

# Amanda Everitt

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## EDUCATION

<b>University of California, San Francisco</b> PhD, Biological and Medical Informatics	In progress
<b>University of California, Davis</b> BSc, Biotechnology-Bioinformatics	2013-2017

## RESEARCH EXPERIENCE

### Dr. Jeremy Willsey Laboratory – Institute for Neurodegenerative Diseases

*Bioinformatic Programmer II* 01/2018 - 01/2019

*Bioinformatic Programmer III* 03/2019 – 07/2020

- Advisor: A. Jeremy Willsey, Ph.D.
- Responsible for complete processing and interpretation of high-throughput sequencing datasets including RNA-seq (8), AmpliSeq (42), single-cell RNA-seq (1), ATAC-seq (2), ChIP-seq (1), and Methyl-Seq (1)
- Integrate multiple data modalities across model systems to identify if similar pathways are affected by risk genes identified in Autism spectrum disorder or Tourette syndrome. Specialize in network-level analyses.
- Familiar with multiple model systems and accompanying databases including Xenopus (XenBase), Drosophila (FlyBase), mouse (MGI, Allen Atlas), vole (Ensembl), and various cell-cultures (UCSC Genome and Cell Browser, BrainSpan, GTEX) • Manage computational pipelines, data storage, billing, and cloud formation (via AWS) for large-scale studies
- Collaborate extensively with more than six groups, resulting in two publications with two in review and three in preparation

### Viome

*LIMS consultant* 01/2018 – 03/2018

*Software Engineer* 10/2017 – 12/2017

- Collaborated with engineering, bioinformatics, and laboratory teams to improve functionality and local structure of Labware LIMS
- Streamlined the collection, curation, and migration of datasets (e.g. customer data, metatranscriptomics, metabolomics) into an integrated central database
- Developed a custom program to implement quality control measures which navigates cloud computing and Google Sheets API using SQL and Python

### Vector Genetics Laboratory – UC Davis School of Veterinary Medicine

### Undergraduate Research Assistant

07/2015 - 04/2017

- Advisor: Bradley Main, Ph.D.
- Investigated the genetic variation associated with the increased insecticide resistance in malaria-transmitting mosquitoes with a specific haplotype. Performed differential gene expression and identified structural variants. Published 2018.
- Prepared RNAseq libraries, dissected and sexed mosquitoes, maintained mosquito colonies, performed gel electrophoreses and various insecticide assays

### Dr. Jonathan Eisen Laboratory

#### Bioinformatic Intern

07/2015 - 04/2017

- Advisor: Prof. Jonathan Eisen and Guillaume Jospin
- Investigated the potential presence of unexpected microorganisms in metagenomic data by mapping, reassembling, and classifying previously unused reads
- Pre-processed metagenomic data, assisted in data storage, and converted software from Perl to Python

### iGEM (International Genetically Engineered Machine)

#### Undergraduate Researcher

04/2016 – 10/2016

- Advisors: Justin Siegel, Ph.D., Marc Facciotti, Ph.D. and Matthias Hess, Ph.D.
- Our project was a proof-of-concept that proteins could be used as food dyes, rather than synthetic petroleum-based dyes, in response to consumer demands
- Designed and evaluated the statistical efficiency of a pipeline that uses the protein sequence pattern of a known “color” domain to search through metagenomes for homologs and predict a color phenotype –allowing our team to efficiently allocate time and financial resources
- Responsible for protein purification, bacterial culture, web-site design, poster design, and 20-minute presentation

### PEER-REVIEWED RESEARCH PUBLICATIONS

1. Willsey HR, Exner CRT, Xu Y, **Everitt A**, Sun N, Wang B, Dea J, Schmunk G, Zaltsman F, Teerikorpi N, Kim A, Anderson AS, Shin D, Seyler M, Nowakowski TJ, Harland RM, Willsey AJ, and State MW. “Parallel *in vivo* analysis of large-effect autism genes implicates cortical neurogenesis and estrogen in risk and resilience”. *Neuron* (2021).
2. Willsey HR, Xu Y, **Everitt A**, Dea J, Exner CRT, Willsey AJ, State MW, and Harland RM. “Neurodevelopmental disorder risk gene *DYRK1A* is required for ciliogenesis and brain size in *Xenopus* embryos”. *Development* (2020). PMID: 32467234.
3. Darbandi SF, Schwartz SER, Pai E. LL, **Everitt A**, Turner ML, Cheyette BNR, Willsey AJ, State MW, Sohal VS, and Rubenstein JLR. “Enhancing WNT signaling Restores Cortical Neuronal Spine Maturation and Synaptogenesis in *Tbr1* Mutants”. *Cell Reports* (2020).
4. Shah PS, Link N, Jang GM, Sharp PP, Zhu T, Swaney DL, Johnson JR, Von Dollen J, Romage HR, Satkamp L, Newton B, Huttenhain R, Petiti MJ, Baum T, **Everitt A**, Laufmain O, Tassetto M, Shales M, Stevenson E, Iglesias GN, Shokat L, Tripathi S,

Balasubramaniam V, Webb LG, Aguirre S, Willsey AJ, Garcia-Sastre A, Pollard KS, Cherry S, Gamarnik AV, Marazzi I, Taunton J, Fernandez-Sesma A, Bellen HJ, Andino R, and Krogan NJ. "Comparative Flavivirus-Host Protein Interaction Mapping Reveals Mechanisms of Dengue and Zika Virus Pathogenesis". *Cell* (2018).

