

James S. Adelman

Department of Natural Resource Ecology and Management, Iowa State University
201 Science II, Ames, IA 50011
(515) 294-9682, adelmanj@iastate.edu, www.nrem.iastate.edu/people/james-adelman

APPOINTMENTS:

Iowa State University, Ames, IA 2015-present
Assistant Professor, Department of Natural Resource Ecology and Management

Virginia Tech, Blacksburg, VA 2011-2014
Postdoctoral Associate, Department of Biological Sciences

Smithsonian Institution, Washington, DC 2011-2011
Postdoctoral Fellow, Migratory Bird Center

EDUCATION:

Princeton University, Princeton, NJ 2004-2010
Ph.D. in Ecology and Evolutionary Biology, Advisor: Dr. Michaela Hau

Duke University, Durham, NC 1995-1999
B.S. with honors in Biology, summa cum laude, Phi Beta Kappa, minors in Music and Chemistry

MAIN RESEARCH INTERESTS:

Revealing how host physiology and behavior influence the spread and evolution of infectious diseases in wild animal populations.

PUBLICATIONS: (*undergraduate student author, **graduate student author)

In press/review

- Nunez, C.M.V., **J.S. Adelman**, H. Carr*, C. Knight*, and D.R. Rubenstein. Lingering effects of contraception management on the birth rates and social behaviors in feral mares (*Equus caballus*). *In review*.
- Houston, D.D., S. Azeem, C. Lundy, Y. Sato, B. Guo, J.A. Blanchong, P.C. Gauger K.J. Yoon, and **J.S. Adelman**. No evidence for a role of wild songbirds or rodents in spreading avian influenza virus across an agricultural landscape. *In review*.
- Kim, S., M. Park**, A.E. Leon**, **J.S. Adelman**, D.M. Hawley, and R.A. Dalloul. Development and validation of a house finch interleukin-1 β (HfIL-1 β) ELISA system. *In review*.

2017

- Adelman, J.S.** and D.M. Hawley. Tolerance of infection: a role for animal behavior, potential immune mechanisms, and consequences for parasite transmission. **Hormones and Behavior**: DOI: 10.1016/j.yhbeh.2016.10.013.
- Adelman, J.S.**, C.M. Mayer*, and D.M. Hawley. Infection reduces anti-predator behaviors in house finches. **Journal of Avian Biology**: DOI: 10.1111/jav.01058.
- Park, M.**, S. Kim, **J.S. Adelman**, A.E. Leon**, D.M. Hawley, R.A. Dalloul. 2017. Identification and functional characterization of the house finch interleukin-1 β . **Developmental and Comparative Immunology** 69: 41-50.

2016

- Love, A.C.**, S.L. Foltz**, **J.S. Adelman**, I.T. Moore, and D.M. Hawley. Changes in corticosterone concentrations and behavior during *Mycoplasma gallisepticum* infection in house finches (*Haemorrhous mexicanus*). **General and Comparative Endocrinology** 235: 70-77.
- Martin, L.B., S.A. Burgan**, **J.S. Adelman**, and S.S. Gervasi. Host competence: an organismal trait to integrate immunology and epidemiology. **Integrative and Comparative Biology** 56: 1225-1237.

2015

- Adelman, J.S.**, S.C. Moyers**, D.R. Farine, and D.M. Hawley. 2015. Feeder use predicts both acquisition and transmission of a contagious pathogen in a North American songbird. **Proceedings of the Royal Society, Series B** 282: 20151429.

