

HEATH BLACKMON

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ACADEMIC POSITIONS

2016 – present Postdoctoral Associate, University of Minnesota; College of Biological Sciences
2015 – 2016 Postdoctoral Associate, University of Minnesota; Goldberg Lab
2013 Graduate Fellow, National Evolutionary Synthesis Center

EDUCATION

2015 Ph.D., Quantitative Biology, University of Texas at Arlington
Dissertation: Synthesis and phylogenetic comparative analyses of the causes and consequences of karyotype evolution in arthropods
Major Professor: Jeffery Demuth

2010 B.S., Environmental Science, Oregon State University, Summa Cum Laude

GRANTS

Awarded

2016	\$102,000	University of Minnesota Grand Challenges Grant <i>Sex chromosome aneuploidy: reproductive health in humans and domestic animals and driving forces in the evolution of genome architecture</i>
	\$46,000	BARD Postdoctoral Fellowship – Declined <i>The evolutionary dynamics of ploidy evolution in plants</i>
2013	\$23,000	NESCent Graduate Fellowship <i>The Tree of Sex: A comprehensive synthesis of sex determination systems and their evolution in invertebrates</i>

PEER REVIEWED PUBLICATIONS

2016 **Blackmon H.**, Ross L, Bachtrog D. Sex determination, sex chromosomes and karyotype evolution in insects. – *Journal of Heredity* (in press)

Blackmon, H. and J.P. Demuth. An information-theoretic approach to estimating

the composite genetic effects contributing to variation among generation means: moving beyond the joint-scaling test for line cross analysis. – *Evolution* 70:2 420-432.

Ross, L. and **H. Blackmon**. Sex Determination. In R. Kliman (Ed.) *Encyclopedia of Evolutionary Biology*. 81-88 Elsevier Academic Press. doi:10.1016/B978-0-12-800049-6.00146-3

Richard Adams; **H. Blackmon**; J. Reyes-Velasco; D. Schield; D. Card; A. Andrew; N. Waynewood; T. Castoe. Microsatellite landscape evolutionary dynamics across 450 million years of vertebrate genome evolution. *Genome* 59:5, 295-310- Editor's choice.

2015 **Blackmon, H.**, N. Hardy, L. Ross. The evolutionary dynamics of haplodiploidy: genome architecture and haploid viability. *Evolution* 69:11 2971-2978.

Blackmon, H., and J. P. Demuth. The fragile Y hypothesis: Y chromosome aneuploidy as a selective pressure in sex chromosome and meiotic mechanism evolution. *Bioessays* 37:9 942-950.

Blackmon, H., and J. P. Demuth. Coleoptera Karyotype Database. *The Coleopterists Bulletin* 69:1 174-175.

Ross, L., **H. Blackmon**, P. Lorite, V. Gokhman, and N. Hardy. Recombination, chromosome number and eusociality in the Hymenoptera. *Journal of Evolutionary Biology* 28:1 105-116.

Blackmon, H., and J. P. Demuth. Genomic origins of insect sex chromosomes. *Current Opinion in Insect Science* 7 45-50. – recommended by Faculty of 1000.

2014 **Blackmon, H.**, and J. P. Demuth. Estimating tempo and mode of Y chromosome turnover: explaining Y chromosome loss with the fragile Y hypothesis. *Genetics* 197:2 561-572.

Streicher, J. W., T. J. Devitt, C. S. Goldberg, J. H. Malone, **H. Blackmon**, and M. K. Fujita. Diversification and asymmetrical gene flow across time and space: lineage sorting and hybridization in polytypic barking frogs. *Molecular Ecology* 23:13 3273-3291.

Tree of Sex Consortium; T. Ashman, D. Bachtrog, **H. Blackmon**, E.E. Goldberg, M.W. Hahn, M. Kirkpatrick, J. Kitano, J.E. Mank, I. Mayrose, R. Ming, S.P. Otto, C.L. Peichel, M.W. Pennell, N. Perrin, L. Ross, N. Valenzuela, and J.C. Vamosi. Tree of Sex: A database of sexual systems. *Nature Scientific Data* 1:140015. – responsible for 11,526 invertebrate records and all figures.

2012 **Blackmon, H.**, and J. P. Demuth. Ring Species and Speciation. *Encyclopedia of Life Science*. www.els.net.

