

DANIEL J. BECKER

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- EDUCATION** Odum School of Ecology, University of Georgia, Athens, GA 08/2012–06/2017
PhD in Ecology. *Linking anthropogenic resources to wildlife–pathogen dynamics: from theory to vampire bats*. Advised by Sonia Altizer & Daniel Streicker
- Bard College, Annandale-on-Hudson, NY 05/2010
BA in Anthropology, Global Health, Science & Society. *From clinic to support group: medical expertise and Lyme disease in Dutchess County, NY*. Advised by Diana Brown
- POSITIONS** Intelligence Community Postdoctoral Fellow (Ellen Ketterson) starting 10/2018
Department of Biology, Indiana University, Bloomington, IN
- Postdoctoral Researcher (Raina Plowright) 08/2017–present
Microbiology & Immunology, Montana State University, Bozeman, MT
- Research Assistant (Sonia Altizer & Richard Hall) 06/2017–07/2017
Odum School of Ecology, University of Georgia, Athens, GA
- RESEARCH INTERESTS** Mathematical modeling of infectious disease; resource subsidies and disease ecology; ecological immunology; within- and between-host dynamics; multi-host pathogens; zoonoses of wild bats and birds; meta-analysis & phylogenetic comparative methods
- GRANTS & FELLOWSHIPS** Rules of Life, National Science Foundation pending
The scale of sickness: how immune variation across space and species affects infectious disease dynamics (\$17,536; PIs: Downs, Martin; designed by Schoenle and Becker)
- ~\$415,000 total
- Intelligence Community Postdoctoral Fellowship, ORISE 2018–2020
Modeling changes in migratory behavior as a driver of zoonotic disease in an avian host (\$196,000; PIs: Becker, Ketterson)
- Small Grant, Royal Society of Tropical Medicine & Hygiene 2018–2020
Assessing how urbanization influences immune defense and zoonotic infections in Australian flying foxes (\$6,574; PIs: Becker, Rynda-Apple, Plowright)
- Theodore Roosevelt Memorial Grant, AMNH 2018–2019
Predictors of hemoplasma cross-species transmission in a Neotropical bat community (\$3,500; PI: Becker)
- Doctoral Dissertation Improvement Grant, National Science Foundation 2016–2018
Consequences of resource heterogeneity for immune defense, connectivity, and rabies dynamics in vampire bats (\$19,499; PIs: Altizer, Streicker, Becker)
- ARCS Foundation Award, ARCS Foundation 2014–2017
How livestock expansion affects vampire bat rabies and human disease risk in the Peruvian Amazon (\$21,000; PIs: Becker)
- Graduate Research Fellowship, National Science Foundation 2014–2017
Resource availability and infection dynamics at the vampire bat–human interface (\$138,000; PI: Becker)

GRANTS (CONTINUED)	Exploration Fund Grant, Explorer's Club (\$2,500)	2017
	Small Grant for Graduate Research, Odum School of Ecology (\$1,492)	2016
	Grant-in-Aid of Research, American Society of Mammalogists (\$1,500)	2016
	Ecoimmunology Exchange Award, National Science Foundation (\$1,800)	2015
	Small Grant for Graduate Research, Odum School of Ecology (\$1,500)	2015
	Exploration Fund Grant, Explorer's Club (\$1,000)	2015
	Grant-in-Aid of Research, Sigma Xi (\$600)	2015
	Innovative and Interdisciplinary Grant, University of Georgia (\$1,500)	2015
	Exploration Fund Grant, Explorer's Club (\$2,250)	2014
	Grant-in-Aid of Research, Sigma Xi (\$385)	2014
	Ecoimmunology Exchange Award, National Science Foundation (\$1,500)	2013
	Grant-in-Aid of Research, American Society of Mammalogists (\$1,500)	2013
	Student Research Scholarship, Bat Conservation International (\$2,800)	2013
	One Health Seed Grant, University of Georgia (\$5,000)	2013
	Student Research Grant, Animal Behavior Society (\$1,000)	2013
	Tinker Graduate Field Research Award, University of Georgia (\$1,000)	2013
	Small Grant for Graduate Research, Odum School of Ecology (\$1,500)	2013

