

Jessica Marie Hoffman
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Education

- 2015 Ph.D., Genetics, University of Georgia.
Dissertation: Metabolomic analysis of aging and longevity
Advisor: Daniel E.L. Promislow
- 2008 B.S., Biological Sciences, *summa cum laude*, Clemson University.
Honors Thesis: Demographic histories and population structure of two predator-prey species:
Nucella ostrina and *Balanus glandula*
Advisor: Peter B. Marko

Professional Experience

- 2015- Postdoctoral Fellow. Department of Biology. University of Alabama at Birmingham.
Advisor: Steven N. Austad

Peer Reviewed Publications

*Co-first authors

- Austad SN and **Hoffman JM**. 2019. Response to "Genes that improved fitness also cost modern humans: evidence for genes with antagonistic effects on longevity and disease. **Evolution, Medicine, and Public Health**. DOI: 10.1093/emph/eoz003.
- Hoffman JM**, Ross C, Tran V, Promislow DEL, Tardif S, Jones DP. 2018. The metabolome as a biomarker of mortality risk in the common marmoset. **American Journal of Primatology**. DOI: 10.1002/ajp.22944.
- Austad SN and **Hoffman JM**. Is antagonistic pleiotropy ubiquitous in aging biology? 2018. **Evolution, Medicine, and Public Health**. 2018 1: 287-294.
-Recommended by F1000
- Hoffman JM***, Lourenco B*, Creevy KE, Promislow DEL. 2018. Canine hyperadrenocorticism associations with signalment, selected comorbidities and mortality within North American Veterinary Teaching Hospitals. **Journal of Small Animal Practice**. Epub ahead of print doi: 10.1111/jsap.12904.
- Hoffman JM**, Creevy KE, Franks A, O'Neill D, Promislow DEL. 2018. The domestic dog as a model for human morbidity and mortality. **Aging Cell**. Epub ahead of print doi: 10.1111/ace1.12737.
- Hoffman JM***, Lyu Y*, Pletcher S, Promislow DEL. 2017. Proteomics and metabolomics in aging research: From biomarkers to systems biology. **Essays in Biochemistry**. 61(3): 379-388.
- Hoffman JM**, O'Neill D, Creevy KE, and Austad SN. 2018. Do female dogs age differently than male dogs? **Journal of Gerontology: Biological Sciences**. 73 (2): 150-156.
- Jin K*, **Hoffman JM***, O'Neill D, Creevy KE, and Promislow DEL. 2016. Multiple morbidities in companion dogs: A novel model for investigating age-related disease. **Pathobiology of Aging and Age-Related Diseases**. 6: 33276.
- Fisher KE, **Hoffman JM**, Sloane L, Gelfond J, Soto VY, Richardson A, Austad SN. 2016. A cross-sectional study of male and female C57BL/6Nia mice suggests lifespan and healthspan are not necessarily correlated. **Aging**. 8(10): 2370-2391.

Hoffman JM, Tran V, Wachtman L, Green CL, Jones DP, Promislow DEL. 2016. A longitudinal analysis of the blood plasma metabolome in the common marmoset, *Callithrix jacchus*. **Experimental Gerontology**. 76: 17-24.

Hariharan R*, **Hoffman JM***, Thomas AS, Soltow QA, Jones DP, Promislow DEL. 2014. Invariance and plasticity in the *Drosophila melanogaster* metabolomic network in response to temperature. **BMC Systems Biology**. 8:139.

Hoffman JM*, Soltow QA*, Li S, Sidik A, Jones DP, Promislow DEL. 2014. Effects of age, sex and genotype on high-sensitivity metabolomic profiles in the fruit fly, *Drosophila melanogaster*. **Aging Cell**. 13(4): 596-604.

Hoffman JM, Creevy KE, Promislow DEL. 2013. Reproductive capability is associated with lifespan and cause of death in companion dogs. **PLoS One**. 8(4): e61082.
doi:10.1371/journal.pone.0061082.

