

Randy Parrish

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EDUCATION

MSPH, Biostatistics Expected May 2021
Rollins School of Public Health (RSPH), Emory University | Atlanta, GA
GPA: 3.75 | [Thesis](#)

BS, Biology (Cellular/Physiology Track) May 2019
BA, Mathematics May 2019
University of Louisville (UofL) | Louisville, KY
Minor: Global Public Health | *Cum Laude* | GPA: 3.71

RESEARCH OUTCOMES

Parrish, R., Gibson, G., Epstein, M. P., Yang, J. TIGAR-V2: Efficient TWAS Tool with Nonparametric Bayesian eQTL Weights of 49 Tissue Types from GTEx V8. (November, 2021). *HGG Advances*. Preprint: <https://www.biorxiv.org/content/10.1101/2021.07.16.452700v2>

Yang, J., **Parrish, R.**, Gibson, G., Epstein, M. P. (October, 2021). TIGAR-V2: Efficient TWAS Tool with Nonparametric Bayesian eQTL Weights of 49 Tissue Types from GTEx V8 [Poster]. ASHG Virtual Meeting 2021.

Tang, S., **Parrish, R.**, Buchman, A. S., De Jager, P. L., Bennett, D. A., Epstein, M. P., Yang, J. (October, 2020). Powerful variance-component method for TWAS identifies novel and known risk genes for Alzheimer's dementia [Poster Presentation]. ASHG Virtual Meeting 2020.

Staples, A. K., King, R. A., Doughty, M. A., **Parrish, M. L.**, Klann, J. K., Rinehart, C. A., ... Hatfull, G. F. (2017). Mycobacterium phage TinaFeyge, complete genome [Direct Submission]. GenBank: [KY471266.1](#).

PRESENTATIONS

SR-TWAS: Leveraging multiple reference panels to improve TWAS power by ensemble machine learning [Platform Presentation] October 2021
ASHG 2021 Virtual Meeting | [Website](#)

Correlation of geographical distribution of mycobacteriophages with genomic clusters and genome distance [Poster] May 2013
12th Annual UT-ORNL-KBRIN Bioinformatics Summit | Buchanan, TN | [Abstract](#)

Mycobacteriophage sub-cluster distribution and correlation to hydrologic regions [Poster] November 2012
BISC and HPCC Research Symposium, WKU | Bowling Green, KY

RESEARCH EXPERIENCE

Transcriptome-Integrated Genetic Association Resource ([TIGAR](#)) February 2020–Present
Dr. Jingjing Yang | *Emory University School of Medicine* | Atlanta, GA

- preparing/analyzing large multi-omics data in HPC cluster environment
- applying TIGAR tool to GTEx V8 data
- optimizing code to reduce memory consumption and execution time in all TIGAR Python scripts
 - gene expression model training time for TIGAR example data on 1 core reduced from 17+ minutes to <4 for all models

Modeling qPCR Curves August 2018–May 2019

Dr. Gary Cobbs | *UofL* | Louisville, KY

- modified and developed R code to model qPCR curves in order to predict initial absolute concentration of template DNA from raw fluorescence values
- investigated kinetics of primer/probe annealing, processivity in literature
- generated visualizations from model output using ggplot2

Mycobacteriophage Sub-Cluster Distribution & Correlations August 2012–May 2013

Dr. Claire Rinehart | *Western Kentucky University (WKU)* | Bowling Green, KY

- used **Mathematica** to analyze geographic distribution of phages and to generate visualizations
- assessed distribution of phage clusters and examined correlation between geographic distance and genetic distance within each cluster

Mycobacteriophage Isolation & Genome Annotation August 2011–May 2012

Dr. Rodney King & Dr. Claire Rinehart | *SEA-PHAGES & WKU* | Bowling Green, KYTECHNICAL SKILLS

- R, Python, Bash, AWK, [SAS 9.4](#)
- Linux, HPC Cluster, Sun Grid Engine, parallel computing in R/Python, Docker, AWS
- MS Office, Zotero reference manager, L^AT_EX, B_IB_TE_X

EMPLOYMENT

Research Specialist June 2021–Present

Research Assistant February 2020–June 2021

*YangLab, Center for Computational and Quantitative Genetics,
Emory University School of Medicine* | Atlanta, GA

Small Group Tutor for Biostatistics & Microbiology October 2016–April 2018

REACH Learning Resource Center, UofL | Louisville, KYPROFESSIONAL MEMBERSHIP

American Society of Human Genetics August 2020–Present

American Statistical Association July 2017–Present

COMMUNITY INVOLVEMENT

Humanitarian Emergencies Research Team (HERT) October 2019–December 2020

GEB Data Analysis and Visualizations Co-Lead | *RSPH, Emory University*

Student Outbreak and Response Team (SORT) October 2019–December 2020

Member | *RSPH, Emory University*

Summer Institute in Biostatistics (SIBS) June 2017–July 2017

Student | *RSPH, Emory University*HONORS

- ASHG 2021 Charles J. Epstein Trainee Awards Semifinalist 2021
- UofL Dean's List Fall 2016, Spring 2017, Spring 2018
- UofL Dean's Scholar Fall 2017
- Kentucky Educational Excellence Scholarship 2013, 2016, 2017
- NCWIT Aspirations in Computing Kentucky Affiliate 2013
- Carol Martin Gatton Academy of Mathematics and Science in Kentucky 2011-2013