

# Audrey E. Gill

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## Skills

### Languages

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R  
Bash  
Python  
Markdown/ LaTeX  
SAS

### Bioinformatics

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Git/Github  
Keras  
Bioinformatics pipelines  
High performance computing  
PBS & Slurm scripting

### Statistics

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Design of experiments  
Bayesian analysis  
Data dimension reduction  
Nonparametric regression  
Generalized & multivariate linear models

## Work Experience

### New York City Green Roof Microbiome Project - *University of Oregon, Dr. Krista McGuire*

September 2018 - March 2018

- Evaluated microbial community succession and dispersal using 16S and ITS data from over 1,000 samples spanning a seven year collection period
- Collaborated in a team using FUNGuild, Qiime, and various R packages for ecological data analysis and visualization
- Prepared GitHub repository for reproducibility of results, including R scripts and other code, figures/visuals
- Orally presented study outcomes to audiences from a variety of disciplines

### Data Dimension Reduction with Variational Autoencoders - *University of Oregon, Dr. Andrew Kern*

September 2018 - December 2018

- Explored a preliminary application of variational autoencoders to dimensionality reduction of GWAS data from the Human Genome Diversity Project
- Implemented classical deep learning techniques with Keras for R and Python
- Performed literature review of recent advancements in deep learning methods and their applications to population genetics research

### Network Analysis of Gene-miRNA Interaction - *Texas Tech University, Dr. Fangyuan Zhang*

September 2018 - March 2018

- Coordinated with statistics and microbiology faculty in a research team setting
- Performed network analysis to classify genes based on common microRNA binding sites
- Utilized high dimensional data reduction techniques and functional gene enrichment analysis in methylation studies

### Engaged Learning Fellow - *Southern Methodist University, Drs. Monnie McGee and Josephine Caldwell-Ryan*

August 2014 - December 2015

- Competitive grant-funded project examined prejudice towards transgender and gender variant people
- Designed psychosocial and behavioral experiments, secured IRB approval across two institutions, conducted online and in-person data collection, and presented results independently and under supervision of faculty
- Analyses included quantitative and qualitative data using nonparametric and parametric techniques

### Summer Institute in Biostatistics - *Columbia University, Dr. Carmela Alcantara*

May 2014 - July 2014

- Training in biostatistical design and analysis techniques and SAS programming
- Interacted with a variety of biomedical research labs, gaining understanding of the challenges in heart, lung, blood, and sleep research and the role of biostatistics in meeting those challenges
- Continued mentoring under Dr. Alcantara after program completion in analyses, oral and written communication of study outcomes, and training in the area of behavioral cardiovascular research

### Mathematics and Statistics Tutor - *Texas Tech University, Southern Methodist University, Eastern New Mexico University*

August 2010 - June 2017

- Facilitated over 1,500 hours of individual and group sessions to reinforce course concepts and engage in critical consideration of class assignments and writing prompts
- Tailored performance improving strategies for a wide variety of student educational backgrounds and goals
- Coordinated with professors, athletics staff, and support staff to provide optimal feedback on class assignments and individual student progress

## Education

### **M.S. Bioinformatics and Genomics**

*University of Oregon*

Anticipated December 2019

### **M.S. Statistics**

*Texas Tech University*

May 2018

### **B.S. Statistics**

*Southern Methodist University*

Cum laude

December 2015

## Publications and Presentations

“Personality and Empathy as Factors in Awareness of and Attitudes toward Gender Variance”

Publication in preparation.

“Intensive and Specific Feedback Self-control of the Argonauts and MicroRNA Targeting Activity”

Degeng Wang, Audrey Gill, Fangyuan Zhang. Manuscript under review by Nucleic Acids Research.

“Predictive and Mediating Factors in Cisgenderist Attitudes”

Poster co-author. Presented at Western Psychological Association Convention 2017.

“Gender and Psychological Correlates of Short Sleep Duration and Poor Sleep Quality in Adults with Coronary Heart Disease: Results from a National Survey”

Poster first author. Presented at the SLEEP 2015 Annual Conference 2015.

“An Exploratory Study of Critical Thinking Disposition and Cisgenderism”

Poster first author. Presented at the International Convention of Psychological Science 2015.