

# CURRICULUM VITAE

Oct. 2012

## Spencer R. Hall

*Associate Professor*

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## EDUCATION

*University of Chicago*, Chicago, IL. **PhD 2003** Department of Ecology and Evolution  
*Cornell University*, Ithaca, NY. **BS 1997** Department of Natural Resources

## PROFESSIONAL EXPERIENCE

**Associate Professor:** Department of Biology, Indiana University, 2011-  
**Assistant Professor:** Department of Biology, Indiana University, 2006-2011  
**Adjunct Faculty:** W.K. Kellogg Biological Station, Michigan State, 2006-  
**Post-doctoral Research Associate:** Department of Animal Biology, University of Illinois at  
Urbana-Champaign, 2003-2005

## PUBLICATIONS: Peer-Reviewed

- In rev.** Civitello, D.J., S. Pearsall, M.A. Duffy, and S.R. Hall. *In review*. Parasite consumption and host interference can inhibit disease spread in dense populations. *Ecology Letters*.
- Bertram, C.R., M. Pinkowski, S.R. Hall, M.A. Duffy, and C.E. Cáceres. *In review* Trait-mediated indirect effects, predators, and disease: test of a size-based model. *Oecologia*.
- Hurtado, P, S.R. Hall, and S.P. Ellner. *In review*. Infectious disease in predator populations: dynamic consequences of prey-mediated transmission and infectiousness. *American Naturalist*.
- Hall, S.R., A.N. Smith, R.M. Penczykowski, M.S. Shocket, D.J. Civitello, M.A. Duffy. *In review*. Predators can fuel epidemics through trophic cascades. *Ecology*.
- 2013** Civitello, D.J., R.M. Penczykowski, J.L. Hite, M.A. Duffy, and S.R. Hall. 2013 Potassium stimulates fungal epidemics in a freshwater invertebrate. *Ecology*, *in press*
- 2012** Civitello, D.J., P. Forys, A.P. Johnson, and S.R. Hall. 2012. Chronic contamination decreases disease spread: a *Daphnia*-fungus-copper case study. *Proc. Roy. Soc. London B.*, *in press*.

- Duffy, M.A., J. Housley Ochs, R.M. Penczykowski, D.J. Civitello, C.A. Klausmeier, and S.R. Hall. 2012. Ecological context influences epidemic size and parasite-mediated selection. *Science* 334:1636-1638.
- Hall, S.R., C.R. Becker, M.A. Duffy, and C.E. Cáceres. 2012. A power-efficiency tradeoff alters epidemiological relationships. *Ecology* 93:645-656.
- Overholt, E.P., S.R. Hall, C.E. Williamson, C.K. Meikle, M.A. Duffy, and C.E. Cáceres. 2011. Solar radiation decreases parasitism in *Daphnia*. *Ecology Letters* 15:47-54.
- Auld, S.K.J.R., S.R. Hall, and M.A. Duffy. 2012. Epidemiology of a *Daphnia*-multiparasite system and its implications for the Red Queen. *PLoS One* 7:e39564
- 2011** Hall, S.R., C.R. Becker, M.A. Duffy, and C.E. Cáceres, C.E. 2011. Epidemic size determines population-level effects of parasites. *Oecologia* 166:833–842.
- Duffy, M.A., J.M. Housley, R.M. Penczykowski, C.E. Cáceres, S.R. Hall. 2011. Unhealthy herds: trait-mediated indirect effects of predators increase susceptibility of hosts to disease. *Functional Ecology* 25: 945–953.
- Prior, N.H., C.N. Washington, J.M. Housley, S.R. Hall, M.A. Duffy, and C.E. Cáceres. 2011. Maternal effects and epidemiological traits in a planktonic host-parasite system. *Evolutionary Ecology Research* 13:401-413.
- 2010** Hall, S.R., R. Smyth, C.R. Becker, M.A. Duffy, C.J. Knight, S. MacIntyre, A.J. Tessier, C.E. Cáceres. 2010. Why are *Daphnia* in some lakes sicker? Disease ecology, habitat structure, and the plankton. *BioScience* 60:363-375.
- Duffy, M.A., C.E. Cáceres, S.R. Hall, A.J. Tessier, A.R. Ives. 2010. Multi-scale and multi-species patterns of parasitism in lake zooplankton. *Ecology* 91:3322–3331.
- Hall, S.R., C.R. Becker, M.A. Duffy, and C.E. Cáceres. 2010. Genetic variation in resource acquisition and use among hosts creates key epidemiological tradeoffs. *American Naturalist* 176:557-565.
- 2009** Hall, S.R., C.R. Becker, J.L. Simonis, M.A. Duffy, A.J. Tessier, and C.E. Cáceres. 2009. Friendly competition: evidence for a dilution effect among competitors in a planktonic host-parasite system. *Ecology* 90:791-801.
- Duffy, M.A., S.R. Hall, C.E. Cáceres, and A.R. Ives. 2009. Rapid evolution, seasonality, and the termination of epidemics. *Ecology* 90:1441-1148.
- Hall, S.R., C.M. Knight, C.R. Becker, M.A. Duffy, A.J. Tessier, and C.E. Cáceres. 2009. Quality matters: food quality and the course of epidemics in a planktonic host-parasite system. *Ecology Letters* 12:118-128.