AWARDS	Nomination for Director's Award (with Raina Plowright), DARPA	2018
	Robert C. Anderson Memorial Award, University of Georgia (\$1,000)	2017
	Best Student Presentation, SICB Division of Ecoimmunology (\$150)	2017
	ARCS Foundation Atlanta 25th Anniversary Award (\$1,000)	2016
	Award for Excellence in Wildlife Conservation, University of Georgia (\$1,000)	2016
	Best Basic/Theoretical Student Paper, Odum School of Ecology (\$250)	2016
	Best Basic/Theoretical Student Paper, Odum School of Ecology (\$250)	2016
	Honorable Mention Lotka Prize, Ecological Society of America	2015
	Franz Boas & Ruth Benedict Prize in Anthropology, Bard College (\$500)	2010
	Bard College Senior Project Award, Bard College (\$500)	2010

PEER-REVIEWED PAPERS **Becker DJ, Snedden C, Altizer S, Hall RJ.** Host dispersal responses to resource supplementation determine pathogen spread in wildlife metapopulations. In press at *American Naturalist*.

*** equal author contributions** **Kessler MK, Becker DJ, Peel AJ, Justice NV, Lunn T, Crowley DE, Jones DN, Eby P, Sanchez CA, Plowright RK.** Changing resource landscapes and spillover of henipaviruses. In press at *Annals of the New York Academy of Sciences*.
undergraduates

Becker DJ, Czirjak GA, Volokhov DV, Bentz AB, Carrera JE, Camus MS, Navara KJ, Chizhikov VE, Fenton MB, Simmons NB, Recuenco SE, Gilbert AT, Altizer S, Streicker DG (2018). Livestock abundance predicts vampire bat demography, immune profiles and bacterial infection risk. *Phil Trans R Soc B* 373:20170089.

Becker DJ, Hall RJ, Forbes KM, Plowright RK, Altizer S (2018). Anthropogenic resource subsidies and host-parasite dynamics in wildlife. *Phil Trans R Soc B* 373:20170086.

Altizer S, **Becker DJ**, Epstein JH, Forbes KM, Gillespie TR, Hall RJ, Hawley DM, Hernandez SM, Martin LB, Plowright RK, Satterfield DA, Streicker DG (2018). Food for contagion: synthesis and future directions for studying host-parasite responses to resource shifts in anthropogenic environments. *Phil Trans R Soc B* 373:20170102.

Becker DJ, Streicker DG, Altizer S (2018). Using host species traits to understand the consequences of resource provisioning for host-parasite interactions. *Journal of Animal Ecology* 87:511-525.

Becker DJ, Chumchal MM, Broders HG, Korstian JM, Clare EL, Rainwater TR, Platt SG, Simmons NB, Fenton MB (2018). Mercury bioaccumulation in bats reflects dietary connectivity to aquatic food webs. *Environmental Pollution* 233:1076–1085.

Pusch EA, Bentz AB, **Becker DJ**, Navara KJ (2018). Behavioral phenotype predicts physiological responses to chronic stress in proactive and reactive birds. *General and Comparative Endocrinology* 255:71–77.

Volokhov DV*, **Becker DJ***, Bergner LM, Camus MS, Orton RJ, Chizhikov VE, Altizer SM, Streicker DG (2017). Novel hemotropic mycoplasmas are widespread and genetically diverse in vampire bats. *Epidemiology & Infection* 145:3154–3167.

Becker DJ, Chumchal MM, Bentz AB, Platt SG, Czirjak GA, Rainwater TR, Altizer S, Streicker DG (2017). Predictors and immunological correlates of sublethal mercury exposure in vampire bats. *Royal Society Open Science* 4:170073.

Murray MH, **Becker DJ**, Hall RJ, Hernandez SM (2016). Wildlife health and supplemental feeding: A review and management recommendations. *Biological Conservation* 204:163–174.

Bentz AB, **Becker DJ**, Navara KJ (2016). Evolutionary implications of interspecific variation in a maternal effect: a meta-analysis of yolk testosterone response to competition. *Royal Society Open Science* 3:160499.

