LucyD'Agostino McGowan

www.lucymcgowan.com

• LucyMcGowan **Y** LucyStats • 0000-0001-7297-9359

EMPLOYMENT

Wake Forest University 2019-present

Assistant Professor, Department of Statistical Sciences

2022-present Wake Forest University School of Medicine

Secondary Joint Appointment, Department of Biostatistics and Data Science

2018-2019 Johns Hopkins Bloomberg School of Public Health

Postdoctoral fellow with Jeffrey Leek

2017 March-August **RStudio**

Internship under Jenny Bryan developing the 'googledrive' R package

2016-2017 Vanderbilt University

NIH Big Data to Knowledge Training Fellow

2015-2016, 2017-2018 Vanderbilt University

Research Assistant, Department of Biostatistics and VA Tennessee Valley

2015 Summer Cleveland Clinic

Summer Graduate Fellow, Department of Quantitative Health Sciences

2012-2014 Washington University School of Medicine

Research Assistant, Gutmann Research Laboratory, Department of Neurology

2012-2014 Washington University School of Medicine

Statistical Analyst, Department of Surgery, Division of Public Health Sciences

EDUCATION

PhD in Biostatistics, May 2018

VANDERBILT UNIVERSITY

Thesis: Improving Modern Techniques of Causal Inference: Finite Sample Performance of ATM and ATO Doubly Robust Estimators, Variance Estimation for ATO Estimators, and Contextualized Tipping Point Sensitivity Analyses for Unmeasured Confounding

MS in Biostatistics, December 2013

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE

Thesis: Quantitative Assessment of the Community Research Fellows Training Program

BA in Religious Studies and Romance Languages, May 2012 with Distinction and Highest Honors

UNC CHAPEL HILL

Invited Presentations

Mount Sinai Seminar 2024

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Integrating design thinking in the data analytic process."

Temple University Seminar 2024

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Bridging the Gap Between Theory and Practice: When to Include the Outcome in Your Imputation Model."

NC ASA Annual Dinner 2024

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Analytic Design Theory: Framework for Alignment Between Analyst and Audience."

CAUSE Webinar Series 2024

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Causal Inference is Not Just a Statistics Problem."

National Institute for Research in Digital Science & Technology

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Bridging the gap between imputation theory and practice."

ENAR Webinar Series Spring 2024

ORAL PRESENTATION

Lucy D'Agostino McGowan, "When to Include the Outcome in Your Imputation Model: A Mathematical Demonstration and Practical Advice."

Duke University Stroke Invited Speaker Series 2024

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Statistical Rigor in Academic Medicine: Practical Strategies for Improvement."

Analytic Design Theory Mini-Retreat 2024

ORAL PRESENTATION

Lucy D'Agostino McGowan, "A framework for developing AI-powered negotiation agents to examine producer-consumer dynamics in data science."

Johns Hopkins Department of Biostatistics Seminar Spring 2023 ORAL PRESENTATION Lucy D'Agostino McGowan, "Causal Inference Challenges that Go Beyond Statistics."

U Mass Amherst Dept of Biostatistics & Epi Seminar Spring 2023 Oral Presentation Lucy D'Agostino McGowan, "Practical Principles for Data Analysis Design."

ASA Joint Statistical Meeting 2023

Oral Presentation

Lucy D'Agostino McGowan, "A Visual Diagnostic Tool for Causal Inference."

WFU Translational and Health System Science Guest Lecture 2023 ORAL PRESENTATION Lucy D'Agostino McGowan, "Causal Inference is not just a statistics problem."

Open Science ReproducibiliTea 2023

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Causal Inference is not a statistics problem."

Appalachian State University Fall 2023

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Estimating causal effects: this be madness, yet there is method in it."

Duke University Department of Statistical Science Fall 2023

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Causal Quartet: When statistics alone do not tell the full story."

Women in Statistics and Data Sciences 2023

ORAL PRESENTATION

Lucy D'Agostino McGowan, "The 'why' behind including 'Y' in your imputation model."

Teaching Statistics in Health Sciences (ASA) Webinar Series 2023 ORAL PRESENTATION Lucy D'Agostino McGowan, "Design Principles of Data Analysis."

University of Houston Grand Rounds 2023

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Moving towards best practice: dispelling statistical myths."

CDC Statistical Advisory Group 2022

ORAL PRESENTATION

Lucy D'Agostino McGowan, "The Journey to True: Accurate Statistical Communication."

WFU Department of Biostatistics and Data Science Seminar 2022 Oral Presentation Lucy D'Agostino McGowan, "Modern Statistical Communication in the Social Media Era."

R/Medicine 2022 Oral Presentation

Lucy D'Agostino McGowan, "ConTESSA: A shiny application to assist with evaluating the impact of COVID-19 test-trace-isolate programs."

Duke Clinical Research Institute Fellows Seminar Series Fall 2022 ORAL PRESENTATION Lucy D'Agostino McGowan, "Statistical Myths and Misuse: Abandoning Outdated Statistical Practices."

ASA Joint Statistical Meeting 2021

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Examining the Impact of Software Instruction on Completion of Data Analysis Tasks."

R-Ladies Baltimore 2021

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Let's get meta: analyzing your R code with tidycode."

Wake Forest University BI and Analytics Meeting Februrary 2021 ORAL PRESENTATION
Lucy D'Agostino McGowan, "Hill's Criteria for the Data Scientist: Incorporating Causal
Inference Techniques."

ENAR 2020 Oral Presentation

Lucy D'Agostino McGowan, "Tools for analyzing R code the tidy way."

SDSS 2020 Oral Presentation

Lucy D'Agositno McGowan, "Best Practices for Teaching R A Randomized Controlled Trial."

ASA Joint Statistical Meeting 2020

ORAL PRESENTATION

Lucy D'Agostino McGowan, "The Ups and Downs of Communicating Complex Statistics."

JupyterCon 2020 Keynote

Lucy D'Agostino McGowan, "Equipping and empowering future data scientists with confidence, intuition, and communication skills."

CDC R Group 2020

ORAL PRESENTATION

Lucy D'Agostino McGowan, "ConTESSA: A Shiny App to Help Quantify Contact Tracing Efficacy."

