

COLEMAN R. HARRIS

Department of Biostatistics, Vanderbilt University
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EDUCATION

Vanderbilt University August 2017 - Present
PhD Candidate in Biostatistics *NIH BD2K Training Fellowship (T32)*
Topic: Computational tools for quality control and batch effects in high-dimensional multiplexed images

University of Alabama August 2015 - May 2017
B.S. in Statistics, Minor in Biology, *cum laude*

COMPUTING

Programming Languages R, Python, SQL, Bash, Java, STATA, VBA, C, HTML/CSS
Software & Tools Git, Google BigQuery, cURL, Microsoft Azure, Flask, REST APIs
Relevant Coursework Adv. Statistical Learning, Regression Modeling Strategies, Data Privacy in Biomedicine, Bayesian Methods

TECHNICAL EXPERIENCE

Data Analyst | *Decode Health & IQuity Inc.* June 2020 - Present

Data Science Intern | *Decode Health & IQuity Inc.* April 2020 - June 2020

- Modeling, automation, & infrastructure support for research using claims & genomic sequencing data
- Deep pipeline development utilizing tools like Python & Flask, Microsoft Azure, AutoML, REST APIs
- Owned sections of data science pipeline, incl. documentation & automation of modeling processes

Data Science Intern | *Nashville Biosciences* January 2020 - August 2020

- Explored “big” datasets with Google BigQuery to identify millions of errors, improving data quality
- Wrote and implemented concise SQL scripts to streamline error identification processes

Biostatistician | *Depts. of Otolaryngology & Health Policy, VUMC* May 2018 - January 2020

- Facilitated study design, power calculations & simulation studies w/ R. Published in *The Laryngoscope*.
- Rigorous statistical analysis, incl. hierarchical clustering, regression modeling, & correlation analysis

Statistical Quality Intern | *Aegis Sciences* May 2017 - August 2017

- Designed & executed stability study for drugs/metabolites to improve QC methods & lab standards
- Advanced statistical data analysis to analyze & communicate final results to interdisciplinary colleagues

Research Assistant | *Dept. of Physics, University of Alabama* August 2015 - August 2016

- Utilized data analysis and visualization methods to organize and interpret complex impedance data
- Improved communication skills through a variety of presentations, graphics, and update reports

COMMUNICATIONS EXPERIENCE

Content Writer | *Kaizen Analytix* March 2021 - June 2021

- Lead end-to-end production of technical white-papers & publications for Marketing Team
- Develop content on complex topics like AI & econometrics, incl. SEO-optimization & brand consistency

Technical Writer | *Keshif**May 2020 - January 2021*

- Rewrote & updated the Keshif Knowledge Base hosted on HelpScout to improve user experience
- Utilized Keshif to craft content at the intersection of data visualization, design, and wellness
- Published multiple blog posts detailing the Knowledge Base & extensive breakdowns of the Keshif tool

Content Writer | *Nebula Genomics**December 2019 - May 2020*

- Educated customers & promoted brand awareness with targeted content, research summaries, & socials
- Commissioned, edited, and SEO-optimized dozens of pieces to improve page ranking and draw traffic
- Managed, crafted, and analyzed social media content to improve website traffic and social impressions

LEADERSHIP EXPERIENCE

Co-President | *Vanderbilt Science Policy Group**2020 - Present***Vice President** | *Vanderbilt Science Policy Group**2018 - 2020*

- Applied for and awarded grant funding totaling over \$7000 from national organizations
- Planned, organized, and facilitated multiple large events across disciplines and political sides
- Lobbied climate & energy w/ UCS in offices of Sen. Alexander, Rep. Blackburn, & Rep. Cooper.

Census Fellow | *Union of Concerned Scientists**2021 - Present*

- Researched and developed [rigorous report](#) on data quality, community impact, and census best practices
- Helped lead advocacy efforts including developing research, sign-on letters, webinars

Southern Hub Co-Chair | *National Science Policy Network**2021 - Present*

- Organized and facilitated programming, events, and resources for 500 members over 20 chapters

Vanderbilt Biostatistics Graduate Student Association*President**2020 - 2022**Treasurer**2019 - 2020***Political Campaigns***Consultant, Wade Munday for Tennessee Senate District 25**2017 - 2018**Intern, Phil Bredesen for U.S. Senate**2018**Data Consultant, Clayton Hinchman for U.S. Congress**2018***University of Alabama***Co-Director of Undergraduate Research, Student Government Association**2016 - 2017**Social Chairman, Sigma Tau Gamma Fraternity**2016 - 2017***SCIENCE POLICY AND COMMUNICATION**