Marko PB, **Hoffman JM**, Emme SA, McGovern TM, Keever C, Cox LN. 2010. The 'Expansion-Contraction' model of Pleistocene biogeography: rocky shores suffer a sea change? **Molecular Ecology**. 19(1): 146-169.

Book Chapters

Creevy KE, Austad SN, **Hoffman JM**, O'Neill D, Promislow DEL. 2015. The companion dog as a model for the longevity dividend. In *The longevity dividend* (Olshansky J, Kirkland J, Martin G eds). Cold Spring Harbor Press.

Submitted Manuscripts

Hoffman JM, Kiklevich JV, Austad M, Tran V, Jones DP, Royal A, Henry C, Austad SN. Tryptophan metabolism is differently regulated between large and small dogs. *In review*.

Grants

2019-2024 NIH K99/R00 Pathway to Independence award. *The metabolomic consequences of small size and long life*. K99AG059920. **National Institute on Aging** (\$925,334).

2014-2015 Doctoral Dissertation Improvement Grant. *The evolution of the metabolome across the Drosophila phylogeny*. NSF1402604. **National Science Foundation** (\$12,562).

Fellowships

2016 Glenn/AFAR Postdoctoral Fellowship Program for Translational Research on Aging. **Glenn Medical Foundation and American Federation for Aging Research**.

2014 ARCS Foundation Graduate Fellowship. University of Georgia and Atlanta chapter of the **ARCS Foundation**.

2013 ARCS Foundation Graduate Fellowship. University of Georgia and Atlanta chapter of the **ARCS Foundation**.

2013 Bishop Graduate Fellowship. Department of Genetics, University of Georgia.

2012 NIH T32 Training Grant. Department of Genetics, University of Georgia. **NIGMS**.

Awards

- 2019 Williams Prize for best paper in Evolution, Medicine, and Public Health. International Society of Evolution, Medicine, and Public Health.
- 2018 Postdoc Travel Award. UAB Office of Postdoctoral Education.
- 2018 2nd Place Best Poster- Postdoc division. 2nd Annual UAB Nathan Shock Center Symposium.
- 2018 2nd Place Oral Presentation. 15th Annual Postdoc Research Day. University of Alabama at Birmingham.
- 2017 2nd Place Trainee Data Blitz. Annual AGE meeting. New York, New York.
- 2017 1st Place Oral Presentation. 14th Annual Postdoc Research Day. University of Alabama at Birmingham.
- 2016 Grant Incentive Award. UAB Office of Postdoctoral Education.
- 2016 Postdoc Travel Award. UAB Office of Postdoctoral Education.
- 2016 Graduate Student and Postdoc Travel Award. Annual AGE Meeting. American Aging Association.
- 2016 3rd Place Oral Presentation. 13th Annual Postdoc Research Day. University of Alabama at Birmingham.
- 2014 Postdoc and Graduate Student Travel Award. Keystone Symposium. Steamboat Springs, Colorado.
- 2014 UGA Graduate Student Travel Award. University of Georgia.
- 2005 Prince Presidential Scholar. Clemson University.

Other Education/Training

- 2018 Mentoring and Leadership Graduate Certificate. Graduate School. University of Alabama at Birmingham. Birmingham, AL.
- 2017 NIA Summer Training on the Basic Biology of Aging. Seattle, WA.
- 2016 Butler-Williams Scholars Program. National Institute on Aging. Bethesda, MD.
- 2016 MDI Biological Laboratory Comparative and Experimental Approaches to Aging Biology short course. Bar Harbor, ME.
- 2013 Summer Institute on Statistical Genetics. High-Dimensional Omics Data and Network and Pathway Analysis of Omics Data. University of Washington. Seattle, WA.

Manuscripts Reviewed

Aging Cell. Aging Clinical and Experimental Research. Companion Animal. Heredity. Journal of Gerontology: Biological Sciences. Journal of Veterinary Internal Medicine. PLoS ONE. PNAS. Scientific Reports.

