

CURRICULUM VITAE

Justin B. Lack

Laboratory of Genetics, University of Wisconsin,
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Education:

Ph.D. in Zoology, 2012, Oklahoma State University, Stillwater, OK; GPA 3.9.
Dissertation project: *Population genetic analysis of invasive Rattus: implications for evolutionary biology, disease ecology and invasion biology.*

M.S. in Biology, 2007, University of Central Oklahoma, Edmond, OK; GPA: 4.0. Thesis Project: *Population genetic structure of the Texas mouse (Peromyscus attwateri) as inferred by cytochrome b sequence data.*

B.S. in Biology, 2004, University of Central Oklahoma, Edmond, OK; GPA: 3.8.

Areas of Research Interest:

Evolutionary genetics and development, Population genomics, Phylogenetics, Invasion biology

Positions Held:

<u>Date</u>	<u>Location</u>	<u>Specifics</u>
June 1, 2012 - Present	Laboratory of Genetics, University of Wisconsin	Postdoctoral Researcher
August 2007 - May 2012	Dept. Zoology, Oklahoma State University	Physiology Laboratory Instructor
August 2005 - May 2007	Dept. Biology, University of Central Oklahoma	Teaching Assistant, Microbiology and General Biology Laboratories
June 2006 - August 2006	Dept. Biology, University of Central Oklahoma	Peer Mentor, Center for Undergraduate Research and Education in Science, Technology, Engineering and Mathematics (CURE-STEM)

Publications:

- Lack, J. B.**, M. J. Hamilton, J. K. Braun, D. Greene, C. Conroy, M. A. Mares, R. A. Van Den Bussche. *In Press*. Invasion facilitates hybridization with introgression in the *Rattus rattus* species complex. *Molecular Ecology*, DOI: 10.1111/j.1365-294X.2012.05620.x.
- Lack, J. B.**, *K. Volk, and R. A. Van Den Bussche. *In Press*. Detection of hepatitis E virus genotype 3 from wild-collected *Rattus* in multiple U.S. localities. *Emerging Infectious Diseases*.
- Roehrs, Z. P., **J. B. Lack**, *C. E. Stanley, Jr., C. J. Seiden, R. Bastarache, W. D. Arbor, M. J. Hamilton, D. M. Leslie, and R. A. Van Den Bussche. *In Press*. Mammals of Red Slough Wildlife Management Area, with comments on McCurtain County, Oklahoma. Occasional Papers of the Museum, Texas Tech University.
- Moncrief, N. D., **J. B. Lack**, J. Maldonado, K. Bryant, C. Edwards, R. A. Van Den Bussche. *In Press*. Lack of phylogeographic structure in two sympatric, forest obligate, squirrels (*Sciurus niger* and *S. niger*). *Journal of Mammalogy*.
- Bradley, R. D., A. O. Stallings, C. N. Hoang, D. D. Henson, L. L. Peppers, R. S. Pfau, **J. B. Lack**, and R. A. Van Den Bussche. *In Press*. Genetic, phylogenetic, and conservation status of *Sigmodon hispidus eremicus*. *Southwestern Association of Naturalists*.
- Scott, J. E., **J. B. Lack**, A. S. Hogue, and M. J. Ravosa. 2012. On the reversibility of mandibular symphyseal fusion. *Evolution*, DOI: 10.1111/j.1558-5646.2012.01639.x.
- Lack, J. B.**, Reichard, M., and Van Den Bussche, R. A. 2012. Phylogeny and evolution of the Piroplasmida as inferred from 18S rRNA sequences. *International Journal of Parasitology*, 42:353-363.
- Lack, J. B.**, *R. D. Nicholls, G. M. Wilson, R. A. Van Den Bussche. 2011. Genetic signature of reproductive manipulation in the phylogeography of the bat fly, *Trichobius major*. *Journal of Heredity*. 102:705-718. **(Selected for the Stephen J. O'Brien Award for the best student paper published in the Journal of Heredity for 2011)**
- Roehrs, Z. P., **J. B. Lack**, and R. A. Van Den Bussche. 2011. A Molecular phylogenetic reevaluation of the Tribe Nycticeiini (Chiroptera: Vespertilionidae). *Acta Chiropterologica*, 13:17-31.
- Lee, D. N., **J. B. Lack**, R. A. Van Den Buscche, and J. A. Long. 2011. Importance of tributary streams for rainbow trout reproduction: insights from a bigenomic approach in a small stream in Georgia. *River Research and Applications*, DOI: 10.1002/rra.1556.
- Lack, J. B.**, R. Pfau, and G. M. Wilson. 2010. A dynamic demographic history and incomplete lineage sorting obscure population genetic structure of the Texas mouse (*Peromyscus attwateri*). *Journal of Mammalogy* 91:314-325.