Accolades*Certificate, Science Policy Scholar Program, National Science Policy Network**2020***Roles***Advocacy Consultant, American Statistical Association**2020**Workshop Organizer & Trainer, Union of Concerned Scientists Local Leader Summit**2020**Opinion Lead Editor, National Science Policy Network: Election Initiative**2020-2021**Co-Founder, Tennessee Scicommers**2019*

TEACHING EXPERIENCE

- **Teaching Assistant**

- BIOS 6301: Introduction to Statistical Computing Fall 2018
Instructor: Chris Fannesbeck, Ph.D
- BIOS 7361: Advanced Concepts in Probability and Real Analysis Fall 2019
Instructor: Robert Johnson, Ph.D
- BIOS 7351: Statistical Collaboration in Health Sciences I Fall 2020
Instructor: Mario Davidson, Ph.D
- BIOS 7352: Statistical Collaboration in Health Sciences II Spring 2021
Instructor: Dandan Liu, Ph.D

PUBLICATIONS

Peterson, G.W., McEntee, M., **Harris, C.R.**, Klevitch, A.D., Fountain III, A.D., Soliz, J.R., Balboa, A., Hauser, A.J. Detection of an explosive simulant via electrical impedance spectroscopy utilizing the UiO-66- NH₂ metal-organic framework. *Dalton Transactions*, 2016, 45, 17113-17116.

Soliz, J.R., Klevitch, A.D., **Harris, C.R.**, Rossin, J.A., Ng, Amy, Stroud, R.M., Hauser, A.J., Peterson, G.W. Structural Impact on Dielectric Properties of Zirconia. *Journal of Physical Chemistry C*, 2016, 120 (47), 26834-46840.

Harris, C.R., Soliz, J.R., Klevitch, A.D., Bartz, M.J., Rossin, J.A., Fountain III, A.D., Hauser, A.J., Peterson, G.W. Sensing of NO₂ with Zirconium Hydroxide via Electrical Impedance Spectroscopy. *Dalton Transactions*, 2017, 46 (33), 10791-10797.

Shing, J. Z., **Harris, C. R.**, Hull, P. C. Re: Human papillomavirus vaccine initiation in Asian Indians and Asian subpopulations: a case for examining disaggregated data in public health research. *Public Health*, 2018.

A. Langerman, K.M. Brelsford, C.J. Diehl, **C.R. Harris**, T.G. Stewart. Trust as a Predictor of Patient Perceptions Regarding Overlapping Surgery and Trainee Independence. *The Laryngoscope*, 2020.

M.A. Diasio, D.F. DaCrema, R.B. Dudek, **C.R. Harris**, M.N. Schmehl, C.L. Schuerger, M.T. Tan. Developing Science and Technology Policy Fellowships in State Governments without Full-Time Legislatures. *Journal of Science Policy & Governance*, 2020.

J.D. Gray, **C.R. Harris**, L.S. Wylezinski, C.F. Spurlock III. Predictive Modeling of COVID-19 Case Growth Highlights Evolving Demographic Risk Factors in Tennessee and Georgia. *medRxiv*, 2021.

PRESENTATIONS

Zr(OH)₄ nanoparticles for impedance-based NO₂ detection (2015, Oct). Poster presentation, University of Alabama Materials for Information Technology Fall Review, Tuscaloosa, AL.

Zr(OH)₄ nanoparticles for impedance-based NO₂ detection (2016, Mar). Oral presentation, American Physical Society March Meeting, Baltimore, MD.

Zr(OH)₄ nanoparticles for impedance-based NO₂ detection (2016, Mar). Poster presentation, Undergraduate Research and Creative Activity Conference, Tuscaloosa, AL.

Stability of 16 drugs and metabolites in oral fluid (2017, Nov). Oral presentation, Southeast Regional Meeting of the American Chemical Society, Charlotte, NC.

Geographically weighted regression is robust to data privacy protections implemented via Lipschitz embedding (2019, Apr). Poster presentation, Vanderbilt Data Science Institute Symposium, Nashville, TN.

An Introduction to Shiny (2020, Jan). Lecture, Data Science in Teams I, Data Science Institute, Vanderbilt University.

Exploring PD1 Asymmetry (2020, Mar). Hackathon and oral presentation, Cell Imaging Hackathon, National Cancer Institute Center for Cancer Systems Biology Research Center, Vanderbilt University, Nashville, TN.

