

Mary M. Ryan

Curriculum Vitae

Updated August 2022

Postdoctoral Associate

Department of Biostatistics | Yale University School of Public Health | New Haven, CT 06511

✉ mary.ryan@yale.edu maryryan.netlify.app

RESEARCH INTERESTS

Clinical trials, pragmatic clinical trials, cluster randomized trials, group sequential design, epidemiology of Alzheimer's disease, Alzheimer's disease biomarker discovery

EDUCATION

University of California, Irvine	Irvine, CA
Ph.D., Statistics	2021
<i>Dissertation: Robustness and Efficiency in Modern Biostatistical Studies</i>	
<i>Advisor: Daniel L. Gillen, Professor and Chair of Statistics</i>	
M.S., Statistics	2019
University of Missouri	Columbia, MO
B.A., Statistics	2016
<i>Minor, Mathematics</i>	
B.J., Journalism	2016

ACADEMIC POSITIONS

Yale University	New Haven, CT
Postdoctoral Associate, Department of Biostatistics	2021 - present
University of California, Irvine	Irvine, CA
Graduate Research Assistant, Department of Statistics	2017 - 2021
University of Missouri	Columbia, MO
Undergraduate Research Assistant, Department of Statistics	2014 - 2016

COLLABORATIVE RESEARCH AFFILIATIONS & APPOINTMENTS

Yale University	New Haven, CT
Yale Center for Analytical Sciences	2021 - present
University of California, Irvine	Irvine, CA
Gillen/Grill Alzheimer's Disease Research Lab	2017 - present
Data Management and Statistics Core, Alzheimer's Disease Research Center	2017 - 2021

ACADEMIC AWARDS & HONORS

UC Irvine Carl W. Cotman Predoctoral Scholar Award	2021
UC System Nominee to the 70 th Lindau Nobel Laureate Meeting	2020
UC Irvine Division of Teaching Excellence & Innovation Summer Fellow	2020
UC Irvine Public Impact Fellow	2019-2020
Honorable Mention: JSM Biopharmaceutical Section Contributed Presentation Award	2019
UC Irvine MIND Aging Fellow	2017-2019
University of Missouri University Honors	2016
University of Missouri Excellence in Undergraduate Research	2015
University of Missouri Albert Winemiller Scholar	2013-2016

REFEREED JOURNAL PUBLICATIONS

"*" indicates mentored graduate student

1. **Ryan, M.M.**, Gillen, D.L. (2022) "Sequential Sampling in Prospective Observational Studies." *Annals of Applied Statistics*. (Accepted).
2. **Ryan, M.M.**, Gillen, D.L., Grill, J.D. (2021). "Reasons for Undergoing Amyloid Imaging Among Cognitively Unimpaired Older Adults with Elevated and Not Elevated Amyloid." *Annals of Clinical and Translational Neurology*. doi.org/10.1002/acn3.51414
3. **Ryan, M.M.**, Cox, C.G., Witbracht, M., Hoang, D., Gillen, D.L., Grill, J.D. (2020). "Using Direct-to-Consumer Genetic Testing Results to Accelerate Alzheimer's Disease Clinical Trial Recruitment." *Alzheimer Disease & Associated Disorders*. doi.org/10.1097/wad.0000000000000421
4. Cox, C.G., **Ryan, M.M.**, Gillen, D.L., Grill, J.D. (2020). "Is reluctance to share Alzheimer's disease biomarker status with a study partner a barrier to preclinical trial recruitment?" *The Journal of Prevention of Alzheimer's Disease*. dx.doi.org/10.14283/jpad.2020.36
5. **Ryan, M.M.**, Spotnitz, W.D., Gillen, D.L. (2020). "Variance estimation for the Kappa statistic in the presence of clustered data and heterogeneous observations." *Statistics in Medicine*. doi.org/10.1002/sim.8522
6. **Ryan, M.M.**, Grill, J.D., Gillen, D.L. (2019). "Participant and Study Partner Prediction and Identification of Cognitive Impairment in Preclinical Alzheimer's Disease: Study Partner vs. Participant Accuracy." *Alzheimer's Research & Therapy*. doi.org/10.1186/s13195-019-0539-3
7. Cox, C.G., **Ryan, M.M.**, Gillen, D.L., Grill, J.D. (2019). "A preliminary study of clinical trial enrollment decisions among people with Mild Cognitive Impairment and their study partners." *The American Journal of Geriatric Psychiatry*. doi.org/10.1016/j.jagp.2018.10.016