SOFTWARE AND DATABASES

R Packages	chromevoIR: Probabilistic models of chromosome and ploidy evolution <i>github.com/coleoguy/chromevoIR</i> SAGA: Software for the Analysis of Genetic Architecture. <i>github.com/coleoguy/SAGA</i> EvobiR: Evolutionary biology analysis in R. <i>github.com/coleoguy/EvobiR</i>
Databases	Coleoptera Karyotype Database. <i>uta.edu/karyodb/</i> Tree of Sex Database – responsible for invertebrates <i>treeofsex.org</i>
Pedagogy	Popgensim: Wright-Fisher Simulator – undergraduate lab exercise <i>github.com/coleoguy/popgensim</i>

PRESENTATIONS (T – talk P – poster)

2016	Evolution Conference joint meeting of SSE, SSB, & ASN. Texas. – P
2016	Tel Aviv University, Department of Plant Biology, Israel – T
2015	American Genetics Association: President’s Symposium, Bainbridge Island – T
	University of Minnesota Postdoctoral Symposium. – P
2014	Arthropod Genomics Conference, Notre Dame, Indiana. 2014 – P
	University of Texas at Arlington, Genome Biology Group. 2014 – T
2013	University of Texas at Austin, Department of Population Biology. – T
2012	Evolution Conference joint meeting of SSE, SSB, & ASN. Canada. – P
2011	Evolution Conference joint meeting of SSE, SSB, & ASN. Oklahoma. – P

AWARDS AND MINOR GRANTS

2016	Outstanding poster presentation University of Minnesota postdoctoral seminar
2014	Learning Community Grant - University of Texas at Arlington – \$500
	Writing Fellowship - University of Texas at Arlington – \$6,726
2013	Excellence in Teaching Award - University of Texas at Arlington – \$500
	Eck Institute for Global Health Travel Grant – \$600
2012	NESCent Working Group Travel Funds – \$2,300
	Department Travel Grant – \$1,125
2010-2015	Carrizo Oil and Gas Doctoral Student Fellowship – \$10,000
	STEM Fellowship – \$104,000
2010	The Utley Graduate Fellowship - \$2,000

ADDITIONAL TRAINING

2016	Software Carpentry Instructor Training
2015	CIRTL Associate level certification in STEM teaching
2014	Bark Beetle Academy – University of Florida
2012	Bodega Phylogenetics Workshop – University of California Davis

OTHER PUBLICATIONS

2010 – 2016	Coleopterists Corner - blog. 100+ posts. 3,000+ views/month
2014	Blackmon, H. Coleoptera Karyotypes: The evolution of sex chromosomes and chromosome number. <i>Newsletter of the Ontario Entomological Society</i> 19(2) 19–21

TEACHING EXPERIENCE

(U – undergraduate G – graduate)

Average student evaluation 4.5/5

Developed curricula and primary instructor

2013	Introduction to R for Biologists	G 12 students
2011	Entomology Laboratory	U 60 students

Teaching assistant

2016	Biostatistics	U 60 students
2014	Bioinformatics	G 21 students

Laboratory instructor

2014-2015	Anatomy and Physiology I	U 96 students
2014	Anatomy and Physiology II	U 72 students
2013-2015	Research Methods	U 76 students
2012	Zoology	U 46 students
2010	Introductory Biology (majors)	U 72 students

Guest lectures

2016	Measurement error in comparative analyses	G 6 students
2015	Reproducible research in R	G 15 students
2014	Phyloinformatics	G 21 students
2012	Graphing in R	G 21 students
2011	Ancestral State Reconstruction	G 14 students
2011	Evolution and Ecology of Insects	U 191 students

PROFESSIONAL MEMBERSHIPS

Genetics Society of America; Society for the Study of Evolution, American Genetics Association; Coleopterists Society; American Society of Naturalists; American Association for the Advancement of Science

JOURNAL REVIEW

Annals of the New York Academy of Sciences; Axios; European Journal of Entomology; Evolution; Genome Biology and Evolution; Heredity; International Journal of Gynecology and Obstetrics Research; Journal of Heredity; Myrmecological News; Proceedings of the Royal Society B; Zoological Science

UNIVERSITY AND COMMUNITY SERVICE

2016 – present Genetics Society of America Board of directors – postdoctoral representative
2015 – present Organize and facilitate the EvolTwin group (evolution group in the Twin Cities)
2010 – present Elementary and Middle School Hands on Science Programs:
Scientific Inference - Fossils and Skeletons: 213 students
Insects Adaptation: 69 students
2016 Grant review for Phi Sigma Biological Sciences Honor Society
Software Carpentry Instructor: Reproducible research in R - 4 hour module
2015 Software Carpentry Class at University of Texas at Arlington; assistant
Organized and led learning community – Primary literature in undergraduate biology
2014 Formed and moderated foundations of evolutionary biology graduate study group
2012 Session Moderator for ACES conference
Faculty search committee — graduate student representative
2011 Judge for Undergraduate Research Posters at LSAM Conference

REFERENCES

Emma Goldberg
Assistant Professor
University of Minnesota

Jeffery Demuth
Associate Professor
University of Texas at Arlington

Yaniv Brandvain
Assistant Professor
University Minnesota