

Sarah Anne Hamer

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Education

Doctor of Veterinary Medicine , Michigan State University, East Lansing, MI	2011
Doctor of Philosophy , Michigan State University, East Lansing, MI	2010
- Dual-degree: Fisheries and Wildlife; Ecology, Evolutionary Biology, & Behavior	
- Specialization in Fish and Wildlife Disease Ecology and Conservation Medicine	
Master of Science , University of Illinois, Champaign/Urbana, IL	2003
-Department of Natural Resources and Environmental Sciences	
-Wildlife Ecology Specialization	
Bachelor of Science , University of Illinois, Champaign/Urbana, IL	2001
-Major: Natural Resources and Environmental Sciences	
-Bronze Tablet University Honors for top 3% of graduating class	

Professional Experience

Assistant Professor, Texas A&M University	1/2012 - present
Department of Veterinary Integrative Biosciences; Epidemiology and Public Health Group	
Faculty in Ecology and Evolutionary Biology Program	
Faculty in Vector Biology Group	
Adjunct Assistant Professor, Michigan State University	11/2011 - present
Department of Fisheries and Wildlife	
Veterinary Extern	
National Wildlife Health Center, Madison, WI	9/2010-10/2010
Assisted in field and laboratory research to detect a novel mosquito-borne Flavivirus in Wisconsin. Experiences included development and validation of enzyme-linked immunosorbent assays, trapping and blood-sampling of mammals, and reporting research findings. <i>Mentor</i> : Dr. Erik Hofmeister	
International Crane Foundation, Baraboo, WI	10/2010
Assisted in health checks of ten species of cranes. Duties included blood-sampling, clipping feathers, trimming bills, tube-feeding, post-surgical care, administering drugs, and data entry into MedArks program. Also assisted with hematology research. <i>Mentor</i> : Dr. Barry Hartup	
Urban Wildlife Institute, Lincoln Park Zoo, Chicago, IL	6/2010-7/2010
Designed and implemented field research to assess the prevalence of wild bird-borne zoonotic pathogens along a gradient of urbanization in greater Chicago, IL. Duties included mist netting, collection of blood, ectoparasite, and fecal samples, and processing samples using diagnostic assays (PCR, ELISA, DNA sequencing). <i>Mentor</i> : Dr. Seth Magle	
Veterinary Student Researcher	5/2008-8/2008
Meriel Veterinary Scholars Summer Research Program, Michigan State University	
Graduate Research Assistant, Michigan State University	8/2003-5/2010
Department of Fisheries and Wildlife	

Dissertation: Interactions among invading ticks, wildlife, and zoonotic pathogens
Committee: Drs. Jean Tsao, Graham Hickling, Edward Walker, Kelly Millenbah, Linda Mansfield

- Visiting Summer Researcher**, Kellogg Biological Station, Hickory Corners, MI 2004-2009
- Graduate Research Assistant**, University of Illinois 8/2001-5/2003
Department of Natural Resources and Environmental Sciences
Thesis: Impacts of West Nile virus on free-ranging American Crows
Graduate Committee: Drs. Richard Warner, Robert Novak, Phil Mankin, Jeff Brawn
- Wildlife Intern**, Max McGraw Wildlife Foundation, West Dundee, IL 5/2001-8/2001
Assisted in radio-telemetry, den searching, and processing of raccoons, skunks, and coyotes
Supervisor: Dr. Stan Gehrt
- Volunteer Wildlife Technician**, Illinois Natural History Survey, Champaign, IL 8/2000-8/2001
Tracked radio-collared foxes, tracked urban deer, and night-censused deer
Supervisors: Drs. Richard Warner, Tim VanDeelen
- Undergraduate Research Scholar**, University of Illinois 8/2000-8/2001
Department of Natural Resources and Environmental Sciences, Soil Fertility Laboratory. Jonathan Baldwin Turner Program. Research on soil cation-exchange capacity with awarded funding.
Supervisors: Drs. Richard Mulvaney, Saeed Khan
- Undergraduate Research Assistant**, University of Illinois 1/1999-5/2000
Department of Natural Resources and Environmental Sciences, Soil Mineralogy Laboratory.
Conducted soil analyses to determine soil erosion patterns *Supervisor*: Dr. Bob Jones
- Department of Cell Biology**. Laboratory maintenance and experimental preparation.
Supervisors: Drs. David Clayton, Wendy Woods

Research Support

Grants Awarded

- Texas EcoLabs**, \$20,847 (\$19,806 direct costs) 1/2013 - 12/2013
Wildlife sentinels for emerging tick-borne diseases in Texas
Role: Principal Investigator; Co-Investigator: Jessica Light
- Bernice Barbour Foundation, Inc.** \$20,000 (all direct costs) 1/2013 - 12/2014
Vector-borne infections in high-risk populations of dogs the southern US
Role: Principal investigator
- United States Fish and Wildlife Service**, \$120,099 (\$102,212 direct costs) 10/2012 - 9/2014
Avian Health and Disease Monitoring and Support Program; Award No. F12AC00423
Disease risks to whooping cranes determined by non-invasive sampling and analysis of sandhill cranes as surrogates
Role: Principal Investigator; Co-Investigator: Gabriel L. Hamer
- Formula Animal Health Fund**, \$20,000 + \$19,690 (second year renewal; all direct costs) 3/2012 - 9/2013
College of Veterinary Medicine, Texas A&M University; Award No. TEX0HAMER
Elucidating tick-borne disease transmission systems using stable isotopes to identify tick-host interactions
Role: Principal Investigator; Co Investigator: Gabriel L. Hamer

Previous Funding

National Science Foundation, \$10,000 (all direct costs) 2009 - 2010
Doctoral Dissertation Improvement Grant; Award No. 0910025
Elucidating an invasion of blacklegged ticks and Lyme disease pathogen
Co-Investigators: S. Hamer and J. Tsao.