- Lack, J. B.**, Z. P. Roehrs, *C. E. Stanley, Jr., M. Ruedi, and R. A. Van Den Bussche. 2010. Molecular phylogenetics of *Myotis* suggest familial-level divergence for the genus *Cistugo* (Chiroptera). *Journal of Mammalogy* 91:976-992.
- Moncrief, N. D., **Lack, J. B.**, and R. A. Van Den Bussche. 2010. Eastern fox squirrel (*Sciurus niger*) lack phylogeographic structure: recent range expansion and phenotypic differentiation. *Journal of Mammalogy*, 91:1112-1123.
- Lack, J. B.**, and R. A. Van Den Bussche. 2010. Identifying the confounding factors in resolving phylogenetic relationships in Vespertilionidae. *Journal of Mammalogy*, 91:1435-1448.
- Roehrs, Z. P., **J. B. Lack**, and R. A. Van Den Bussche. 2010. Tribal phylogenetic relationships within Vespertilioninae (Chiroptera: Vespertilionidae) based on mitochondrial and nuclear sequence data. *Journal of Mammalogy*, 91:1073-1092.
- Lack, J. B.**, *J. E. Wilkinson, and R. A. Van Den Bussche. 2010. Range-wide population genetic structure of the pallid bat (*Antrozous pallidus*)—incongruent results from nuclear and mitochondrial DNA. *Acta Chiropterologica*, 12:401-413.
- Van Den Bussche, R. A., **J. B. Lack**, D. P. Onorato, E. C. Hellgren, L. C. Gardner-Santana, B. R. McKinney, J. D. Villalobos, M. Chamberlain, and D. White. 2009. Mitochondrial DNA phylogeography of black bears (*Ursus americanus*) in central and southern North America: conservation implications. *Journal of Mammalogy*, 90:1075-1082.
- Lack, J. B.** and R. A. Van Den Bussche. 2009. A relaxed molecular clock places an evolutionary timescale on the origins of North American big-eared bats (Vespertilionidae: *Corynorhinus*). *Acta Chiropterologica* 11:15-23.
- Echelle, A. A., J. C. Hackler, **J. B. Lack**, S. Ballard, J. Roman, S. F. Fox, D. M. Leslie, Jr., and R. A. Van Den Bussche. 2009. Conservation genetics of the alligator snapping turtle: cytonuclear evidence of range-wide bottlenecking and unusually pronounced geographic structure. *Conservation Genetics*, DOI 10.1007/s10592-009-996-1.
- Van Den Bussche, R. A., **J. B. Lack**, *C. E. Stanley, Jr., *J. E. Wilkinson, P. Truman, L. M. Smith, and S. T. McMurry. 2009. Development and characterization of 10 polymorphic tetranucleotide microsatellite markers for the New Mexico spadefoot toad (*Spea multiplicata*). *Conservation Genetics Resources* DOI 10.1007/s12686-009-9017-8.
- Smith, S. J., D. M. Leslie, Jr., M. J. Hamilton, **J. B. Lack**, and R. A. Van Den Bussche. 2008. Subspecific affinities and conservation genetics of western big-eared bats (*Corynorhinus townsendii pallescens*) at the edge of their distributional range. *Journal of Mammalogy*, 89:799-814.

