Andrew DiLernia

517-667-0473; dilerand@mail.gvsu.edu; andrewdilernia.com; dilernia

Education

University of Minnesota - Twin Cities — Minneapolis, MN
Ph.D., Division of Biostatistics — Sept. 2016 - July 2021

Grand Valley State University — Allendale, MI
B.S. in Mathematics and Statistics, Magna cum laude — April 2016

Teaching Experience

Assistant Professor, Statistics — Allendale, MI
Grand Valley State University

- **STA 216: Intermediate Applied Statistics** — Aug. 2021 -Present
  - Taught fundamentals of SAS programming
  - Use of SAS for creating data visualizations and descriptive statistics for exploratory data analysis
  - Predictive modeling, multiple linear regression, ANOVA, nonparametric statistics, statistical inference and modeling

Adjunct Statistics Instructor — Minneapolis, MN
Augsburg University

- **MAT 213: Data Visualization & Statistical Computing** — Jan. 2021 - May 2021
  - Taught use of R for data wrangling and manipulation, data visualization using ggplot2, RMarkdown, importing and combining data sets, web scraping, basics of natural language processing, SQL, interactive visualizations, and dashboards.
- **MAT 273: Statistical Models** — Sept. 2019 - Dec. 2020
  - Taught linear models, generalized linear models, and time series models using R
  - Created YouTube channel for remote learning

Graduate Teaching Assistant — Minneapolis, MN
University of Minnesota, Division of Biostatistics

- **PubH 8452: Advanced Longitudinal Data Analysis** — Sept. 2020 - Dec. 2020
  - Taught use of mixed effects models, GEE models, and generalized linear models using R
- **PubH 7402: Biostatistics Modeling and Methods** — Jan. 2020 - May 2020
  - Taught use of hypothesis testing, generalized linear models, and survival models using R
- **PubH 7461: Exploring and Visualizing Data in R** — Sept. 2019 - Dec. 2019
  - Taught use of R and tidyverse packages for data wrangling and creating visualizations
- **PubH 7462: Advanced Programming and Data Analysis in R** — Jan. 2019 - May 2019
  - Taught use of Github, R Markdown, Tidyverse, R Shiny, ggplot2, and creating R packages
- **PubH 6414: Biostatistical Literacy** — Sept. 2018 - Dec. 2018
  - Taught interpretation of hypothesis tests, generalized linear models, and survival models
- **PubH 7402: Biostatistics Modeling and Methods** — Jan. 2018 - May 2018
  - Taught use of hypothesis testing, generalized linear models, and survival models using R
- **PubH 7401: Fundamentals of Biostatistical Inference** — Sept. 2017 - Dec. 2017
  - Taught statistical inference applied to research in public health and other health science fields
- **PubH 6450: Biostatistics I** — Sept. 2016 - May 2017
  - Led lab sessions teaching fundamentals of R and SAS programming for public health data

Statistics Tutor and Grader Allendale, MI
Grand Valley State University

- **Advanced Statistics Tutor** Aug. 2013 - April 2016
  - Assisted undergraduates with SAS programming, distribution theory, and statistical inference
- **Grader for Nonparametric Statistics** Aug. 2014 - April 2015
  - Graded non-parametric statistics assignments for Dr. Phyllis Curtiss

Research Experience

Graduate Research Assistant Minneapolis, MN
University of Minnesota, Division of Biostatistics

- **Classification of Physical Activities using Accelerometer Data** May 2020 - Present
  - Collaborating with Dr. Julian Wolfson
  - Detecting and summarizing periods of physical activity for patients based on accelerometer data
  - Implementing feature engineering, penalized logistic models, random forests, Hidden Markov Models, and synthetic minority over-sampling technique (SMOTE) for imbalanced classes using R
- **Machine Learning Methods for fMRI Data** May 2017 - Present
  - Collaborating with Dr. Lin Zhang and Dr. Mark Fiecas
  - Developing penalized model-based clustering and supervised learning methods for fMRI data
  - Methods applied to data on participants with schizophrenia and healthy controls
- **Comparing Cytotoxicity of Tobacco Carcinogens** Sept. 2016 - Oct. 2019
  - Collaborated with Dr. Lin Zhang and Dr. Lisa Peterson
  - Conducted genome-wide association study (GWAS) to investigate toxicity of a tobacco carcinogen
- **Paired Comparison Models for Major U.S. Sports** Aug. 2016 - March 2018
  - Collaborated with Dr. Joseph Koopmeiners and Dr. Julian Wolfson
  - Developed method to quantify the information sports games yield about the relative strengths of teams using Bradley-Terry and margin of victory models