Summer Support Fellowships 2009
College of Agriculture and Natural Resources, \$6000
Ecology, Evolutionary Biology, and Behavior, \$1800 2009

Kellogg Biological Station Research Grants
G. H. Lauff Research Award, \$4500 2004, 2005, 2008
Porter Award for invertebrate research, \$2500 2006-2008

Companion Animal Fund \$25,000 (all direct costs) 2005 - 2006
Center for Veterinary Medicine, Michigan State University
Principal Investigators: S. Yaremych-Hamer, G. Hickling, E. Walker, J. Tsao, and L. Mansfield
Surveillance for spatial spread of canine Lyme borreliosis in Lower Michigan through engaging veterinary clinicians in research.

Travel Grants

- EDEN: Emerging Diseases in a Changing European Environment in Montpellier, France, 2010: Funding from MSU College of Veterinary Medicine Graduate Training Program (\$1200)
- Wildlife Disease Association Conference in Blaine, WA, 2009: Funding from Dept. Fisheries and Wildlife Graduate Student Organization Travel Grant (\$200)
- The Wildlife Society Conference in Miami, FL, 2008: Funding from MSU College of Veterinary Medicine Class of 1957 (\$800); Harold and Phyllis Duchan Student Enrichment Award (\$1000)
- XI International Conference on Lyme Borreliosis and Other Tick-borne diseases in Irvine, CA, 2008: Funding from University of California Regents (\$350)
- Ticks and Tick-borne Pathogens Conference in Argentina, 2008: Funding from MSU Graduate School (\$350), International Studies and Programs (\$300), College of Agriculture and Natural Resources (\$400), Dept. Fisheries and Wildlife (\$200); College of Veterinary Medicine International Experience Fellowship (\$1000)
- Midwest Fish and Wildlife Conference in Madison, WI, 2007: Funding from Department of Fisheries and Wildlife Graduate Student Organization Travel Grant (\$175)
- Ecology & Evolution of Infectious Disease Conference and Workshop in Ft. Collins, CO, 2005: Funding from NSF-IGERT PRIMES travel support (\$900)
- Ticks and Tick-borne Pathogens Conference in Switzerland, 2005: Funding from Graduate Student Organization (\$400), Graduate School (\$400), International Studies and Programs (\$250), College of Agriculture and Natural Resources (\$250), and Ecology, Evolutionary Biology, and Behavior Program Travel Fellowship (\$100)

Awards and Honors

- Third Place Young Investigator Competition for Biomedical Research (of 58 applicants and 5 finalists), Merit-NIH National Veterinary Scholars Symposium, 2012 (\$500)
- Veterinary Student Research Award, Michigan State University, 2010 (\$500)
- Wildlife Disease Association Graduate Student Scholarship, 2010 (\$2000)
- Tracy Anne Hammer Memorial Fellowship for Dual-Degree DVM Students, 2010 (\$4000)
- Dissertation Completion Fellowship, College of Ag and Natural Resources, 2010 (\$6000)
- Rainbow Feathers Bird Club avian medicine scholarship, 2009 (\$1000)

- Graduate Research Recognition Award, Wildlife Disease Association: keynote student speaker at annual conference in Blaine, WA, 2009
- American Veterinary Medical Foundation Student Scholarship, 2009 (\$1000)
- Best Student Oral Presentation Award, The Wildlife Society conference, Miami, FL, 2008
- Safari Clubs International, Michigan Involvement Committee Scholarship, 2007-2009 (\$7500)
- Graduate Retention Fellowship, College of Agriculture and Natural Resources, 2008 (\$1000)
- Rocky Mountain Goat Fellowship, 2008 (\$2500)
- College of Agriculture and Natural Resources Alumni Graduate Fellowship, 2008 (\$2500)
- Janice Fenske Memorial Award Finalist for student studying Fisheries or Wildlife, 2007
- Best Student Presentation Competition Award at the Michigan Mosquito Control Association Annual Meeting: William Lechel Memorial Scholarship, 2007 (\$1000)
- Graduate Fellowship Award, Kellogg Biological Station, 2006-2007 (\$2500)
- Best Student Poster Award, Fisheries and Wildlife Grad Student Symposium, 2006 (\$200)
- G. H. Wallace Ornithological Scholarship, MSU Dept. Zoology, 2006 (\$1000)
- G. R. Hartsough Endowed Scholarship in Fur Animal Studies, 2005-2006 (\$4000)
- Best Student Oral Presentation Award, The Wildlife Society conference, Madison, WI, 2005
- Best Student Poster Award at the MSU Invasive Species Conference, 2005 (\$150)
- American Ornithologists' Union Student Membership Award 2005 - 2007
- Ecology, Evolutionary Biology, and Behavior Program Fellowship, 2004 (\$100)
- Fisheries and Wildlife Department Entrance Fellowship, 2003
- Department of Natural Resources and Env. Sciences Merit-Based Graduate Fellow, 2001 - 2003
- Best Student Research Award at the American Mosquito Control Association Annual Conference: Gerald Hollandsworth Award, 2003 (\$500)
- Placed 2nd in Agriculture, Consumer, and Environmental Science Undergraduate Research Forum, 2001
- University of Illinois Book Dedication Award (dedicate a book of choice to high school library for students earning 4.0 GPA in first semester of college)
- James Scholar (College of Liberal Arts and Sciences Honors Program), 1998-2001
- Jonathan Baldwin Turner Undergraduate Research Scholarship, 2000-2001