A New Integrated Marked Point Process Approach to Analyze Highly Multiplexed Cellular Imaging Data (2020, Mar). Oral presentation, ENAR, Nashville, TN (Virtual).

An Empirical Bayes Approach to Image Normalization in Highly Multiplexed Cellular Imaging Data (2020, June). Plenary talk, NLM Informatics Training Conference, Portland, OR (Virtual).

An Empirical Bayes Approach to Image Normalization in Highly Multiplexed Cellular Imaging Data (2020, Aug). Oral presentation, Joint Statistical Meetings, Philadelphia, PA (Virtual).

Building Your Audience: Crafting a Voice to Communicate Statistics to the General Public (2021, Feb). Oral presentation, Conference on Statistical Practice, Nashville, TN (Virtual).

An Introduction to Science Policy (2021, Feb). **Invited presentation**, Collaborative for STEM Education and Outreach, Vanderbilt University, Nashville, TN (Virtual).

ComBat-HDMI: Combining Batches of High-Dimensional Multiplexed Images (2021, Mar). Poster presentation, ENAR, Nashville, TN (Virtual).

Combining Batches of High-Dimensional Multiplexed Images (2021, Apr). **Invited seminar**, Vanderbilt University Department of Biostatistics, Nashville, TN (Virtual).

Quality Control and Batch Effects of Multiplexed Immunofluorescence (MxIF) Images (2021, May). **Invited presentation**, HTAN Image Data Quality Workshop, Virtual.

Combining Batches of High-Dimensional Multiplexed Images (2021, Apr). Lightning presentation, Vanderbilt University Department of Biostatistics, Nashville, TN (Virtual). **Awarded Best Presentation.**

Quantifying and correcting slide-to-slide variation in multiplexed immunofluorescence images (2021, Aug). **Organizer and presenter**, Topic-contributed session, Joint Statistical Meetings, Virtual.

CONTINUING EDUCATION

Image Analysis Workshop, presented by NCI Cancer Systems Biology Consortium & Physical Science-Oncology (2020, Jan). Seattle, WA.

Tutorial: Statistical methods for geometric functional data. ENAR (2020, Mar). Nashville, TN (Virtual).

ACADEMIC ACHIEVEMENTS

University of Alabama Presidential Scholars Scholarship, 2015 - 2017

Undergraduate Research and Creativity Activity Grant, University of Alabama, 2015

Olin B. King Endowed Achievement Scholarship, 2016 - 2017

Elizabeth Buford Shepherd Scholarship, 2015 - 2019

NIH Big Data to Knowledge Training Fellowship (T32), 2018 - Present

Session Chair, Building Communication Skills at All Levels, Conference on Statistical Practice, 2021.

Best Presentation, VUMC Department of Biostatistics, Student Lightning Talks, 2021.

SERVICE EXPERIENCE

Volunteer, Hands on Nashville, 2021 - Present

57 Miles Student Leader and Volunteer, 2015 - 2017

Ambassador to the University of Alabama Honors College, 2016 - 2017

Member of Lambda Sigma Honor Society & Omicron Delta Kappa Honor Society

SELECTED WRITING

A line item in the new tax reform proposal could hinder STEM education. (2017, Nov 13). *STAT*.

How to make an impact in science policy as a graduate student. (2018, Apr 4). *PLoS ECR*.

Climate is getting more extreme in every possible way. (2019, Jan 8). *Massive Science*.

For Linda Young, Its About Learning the Right Questions to Ask. (2019, Sept 1). *Amstat News*.

James Rosenberger: A Collaborator Across Disciplines. (2019, Sept 1). *Amstat News*.

On Being a Spatial Data Archaeologist. (2019, Oct 31). *Nightingale*.

From one to millions - the age of population genomics. (2019, Dec 22). *Nebula Genomics*.

Can income be linked to genetics? (2020, Jan 12). *Nebula Genomics*.

Kristian Lum: A Statistician Inspired by Human Rights. (2020, Sept 1). *Amstat News*.

Karl E. Peace: A True Humanitarian. (2020, Sept 1). *Amstat News*.

Does your app need a prediction model or an inference model? (2020, Nov 17). *Triplebyte Compiler*.

Conveying Different Messages with Your Choice of Data Visualization (2020, Dec 18). *Nightingale*.

Analysis: Nashville should ban facial recognition technology (2021, Feb 23). *Tennessee Lookout*.

Shifting Focus to Small and Wide Data (2021, Jun 2). *Kaizen Analytix*.