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2015 (cont'd)

- Adelman, J.S.**, I.T. Moore, and D.M. Hawley. 2015. House finch responses to *Mycoplasma gallisepticum* do not vary with experimentally increased aggression. **Journal of Experimental Zoology, Part A** 323: 39-51.
- Adelman, J.S.** 2015. Immune systems: linking organisms, populations, and evolution through disease. *In* **Integrative Organismal Biology**, (L.B. Martin, C.K. Ghalambor and H.A. Woods, eds.).
- Núñez, C.M.V, **J.S. Adelman**, and D.I. Rubenstein. 2015. Sociality increases juvenile survival after a catastrophic event in the feral horse (*Equus caballus*). **Behavioral Ecology** 26: 138-147.
- Moyers, S.C.***, K.B. Kosarski*, **J.S. Adelman**, and D.M. Hawley. Interactions between social behavior and the acute phase immune response in house finches. **Behaviour** 152: 2039-2058.
- Hau, M., M.F. Haussmann, T.J. Greives, C. Matlack, D. Costantini, M. Quetting, **J.S. Adelman**, A.C. Miranda, and J. Partecke. 2015. Repeated stressors in adulthood increase the rate of biological ageing. **Frontiers in Zoology** 12:4.

2014

- Adelman, J.S.**, S.C. Moyers**, and D.M. Hawley. 2014. Using remote biomonitoring to understand heterogeneity in immune-responses and disease-dynamics in small, free-living animals. **Integrative and Comparative Biology** 54: 377-386.
- Downs, C.J., **J.S. Adelman**, and G.E. Demas. 2014. Mechanisms and methods in ecoimmunology: integrating within-organism and between-organism processes. **Integrative and Comparative Biology** 54: 340-352.
- Núñez, C.M.V, **J.S. Adelman**, J. Smith*, L.R. Gesquiere, and D.I. Rubenstein. 2014. Linking social environment and stress physiology in feral mares (*Equus caballus*): group transfers elevate fecal cortisol levels. **General and Comparative Endocrinology** 196: 26-33.

2013

- Adelman, J.S.**, L. Kirkpatrick, J.L. Grodio**, and D.M. Hawley. 2013. House finch populations differ in early inflammatory signaling and pathogen tolerance at the peak of *Mycoplasma gallisepticum* infection. **The American Naturalist** 181: 674-689.
- Adelman, J.S.**, A.W. Carter**, W.A. Hopkins, and D.M. Hawley. 2013. Deposition of pathogenic *Mycoplasma gallisepticum* onto bird feeders: host pathology is more important than temperature-driven increases in food intake. **Biology Letters** 9: 20130594.
- Adelman, J.S.**, D.R. Ardia, and K.A. Schat. 2013. Ecoimmunology. *In* **Avian Immunology**, (K.A. Schat, B. Kaspers, and P. Kaiser, eds), 2nd edition. Elsevier, Amsterdam.
- Núñez, C.M.V, **J.S. Adelman**, and D.I. Rubenstein. 2013. A free-ranging, feral mare (*Equus caballus*) affords similar maternal care to her genetic and adopted offspring. **The American Naturalist** 182: 674-681.

2012

- Lopes**, P.C., **J.S. Adelman**, J.C. Wingfield, and G.E. Bentley. 2012. Social context modulates sickness behavior. **Behavioral Ecology and Sociobiology** 66: 1421-1428.
- Hawley, D.M., S.E. DuRant**, A. Wilson*, **J.S. Adelman**, and W.A. Hopkins. 2012. Additive metabolic costs of thermoregulation and pathogen infection. **Functional Ecology** 26: 701-710.

2011

- Bisson, I.A., L. K. Butler, P. Kelley, **J.S. Adelman**, T.J. Hayden, L.M. Romero, and M. Wikelski. 2011. Energetic response to human disturbance in an endangered songbird. **Animal Conservation** 14: 484-491.

2001-2010

- Adelman, J.S.**, S. Córdoba-Córdoba, K. Spoelstra, M. Wikelski, and M. Hau. 2010. Radiotelemetry reveals variation in fever and sickness behaviours with latitude in a free-living passerine. **Functional Ecology** 24: 813-823.
- Adelman, J.S.**, G.E. Bentley, J.C. Wingfield, L.B. Martin, and M. Hau. 2010. Population differences in fever and sickness behaviors in a wild passerine: a role for cytokines. **Journal of Experimental Biology** 213: 4099-4109.
- Adelman, J.S.** and L.B. Martin. 2010. Immune systems and sickness behavior. *In* **Encyclopedia of Animal Behavior** (M. Breed and J. Moore, eds), Vol. 2, pp. 133-137. Elsevier, Amsterdam.