 MANUSCRIPTS UNDER REVIEW/IN PROGRESS

8. **Ryan, M.M.**, Esserman, D., Li, F. "Maximin optimal cluster randomized designs for assessing treatment effect heterogeneity." (In Revision).
9. **Ryan, M.M.**, Gillen, D.L. "Sequential Sampling for Studies Utilizing the Kappa Statistic." (In Preparation).
10. Dolmadjian, L.*, **Ryan, M.M.**, Gillen, D.L., Grill, J.D. "Impact of Study Partner Replacement in Mild Cognitive Impairment Clinical Trials." (In Preparation).

 SELECTED PRESENTATIONS, POSTERS, & SHORT COURSES

 INVITED PRESENTATIONS

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| 1. ASQ Silicon Valley Section's Statistics & Reliability Discussion Group (Virtual). Oral presentation on " <i>Variance Estimation for the Kappa Statistic in the Presence of Clustered Data and Heterogeneous Observations</i> " | April 2021 |
| 2. Department of Family Medicine, Oregon Health & Science University (Virtual). Oral presentation on " <i>Sequential Sampling in Prospective Observational Studies</i> " | February 2021 |
| 3. Department of Global & Community Health, George Mason University (Virtual). Oral presentation on " <i>Sequential Sampling in Prospective Observational Studies</i> " | February 2021 |
| 4. Department of Biostatistics, Wake Forest University (Virtual). Oral presentation on " <i>Sequential Sampling in Prospective Observational Studies</i> " | February 2021 |
| 5. Division of Biostatistics, University of Minnesota (Virtual). Oral presentation on " <i>Sequential Sampling in Prospective Observational Studies</i> " | February 2021 |
| 6. Department of Mathematics & Statistics, Wake Forest University (Virtual). Oral presentation on " <i>Sequential Sampling in Prospective Observational Studies</i> " | January 2021 |
| 7. American Statistical Association Biopharmaceutical Section Webinar (Virtual). Oral presentation on " <i>Variance Estimation for the Kappa Statistic in the Presence of Clustered Data and Heterogeneous Observations</i> " | January 2021 |
| 8. Department of Biostatistics, St. Jude Children's Research Hospital (Virtual). Oral presentation on " <i>On Confounding, Efficiency, & Prospective Observational Study Design</i> " | January 2021 |
| 9. Department of Biostatistics, Vanderbilt University (Virtual). Oral presentation on " <i>On Confounding, Efficiency, & Prospective Observational Study Design</i> " | December 2020 |
| 10. Orange County Biostatistics Symposium (Virtual). Oral presentation on " <i>Variance Estimation for the Kappa Statistic in the Presence of Clustered Data and Heterogeneous Observations</i> " | November 2020 |

 CONTRIBUTED PRESENTATIONS

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| 11. Joint Statistical Meetings (JSM) (Washington, D.C.). Oral presentation on " <i>Maximin Optimal Cluster Randomized Designs for Assessing Treatment Effect Heterogeneity</i> " | August 2022 |
| 12. Society for Clinical Trials (San Diego, CA). Oral presentation on " <i>Maximin Optimal Cluster Randomized Designs Accounting for Treatment Effect Heterogeneity</i> " | May 2022 |
| 13. Joint Statistical Meetings (JSM) (Denver, CO). Oral presentation on " <i>An Extension of Cohen's Kappa for Clustered Data and Group Sequential Testing</i> "
★ Received JSM Contributed Presentation Honorable Mention Award from ASA Biopharmaceutical Section | July 2019 |
| 14. Western North American Region International Biometric Society (WNAR) Annual Meeting (Portland, OR). Oral presentation on " <i>An Investigation of the Kappa Statistic Under Clustered Data and Group Sequential Testing, with an Application to Surgical Rating</i> " | June 2019 |

