Amanda Everitt

Sandler Neurosciences Center, UCSF
675 Nelson Rising Ln, San Francisco, CA 94158

email amanda.everitt [at] ucsf.edu
website https://aseveritt.github.io/

EDUCATION

University of California, Davis BSc, Biotechnology-Bioinformatics 2013-2017

RESEARCH EXPERIENCE

Willsey Laboratory – Institute for Neurodegenerative Diseases, UCSF
Bioinformatics Programmer II 01/2018 - 03/2019
Bioinformatics Programmer III 03/2019 – present

- 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. & Dr. Gregory Lanzaro

- 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

Eisen Laboratory, UC Davis
Bioinformatics Intern 07/2015 - 04/2017

- Advisor: Prof. Jonathan Eisen and Guillaume Jospin
- Investigated the potential presence of unexpected microorganisms in seagrass metagenomic data by mapping, reassembling, and classifying 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. 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. (2018). Comparative Flavivirus-Host Protein Interaction Mapping Reveals Mechanisms of Dengue and Zika Virus Pathogenesis. Cell, 175(7), 1931-1945.
2. 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. (2018). Neonatal Tbr1 Dosage Controls Cortical Layer 6 Connectivity. Neuron, 100(4), 831-845.
3. Main BJ, **Everitt A**, Cornel AJ, Hormozdiari F, and Lanzaro GC. (2018). Genetic variation associated with increased insecticide resistance in the malaria mosquito *Anopheles coluzzii*. Parasites & Vectors 11, 225.

IN REVIEW

1. Wojcechowskyj JA, Hultquist JF, Hiatt J, Jang GM, Li Y, Shales M, Mandell JD, Gordon DE, McGregor MJ, Chen Y, Weissman JS, Willsey AJ, **Everitt A**, Marson A, Frankel AD, Kampmann M, and Krogan NJ. (submitted 2018). The exonuclease PNPT1 genetically interacts with HIV-1 Rev and regulates interferon signaling.
2. Fazel Darbandi S, Robinson-Schwartz SE, Pai ELL, **Everitt A**, Turner M, Cheyette BNR, Davis G, Willsey AJ, State MW, Sohal VS, and Rubenstein JLR. (submitted 2019). LiCl Treatment Rescues Cortical Neuronal Spine Maturation and Synaptogenesis in Tbr1 Mutants.

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
2016 Spring, Dean's List College of Agricultural and Environmental Sciences, UC Davis

IN REVIEW

2020 NSF Graduate Research Fellowship Program

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 four 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

Scripting Languages:	proficient in R, Python, Bash; experience in MatLab, Mathematica, Perl, SQL
Computing Resources:	AWS cloud, HPCC management systems (Slurm)
Wet Lab:	RNA and DNA isolations, PCR, electrophoresis/Bioanalyzer, insect dissection, maintenance of mosquito colonies
Dry Lab:	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