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Education

2010-2011	Postdoctoral	<i>Bioinformatics</i>	Texas A&M University
2005-2010	Ph.D., M.S.	<i>Statistics</i>	Duke University
2001-2005	B.S., B.A [†]	<i>Computer Science, Mathematics</i>	Trinity University

Statistical Inference

- Bayesian Analysis
- Mixture Models
- Hypothesis Testing
- Nonparametric Tests
- Regression and GLMs
- Model Diagnostics

Predictive Methodology

- Loss Functions/Metrics
- Regularization
- Cross Validation
- Confusion Matrices
- Cost/Benefit Matrices
- Model Interpretation

Bioinformatics

- fastQC/Illumina
- fastX/cutadapt
- BWA/bowtie/SAM
- IGV/VCF/GFF
- SAMtools/GATK
- HTseq/TopHat

Machine Learning

- Ensemble Methods
- Boosting (XGBoost)
- Support Vector Machines
- Neural Networks (keras)
- Clustering
- PCA/SVD/NMF
- Recommenders

Coding

- Python
- R
- SQL
- Bash
- AWS/HPC
- C++
- git

Packages

- bokeh
- sklearn
- spark
- gensim
- statsmodels
- scipy.stats
- np/pd/plt

Genomics

- Genotyping/GWAS
- Mapping Populations
- Bulk Segregation
- RAD-Seq/WGS
- RNA/TAG-Seq/DE
- Start Site Analysis
- Allele Specific RNA

Experience

2016-2017 *Instructor, Sr. Data Scientist*

Galvanize, ATX & NYC

Content development, lecturing, guidance, mentoring; recruiting, hiring, promotion, networking

2014-2016 *Research Associate, Integrative Biology*

University of Texas

Bioinformatics pipeline creation and data management; mentoring and statistical analysis support

2011-2014 *Bioinformatic Analyst, Next Generation Sequencing*

Texas A&M AgriLife

Lead bioinformatic analysis and consulting services team; managed data QC and delivery pipeline

2010-2011 *Research Associate, Postdoctoral Fellowship*

Texas A&M University

Statistical and genomic data analysis, consulting, and project support in a basic science wet lab

2007-2010 *Instructor and Consultant, Statistical Science*

Duke University

Experimental design and data analysis consultation; teaching and mentoring for statistics courses

2006-2007 *Research Assistant, Children's Environmental Health*

Duke University

Collaboration with diverse interdisciplinary team in an applied and translational research setting

Publications

- Wang, X, Schwartz SL, Lovell JT, Juenger T. *Photoperiod regulation of diurnal transcription in *Panicum Hallii**. **In Prep.**
- Jin H, Schwartz SL, Vvedenskaya I, Malik I, Pugh BF, Nickels B, Kaplan CD. Pol II activity and promoter architecture determine transcription start site usage in *Saccharomyces cerevisiae*. **In Prep.**
- Lambertz IU, Luo L, Berton TR, Schwartz SL, Hursting SD, Conti CJ, Fuchs-Young R. Early Exposure to a High Fat/High Sugar Diet Increases the Mammary Stem Cell Compartment and Mammary Tumor Risk in Female Mice. **Cancer Prevention Research**, 2017.
- Lovell JT, Shakirov EV, Schwartz SL, Lowry D, Aspinwall A, Taylor S, Bonnette J, Hawkes C, Fay P, Juenger TE. Promises and challenges of eco-physiological genomics in the field: tests of drought responses in Switchgrass. **Plant Physiology**, 172(2), 2016: 734-48.
- Lovell JT, Schwartz SL, Lowry D, Shakirov E, Wang M, Johnson J, Sreedasyam A, Plott C, Jenkins J, Schmutz J, Juenger T. *Drought responsive gene expression and regulatory divergence between upland and lowland ecotypes of a perennial C4 grass*. **Genome Research**, 26(4), 2016: 510-18
- Torres M, Ghaffari N, Buiate EAS, Moore N, Schwartz SL, Johnson CD, Vaillancourt L. *A *Colletotrichum graminicola* mutant deficient in the establishment of biotrophy reveals early transcriptional events in the maize anthracnose disease interaction*. **BMC Genomics**, 17(202), 2016.
- Su, Z., et al. *A comprehensive assessment of RNA-seq accuracy, reproducibility and information content by the SEQC Consortium*. **Nature Biotechnology**, 32, 2014: 903-14
- Clavijo A, Nikooienejad A, Shahrokh M, Metz R, Schwartz SL, Atashpaz-Gargariz E, Deliberto TJ, Lutman MW, Pedersen K, Bazan LR, Swenson SL, Koster LG, Zang M, Beckham T, Johnson C, Bonpheng M. *Identification and phylogenetic analysis of the first pandemic (H1N1) 2009 influenza virus from feral swine*. **Zoonoses Public Health**, 60(5), 2013: 327-35.
- Schwartz SL, Ivanov IV, Davidson LA, Goldsby JS, Dahl DB, Dougherty ER, Herman D, Donavan SM, and Chapkin RS. *A metagenomic study of diet-dependent interaction between gut microbiota and host in infants reveals differences in immune response*. **Genome Biology**, 13(4), 2012.
- Shah MS, Schwartz SL, Zhao C, Davidson LA, Zhou B, Lupton JR, Ivanov I, and Chapkin RS. *Integrated microRNA and mRNA expression profiling in a rat colon carcinogenesis model: Effect of a chemoprotective diet*. **Physiological Genomics**, 43(10), 2011: 640-54.
- Schwartz SL, Li F, Reiter JP. *Sensitivity analysis for unmeasured confounding in principal stratification*. **Statistics in Medicine**, 31(10), 2012: 949-62.
- Schwartz SL, Li F, Mealli F. *Dirichlet processes for flexible modeling of continuous intermediate variables using principal stratification*. **Journal of the American Statistical Association**, 106(496), 2011: 1331-44.
- Schwartz SL, Gelfand A, Miranda ML. *Joint Bayesian analysis of birthweight and censored gestational age using finite mixture models*. **Statistics in Medicine**, 29(16), 2010: 1710-23.
- Dissertation: Bayesian Mixture Modeling Approaches for Intermediate Variables and Causal Inference. Advisors: Drs. Fan Li and Jerome P. Reiter. Duke University. 2010.

Graduated[†] *Summa Cum Laude*, awarded Barry M. Goldwater Scholarship and two NSF CSEMS Scholarships, selected Class of 2005 Outstanding Computer Science Student, and played collegiate soccer, winning the NCAA DIII Men's Soccer National Championship in 2003 and Academic All-American honors in 2005.