

Jacob Lawrence Kerby

EDUCATION

Ph.D., **Ecology**, *University of California at Davis*, 2006

Advisor: Andrew Sih

M.S., **Biology**, *California State University, Northridge*, 2003

Advisor: Paul Wilson

B.S., **Psychobiology**, *Pepperdine University*, 1996

Advisor: Lee Kats

ADMINISTRATIVE EXPERIENCE

May 2021- Present, **Chair of Biology**, *University of South Dakota*. Oversee department of 14 faculty at two locations. Manage working budget of department along with oversight of curriculum, assessment of undergraduate and graduate programs.

December 2019 – April 2021, **Associate Chair of Biology**, *University of South Dakota*. Oversee teaching assignments for department, curricula scheduling and assessment.

August 2019 – Present, **Chair of IACUC**, *University of South Dakota*. Oversee the coordination and implementation of effective, efficient systems for protocol review and program review by the IACUC in compliance with PHS policy and the AWA.

July 2012 – June 2014, **Director of Research**, *Missouri River Institute, University of South Dakota*. Worked with faculty across the College of Arts and Sciences to establish funding opportunities and projects. Developed relationships with several local federal and state agencies.

RECENT ACCOLADES

Beverly and Truman Schwartz Distinguished Faculty, January 2020- May 2023

Awarded to outstanding tenured faculty member of the College of Arts & Sciences who has shown exceptional creativity and productivity in the tripartite mission and shows promise of continuing such achievement.

President's Executive Council Member - May 2021. Selected to participate in leadership training with leaders from across the university.

Outstanding Faculty Award, October 2019- Awarded internationally to the top ten professors each year as nominated by local chapters of the Kappa Alpha Theta sorority.

Lambda Chi Teaching Award, April, 2017- Awarded to professor for highest teaching excellence in large classroom settings.

Cutler Award in Liberal Arts, April 2015- Awarded to professor with teaching and research that best represents a liberal arts perspective.

Belbas Larson Award for Excellence in Teaching, April 2014- Awarded to an untenured professor with the highest teaching standards and evaluations at the university.

Presidents Research Award, Early/Mid Career level, October 2011- Awarded to an untenured professor with most significant research program at the university.

Chief Editor, Behavior and Ecology section for Frontiers in Amphibian and Reptile Science, July 2023- Present.

Associate Editor for PLoS ONE, Disease Ecology, August 2014- July 2023

Associate Editor for Copeia, General Herpetology, January 2012- Present

RECENT SERVICE AT USD

Belbas Larson Selection Committee, Chair- March 2023-Present. Oversee committee award.

Higher Learning Commission Assurance Committee- September 2018- December 2021. Research and contribute to documentation in preparation for reaccreditation of USD in 2021.

Teach Foundations of Ecology, Proposal Writing, and Bayesian Statistics graduate seminars.

RECENT GRANTS (Total over \$2 million)

National Park Service. (\$231,091). December 2023- June 2025. Interactive effects of invasive zebra mussels and eastern redcedar on two threatened/endangered species within the Missouri National Recreation River. PI: Jacob Kerby, Co-PI: David Swanson

South Dakota Lakes and Streams Association. (\$69,776). August 2023- July 2025. Potential Economic Costs of Dreissenid Mussels (Zebra and Quagga) Infestation in South Dakota. PI: Jacob Kerby.

South Dakota State Game, Fish & Parks. (\$7,500). May 2022- May 2023. Amphibian Ranavirus Infection Research. PI: Jacob Kerby.

South Dakota State Game, Fish & Parks. (\$5,000). May 2021- May 2022. Amphibian Disease Research Survey. PI: Jacob Kerby.

South Dakota State Game, Fish & Parks. (\$6,924). May 2019- May 2020. Presence of selenium in South Dakota tile wetland species. PI: Jacob Kerby.

South Dakota State Game, Fish & Parks. (\$148,287). May 2017- September 2019. Survey of False Map Turtles in South Dakota. PI: Jacob Kerby.

South Dakota State Game, Fish & Parks. (\$185,920). June 2015- July 2017. Impacts of tile drainage outflows on wetland systems in eastern South Dakota. PI: Jacob Kerby, Co-PI Jeff Wesner.

South Dakota State Game, Fish & Parks. (\$44,701). May 2014- December 2016. Status of salamander species in South Dakota. PI: Jacob Kerby

National Park Service. (\$39,187). July 2013- June 2015. Assessment of amphibian populations at Bow Creek wetlands in the Missouri National Recreation River. PI: Jacob Kerby

South Dakota State Game, Fish & Parks. May 2013-December 2014. (**\$4,809**). Recruitment and training of South Dakotan citizen scientists for Frog Watch USA. PI: BT/TT2 12 Tf46

Fish and Wildlife Service. May 2010- July 2013. (**\$224,000**). Estimating the effects of *Somatochlora hineana*.

