

# Julia Wrobel

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CV compiled on 2024-09-14

ACADEMIC APPOINTMENTS	<b>Department of Biostatistics &amp; Bioinformatics</b> Emory University Assistant Professor Jul 2023 – Present
	<b>Department of Biostatistics &amp; Informatics</b> Colorado School of Public Health Assistant Professor Aug 2019 – Jun 2023
EDUCATION	<b>Columbia University Mailman School of Public Health</b> , New York, NY, USA PhD in Biostatistics Sep 2015 – Jun 2019 <ul style="list-style-type: none"><li>Dissertation title: Functional data analytics for wearable device and neuroscience data</li><li>Advisor: Jeff Goldsmith</li></ul>
	Master of Science (M.S.) in Biostatistics Sep 2013 – May 2015 <ul style="list-style-type: none"><li>Practicum: Associations and patterns in ambulatory blood pressure</li><li>Advisor: Jeff Goldsmith</li></ul>
	<b>Swarthmore College</b> , Swarthmore, Pennsylvania, USA Bachelor of Arts (B.A.) in Chemistry Sep 2006 – May 2010
HONORS & AWARDS	Dean's Pilot Innovation Award Rollins School of Public Health, Emory University Sep 2024
	ASA Biometrics Section JSM Travel Award Jul 2018
	ENAR Distinguished Student Paper Award Mar 2018
	NESS IBM Student Research Award Finalist Mar 2018
	WSDS 2017 Conference Travel Award Women in Statistics and Data Science conference in La Jolla, California Oct 2017
	Gertrude M. Cox Scholarship for Women in Statistics Jul 2017
	Summer Institute in Statistics for Big Data Travel Scholarship University of Washington Department of Biostatistics Jul 2017
	Certificate of Distinction, Columbia Department of Biostatistics For outstanding research by a Master's student May 2015
	Sigma Xi Scientific Research Society May 2010
PRIOR WORK EXPERIENCE	<b>Department of Biostatistics</b> , Columbia University Research Assistant Jun 2014 – Jun 2019 <ul style="list-style-type: none"><li>Supervisor: Jeff Goldsmith</li><li>Research areas: Functional data, neuroimaging, variational inference, accelerometers, interactive graphics</li></ul>
	<b>Data Science and AI Research</b> , AT&T Labs Summer Intern - Statistical Research Group May 2018 – Aug 2018 <ul style="list-style-type: none"><li>Supervisor: Senior Inventive Scientist Emily Dodwell</li><li>Curve clustering and predictive modeling for addressable advertising delivery data</li></ul>
	<b>Department of Immunology and Rheumatology</b> , Children's Hospital of Philadelphia Immunology Research Scientist Apr 2011 – Jul 2013
PROFESSIONAL ORGANIZATIONS & SERVICE	EDITORIAL SERVICE <b>Associate Editor for Reproducibility</b> , Journal of the American Statistical Association Apr 2021 – Present

**Referee:** Annals of Applied Statistics, Applied Mathematical Modeling, Biometrics, Biostatistics, BMC Bioinformatics, Canadian Journal of Statistics, Computational Statistics and Data Science, f1000Research, Electronic Journal of Statistics, Journal of the American Statistical Association, Journal of Computational and Graphical Statistics, Journal for the Measurement of Physical Behavior, Journal of Statistical Software, Patterns, PLOS ONE, Scandinavian Journal of Statistics, Stat, Statistics and Computing, Statistics in Medicine, Statistical Methods in Medical Research

#### MEMBERSHIPS

ASA, ENAR

#### GRANT REVIEW SERVICE

Diabetes Translational Accelerator's Shankar Fellowship Program Apr 2024

#### DEPARTMENTAL AND UNIVERSITY COMMITTEES (EMORY)

Member, Georgia CTSA Biostatistics, Epidemiology, and Research Design (BERD) Aug 2023 – Present

Member, Data science education committee Jan 2024 – Present

Member, PhD qualifying exam committee Jan 2024 – Present

Member, Biostatistics MSPH/MPH admission's committee Dec 2023 – Present

#### DEPARTMENTAL AND UNIVERSITY COMMITTEES (COLORADO)

Director, Health analytics and data science certificate program Sep 2019 – Jun 2023