- Hall, S.R. 2009. Stoichiometrically-explicit food webs: feedback between stoichiometric constraints and species interactions. *Annual Review of Ecology, Evolution, and Systematics* 40:503-528.
- Cáceres, C.E., C.J. Knight, and S.R. Hall. 2009. Predator spreaders: predation can enhance parasite success in a planktonic host-parasite system. *Ecology* 90:2850-2858.
- Hall, S.R., J.L. Simonis, R.M. Nisbet, A.J. Tessier, and C.E. Cáceres. 2009. Resource ecology of virulence in a planktonic host-parasite system: an explanation using dynamic energy budgets. *American Naturalist* 174:149-162.
- 2008** Duffy, M.A., and S.R. Hall. 2008. Selective predation and rapid evolution can jointly dampen effects of virulent parasites on *Daphnia* populations. *American Naturalist* 171:499-510. (*Winner of 2010 ESA Mercer Award*).
- Darcy-Hall, T.L., and S.R. Hall. 2008. Linking limitation to shifts in species composition: importance of inter- and intra-specific variation in grazing resistance. *Oecologia* 155: 797-808.
- Duffy, M.A., C.E. Brassil, C.A. Klausmeier, S.R. Hall, A.J. Tessier, C.E. Cáceres, and J.K. Conner. 2008. Parasite-mediated disruptive selection in a natural *Daphnia* population. *BMC Evolutionary Biology* 8:80.
- Hall, S.R., K.D. Lafferty, J.H. Brown, C.E. Cáceres, J.M. Chase, A.P. Dobson, R.D. Holt, C.G. Jones, S.E. Randolph, and P. Rohani. 2008. Is infectious disease just another type of consumer-resource interaction? Pp. 223-241. In R.S. Ostfeld, F. Keesing, and V.T. Eviner (eds). *Reciprocal interactions between ecosystems and disease*. Princeton University Press.
- 2007** Hall, S.R., M.A. Leibold, D.A. Lytle, and V.H. Smith. 2007. Grazing and the light:nutrient hypothesis: revisiting bottom-up and top-down effects on producer stoichiometry. *Ecology* 88:1142–1152
- Hall, S.R., L. Sivals-Becker, C. Becker, M.A. Duffy, A.J. Tessier, and C.E. Cáceres. 2007. Eating yourself sick: transmission of disease as a function of feeding biology of hosts. *Ecology Letters* 10:207–218.
- Hall, S.R., J.B. Shurin, S. Diehl, and R.M. Nisbet. 2007. Food quality and the strength of trophic cascades. *Oikos* 116:1128-1143.
- Hall, S.R., C. Becker, and C. E. Cáceres. 2007. Parasitic castration: a perspective from a model of dynamic energy budgets. *Integrative and Comparative Biology* 47: 295-309.
- 2006** Hall, S.R., A.J. Tessier, M.A. Duffy, M. Huebner, and C.E. Cáceres. 2006. Warmer does not have to mean sicker: temperature and predators can jointly drive timing of epidemics. *Ecology* 87:1684-1695.