PI- Jacob Kerby, Co-

70) Spatial variation of False Map Turtle (*Graptemys pseudogeographica*) bacterial microbiota in the Lower Missouri River, United States. JD Madison, MM Butterfield, DR Davis, and JL Kerby. 2022. *Journal of Herpetology*, 56(2), 258-265.

69) Detection of imidacloprid and metabolites in Northern Leopard frog (*Rana pipiens*) brains. 2022. KS Campbell, PG Keller, LM Heinzl, SA Golovko, JL Kerby. - *Systematic Parasitology*, 813:152424

68) Community development, implementation, and assessment of a NIBLSE bioinformatics sequence similarity learning resource. 2021. AJ Kleinschmit, EF Ryder, - *PLOS One*

67) Whitfield, S. M, G. Alvarado, J. G. Abarça, H. Zumbado, Ulate, R. R. Jimenez, and L. Kerby. 2021. Ranavirus is widespread in Costa Rica and occurs with threatened animals. *Diseases of Aquatic Organisms* 144:8998.

66) J. G. Abarça, S. M. Whitfield, I. Zuniga-Chaves, G. Alvarado, J. L. Kerby, C. Murillo-Cruz, A. Pintó-Tomás. 2021. Genotyping and differential bacterial inhibition of *Batrachochytrium dendrobatidis*

Community richness of amphibian skin bacteria correlates with bioclimate at the global scale. *Nat Ecol Evol* 3(3), 38-389. 2019.

58) Butterfield, M., D. Davis, J. Madison, and J. L. Kerby. 2019. Surveillance of *Ranavirus* in False Map Turtles (TQq0 0 612 792 reW*nBT/TT0 12 Tf157.33 6 Cq0 0 6T/TT2 12n81039

- 25) Whitfield, S., E. Geerdes, I. Chacon, E. Ballester Rodriguez, R. Jimenez, M.A. Donnelly, and J. L. Kerby. 2013. Infection and co-infection by the amphibian chytrid fungus (*Batrachochytrium dendrobatidis*) and ranavirus in wild Costa Rican frogs. *Diseases of Amphibians* 104: 173-178.
- 24) Kats, L. B., G. Bucciarelli, T.L. Vandergon, R. L. Honeycutt, E. Mattiasen, A. Sanders, S.P.D. Riley, J.L. Kerby and R.N. Fisher. 2013. Effects of natural flooding and trapping on the facilitation of invasive crayfish-native amphibian coexistence in a semi-arid perennial stream. *Journal of Herpetology* 98: 109-112.
- 23) Kerby, J.L., A. Schieffer, J. Brown, and S. Whitfield. 2013. Comparison of quantitative PCR methodologies for Bd analyses. *Molecular Ecology* 4(2): 162-166.
- 22) Hanlon, S. M., Kerby J. L., and M.J. Parris. 2012. Unlikely remedy: Fungicide clears infection from pathogenic fungus in larval southern leopard frogs (*Lithobates sphenoccephalus*). *PLoS ONE* 7: e43573.
- 21) Hoverman, J., Richgels, K, Mihhaljevic, J. Kerby, J.L., and P.T.J. Johnson. 2012. Widespread co-occurrence of virulent pathogens within California amphibian communities. *Ecology* 9: 288-292.
- 20) Whitfield, S. M., M. Donnel

- 14) Venesky, M.D, J.L. Kerby, A. Storfer, and M. J. Parris. 2011. Can differences in host behavior drive patterns of disease prevalence in tadpoles? *PLS ONE* 6(9): e24991. doi:10.1371/journal.pone.0024991.
- 13) Johnson, P.T.J, V. J. McKenzie, A.C. Peterson, J.L. Kerby, J. Brown, A.R. Blaustein, and T. Jackson. 2011. Regional decline of an iconic amphibian species: understanding multi-scale patterns of leopard frog declines in Colorado. *Conserv Biol* 25(3): p. 556-566
- 12) Kerby, J. L., K. Richards-Hrdlicka, A. Storfer, D. Skelly. 2010. An examination of amphibian sensitivity to environmental contaminants: Are amphibians poor canaries? *Environ Biol Fish* 13(1): 60-67. (Available online- Featured on Nature News 10/29/2009: <http://www.nature.com/news/2009/091029/full/news.2009.1048.html>)
- 11) Kerby, J. L., and A. Storfer. 2009. Combined effects of atrazine and chlorpyrifos on susceptibility of the Tiger Salamander to *Ambystoma tigrinum* virus. *Environ Biol Fish* 6:91-98.
- 10) Pintor, L. M., A. Sih, and J. L. Kerby. 2009. Behavioral correlations provide a mechanism for explaining high invader densities and increased impacts on native prey. *Environ Biol Fish* 90(3): 581-587.
- 9) Baumsteiger, J., and J. L. Kerby. 2009. Effectiveness of Chinook salmon carcass tissue for use in DNA extraction and amplification in conservation genetic studies. *North Am J Fish Manage* 29: 40-49.
- 8) Ajie, B. A., L. M. Pintor, J. Watters, J. L. Kerby, J. Hammond, and A. Sih. 2007. A framework for determining the fitness consequences of antipredator behavior. *Behav Ecol* 18(1): 267-270.
- 7) Rohr, J., J. Kerby, and A. Sih. 2006. Community ecology as a framework for predicting contaminant effects. *Trends Ecol Evol* 21(11): 607-613.
- 6) Riley, S., G. T. Busteed, L. B. Kats, T. L. Vandergon, L. Lee, R. Dagit, J. L. Kerby, R. N. Fisher, and R. M. Sauvajot. 2005. Effects of urbanization on the distribution and

2) Sih, A., A. M. Bell, and J. L. Kerby. 2004. Two stressors are far deadlier than one. *Trends Ecol Evol* . 19(6): 274-276.