Teaching- Instructor of Record

- Spring 2019 Biometry (graduate level)
- Spring 2018 Biometry (graduate level)
- Spring 2017 Introduction to R All Day workshop (one day workshops)

Teaching- Teaching Assistant

Spring 2012 Introductory Genetics
Fall 2011 Introductory Genetics
Summer 2011 Evolution
Spring 2011 Biology Laboratory for biology majors
Fall 2010 Biology Laboratory for non-biology majors

Service

2018-2019 Gerontological Society of America, Biological Sciences section, Emerging Scholars and Professional Organization, senior representative.
2017-2018 Gerontological Society of America, Biological Sciences section, Emerging Scholars and Professional Organization, junior representative.
2017 Volunteer. Girls in Science and Engineering Day. UAB.
2016- **Aging Biology Update monthly web newsletter. UAB Nathan Shock Center.**
2016-2017 Discoveries in the Making- Presenting research at local Birmingham, AL libraries.
2016- Judge UAB 3 Minute Thesis.
2016- Judge UAB Undergraduate Research Expo.
2016 Judge Alabama Junior Academy of Science Paper Reading. UAB region.
2014-2015 Genetics Graduate Student Association Travel Award Committee. UGA.
2012-2013 Co-President. Genetics Graduate Student Association. UGA.

Scientific Society Memberships

2019- International Society for Evolution, Medicine, and Public Health
2016- American Aging Association
2015- Gerontological Society of America
2012-2014 Society for the Study of Evolution

Invited Presentations

2019 Is antagonistic pleiotropy ubiquitous in aging biology? International Society for Evolutionary Medicine annual meeting. Zurich, Switzerland.

2019 Insights into the evolution of aging and longevity with comparative metabolomics. Clemson University. Clemson, SC.

2018 The metabolomic consequences of aging: A comparative analysis. ESPO Presidential Symposium. Gerontological Society of America Annual Meeting. Boston, MA.

2017 High resolution metabolomics to monitor metabolic resilience in marmoset aging (oral presentation via Skype). American Society of Primatology Annual Meeting. Washington, D.C.

2017 Metabolomic analysis of aging and longevity. University of North Georgia. Dahlonega, GA.

2016 Insights into aging from comparative metabolomics. Pennsylvania State University. State College, PA.

Presentations/Posters

2019 The metabolomic consequences of age and size in the companion dog (oral presentation). 16th Annual Postdoc Research Day. Birmingham, AL.

2018 The metabolomic consequences of age and size in the companion dog (oral and poster presentation). Neurobiology and Neuroendocrinology of Aging Conference. Bregenz, Austria.

2018 The metabolomic consequences of age and size in the companion dog (poster). 2nd Annual UAB Nathan Shock Center Symposium. Birmingham, AL.

- 2018 The metabolomic consequences of age and size in the companion dog: a pilot study (oral presentation). 15th Annual Postdoc Research Day. Birmingham, AL.
- 2017 Metabolomic consequences of age and size in the companion dog (poster). Gordon Research Conference on the Biology of Aging. Les Diablerets, Switzerland.
- 2017 Metabolomic consequences of age and size in the companion dog (oral and poster presentation). Annual AGE meeting. New York, NY.
- 2017 Metabolomic consequences of age and size in the companion dog (poster). AFAR Grantee Conference. Santa Barbara, CA.
- 2017 Cost of reproduction across lifespan variation in *Drosophila melanogaster* (poster). 1st Annual UAB Nathan Shock Center Symposium. Birmingham, AL.
- 2017 Multimorbidity in the companion dog (oral presentation). 14th Annual Postdoc Research Day. Birmingham, AL.
- 2016 The association of lifespan and health parameters across genotypes of flies and mice (oral presentation). Gerontological Society of America annual meeting. New Orleans, LA.
- 2016 Do female dogs age differently than male dogs? (poster). Gerontological Society of America annual meeting. New Orleans, LA.
- 2016 The association of longevity and health parameters in flies and mice: a meta-analysis (poster). Annual AGE meeting. Seattle, WA.
- 2016 The domestic dog as a model for human morbidity and mortality (oral presentation). 13th Annual Postdoc Research Day. Birmingham, AL.
- 2015 A comparative analysis of the metabolomic influences on longevity (poster). Gerontological Society of America annual meeting. Orlando, Florida.
- 2014 The effects of age and genetic variation on the metabolome of *Drosophila melanogaster* (poster). Annual meeting, the Society for the Study of Evolution. Raleigh, North Carolina.
- 2014 The effects of genetic variation on the metabolome of *Drosophila melanogaster* (poster). EVO-WIBO. Port Townsend, Washington.
- 2014 Longitudinal changes in metabolomics profiles of the common marmoset (poster). Keystone Symposium- Aging: Pushing the limits of cellular quality control. Steamboat Springs, Colorado.
- 2012 Cost of Reproduction in the Domestic Dog (oral presentation). Annual meeting of the Society for the Study of Evolution. Ottawa, Canada.
- 2012 Epidemiology and Evolutionary Trade-offs in the Domestic Dog (oral presentation). Enthusiasts of Diversity, Genetics and Evolution. University of Georgia.
- 2011 Cost of Reproduction in the Domestic Dog (oral presentation). Southeastern Population Ecology and Evolutionary Genetics Meeting. Reidsville, North Carolina.