Director, Applied biostatistics certificate program Aug 2022 – Jun 2023

Organizer, Biostatistics MS/PhD program student visit day Mar 2020 – Jun 2023

Member, MS qualifying exam committee Apr 2021 – Jun 2023

Member, PhD qualifying exam committee Apr 2020 – Apr 2021

Member, Inference curriculum task force Sep 2019 – Dec 2019

#### NATIONAL AND INTERNATIONAL SERVICE

Judge, MCBIOS student poster competition Mar 2024

Reviewer, ENAR distinguished student paper competition Sep 2023

Member, ENAR Council for Emerging and New Statisticians (CENS) Apr 2020 – Mar 2022

Social Media co-Chair, ENAR CENS Jul 2021 – Mar 2022

Reviewer, ASA Statistics in Imaging student paper competition Dec 2020

#### GRANT SUPPORT

##### PRESENT SUPPORT

Novel Approaches to Assessing Cannabis Impaired Driving Jul 2020 – Apr 2025

- R01DA049800, NIH (PI: Brooks-Russell)

- Role: Co-Investigator

Observational study of the effects of acute cannabis use on ocular activity relevant to driving Jul 2021 – Jun 2023

- R01 Supplement, Institutes for Cannabis Research (PI: Brooks-Russell)

- Role: Co-Investigator

##### PAST SUPPORT

Multiplexed single-cell imaging in pediatric lupus nephritis Oct 2020 – Sep 2023

- Lupus Research Alliance Lupus Innovation Award (PI: Hsieh)

- Role: Co-Investigator

Network Analysis of the Ovarian Tumor Microenvironment Apr 2020 – Mar 2021

- CCTSI Translational Methods Biostatistics/Bioinformatics Pilot Grant

- Role: PI

Spatial Mapping of Proteomic and Transcriptional Signatures in Kidney Disease Jul 2022 – Jun 2023s

- U01DK133113, NIH (PIs: Hsieh and Thurman)

- Role: Co-Investigator

## PUBLICATIONS

## BOOK CHAPTERS AND EDITORIALS

- J Wrobel, E Hector, L Crawford, L McGowan, N da Silva, J Goldsmith, S Hicks, M Kane, Y Lee, V Mayrink, CJ Paciorek, T Usher, J Wolfson, “Partnering with Authors to Enhance Reproducibility at JASA”. *Journal of the American Statistical Association*, *in press*, 2024.
- J Wrobel, C Harris, S Vandekar, “Statistical Analysis of Multiplex Immunofluorescence and Immunohistochemistry Imaging Data”. In B Fridley & X Wang (Eds.), *Statistical Genomics. Springer Nature*, 2023.