Publications

Peer Reviewed Journal Articles (24)

2013

24. **Hamer SA**, Amuzie CJ, Williams KJ, Smedley RC. 2013. Infectious laryngotracheitis virus in organic laying chickens, Michigan. J Am Vet Med Assoc. In press, 11/2011.

2012

23. Rosen ME, **Hamer SA**, Gerhardt RR, Jones CJ, Muller LI, Scott MC, Hickling GJ. 2012. Absence of *Borrelia burgdorferi* in widespread *Ixodes scapularis* (Acari: Ixodidae) collected from white-tailed deer (*Odocoileus virginianus*) in Tennessee. J Med Entomol. 49:1473-1480.
22. **Hamer SA**, Hickling GJ, Keith R, Sidge JL, Walker ED, Tsao JI. 2013. Associations of passerine birds, rabbits, and ticks with *Borrelia miyamotoi* and *Borrelia andersonii* in Michigan, U.S.A. Parasit Vector. 5:231.
21. **Hamer SA**, Goldberg TK, Kitron UD, Brawn JD, Anderson TK, Loss SR, Walker ED, Hamer GL. 2012. Wild birds and the urban ecology of ticks and tick-borne pathogens in Chicago, Illinois, USA, 2005-2010. Emerg Infect Dis. 18:1589-1595. **Paper Selected as a Media Highlight**
20. Margos G, Tsao J, Castillo-Ramírez S, Girard Y, **Hamer S**, Hoen A, Lane R, Raper S, Ogden N. 2012. Two boundaries separate *Borrelia burgdorferi* populations in North America. Appl Environ Microbiol. 78:6059-6067.

19. Hamer SA, EW Lehrer, Magle SB. 2012. Wild birds as sentinels for multiple zoonotic pathogens along an urban to rural gradient in greater Chicago, Illinois. *Zoonoses Public Hlth*. 59:355-364.
18. Pepin KM, Eisen RJ, Mead PS, Piesman J, Fish D, Hoen AG, Barbour A, Hamer SA, Diuk-Wasser MA. 2012. Geographic variation in the relationship between human Lyme disease incidence and the density of infected host-seeking *Ixodes scapularis* nymphs in the US. *Am J Trop Med Hyg* 86:1062-1071.
17. Hamer SA, Hickling GJ, Sidge JL, Walker ED, Tsao JI. 2012. Synchronous phenology of juvenile *Ixodes scapularis*, vertebrate host associations, and patterns of *Borrelia burgdorferi* ribotypes in the midwestern United States. *Ticks Tick Borne Dis*. 3:65-74.
16. Diuk-Wasser, MA, Hoen AG, Cislo P, Brinkerhoff R, Hamer SA, Rowland M, Cortinas R, Vourc'h G, Melton F, Hickling GJ, Tsao JI, Bunikis J, Barbour AG, Kitron U, Piesman J, Fish D. 2012. Human risk of infection with *Borrelia burgdorferi*, the Lyme disease agent, in eastern United States. *Am J Trop Med Hyg*. 86:320-327.
- 2011
15. Rydzewski J, Mateus-Pinilla N, Warner R, Hamer S, Weng H-Y, Haramis L. 2011. *Ixodes scapularis* and *Borrelia burgdorferi* among diverse habitats within a natural area in east-central Illinois. *Vector-borne Zoonot* 11:1351-1358.
14. Hamer SA, Hickling GJ, Sidge JL, Rosen ME, Walker ED, Tsao JI. 2011. Diverse *Borrelia burgdorferi* strains in a bird-tick cryptic cycle. *Appl Environ Microbiol* 77:1999-2007.
- 2010
13. Scott C, Rosen M, Hamer S, Baker E, Edwards H, Crowder C, Tsao J, Hickling G. 2010. High-prevalence *Borrelia miyamotoi* infection among Wild Turkeys (*Meleagris gallopavo*) in Tennessee. *J Med Ent*. 47:1238-42.
12. Hamer SA, Tsao JI, Walker ED, Hickling GJ. 2010. Invasion of the Lyme disease vector *Ixodes scapularis*: implications for *Borrelia burgdorferi* endemicity. *EcoHealth* 7:47-63.
11. Diuk-Wasser MA, Vourc'h G, Cislo P, Gatewood AG, Melton F, Hamer SA, Rowland M, Cortinas MR, Hickling GJ, Tsao JI, Kitron U, Piesman J, Fish D. 2010. Field and climate-based model for predicting the density of the Lyme disease vector *Ixodes scapularis* in the United States. *Global Ecol Biogeogr* 19:504-514.
- 2009
10. Gatewood AG, Liebman KA, Vourc'h G, Bunikis J, Hamer SA, Cortinas R, Melton F, Cislo P, Kitron U, Tsao J, Barbour AG, Fish D, Diuk-Wasser MA. 2009. Climate and tick seasonality are predictors of *Borrelia burgdorferi* genotype distribution. *Appl Environ Microb*. 75:2476-2483.
9. Hamer SA, Tsao JI, Walker ED, Mansfield LS, Foster ES, Hickling GJ. 2009. Use of tick surveys and serosurveys to evaluate pet dogs as a sentinel species for emerging Lyme disease. *Am J Vet Res*. 70:49-56.
- 2007
8. Hamer SA, Hickling GJ, Roy P, Walker ED, Foster ES, Barber CC, and Tsao JI. 2007. Zoonotic pathogens in *Ixodes scapularis*, Michigan. *Emerg Infect Dis*. 7:1131-1133.
- 2006
7. Ward MP, Raim A, Yaremych-Hamer S, Lampman R, and Novak R. 2006. Does the roosting behavior of birds affect the transmission dynamics of West Nile virus? *Am J Trop Med Hyg* 75:350-355.
6. Diuk-Wasser M, Gatewood A, Cortinas R, Yaremych-Hamer S, Tsao J, Kitron U, Hickling G, Walker E, Brownstein J, Piesman J, and Fish D. 2006. Spatial and temporal patterns of nymphal host-seeking *I. scapularis* in the United States. *J Med Ent* 43:166-176.
- 2004
5. Yaremych SA, Novak RJ, Raim AJ, Mankin PC, and Warner RE. 2004. Home range and habitat use by American Crows in east-central Illinois. *Wilson Bull*, 116:232-239.
4. Yaremych SA, Levengood JM, Novak RJ, Mankin PC, and Warner RE. 2004. Gender determination and sex-specific West Nile virus mortality of American Crows. *Wildl Soc Bull* 32:893-899.
3. Yaremych SA, Warner RE, Mankin PC, Brawn JD, Raim AJ, and Novak RJ. 2004. West Nile virus and high death rate in American Crows. *Emerg Infect Dis*. 10:709-711.
2. Mulvaney RL, Yaremych SA, Khan SA, Swiader JM, and Horgan BP. 2004. Use of diffusion to determine soil cation-exchange capacity by ammonium saturation. *Comm Soil Sci Plant Anal*. 35:51-67.
- 2003
1. Yaremych SA, Warner RE, Van de Wyngaerde MT, Ringia AM, Lampman RL, and Novak RJ. 2003. West Nile virus detection in American Crows. *Emerg Infect Dis*. 9:1319-1321.