Becker DJ, Hall RJ (2016). Heterogeneity in patch quality buffers metapopulations from pathogen impacts. *Theoretical Ecology* 9:197–205.

Becker DJ, Oloya J, Ezeamama AE (2015). Household socioeconomic and demographic correlates of *Cryptosporidium* seropositivity in the United States. *PLoS Neglected Tropical Diseases* 9:e0004080.

Becker DJ, Streicker DG, Altizer S (2015). Linking anthropogenic resources to wildlife–pathogen dynamics: a review & meta-analysis. *Ecology Letters* 18:483–495.

Becker DJ, Hall RJ (2014). Too much of a good thing: resource provisioning alters infectious disease dynamics in wildlife. *Biology Letters* 10:20140309.

PAPERS IN ADVANCED STAGES

Sanchez CA*, **Becker DJ***, Barriga P, Brown LM, Majewska AA, Teitelbaum CT, Hall RJ, Altizer S. On the relationship between body condition and parasite infection in wildlife: a review and meta-analysis. In revision at *Ecology Letters*.

Becker DJ, Bergner LM, Bentz AB, Orton RJ, Altizer S, Streicker DG. Prevalence and genetic diversity of *Bartonella* infections in common vampire bats. In revision at *PLoS Neglected Tropical Diseases*.

Becker DJ, Czirjak GA, Rynda-Apple A, Plowright RK. Handling stress and sample storage are associated with weaker complement-mediated bactericidal ability in birds but not bats. In revision at *Physiological and Biochemical Zoology*.

Martin G, **Becker DJ**, Plowright RK. Environmental persistence of influenza H5N1 is driven by temperature and salinity: insights from a Bayesian meta-analysis. In revision at *Frontiers in Ecology & Evolution*.

Washburne AD, Silverman JD, Morton JT, **Becker DJ**, Crowley DE, Mukherjee S, David LA, Plowright RK. Phylofactorization: a graph-partitioning algorithm to identify phylogenetic scales of ecological data. In revision at *Ecological Monographs*.

Bergner LM, Orton RJ, da Silva Filipe A, Shaw AE, **Becker DJ**, Tello C, Biek R, Streicker DG. Using non-invasive metagenomics to characterize viral communities from wildlife. In review at *Molecular Ecology Resources*.

Becker DJ, Nachtmann C, Argibay HD, Botto G, Escalera-Zamudio M, Carrera JE, Tello C, Winiarski E, Greenwood AD, Rojas-Anaya E, Loza-Rubio E, Lavergne A, de Thoisy B, Czirjak GA, Plowright RK, Altizer S, Streicker DG. Leukocyte profiles reflect local environment and biogeography in a widespread Neotropical bat species. In review at *Ecography*.

Murray MH*, Sanchez CA*, **Becker DJ**, Byers KA, Worsely-Tonks KEL, Craft ME. City sicker: a meta-analysis of shifts in wildlife health with urbanization. In review for *Ecology Letters*.

Washburne AD, Crowley DE, **Becker DJ**, Olival KJ, Taylor M, Munster VJ, Plowright RK. Taxonomic patterns in the zoonotic potential of mammalian viruses. In review at *eLife*.

Becker DJ, Crowley DE, Higgs MD, Plowright RK. Assessing risk of bat virus spillover in space and time: reservoir host sampling deficiencies and optimization. In prep for *Journal of Applied Ecology*.

Plowright RK, **Becker DJ**, Crowley DE, Washburne AD, Huang T, Han BA. Nipah virus outbreak in Kerala, India: identifying reservoirs to prioritize surveillance. In prep for *PLoS Currents: Outbreaks*.

Becker DJ, Teitelbaum CT, Murray MH, Rozier RS, Lipp EK, Hernandez SH, Altizer S, Hall RJ. Disentangling the contributions of intraspecific and exogenous sources of infection on *Salmonella* transmission dynamics in urbanized white ibis. In prep for *Journal of the Royal Society Interface*.

Becker DJ, Washburne AD, Faust, CL, Mordecai EA, Pulliam JRC, Lloyd-Smith JO, Plowright RK. Can we predict pathogen spillover? In prep for *Phil Trans R Soc B*.