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2001-2010 (cont'd)

- Nuñez, C.M.V., **J.S. Adelman**, and D.I. Rubenstein. 2010. Immunocontraception in wild horses (*Equus caballus*) extends reproductive cycling beyond the normal breeding season. **PLoS One** 5: e1365.
- Adelman, J.S.** and L.B. Martin. 2009. Vertebrate sickness behaviors: adaptive and integrated neuroendocrine immune responses. **Integrative and Comparative Biology** 49: 202-214.
- Nuñez, C.M.V., **J.S. Adelman**, C. Mason, and D.I. Rubenstein. 2009. Immunocontraception decreases group fidelity in a feral horse population during the non-breeding season. **Applied Animal Behaviour Science** 117: 74-83.
- Safran, R.J., **J.S. Adelman**, K.J. McGraw, and M. Hau. 2008. Sexual signal exaggeration affects physiological state in male barn swallows. **Current Biology** 18: r461-462.
- Roemer, S.C., **J.S. Adelman**, M.E.A. Churchill, and D.P. Edwards. 2008. Mechanism of high-mobility group protein B enhancement of progesterone receptor sequence-specific DNA binding. **Nucleic Acids Research** 36: 3655-3666.
- Vitousek, M.N., **J.S. Adelman**, N.C. Gregory, and J.J.H. St Clair. 2007. Heterospecific alarm call recognition in a non-vocal reptile. **Biology Letters** 3: 632-634.
- Wikelski, M., D. Moskowicz, **J.S. Adelman**, J. Cochran, D.S. Wilcove, and M.L. May. 2006. Simple rules guide dragonfly migration. **Biology Letters** 2: 325-329.
- Melvin, V.S., C. Harrell, **J.S. Adelman**, W.L. Kraus, M. Churchill, and D.P. Edwards. 2004. The role of the C-terminal extension (CTE) of the estrogen receptor alpha and beta DNA binding domain in DNA binding and interaction with HMGB. **Journal of Biological Chemistry** 279: 14763-71.
- Wardell, S.E., V. Boonyaratankornkit, **J.S. Adelman**, A. Aronheim, and D.P. Edwards. 2002. Jun dimerization protein 2 functions as a progesterone receptor n-terminal domain coactivator. **Molecular and Cellular Biology** 22: 5451-5466.

PRESENTATIONS:

Invited Talks

- Adelman, J.S.** 2016. Bacteria and backyard bird feeders. ISU Women's Nature Meeting? Ames, IA. (Public Lecture)
- Adelman, J.S. 2016. Animal physiology, behavior, and disease at the wild-domestic interface. Iowa Department of Natural Resources, Wildlife Research Section, Ames, IA.
- Hawley, D.M., **Adelman, J.S.**, Ariel Leon, A., and S.C. Moyers. 2016. Transmission hubs or immunizers? The opposing roles of bird feeders in a naturally occurring disease system. Resource Provisioning and Wildlife-Pathogen Interactions in Human-Altered Landscapes Symposium, Annual Meeting of the Ecological Society of America, Ft. Lauderdale, FL.
- Adelman, J.S.** 2016. Heterogeneous responses to infection: potential mechanisms and transmission consequences in a wild songbird. University of Minnesota, Department of Ecology and Evolutionary Biology, St. Paul, MN.
- Adelman, J.S.** 2015. Heterogeneous responses to infection in songbirds: recent findings and future directions. Iowa State University, Graduate Student Organization Seminar, Department of Natural Resource Ecology and Management and Seminar in Ecology and Evolutionary Biology, Ames, IA.
- Adelman, J.S.**, S.C. Moyers, and D.M. Hawley. 2014. Behavioral risk factors of Mycoplasma conjunctivitis in house finches: are super-receivers also super-spreaders? Ecological Principles of Emerging Infectious Diseases in Birds Symposium, Annual Meeting of the American Ornithologists' Union, Estes Park, CO.
- Adelman, J.S.** 2014. How radio telemetry and radio frequency identification can help link individual immune responses and disease dynamics in wild animals. Methods and Mechanisms in Ecoimmunology Symposium, Annual Meeting of the Society for Integrative and Comparative Biology, Austin, TX.
- Adelman, J.S.** 2013. Heterogeneous responses to infection: potential mechanisms and transmission consequences in wild birds. College of William & Mary, Department of Biology.
- Adelman, J.S.** 2012. What birds have to say about the impending zombie apocalypse. NerdNite, Washington, DC. (Public Lecture)

