

## LUCAS J. KIRSCHMAN

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Southeast Missouri State University

### EDUCATION

2012 – 2017 Ph.D. in Zoology, Zoology Department, Southern Illinois University Carbondale  
2009 – 2010 M.S. in Biology, Biology Department, Clarion University of Pennsylvania  
2002 – 2005 B.S. in Recreation Mgmt., Recreation Dept., Lock Haven University of Pennsylvania

### PROFESSIONAL EXPERIENCE

2020 – Present	Instructor	Southeast Missouri State University
2019 – 2020	Instructor	Murray State University
2019	Adjunct Professor	Murray State University
2017 – 2019	Postdoctoral Researcher	University of Alaska Anchorage
2017	Lecturer of Distinction	Southern Illinois University Carbondale
2012 – 2016	Graduate Teaching Assistant	Southern Illinois University Carbondale
2011	Education Consultant	Education Management Consultants
2010	Graduate Research Assistant	Clarion University of Pennsylvania
2009 – 2010	Graduate Teaching Assistant	Clarion University of Pennsylvania

### PUBLICATIONS

- L. J. Kirschman**, L Dewey, and A. Gregory (in review). Immune function does not trade-off with reproductive effort in a semelparous wolf spider with parental care. *Physiological Entomology*
- L. J. Kirschman**, A. Khadjinova, K. Ireland, and K. C. Milligan Myhre (2020). Early life disruption of the microbiota affects organ development and cytokine gene expression in threespine stickleback. *Integrative and Comparative Biology*
- L. J. Kirschman**, D. Morales, E. Crawford, A. Zera, and R. W. Warne (2019). Sex and life history shape the strength of cellular and humoral immune responses in a wing dimorphic cricket. *Journal of Insect Physiology*
- R. W. Warne, **L. J. Kirschman**, and L. Zeglin (2019). Manipulated gut microbiomes during critical windows affect host development, physiology, and disease susceptibility in amphibians. *Journal of Animal Ecology* 88

- L. J. Kirschman** and K. C. Milligan-Myhre (2019). The costs of living together: Immune responses to the microbiota and chronic gut inflammation. *Applied and Environmental Microbiology*. 85(10)
- L. J. Kirschman**, E. J. Crespi, and R. W. Warne (2018). Critical disease windows shaped by stress exposure alter allocation trade-offs between development and immunity. *Journal of Animal Ecology*. 87(1)
- L. J. Kirschman**, J. G. Palis, K. A. Fritz, K. Althoff, and R. W. Warne (2017). Two ranavirus-associated mass-mortality events among larval amphibians in Illinois, USA. *Herpetological Review*. 48(4)
- K. A. Fritz, **L. J. Kirschman**, S. D. McCay, J. T. Trushenski, R. W. Warne, and M. R. Whiles (2017). Subsidies of Essential Nutrients from Aquatic Environments Increase Immune Function in Terrestrial Consumers. *Freshwater Science*. 36(4)
- L. J. Kirschman**, M. D. McCue, J. G. Boyles, and R. W. Warne (2017). Exogenous stress hormones alter energetic and nutrient costs of development and metamorphosis *Journal of Experimental Biology*. 220(18)
- R. W. Warne, **L. J. Kirschman** and L. Zeglin (2017). Manipulating gut microbiota in amphibian larvae as an approach to explore host-symbiont interactions and influence disease dynamics. *Integrative and Comparative Biology*. icx100
- L. J. Kirschman**, A. Quade, A. J. Zera, and R. W. Warne. (2017). Immune function trade-offs in response to parasite threats. *Journal of Insect Physiology*, 98
- A. Araujo, **L. J. Kirschman**, and R. W. Warne. (2016). Behavioral phenotypes predict disease susceptibility and infectiousness. *Biology Letters*, 12(8)
- L. J. Kirschman**, S. Haslett, K. A. Fritz, M. R. Whiles, and R. W. Warne. (2016). Influence of physiological stress on nutrient stoichiometry in larval amphibians. *Physiological and Biochemical Zoology*, 89(4)
- B. Neils, C.S. Carey, A. Araujo, D. Burkhart, **L. J. Kirschman**, B. LaBumbard, S. LaGrange, J. J. Maine, A. M. Rombense, M. N. Wood, and J. G. Boyles. (2015). Writing your way into high impact factor journals. *Bulletin of the Ecological Society of America*, 96(2)
- M. L. McDonald, **L. J. Kirschman**, and K. J. Regester. (2011). *Plethodon cinereus*: erythristic morph. *Herpetological Review*, 42(3)

