Lucy D'Agostino McGowan

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⌂ LucyMcGowan 🐦 LucyStats 🆔 0000-0001-7297-9359

defining attributes *goal-driven leadership, advanced analytic skills, strategic thinking, resourceful team player, sunny disposition, public speaking, organizational & communication skills*

Education

PhD in Biostatistics, May 2018, GPA 3.95   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, GPA 3.88   Washington University School of Medicine
Thesis: Quantitative Assessment of the Community Research Fellows Training Program

BA with Distinction and Highest Honors   University of North Carolina at Chapel Hill
Religious Studies: GPA 3.92 Romance Languages: GPA 3.86

Research Experience

2019-present	**Wake Forest University** *Assistant Professor, Department of Mathematics and Statistics*	
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*	
2013 Summer	**Graham Colditz Laboratory** *Summer Intern, Washington University School of Medicine*	
2012-2014	**Washington University School of Medicine** *Research Assistant, Gutmann Research Laboratory, Department of Neurology*	
2012-2014	**Washington University School of Medicine** *Statistical Data Analyst, Department of Surgery, Division of Public Health Sciences*	

Computing

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

Familiar: Python, Stata, ArcGIS

Awards

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

Outreach

2019-2020 Casual Inference Podcast co-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

Professional Activities

Internal Service

2020   Peer Learning Community Facilitator, WFU Center for Advancement of Teaching

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

2019-2020 Founding committee member, DataFest

2019-2020 Committee member, Statistics Curriculum Committee

2019   Founder, Reynolda Data Science Lab

Professional Service

2020   Vice-chair, ASA Committee on Women in Statistics

2020   Committee member, ENAR Program Committee

2020   Member, ENAR Regional Advisory Board

2019-2021 ASA Council of Sections Representative, Section on Statistical Computing

2019-2020 Associate Editor (Social Media), The American Journal of Epidemiology

2019   Committee member, ASA Committee on Women in Statistics

2019   Interim Program Chair, ASA Statistics Communication Interest Group

2018   Committee member, 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

2014   Abstract reviewer, Applied Public Health Statistics, American Public Health Association

Referee

- Biostatistics
- The American Statistician
- BMJ Open
- rOpenSci
- American Journal of Epidemiology
- Statistics in Medicine
- Journal of the Royal Statistical Society
- Nature Biotechnology

FUNDING

2020   **Leadership and Character Course Redesign Grant**
Internal Grant. Amount: $1000

2019   **A study of various methods to teach R programming**
Wake Forest University Center for the Advancement of Teaching SoTL Seed Grant Fund. Role: PI. WFU Amount: $940

TEACHING EXPERIENCE

Wake Forest University

- STA 363: Statistical Learning (2020)
- STA 212: Statistical Modeling (2019)

Vanderbilt University

- Frank Harrell's Regression Modeling Strategies (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

- 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)

Invited Presentations

ASA K-12 Virtual Workshops Lucy D'Agostino McGowan and Shannon Ellis, "Using RStudio Cloud in the Classroom." Workshop

ENAR 2020 Lucy D'Agostino McGowan, "Tools for analyzing R code the tidy way." Oral Presentation

eCOTS 2020 Laura Le, Kari Lock Morgan, Lucy D'Agostino McGowan, "Panel: Engaging Students during the COVID-19 Health Crisis." Oral Presentation

SDSS 2020 Lucy D'Agositno McGowan, "Best Practices for Teaching R A Randomized Controlled Trial." Oral Presentation

ENAR 2019 Lucy D'Agostino McGowan, "Data Visualizations with ggplot2." Tutorial

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

ASA Joint Statistical Meeting 2019 Lucy D'Agostino McGowan, "Challenges in Augmenting Randomized Trials with Observational Health Records." Oral Presentation

ENAR 2018 Lucy D'Agostino McGowan, Robert A. Greevy, Jr, "Exploring finite-sample bias in propensity score weights." Oral Presentation

Data Day Texas 2018 Lucy D'Agostino McGowan, "Making Causal Claims as a Data Scientist: Tips and Tricks Using R." Oral Presentation

ASA Joint Statistical Meeting 2018 Lucy D'Agostino McGowan, "Harnessing the Power of the Web via R Clients for Web APIs." Oral Presentation

SAS Global Forum 2017 Lucy D'Agostino McGowan, "Streamline Your Workflow: Integrating SAS, LaTeX, and R into a Single Reproducible Document." Oral Presentation

R-Ladies Nashville Lucy D'Agostino McGowan, "An R + GitHub Journey." Oral Presentation

SAS Global Forum 2016 Lucy D'Agostino McGowan, Robert A. Greevy, Jr, "Integrating SAS and R to Perform Optimal Propensity Score Matching." Oral Presentation

SAS Global Forum 2015 Lucy D'Agostino McGowan, Alice Toll, "Using PROC SURVEYREG and PROC SURVEYLOGISTIC to Assess Potential Bias." Oral Presentation

SAS Global Forum 2014 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." Oral Presentation

Contributed Presentations

ENAR 2017

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

useR!2017

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

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

Women in Statistics and Data Science 2017

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."

ASA Joint Statistical Meeting 2016

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

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

ASA Joint Statistical Meeting 2015

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

141st American Public Health Association Annual Meeting 2013

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

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

SAS Analytics 2013

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

Northeast SAS Users Group 2013

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

Northeast SAS Users Group 2013

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

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

Software

Author & Maintainer

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.

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.

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

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.

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.

Publications

1. 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.

2. 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.

3. 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).

4. 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 (URL: http://doi.org/10.21105/joss.01686).

5. 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.

6. 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.

7. 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.

8. **D'Agostino McGowan L**, Roumie CL (2018). "Sulfonylureas as second line treatment for type 2 diabetes." *BMJ*, *362*.

9. 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.

10. **D'Agostino McGowan L**, Bullen JA, Obuchowski NA (2016). "Location bias in ROC studies." *Statistics in Biopharmaceutical Research*, *8*(3), 258-267.

11. 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.

12. 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.

13. 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.

14. **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.

15. 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.

16. 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.

17. 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.

18. 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.

19. **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.

PRESS

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

Is your research hot or not? US boffins create "Tinder for preprints" (2017) *The Register.* 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.* 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.* Available at: https://www.nature.com/news/swipe-right-for-science-papr-app-is-tinder-for-preprints-1.22163