*Denotes undergraduate co-authors

Manuscripts Submitted:

Lack, J. B., M. J. Hamilton, J. K. Braun, M. A. Mares, R. A. Van Den Bussche. ***In Review***. Comparative phylogeography of *Rattus rattus* and *Rattus norvegicus* suggests interspecific interactions dictate dispersal and invasion success in the U.S. Biological Invasions.

*Stanley Jr., C. E., N. L. Cooper, **J. B. Lack**, J. R. Bidwell, and R. A. Van Den Bussche. ***In Review***. Significant genetic divergence between laboratory and wild populations of the freshwater amphipod *Hyalella Azteca*: implications for unmonitored anthropogenic isolation in laboratory cultures. Heredity.

*Denotes undergraduate co-authors

Manuscripts In Preparation (draft available):

Lack, J. B., V. Mushegan, R. Pfau, and G. M. Wilson. ***In Prep***. Regional demographic history and nuclear DNA phylogeography of the Texas mouse (*Peromyscus attwateri*). (To be submitted to The Journal of Biogeography).

Lack, J. B., C. E. Stanley, Jr., A. Ragavendran, and P. D. Jeyasingh. ***In Prep***. Evidence for selection on nitrogen economy in synonymous codon usage. (To be submitted to Evolution).

Roehrs, Z. P., **J. B. Lack**, and R. A. Van Den Bussche. ***In Prep***. Phylogenetic Reassessment of the Pipistrellus-like bats (Chiroptera: Vespertilionidae). Acta Chiropterologica.

Book Chapters:

Van Den Bussche, R. A., and **J. B. Lack**. ***In Press***. *Bat Molecular Phylogenetics: Past, Present, and Future*. In: Bat Evolution, Ecology, and Conservation. Eds. R. A. Adams and S. Pederson. Springer Science Press, NY, U.S.A.

Grants/Fellowships:

2011 National Science Foundation DDIG: Comparative phylogeography of *Rattus rattus* and *Rattus norvegicus* in the U.S. and dispersal potential of rat-borne pathogens. J. B. Lack, \$11,624.

United States Department of Defense: February 2011. DoD/ARO: *Core BAA for Basic and Applied Scientific Research*. Predicting behavioral suites from genetic profiles: Variation in mating, aggression & exploration in pouched rats. \$810,451. A. Ophir (PI), J. B. Lack (collaborator).

American Society of Mammalogists, Albert R. and Alma Shadle Fellowship. J. B. Lack, \$4,400.

American Museum of Natural History, Theodore Roosevelt Memorial Grant: Shifts in bat diversity inferred from sequencing of ancient DNA from 8,000-year old guano. J. B. Lack, \$1,991.

American Society of Mammalogists, Grant in Aid, Shifts in bat diversity inferred from sequencing of ancient DNA from 8,000-year old guano. J. B. Lack, \$1,500.

Department of Zoology, Oklahoma State University, Travel Grant, \$500

Distinguished Graduate Fellowship, Oklahoma State University, \$2,000

2010 Summer Research Fellowship, Oklahoma State University Graduate College, \$2,000

Distinguished Graduate Fellowship, Oklahoma State University, \$2,000

2009 Distinguished Graduate Fellowship, Oklahoma State University, \$2,000

2008 Oklahoma State University Zoology Graduate Student Society, Research Grant, \$100

American Society of Mammalogists, Grant in Aid, Phylogeography of the invasive species *Rattus rattus* and *Rattus norvegicus* in the United States. J.B. Lack, \$1,500.