## METHODOLOGY AND SOFTWARE

‡ indicates a graduate student or postdoc under my supervision

- J Wrobel, B Sauerbrei, E Kirk, JZ Guo, A Hantman, and J Goldsmith, “Modeling Trajectories using Functional Linear Differential Equations”, *AOAS*, *in press*, 2024.
- D Tu, J Wrobel, TD Satterthwaite, J Goldsmith, RC Gur, RE Gur, J Gertheiss, DS Bassett, and RT Shinohara, “Regression and Alignment for Functional Data and Network Topology”, *Biostatistics*, *in press*, 2024.
- S Godbole‡, A Leroux, A Brooks-Russell, PS Subramanian, MJ Kosnett, and J Wrobel, “A Study of Pupil Response to Light as a Digital Biomarker of Recent Cannabis Use”, *Digital Biomarkers*, vol. 8, no. 1, 2024.
- J Xiong, H Kaur, CN Heiser, ET McKinley, JT Roland, RJ Coffey, MJ Shrubsole, J Wrobel, S Ma, KS Lau, and S Vandekar “GammaGateR: semi-automated marker gating for single-cell multiplexed imaging”, *Bioinformatics*, 2024.
- T Vu, S Seal, T Ghosh, M Ahmadian, J Wrobel, and D Ghosh, “FunSpace: A functional and spatial analytic approach to cell imaging data using entropy measures”, *PLoS Computational Biology*, vol. 19, no. 9, 2023.
- M Ahmadian, C Rikert, A Minic, J Wrobel, B Bitler, F Xing, M Angelo, E Hsieh, D Ghosh and K Jordan, “A Platform-Independent Framework for Phenotyping of Multiplex Tissue Imaging Data”, *PLoS Computational Biology*, vol. 19, no. 9, 2023.
- B Steinhart‡, A Brooks-Russell, MJ Kosnett, PS Subramanian, and J Wrobel, “A Video Analysis Pipeline for Assessing Changes in Pupil Response to Light after Cannabis Consumption”, *Journal of Data Science*, 2023.
- S Bothwell‡, A Kaizer, R Peterson, D Ostendorf, V Catenacci, and J Wrobel, “Pattern-Based Clustering of Daily Weigh-In Trajectories using Dynamic Time Warping”, *Biometrics*, vol. 79, no. 3, 2023.
- T Vu, J Wrobel, BG Bitler, EL Schenk, KR Jordan, and D Ghosh, “SPF: A Spatial and Functional Data Analytic Approach to cell Imaging data”, *PLoS Computational Biology*, vol. 18, no. 6, 2022.
- C Harris, J Wrobel, and S Vandekar, “mxnorm: An R Package to Normalize Multiplexed Imaging Data”, *Journal of Open Source Software*, vol. 7, no. 71, 2022.
- S Seal, T Vu, T Ghosh, J Wrobel, and D Ghosh, “DenVar: Density-based Variation analysis of multiplex imaging data”, *Bioinformatics Advances*, vol. 2, no. 1, 2022. **Recipient of 2022 ASA Biometrics Section Paper Award.**
- CR Harris, ET McKinley, JT Roland, Q Liu, MJ Shrubsole, K Lau, RJ Coffey, J Wrobel, and S Vandekar “Quantifying and correcting slide-to-slide variation in multiplexed immunofluorescence images”, *Bioinformatics*, vol. 38, no. 6, pp. 1700–1707, 2022.
- EI McDonnell, V Zipunnikov, J Schrack, J Goldsmith, and J Wrobel, “Registration of 24-hour accelerometric rest-activity profiles and its application to human chronotypes”, *Biological Rhythm Research*, vol. 8, no. 9 pp. 1–22, 2022.
- J Wrobel and A Bauer, “registr 2.0: Incomplete Curve Registration for Exponential Family Functional Data”, *Journal of Open Source Software*, vol. 6, no. 61, pp. 2964, May 2021.

- J Wrobel, ML Martin, R Bakshi, PA Calabresi, M Elliot, D Roalf, RC Gur, RE Gur, RG Henry, G Nair, J Oh, N Papinutto, D Pelletier, DS Reich, WD Rooney, TD Satterthwaite, W Stern, K Prabhakaran, NL Sicotte, RT Shinohara, and J Goldsmith, “Intensity warping for multisite MRI harmonization”, *Neuroimage*, vol. 223, pp. 117242, Dec 2020.
- J Wrobel, V Zipunnikov, J Schrack, and J Goldsmith, “Registration for exponential family functional data”, *Biometrics*, vol. 75, no. 1, pp. 48–57, Mar 2019. **Recipient of 2018 ENAR Distinguished Student Paper Award.**
- J Wrobel, “registr: Registration for exponential family functional data”, *Journal of Open Source Software*, vol. 3, no. 22, pp. 557 Feb 2018.
- S Lopez–Pintado and J Wrobel, “Robust non-parametric tests for imaging data based on data depth”, *Stat*, vol. 6, no. 1, pp. 405–419, Oct 2017.
- J Wrobel, SY Park, AM Staicu, J Goldsmith, “Interactive graphics for functional data analyses”, *Stat*, vol. 5, no. 1, pp. 108–118, Feb 2016 **Selected as an exemplar paper of Stat**, showcased at the 2017 Joint Statistical Meetings.