#### PRESENTATIONS

- L.J. Kirschman** (2020). The currency of life: Physiological trade-offs between growth, development, and immune function. *University of Southern Mississippi*, Hattiesburg, MS [talk]
- L.J. Kirschman** (2020). The currency of life: Physiological trade-offs between growth, development, and immune function. *Southwest University of Oklahoma*, Weatherford, OK [talk]

- L.J. Kirschman** and K. Milligan-Myhre (2019). The effects of the microbiota and host genetic background in defense against pathogens. *Society of Integrative and Comparative Biology*, Tampa, FL [talk]
- L.J. Kirschman** (2018). The costs of growing up: Life history trade-offs between growth, development, and immune function. *Murray State University Biology Seminar Series*, Murray, KY [talk]
- L.J. Kirschman**, R.W. Warne, E. Crespi, and K. Milligan-Myhre (2018). Manipulated gut microbiomes during critical windows affect host development, physiology, and disease susceptibility in amphibians. *Eleventh Annual University of Alaska Biomedical Research Conference*, Anchorage, AK [talk]
- K. Ireland, E. Lescak, **L. J. Kirschman**, and K. Milligan-Myhre (2017). Interactions between microbiota and the immune response in threespine stickleback. *NIH IDEA Western Regional Conference*, Jackson WY [poster]
- L. J. Kirschman** (2017). The effects of neuroendocrine stress on larval development. *UAA Biology Seminar Series*, Anchorage, AK [talk]
- L. J. Kirschman**, E. Crespi, and R. W. Warne (2017). Duration of stress exposure shapes allocation trade-offs to development and immunity. *SIU Graduate Student Creative Activities and Research Forum*, Carbondale, IL [talk, runner-up best biology and chemistry presentation]
- L. J. Kirschman**, A. Quade, A. J. Zera, and R. W. Warne (2017). Immune function trade-offs in response to parasite threats. *Society of Integrative and Comparative Biology*, New Orleans, LA [talk]
- R. W. Warne, **L. J. Kirschman**, and L. Zeglin (2017). Microbiome engineering effects developmental plasticity, physiological performance, and disease resistance in larval amphibians. *Society of Integrative and Comparative Biology*, New Orleans, LA [talk]
- L. J. Kirschman**, A. Quade, A. J. Zera, and R. W. Warne (2016). Immune function trade-offs in response to parasite threats. *Third Annual SIU Student Research Symposium*, Carbondale, IL [talk, best graduate presentation]
- L. J. Kirschman** and R. W. Warne (2016) Critical windows of development: The consequences of physiological stress and phenotypic plasticity in larval amphibians. *Joint Meeting of Ichthyologists and Herpetologists*, New Orleans, LA [talk]
- K. A. Fritz, **L. J. Kirschman**, and M. R. Whiles (2016). Influence of amphibians on energy and nutrient fluxes across aquatic-terrestrial boundaries of temporary ponds. *Joint Meeting of Ichthyologists and Herpetologists*, New Orleans, LA [talk]
- K. A. Fritz, **L. J. Kirschman**, and M. R. Whiles (2016). Nutrient flows and subsidies across aquatic-terrestrial boundaries of temporary ponds via amphibian migrations. *Society for Freshwater Science Meeting*, Sacramento, CA [talk]
- L. J. Kirschman**, A. Quade, and R. W. Warne (2016). Immune function trade-offs in a wing polymorphic cricket. *SIU Graduate Student Creative Activities and Research Forum*, Carbondale, IL [talk, runner-up best biology presentation]