Book Chapters

Hamer, SA, Cooley TM, Hamer GL. 2011. Avian Diseases. Second Michigan Breeding Bird Atlas. Available at: <http://www.mibirdatlas.org/MichiganBreedingBirdAtlasII.aspx>.

Yaremych SA, Warner RE, Mankin PC, Brawn JD, Raim AJ, and Novak RJ. 2005. West Nile virus causes high mortality in a free-ranging population of American Crows [reprint]. *In* Wildlife Diseases: Landscape Epidemiology, Spatial Distribution and Utilization of Remote Sensing Technology. S.K. Majumdar, J. Huffman, F.J. Brenner, and A.I. Panah, editors. Pennsylvania Academy of Sciences. Pages 200-204.

Theses

Hamer SA. 2010. Interactions among invading ticks, wildlife, and zoonotic pathogens. PhD Dissertation. Department of Fisheries and Wildlife and Program in Ecology, Evolutionary Biology, and Behavior. Michigan State University. 266 pages.

Yaremych SA. 2003. American Crows and the West Nile virus in east-central Illinois. MS Thesis. Department of Natural Resources and Environmental Science. University of Illinois. 67 pages.

Outreach publications

SA Hamer, Ji Tsao, GJ Hickling. 2011. A hidden cycle of Lyme disease bacteria in Michigan's forests. Newsletter for the Michigan Lyme Disease Association.

Hamer SA. 2007. Tracking emerging tick-borne disease in Michigan. The Vector: The Newsletter of The Wildlife Society Wildlife Disease Working Group.

Yaremych-Hamer SA. 2005. Disease detectives: on the hunt for ticks and Lyme disease in Lower Michigan. The Spotlight: A Publication of Michigan State University's Department of Fisheries and Wildlife and Wildlife Graduate Students. Feature Article.

Yaremych SA, Brawn JD. 2003. Intelligence, behavior, life history of crows. Illinois Steward 12:6-10.

Scientific Presentations

Invited Professional Presentations (15)

- 2013 University of Richmond, Department of Biology Seminar Speaker and Pre-veterinary club speaker, Richmond, VA, Feb 3-4, 2013
Entomological Society of America, Southwestern Branch. Symposium on blood-feeding arthropods. Las Cruces, NM, Feb. 26-28, 2013
- 2012 Entomology Department Seminar Series, Texas A&M University
James Steele Conference on Diseases in Nature Transmissible to Man. San Antonio, TX
Invited presenter on CDC's 'Selected Zoonotic Disease Conference Call', Aug 1, 2012.
Merial-NIH National Veterinary Scholar Symposium, Young Investigator Competition in Loveland, CO
(Third Place Award of 58 applicants)
- 2011 Stanford University, Globally Emerging Zoonotic Diseases Course (CompMed 84Q). Topic: Emerging tick-borne disease ecology. Professor: Dr. Stephen Felt
- 2010 Symposium in wildlife as reservoirs of human disease agents. American College of Veterinary Pathologists. Baltimore, MD
Evolution Seminar Series, University of Wisconsin, Madison, WI
- 2009 Wildlife Disease Association Annual Conference, Blaine, WA
Keynote student oral presentation
- 2007 Midwest Fish and Wildlife Conference. Madison, WI
The Center for Wildlife Health Seminar Series, University of Tennessee, Knoxville, TN
- 2006 Michigan Department of Agriculture Meeting, DeWitt, MI
Society of Vector Ecology, Anchorage, AK
- 2004 36th Annual Society for Vector Ecology Conference, MA
- 2003 American Ornithologists' Union, Champaign-Urbana, IL