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Invited Talks (cont'd)

- Adelman, J.S.**, A.F. Wilson, W.A Hopkins, and D.M. Hawley. 2012. Heterogenous responses to infection among house finches: toward transmission consequences. Disease Ecology Symposium, 5th North American Ornithological Conference, Vancouver, BC, Canada.
- Adelman, J.S.** 2010. What is 'pathogen pressure' and can it help us understand variation in host defenses? Virginia Tech, Department of Biological Sciences.
- Adelman, J.S.** 2009. Population differences in immune function: from patterns to mechanisms. University of South Florida, Department of Biology.
- Adelman, J.S.** 2009. Immunology in the wild: studies with song sparrows. The Stony Brook-Millstone Watershed Association, Pennington, NJ. (Public Lecture)
- Adelman, J.S.**, M.C. Wikelski, and M. Hau. 2009. Sickness behavior and fever vary among free-living sparrows along a life history gradient: only some like it hot. Psychoneuroimmunology meets Integrative Biology Symposium—Related Session, Annual Meeting of the Society for Integrative and Comparative Biology, Boston, MA.

Contributed Talks and Posters

- Vaziri, G.J. and **J.S. Adelman**. 2017. Sickness behaviors in house sparrow flocks with different prevalences of simulated infection. Annual Meeting of the Society for Integrative and Comparative Biology, New Orleans, LA. (Poster)
- Houston, D.D., S. Azeem, C. Lundy, Y. Sato, B. Guo, J.A. Blanchong, P.C. Gauger K.J. Yoon, and **J.S. Adelman**. 2017. No evidence for a role of wild songbirds or rodents in spreading avian influenza virus across an agricultural landscape. Annual Meeting of the Society for Integrative and Comparative Biology, New Orleans, LA.
- Nuñez, C.M.V, **J.S. Adelman**, H.A. Carr, C. Knight, and D.I. Rubenstein. 2017. Prolonged effects of contraception management on feral horse (*Equus caballus*) reproductive physiology and behavior. Annual Meeting of the Society for Integrative and Comparative Biology, New Orleans, LA.
- Moyers, S.C., **Adelman, J.S.**, and D.M. Hawley. 2016. Intraspecific competition for food influences pathogen transmission in house finches *Haemorhous mexicanus*. North American Ornithological Conference, Washington, DC.
- Adelman, J.S.**, Mayer, C., and D.M. Hawley. 2016. *Mycoplasma gallisepticum* infection reduces anti-predator behaviors in house finches. Annual Meeting of the Society for Integrative and Comparative Biology, Portland, OR.
- Moyers, S.C., **Adelman, J.S.**, and D.M. Hawley. 2016. Intraspecific competition for food influences pathogen transmission in house finches *Haemorhous mexicanus*. Annual Meeting of the Society for Integrative and Comparative Biology, Portland, OR.
- Nuñez, C.M.V, **J.S. Adelman**, J. Smit, L.R. Gesquiere, and D.I. Rubenstein. 2016. Linking social behavior and stress physiology in feral mares (*Equus caballus*): Group transfers elevate fecal cortisol levels. Annual Meeting of the Society for Integrative and Comparative Biology, Portland, OR.
- Moyers, S.C., **J.S. Adelman**, D.R. Farine, and D.M. Hawley. 2015. Feeder use predicts both acquisition and transmission of a contagious pathogen in a North American songbird. Annual Ecology and Evolution of Infectious Diseases Conference, Athens, GA. (Poster)
- Adelman, J.S.**, A.F. Wilson, W.A Hopkins, and D.M. Hawley. 2013. Pathology is more important than temperature-induced increases in food intake for *Mycoplasma gallisepticum* deposition on bird feeders. Annual Ecology and Evolution of Infectious Diseases Conference, State College, PA. (Poster)
- Adelman, J.S.**, A.F. Wilson, W.A Hopkins, and D.M. Hawley. 2013. Temperature-induced feeding increases do not augment pathogen deposition on bird feeders: potential consequences for climate-disease relationships. Annual Meeting of the Society for Integrative and Comparative Biology, San Francisco, CA.