Wake Forest School of Medicine Methods Conference 2020

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Applied Demonstration of the tipr R Package."

Macalester College 2019

KEYNOTE

Lucy D'Agostino McGowan, "There and back again, a data scientist's tale."

ASA Joint Statistical Meeting 2019

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Challenges in Augmenting Randomized Trials with Observational Health Records."

ENAR 2018 Oral Presentation

Lucy D'Agostino McGowan, Robert A. Greevy, Jr, "Exploring finite-sample bias in propensity score weights."

Data Day Texas 2018

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Making Causal Claims as a Data Scientist: Tips and Tricks Using R."

ASA Joint Statistical Meeting 2018

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Harnessing the Power of the Web via R Clients for Web APIs."

SAS Global Forum 2017

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Streamline Your Workflow: Integrating SAS, LaTeX, and R into a Single Reproducible Document."

R-Ladies Nashville 2017

ORAL PRESENTATION

Lucy D'Agostino McGowan, "An R + GitHub Journey."

SAS Global Forum 2016

ORAL PRESENTATION

Lucy D'Agostino McGowan, Robert A. Greevy, Jr, "Integrating SAS and R to Perform Optimal Propensity Score Matching."

SAS Global Forum 2015

ORAL PRESENTATION

Lucy D'Agostino McGowan, Alice Toll, "Using PROC SURVEYREG and PROC SURVEYLOGISTIC to Assess Potential Bias."

SAS Global Forum 2014

ORAL PRESENTATION

Lucy D'Agostino McGowan, Melody S. Goodman, Kimberly A. Kaphingst, "Using SAS/STAT® Software to Validate a Health Literacy Prediction Model in a Primary Care Setting."

INVITED WORKSHOPS AND PANELS

New York R Conference 2024

Workshop

Lucy D'Agostino McGowan and Malcolm Barrett, "Causal Inference in R."

New York R Conference 2023

WORKSHOP

Lucy D'Agostino McGowan and Malcolm Barrett, "Causal Inference in R."

ENAR 2023 Panel

Xiangrong Kong, Torri Simon, Andrew Spieker, Briana Stephenson, Lucy D'Agostino McGowan, "Kickstart your Career: How to Maximize Those Early Years."

WFU CAT ChatGPT Learning Series 2023

Panel

Amanda Corris, Lucy D'Agostino McGowan, Justin Esarey, Jerid Francom, Dwayne Godwin, Jed Macosko, "The Science of ChatGPT."

ASA Statistical Computing in Action 2023

PANEL

Lucy D'Agostino McGowan, "Data Jamboree: Analyzing NYC 311 Service Requests in R."

Women in Statistics and Data Sciences 2023

PANEL

Ana Maria Ortega-Villa, Lucy D'Agostino McGowan, Pamela Shaw, Suhwon Lee, Tanya Garcia, "Demystifying invited session proposals."

North Carolina Translational and Clinical Sciences Institute

PANEL

Lucy D'Agostino McGowan, "What is the value of the p-value?."

National Institute of Statistical Sciences Graduate Student Conference 2022

PANEL

Lucy D'Agostino McGowan, "Tips for Statistical Communication and Data Storytelling."

The Wake Forest 2022 Conference on Analytics Impact 2022

Panel

Lucy D'Agostino McGowan, "Panel Discussion: Communicating during a pandemic: what worked, what didn't and what's next."

Rstudio::conf 2022 Workshop

Lucy D'Agostino McGowan and Malcolm Barrett, "Causal Inference in R."

Posit Tidymodels Team

WORKSHOP

Lucy D'Agostino McGowan and Malcolm Barrett, "Causal Inference in R."

ENAR 2021 Panel

Lucy D'Agostino McGowan, Caitlin Rivers, Eleanor Murray, Kareem Carr, Jeffrey Leek, "Communicating Complex Statistical Concepts to Collaborators, Stakeholders, and the General Public."

New York R Conference 2021

Workshop

Lucy D'Agostino McGowan and Malcolm Barrett, "Causal Inference in R."

R-Ladies NYC

Lucy D'Agostino McGowan, Lynsie Daley, Kat Hoffman, Michael Kane, "Panel Discussion: Working with and learning from COVID-19 data."

ASA K-12 Virtual Workshops 2020

Workshop

Lucy D'Agostino McGowan and Shannon Ellis, "Using RStudio Cloud in the Classroom."

eCOTS 2020 Panel

Laura Le, Kari Lock Morgan, Lucy D'Agostino McGowan, "Panel: Engaging Students during the COVID-19 Health Crisis."

NC School of Science and Math Data Science Panel 2020

PANEL

Lucy D'Agostino McGowan, "Data Science at Wake Forest University."

user!2020 Workshop

Lucy D'Agostino McGowan and Malcolm Barrett, "Causal Inference in R."

R in Government Conference

Workshop

Lucy D'Agostino McGowan and Malcolm Barrett, "Causal Inference in R."

ENAR 2019 Workshop

Lucy D'Agostino McGowan, "Data Visualizations with ggplot2."

Women in Statistics and Data Science 2017

PANEL

Jenny Bryan, Mine Cetinkaya-Rundel, Lucy D'Agostino McGowan, Gabriela de Queiroz, Mine Dogucu, Katherine Scranton, Jennifer Thompson, "R-Ladies Panel: Improving gender diversity in a male-dominated community."

Contributed Presentations

ASA Joint Statistical Meeting 2022

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Design Thinking: Empirical Evidence for Six Principles of Data Analysis."

rstudio::global 2021

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Designing Randomized Studies using Shiny."

Women in Statistics and Data Science 2021

ORAL PRESENTATION

Lucy D'Agostino McGowan, "Bringing Data Science Communication into the Classroom."

ENAR 2017

ORAL PRESENTATION

Lucy D'Agositno McGowan, Robert Alan Greevy, Jr, "Simplifying and Contextualizing Sensitivity to Unmeasured Confounding Tipping Point Analyses."

useR!2017 Oral Presentation

Lucy D'Agostino McGowan, Nick Strayer, Jeff Leek, "papr: Tinder for pre-prints, a Shiny Application for collecting gut-reactions to pre-prints from the scientific community."