Contributed Talks and Poster Presentations (41)

- 2012** Conference for Research Workers in Animal Diseases, Chicago, IL. 'Prevalence of pathogenic Shiga toxin producing *Escherichia coli* in dairy cattle and wildlife in Texas'. M. Subbiah, K. J. Cummings, S. Hamer, J. Hill and T. S. Edrington, Dec. 2-4, 2012.
Ecology and Evolution of Infectious Diseases Conference, Ann Arbor, MI. 'Do wild birds introduce and maintain ticks and tick-borne pathogens in the urban ecosystem,?', May 23-24, 2012.
- 2011** Phi Zeta Research Day, MSU College of Veterinary Medicine, East Lansing, MI (co-author)
- 2010** National Wildlife Health Center, Madison, MI, presentation of internship research project
Disease Eco-Lunch Discussion Group, MSU
International Conference of Lyme borreliosis and other tick-borne disease, Ljubljana, Slovenia (co-author)
Phi Zeta Research Day, MSU College of Veterinary Medicine, East Lansing, MI (co-author)
EDEN: Emerging Diseases in a Changing European Environment. Montpellier, France
- 2009** Phi Zeta Research Day, MSU College of Veterinary Medicine, East Lansing, MI (primary author on one presentation and co-author on 3 presentations)
University Undergraduate Research and Arts Forum, East Lansing, MI (co-author)
- 2008** The Wildlife Society Conference, Miami, FL
Best student presentation award winner
XI International Conference of Lyme Borreliosis and other Tick-borne Pathogens. Irvine, CA
Phi Zeta Research Day, MSU College of Veterinary Medicine, East Lansing, MI
VI International Conference on Ticks and Tick-borne Pathogens. Buenos Aires, Argentina
National Veterinary Scholars Symposium. East Lansing, MI
Invasive Species Symposium, Michigan State University, East Lansing, MI
Michigan Epidemiology Conference, East Lansing, MI (co-author)
- 2007** Conference of Research Workers in Animal Disease, Chicago, IL (co-author)
Society for Vector Ecology, Springfield, IL (co-author)
Michigan Mosquito Control Association Annual Meeting, Traverse City, MI
Best student presentation award
- 2006** Phi Zeta Research Day at MSU College of Veterinary Medicine, East Lansing, MI. (co-author)
Invasive Species Symposium, Michigan State University, East Lansing, MI (co-author)
Entomological Society of America- North Central Branch, Bloomington, IL
Graduate Student Symposium, Michigan State University, East Lansing, MI
Best student poster award
Conference for Veterinary and Medical Professionals on Lyme Disease in Michigan, Augusta, MI
- 2005** Ohio Mosquito Control Association, Toledo, OH
Joint meeting of the Inland Bird Banding Association and Michigan Field Ornithologists and Bird Banders, Hickory Corners, MI
Wildlife Society Conference, Madison, WI
Best student presentation award
Ticks and Tick-borne Pathogen V Conference, Neuchatel, Switzerland. (2 presentations)
Invasive Species Initiative Conference, MI, East Lansing, MI
Best student presentation award
Ecology and Evolution of Infectious Disease Conference, CO
Midwest Fish and Wildlife Conference, IN
Entomological Society of America Annual Meeting. UT (co-author)
- 2004** Michigan Field Ornithologists and Bird Banders Annual Meeting, MI
Phi Zeta Research Day, College of Vet Med, Michigan State University, East Lansing, MI (co-author)
36th Annual Society for Vector Ecology Conference, MA (co-author)
Emerging Zoonotic Diseases: Patterns and Processes Symposium, Microbial Pathogenesis Conference, IL
Michigan Mosquito Control Association, MI
- 2003** American Mosquito Control Association, Minneapolis, MN
Best student presentation award
The Wildlife Society IL, IA, WI Joint Chapter Meeting, IA
- 2002** Illinois Mosquito and Vector Control Association, IL

Teaching Experience

Texas A&M University

Instructor

VIBS 413: Introductory Epidemiology, 3 credit hours, 24 students, Spring 2013

Guest Lectures and Labs

VIBS 926: Intro to Public Health Concepts (for first year DVM students), Spring 2013

Topic: Eco-epidemiology. Professor: Dr. Christine Budke

VIBS 930: Public Health III (for second year DVM students), Spring 2013

Topic: Tick-borne and rickettsial zoonoses. Professor: Dr. Christine Budke

VTPB/WFSC 301: Wildlife Diseases, Fall 2012

Topic: West Nile virus and other emerging vector-borne viruses. Professor: Dr. Don Davis

WFSC 401: General Mammalogy, Fall 2012

Topic: Teach bi-monthly hands-on field labs in rodent trapping and disease ecology. Professor: Dr. Jessica Light

