&M, Summer 2015, 2014. Assist in teaching students about natural history of the region, teaching plant and animal identification. Plan meals, coordinate hikes and logistics.

Lab Instructor, Ornithology WFSC402, Texas A&M. Spring 2013, 2014, 2015, 2016.

Created all lab materials, lectures and lab exams. Course includes field techniques: bird identification, point count and line transect sampling and covered worldwide avian taxonomy and evolution.

STUDENT MENTORING * Undergraduate ** High School

Mississippi State University, Department of Wildlife, Fisheries and Aquaculture

Devin Raburn, Senior, 2022- present. EEB Mentor Match Program. Mentoring for applications to graduate school programs.

The Bronx High School of Science, The Bronx, NY

Camila Kulahlioglu**, Junior, 2021- present. Project for Regeneron Science Talent Search.

NSF REU: Systematics, Evolution and Conservation for the 21st Century, American Museum of Natural History, “A bioinformatic pipeline to identify Avian MHC regions and copy number”

Madisun Woodward*, Summer 2021, Pomona College

Jonathan Kuse*, Summer 2021, Orange Coast College

Lynbrook Senior High School, Nassau County, NY

Maximo Casares**, Senior, 2020- 2022, Advanced Science Research Program. Currently a freshman undergraduate at the City College of New York

The City College of New York, Graduate Center

Rachael Joakim, Ph.D. candidate, 2020- present

Sarah Pangburn, Ph.D. student, 2020- present

Nayir Allam-mi, MS student, 2021- present

University of Connecticut, Department of Ecology and Evolutionary Biology

Grace Vaziri, Ph.D. student, 2019-2020

Alyssa Adesso *, 2019- 2020. Currently MS student at Penn State

Kiley Chernicky, 2018-2022. Currently MS student in the Biology Program at DePaul University

Robert Lepore*, 2019

Texas A&M University

Cragen King M.S., 2016 - 2017

Taylor Verrett*, 2014-2016, field technician 2018-2019. Completed MS student at Western Kentucky State University, 2021. Currently PhD student at The University of Oklahoma.

Shelby Simons*, 2013-2016; field technician 2018 – 2019. Currently MS student at the University of Georgia

David Rumsford*, 2015

Connor Fleming*, 2015

Alyssa Pope*, 2014-2015

Emily Bach*, 2014.

Anna Blick*, 2013-2014. MS in Public Health at Texas A&M University; Currently a DVM/PhD student at Texas A&M Veterinary School

Natalie Izral*, 2012-2013. Completed MS at the University of Western Ontario, 2016. Currently a Natural Resources Specialist for the Texas Commission on Environmental Quality.

Jessica Buchorn*, 2013

OUTREACH AND SYNERGISTIC ACTIVITIES

2022- Society for the Study of Evolution (SSE) Diversity Committee member (3-year term)

2021 American Society of Parasitology Parasite Week K-12 Outreach, 7th grade class, New York, NY

- 2020 Career Day Speaker. PS/MS278-Paula Hedbavny School. 4th grade classes. New York, NY
- 2018- Skype a Scientist- Presentations for various classrooms and age demographics
- 2017 Undergraduate Diversity at Evolution Volunteer Mentor, Portland, Oregon
- 2015 **Harvey, J.A.** Avian Malaria across Sub-Saharan Africa: from bioregions to habitats to hosts. Rio Brazos Audubon Society. Brazos Valley Museum of Natural History. Bryan, Texas. (Invited Lecture)
- 2014-16 Ecology & Evolutionary Biology Program Graduate Student Steering Committee, Texas A&M University

MANUSCRIPT REVIEWER

American Naturalist, Biological Conservation, Ecology and Evolution, Ecology Letters, IBIS, Oecologia, Conservation Physiology

LANGUAGE PROFICIENCY

Spanish (Native speaker)