- L. J. Kirschman**, A. Quade, and R. W. Warne (2016). Immune function trade-offs in a wing polymorphic cricket. *SIU Darwin Week Student Symposium*, Carbondale, IL [talk]
- L. J. Kirschman**, M. McCue, and R. W. Warne. (2016). The effects of stress and Ranavirus on energetics and macronutrient usage during amphibian metamorphosis. *Society of Integrative and Comparative Biology*, Portland, OR [talk]
- L. J. Kirschman**, M. McCue, and R. W. Warne. (2015). The effects of stress and Ranavirus on energetics and macronutrient usage during amphibian metamorphosis. *Second Annual SIU Student Research Symposium*, Carbondale, IL [talk; best graduate presentation]
- L. J. Kirschman**, M. McCue, and R. W. Warne. (2015). The effects of stress and ranavirus on energetics and macronutrient usage during amphibian metamorphosis. *Society for the Study of Amphibians and Reptiles*, Lawrence, KS [talk]
- L. J. Kirschman**, R. W. Warne, E. J. Crespi, and J. L. Brunner. (2015). Stress effects on immune function and disease emergence in amphibians. *SIU Darwin Week Student Symposium*, Carbondale, IL [talk].
- L. J. Kirschman**, K. A. Fritz, R. W. Warne, and M. R. Whiles. (2014). Physiological stress in larval amphibians affects nutrient stoichiometry and cycling in ecosystems. *Society for Freshwater Science*, Portland, OR [talk]
- L. J. Kirschman**, K. A. Fritz, R. W. Warne, and M. R. Whiles. (2014). Physiological stress in larval amphibians affects nutrient stoichiometry and cycling in ecosystems. *Society of Integrative and Comparative Biology*, Austin, TX [talk]
- L. J. Kirschman**, R. W. Warne, E. J. Crespi, and J. L. Brunner. (2013). Stress effects on immune function and disease emergence in amphibians. *Society of Integrative and Comparative Biology*, San Francisco, CA [talk]
- L. J. Kirschman**, K. J. Regester, and E. J. Chapman. (2011). Emergence of a fungal pathogen among hellbender (*Cryptobranchus a. alleganiensis*) populations. *Joint Meeting of Ichthyologists and Herpetologists*, Indianapolis, IN [poster]
- L. J. Kirschman**, K. J. Regester, and E. J. Chapman. (2011). Emergence of a fungal pathogen among hellbender (*Cryptobranchus a. alleganiensis*) populations. *Eighty-seventh Annual Meeting of the PA Academy of Sciences*, Altoona, PA [poster]

TEACHING EXPERIENCE

2021	Cell and Organismal Biology (BI 173)	SEMO
2021	Cell and Organismal Biology Lab (BI 073)	SEMO
2021	Career Development in Biology (BI 389)	SEMO
2020, 2021	Human Biology (BS 103)	SEMO

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2020	Marine Ecology (BI 434/634)	SEMO
2020	Biology of the Living (BS 108)	SEMO
2020	Zoology Lab (ZO 010)	SEMO
2020	Genetics Lab (BI 083)	SEMO
2020	Ecology (BIO 330)	MSU
2020	Human Anatomy (BIO 228)	MSU
2019, 2020	Herpetology (BIO 572)	MSU
2019, 2020	Biological Inquiry and Analysis (BIO 216)	MSU
2019	Conservation Biology (BIO 578)	MSU
2019	Biological Concepts (BIO 101)	MSU
2019	Human Physiology (BIO 229)	MSU
2017	Conservation of Natural Resources (ZOO 312)	SIU

### TEACHING ASSISTANT EXPERIENCE

2016	Principles of Animal Biology (ZOO 118)	SIU
2016	Developmental Biology (BIOL 409)	SIU
2014, 2016	Comparative Animal Physiology (ZOO 433)	SIU
2012, 2013, 2015, 2016	Herpetology (ZOO 408)	SIU
2012, 2014, 2015	General Biology (ZOO 115)	SIU
2010	Principles of Ecology (BIOL 202)	CUP
2010	Principles of Biology II (BIOL 156)	CUP
2009	Principles of Biology I (BIOL 155)	CUP
2009	Human Anatomy and Physiology (BIOL 251)	CUP

### GRANTS AND FELLOWSHIPS

2020	SEMO Grants and Research Funding Committee – The effects of climate on reproductive strategy; <b>awarded</b> \$3,313
2018	National Institute of Health; Ruth L. Kirschstein Postdoctoral Individual National Research Service Award – The Roles of Stress and Microbiota Disruption in Inflammatory Bowel Diseases; not awarded
2017	National Institute of Health; Centers of Biomedical Research Excellence – The microbiota and metabolic flexibility; not awarded