BESC 210: Introduction to Bioenvironmental Science, Fall 2012

Topic: Vector-borne disease ecology and epidemiology. Professor: Dr. Paul Figueiredo

VSCS 948-302: Applied Conservation Medicine, Spring 2012

Topic: Ecological drivers of vector-borne disease, Professors: Drs. J. Heatley, D. Brightsmith

VIBS 681-611: Food-borne Pathogen Epidemiology Seminar, Spring 2012

Topic: *Toxoplasma gondii*, Professor: Dr. Kevin Cummings

VIBS 608: Epidemiology Methods I, Spring 2012, Spring 2013

Topic: Cross-sectional studies. Professor: Dr. Renata Ivaneck

Michigan State University

Instructor

FW 238: Introductory Fisheries and Wildlife Field Experience, 2008

Summer field course in fisheries and wildlife techniques, including mammal trapping, mist netting, orienteering, herp surveys fish trapping, deer survey using distance sampling.

Teaching Assistant

ZOL 490: Study Abroad: From Apes to Aves: Forest Biodiversity in Uganda, 2008

Inaugural program to five national parks to study avian and primate behavior. Gave lectures on disease ecology; labs in mist netting. Collected samples for Uganda Virus Research Institute.

LCS 610w: Wildlife Disease Ecology and Management, 2005-2008

Veterinary Clerkship: Taught field, laboratory, and GIS labs to group of veterinary students. Professors: Drs. Jean Tsao and Graham Hickling

PRO 101: Freshman Seminars on Wildlife Disease, 2003

Aided in course development, assignment preparation, and guest lectured. Professors: Drs. Amanda Fine, Graham Hickling

Guest Lectures and Labs

FW 238: Introductory Fisheries and Wildlife Field Experience, 2009

Topic: Field techniques in mist-netting, bird-banding, mammal trapping, and chemical immobilization of wildlife. Professor: Dr. Dan Hayes

FW/MC 481L Global issues in Fisheries and Wildlife Resources, 2007-2010

Topic: Globalization and disease. Professor: Dr. William Taylor

FW 419: Geographic Information Systems, 2006-2008

Topic: Wildlife Disease Spatial Risk Models. Professor: Dr. K. Millenbah

ZOL 365: Biology of Mammals, MSU- Kellogg Biological Station, 2006, 2008

Topic: Small mammal trapping. Instructor: Lisa Korte

ZOL 491: Current Topics in Conservation Biology, Kellogg Biological Station, 2005, 2008

Topics: Conservation medicine and wildlife disease. Wildlife anesthesia and raccoon processing demonstration. Professors: Drs. K. Gross and D. Schemske

ZOL 360: Biology of Birds, 2004-2009

Topic: Avian field research methodology and standard surveys. Professor: Dr. P. Rasmussen.

University of Illinois

Teaching Assistant

NRES 104: Introduction to Environmental Science, 2001-2002

Led weekly discussion sections (8-13 students) and guest lectured. Test writing and administration, creating assignments, grading, course website development. Professor: Dr. Mark David.

NRES 101: Introduction to Soil Science, 2002

Instructed weekly wet laboratory sections (15 students). Professor: Dr. Robert Darmody.

Teaching Awards

- 'Incomplete List of Teachers Ranked as Outstanding' by their students at University of Illinois, Fall 2001, Spring 2002, Fall 2003
- Graduate Teaching Certificate, Division of Instructional Resources, University of Illinois, 2002
- Finalist for Louis Logeman Graduate Teaching Award, University of Illinois, 2002

Graduate Student Mentor

Texas A&M University

Miranda Bertram, DVM	PhD in Biomedical Sciences, Epidemiology emphasis	TAMU- Veterinary Integrative Biosciences (VIBS)	Chair	2012-present
Rachel Curtis	PhD in Biomedical Sciences, Epidemiology emphasis	TAMU- VIBS	Chair	2012-present
Lowell Pigott	MS (non-thesis), Veterinary Public Health-Epidemiology	TAMU- VIBS	Chair	2012-present
Jaime Rodriguez	MS in Wildlife and Fisheries Sciences	TAMU- Wildlife and Fisheries Sciences (WFSC)	Co-Chair (with Dr. Jessica Light, WFSC)	2012-present
Alicia Leahy	MD/PhD	TAMU- Health Science Center and VIBS	Committee member	2012-present

Undergraduate and Veterinary Student Mentor

Texas A&M University

Frida Cano	Entomology undergraduate	Work study student	2012-present
Adrian Castellanos	Wildlife and Fisheries Sciences undergraduate	Summer researcher supported by funds awarded from TAMU Integrated Undergraduate Research Experiences in Biological and Mathematical Sciences	2012-present

Faculty mentor for 9 first-year DVM students (monthly group meetings), Fall 2012-present:

Bittner, Savannah; Cronin, Clayton; Darwin, Courtney; Davis, Michaela; Dotson, Meredith; Hessel, Patricia; Ramsey, Amanda; Rech, Cordell; Wilmeth, Gaylon

Michigan State University

Jennifer Sidge (2008-2011, undergraduate independent researcher; veterinary student researcher; pursuing DVM and MS at MSU; won student poster award at Undergraduate Research and Arts Forum; co-author on two papers)

Michelle Haring (2009, McNair Research Scholar, earned BS University of Wisconsin- River Falls)