ASA Joint Statistical Meeting 2017

SPEED (ORAL + POSTER) PRESENTATION

Lucy D'Agostino McGowan, Robert A. Greevy, Jr, "Contextualizing Sensitivity Analysis in Observational Studies: Calculating Bias Factors for Known Covariates."

ASA Joint Statistical Meeting 2016

POSTER

Lucy D'Agostino McGowan, Robert A. Greevy, Jr, "Practical Guidance and Tools for Rule-Out Sensitivity to Unmeasured Confounding Analyses."

ASA Joint Statistical Meeting 2016

ORAL PRESENTATION

Ryan Jarrett, Lucy D'Agostino McGowan, "Assessing the Association Between Accident Injury Severity and NCAP Car Safety Ratings"."

ASA Joint Statistical Meeting 2015

SPEED (ORAL + POSTER) PRESENTATION

Lucy D'Agostino McGowan, Alice Toll, "Census Tract-Level Disparities: Examining Food Swamps and Food Deserts."

141st American Public Health Association Annual Meeting 2013

Poster

Lucy D'Agostino McGowan, Melody S. Goodman, "Developing County-Level Estimates of Racial Disparities in Obesity Using Multilevel Reweighted Regression."

141st American Public Health Association Annual Meeting 2013 Oral Presentation

Lucy D'Agostino McGowan, Melody S. Goodman, "Small Areal Estimation of Racial Disparities in Diabetes Using Multilevel Reweighted Regression."

SAS Analytics 2013

Poster

Lucy D'Agostino McGowan, Patrick J. McGowan, "Mining Through Resumes: Utilizing SAS to Increase Efficiency and Objectivity in the Hiring Process."

Lucy D'Agostino McGowan, "SAS ® for Budgeting an Ideal Wedding."

Northeast SAS Users Group 2013

ORAL PRESENTATION

Lucy D'Agostino McGowan, Melody S. Goodman, "Using PROC GLIMMIX and PROC SGPLOT to Demonstrate County-level Racial Disparities in Obesity in North Carolina."

SAS Global Forum 2013

ORAL PRESENTATION

Lucy D'Agostino McGowan, Melody S. Goodman, "Multilevel Reweighted Regression Models to Estimate County-Level Racial Health Disparities Using PROC GLIMMIX."

PUBLICATIONS

+Indicates equal contributions

- 1. **D'Agostino McGowan L**, Lotspeich SC, Hepler SA (2024). "The "Why" behind including "Y" in your imputation model." *Statistical Methods in Medical Research*, 09622802241244608.
- 2. +D'Agostino McGowan L, Wohl S, +Lessler J (2024). "Power and sample size calculations for testing the ratio of reproductive values in phylogenetic samples." The American Journal of Epidemiology (In Press).
- 3. South AM, Giammattei VC, Bagley KW, Bakhoum CY, Beasley WH, Bily MB, Biswas S, Bridges AM, Byfield RL, Campbell JF, Chanchlani R, Chen A, **D'Agostino McGowan L**, Downs SM, Fergeson GM, Greenberg JH, Hill-Horowitz TA, Jensen ET, Kallash M, Kamel M, Kiessling SG, Kline DM, Laisure JR, Liu G, Londeree J, Lucas CB, Mannemuddhu SS, Mao K, Misurac JM, Murphy MO, Nugent JT, Onugha EA, Pudpuakkam A, Redmond KM, Riar S, Sethna CB, Siddiqui S, Thumann AL, Uss SR, Vincent CL, Viviano IV, Walsh MJ, White BD, Woroniecki RP, Wu M, Yamaguchi I, Yun E, Weaver DJ, Jr. (2024). "The Study of the Epidemiology of Pediatric Hypertension Registry (SUPERHERO): Rationale and Methods." The American Journal of Epidemiology (In Press).
- 4. **D'Agostino McGowan L**, Gerke T, Barrett M (2023). "Causal inference is not just a statistics problem." *Journal of Statistics and Data Science Education*, θ(ja), 1-9. doi:10.1080/26939169.2023.2276446 https://doi.org/10.1080/26939169.2023.2276446.
- 5. Mendoza H, **D'Agostino McGowan L** (2022). "Randomized controlled trial: Quantifying the impact of disclosing uncertainty on adherence to hypothetical health recommendations." *Plos one*, 17(12), e0278263.
- 6. **D'Agostino McGowan L** (2022). "Sensitivity Analyses for Unmeasured Confounders." *Current Epidemiology Reports*, 1-15.
- 7. **D'Agostino McGowan L** (2022). "tipr: An R package for sensitivity analyses for unmeasured confounders." *Journal of Open Source Software*, 7(77), 4495. doi:10.21105/joss.04495 https://doi.org/10.21105/joss.04495, https://doi.org/10.21105/joss.04495.
- 8. **D'Agostino McGowan L**, D'Agostino Sr RB, D'Agostino Jr RB (2023). "A Visual Diagnostic Tool for Causal Inference." *Observational Studies*, 9(1), 87-95.