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Contributed Talks and Posters (cont'd)

- Adelman, J.S.**, L. Kirkpatrick, J.L. Grodio, and D.M. Hawley. 2012. Can early immune responses predict tolerance to an emerging infectious disease? Annual Ecology and Evolution of Infectious Diseases Conference, and Annual Workshop for Refining and Diversifying Ecoimmunology. Ann Arbor, MI. (Poster)
- Adelman, J.S.**, L. Kirkpatrick, and D.M. Hawley. 2012. Variation in immune responsiveness and tolerance of *Mycoplasma* infection between house finch populations. Annual Meeting of the Society for Integrative and Comparative Biology, Charleston, SC.
- Adelman, J.S.** and S.A. Muñoz. 2011. Could helminths drive geographic patterns in vertebrate eco-immunology? Annual Meeting of the Society for Integrative and Comparative Biology, Salt Lake City, UT.
- Adelman, J.S.**, S.A. Muñoz, M. Wikelski, and M. Hau. 2010. Can latitudinal differences in immune responses predict parasite burdens? Annual Ecology and Evolution of Infectious Disease Conference, Ithaca, NY. (Poster)
- Adelman, J.S.** and M. Wikelski, M. Hau. 2010. Latitudinal differences in sickness behaviors and fever: from patterns to mechanisms. Annual Meeting of the Society for Integrative and Comparative Biology, Seattle, WA.
- Adelman, J.S.**, M. Wikelski, and M. Hau. 2008. Acute phase immune responses along a life history gradient. Annual Meeting of the Society for Integrative and Comparative Biology, San Antonio, TX.

FELLOWSHIPS AND GRANTS RECEIVED:

Iowa Ornithologists' Union	2016
"Gut parasites of Iowa song sparrows and their immunomodulatory effects" (\$990)	
Egg Industry Center	2015
"Role of terrestrial wild birds, rodents, and insects in spreading avian influenza virus to commercial layer operations" (\$119,866; \$42,155 to Adelman)	
Organismal Biology and Ecology Grants, Virginia Tech	2012
"The effects of social stress on immune-endocrine interactions, host behavior, and pathogen transmission in an emerging wildlife disease" (\$2,600)	
Dean's Fund for Scholarly Travel, Princeton University (\$600)	2009
EBIRD USA Exchange Visit Award, NSF	2007
"Assessing cytokine levels in passerine macrophages <i>in vitro</i> " (\$1,000)	
NSF Graduate Research Fellowship	2006
"Migratory decision rules and their impacts on avian responses to global climate change" (\$121,500)	
Francis Boyer Fellowship in the Life Sciences, Princeton University (\$24,000)	2004

TEACHING EXPERIENCE:

Iowa State University, Ames, IA	2015-present
Instructor, Ecological Methods	
Co-Instructor, Wildlife Ecology and Management	
Co-Instructor, Natural History of Costa Rica	
Co-Instructor, Altitudinal Ecology	
Virginia Tech, Blacksburg, VA	2013-2014
Guest Lecturer in: Disease Ecology, Ornithology, and Introduction to Animal Physiology	
Princeton University, Princeton, NJ	2010-2011
Lecturer, Ecology and Evolution of Immune Systems	
Princeton University, Princeton, NJ	2004-2010
Guest Lecturer in: Ecology and Evolution of Immune Systems, Animal Behavior, Comparative Physiology, and the Junior Thesis Tutorial	
Teaching Assistant in: Introductory Biology, Animal Behavior	
Duke University, Durham, NC	1998-1999
Course Co-Director: Project WILD, a student-run, one-semester wilderness training course	

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UNDERGRADUATE STUDENTS MENTORED:

Jacob Heatwole, Independent Research	2016-2017
Sarah Kane, Independent Research	2016
Morgan Milsap, Independent Research	2016
Maggie Daves, Honors Research	2015-2016
Erin McCall, Independent Research	2015-2016
Hayden Wolfe, Independent Research	2015-2016
Courtney Youngbar, Independent Research, Virginia Tech	2014-2015
Casey Setash, Honors Research, Virginia Tech	2013-2014
Sydney Robinette, Independent Research, Virginia Tech	2013-2014
Corinne Mayer, Honors Research, Virginia Tech	2012-2014
Ethan Robertson, Independent Research, Virginia Tech	2012
Stephanie Feldstein, Senior Thesis, Princeton University	2008
Nick Cuneo, Senior Thesis, Duke University	2008

GRADUATE STUDENTS MENTORED:

Academic Advisor

Grace Vaziri (M.S., Wildlife Ecology, 2016-present). Thesis title: The impact of gut parasites on immune response to microparasites in songbirds.

Rachel Ruden (Ph.D., Wildlife Ecology, 2016-present). Dissertation title: The porous barrier of animal disease at the wild-domestic interface: a role for infection tolerance in house finches and chickens.

Member of Program of Study Committee

Kaitlyn Holden (Ph.D., Ecology and Evolutionary Biology, 2015-present)

Amy Geffre (Ph.D., Ecology and Evolutionary Biology, 2015-present)

Kelsey Fisher (Ph.D., Entomology, 2016-present)

PROFESSIONAL MEMBERSHIPS:

Society for Integrative and Comparative Biology	2006-present
Secretary, Division of Ecoimmunology and Disease Ecology	2017-present
Symposium Co-Chair, "Methods and Mechanisms in Ecoimmunology"	2014
Session Chair, Annual Meetings	2010-present
Student Worker, Annual Meetings	2008-2009
American Ornithologists Union	2008-present
NSF-RCN Refining and Diversifying Ecoimmunology, Core Participant	2009-2014

OUTREACH

Founder and "Boss", Nerd Nite Des Moines" 2017-present

A quarterly presentation series open to the public and held at local pubs

SEEDS Nature Center, Blacksburg, VA, public bird banding demonstrations 2012-2014

PROFESSIONAL SERVICE

Reviewer for for The American Naturalist, The Auk, Behavioral Ecology, 2008-present

Behavioral Ecology and Sociobiology, Biology Letters, Biotropica, Conservation Physiology, EcoHealth, Functional Ecology, Journal of Animal Ecology, Journal of Avian Biology, Journal of Experimental Biology, Journal of Experimental Zoology, PeerJ, Proceedings of the Royal Society Series B.

Ad hoc reviewer for NSF Division of Integrative Organismal Systems (IOS) 2015

Member, Avian Influenza Technical Advisory Group (ISU/IDALS) 2015-present

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UNIVERSITY SERVICE

Department of Natural Resource Ecology and Management (NREM)

Graduate Admissions committee 2016-present

Curriculum committee, NREM, Forestry, and Animal Ecology Majors 2016-present

Member, Boone and Crockett endowed chair exploratory committee 2016-present

Member, USGS Coop-Unit, Asst. Director (Wildlife), exploratory committee 2016-present

Advisor, Field Notes, graduate student outreach and research publication 2015-present

Ecology and Evolutionary Biology Interdepartmental Graduate Program

Recruitment committee 2015-present