Jennifer Stowe (2009, summer veterinary student researcher, pursuing DVM at MSU)

Aubrey Rankin (2009, summer veterinary student researcher, pursuing DVM at MSU)

Aditi Upadhye (2006, high school intern; volunteered in laboratory)

Michelle Rosen (2005-2009, field and lab technician; earned MS in tick-borne disease ecology at Univ. Tennessee; co-author on two papers)

Natalie Ochmanek (2006-2007, field and laboratory technician; earned BS from MSU)

Katherine Boatman (2006, laboratory technician; earned DVM from MSU)

Emily Koppel (2006, undergraduate independent researcher; MS in parasite-host ecology at Minnesota State University)
 Todd Lickfett (2005-2009, field technician; earned MS in disease ecology at Central MI University)
 Aaron Rydecki (2005, field technician; earned BS at Grand Valley State University)
 Christina Barber (2005, summer veterinary student researcher, co-author on paper resulting from her work; earned DVM at MSU)
 Christopher Niebuhr (2004, field technician; now pursuing MS in tick ecology at Tarleton State University)
 Mandy Kauffman (2004-2005, undergraduate independent researcher; now pursuing MS in wildlife disease at University of Wyoming)
 Megan Schiable (2004, summer veterinary student researcher; earned DVM at MSU)
 Dana Galbreath (2004, Professorial Assistantship (PA) in Honors College, earned BS at MSU)

Recognition of Graduate Students

Student Name: Miranda Bertram, DVM

- College of Veterinary Medicine and Biomedical Sciences Merit Fellowship, 2012-2016
- Lechner Scholarship, 2012-2013

Student Name: Rachel Curtis

- College of Veterinary Medicine and Biomedical Sciences Merit Fellowship, 2012-2016
- Lechner Scholarship, 2012-2013

Professional service

- Invited member of 'Tick Technical Working Group' to advise on sampling design for tick collections for the National Ecological Observatory Network (NEON), NSF-funded continental-scale observatory designed to gather up to 30 years of data on the ecological impacts of climate and land use changes at 60 sites spread across the United States, Jan 2013-present.
- Search Committee for PhD/DVM Herd/Wildlife Population Health open rank position in Department of Veterinary Pathobiology, Fall 2012-present.
- Represented the VIBS Epidemiology and Public Health Group with a booth at the Sigma Xi Undergraduate Research Expo, October 2012
- Judge for TAMU CVM Graduate and Postdoctoral Association Research Symposium, April 2012
- Selection Committee for TAMU CVM High Impact Student Publication Awards, April 2012
- Wildlife Disease Working Group, The Wildlife Society
 - Elected Board Member (2007-2011)
 - Chair of Student Affairs Committee. In this role, I solicit student and edit student research articles for 'The Vector' quarterly newsletter for our working group, 2008-present
- Fisheries and Wildlife Graduate Student Organization, President 2008-2009, Vice-President 2007-2008, Treasurer 2006-2007
- Graduate Representative for the undergraduate Fisheries and Wildlife Club, 2004 - 2009
- Xi Sigma Pi Forestry and Natural Resources Honors Society, President 2001-2003

Peer reviewer for journals

African Journal of Agricultural Research
 American Journal of Veterinary Research
 Applied and Environmental Microbiology
 Comparative Immunology, Microbiology & Inf. Diseases
 EcoHealth (3)
 Emerging Infectious Diseases (3)
 Evolutionary Biology
 Frontiers in Systems Biology
 Journal of the American Veterinary Medical Association
 Journal of Infectious Diseases
 Journal of Medical Entomology (2)

Journal of Medical Microbiology
 Journal of Wildlife Diseases
 Parasites & Vectors
 PLoS ONE (2)
 Proceedings of the Royal Society B
 Ticks and Tick-borne Diseases (6)
 Vector-borne and Zoonotic Diseases
 Veterinary Parasitology
 Veterinary Preventive Medicine
 Wilson Journal of Ornithology

Affiliations and Certifications

- Master Bird Bander, USGS Bird Banding Laboratory, Patuxent, MD, 2012-present
- Association of Field Ornithologists, 2012-present
- Veterinary Medical License (Michigan) and USDA National Veterinary Accreditation, 2011-present
- Associate Wildlife Biologist™, Certification of The Wildlife Society, 2009-present
- The Wildlife Society, 2005-present; Wildlife Disease Working Group, 2007-present; Texas Chapter 2012-present
- Wildlife Disease Association, 2009-present
- American Veterinary Medical Association, 2007-present
- Michigan Veterinary Medical Association, 2007-2011
- American Ornithologists' Union, 2005-2008
- Society of Vector Ecology 2004-2007