- 9. **D'Agostino McGowan L**, Peng RD, Hicks SC (2022). "Design Principles for Data Analysis." Journal of Computational and Graphical Statistics, 1-14. doi:10.1080/10618600.2022.2104290 https://doi.org/10.1080/10618600.2022.2104290.
- Rando HM, MacLean AL, Lee AJ, Ray S, Bansal V, Skelly AN, Sell E, Dziak JJ, Shinholster L, D'Agostino McGowan L, others (2021). "Pathogenesis, Symptomatology, and Transmission of SARS-CoV-2through Analysis of Viral Genomics and Structure." mSystems. doi:10.1128/mSystems.00095-21 https://doi.org/10.1128/mSystems.00095-21.
- 11. Molino AR, Andersen KM, Sawyer SB, Đoàn LN, Rivera YM, James BD, Fox MP, Murray EJ, **D'Agostino McGowan L**, Jarrett BA (2022). "The Expert Next Door: Interactions With Friends and Family During the COVID-19 Pandemic." *American journal of epidemiology*, 191(4), 552-556.
- 12. Fox M, Carr K, **D'Agostino McGowan L**, Murray E, Hidalgo B, Banack H (2021). "Will Podcasting and Social Media Replace Journals and Traditional Science Communication? No, but..." *American Journal of Epidemiology*.
- 13. Grantz KH, Lee EC, **D'Agostino McGowan L**, Lee KH, Metcalf CJE, Gurley ES, Lessler J (2021). "Maximizing and evaluating the impact of test-trace-isolate programs: A modeling study." *PLoS medicine*, 18(4), e1003585.
- 14. +Cohen JB, +**D'Agostino McGowan L**, Jensen ET, Rigdon J, South AM (2021). "Evaluating sources of bias in observational studies of angiotensin-converting enzyme inhibitor/angiotensin II receptor blocker use during COVID-19: beyond confounding." *Journal of Hypertension*, 39(4), 795.
- 15. **D'Agostino McGowan L**, Grantz KH, Murray E (2021). "Quantifying Uncertainty in Mechanistic Models of Infectious Disease." *American Journal of Epidemiology*, 190(7), 1377-1385.
- 16. Fox MP, **D'Agostino McGowan L**, James BD, Lessler J, Mehta SH, Murray EJ (2020). "Concerns About the Special Article on Hydroxychloroquine and Azithromycin in High Risk Outpatients with COVID-19 by Dr. Harvey Risch." *American Journal of Epidemiology*.
- 17. **D'Agostino McGowan L**, Kross S, Leek J (2020). "Tools for Analyzing R Code the Tidy Way." *The R Journal*, 12(1), 226-242. doi:10.32614/RJ-2020-011 https://doi.org/10.32614/RJ-2020-011.
- 18. Liberman JS, **D'Agostino McGowan L**, Greevy RA, Morrow JA, Griffin MR, Roumie CL, Grijalva CG (2020). "Mental health conditions and the risk of chronic opioid therapy among patients with rheumatoid arthritis: a retrospective veterans affairs cohort study." *Clinical Rheumatology*, 1-10.
- 19. Griffin L, Carter M, D'Agostino Jr R, **D'Agostino McGowan L** (2019). "Comparative Effectiveness of Two Collagen-containing Dressings: Oxidized Regenerated Cellulose (ORC)/Collagen/Silver-ORC Dressing Versus Ovine Collagen Extracellular Matrix." Wounds: a compendium of clinical research and practice, 31(11), E73.
- 20. Wickham H, Averick M, Bryan J, Chang W, D'Agostino McGowan L, François R, Grolemund G, Hayes A, Henry L, Hester J, Kuhn M, Pedersen TL, Miller E, Bache SM, Müller K, Ooms J, Robinson D, Seidel DP, Spinu V, Takahashi K, Vaughan D, Wilke C, Woo K, Yutani H (2019). "Welcome to the tidyverse." Journal of Open Source Software, 4(43), 1686. doi:10.21105/joss.01686 https://doi.org/10.21105/joss.01686.

- 21. Singh DP, Gabriel A, Silverman RP, Griffin LP, **D'Agostino McGowan L**, D'Agostino Jr RB (2019). "Meta-analysis Comparing Outcomes of Two Different Negative Pressure Therapy Systems in Closed Incision Management." *Plastic and Reconstructive Surgery Global Open*, 7(6).
- 22. Pun BT, Balas MC, Barnes-Daly MA, Thompson JL, Aldrich JM, Barr J, Byrum D, Carson SS, Devlin JW, Engel HJ, Esbrook CL, Hargett KD, Harmon LR, Hielsberg C, Jackson JC, Kelly TL, Kumar V, Millner L, Morse A, Perme CS, Posa PJ, Puntillo KA, Schweickert WD, Stollings JL, Tan A, **D'Agostino McGowan L**, Ely EW (2019). "Caring for critically ill patients with the ABCDEF bundle: results of the ICU liberation collaborative in over 15,000 adults." Critical Care Medicine, 47(1), 3-14.
- 23. Murff HJ, Roumie CL, Greevy RA, Hackstadt AJ, **D'Agostino McGowan L**, Hung AM, Grijalva CG, Griffin MR (2018). "Metformin use and incidence cancer risk: evidence for a selective protective effect against liver cancer." *Cancer causes & control : CCC*, 27(10), 1-10.
- 24. **D'Agostino McGowan L**, Roumie CL (2018). "Sulfonylureas as second line treatment for type 2 diabetes." *BMJ*, 362.
- 25. Blume JD, **D'Agostino McGowan L**, Dupont WD, Greevy Jr RA (2018). "Second-generation p-values: Improved rigor, reproducibility, & transparency in statistical analyses." *PloS one*, 13(3), e0188299.
- 26. Roumie CL, Min JY, **D'Agostino McGowan L**, Presley C, Grijalva CG, Hackstadt AJ, Hung AM, Greevy RA, Elasy T, Griffin MR (2017). "Comparative safety of sulfonylurea and metformin monotherapy on the risk of heart failure: a cohort study." *Journal of the American Heart Association*, 6(4), e005379.
- 27. **D'Agostino McGowan L**, Bullen JA, Obuchowski NA (2016). "Location bias in ROC studies." *Statistics in Biopharmaceutical Research*, 8(3), 258-267.
- 28. Drake BF, Brown K, **D'Agostino McGowan L**, Haslag-Minoff J, Kaphingst K (2016). "Secondary consent to biospecimen use in a prostate cancer biorepository." *BMC research notes*, 9(1), 346.
- 29. **D'Agostino McGowan L**, Stafford JD, Thompson VL, Johnson-Javois B, Goodman MS (2015). "Quantitative evaluation of the community research fellows training program." Frontiers in public health, 3, 179.
- 30. Chen Y, **D'Agostino McGowan L**, Cimino PJ, Dahiya S, Leonard JR, Lee DY, Gutmann DH (2015). "Mouse low-grade gliomas contain cancer stem cells with unique molecular and functional properties." *Cell reports*, 10(11), 1899-1912.
- 31. Kaphingst KA, Stafford JD, **D'Agostino McGowan L**, Seo J, Lachance CR, Goodman MS (2015). "Effects of racial and ethnic group and health literacy on responses to genomic risk information in a medically underserved population." *Health Psychology*, 34(2), 101.
- 32. Griffey RT, Kennedy SK, **D'Agostino McGowan L**, Goodman M, Kaphingst KA (2014). "Is low health literacy associated with increased emergency department utilization and recidivism?" *Academic Emergency Medicine*, 21(10), 1109-1115.
- 33. Diggs-Andrews KA, Brown JA, Gianino SM, **D'Agostino McGowan L**, Rubin JB, Wozniak DF, Gutmann DH (2014). "reply." *Annals of neurology*, 75(5), 800-801.

