Ryan Miller,
Assistant Professor of Statistics   **Grinnell College**

CONTACT INFORMATION	Grinnell College, 1115 8th Avenue, Grinnell, IA, 50112	phone: (641) 269-4017 email: millerry@grinnell.edu website: remiller1450.github.io

EDUCATION

University of Iowa, Iowa City, IA

Ph.D., Biostatistics, August 2018
- Thesis: *Marginal False Discovery Rate Approaches to Inference on Penalized Likelihood Models*
- Advisor: Patrick Breheny, Ph.D

M.S., Biostatistics, May 2015
- Preceptorship: *Analyzing the Geographic Dispersion of Accidents Involving Animal Strikes in Iowa using a Bayesian Spatio-temporal Model*
- Advisor: Jake Oleson, Ph.D

Augustana College, Rock Island, IL

B.A., Mathematics and Mathematics Education (Double Major), May 2011
- Graduated *Cum Laude*
- Advisor: Stacey Rodman, Ph.D

PROFESSIONAL EXPERIENCE

Assistant Professor of Statistics   2022 to present
Department of Mathematics and Statistics
Grinnell College

Assistant Professor of Statistics (tenure track)   2020 to 2022
Department of Mathematics
Xavier University

Visiting Assistant Professor of Statistics   2018 to 2020
Department of Mathematics and Statistics
Grinnell College

Research Assistant   2017 to 2018
Iowa Public Policy Center,
University of Iowa
Supervisor: Elizabeth Momany, Ph.D
Role: Statistical analysis as part of the State Innovation Model (SIM) for Iowa healthcare

Research Assistant   2014 to 2017
Iowa Public Policy Center
University of Iowa
Supervisor: Michelle Reyes, M.S.
Role: Statistical analyses and data management on projects involving the Iowa Department of Transportation (IDOT) crash records database

Consultant   2017 to 2018
National Advanced Driving Simulator Organization
University of Iowa
Supervisor: Michelle Reyes, M.S.
Role: Statistical support on projects involving teen driving research

TEACHING EXPERIENCE	Grinnell College, Department of Mathematics and Statistics

TEACHING
EXPERIENCE

Grinnell College, Department of Mathematics and Statistics
STA 395 - Introduction to Machine Learning (1)
Spring 2023, Spring 2024
STA 330 - Applied Data Science (2)
Spring 2023, Spring 2020
STA 230 - Introduction to Data Science (7)
Fall 2023, Spring 2023, Fall 2022 (2), Fall 2019, Spring 2019 (2)
STA 209 - Applied Statistics (6)
Spring 2020, Fall 2019 (2), Spring 2019, Fall 2018 (2), Spring 2024
TUT 100 - Tutorial (1)
Fall 2023

Xavier University, Department of Mathematics
MATH 257 - Data Modeling (1)
Spring 2021
MATH 256 - Introduction to Probability and Statistics (2)
Fall 2021, Fall 2021
MATH 156 - General Statistics (4)
Spring 2022, Spring 2021 (2), Fall 2020
MATH 146 - Introductory Biostatistics (4)
Spring 2022 (2), Fall 2021 (2)

University of Iowa, Department of Biostatistics
BIOS 4120 - Introduction to Biostatistics
Summer 2014 (Instructor), Fall 2014 (TA), Spring 2014 (TA)

Pawnee High School, Pawnee IL
Calculus I, Algebra II w/ Trig, Algebra I, Advanced Algebra   2011-2012

PEER-REVIEWED
PUBLICATIONS

6. **Miller, R**, Brown, T, Schmitt, R, Gaffney, G, Milavetz, G "Predicting changes in driving performance in individuals who use cannabis following acute use based on self-reported readiness to drive" *Accident Analysis and Prevention.* 2023 (accepted, to appear)
https://pubmed.ncbi.nlm.nih.gov/37984112/

5. **Miller, R**, and Breheny, P "Feature-specific inference for penalized regression using local false discovery rates" *Statistics in Medicine.* 2023
https://onlinelibrary.wiley.com/doi/10.1002/sim.9678

4. **Miller, R**, Brown, T, Wrobel, J, Kosnett, M, Brooks-Russell, A "Influence of cannabis use history on the impact of acute cannabis smoking on simulated driving performance during a distraction task" *Traffic Injury Prevention.* 2022
https://www.tandfonline.com/doi/full/10.1080/15389588.2020.1814956

3. Vo, M*, Kuo-Esser, L*, Dominguez, M*, Barta, H*, Graber, M*, Rausenberger, A*, **Miller, R**, Sommer, N, Escorcia, W "Photo Phenosizer, a rapid machine learning-based method to measure cell dimensions in fission yeast" *microPublication Biology.* 2022
https://micropublication.org/journals/biology/micropub-biology-000620

2. **Miller, R**, Brown, T, Lee, S*, Tibrewal, I*, Milavetz, G, Gaffney, G, Hartman, Hartman R, D Gorelick, R Compton, Huestis, M "Impact of cannabis and low alcohol concentration on divided attention tasks during driving" *Traffic Injury Prevention.* 2020
https://www.tandfonline.com/doi/full/10.1080/15389588.2020.1814956

1. **Miller, R**, and Breheny, P "Marginal false discovery rate control for likelihood-based penalized regression models" *Biometrical Journal.* 2019
https://onlinelibrary.wiley.com/doi/abs/10.1002/bimj.201800138

   * indicates undergraduate student co-author

PEER-REVIEWED
PRESENTATIONS

5. **Miller, R**, Agusti Mazza, I*, Brown, T, "Data Augmentation using a Semi-Reflective Generative Model to Improve Automated Detection of Impairment'" *Transportation Research Board Annual Meeting, Artificial Intelligence and Advanced Computing Applications.* January 2025 (accepted, forthcoming)

