Grace J. Vaziri

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Education

2017 M.S. Wildlife Ecology, Iowa State University.
Thesis: Internal and external drivers of acute phase response variation in two species of songbird.

2013 B.S. Molecular Environmental Biology, University of California, Berkeley.

Publications

Vaziri GJ, Muñoz SA, Martinsen ES, and Adelman JS. "Gut parasite levels are associated with severity of response to immune challenge in a wild songbird" (Journal of Wildlife Diseases).

Currently in revision
Vaziri GJ Johny M, Caragea PC, Adelman JS. "Social context affects thermoregulation but not activity level in a social passerine" (Behavioral Ecology).

In preparation
Vaziri, GJ, Jusino MA, Brewer MT, Adelman, JS. "Helminth infection modulates the acute phase immune response in wild song sparrows" (Journal TBD).

Presentations

Vaziri GJ and Adelman JS. "Host-Parasite Interactions and the Acute Phase Immune Response in a Songbird" (2018) The Society for Integrative and Comparative Biology Annual Meeting [Oral presentation].

Vaziri GJ "Two drivers of acute phase response variation in free-living passerines" (2017) Master's Thesis Defense [Oral presentation].

Vaziri GJ and Adelman JS. "Immunomodulatory roles of helminths in a free-living wild songbird" (2017) Ecology and Evolution of Infectious Diseases Annual Meeting [Poster].

Vaziri GJ and Adelman JS. "How does social context affect the expression of fever and sickness behavior in house sparrows?" (2017) The Society for Integrative and Comparative Biology Annual Meeting [Poster].

Vaziri GJ and Adelman JS. "How does social context affect the expression of fever and sickness behavior in house sparrows?" (2016) Iowa State University, Department of Natural Resource Ecology and Management Graduate Student Research Symposium [Poster].

Awards and Funding

2016 Myrle Burk Scholarship ($750)

2016 Iowa Ornithologist's Union Special Projects Grant ($989)

2016 Graduate and Professional Student Senate Travel Award ($180)

2017 Elaine Boge Scholarship ($1000)

2017 J. N. "Ding" Darling, Iowa Natural Heritage Foundation Scholarship ($1000)

2018-2022 Jorgensen Fellowship, University of Connecticut ($20,000/year)

Research

Research Internship, University of Wisconsin, Madison February 2018-August 2018
Dr. Daniel Lindner and Dr. Zac Peery, co-PIs

- Collaborated with the US Forest Service to use next-generation amplicon sequencing to characterize fungal communities in logs from a long-term experiment examining how increased levels of atmospheric carbon dioxide influences forest growth and health. Tasks included DNA extraction, barcoding, quantification, equalization, pooling, and bioinformatic analysis and synthesis of results. Additionally, performed DNA extractions and qPCR in collaboration with the Washington Department of Fish and Wildlife to detect the presence of white-nose syndrome-causing fungus, *Pseudogymnoascus destructans* (*Pd*) in samples of guano and sediment from caves and structures in Washington state.

Master's Research, Iowa State University January 2016- December 2017
Dr. James S. Adelman, PI

- Field, captive, and lab-based experiments to test how two internal drivers (helminth infection and cloacal microbiome) and one external driver (social context) contribute to variation in immune response to simulated bacterial infections in two species of wild passerines.
    - Used radiotelemetry to monitor thermoregulatory activity and changes in activity-level in response to simulated bacterial infections in free-living song sparrows (*Melospiza melodia*) with experimentally manipulated gut helminth infections.

- Compared cloacal microbiome community structure between song sparrows treated for gut helminths and a control group using next generation sequencing and the bioinformatics pipeline Qiime2.
- In an aviary setting, house sparrow (*Passer domesticus*) flocks were created with different ratios of healthy birds to "infected" birds to investigate whether thermoregulation and activity level in response to a simulated bacterial infection are associated with the type of experimental flock (social context) in which a bird resided.

Volunteer Laboratory Technician, UC Berkeley August – December 2015
Dr. Patrick O'Grady, PI

- Performed PCR on *Drosophila* specimens collected for projects studying how Hawaiian-endemic, and other Drosophila lineages evolved and diversified.

Undergraduate Research Apprentice, UC Berkeley January 2012- May 2013
Dr. Lucia Jacobs, PI

- Contributed to experiments researching the cognitive functioning of Eastern Fox Squirrels (*Sciurus niger*). Duties included assisting graduate students with noninvasive field experiments exploring food-caching processes in humans and squirrels, and using video coding to quantify behaviors used by squirrels when caching food-items.