- 34. Fisher MJ, Loguidice M, Gutmann DH, Listernick R, Ferner RE, Ullrich NJ, Packer RJ, Tabori U, Hoffman RO, Ardern-Holmes SL, Hummel TR, Hargrave DR, Bouffet E, Charrow J, Bilaniuk LT, Balcer LJ, **D'Agostino McGowan L**, Liu GT (2014). "Gender as a disease modifier in neurofibromatosis type 1 optic pathway glioma." *Annals of Neurology*, 75(5), 799-800.
- 35. Colditz GA, **D'Agostino McGowan L**, James AS, Bohlke K, Goodman MS (2014). "Screening for colorectal cancer: Using data to set prevention priorities." *Cancer Causes & Control*, 25(1), 93-98.
- 36. **D'Agostino McGowan L**, Gennarelli RL, Lyons SA, Goodman MS (2013). "Using small-area analysis to estimate county-level racial disparities in obesity demonstrating the necessity of targeted interventions." *International journal of environmental research and public health*, 11(1), 418-428.

Computing

Expert: R, Shiny, Git/GitHub, LATEX, HTML/CSS, SAS

Familiar: Python, Stata, ArcGIS

Software

AUTHOR & MAINTAINER

quartets: An R package that contains pedogocial datasets for statistical concepts

ConTESSA: A Shiny Application developed in collaboration with the John Hopkins Infectious Disease Dynamics group to help contact tracing program managers.

pald: An R package to calculate partioned local depth (PaLD) probabilities for clustering

tipr: An R package with tools for conducting tipping point sensitivity analyses.

contributr: A Shiny Application developed in collaboration with Maelle and rOpenSci for finding beginner GitHub issues to contribute to.

papr: Tinder for pre-prints, a Shiny Application developed in collaboration with Jeff Leek and Nick Strayer for collecting gut-reactions to pre-prints from the scientific community

AUTHOR

rcanvas: An R package for interfacing with the Canvas API

datasauRus: An R package made in collaboration with Steph Locke consisting of The Datasaurus Dozen, a set of datasets with the same summary statistics. They retain the same summary statistics despite having radically different distributions. The datasets represent a larger and quirkier object lesson that is typically taught via Anscombe's Quartet.

googledrive: An R package that interfaces with Google Drive from R, allowing users to seamlessly manage files on Google Drive from the comfort of their console.

meetupr: An R package authored and maintained by R-Ladies to interface with the Meetup API

Contributer

cowsay: An R package that allows printing of character strings as messages/warnings/etc. with ASCII animals, including cats, cows, frogs, chickens, ghosts, and more.

RJafroc: And R package for analyzing data acquired using the Receiver Operating Characteristic paradigm and its extensions.

TEACHING EXPERIENCE

Wake Forest University

- (Spring) STA 112: Introduction to Regression and Data Science (2024)
- (Spring) BEM 392: Seminar in Mathematical Business Analysis (2024)
- (Spring) STA 363: Statistical Learning (2023)
- (Spring) BEM 392: Seminar in Mathematical Business Analysis (2023)
- (Fall) STA 112: Introduction to Regression and Data Science (2023)
- (Fall) STA 779: Causal Inference (2023)
- (Spring) STA 379/679: Causal Inference (2022)
- (Spring) BEM 392: Seminar in Mathematical Business Analysis (2022)
- (Fall) STA 112: Introduction to Regression and Data Science (2022)
- (Spring) STA 363: Statistical Learning (2020)
- (Fall) STA 312: Linear Models (2020)
- (Fall) STA 363: Statistical Learning (2020)
- (Fall) STA 212: Statistical Modeling (2019)

Vanderbilt University

- Frank Harrell's Regression Modeling Strategies Teaching Assistant (2017)
- Statistical Collaboration in Health Sciences Teaching Assistant (2015)
- Modern Regression Analysis Teaching Assistant (2015)
- Principles of Modern Biostatistics Teaching Assistant (2015)

Washington University in St. Louis

- Introduction to SAS Teaching Assistant (2013)
- Introduction to Clinical Epidemiology Teaching Assistant (2013)
- Randomized Controlled Trials Teaching Assistant (2013)

Online Courses

- Measuring and Maximizing Impact of COVID-19 Contact Tracing (2020-2022)
- Creating dynamic dashboards with the shinydashboard R package (2019)
- Understanding data and statistics in the medical literature (2019)
- ggplot2 in 2: Learn the ggplot2 R package in 2 hours (2019)

STUDENT ENGAGEMENT

Undergraduate Theses

- Kiyo Takahashi, Trust in Data Analysis (2023-2024)
- Noah Edwards-Thro, NBA Player Clustering Using Gaussian Mixture Modeling (2021-2022)
- Jonathan Trattner, Tools for Designing Online Randomized Trials Using the Shiny Framework (2020-2021)
- Nuri Park, Best Practices for Teaching R: A Randomized Controlled Trial (2020-2021)
- Hannah Mendoza, The Impact of Disclosing Uncertainty on Decision Making: A Randomized Controlled Trial (2020)