#### COLLABORATIVE

- J Rieck<sup>‡</sup>, J Wrobel, AR Porras, K McRae, and JL Gowin, “Neural signatures of emotion regulation”, *Scientific Reports*, vol. 14, no. 1, 2024.
- GS Wang, MJ Kosnett, P Subramanian, J Wrobel, M Ma, T Brown, LC Bidwell, and A Brooks-Russell, “Accuracy and replicability of identifying eyelid tremor as an indicator of recent cannabis smoking”, *Clinical Toxicology*, vol. 62, no. 1, 2024.
- A Brooks-Russell, J Wrobel, T Brown, LC Bidwell, GS Wang, B Steinhart<sup>‡</sup>, G Dooley, and MJ Kosnett, “Effects of acute cannabis inhalation on reaction time, decision-making, and memory using a tablet-based application”, *Journal of Cannabis Research*, vol. 6, no. 1, 2024.
- Y Wang, JN Stroh, G Hripcsak, CC Low Wang, TD Bennett, J Wrobel, C Der Nigoghossian, S Mueller, J Claassen, and DJ Albers, “A methodology of phenotyping ICU patients from EHR data: high-fidelity, personalized, and interpretable phenotypes estimation”, *Journal of Biomedical Informatics*, vol. 148, 2023.
- S Smith<sup>‡</sup>, J Wrobel, A Brooks-Russell, MJ Kosnett, and M Sammel, “A Latent Variable Analysis of Psychomotor Performance after Acute Cannabis Smoking”, *Cannabis*, 2023.
- R Miller, T Brown, J Wrobel, MJ Kosnett and A Brooks-Russell, “Influence of cannabis use history on the impact of acute cannabis smoking on simulated driving performance during a distraction task”, *Traffic Injury Prevention*, pp. 1–7, 2022.
- S Seal, J Wrobel, AM Johnson, RA Nemenoff, EL Schenk, BG Bitler, KR Jordan, and D Ghosh, “On Clustering for Cell Phenotyping in Multiplex Immunohistochemistry (mIHC) and Multiplexed Ion Beam Imaging (MIBI) Data”, *BMC Research Notes*, vol. 15, no. 1, pp. 1–7, 2022.
- J Wrobel, J Silvasstar, R Peterson, K Sumbundu, A Kelley, D Stephens, SC Rushing, and S Bull, “Patterns of User Engagement in the BRAVE Study”, *JMIR Formative Research*, vol. 6, no. 2, 2022.
- B Steinhart<sup>‡</sup>, KR Jordan, J Bapat, MD Post, LJ Brubaker, BG Bitler, and J Wrobel, “The spatial context of tumor-infiltrating immune cells associates with improved ovarian cancer survival”, *Molecular Cancer Research*, vol. 19, no. 12, pp. 1973–1979, Oct 2021.
- J Wrobel, J Muschelli, and A Leroux, “Diurnal Physical Activity Patterns across Ages in a Large UK Based Cohort: The UK Biobank Study”, *Sensors*, vol. 21, no. 4, pp. 1545, Jan 2021.
- A Brooks-Russell, T Brown, K Friedman, J Schwartz, KA Ryall, E Amioka, G Dooley, GS Wang, J Wrobel, B Steinhart<sup>‡</sup>, G Milavetz and MJ Kosnett, “Simulated Driving Performance among Daily and Occasional Cannabis Users”, *Accident Analysis & Prevention*, vol. 160, pp. 106326, Sep 2021.

- SC Rushing, A Kelley, S Bull, D Stephens, [J Wrobel](#), J Silvasstar, R Peterson, C Begay, TG Dog, C McCray, DL Brown, M Thomas, C Caughlan, M Singer, P Smith, and K Sumbundu. “Efficacy and Impact of an mHealth Intervention to promote Mental Wellness for American Indian and Alaska Native Teens and Young Adults: A Randomized Controlled Trial of the BRAVE Study”, *JMIR Mental Health*, vol. 8, no. 9, pp. e26158, Aug 2021.
- AM Johnson, JM Boland, [J Wrobel](#), EK Klezcko, MW Evans, K Hopp, L Heasley, ET Clambey, K Jordan, RA Nemenoff, and EL Schenk, “Cancer cell-specific MHCII expression as a determinant of the immune infiltrate organization and function in the non-small cell lung cancer tumor microenvironment”, *Journal of Thoracic Oncology*, vol. 16, no. 10, pp. 1694–1704, May 2021.
- MI Becker, DJ Calame, [J Wrobel](#), and AL Person. “Online control of reach accuracy in mice”, *Journal of Neurophysiology*, vol. 124, no. 6, pp. 1637–1655, Nov 2020.
- JH Kim, J Santaella-Tenorio, C. Mauro, [J Wrobel](#), M Cerdá, KM Keyes, D Hasin, SS Martins, and G Li. “State medical marijuana laws and the prevalence of opioids detected among fatally injured drivers?”, *American Journal of Public Health*, vol. 106, no. 11, pp. 2032–2037, Aug 2016.
- S Canna, [J Wrobel](#), N Chu, PA Kreiger, M Paessler, EM Behrens, “Interferon- $\gamma$  mediates anemia but is dispensable for fulminant toll-like receptor 9-induced macrophage activation syndrome and hemophagocytosis,” *Arthritis and Rheumatism*, vol. 65 (7), pp. 1764–1775, Jul 2013.