Plowright RK, **Becker DJ**, Manlove KR, Irvine K, McCallum H, Cross PC. From status to dynamics: sampling strategies to elucidate the dynamics of emerging infections in their reservoir hosts. In prep for *Phil Trans R Soc B*.

Glennon EE, **Becker DJ**, Peel AJ, Garnier R, Plowright RK, Restif O. What's stirring in the reservoir? Modeling mechanisms of henipavirus circulation in fruit bat hosts. In prep for *Phil Trans R Soc B*.

Becker DJ, Albery GF, Kessler MK, Lunn T, McGuire LP, Higgs M, Czirjak GA, Plowright RK. Landscape immunology: the spatial dimensions of wildlife immune defense. In prep for *Integrative & Comparative Biology*.

Becker DJ, Speer KA, Simmons NB, Fenton MB, Walk ST, Altizer S, Streicker DG, Chizhikov VE, Volokhov DV, Plowright RK. Dietary guild and roosting habits predict hemoplasma infection and genotype exchange in a Neotropical bat community. In prep for *Proceedings B*.

CONFERENCE TALKS & POSTERS	Ecological Society of America, New Orleans, LA	2018
	Ecology and Evolution of Infectious Diseases, Glasgow, UK (poster)	2018
	Society for Integrative and Comparative Biology, San Francisco, CA	2018
	Ecological Society of America, Portland, OR	2017
	Society for Integrative and Comparative Biology, New Orleans, LA	2017
	Ecological Society of America, Fort Lauderdale, FL	2016
	Ecology and Evolution of Infectious Diseases, Ithaca, NY (poster)	2016
	Society for Integrative and Comparative Biology, Portland, OR	2016
	Ecological Society of America, Baltimore, MD	2015
	Ecology and Evolution of Infectious Diseases, Athens, GA (poster)	2015
	Society for Integrative and Comparative Biology, West Palm Beach, FL	2015
	Ecology and Evolution of Infectious Diseases, State College, PA (poster)	2013
	INVITED TALKS & SEMINARS	Ecological Society of America, New Orleans, LA
Disease Dynamics Unit, Cambridge University, Cambridge UK		2018
Department of Biology, Indiana University, Bloomington, IN		2018
International Urban Wildlife Conference, San Diego, CA		2017
Institute of BAHCM, University of Glasgow, Glasgow, United Kingdom		2017
Annual Georgia Bat Working Group Meeting, Athens, GA		2016
Center for the Ecology of Infectious Disease, Athens, GA		2016
International Association of Landscape Ecology World Congress, Portland, OR		2015
TEACHING & GUEST LECTURES	Becker DJ. Introduction to linear mixed models, AIC, and their implementation in R. Department of Biology, Appalachian State University, Boone, NC, 2017.	
	Becker DJ. Vampire bat immunity and infection in a changing world. MB 560 Infectious Disease Ecology, Montana State University, Bozeman, MT, 2017.	
	Becker DJ. Conducting hierarchical meta-analysis in ecology and evolutionary biology. Odum School of Ecology, University of Georgia, Athens, GA, 2016.	
	Becker DJ. Ecological approaches to zoonotic disease in changing landscapes. BIOL 1990 Orientation to Biology Degree Programs, University of Georgia, Athens, GA, 2016.	
	Becker DJ. Supplemental feeding, changes to habitat quality, and wildlife health. ECOL 3480 Urban Landscape Ecology, University of Georgia, Athens, GA, 2016.	
	Becker DJ. The analysis of infectious disease data using R (in Spanish). Instituto Nacional de Salud, Lima, Peru, 2015.	
	Becker DJ. Resources, nutrition, stress, and immunity. ECOL 4150 Population Biology of Infectious Diseases, University of Georgia, Athens, GA, 2015.	
WORKING GROUPS	Center for the Ecology of Infectious Disease, University of Georgia	2016–present
	Immunity Across Scales, NSF IDEAS Research Coordination Network	2018
	DARPA Pathogen Spillover, Montana State University	2017–2018
	Computational Ecology & Epidemiology, University of Georgia	2014–2016
ADDITIONAL TRAINING	Introduction to Spatial Statistics, British Ecological Society	2018
	Parameter Estimation for Dynamic Biological Models, NIMBioS	2014
	Dynamical Approaches to Disease Data, Emerging Pathogens Institute	2013
	Stable Isotope Ecology, Canadian Institute of Ecology & Evolution	2013
	Fundamentals of Ecosystem Ecology, Cary Institute of Ecosystem Studies	2009