INDEPENDENT STUDIES

- Ives Xue, Introducing time ordering to combat collider bias (2024)
- Fiona Zhang, Fitting infectious distributions to asymptomic antigen testing data (2024)
- Chester Pan, Introduction to Large Language Models (2023-2024)
- James Zhao, Bootstrap Intervals for Post-Imputation Inference (Course Credit) (2023)
- Shawn Lang, Propensity Score Models (2022)
- Hannah Luebbering, Studies on Teaching Programming: A Literature Review (2020-2021)
- Iris Liu, Building a Dashboard and Gaining Insight into Reynolda Museum Data, URECA Wake Forest Research Fellowship (Funded Research) (2020)
- Sophia Fang, Understanding Statistics and Data in The Medical Literature Course Update (2020)
- Sofia Blankenship, Building a Shiny Applications (Course Credit) (2019)

Professional Activities

Internal Service

Department of Statistical Sciences

2023-2024 Chair, Colloquium Committee

2023-2024 Committee member, Temporary Faculty

2022-2023 Committee member, Department Awards Committee

2022-2023 Committee member, Colloquium Committee

2020-2024 Statistics Major Advisor

2020-2021 Committee member, Statistics Hiring Committee

2020-2021 Committee member, Postdoc Hiring Committee

2020 Math Club Faculty Co-Chair

2019-2020 Faculty advisor, Wake Forest University ASA Student Chapter

2019-2020 Committee member, Statistics Curriculum Committee

College-wide

- 2024 Chair, Melson Doctoral Student Award Committee
- 2022-2024 Secretary, Graduate Council
- 2020-2022 Wake Forest College Covid-19 Steering Committee Working Group
- 2020-2021 Peer Learning Community Facilitator, WFU Center for Advancement of Teaching

EXTERNAL PROFESSIONAL SERVICE

- 2024 PCORI Grant Merit Reviewer
- 2020-2022 Committee of Presidents of Statistical Societies (COPSS) Communications Officer
- Abstract reviewer, Applied Public Health Statistics, American Public Health Association

Service on Editorial Boards

- 2023-2024 Associate Editor for Reproducibility, JASA
- 2023-2024 Associate Editor, R Journal
- 2019-2024 Associate Editor (Social Media), The American Journal of Epidemiology

Service for the American Statistical Association

- 2024 Past-chair, ASA Section on Statistical Graphics
- 2023 Chair, ASA Section on Statistical Graphics
- 2022 Chair elect, ASA Section on Statistical Graphics
- 2021 Chair, ASA Committee on Women in Statistics
- 2020 Vice-chair, Chair-elect, ASA Committee on Women in Statistics
- 2019-2023 Committee member, ASA Computing and Graphics Student Paper Award Committee
- 2019-2021 Council of Sections Representative, ASA Section on Statistical Computing
- 2019 Committee member, ASA Committee on Women in Statistics
- 2019 Interim Program Chair, ASA Statistics Communication Interest Group
- 2018 Committee member, ASA Women in Statistics and Data Science Service Project
- 2017-2018 President, Nashville ASA Student Chapter
- 2017 Panelist, Inaugural ASA Student Chapter Workshop
- 2016-2017 Vice President, Co-founder, Nashville ASA Student Chapter

Service for the International Biometric Society (ENAR)

- 2021-2023 Council on Emerging and New Statisticians Liaison, ENAR Regional Advisory Board
- 2020-2023 Member, ENAR Regional Advisory Board
- 2020-2021 Committee member, ENAR Program Committee

Referee

Biostatistics, The American Statistician, BMJ Open, Journal of Statistical Software, rOpenSci, American Journal of Epidemiology, Statistics in Medicine, Journal of the Royal Statistical Society, Nature Biotechnology, PLOS One, Observational Studies, Biometrics, The R Journal, Journal of Statistics and Data Science Education, Data Science in Science, Stat and The International Journal of Psychology

Chaired Conference Sessions

2023 Improving Estimation of Difficult to Measure Health Outcomes, ENAR 2023

2022 Educating Character in the Social Sciences Panel, WFU Educating Character Across the University Conference

Outreach		
2022-2024	Founding co-organizer, Wake Forest University Florence Nightingale Day	
2022	Co-organizer, WFU Conference on Communicating with Healthcare Data	
2022	Chair, Data Jamboree ASA Section on Statistical Computing Symposium	
2019-2024	${\it Casual\ Inference\ Podcast\ co\text{-}host,\ sponsored\ by\ the\ American\ Journal\ of\ Epidemiology}$	
2017-2018	President, Vanderbilt Biostatistics Graduate Student Association	
2017-2018	Abstract reviewer, R-Ladies Global	
2016-2019	Co-founder, Co-organizer, R-Ladies Nashville	
2016-2017	President, Vanderbilt Graduate Student Council	

2016-2017 Vice President, Vanderbilt Biostatistics Graduate Student Association

2016 useR Student Volunteer

2015-2016 Tutor, Tennessee Office of Refugees

2015 Scholar, Scholarship of Teaching and Learning

2014-2015 Vice President of Social Affairs, Vanderbilt Graduate Student Council

AWARDS

2023	ASA Teaching of Statistics in the Health Sciences Young Investigator Award
2023	ASA StatsForward Fellow
2023	Featured Speaker, Fall Dinner, North Carolina Chapter of the ASA
2020	JupyterCon Invited Keynote Speaker
2019	Winning team, ASA Leadership Challenge
2018	Vanderbilt Biostatistics Travel Award (ENAR)
2017	NASA Datanauts, Class of 2017

2017	useR!2017 Young Academic Scholarship
2017	Caucus for Women in Statistics Travel Award
2016	First Place, GSS Student Data Challenge, ASA Joint Statistical Meeting
2016	Second Place, SPAAC Poster Competition, ASA Joint Statistical Meeting
2016	Southern Startup Internship Program in Data Science (South BDHub)
2016	Vanderbilt Commodore Award in Biostatistics
2015	First Place, GSS Student Data Challenge, ASA Joint Statistical Meeting
2015	Prezi Student Ambassador
2014	SAS Student Scholar, PharmaSUG
2014	SAS Student Ambassador, SAS Global Forum 2014
2013	First Place, Student Research Competition, 141st APHA Annual Meeting
2013	Ellis R. Ott Scholarship: ASQ Statistics Division
2013	Best Contributed Paper in the Statistics and Data Analysis Section at SAS Global Forum
2013	SAS Student Scholar, NESUG
2013	SAS Student Ambassador, SAS Global Forum 2013
2012	Gertrude M. Cox Scholarship for Women in Statistics Honorable Mention
2012	NIAF Jim Cantalupo Scholarship
2011-2012	National Society of Leadership and Success
2011	Dunlevie Honors Undergraduate Research Award
2010	Programma Ponte Scholarship
2010	Newman Scholar
2009-2012	UNC Dean's List
2008-2012	UNC Public Service Scholar

