Amelia Weber Hall, PhD

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Education

Ph.D. **Microbiology** (2017),
University of Texas at Austin, Austin, TX
B.S. **Molecular Genetics** (2007),
University of Rochester, Rochester, NY

Honors and Awards

AHA Atrial Fibrillation SFRN Fellowship, 2018
Graduate School Summer Fellowship, 2015, 2016
Ethel and Robert L. Terry Memorial Scholarship, 2012, 2015
Joseph F. Short Memorial Endowed Fellowship, 2012
Graduate Recruitment Fellowship, 2010

Experience

Massachusetts General Hospital & The Broad Insitute of MIT and Harvard, *Research Fellow* 11/2017 –
Advised by Dr. Patrick Ellinor; Genetics of Cardiovascular Disease
- Currently working on wetlab/analysis efforts to produce chromatin state maps in human left atrium tissue
- Annotating SNP data with relevant features to provide genomic context for disease associated SNPs
- Implemented pipeline for single cell RNA-seq data, currently moving pipeline to cloud-based services

University of Texas at Austin: Department of Molecular Biosciences, *Graduate Research Asst.* 2010 – 2017
Advised by Dr. Vishwanath Iyer; Transcriptional Regulation, and Functional Genomics
- Designed project to study histone modification profiles and gene expression in human brain tumor samples
- Developed protocol to perform chromatin immunoprecipitation, optimized for primary brain tumor samples
- Collaborated with the Texas Cardiac Arrhythmia Institute to determine if certain genotypes are associated with success in treating atrial fibrillation through surgery

University of Texas at Austin: Section of Neurobiology, *Laboratory Technician* 2007 – 2010
Advised by Dr. Richard Aldrich; Biophysics, and Ion Channels
- Developed protein mutagenesis protocol to selectively add non-natural amino acids to calcium binding sites for optical measurement of calcium binding strength

University of Rochester: Department of Biology, *Undergraduate Research Assistant* 2006 – 2007
Advised by Dr. Vera Gorbunova; Aging, DNA Repair, and Cancer Biology
- Defended undergraduate thesis: The Effects of Irradiation, Oxidative Damage and Oncogenic Senescence on DNA Repair Efficiency in Human Dermal Fibroblasts, Spring 2007

University of Rochester: Educational Technology Center, *Student Technician* 2003 – 2007
IntrinsiQ Research, Inc., Waltham, MA, *Summer Programming Intern* 2004 – 2006

Publications

Hall AW, Battenhouse AM, Shivram H, Morris AR, Cowperthwaite MC, Shpak M, Iyer VR. Bivalent Chromatin Domains in Glioblastoma Reveal a Subtype-Specific Signature of Glioma Stem Cells. *Cancer Res*. 2018. PMID: 29549165; PMCID: PMC5955797.

Halling DB, Liebeskind BJ, **Hall AW**, Aldrich RW. Conserved properties of individual Ca2+-binding sites in calmodulin. *Proc Natl Acad Sci USA*. 2016. PMID: 26884197; PMCID: PMC4780646.

Mohanty S*, **Hall AW***, Mohanty P, Prakash S, Trivedi C, et al. Novel association of polymorphic genetic variants with predictors of outcome of catheter ablation in atrial fibrillation: new directions from a prospective study (DECAF). *J Interv Card Electrophysiol.* 2016. PMID: 26497660.

Shpak M, **Hall AW**, Goldberg MM, Derryberry DZ, Ni Y, Iyer VR, Cowperthwaite MC. An eQTL analysis of the human glioblastoma multiforme genome. *Genomics*. 2014. PMID: 24607568.

Ni Y, **Hall AW**, Battenhouse A, Iyer VR. Simultaneous SNP identification and assessment of allele-specific bias from ChIP-seq data. *BMC Genet.* 2012. PMID: 22950704; PMCID: PMC3434080.

Li W, Halling DB, **Hall AW**, Aldrich RW. EF hands at the N-lobe of calmodulin are required for both SK channel gating and stable SK-calmodulin interaction. *J Gen Physiol.* 2009. PMID: 19752189; PMCID: PMC2757765.

Seluanov A, Hine C, Bozzella M, **Hall A**, Sasahara TH, Ribeiro AA, Catania KC, Presgraves DC, Gorbunova V. Distinct tumor suppressor mechanisms evolve in rodent species that differ in size and lifespan. *Aging Cell.* 2008. PMID: 18778411; PMCID: PMC2637185.

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Skills

Molecular biology:
- Protocol development/experimental design
- Chromatin immunoprecipitation
- Western blot
- Tissue culture
- Protein expression/purification

Bioinformatics:
- Genomics: ChIP-seq, RNA-seq, 4C-seq
- Data analysis and visualization
- Python, Unix, R, HPC (SGE/SLURM)
- Chromatin state modeling
- Pathway enrichment

Invited Talks

Modeling Chromatin States to Elucidate Transcriptional Regulation in Glioblastoma, Chromatin, Non-coding RNAs and RNAP II Regulation in Development and Disease, Austin, TX. March 2016 *

Modeling Chromatin States to Elucidate Transcriptional Regulation in Glioblastoma, Department of Molecular Biosciences Retreat. March 2016

Histone Modification Profiling in Glioblastoma Tumors Identifies Enhancer Variability, Big Data in Biology Symposium 2015, Austin, TX. May 2015 *

Epigenetic Profiling and Chromatin Architecture in Glioblastoma, RNA and DNA Club, UT Austin. Feb. 2015

Histone Modification Profiling in Glioblastoma Tumors Identifies Enhancer Variability, Lost Pines Conference 2014, Smithville, TX. November 2014 *

Optimizing ChIP in Cell Lines and Solid Tumors, M.D. Anderson Science Park, Smithville, TX. Nov. 2013

* indicates a poster and talk were presented together.

Posters

Glioblastoma enhancers and bivalent chromatin domains are subtype specific, Department of Molecular Biosciences Retreat, March 2017. **Awarded "Best Poster."**

Non-coding somatic mutations and regulatory variation in the glioblastoma genome, Cancer Prevention Research Institute of Texas Annual Conference, Austin, TX, November 2015

Epigenetic Profiling and Clustering of Glioblastoma Multiforme, Big Data in Biology Symposium 2014, Austin, TX, May 2014. **Won "Best Graduate Student Poster," award.**

Teaching Experience

Core Next Generation Sequencing Tools on Stampede. Big Data Summer School at UT Austin, Co-instructor May 2017, May 2016, May 2015. Teaching assistant May 2014.

Public Health Bacteriology Laboratory. Teaching assistant under Dr. Suzanne Barth, (BIO361L, Spring, Fall 2016). **Awarded Outstanding Teaching Assistant Award, April 2017**

Immersive approaches to biological data. Teaching assistant at **Cold Spring Harbor Laboratories,** December 2016.

Working with MySQL Databases. Short Course for Center for Computational Biology and Bioinformatics. Teaching assistant: December 2015, October 2014.

Introduction to ChIP-seq. Short course for Center for Computational Biology and Bioinformatics. Co-instructor November 2015, December 2014.

Core Next Generation Sequencing Analysis Tools. Center for Computational Biology and Bioinformatics. Instructor October 2016, Teaching assistant October 2015.

Introductory Biology II TIP. Teaching assistant under Dr. Kristin Patterson, (BIO311D, Fall 2015).