# Scott Allen Funkhouser

Updated January 2017

## Education

2013-2019

**PhD, Genetics and Quantitative Biology**; Michigan State University

2007-2011

**BSc, Biochemistry**; University of Washington

2005-2007

**Valedictorian**; Graham-Kapowsin HS

## Research Positions

2014 - Present

**Graduate Research Assistant**; Mentor: Catherine Ernst PhD; Michigan State University

*Investigating the role of A-to-I RNA editing in mammalian genomes and developing methods for the genomic prediction of complex phenotypes.*

2012 - 2013

**Research Scientist I**; Mentor: Mary Philip MD PhD; University of Washington

*Investigated the role of a heme exporter, FLVCR, in the development of T lymphocytes.*

2010 - 2011

**Undergraduate Research Assistant**; Mentor: Chris Hague PhD; University of Washington

*Studied novel binding partners to pertinent G-Protein coupled receptors.*

## Awards, Grants, Scholarships

**USDA Pre-doctoral Fellowship**

*2017-2019* • *$95,000*

**ISAG Travel Award**

*$2,000 to attend the 2016 ISAG Conference in Salt Lake City, UT*

**NSIF Graduate Student Travel Award**

*$500 to attend 2016 NSIF meeting in Raleigh, NC*

**Fred and Lucille Stamper Academic College Scholarship**

*2007 - 2011* • *$16,256*

## Memberships

**ASAS PhD Student Member**

*2015 – Present*

**Genetics Student Organization Officer**

* 2016-Present: *President*
* 2014-2015: *Second-year Representative*
* 2015-2016: *Third-year Representative and Social Chair*

## Selected Graduate Coursework

* Molecular Biology (BMB 801)
* Eukaryotic Molecular Genetics (MMG 835)
* R Programming for Quantitative Genetics (ANS 824)
* Advanced Statistics for Biologists (STT 814)
* Intro to Statistical Genetics (STT 855)
* Bayesian Inference using MCMC (FW 849)

## Skills

**Programming**

Listed in order from most skilled to least skilled

* The R language
* C++
* Bash
* Fortran
* Python
* Java

Familiar with others for web development including:

* Markdown
* HTML
* CSS
* Javascript

**Bioinformatics**

Experience using various tools, including:

* Bowtie
* Tophat
* Picard
* SAMTools
* bcftools
* Variant Effect Predictor
* UCSC Genome Browser

**Software development**

* Git
* Github
* R Studio
* GNU Make

R development packages:

* devtools
* roxygen
* testthat

**Literate programming**

* knitr
* Rmarkdown
* Shiny

**Molecular Biology**

* Flow cytometry
* immunostaining
* qPCR
* PCR
* molecular cloning and techniques therein
* cell culture

## Publications

1. **Funkhouser SA**, Bates RO, Ernst CW, Newcom D, Steibel JP. Estimation of genome-wide and locus-specific breed composition in pigs. TAS. 2017; doi: 10.2527/tas2016.0003
2. Zhao D, Hamilton JP, Hardigan M, Yin D, He T, Vaillancourt B, Reynoso M, **Funkhouser SA** et al. Analysis of ribosome-associated mRNAs in rice reveals the importance of transcript size and GC content in translation. G3 (Bethesda). 2016;7: 203–219. doi:10.1534/g3.116.036020
3. Philip M, **Funkhouser SA**, Chiu EY, Phelps SR, Delrow JJ, Cox J, et al. Heme Exporter FLVCR Is Required for T Cell Development and Peripheral Survival. J Immunol. 2015; doi:10.4049/jimmunol.1402172

## Pending Publications

1. **Funkhouser SA**, Steibel JP, Bates RO, Raney NE, Schenk D, Ernst CW. Evidence for Transcriptome-wide RNA Editing Among Sus scrofa PRE-1 SINE Elements. bioRxiv. 2017; Available: [here](http://biorxiv.org/content/early/2017/01/05/096321.abstract)
2. Reeb PD, **Funkhouser SA**, Ernst CW, Steibel JP. Assessing genotype call accuracy from RNA sequencing data.

## Conference Presentations and Posters

* **Funkhosuer SA**, Bates RO, CW Ernst, Newcom D, Steibel JP. (2016) Estimation of the composition of four U.S. swine breeds using genomic data. ePoster presented at the 2016 ASDA/AAS Joint Annual Meeting.
* **Funkhouser SA**, Steibel JP, Bates RO, Raney NE, Ernst CW. (2016) RNA editing in swine is associated with PRE-1 retrotransposons. ePoster presented at the 2016 International Society for Animal Genetics Conference.
* **Funkhouser SA**, Steibel JP, Bates RO, Raney NE, Ernst CW. (2015) Evidence of RNA editing in pig longissimus dorsi muscle. Oral presentation given at the American Dairy Science / American Society of Animal Science Midwest Conference.

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