GRANT FUNDING

Current

2024-2027 Patient-Centered Outcomes Research Institute, Balanced subgroup discovery: who benefits most from an intervention? (PI: Joseph Rigdon)
Role: Subaward PI, Co-I (WFU Amount: \$129,094, Total Amount: \$1,069,896)

2023-2024 Wake Forest University Program for Leadership and Character, *Evaluating the impact of communicating quantitative results transparently on stakeholder trust* (PI: **Lucy D'Agostino McGowan**)

Role: PI (WFU Amount: \$3,000)

- 2023-2024 R Consortium, Causal Inference in a Box (PI: Lucy D'Agostino McGowan) Role: PI (WFU Amount: \$1,667, Total Amount \$5,000)
- 2023-2025 Wake Forest University Faculty Development Fund, Casual Inference Podcast Role: PI (WFU Amount: \$2,940)

Completed

- 2020-2021 Wake Forest School of Medicine's Translational Research Initiative Joint Pilot Project, Study of the Epidemiology of Pediatric Hypertension Registry (PI: Andrew South) Role: Co-I
- Wake Forest University Program for Leadership and Character, Leadership and Character Course Redesign: Statistical Learning
 Role: Course Designer (WFU Amount: \$1,000)
- 2020-2021 Bloomberg Philanthropies, Maximizing and Evaluating the Impact of Contact Tracing Programs (PI: Emily Gurley)
 Role: Consultant (Amount: \$15,000)
- 2019-2020 Wake Forest University Center for the Advancement of Teaching SoTL Seed Grant Fund, A study of various methods to teach R programming (PI: Lucy D'Agostino McGowan) Role: PI (WFU Amount: \$940)

PENDING

- Patient-Centered Outcomes Research Institute, Harmonizing Clinical Interpretations: Addressing Bias in Clinical Trials due to Clinician and Central Read Discordance (PI: Lucy D'Agostino McGowan and Ralph D'Agostino, Jr.)
 Role: PI (WFU Amount: \$247,024, Total Amount: \$955,455)
- National Institutes of Health, Towards a Statistical Framework for Designing Studies

 Aimed at Molecular Surveillance and Phylogenetic Inference (PI: Justin Lessler)

 Role: Subaward PI, Co-I (WFU Amount: \$514,945, Total Amount: \$3,934,692)
- National Science Foundation, AI-Powered Generative Agents for Data Science (PI: Lucy D'Agostino McGowan)
 Role: PI (WFU Amount: \$196,810)

Press

Program aims to ignite youth excitement in data science careers (2024) Wake Forest News. (quoted). Available at: https://news.wfu.edu/2024/03/27/program-aims-to-ignite-youth-excitement-in-data-science-careers/

WFU to introduce middle and high schoolers to careers in statistics and data science (2023) Wake Forest News. (quoted). Available at: https://news.wfu.edu/2023/04/12/wfu-to-introduce-middle-and-high-schoolers-to-careers-in-statistics-and-data-science/

Covid-19 safety doesn't have to be all or nothing. Here's how to think about it going forward. (2022) Vox. (quoted). Available at: https://www.vox.com/23000377/how-to-use-covid-data-numbers-protect-yourself-high-risk

Is Covid More Dangerous Than Driving? How Scientists Are Parsing Covid Risks. (2022) The New York Times. (quoted). Available at: https://www.nytimes.com/2022/04/17/science/covid-risks.html

How to think about masking on planes, trains, and buses right now (2022) *Vox.* (quoted). Available at: https://www.vox.com/23036148/should-i-mask-when-flying-riding-subway-bus-uber

Just Tweak Some Parameters (2022) *Not So Standard Deviations Podcast*. (podcast). Available at: https://nssdeviations.com/154-just-tweak-some-parameters

With public health information saying 'why' matters (2022) Wake Forest News. (write-up). Available at: https://news.wfu.edu/2022/12/14/with-public-health-information-saying-why-matters/

Professors Carry Remote Learning Learned into New Semester (2021) Spectrum News. (quoted). Available at: https://spectrumlocalnews.com/nc/charlotte/news/2021/01/14/professors-carry-lessons-learned-into-new-semester

Celebrating Women in Statistics (2021) Amstat News Magazine. (write-up). Available at: https://magazine.amstat.org/blog/2021/03/01/lucy-dagostino-mcgowan/

Quantifying vaccine effectiveness: How to properly report breakthrough cases (2021) BBC Radio Interview with Stephen Nolan. (radio). Available at: https://web.archive.org/web/20210725064237/https://www.bbc.co.uk/sounds/play/m000y7cq

Alarmed about breakthrough COVID cases? Here's how experts say to read the numbers (2021) News and Observer. (quoted). Available at: https://amp.newsobserver.com/article253223608.html?__twitter_impression=true

You're probably reading breakthrough COVID-19 case numbers the wrong way. Here's why (2021) CBS Raleigh. (televised interview). Available at: https://www.cbs17.com/news/north-carolina-news/youre-probably-reading-breakthrough-covid-19-case-numbers-the-wrong-way-heres-why/

Wake Forest researcher suggests looking at breakthrough cases differently (2021) Winston-Salem Journal. (quoted). Available at: https://journalnow.com/news/local/wake-forest-researcher-suggests-looking-at-breakthrough-cases-differently/article_63f199bc-fdeb-11eb-a5f3-cff52aab66fa.html

Lucy D'Agostino McGowan: The essential stats on breakthrough cases (2021) Winston-Salem Journal. (op-ed). Available at: https://journalnow.com/opinion/columnists/lucy-dagostino-mcgowan-the-essential-stats-on-breakthrough-cases/article_95b8860e-004d-11ec-b022-77e8b9178b2a.html