Outreach Activities

- Host monthly field research bird banding experiences at local natural area for university and community members, with approximately 30 participants each month, starting Fall 2012
- Invited speaker at TAMU CVM Postdoctoral Association on the academic interview process, August 2012
- Invited Speaker at monthly Rio Brazos Audubon Society Meeting to discuss the relationships among wild bird, ticks, and zoonotic pathogens, Bryan, TX, May 2012
- Invited Speaker at TAMU Wildlife Disease Association student chapter semester meeting, Topic: Eco-Epidemiology, February 2012
- Instructor, Wildlife Disease Workshop for Texas Chapter of The Wildlife Society, Ft. Worth. Provided 2 days of lectures on wildlife diseases and field necropsy demonstrations for wildlife biologists and students, February 2012.
- Invited Speaker for Pfizer Lunch and Learn'. 'Ticks, Trails, and Hummingbird Tales', March 2011.
- Guest speaker at Safari Clubs International Novi Chapter 'Big Buck Night'. Topic: Emerging tick-borne diseases and risk to hunters, May 2010
- Invited speaker at Michigan Lyme Disease Association annual Conference, August 2009
- Created a booth on wildlife field research for 'Vet-a-visit', the open house for MSU College of Vet Med, 2008
- Presentations to park staff and visitors at Sleeping Bear Dunes National Lakeshore on ticks and disease risk in summers 2008 and 2009
- Collaborate with Michigan Dept Community Health and Dept Natural Resources to share results of Lyme disease surveillance with state parks managers and public. Provided fact sheets. 2004-2009.
- Presentation as part of MSU Department of Fisheries and Wildlife weekly seminar series on biodiversity in Uganda after assisting with instruction of a study abroad, 2008.
- Once per semester organize hands-on wildlife fieldwork experiences (mist-netting) for the undergraduate Fisheries and Wildlife club, department, and veterinary students, 2004-2009.
- Presentation of research to undergraduate Fisheries and Wildlife Club, October 2007.
- Organized the 'Conference for Veterinary and Medical Professionals on Emerging Lyme disease in Michigan' at Brook Lodge, MI, November 2005. Attended by ~50 human and veterinary medical professionals; presented general disease information and research results

Professional development

- Invited participant in 'Becoming Faculty' workshop funded by the Burroughs Wellcome Fund in conjunction with the Meriel-NIH National Veterinary Scholars Symposium, Loveland, CO, August 2012
- Center for Teaching Excellence, TAMU: Syllabus and Course Development Workshops, summer 2012
- Workshop on ecological modeling prior to the Ecology and Evolution of Infectious Disease Conference, Ann Arbor, MI, May 19-22, 2012
- Tools for Infectious Disease Epidemiology: Infectious disease modeling, Cornell College of Veterinary Medicine, July 2011
- Summer Session in Epidemiology, University of Michigan, July 2005
- Ecology and Evolution of Infections Disease Workshop: Modeling of long-term data sets, CO, May 2005
- MSU Summer Institute on College Teaching and Learning: Cooperative Learning in the Classroom- 2 day workshop, August 2004. Selected by department for participation.
- Chemical Immobilization for Wildlife Handlers- 3 day workshop, MI, May 2004.
- Study Abroad, University of Pretoria, Center for Wildlife Management, South Africa. Field course in wildlife management and conservation issues in Kruger National Park. 2001.
- Study Abroad, College of Agriculture, Consumer, and Environmental Science International Study program, University of Illinois. Traveled to Puerto Rico and Jamaica with classes on short study trips to learn local issues in agriculture, wildlife, and environmental research. May 1999 and January 2001.

Communication of Science through the Media

- Emerging Infectious Diseases Podcast, recorded November 2012, produced by Centers for Disease Control and Prevention (CDC). Recorded a Podcast interview by invitation to discuss my paper on birds and ticks published in EID Journal. Available through I-tunes.
- Invited presenter on CDC's 'Selected Zoonotic Disease Conference Call' to present my research on urban bird-borne zoonotic diseases. Conference call attended by over 200 medics, epidemiologists, public health officials, and more. (8/1/12).
- 'Lyme disease tick adapts to life on the fragmented prairie' (6/21/2011) press release, University of Illinois News Bureau
- Interviewed in a video exhibit at the Michigan State University museum: "Avelution" Birds in the Development of Darwin's Theories on Evolution, 2010
- PhD research on Lyme disease featured in:
 - Woods-N-Water News 'MSU researchers collect ticks from harvested deer in Lyme disease study' (January 2008)
 - Hunters Exchange Television, 15-minute piece on wildlife field research, 2007
 - Ludington Daily News 'Tick that spreads Lyme disease moving north' (6/26/07)
- Master of Science research on West Nile virus and crows featured in:
 - Chicago Wildlife News 'Crows slowly making comeback in Illinois' (3/8/10)
 - Chicago Wilderness 'A Murder of Crows- Black Beauty Faces Hard Times' (Winter 2004)
 - The News Gazette Champaign IL 'This conference is for the birders' (12/10/03)
 - Urban Programs Resource Network 'West Nile virus is tough on bird population' (5/28/03)
 - Chicago Tribune Magazine 'West Nile virus- what went wrong?' (5/11/03)
 - Outdoor Illinois 'Crow Study Yields Eye-Opening Results' (April 2003)
 - The News Gazette, Champaign IL 'Research tracks spread of West Nile' (7/28/02)
 - The Skokie Review 'West Nile depleting bird populations' (9/12/02)
 - Illinois Public Radio interview, 2003

Promotion of Women in Science

- 'Vetward Bound' Enrichment Summer Program: mentor for disadvantaged persons preparing for entrance into veterinary medical school, Michigan State University College of Veterinary Medicine, 2010-2011
- Featured with cover photo in 'Women in the Outdoors' segment of Outdoors Magazine, July 2009
- Organized lab participation in 'Becoming an Outdoorswomen' workshop by Michigan Department of Natural Resources (topic: shooting sports), 2008
- Mentored a minority female high school student in laboratory bench science, 2008
- Girls Math and Science Conference: created a wildlife-trapping workshop for 6th grade girls, 2006