Teaching

General Ecology, Teaching Assistant, University of Connecticut Fall 2018-present

- Lead discussion section for an upper-division undergraduate class in the Ecology and Evolutionary Biology department.

Ecological Methods Laboratory Teaching Assistant, Iowa State University Spring 2016-Fall 2017

- Teach the laboratory section of an upper-division undergraduate class. Topics include introductions to programs MARK and R, introductions to statistical techniques for basic ecological research, and field ecology methods including telemetry, vegetation surveys, pitfall-trapping, and basic orienteering.

Wildlife Ecology and Management Teaching Assistant, Iowa State University Fall 2016

- Reviewed and edited project proposals and coordinated equipment arrangements (i.e., transportation and sampling gear) for field based, senior projects.

Outreach

Nerd Nite Des Moines, Co-boss, Des Moines, IA 2016-2017

- Organize and host quarterly events for the public. Events consist of three talks from local experts in a broad range of fields, punctuated with live music, and held at a local bar/music venue. I recruit speakers and musical guests, advertise the event on social media and through traditional media, host the event, and coordinate with venue organizers and event sponsors. See https://www.desmoinesregister.com/story/news/local/columnists/daniel-finney/2017/05/11/can-nerd-nites-make-science-cool/317412001/ for coverage.

Health and Happiness, Co-founder, Democratic Education at Cal, UC Berkeley 2012-2013

- Designed, developed, registered and co-facilitated a course for undergraduates based on exploring the scientific understanding of human happiness, and how happiness relates to physical and mental health.

Outreach and Laboratory Assistant, Lawrence Hall of Science, Berkeley, CA 2011-2012

- Provided hands-on feeding, habitat cleaning, and social enrichment for 70-80 small exotic animals including mammals, reptiles, birds, fish, and arthropods. I also administered veterinarian-prescribed medical attention.
    - Led animal interactions with children and visitors to the Lawrence Hall of Science, educating them about the life histories of the animals.

Professional Experience

Wildlife Crew Lead, Plague Project, University of Idaho 2015

- Led a crew of two wildlife field technicians in conducting small mammal trapping and Northern Idaho Ground Squirrel (*Urocitellus brunneus brunneus*) trapping. In addition to small mammal trapping, administering anesthesia, removing ectoparasites (fleas and ticks) and marking animals for recapture, insecticide was applied to treatment portions of study sites, and radio collars were deployed on squirrels for future tracking with radio telemetry.
    - Collaborated with USDA Forest Service, USFSW, and University of Idaho.
      2014 Wildlife Field Technician, Restoration Project, University of Idaho
- Worked as part of a three-person crew trapping, marking (ear-tag and PIT-tag), measuring, and radio-tracking ground squirrels and chipmunks, specifically focused on the federally threatened Northern Idaho Ground Squirrel.
    - Identified and quantified the vegetation present at the NIDGS trapping sites. Daubenmire quadrats and intersect transects were used to collect data on the vegetative characteristics of these sites.

Field Biology Assistant, Mosaic Associates, LLC., Pinole, CA 2013-2014

Worked with the lead scientist in the field and the office to contribute to ongoing mitigation monitoring projects through data collection and report preparation. Assisted in the writing, review and revision of memos and yearly reports on mitigation site monitoring. In the field, performed vegetative cover and wildlife surveys, vegetation height and vigor monitoring, and nest box surveys, construction site monitoring for burrowing owls.

Laboratory Skills

- Next generation sequencing workflow
    - DNA extraction, barcoding, library preparation
    - PCR, qPCR
    - Gel electrophoresis
    - Multi-channel pipetting
    - Sterile techniques
- Parasitology
    - Fecal flotation test and microscopy
    - Fecal parasite egg and oocyst identification
    - Necropsy and adult parasite identification

Bioinformatics Skills

- 16S and 18S, and ITS analysis with Qiime2 and AMPtk
- Command line

Field Skills

- Telemetry (automated and manual)
- Placement of radio transmitters (bird and small mammal)
- Mist-netting
- Blood sample collection (birds and small mammals)
- Bird banding, small mammal trapping
- Ear tagging
- PIT tagging
- Anesthesia

Society Involvement

Society for Integrative and Comparative Biology, student member

Leadership

Secretary Fall 2016 – Fall 2017
Department of Natural Resource Ecology and Management Graduate Student Organization (GSO), Iowa State University

- Create and maintain records of communications and elections at official meetings of the GSO.