- Cáceres, C.E., S.R. Hall, M.A. Duffy, A.J. Tessier, and S. MacIntyre. 2006. Physical structure of lakes constrains epidemics in *Daphnia* populations. *Ecology* 87:1438-1444.
- Hall, S.R., M.A. Leibold, D.A. Lytle, and V.H. Smith. 2006. Inedible producers in food webs: controls on stoichiometric food quality and composition of grazers. *American Naturalist* 167:628-637.
- 2005** Leibold, M.A., S.R. Hall, and O. Bjørnstad. 2005. Food web architecture and its effects on consumer resource oscillations in experimental pond ecosystems. *Pp.* 37-47 in J. Moore and P. deRuyster and V. Wolters (eds). *Dynamic food webs: multispecies assemblages, ecosystem development, and environmental change*. Academic Press.
- Hall, S.R., V.H. Smith, D.A. Lytle, and M.A. Leibold. 2005. Constraints on primary producer N:P stoichiometry along N:P supply ratio gradients. *Ecology* 86:1894-1904.
- Hall, S.R., M.A. Duffy, A.J. Tessier, and C.E. Cáceres. 2005. Spatial heterogeneity of daphniid parasitism within lakes. *Oecologia* 143:635-644.
- Hall, S.R., M.A. Duffy, and C.E. Cáceres. 2005. Selective predation and productivity jointly drive complex behavior in host-parasite systems. *American Naturalist* 180:70-81.
- Duffy, M.A., S.R. Hall, A.J. Tessier, and M. Huebner. 2005. Selective predators and their parasitized prey: top-down control of epidemics. *Limnology and Oceanography* 50:412-420.
- 2004** Hall, S.R. 2004. Stoichiometrically-explicit competition between grazers: species replacement, coexistence, and priority effects along resource supply gradients. *American Naturalist* 164:157-172.
- Hall, S.R., M.A. Leibold, D.A. Lytle, and V.H. Smith. 2004. Stoichiometry and planktonic grazer composition over gradients of light, nutrients, and predation risk. *Ecology* 85:2291-2301.
- 1999-2003** Hall, S.R., N.K. Pauliukonis, E.L. Mills, L.G. Rudstam, C.P. Schneider, S.J. Lary, and F. Arrhenius. 2003. A comparison of lower trophic level variables in embayment, nearshore and offshore habitats of Lake Ontario. *Journal of Great Lakes Res.* 29:54-69.
- Hall, S.R., and E.L. Mills. 2000. Exotic species in large lakes of the world. *Aquatic Environmental Health and Management* 3:105-135.
- Hall, S.R., and L.G. Rudstam. 1999. Habitat use and recruitment: a comparison of long-term recruitment patterns among fish species in a shallow, eutrophic lake, Oneida Lake, NY, USA. *Hydrobiologia* 408/409:101-113.

**PUBLICATIONS: Other**

- 1999 Mills, E.L., **S.R. Hall**, and N.K. Pauliukonis. 1999. Exotic species in the Laurentian Great Lakes: from science to policy. *Great Lakes Research Review* 3:1-8.
- 1998 Moen, A.N., **S.R. Hall**, and T.N. Moen. 1998. Student authoring, editing, and electronic publishing. *Proceedings of the Second Biennial Conference on University Education in Natural Resources*. pp. 155-163.

## **FUNDING**

### Currently funded:

- 2011- “Collaborative Research: Testing mechanistic connections between sex, foraging and  
2013 parasitism along an ecological gradient” with Carla Cáceres (PI)  
NSF DEB - \$743.1K, \$214K IU portion
- 2009- “Collaborative research: Joint influences of host genetics and community  
2013 context on eco-evolutionary host-parasite dynamics”, with Meg Duffy (PI),  
NSF DEB- \$695K total, \$237K IU portion
- 2010- “Ecological dynamics of facultative bacterial pathogens: cost of virulence, competition,  
2014 and the horizontal transmission of virulence”, with James Bever (PI), Clay Fuqua (co-PI)  
NSF-NIH-EID - \$0.8M
- 2010- “Collaborative research: Exploring the generality of light, nutrient, and predator  
2014 constraints on food chain efficiency” with M. Gonzales (PI) & M. Vanni (co-PI)  
NSF-DEB - \$622K total, \$156K IU portion
- 2010- Dissertation Research: A mechanistic basis for the effects of toxins on epidemic disease  
2012 in *Daphnia*”, PI-David Civitello  
NSF DDIG, \$13K

### Past funding:

- 2006- “Community ecology of disease: control of epidemics by species interactions”  
2010 NSF DEB-0613510, with co-PI Carla Cáceres, \$450K total, \$300K IU portion

### Internal:

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| 2009 | Center for Research in the Environ. Sci. (CRES)      | \$22K |
| 2009 | Office of the Vice-Provost for Research (many co-PI) | \$50K |

## **INVITED SEMINARS**

- 2012 Center for Infectious Disease Dynamics, Penn State University  
Bio-Math Seminar, University of Illinois  
Department of Biology, Franklin and Marshall College
- 2010 Department of Biology, University of Nebraska-Lincoln  
Department of Integrative Biology, University of Texas-Austin
- 2009 Program in Biogeochemistry and Biocomplexity, Cornell University (1/23)  
Curriculum in Ecology, University of North Carolina-Chapel Hill (3/19)  
Department of Biology, Western Michigan University (4/9)

