Mary M. Ryan

Curriculum Vitae

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Postdoctoral Associate
Department of Biostatistics | Yale University School of Public Health | New Haven, CT 06511
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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
Dissertation: Robustness and Efficiency in Modern Biostatistical Studies	
Advisor: Daniel L. Gillen, Professor and Chair of Statistics	
M.S., Statistics	2019
University of Missouri	*Columbia, MO*
B.A., Statistics	2016
Minor, Mathematics	
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 70th 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

1. **ASQ Silicon Valley Section's Statistics & Reliability Discussion Group** (Virtual). Oral presentation on *"Variance Estimation for the Kappa Statistic in the Presence of Clustered Data and Heterogeneous Observations"* — April 2021

2. **Department of Family Medicine, Oregon Health & Science University** (Virtual). Oral presentation on *"Sequential Sampling in Prospective Observational Studies"* — February 2021

3. **Department of Global & Community Health, George Mason University** (Virtual). Oral presentation on *"Sequential Sampling in Prospective Observational Studies"* — February 2021

4. **Department of Biostatistics, Wake Forest University** (Virtual). Oral presentation on *"Sequential Sampling in Prospective Observational Studies"* — February 2021

5. **Division of Biostatistics, University of Minnesota** (Virtual). Oral presentation on *"Sequential Sampling in Prospective Observational Studies"* — February 2021

6. **Department of Mathematics & Statistics, Wake Forest University** (Virtual). Oral presentation on *"Sequential Sampling in Prospective Observational Studies"* — January 2021

7. **American Statistical Association Biopharmaceutical Section Webinar** (Virtual). Oral presentation on *"Variance Estimation for the Kappa Statistic in the Presence of Clustered Data and Heterogeneous Observations"* — January 2021

8. **Department of Biostatistics, St. Jude Children's Research Hospital** (Virtual). Oral presentation on *"On Confounding, Efficiency, & Prospective Observational Study Design"* — January 2021

9. **Department of Biostatistics, Vanderbilt University** (Virtual). Oral presentation on *"On Confounding, Efficiency, & Prospective Observational Study Design"* — December 2020

10. **Orange County Biostatistics Symposium** (Virtual). Oral presentation on *"Variance Estimation for the Kappa Statistic in the Presence of Clustered Data and Heterogeneous Observations"* — November 2020

CONTRIBUTED PRESENTATIONS

11. **Joint Statistical Meetings (JSM)** (Washington, D.C.). Oral presentation on *"Maximin Optimal Cluster Randomized Designs for Assessing Treatment Effect Heterogeneity"*
August 2022

12. **Society for Clinical Trials** (San Diego, CA). Oral presentation on *"Maximin Optimal Cluster Randomized Designs Accounting for Treatment Effect Heterogeneity"*
May 2022

13. **Joint Statistical Meetings (JSM)** (Denver, CO). Oral presentation on *"An Extension of Cohen's Kappa for Clustered Data and Group Sequential Testing"*
⋆ *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 *"An Investigation of the Kappa Statistic Under Clustered Data and Group Sequential Testing, with an Application to Surgical Rating"*
June 2019

POSTERS ——————————————

15. **Alzheimer's Association International Conference (AAIC)** (Virtual/San Diego, CA). Poster presentation on *"Impact of Study Partner Type on Primary Endpoint Volatility in a Phase 3 Registration Trial of Mild-to-Moderate Alzheimer's Disease"*
July 2022

16. **Clinical Trials on Alzheimer's Disease (CTAD)** (Virtual). Poster presentation on *"Perceptions of Amyloid Imaging Among Cognitively Normal Older Adults with Elevated and Not Elevated Amyloid"*
November 2020

17. **Clinical Trials on Alzheimer's Disease (CTAD)** (San Diego, CA). Poster presentation on *"Using Direct-to-Consumer Genetic Testing Results in Alzheimer's Disease Clinical Trial Recruitment"*
December 2019

18. **Alzheimer's Association International Conference (AAIC)** (Los Angeles, CA). Poster presentation on *"Participant and Study Partner Prediction and Identification of Cognitive Impairment in Preclinical Alzheimer's Disease: Study Partner vs. Participant Accuracy"*
July 2019

19. **REMIND Emerging Scientists Symposium** (Irvine, CA). Poster presentation on *"Scientific Necessity of Study Partners in Preclinical Alzheimer's Disease Trials"*
March 2018

SHORT COURSES & WORKSHOPS ——————————————

20. **Computer-Assisted Reporting Conference** (Newport Beach, CA).Workshop on *"R: Models for Clustered and Correlated Data"*
March 2019

21. **Computer-Assisted Reporting Conference** (Newport Beach, CA). Workshop on *"Building Graphics in R"*
March 2019

22. **Computer-Assisted Reporting Conference** (Chicago, IL). Workshop on *"R: Machine Learning and Data Models"*
March 2018

TEACHING EXPERIENCE

University of California, Irvine   *Irvine, CA*

    *Instructor of Record**, Basic Statistics   Summer 2020

    Teaching Assistant, Introduction to Biological Statistics   Winter 2020

    Teaching Assistant, Introduction to Probability & Statistics for Computer   Fall 2019
    Science

    *Instructor of Record**, Introduction to Biological Statistics   Summer 2017

University of Missouri   *Columbia, MO*

    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 *"New Models, Diagnostics*   August 2022
and Considerations in Evaluating Intervention and Policy Effects"
Joint Statistical Meetings (Washington, D.C.)

INSTITUTIONAL SERVICE

University of California, Irvine   *Irvine, CA*

    Student Representative, Department of Statistics Seminar Committee   2020 - 2021

    Department of Statistics Student Representative, Diverse Educational   2019 - 2021
    Community and Doctoral Experience (DECADE)

    Co-Chair, Research and Education in Memory Impairments and Neuro-   2018 - 2021
    logical Disorders (REMIND)

    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   July - Aug 2022
(New Haven, CT)

Guest Lecturer on the topic *"Introduction to Data Science"*. YCAS Young   July - Aug 2022
Scholars in Biostatistics Program (New Haven, CT)

Workshop Instructor for the class *"STEM Meets Storytelling: Using Data Sci-*   July 2022
ence to Tell Stories about Our Communities". Pathways to Science Summer
Scholars (New Haven, CT)

Guest Lecturer on the topic *"Data and Me: What is Biostatistics and How Do*   March 2022
We Use It?". Exploring Science Seminar Series (New Haven, CT)

PROFESSIONAL ORGANIZATIONS

Justice, Equity, Diversity, and Inclusion (JEDI) Outreach Group, Member   2022 - present

Eastern North American Region of the International Biometrics Society   2021 - present
(ENAR), Member

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   2019 - 2021
(WNAR), Member

STATISTICAL & PROGRAMMING LANGUAGES

R

Python

SAS

SQL

HTML/CSS