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- 2017 Life Sciences Research Foundation – The effects of neuroendocrine stress, genetic background, and microbiota on chronic gut inflammation; not awarded
- 2016 Life Sciences Research Foundation – The effects of life history and nutrition on immune function; not awarded
- 2015 Instrumentl.com – Critical windows of development and amphibian ranaviruses; **awarded** \$600
- 2014 Illinois Water Resource Council - The effects of climate change and pollution on disease emergence in aquatic ecosystems; not awarded
- 2014 SIU Graduate and Professional Student Council – Amphibian ranaviruses and nutrient stoichiometry; **awarded** \$250

### AWARDS

- 2018 Richard R. Kudo Memorial Award in Zoology; **awarded** \$750
- 2017 SIU Zoology Graduate Summer Scholarship; **awarded** \$3,100
- 2017 Runner-up for Best Biology and Chemistry Presentation; SIU Graduate Student Creative Activities and Research Forum
- 2017 Best Graduate Student Presentation; SIU Student Research Symposium
- 2017 SIU Zoology Graduate Student Association Travel Award - Immune function trade-offs in response to parasite threats; **awarded** \$150
- 2016 Runner-up for Best Biology Presentation; SIU Graduate Student Creative Activities and Research Forum
- 2016 Best Graduate Student Presentation; SIU Student Research Symposium; **awarded** \$500

### POSTGRADUATE MENTORING

- 2018 Anastasia Khadjinova Contribution of Host Genes to Microbiota and Pathogen Susceptibility [medical school independent investigation; *Integrative and Comparative Biology*]
- 2018 Kelly Ireland The effects of environmental contaminants on microbiota [graduate research plan]
- 2018 Kenneth Sparks The effects of the microbiota on host behavior [graduate research plan]

### UNDERGRADUATE MENTORING

- 2020 Lindsey Dewey  
Andre Gregory  
Reem Turkmani Immune function does not trade-off with reproductive effort in a semelparous wolf spider with parental care [in review; *Physiological Entomology*]

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Fleurcey Auguste  
Tiara Garbuzinski

2017	Camille Alvino	Performance curves for juvenile dimorphic insects [senior project]
2017	Katy Banning	Atrazine and heat exposure interact to alter critical disease windows [senior project]
2017	Ryan Domalewski	Poly-unsaturated fatty acids and immune function
2017	Emily Crawford Daniel Morales	Sex and life history shape the strength of cellular and humoral immune responses in a wing-dimorphic cricket [senior projects; <i>Journal of Insect Physiology</i> ]
2016	Kyle Althoff	Multiple ranavirus induced mass-mortality events among larval Amphibians in Illinois [senior project, <i>Herpetological Review</i> ]
2015	Brian Yost	Prevalence of ranavirus in Southern Illinois [senior project]
2015	Breann Geraldts	Fire retardant effects on survival and development [senior project]
2015	Lindsay Hsieh	Toxic subsidies: the cost on immune function [senior project]
2015	Adam Quade	Immune function trade-offs in response to parasite threats [senior project; <i>Journal of Insect Physiology</i> ]
2015	Savhannah Haslett	Influence of physiological stress on nutrient stoichiometry in larval amphibians [ <i>Physiological and Biochemical Zoology</i> ]
2014	Sandra Ehrnt	Temperature, sublethal toxicity, and performance [senior project]
2012	Michael Fiala	Sublethal copper toxicity and ranavirus susceptibility [senior project]

### PROFESSIONAL SERVICE AND OUTREACH

2019	ZoFest	Murray State University
2018, 2019	STEM Day	Murray State University
2018	Kids2College	Alaska Commission on Postsecondary Education
2018	Science night	Lake Hood Elementary
2017, 2018	Guest lectures	Alaska Native Science and Engineering Program
2017	STEM Day	University of Alaska Anchorage
2017	Darwin week	Southern Illinois University Carbondale
2014 – 2017	Special exhibit: Amphibians	Shedd Aquarium
2014 – 2016	Cache River Nature Fest	Friends of the Cache River
2015	Scouting for Wildlife	Girl Scouts of America
2012	The Egyptian Experience	Southern Illinois University Carbondale

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PROFESSIONAL MEMBERSHIPS

Society for Integrative and Comparative Biology

American Arachnological Society

Global Ranavirus Consortium

MANUSCRIPT REVIEWS

Physiological and Biochemical Zoology

PLoS ONE

Freshwater Science

Herpetological Review

Evolutionary Ecology

PeerJ

Integrative and Comparative Biology

Scientific Reports

Functional Ecology

Journal of African Herpetology

Journal of Wildlife Diseases