- W.K. Kellogg Biological Station, Michigan State University (4/10)  
 Department of Biology, Wayne State University (11/23)
- 2008 Department of Zoology, Miami University of Ohio  
 Fish Health and Ecosystem Dysfunction Workshop, Great Lakes Fisheries Commission  
 Lake Response to Environmental Change Program, Umea & Uppsala Universities  
 Department of Biology, Ludwig-Maximilians University, Munich, Germany  
 Center for Population Biology, University of California, Davis  
 Cary Institute for Ecosystem Studies  
 SPEA, Indiana University  
 Department of Biology, Tulane University
- 2007 Department of Ecology, Evolution, and Marine Biology, UC Santa Barbara  
 Department of Biology, Washington University  
 Department of Ecology and Evolutionary Biology, Indiana State University
- 2005 Kellogg Biological Station and Dept. of Zoology, Michigan State University
- 2004 Department of Zoology, University of Florida  
 Department of Biology, Indiana University  
 Department of Zoology, University of Guelph
- 2003 Program in Biogeochemistry and Biocomplexity, Cornell University.  
 Kellogg Biological Station, Michigan State University.  
 Department of Ecology and Evolution, University of Chicago.

#### **INVITED PRESENTATIONS**

- 2011 Ecological Society of America, Annual Meeting, Austin, TX (invited)  
 2010 Ecological Society of America, Annual Meeting, Pittsburgh, PA (invited)  
 2007 Society for Integr. & Compar. Biology, Annual Meeting, Phoenix, AZ (invited)

#### **PRESENTATIONS**

- 2012 Ecological Society of America, Annual Meeting, Portland, OR  
 2012 Ecology and Evolution of Infectious Disease Conference, Ann Arbor, MI  
 2009 Ecological Society of America, Annual Meeting, Albuquerque, NM  
 2008 Ecological Society of America, Annual Meeting, Milwaukee, WI  
 2007 Ecological Society of America, Annual Meeting, San Jose, CA  
 2006 Ecological Society of America, Annual Meeting, Memphis, TN  
 2005 Ecological Society of America, Annual Meeting, Montreal, Canada  
 2005 Cary Conference on Ecology of Infectious Disease, Milbrook, NY  
 2004 Ecological Society of America, Annual Meeting, Portland, OR  
 2004 Gordon Research Conference on Metabolism in Ecology. Lewiston, ME  
 2003 Ecological Society of America, Annual Meeting, Savannah, GA  
 2002 Ecological Society of America, Annual Meeting, Tucson, AZ  
 2001 Ecological Society of America, Annual Meeting, Madison, WI  
 2001 American Society of Limnology and Oceanography, Annual Meeting, Albuquerque, NM  
 2000 Ecological Society of America, Annual Meeting, Snowbird, UT, August 2000  
 2000 Intern. Assoc. of Great Lakes Research, Annual Meeting, Quebec City, Montreal, CA

#### **AWARDS**

- 2010 Mercer Award from the Ecological Society of America (best paper by author under 40)

## 2012 Indiana University Trustees Teaching Award

### **SERVICE**

#### Departmental:

EEB Director of Grad Admissions:	2011, 2012
EEB Admissions Committee:	2009, 2010
Tenure Committee, Jay Lennon:	2012
Graduate Recruitment Weekend committees:	2007, 2008 (head)
Faculty search committees: Ecol./Evol. Genetics	2006-2007
Ecosystem Ecol.	2006-2007
EEB-bridging	2011-2012
Departmental/EEB review: COAS travel awards	2006
Minority recruitment: SACNAS conference	2006
Organizer: Disease Ecology and Evolution Discussion (DEED) group	2006-2010
Ecolunch	2007-

#### University:

Panelist, Preparing Future Faculty Symposium	2008, 2012
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#### Professional:

NSF Panels: DDIG (2006), PCE (2010, 2012)	
Declined invitations: DDIG (2007), PCE (2008, 2012); Dimensions (2010)	
Presider: ESA (2006, 2008, 2009)	

