EMILY M. HALL

Postdoctoral Research Fellow
Vanderbilt University Medical Center
Department of Pathology, Microbiology, & Immunology
A5116 Medical Center North, Nashville, TN 37212
(248) 302-9216
emily.m.hall@vanderbilt.edu
hub.wsu.edu/EmilyHall

EDUCATION

PhD. Zoology, School of Biological Sciences 2011-2016
Washington State University, Pullman, WA

Dissertation title: Crossroads of stress and disease: the influence of road run-off on amphibian disease susceptibility

B.S. Environmental Biology/Zoology 2006-2010
Michigan State University, East Lansing, MI

PUBLICATIONS

Crespi, E.J., Rissler, L.J., Mattheus, N.M., Engbrecht, K., Duncan, S.I., Seaborn, T., **Hall, E.M.,** Peterson, J.D. and Brunner, J.L., 2015. Geophysiology of Wood Frogs: Landscape Patterns of Prevalence of Disease and Circulating Hormone Concentrations across the Eastern Range. *Integrative and Comparative Biology*, 55(4), pp.602-617. (doi: 10.1093/icb/icv096)

Hall, E. M., Crespi, E. J., Goldberg, C. S., & Brunner, J. L. 2016. Evaluating environmental DNA-based quantification of ranavirus infection in wood frog populations. *Molecular Ecology Resources*, 16(2), 423-433. (doi:10.1111/1755-0998.12461)

Hall, E.M., Brady, S.P., Mattheus, N.M., Earley, R.L., Diamond, M., and Crespi, E.J. 2017. Physiological consequences of exposure to salinized roadside ponds on wood frog larvae and adults. *Biological Conservation*. 209, 98–106. (doi: 10.1016/j.biocon.2017.02.013)

In preparation:

Hall, E.M., Hutzenbiler, B., Brunner, J.L., and Crespi, E.J. *Crossroads of stress and disease: Proximity to roads increases disease susceptibility in amphibian populations*. Target: PNAS

Hall, E.M., Goldberg, C., Brunner, J., and Crespi, E.J., *Seasonal dynamics and potential drivers of ranavirus epidemics in wood frog populations*. Target: Molecular Ecology

Duncan, S., **Hall, E.M.**, Crespi, E.J., Edge, C., and Rissler, L., *Geographic and ecological patterns of development and survival across a species' range: a common garden and reciprocal transplant approach*. Target: Journal of Biogeography

Hall, E.M., Unkefer, M., Duncan, S., Rissler, L., and Crespi, E.J., *Geographic variation in foraging behavior and physiology of the wood frog, Lithobates sylvatica*. Target:

Proceedings of the Royal Society B

PROFESSIONAL EXPERIENCE

Postdoctoral Research Fellow 2017-Present
Rollins-Smith Lab at Vanderbilt University
Project: *DoD SERDP: Effects of climate on host-pathogen interactions in chytridiomycosis*

- Determine impact of climate on immune defenses and fungal virulence
- Identify ecological drivers of disease dynamics in amphibian communities

School of Biological Sciences research assistantship 2016-2017
Crespi lab at Washington State University, Pullman WA
Project: *The effects of road salt on amphibian disease dynamics in the Northeastern US*

- Characterized effects of road salt stress on ranavirus susceptibility and transmission

EPA STAR graduate research fellowship 2014-2016
Crespi lab at Washington State University, Pullman WA
Project: *The effects of road salt on amphibian disease dynamics in the Northeastern US*

- Examined the effects of road salt runoff on disease susceptibility with a combination of field and laboratory experiments

Research Assistantship Spring 2014
Crespi lab at Washington State University, Pullman WA
Project: *Investigating roles of leptin in the integrated immune response of amphibians*

- Conducted lab experiments on the influence of leptin in the immunological recovery of antimicrobial peptides

Research Assistantship Spring & Summer 2012
Crespi lab at Washington State University, Pullman WA
Project: *Landscape-level stress assessment: Putting neuroendocrinology on the map*

- Collaborated with Dr. Leslie Rissler and graduate students at University of Alabama
- Analyzed hormone and growth rate differences across populations in a common garden

Research Assistantship Summer 2011
Crespi lab at Washington State University, Pullman WA
Project: *Physiological and transgenerational effects of the roadside environment*

- Collaborated with Dr. Dave Skelly at Yale University and Dr. Steve Brady
- Completed a reciprocal transplant field experiment of tadpoles in pond enclosures

Internship Summer 2010
Cedar Creek Ecosystem Science Reserve, University of Minnesota, MN
Project: *Wildlife conservation and biofuel production on restored prairies*

- Collected sweep net and pitfall samples of insect diversity in tall grass prairies
- Surveyed herpetological and small mammal diversity

Research Assistantship 2008 – 2010
Schemske Lab at Michigan State University, East Lansing MI
Project: *Adaptations and speciation of plants, genera* Mimulus *and* Leptosiphon