Awards/Recognitions:

2012 Phoenix Award for the outstanding doctoral student at Oklahoma State University

Texas Society of Mammalogists, TSM Award for the Best Oral Presentation on Mammalian Cytology, Evolution, and Systematics, Annual Meeting

Stephen J. O'Brien Award for the best student paper published in the Journal of Heredity for 2011

2010 Nancy Randolph Davis Graduate Student Scholarship

Karl F. Koopman Award for the Outstanding Oral Presentation in Systematics, North American Society for Bat Research

Outstanding Graduate Student, Department of Zoology, Oklahoma State University

2009 Texas Society of Mammalogists, Robert Packard Award for the Best Overall Oral Presentation, Annual Meeting

2007 Outstanding Biology Graduate Student, University of Central Oklahoma

Tri-Beta Biological Honor Society, Outstanding Graduate Student Presentation, State Meeting

Presentations:

- Lack, J. B.**, M. J. Hamilton, J. Braun, M. A. Mares, and R. A. Van Den Bussche. 2012. Comparative phylogeography of *Rattus rattus* and *Rattus norvegicus* in the U.S. Texas Society of Mammalogists, Annual Meeting, Texas Tech University Field Station, Junction, TX (Oral).
- Lack, J. B.**, D. Greene, and R. A. Van Den Bussche. 2011. *Rattus* phylogeny reveals novel *Rattus tanezumi* invasion and hybridization in the United States. Texas Society of Mammalogists, Annual Meeting, Texas Tech University Field Station, Junction, TX (Oral).
- Lack, J. B.**, A. Ragavendran, C. E. Stanley, and P. D. Jeyasingh. 2011. Evidence for selection on nitrogen economy in synonymous codon usage. Society for the Study of Evolution, Annual Meeting, University of Oklahoma, Norman, OK (Oral).
- Lack, J. B.**, D. Greene, and R. A. Van Den Bussche. 2011. *Rattus* phylogeny reveals novel *Rattus tanezumi* invasion and hybridization in the United States. American Society of Mammalogists, National Meeting, Portland State University, Portland, OR (Oral).
- Lack, J. B.** and R. A. Van Den Bussche. 2010. Identifying the confounding factors in resolving relationships in Vespertilionidae (Chiroptera). Texas Society of Mammalogists, Annual Meeting, Texas Tech University Field Station, Junction, TX (Oral).
- Lack, J. B.**, C. E. Stanley, and P. D. Jeyasingh. 2010. Synonymous codon usage in plants is affected by environmental nitrogen supply. Southwestern Association of Naturalists, Annual Meeting, Texas Tech University Field Station, Junction, TX (Oral).
- Lack, J. B.** and R. A. Van Den Bussche. 2010. Identifying the confounding factors in resolving relationships in Vespertilionidae (Chiroptera). American Society of Mammalogists, National Meeting, University of Wyoming, Laramie, WY (Oral).
- Lack, J. B.**, R. A. Van Den Bussche, D. P. Onorato, E. C. Hellgren, L. C. Gardner-Santana, B. R. McKinney, J. D. Villalobos, M. Chamberlain, and D. White. 2009. Mitochondrial DNA phylogeography of black bears (*Ursus americanus*) in central and southern North America: conservation implications. Texas Society of Mammalogists, Annual Meeting, Texas Tech University Field Station, Junction, TX (Oral).
- Lack, J. B.**, Z. P. Roehrs, C. E. Stanley, Jr., M. Ruedi, and R. A. Van Den Bussche. 2009. Molecular phylogenetics of *Myotis* suggest familial-level divergence for the genus *Cistugo* (Chiroptera). American Society of Mammalogists, National Meeting, University of Alaska-Fairbanks, Fairbanks, Alaska (Oral).