Reviews for journals (number): *American Naturalist* (10), *Aquatic Microbial Ecology* (1), *Aquatic Toxicology* (2), *Archiv Für Hydrobiologie* (1), *BioScience* (1), *BMC Ecology* (1), *Ecological Monographs* (2), *Ecology* (9), *Ecology Letters* (11), *Freshwater Biology* (1), *Functional and Applied Limnology* (2), *Functional Ecology* (2), *Journal of Animal Ecology* (2), *Journal of Plankton Research* (2), *Journal of the Royal Society Interface* (2), *Journal of Theoretical Biology* (3), *Limnology and Oceanography* (6), *Microbial Ecology* (1), *Nature Knowledge* (1), *Oecologia* (10), *Oikos* (14), *Proc. Roy. Soc. London B* (6), *Philosophical Transactions of the Royal Society of London* (1), *Theoretical Ecology* (2), *Theoretical Population Biology* (4), *Trends in Ecology and Evolution* (1); edited volumes (3)

Totals: 2006: 11 2007: 13 2008: 16 2009: 14 2010: 16

Ad hoc grant reviewer for: National Science Foundation (13), NSERC (3), Louisiana State University (2), IU-CRES (4), US CRDF (1), European Research Council (1), Netherlands (1)

Associate Editorship invite for *Oikos*, declined 2008

### **COURSES TAUGHT**

Invertebrate Zoology Lecture (Bio Z374),	Undergrad.	Autumns '07-'09, '11
Theoretical Ecology (Bio L577),	Graduate	Spring '07, '09, '11
Seminar in Ecology & Environ. Sci. (Bio L570)	Graduate	Autumn '08

Guest lectures: Limnology (E455) Autumn '08, -'11  
Science Writing (J460) Autumn '10

**PROFESSIONAL SOCIETY MEMBERSHIP**

American Society of Naturalists

Ecological Society of America

**STUDENTS AND POSTDOCS TRAINED**Current and former students and post-docs

			<u>Year</u>
David Civitello	PhD	Indiana University, EEB (advisor)	<b>2007-</b>
Jessica Hite	PhD	Indiana University, EEB (advisor)	<b>2010-</b>
Marta Shocket	PhD	Indiana University, EEB (advisor)	<b>2010-</b>
Alex Strauss	PhD	Indiana University, EEB (advisor)	<b>2011-</b>
Claes Becker	Post- Doc	Indiana University, EEB	2007-08

Committees

Lauren Smith	PhD	Indiana University, EEB	<b>2012-</b>
Mandy Gibson	PhD	Indiana University, EEB	<b>2010-</b>
Jeremy Mack	PhD	Miami of Ohio, Zoology	<b>2010-</b>
Evelyn Rynkiewicz	PhD	Indiana University, EEB	<b>2008-</b>
Daniela Vergara	PhD	Indiana University, EEB	<b>2008-</b>
Daniel Johnson	PhD	Indiana University, EEB	<b>2007-</b>
Collin Hobbs	PhD	Indiana University, EEB	<b>2007-</b>

Kayla King	PhD	Indiana University, EEB	2006-10
Sigrid Smith	PhD	University of Illinois, Animal Biology	2006-10
Kimberley Chen	PhD	Indiana University, EEB	2009-10
Kate Charles	PhD	Indiana University, EEB	2008-10
Britt Koskella	PhD	Indiana University, EEB	2006-08
Ellen Jameson	MS	Indiana University, SPEA	2006-08
Johnny Tenegra	MS	University of Illinois, Animal Biology	2006-07
Eugin Chao	BS	Indiana University, Biology (Honors)	2006

Undergraduate Researchers

Shawn Chung	IFLE	Indiana University, Biology	2012-
Sarah Schopmeyer	L490	Indiana University, Biology	2010-12
Aimee Smith	L490	Indiana University, Biology	2010-11
Susan Pearsall		Indiana University, Biology	2011
Philip Forys	L490	Indiana University, Biology (Honors)	2009-11
Tony Gao	Stars	Indiana University, Biology (and IFLE)	2009-10
Catherine Howland	IFLE	Indiana University, Biology	2008
Laurie Greisinger	REU	Indiana University, Biology	2008-10
Christine Knight	REU	University of Illinois	2007
C. Adam Brown	L490	Indiana University, Biology	2007

Visiting graduate students



Rachel Penczykowski	PhD	Georgia Institute of Technology	2010-
Chris Dibble	PhD	Rice University	2011-

High School Students in Special Programs

Issac Ortiz	Lilly	Participant, Lilly Scholars Program (minority)	2011
Caroline Funkhouser	Lilly	Participant, Lilly Scholars Program (minority)	2011
Areisa Peters	Lilly	Participant, Lilly Scholars Program (minority)	2010
Jaemal Watson	Lilly	Participant, Lilly Scholars Program (minority)	2010
Marcus Coleman	Lilly	Participant, Lilly Scholars Program (minority)	2009
Brittany Daniels	Lilly	Participant, Lilly Scholars Program (minority)	2009