- Responsible for recovery and purification of DNA fragments for sequencing

- Constructed ecological niche models in ArcGIS of closely related species

Research Assistantship Summer 2009
Landis Entomology Lab at Michigan State University, East Lansing MI
Project: *Biological control using flowering strips in agricultural landscapes*
- Collected data from insect traps and took sweep net samples across Michigan
- Conducted land use surveys and digitized data using ArcGIS

Study Abroad Summer 2008
La Suerte Biological Station, Costa Rica
Project: *Effects of cattle ranching on rainforest stream ecology*
- Completed a study of aquatic biodiversity in disturbed and old growth rain forest

GRANTS, FELLOWSHIPS, AWARDS

Graduate and Professional Student Association Travel Award ($592) Dec 2016

Golding Award, College of Arts and Sciences, WSU ($3000) May 2016

Graduate and Professional Student Association
Excellence Award for Best Research Assistant Apr 2016

Graduate and Professional Student Association Travel Award ($1373) Sept 2015

Travel Award, Global Ranavirus Consortium ($250) June 2015

Sigma Xi Grants-in-aid of Research ($990) Apr 2015

EPA STAR Graduate Research Fellowship ($84,000) Sept 2014

Travel Award, NSF-RCN Refining and diversifying ecoimmunology ($500) Mar 2014

McNeil Award, School of Biological Sciences, WSU ($2,500) Apr 2014

Travel Award, Global Ranavirus Consortium ($500) May 2013

Natural Resource Conservation Endowment Grant, WSU ($1,200) July 2013

Elling Foundation Awards, School of Biological Sciences, WSU ($9,000) Apr 2012-2014

Michigan State University Dean's list 2007-2010

SCIENTIFIC PRESENTATIONS

Oral Presentations:

Hall, E.M., Hutzenbiler, B., Brunner, J.L., Crespi, E.J., "Salt, stress and susceptibility: the influence of road runoff on ranavirus-related die-offs in larval wood frogs" IRCEB Amphibian Disease Meeting, Tempe AZ, Nov 2016.

Hall, E.M., Hutzenbiler, B., Brunner, J.L., Crespi, E.J., "On the road to disease: testing the stress-induced susceptibility hypothesis in amphibian populations adjacent to roads" Online Global Ranavirus Consortium Course, Apr 2016

Brunner, J.L., E.J. Crespi, **E. Hall**. "The epidemiology of Ranavirus in wood frogs in the

Northeast: lessons for the Northwest?" Joint Partner Wildlife Conference, Coeur d'Alene, ID. Feb 2016

Brunner, J.L., E.J. Crespi, **E. Hall**. "Heterogeneities in ranavirus transmission." Amphibian Disease Conference, Tempe, AZ. Nov. 2015

Hall, E.M., Hutzenbiler, B., Brunner, J.L., Crespi, E.J., "Hypersaline roadside conditions influence larval amphibian susceptibility to ranavirus infection" Ecological Society of America, Baltimore, MD. Aug 2015

Hall, E.M., Hutzenbiler, B., Brunner, J.L., Crespi, E.J., "On the road to disease: susceptibility to ranavirus infection of wood frog populations near roads" 3rd International Symposium on Ranaviruses, Gainesville, FL. May 2015

Brunner, J.L. C. Goldberg, E.J. Crespi, and **E. Hall.** "The positives and negatives of ranavirus detection with eDNA." 3rd International Symposium on Ranaviruses, Gainesville, FL. May 2015

Hall, E.M., Hutzenbiler, B., Brunner, J.L., Crespi, E.J., "On the road to disease: susceptibility to infection in wood frog populations living near roads" EARThs Conference, Washington State University, Pullman WA. Apr. 2015

Hall, E.M., Hutzenbiler, B., Brunner, J.L., Crespi, E.J., "A salted frog: does the hypersaline roadside environment affect disease susceptibility?" School of Biological Sciences Spring Symposium, Washington State University, Pullman, WA. Feb. 2015

Hall, E.M., Goldberg, C.G., Brady, S.P., Hutzenbiler, B., Brunner, J.L., Crespi, E.J. "Amphibian conservation: At the crossroads of physiology and disease ecology" EcoLunch, Washington State University, Pullman WA. Oct 2014

Goldberg, C.G., Brunner, J., **Hall, E.M.,** Strickler, K., Fremier, A., Crespi, E.J, "Simulatneous detection of amphibian pathogens and their vertebrate hosts in aquatic systems" Society for Conservation Biology Meeting, Missoula, MT. July 2014

Hall, E.M., Hutzenbiler, B., Brunner, J.L., Crespi, E.J., "Amphibian conservation: crossroads of stress and infection" Summer Seminar Series at Yale-Myers, Ashford, CT. June 2014