RESEARCH POSITIONS	Field Technician, University of Wisconsin, Boulder Creek, CA	2012
	Research Assistant, Department of Parks & Recreation, Queens, NY	2010–2012
	Research Fellow, Blacksmith Institute, New York, NY	2010–2012
	Project Assistant, Cary Institute of Ecosystem Studies, Millbrook, NY	2011
	Intern, Center for Health, Environment & Justice, Falls Church, VA	2009
EDITORIAL POSITIONS	Guest Editor, <i>Philosophical Transactions of the Royal Society B</i>	2017–present
	Junior Editorial Board Member, <i>Journal of Experimental Zoology A</i>	2018–present
	Student Editorial Assistant, <i>EcoHealth</i>	2012–2017
	Editorial Intern, <i>The Georgia Review</i>	2014
	Editorial Administrator, <i>Annals of the New York Academy of Sciences</i>	2010–2012
AD HOC REVIEWER	<i>Archives of Environmental Contamination and Toxicology; BMC Ecology; EcoHealth; Ecology Letters; Environmental Earth Sciences; Environmental Pollution; Epidemiology & Infection; Evolution; Frontiers in Immunology; Functional Ecology; Infection, Genetics & Evolution; Journal of Animal Ecology; Journal of Applied Ecology; Journal of Urban Ecology; Mammalian Biology; Nature Communications; Oikos; Philosophical Transactions B; PLoS Biology; PLoS ONE; PLoS Pathogens; Proceedings B; Royal Society Open Science; Science of the Total Environment; Scientific Reports</i>	
GRANT REVIEWER	Animal Behavior Society Student Research Grants (2015)	
SCIENTIFIC OUTREACH	Guest Presenter, Oconee Rivers Audubon Society, Athens, GA	2017
	Guest Presenter, Caring for the Winged Ones Summer Camp, Helen, GA	2016
	British Ornithologists' Union Biotweeps Participant	2016
	Volunteer Judge, Georgia Science and Engineering Fair, Athens, GA	2015, 2016
ACADEMIC SERVICE	Student Liaison, Disease Ecology Section, ESA	2016–2018
	Representative, Division of Ecoimmunology & Disease Ecology, SICB	2015–2018
	Advisory Board, Center for the Ecology of Infectious Disease, UGA	2016–2017
	Webmaster, Women in Science University of Georgia	2015–2017
	Principal Organizer for Symposium, ESA Annual Meeting	2015–2016
	Grant Database Coordinator, Odum School of Ecology	2015–2016
	Treasurer, Odum School of Ecology	2013–2014, 2015–2016
STUDENT MENTORING	German Botto (PhD, MSU); pathogen detection in Belizean bats	2018
	Ticha Padgett (UG, MSU); pathogen detection in Belizean bats	2018
	Jorge Carrera (UG, Universidad Nacional de Piura); bat ecology	2013–2016
	Katie Smith (DVM, UGA); vampire bat immunology & data analysis	2016
	Celine Snedden (REU, UC Berkeley); metapopulation & disease modeling	2016
	Andre Jove (UG, UGA): vampire bat hematology & PCR methods	2016
	Ceci Nachtmann (UG, UGA): vampire bat hematology & DNA extraction	2016
	Ruth Schade (UG, UGA): quantifying vampire bat erythrocyte morphology	2015
	Katherine Gilman (PB, BU): vampire bat capture & sampling in Peru	2014
	Kishana Taylor (PhD, UGA): hematology for Integrative Life Sciences rotation	2013
Malavika Rajeev (PB, UGA): vampire bat capture & sampling in Peru	2013	
Giovanni Righi (UG, UGA): compilation of a wild bat parasite database	2013	
SOCIETY AFFILIATIONS	Ecological Society of America	
	Society for Integrative & Comparative Biology	
	Research Coordination Network in Ecoimmunology	

REFERENCES

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