5. Darbandi SF, Schwartz SER, Qi Q, Catta-Preta R, Pai E. LL, Mandell JD, **Everitt A**, Rubin A, Krasnoff RA, Katzman S, Tastad D, Nord AS, Willsey AJ, Chen B, State MW, Sohal VS, and Rubenstein JLR. "Neonatal Tbr1 Dosage Controls Cortical Layer 6 Connectivity". *Neuron* (2018).
6. Main BJ, **Everitt A**, Cornel AJ, Hormozdiari F, and Lanzaro GC. "Genetic variation associated with increased insecticide resistance in the malaria mosquito *Anopheles coluzzii*". *Parasites & Vectors* (2018).

## PRESENTATIONS AND POSTERS

1. **Everitt A**, Dohlman A. "Evaluating statistical methods for inferring directed microbial interaction networks". Oral presentation at: 2019 UCI Systems Biology Short Course; Irvine, CA.
2. Zaltsman Y, Gonzalez S, **Everitt A**, Xu J, Naing S, Teerikorpi N, Sun N, Morris M, Huttenhain R, Krogan N, Willsey AJ. "Human forebrain-patterned cells for functional analysis of autism spectrum disorder risk genes". Poster presentation at: 2019 Psychiatric Cell Map Initiative; San Francisco, CA.
3. Sun N, Tian R, Seyler M, **Everitt A**, Kampmann M, Willsey J. "Identifying Convergent Transcriptional Signatures of Autism Spectrum Disorder". Poster presentation at: 2019 Psychiatric Cell Map Initiative; San Francisco, CA.
4. Teerikorpi N, **Everitt A**, Baum T, Sun N, Huttenhain R, Krogan NJ, Willsey AJ. "Investigating the role of ASD-risk gene CUL3 in neurodevelopment using iPSC-derived neural cells". Poster presentation at: 2018 Molecular Psychiatry Association; Kauai, HI.
5. Sun N, Teerikorpi N, **Everitt A**, Arbelaez J, Baum T, Seyler M, Kampmann M, Jeremy Willsey AJ. "Identifying Convergent Transcriptional Signatures of Autism Spectrum Disorder". Poster presentation at: 2018 Molecular Psychiatry Association; Kauai, HI.
6. **Everitt A**, Caligiuri A, Chen J, Akre S, Weyers B. "Cyanobacteriochrome as a Viable Natural Alternative to Synthetic Food Dyes". Oral and poster presentation at: 2016 International Genetically Engineered Machine Competition; Boston, MA.  
- Received gold medal from a panel of judges; project nominated as a finalist

## AWARDS AND GRANTS

2019 System Biology Career Booster Award, UC Irvine (\$6,000)

2017 Winter, Dean's List College of Agricultural and Environmental Sciences, UC Davis

## PROFESSIONAL DEVELOPMENT ACTIVITIES

**Amazon Web Services Security Essentials** October, 2019

Two-day workshop covering AWS cloud security and data encryption with a particular focus on electronic health records and complying with HIPAA encryption requirements

**Single-Cell RNA-Seq Workshop—UC Davis Bioinformatics Core** July, 2018

Topics covered included: single-cell platforms, experimental design, cost estimation, pre-processing platforms, and foundational downstream analyses

**UCI Systems Biology Short Course** May 2018, ongoing

Intensive 3-week long course focused on establishing interdisciplinary careers and foundational systems biology topics. Included lectures, laboratory exercises, mentoring, and project development.

- Awarded funding to lead a collaboration between five groups across three universities which will use simulated and novel 16s amplicon sequencing to evaluate directed microbial interaction networks

**Center for Leadership Learning Development Program** 2015-2016

Set of 10 courses in topic categories: Foundations of Leadership, Dimensions of Diversity, Self-Awareness, Communication, Conflict Management, and Group Development

## TECHNICAL SKILLS

<b>Scripting Languages:</b>	proficient in R, Python, Bash; experience in MatLab, Mathematica, Perl, SQL
<b>Computing Resources:</b>	AWS cloud, HPCC management systems (Slurm)
<b>Wet Lab:</b>	RNA and DNA isolations, PCR, electrophoresis/Bioanalyzer, insect dissection, rearing and maintenance of mosquito colonies
<b>Dry Lab:</b>	DNA related: Picard, samtools, bowtie2 RNA related: FastQC, STAR, DESeq2, EdgeR, WGCNA Others: DiffBind, IDR, Seurat, MACS2, MAST, Bismark

## TEACHING AND VOLUNTEER EXPERIENCE

**Data and Software Carpentry**

*Certified Instructor*

12/2018 - present

- Teach foundational data science and computing topics including basic UNIX, bioinformatics, and cloud computing

## **Institute for Neurodegenerative Diseases (IND) Software Carpentry Course**

*Organizer and Instructor*

02/2018

- Independently orchestrated and hosted two-day course for IND staff to teach basic computing skills as well as developed personalized lessons for attendees' projects

## **Data-Intensive Biology Summer Institute**

*Teaching Assistant*

Summer, 2017

- Director: Titus Brown, Ph.D.
- Helped instruct a workshop that covered foundational bioinformatics tools including Bash, R, markdown, Github, and cloud computing, as well as tutorials for RNA-seq, CHIP-seq, GWAS, variant calling, and *de novo* genome assembly
- Assisted students with workshop tutorials, guided classroom discussions, provided one-on-one help for students and installed software