#### CURRENTLY UNDER REVIEW

- [J Wrobel](#), AC Soupir, MT Hayes, LC Peres, T Vu, A Leroux, and B Fridley, “mx FDA: A comprehensive toolkit for functional data analysis of single-cell spatial data”, 2024+.
- X Zhou, [J Wrobel](#), C Crainiceanu, and A Leroux, “Analysis of Active/Inactive Patterns in the NHANES Data using Generalized Multilevel Functional Principal Component Analysis”, 2024+.
- A Leroux, C Crainiceanu, and [J Wrobel](#), “Fast Generalized Functional Principal Components Analysis”, 2024+.
- A Soupir, I Gadiyar, B Helm, C Harris, SN Vandekar, LC Peres, RJ Coffey, [J Wrobel](#), S Ma, and BL Fridley, “Benchmarking spatial co-localization methods for single-cell multiplex imaging data with application to high-grade serous ovarian cancer”, 2024+.
- JA Gonzalez, [J Wrobel](#), SN Vandekar, and P Moraga, “Analysing spatial point patterns in digital pathology: immune cells in high-grade serous ovarian carcinomas”, 2024+.

#### SOFTWARE

- J Goldsmith, F Scheipl, L Huang, [J Wrobel](#), J Gellar, J Harezlak, M McLean, B Swihart, L Xiao, C Crainiceanu, and P Reiss, “refund: Regression with Functional Data,” *R package available on CRAN*, version 0.1-17, May 2018. Over 280,000 downloads.
  - author: “mfPCA.sc(): multilevel FPCA by smoothed covariance”
  - contributor: version 0.1-15 to present
  - maintainer: version 0.1-16 to present
- [J Wrobel](#), and A Soupir, “mx FDA: A Functional Data Analysis Package for Spatial Single Cell Data” *R package available on CRAN and GitHub* Apr 2024. Downloaded 800 times as of 2024-09-14.
- [J Wrobel](#), and T Ghosh, “VectraPolarisData” *R data package available on Bioconductor ExperimentHub* Apr 2022. Downloaded 2120 times as of 2024-09-14.
- C Harris, [J Wrobel](#), and S Vandekar, “mxnorm: An R Package to Normalize Multiplexed Imaging Data” *R package available on CRAN and GitHub* Apr 2022. Downloaded 8689 times as of 2024-09-14.
- [J Wrobel](#), EI McDonnell, A Bauer, and J Goldsmith, “registr: Registration for exponential family functional data,” *R package available on CRAN and GitHub* Nov 2017. Downloaded 16,562 times as of 2024-09-14.

- [J Wrobel](#) and J Goldsmith, “refund.shiny: interactive graphics for functional data analysis,” *R package available on CRAN* Sep 2015. Downloaded 30,026 times as of 2024-09-14.
- [J Wrobel](#), C Crainiceanu, and A Leroux, “fastGFPCA: fast generalized functional principal components analysis” *R package available on Github* Oct 2022.
- [J Wrobel](#) and S Lopez–Pintado, “depthTests: Nonparametric hypothesis tests based on multivariate band depth,” *R package available on GitHub* Sep 2017.