Hall, E.M., Crespi, E.J., Mattheus, N., Duncan, S., Rissler. L.J., "Intraspecific patterns of physiology across a species range: biogeography of stress" School of Biological Sciences Spring Symposium, Washington State University, Pullman WA. Feb. 2013

Hall, E.M., Crespi, E.J., Mattheus, N., Duncan, S., Rissler. L.J., "Intraspecific patterns of physiology across a species' range: stress, reproduction, & disease" International Biogeography Society meeting: Biogeography of Stress Workshop. Miami, FL, Jan. 2013

Hall, E.M., Watt, L., Schemske, D., "*Leptosiphon* Edaphic experiments: the dirty work" Michigan State University, East Lansing, MI. Apr. 2009

Hall, E.M., Heuttman *F.,* "Introduction to Stream Ecology at La Suerte Biological Station" La Suerte, Costa Rica, Aug. 2008

Hall, E.M., "Effects of decomposing leaves of three different tree species on soil nutrient levels" Michigan State University, East Lansing, MI. Dec. 2007

Posters:

Hall E.M., Goldberg, C., Crespi, E.J., Brunner, J.L. "Time series of ranavirus epidemiology in wood frog ephemeral ponds" 14th annual Ecology and Evolution of Infectious Disease meeting, Cornell University, Ithaca, NY. June 2016

Hall, E.M., Goldberg, C.G., Brady, S.P., Hutzenbiler, B., Brunner, J.L., Crespi, E.J., "Mapping the susceptibility landscape: the crossroads of physiology and disease dynamics" The Society for Integrative and Comparative Biology, West Palm Beach, FL. January 2015

Hall, E.M., Hutzenbiler, B., Brunner, J.L., Crespi, E.J., "Mapping the susceptibility landscape: ubiquitous pathogen, heterogeneous environment" Research coordination network in Ecoimmunology meeting, Woods Hole, MA. May 2014

Hall, E.M., Hutzenbiler, B., Brunner, J.L., Crespi, E.J., "Susceptibility across the landscape: integrating epidemiology and host physiology" Second International Symposium on Ranaviruses. Knoxville, TN. July 2013

Hall, E.M., Brunner, J.L., Crespi, E.J., "Proposal: Climate change effects on amphibian stress responsiveness and implications for susceptibility to disease in Glacier National Park, MT" School of Biological Sciences Spring Symposium, Washington State University, Pullman WA. Feb. 2012

TEACHING EXPERIENCE

School of Biological Sciences, Washington State University, Pullman WA

Teaching Assistant: *Principles of Animal Development*	Fall 2011
Teaching Assistant: *Principles of Animal Development*	Fall 2012
Teaching Assistant: *General Biology*	Spring 2013
Teaching Assistant: *Principles of Animal Development*	Fall 2013

STUDENT MENTORING

School of Biological Sciences, Washington State University, Pullman WA
Independent projects:

Molly Diamond, Summer Undergraduate Research Award, WSU ($3000) 2014

Project: "Changes in wood frog larvae feeding behavior in response to exposure to road salt"

Brandon Hutzenbiler, Summer Undergraduate Research Award, WSU ($3000) 2013

Project: "Juvenile wood frog reproductive tissue morphology in roadside populations"

Collaborative projects:

Vitoria Fernandez (2015), Jennifer Wroe (2013), Karl Westby and Haley Anderson (2012)

PROFESSIONAL SERVICE/OUTREACH

Public Talk at Yale Summer Science series June 26th, 2014

Ashford Middle School 7th grade Field Trip, Eastford, CT	May 1st, 2014
BGSA Outdoor Fun Day, Pullman WA	Three one-day events 2013-2016
Volunteer at Capitol Area Humane Society, Lansing MI	2008- 2010
Volunteer at Wildlife In Need Center, Oconomowoc, WI	Summer 2007
English Second Language Volunteer, Roosevelt Elementary School, MI	2005-2006

COMPUTATIONAL EXPERTISE

R statistical programming – proficient in manipulating datasets, coding functions and simulations, and printing complex graphics

ArcGIS – skilled in Ecological Niche Modeling and spatial analyses.

PROFESSIONAL MEMBERSHIP

Global Consortium of Ranaviruses	Since 2015
Ecological Society of America	Since 2014
Sigma Xi, The scientific Research Society	Since 2014
Society of Integrative and Comparative Biology	Since 2014

REFERENCES

Louise Rollins-Smith, Associate Professor at Vanderbilt University, Nashville TN
Office: A5119 MCN, email: louise.rollins-smith@vanderbilt.edu, phone: (615) 343-4119

Erica Crespi, Assistant Professor at the School of Biological Sciences, Washington State University Office: 385A Eastlick Hall, email: erica.crespi@wsu.edu, phone: (509) 335-3833

Caren Goldberg, Assistant Professor at the School of the Environment, Washington State University: Office: 471 Heald Hall, email: caren.goldberg@wsu.edu, phone: (509) 335-3673