- Lack, J. B.** and R. A. Van Den Bussche. 2008. Evolutionary history of the genus *Corynorhinus*. Southwestern Association of Naturalists, National Meeting, University of Memphis, Memphis, TN (Oral).
- Lack, J. B.** and R. A. Van Den Bussche. 2008. Evolutionary history of the genus *Corynorhinus*. American Society of Mammalogists, National Meeting, South Dakota State University, Brookings, SD (Oral).
- Lack, J. B.**, R. Pfau, and G. M. Wilson. 2007. Population genetic structure of the Texas mouse, *Peromyscus attwateri*, as inferred by cytochrome b sequence data. Southwestern Association of Naturalists, National Meeting, Tarleton State University, Stephenville, TX (Oral).
- Lack, J. B.**, R. Pfau, and G. M. Wilson. 2007. Population genetic structure of the Texas mouse, *Peromyscus attwateri*, as inferred by cytochrome b sequence data. American Society of Mammalogists, National Meeting, University of New Mexico, Albuquerque, NM (Oral).
- Lack, J. B.**, R. Pfau, and G. M. Wilson. 2007. Population genetic structure of the Texas mouse, *Peromyscus attwateri*, as inferred by cytochrome b sequence data. Tri-Beta Biological Honor Society, State Meeting, OU Field Station, Lake Texoma, OK (Oral).
- Lack, J. B.**, R. Pfau, and G. M. Wilson. 2006. Population genetic structure of the Texas mouse, *Peromyscus attwateri*, as inferred by the mitochondrial control region. Southwestern Association of Naturalists, National Meeting, Colima, Mexico, 2006 (Poster).
- Lack, J. B.**, R. Pfau, and G. M. Wilson. 2006. Population genetic structure of the Texas mouse, *Peromyscus attwateri*, as inferred by cytochrome b sequence data. Central Plains Society of Mammalogists, University of Central Oklahoma, Edmond, Oklahoma (Oral).
- Lack, J. B.**, R. Pfau, and G. M. Wilson. 2005. Population genetic structure of the Texas mouse, *Peromyscus attwateri*, as inferred by cytochrome b sequence data. Central Plains Society of Mammalogists, Truman State University, Kirksville, Missouri, 14-16 Oct. 2005 (Oral).

Service:

Manuscripts reviewed for: Journal of Mammalogy, Acta Chiropterologica, Mammalian Biology, Biological Journal of the Linnean Society, DNA and Cell Biology

2011 Fundraising Committee Member (Zoology Graduate Student Society, OSU)

Student representative to Zoology Faculty Council (OSU)

External reviewer, Faculty Grants, University of Central Oklahoma

Population Genetics Group Leader, National Lab Day, Oklahoma State University

2010 Assistant Professor search committee (Department of Zoology, OSU)

Student representative to Zoology Faculty Council (OSU)

External reviewer, Faculty Grants, University of Central Oklahoma

Population Genetics Group Leader, National Lab Day, Oklahoma State University

2009 Student representative to Zoology Faculty Council (OSU)

Invited Presentations:

2011 Genetic signature of reproductive manipulation in the phylogeography of the bat fly, *Trichobius major*. Lunchtime Seminar, Department of Zoology, Oklahoma State University, January 24, 2011.

2010 Tracing the Colonization History and Dispersal in the U.S. of Two of Humanity's Greatest Pests: *Rattus rattus* and *Rattus norvegicus*. Department of Biological Sciences, University of Central Oklahoma, February 9, 2010.

Synonymous codon usage in plants is affected by environmental nitrogen supply. Lunchtime Seminar, Department of Zoology, Oklahoma State University, February 1, 2010.

Professional Affiliations:

Oklahoma Academy of Science, 2005-present

Central Plains Society of Mammalogists, 2005-present

Southwestern Association of Naturalists, 2006-present

American Society of Mammalogists, 2006-present

American Association for the Advancement of Science (AAAS), 2007-present

Texas Society of Mammalogists, 2008-present

Society for the Study of Evolution, 2009-present

Society for Molecular Biology and Evolution, 2009-present

Mentorship:

Kimberly Koppari, Undergraduate, University of Central Oklahoma, 2005-2006

Sasha Jackson, Undergraduate, Oklahoma State University, Fall 2007

Craig Stanley, Undergraduate, Oklahoma State University, 2008-2009

Jeremy Wilkinson, Undergraduate, Oklahoma State University, 2008-2009

Randilea Nichols, Undergraduate, Oklahoma State University, 2010

Kylie Volk, Undergraduate, Oklahoma State University, 2011 (current)