Reports on breakthrough COVID cases causing confusion about vaccine effectiveness (2021) Wake Forest News. (write-up). Available at: https://news.wfu.edu/2021/08/11/reports-on-breakthrough-covid-cases-causing-confusion-about-vaccine-effectiveness/

Wake Forest researcher: There aren't a lot of vaccinated people in the hospital (2021) *Hickory Daily Record*. (quoted). Available at: https://hickoryrecord.com/wake-forest-researcher-there-arent-a-lot-of-vaccinated-people-in-the-hospital/article_d7555b28-feae-11eb-b9c4-972aad27fb50.html

Why you shouldn't be concerned when more vaccinated people are getting infected than unvaccinated (2021) RMIT ABC Fact Check. (quoted). Available at: https://www.abc.net.au/news/2021-08-06/coronacheck-israel-higher-numbers-vaccinated-people-infected/100353540

Analysis: Why COVID-19 cases are rising in Canada (2021) Ottawa Sun. (quoted). Available at: https://ottawasun.com/diseases-and-conditions/coronavirus/covid-19-cases-rising-in-canada/wcm/57a7281a-62f2-4982-aedb-b8732fc22303

Vaccines Remain Largely Effective Against Delta Variant, Counter to Claims From Fox News Guest (2021) The Washington Informer. (quoted). Available at: https://www.washingtoninformer.com/vaccines-remain-largely-effective-against-delta-variant-counter-to-claims-from-fox-news-guest/

Could rapid result low sensitivity SARS-CoV-2 tests improve pandemic quarantine strategies? (2021) News Medical Life Sciences. (write-up). Available at: https://www.news-medical.net/news/20210203/Could-rapid-result-low-sensitivity-SARS-CoV-2-tests-better-guide-pandemic-quarantine-strategies.aspx

Committee Spotlight: Committee on Women in Statistics (2021) Amstat News Magazine.

(write-up). Available at: https://magazine.amstat.org/blog/2021/07/01/committee-on-women-instatistics/

Breakthrough COVID-19 & Delta (2021) Epidemiology Counts, a Society for Epidemiologic Research Podcast. (podcast). Available at: https://serepidemiologycounts.blubrry.net/2021/09/09/epidemiology-counts-episode-28-breakthrough-covid-19-delta/

Six Rules That Will Define Our Second Pandemic Winter (2021) *The Atlantic.* (quoted). Available at: https://www.theatlantic.com/health/archive/2021/09/six-ways-think-about-pandemic-now/620129/

How to stay safe this Thanksgiving, even as the COVID pandemic remains a threat (2021) USA Today. (op-ed). Available at: https://www.usatoday.com/story/opinion/2021/11/21/how-to-stay-safe-thanksgiving-holidays-covid-tests/8671612002/?gnt-cfr=1

@WomeninStat + Rotating Curators = Success (2021) Amstat News Magazine. (write-up). Available at: https://magazine.amstat.org/blog/2021/12/01/womencurator/

The power of professors: Peer learning communities advance the art of teaching during a pandemic (2020) Wake Forest News. (quoted). Available at: https://news.wfu.edu/2020/08/04/the-power-of-professors-peer-learning-communities-advance-the-art-of-teaching-during-a-pandemic/

Why the 'COVID-19 killed only 6%' argument is wrong by Justin Lessler and Lucy D'Agostino McGowan (2020) USA Today Op-Ed. (op-ed). Available at: https://www.usatoday.com/story/opinion/2020/09/02/why-covid-19-killed-only-6-argument-wrong-column/3454179001/

ASA Fellows Analysis by Lucy D'Agostino McGowan and Katherine Monti (2020) Amstat News Magazine. (article). Available at: https://magazine.amstat.org/blog/2020/10/01/asa-fellows-analysis/

Indoor Church Services Are COVID-19 Hot Spots: Here's Why (2020) *Healthline*. (quoted). Available at: https://www.healthline.com/health-news/indoor-church-services-are-covid-19-hot-spots-heres-why#Church-outbreaks

How to protect yourself and others from spreading COVID-19 at Thanksgiving dinner by Justin Lessler and Lucy D'Agostino McGowan (2020) USA Today Op-Ed. (op-ed). Available at: https://www.usatoday.com/story/opinion/2020/11/25/how-reduce-risk-getting-covid-19-thanksgiving-dinner-column/6419700002/

A casual conversation concerning causal inference (2020) Practical AI Podcast. (podcast). Available at: https://changelog.com/practicalai/113

Special Guest Lucy D'Agostino McGowan (2020) Not So Standard Deviations Podcast. (podcast). Available at: https://nssdeviations.com/118-special-guest-lucy-dagostino-mcgowan

Rising Star Talks About Statistics Journey, Future of the Profession (2018) Amstat News Magazine. (write-up). Available at: http://magazine.amstat.org/blog/2018/09/01/startalksstatistics/

Diabetes: Switching to common drugs raises risk of complications (2018) Medical News Today. (write-up). Available at: https://www.medicalnewstoday.com/articles/322523

Women in Data Science & How to Help (2018) Super Data Science Podcast. (podcast). Available at: https://www.superdatascience.com/podcast/podcast-women-in-data-science

Is your research hot or not? US boffins create "Tinder for preprints" (2017) The Register. (write-up). Available at: https://www.theregister.co.uk/2017/06/19/science_research_tinder_preprint_app/

Great paper? Swipe right on the new "Tinder for preprints" app (2017) Science. (write-up). Available at: http://www.sciencemag.org/news/2017/06/great-paper-swipe-right-new-tinder-preprints-app

Swipe right for science: Papr app is "Tinder for preprints" (2017) Nature. (write-up). Available at: https://www.nature.com/news/swipe-right-for-science-papr-app-is-tinder-for-preprints-1.22163

What Do Lucy D'Agostino McGowan and Ryan Jarrett Do When They Are Not Being Statisticians? (2017) Amstat News Magazine. (write-up). Available at: https://magazine.amstat.org/blog/2017/11/01/lucy-dagostino-mcgowan-and-ryan-jarrett/