1) Kerby, J. L., and L. B. Kats. 1998. Modified interactions between salamander life stages caused by wildfire-induced sedimentation. *Ecol* . 79(2): 740-745.

PRESENTATIONS

Multiple stressors on multiple species

Ranavirus: An emerging infectious disease. May 2013, **Dakota Amphibian and Reptile Conference**, Vermillion, SD

Amphibian disease in South Dakota. *Invited speaker*. February 2013, **South Dakota Wildlife Society**, Chamberlain, SD

What are your standards? Comparison of qPCR standards for amphibian disease. November 2012, **Integrated Research Challenges in Environmental Biology**, Tempe, AZ.

Impacts of chytrid and contaminants on South Dakota amphibians. August 2012, **Ecological Society of America**, Portland, OR

An examination of anti-chytrid bacteria on relict populations of Costa Rica amphibians. May 2012, **Dakota Amphibian and Reptile Conference**, Spearfish, SD.

The impacts of multiple stressors on amphibians. September 2011, **University of Memphis**, *urpk*

Effects of pesticide exposure on susceptibility to ranavirus in Tiger salamanders, *Ambystoma tigrinum*. *Invited symposium speaker* July 2011. **Joint Meeting of Ichthyologists and Herpetologists**, Minneapolis, MN

Understanding the impacts of multiple stressors on amphibians. November 2010, **North Dakota State University**, *urpk*

Impact of contaminants on the interaction of chytrid fungus and anti-fungal bacteria. August 2010, **Ecological Society of America**, Pittsburgh, PA

Comparison of quantitative PCR methodologies for Bd analyses. June, 2010, **Emerging Amphibian Diseases Conference**, Townsville, Australia.

Impacts of an herbicide on the interaction of Bd and anti-fungal bacteria. November 2009, **Integrated Research Challenges in Environmental Biology**, Tempe, AZ.

An examination of amphibian sensitivity to environmental contaminants: Are amphibians poor canaries? August 2009, **Ecological Society of America**, Albuquerque, NM

Prevalence of an emerging disease in South Dakota amphibian populations. April 2009, **Great Plains Biological Research Conference**, Grand Forks, ND.

Impacts of multiple stressors on amphibians. December 2008, **Ecohealth**, Merida, Mexico.

Effects of *Ambystoma tigrinum* virus, pesticides and predators on tiger salamander larvae. November 2007, **Integrated Research Challenges in Environmental Biology**, Tempe, AZ.

Pesticides as cofactors in ranavirus emergence. August 2007, **Ecological Society of**

America, San Jose, CA.

Effects of pesticides on amphibian survival and community structure. August 2006,

Marshal Kim Sanchez, May 2019- August 2019. Mapping the habitat of the False Map Turtle. *NSF REU student from Sustainable Rivers program.*

Anela Napolean, May 2018- August 2018. Examining impacts of pesticides on Leopard Frogs in the Prairie Pothole region. *NSF REU student from Sustainable Rivers program.*

Lucas Goodman, May 2018- August 2018. Important habitat factors for determining the presence of False Map Turtles. *NSF REU student from Sustainable Rivers program.*

Emme Schmidt, *University of South Dakota*, October 2016- Present. Utilization of *Serratia marscesens* for anti-fungal protection in amphibians. *Recipient of U Discover Research Fellow Award (USD prestigious undergraduate award)*

Maddie Butterfield, *University of South Dakota*, October 2016- Present. Examination of turtle microbiome in False Map Turtles. *Recipient of U Discover Research Fellow Award (USD prestigious undergraduate award)*

Shay Austin, *University of Michigan*, May 2016- August 2016. Examining impacts of pesticides on Cricket Frogs along the Missouri River. *NSF REU student from Sustainable Rivers program.*

Kalie Leonard, *University of South Dakota*, October 2014-

Alicia Shieffer, *University of South Dakota*, January 2010 – May 2011. *Honors thesis*: Comparison of fast qPCR techniques with traditional methods in chytrid fungus quantification.

Marie Chase, *University of South Dakota*, November 2008 – May 2010. Impacts of the anti-microbial compound triclosan on amphibian skin microbiota.

Kevin Haier, *University of South Dakota*, November 2008 – June 2010. *Honors thesis*: Dragonfly.

Felicia Barnes, *University of South Dakota*, November 2008 – July 2009. Impacts of glyphosate on amphibian bacterial biota.