## PRESENTATIONS INVITED WORKSHOPS, DEPARTMENT SEMINARS, AND WORKING GROUPS

- “A robust, scalable K-statistic for quantifying immune cell clustering in spatial proteomics data,” *Department of Biostatistics, University of Pittsburgh*, Department Seminar, Sep 2024.
- “Statistical analysis of single-cell protein data,” *Pacific Symposium on Biocomputing workshop*, Big Island, Hawaii, Jan 2024.
- “Analysis of wearable device data using functional data models,” *Department of Biomedical Informatics, Emory University School of Medicine*, Seminar, Dec 2023.
- “Modeling trajectories using functional linear differential equations,” *Department of Biostatistics Functional Data Analysis Working Group, Columbia University*, Oct 2023.
- “Introduction to single-cell multiplex imaging data,” *ASA Statistics in Imaging Section Virtual Working Group*, Sep 2023.
- “A workshop for analysis of multiplex single-cell imaging data in R,” *Department of Biostatistics, University of Michigan*, Cancer Data Science Seminar Series, Apr 2023.
- “Challenges and advances in multiplex imaging,” *Department of Biostatistics PENNSIVE Statistical Imaging Group, University of Pennsylvania*, Seminar, Mar 2022.
- “Registration for wearable device data with application to circadian rhythm chronotype discovery,” *Department of Statistics and Actuarial Science, University of Waterloo*, Virtual Department Seminar, Mar 2022.
- “Registration for wearable device data with application to circadian rhythm chronotype discovery,” *Department of Biostatistics, Epidemiology, and Informatics, University of Pennsylvania*, Virtual Department Seminar, Feb 2022.
- “Registration for wearable device data with application to circadian rhythm chronotype discovery,” *Department of Biostatistics, Vanderbilt University*, Jun 2021.
- “Registration for wearable device data with application to circadian rhythm chronotype discovery,” *Department of Biostatistics, Johns Hopkins University*, Virtual Department Seminar, Sep 2020.
- “Registration for wearable device data with application to circadian rhythm chronotype discovery,” *Department of Epidemiology and Biostatistics, University of California San Francisco*, Virtual Department Seminar, Aug 2020.
- [J Wrobel](#), B Bitler, C Rickert, and K Jordan, “Multiplexed Ion Beam Imaging (MIBI) analysis of the ovarian tumor microenvironment,” *Department of Immunology and Microbiology, CU Anschutz School of Medicine*, Virtual Department Seminar, Jul 2020.

## INVITED TALKS

- “A scalable robust K-statistic for quantifying immune-cell clustering in multiplex imaging data,” 2024 *JSM*, Portland, OR, USA, Aug 2024.
- “A scalable robust K-statistic for quantifying immune-cell clustering in multiplex imaging data,” 2024 *ASA Statistical Methods in Imaging*, Indianapolis, IN, USA, May 2024.
- “A scalable robust K-statistic for quantifying immune-cell clustering in multiplex imaging data,” 2024 *StatGen*, Pittsburgh, PA, USA, May 2024.
- “Tools and software for functional data analysis of multiplexed imaging data,” 2024 *ENAR*, Baltimore, MD, USA, Mar 2024.
- “Modeling trajectories using functional linear differential equations,” 2023 *CMStatistics*, Berlin, Germany, Dec 2023.
- “Analysis of wearable device data using functional data models,” *BERD 2023 Wearables research forum, keynote address*, Atlanta, Georgia, Nov 2023.
- “Using digital biomarkers to predict cannabis impaired driving,” 2023 *Emory Research Week forum on AI*, Atlanta, Georgia, Oct 2023.
- “Analysis of wearable device data using functional data models,” 2023 *Georgia Statistics Day*, Atlanta, Georgia, Oct 2023.



- “Analysis of immune cell spatial clustering using functional data models,” *2023 JSM*, Toronto, Canada, Aug 2023.
- “Fast generalized functional principal components analysis,” *2023 International Indian Statistical Association Conference*, Golden, CO, USA, Jun 2023.
- “Analysis of immune cell spatial clustering using functional data models,” *2023 ASA Statistical Methods in Imaging*, Minneapolis, MN, USA, May 2023.
- “Detecting changes in pupillary light response associated with acute cannabis consumption,” *2022 CMStatistics*, London, UK, Dec 2022.
- “Challenges and advances in multiplex imaging,” *2022 JSM*, Washington DC, USA, Aug 2022.
- “Modeling trajectories using functional linear first-order differential equations,” *2022 EcoSta*, Kyoto, Japan, Jun 2022.
- “Challenges and advances in multiplex imaging,” *2022 ASA Statistical Methods in Imaging*, Nashville, TN, USA, May 2022.
- “Challenges in multiplex imaging,” *2021 CMStatistics*, Virtual Conference, Dec 2021.
- “Intensity warping for multisite MRI harmonization,” *2021 Statistical Methods in Imaging*, Virtual Conference, May 2021.
- “Online control of reach accuracy and functional data models for dynamic movement,” *2020 CMStatistics*, Virtual Conference, Dec 2020.
- “Physical activity patterns across ages in the NHANES data,” *2020 JSM*, Philadelphia, PA, USA, Aug 2020.
- “Modeling kinematic behavior using functional linear first-order differential equations,” *2020 ENAR*, Nashville, TN, USA, Mar 2020.
- “Circadian rhythms revealed by accelerometers,” *Use of Wearable and Implantable Devices in Health Research*, Banff International Research Station, Alberta, Canada, Feb 2020.
- “Intensity warping for multisite MRI harmonization,” *2019 CMStatistics*, London, UK, Dec 2019.
- “Identifying circadian chronotypes using accelerometers,” *2018 CMStatistics*, Pisa, Italy, Dec 2018.
- “Modeling the effects of high-dimensional covariates on 3D kinematics,” *2018 PEPS Workshop on advances in functional data analysis*, Rennes, Brittany, France, Oct 2018.
- “Registration for exponential family functional data,” *2018 JSM*, Vancouver, Canada, Aug 2018.
- “Clustering and Modeling Addressable Advertising Impression Curves,” *AT&T Labs Intern Research Showcase*, New York, NY, USA, Jul 2018.
- “Introduction to Shiny using NBA Data,” *RLadies NYC, hosted at NBA NYC*, New York, NY, USA, May 2018.
- “Registration for exponential family functional data,” *2017 CMStatistics*, London, UK, Dec 2017.
- “Identifying patterns in physical activity,” *2017 AT&T Labs Graduate Student Symposium*, New York, NY, USA, Dec 2017.
- “Registration for binary functional data,” *2017 ICSA Applied Statistics Symposium*, Chicago, IL, USA, Jun 2017.