Mentoring

- 2019- Sophia Dudeck- Alabama School of Fine Arts High School student
- 2018- Matthew Hudson- UAB biology undergraduate
-2019 UAB Honors College Presidential Summer Fellow

2018- Zoie Werkheister- UAB biology undergraduate
 2018-2019 Mauhuan Taheri- UAB biology undergraduate
 -2019 Honors Undergraduate Thesis
 2018-2019 Shehzan Marieda- Hoover High School student
 2017-2018 Drew Freeman- UAB biology undergraduate
 -2018 Undergraduate Thesis
 2017 Guadalupe Meza- UWA undergraduate in the NIH RISE program
 2016-2019 Jeremy Chu, UAB biology undergraduate.
 -2018 UAB Honors College Presidential Summer Fellow
 -2018 Honors Undergraduate Thesis
 2016-2017 C. Aaron Smith, UAB biology undergraduate.
 -2017 Undergraduate Thesis
 2015-2016 Abby Melton, UAB biology undergraduate.
 2014-2016 Ariana Samuelson, UW biochemistry undergraduate.
 -2016 Undergraduate Thesis
 -2015 UW Undergraduate Travel Award
 2014-2015 Cindy Tseng, UW biochemistry undergraduate.
 2011-2012 Catherine McElroy, UGA genetics undergraduate.

Mentee Presentations

2019 Matthew Hudson. UAB Undergraduate Research Expo Summer 2019.
 2019 Mauhaun Taheri. UAB Undergraduate Research Expo Spring 2019.
 2018 Jeremy Chu. 2nd Annual UAB Nathan Shock Center Symposium. Birmingham, AL.
 -1st prize: Best Poster- Undergraduate section
 2018 Drew Freeman. 2nd Annual UAB Nathan Shock Center Symposium. Birmingham, AL.
 -2nd prize: Best Poster- Undergraduate section
 2018 Jeremy Chu. Darwin Day. University of Alabama at Birmingham. Birmingham, AL.
 2017 Guadalupe Meza. NIH STEP-UP Conference. Bethesda, MD.
 2017 Jeremy Chu. of Alabama at Birmingham Undergraduate Research Expo. Birmingham, AL.
 2017 C. Aaron Smith. University of Alabama at Birmingham Undergraduate Research Expo.
 Birmingham, AL.
 2016 Ariana Samuelson. University of Washington Undergraduate Research Symposium. Seattle, WA.
 2016 Abby Melton. University of Alabama at Birmingham Undergraduate Research Expo. Birmingham,
 AL.
 2015 Ariana Samuelson. University of Washington Undergraduate Research Symposium. Seattle, WA.
 2015 Cindy Tseng. University of Washington Undergraduate Research Symposium. Seattle, WA.
 2015 Ariana Samuelson. National Undergraduate Research Conference. Spokane, WA.
 2012 Catherine McElroy. Annual meeting of the Society for the Study of Evolution. Ottawa, Canada.