4. **Miller, R**, Hodson, S*, Le, T*, Schmitt, R, Milavetz, G, Brown, T, "Detection of Cannabis Impaired Driving from Vehicle-based Inputs using Machine Learning Methods'" *Transportation Research Board Annual Meeting, Emerging Research in Impaired Driving.* January 8, 2024

3. **Miller, R**, Brown, T, Schmitt, R, Gaffney, G, Milavetz, G "Predicting changes in driving performance in individuals who use cannabis following acute use based on self-reported readiness to drive'" *Association for the Advancement of Automotive Medicine, 67th annual scientific conference.* October 5, 2023

2. **Miller, R**, Brown, T, Wrobel, J, Kosnett, M, Brooks-Russell, A "Influence of cannabis use history on the impact of acute cannabis smoking on simulated driving performance during a distraction task" *Association for the Advancement of Automotive Medicine, 66th annual scientific conference.* October 12, 2022

1. **Miller, R**, Brown, T, Lee, S*, Tibrewal, I*, Milavetz, G, Gaffney, G, Hartman, Hartman R, D Gorelick, R Compton, Huestis, M "Secondary Task Performance While Driving: The Impacts of cannabis and low alcohol concentration on divided attention tasks during driving" *Association for the Advancement of Automotive Medicine, 64th annual scientific conference.* October 16, 2020

   * indicates undergraduate student co-author

MENTORING

Student Research (MAPs) - 12 Students (52 credit hours):
- Carlton, B, Agusti Mazza, I, and Nguyen, M "Data augmentation and feature selection for improved automated detection of drug-impaired driving using machine learning"
  - Accepted for oral presentation at the 2025 *Transportation Research Board Annual Meeting (Artificial Intelligence and Advanced Computing Applications)* in Washington DC
- Hodson, S, and Le, T "Detection of cannabis impaired driving from vehicle-based inputs using machine learning methods"
  - Accepted for oral presentation at the 2024 *Transportation Research Board Annual Meeting (Emerging Research in Impaired Driving)* in Washington DC
- Krysan, M, and Worth, M "Analysis of driving performance using semi-reflective autoregressive time-series models" (co-mentored)
  - Accepted for poster presentation at the 2023 *Midstates Consortium for Math and Science* at University of Chicago
- Li, L "Facial emotion expression recognition by college students with diverse lived experiences" (co-mentored 2-credit project continuation)
  - Accepted for poster presentation at the 2023 *Midwestern Psychological Association Meeting* in Chicago
- Jindal, T, and Luo, Y "A latent variable approach for analyzing collision scenarios with application to driving simulator time-series data"

- Accepted for poster presentation at the 2019 *Midstates Consortium for Math and Science* at University of Chicago
- Lee, S, and Tibrewal, I "Evaluating the impact of cannabis, with and without alcohol, on secondary tasks performed while driving"
  - Accepted for oral presentation at the 2019 *Midstates Consortium for Math and Science* at University of Chicago
  - Accepted for oral presentation at the 2020 *Association for the Advancement of Automotive Medicine* annual conference in Portland Oregon
  - Accepted for publication in *Traffic Injury Prevention*, 2020

Award Winning Student Projects:
- Vu, A, Le Q, and Nguyen, D "Identification Of Effective Biomarkers In Predicting The Survival Of Patients With Severe Sepsis And Septic Shock" (Fall 2022)
  - 2nd place in the Fall 2022 USCLAP Intermediate Statistics paper competition
- Uzzi, MJ, and Li, L "An Evaluation of the Factors Influencing College Graduation Rate" (Spring 2020)
  - 2nd place in the Spring 2020 USCLAP Introductory Statistics paper competition
  - Presented at the 2020 Electronic Undergraduate Statistics Research Conference
- Carroll-Townsend, D "Factors on Receiving the Flu Vaccine" (Spring 2020)
  - Honorable mention in the June 2020 USCLAP Introductory Statistics paper competition

Senior Project Faculty Mentor:
- Filipiak, E "An improved analysis of performance degradation during divided attention tasks performed while driving" (Xavier University, 2021-22)
- Siemer, K "Factor analysis of a novel school climate survey instrument" (Xavier University, 2021-22)

Doctoral Commitee Member:
- Peterson, R, University of Iowa, Department of Biostatistics (Spring 2019)

FUNDING

- 1N5 School Climate Instrument Validation (co-investigator with Dr. Victor Ronis-Tobin) - $10,000 (2020-22)

MISC. HONORS, RECOGNITIONS

- Project NExT Brown Cohort 2020-2021
- William R. Clarke Graduate Teaching award recipient, University of Iowa 2018
- Outstanding Teaching Assistant nominee, University of Iowa 2013-14
- Pi Mu Epsilon honor society inductee, Augustana College chapter 2010
- Four-year letterman, Cross Country, Track and Field, Augustana College 2007-2011

PROFESSIONAL SERVICE

Referee for the following journals:
- Statistics in Medicine (1)
- Transportation Research Record (2)
- Journal of Statistical Computation and Simulation (1)
- Computational Statistics and Data Analysis (1)
- Scientific Reports (1)
- PLOS One (1)
- Drug and Alcohol Review (1)

AP Statistics exam reader
- 2021, 2022, 2023, 2024

INSTITUTIONAL   Member of the following college-wide committees:
SERVICE
- Health Professions Advisory Commitee (2023-24, 24-25)

DEPARTMENTAL   Served in the following departmental roles:
SERVICE
- Tenure-track faculty search committee (Fall 2022)
- Term faculty search committee (Spring 2024)

REFERENCES   Available upon request

Last updated: September, 2024