Undergraduate Research Assistant Allendale, MI
Grand Valley State University

- **The LGBTQ-Friendly Physician Project** Aug. 2015 - April 2016
  - Collaborated with Dr. Neal Rogness and Dr. Danielle DeMuth
  - Worked to make information available for members of the greater Grand Rapids LGBTQ community regarding the services provided by health care professionals

Professional Experience

Student Intern Agricultural Statistician East Lansing, MI
United States Department of Agriculture May 2014 - July 2016

- Used SAS for integration and recording of survey data, data cleaning, and analysis

Programming Skills

Proficient	**Some experience**
R	Unix/Linux OS
R Markdown	C++
Tidyverse & ggplot2	R Shiny
SAS	GitHub

Software

rccm: Random Covariance Clustering Model Feb. 2020

- R package for implementing penalized-likelihood and an unsupervised machine learning method for joint estimation of sparse precision matrices.

rcm: Random Covariance Model Jan. 2020

- R package for implementing a hierarchical model for joint estimation of sparse precision matrices.

Publications

1. **DiLernia, A.**, Quevedo, K., Camchong, J., Lim, K., Pan, W., & Zhang, L. (2021). Penalized model-based clustering of fMRI data. *Biostatistics*. doi:10.1093/biostatistics/kxaa061
2. Zhang, L., **DiLernia, A.**, Quevedo, K., Camchong, J., Lim, K., & Pan, W. (2020). A random covariance model for bi-level graphical modeling with application to resting-state fMRI data. *Biometrics*. doi:10.1111/biom.13364
3. Peterson, L. A., Ignatovich, I. V., Grill, A. E., Beauchamp, A., Ho, Y., **DiLernia, A. S.**, & Zhang, L. (2019). Individual differences in the response of human β-lymphoblastoid cells to the cytotoxic, mutagenic, and DNA-damaging effects of a DNA methylating agent, N-methylnitrosourethane. *Chemical Research in Toxicology*, 32(11), 2214-2226. doi:10.1021/acs.chemrestox.9b00266
4. Wolfson, J., Koopmeiners, J., S., & **DiLernia, A. S.** (2016). Who's good this year? Comparing the information content of games in the four major US sports. *Journal of Sports Analytics*, 4(2):153–163, doi:10.3233/JSA-17019.
5. **DiLernia, A.** The LGBTQ-Friendly Physician Project. (2016). *Honors Projects*. 512. https://scholarworks.gvsu.edu/honorsprojects/512

Presentations

ASA Statistical Methods in Imaging Conference Atlanta, GA (virtual)
Penalized model-based clustering of fMRI data May 2020

University of Minnesota SPH Research Day Minneapolis, MN
Simultaneous Estimation of Functional Connectivity and Clustering April 2019

Grand Valley State University Annual Student Scholars Day Minneapolis, MN
The Importance of Internships: A Statistical Consulting Experience April 2015

Awards & Honors

ASA Statistical Methods in Imaging Conference Atlanta, GA (virtual)
Student paper competition award winner May 2020

Summer Institute in Statistics for Big Data Seattle, WA
Scholarship and Travel Award from University of Washington July 2017

- Earned certificates in data wrangling with R, data visualization, and reproducible research

School of Public Health Dean's Scholarship Minneapolis, MN
Recognition of high academic achievement Sept. 2016

"I am Grand Valley" Allendale, MI
Recognition of student leadership and contributions to the campus community Jan. 2015

Professional Memberships

American Statistical Association April 2015 - Present