POSTERS

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| 15. Alzheimer's Association International Conference (AAIC) (Virtual/San Diego, CA). Poster presentation on " <i>Impact of Study Partner Type on Primary Endpoint Volatility in a Phase 3 Registration Trial of Mild-to-Moderate Alzheimer's Disease</i> " | July 2022 |
| 16. Clinical Trials on Alzheimer's Disease (CTAD) (Virtual). Poster presentation on " <i>Perceptions of Amyloid Imaging Among Cognitively Normal Older Adults with Elevated and Not Elevated Amyloid</i> " | November 2020 |
| 17. Clinical Trials on Alzheimer's Disease (CTAD) (San Diego, CA). Poster presentation on " <i>Using Direct-to-Consumer Genetic Testing Results in Alzheimer's Disease Clinical Trial Recruitment</i> " | December 2019 |
| 18. Alzheimer's Association International Conference (AAIC) (Los Angeles, CA). Poster presentation on " <i>Participant and Study Partner Prediction and Identification of Cognitive Impairment in Preclinical Alzheimer's Disease: Study Partner vs. Participant Accuracy</i> " | July 2019 |
| 19. REMIND Emerging Scientists Symposium (Irvine, CA). Poster presentation on " <i>Scientific Necessity of Study Partners in Preclinical Alzheimer's Disease Trials</i> " | March 2018 |

SHORT COURSES & WORKSHOPS

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| 20. Computer-Assisted Reporting Conference (Newport Beach, CA). Workshop on " <i>R: Models for Clustered and Correlated Data</i> " | March 2019 |
| 21. Computer-Assisted Reporting Conference (Newport Beach, CA). Workshop on " <i>Building Graphics in R</i> " | March 2019 |
| 22. Computer-Assisted Reporting Conference (Chicago, IL). Workshop on " <i>R: Machine Learning and Data Models</i> " | March 2018 |

TEACHING EXPERIENCE

University of California, Irvine	<i>Irvine, CA</i>
*Instructor of Record , Basic Statistics	Summer 2020
Teaching Assistant , Introduction to Biological Statistics	Winter 2020
Teaching Assistant , Introduction to Probability & Statistics for Computer Science	Fall 2019
*Instructor of Record , Introduction to Biological Statistics	Summer 2017
University of Missouri	<i>Columbia, MO</i>
Teaching Assistant , Advanced Data Journalism	Spring 2016

PEER REVIEW ACTIVITIES

Statistics in Medicine	2022 - present
Statistics in Biopharmaceutical Research	2022 - present

SERVICE TO PROFESSION

Social Media Manager, Instagram	2022 - present
Justice, Equity, Diversity, and Inclusion (JEDI) Outreach Group	
Topic Contributed Session Chair for the session " <i>New Models, Diagnostics and Considerations in Evaluating Intervention and Policy Effects</i> "	August 2022
Joint Statistical Meetings (Washington, D.C.)	

INSTITUTIONAL SERVICE

University of California, Irvine	<i>Irvine, CA</i>
Student Representative , Department of Statistics Seminar Committee	2020 - 2021
Department of Statistics Student Representative , Diverse Educational Community and Doctoral Experience (DECADE)	2019 - 2021
Co-Chair , Research and Education in Memory Impairments and Neurological Disorders (REMIND)	2018 - 2021
Organizer , Department of Statistics NSF GRFP Application Repository	2019 - 2021
Student Representative & Liason , Department of Statistics	2017 - 2018

COMMUNITY INVOLVEMENT & OUTREACH

Statistics & R Instructor for YCAS Young Scholars in Biostatistics Program (New Haven, CT)	July - Aug 2022
Guest Lecturer on the topic " <i>Introduction to Data Science</i> ". YCAS Young Scholars in Biostatistics Program (New Haven, CT)	July - Aug 2022
Workshop Instructor for the class " <i>STEM Meets Storytelling: Using Data Science to Tell Stories about Our Communities</i> ". Pathways to Science Summer Scholars (New Haven, CT)	July 2022
Guest Lecturer on the topic " <i>Data and Me: What is Biostatistics and How Do We Use It?</i> ". Exploring Science Seminar Series (New Haven, CT)	March 2022

PROFESSIONAL ORGANIZATIONS

Justice, Equity, Diversity, and Inclusion (JEDI) Outreach Group, Member	2022 - present
Eastern North American Region of the International Biometrics Society (ENAR), Member	2021 - present
Caucus for Women in Statistics, Member	2020 - present
ISTAART, Alzheimer's Association, Member	2019 - present
American Statistical Association, Member	2018 - present
Western North American Region of the International Biometrics Society (WNAR), Member	2019 - 2021

STATISTICAL & PROGRAMMING LANGUAGES

R

Python

SAS

SQL

HTML/CSS