#### POSTERS

- “Can early intervention save money in addressable advertising?,” *2018 AT&T Labs Intern Poster Session*, Bedminster, NJ, USA, Jul 2018.
- “Removing scanner variability from structural MRIs,” *2018 Statistical Methods in Imaging (SMI) Conference*, Philadelphia, PA, USA, Jun 2018.
- “Communicating results of functional data analyses with interactive graphics,” *2017 Women in Statistics and Data Science (WSDS) Conference*, La Jolla, California, USA, Oct 2017.
- “Can we use statistics to compare pictures? An application to brain imaging data,” *2016 Women in Science at Columbia (WISC) Symposium*, New York, NY, USA, Apr 2016.
- “Associations and patterns in ambulatory blood pressure,” *Columbia University Department of Biostatistics 75th Anniversary Gala*, New York, NY, USA, Apr 2015.

#### LEADERSHIP

**FuDGE: Functional data working group at Emory University**, Rollins School of Public Health  
Co-founder and Organizer Jan 2024 – Present

**imgfun: Image and Functional Data Analysis Working Group**, Colorado School of Public Health  
Co-founder and Organizer Jan 2022 – Jun 2023

<b>Biostatistics Graduate Student Research Working Group</b> , Columbia University	
Founder and Organizer	Dec 2015 – Jun 2019
<b>Columbia Biostatistics Computing Club</b> , Columbia University	
Founder and Co-Organizer	Dec 2016 – Jun 2018
<b>Biostatistics Student Cohort</b> , Columbia University	
Doctoral Student Leader	Aug 2015 – Jun 2019

## TEACHING

### Full Courses

Biostatistical Consulting II (12 enrolled students)	Spring 2023
Biostatistical Methods II (28 enrolled students)	Spring 2023
Biostatistical Methods II (34 enrolled students)	Spring 2022
Biostatistical Methods II (24 enrolled students)	Spring 2021
<ul style="list-style-type: none"> <li>Developed YouTube videos for flipped-classroom format which have been watched over 59.7K times since January 2021</li> </ul>	

### Guest Lectures

- “Introduction to single cell multiplex imaging data”, Introduction to Large-Scale Biomedical Data Analysis, Emory University Rollins School of Public Health, October 2023
- “Introduction to web scraping”, R for Data Science, Colorado School of Public Health, November 2019
- “Introduction to web APIs”, R for Data Science, Colorado School of Public Health, November 2019
- “Nonparametric hypothesis testing”, Biostatistics Methods I, Colorado School of Public Health, October 2019
- “Gibbs sampling and the Metropolis-Hasting algorithm”, Advanced Data Analysis, Colorado School of Public Health, September 2019
- “Introduction to Bayesian regression”, Longitudinal Data Analysis, Columbia University Mailman School of Public Health, November 2018
- “Building Shiny apps with flexdashboard”, Data Science I, Columbia University Mailman School of Public Health, October 2017

## ADVISING

### PhD Thesis Advising

- Sarah Bird (Colorado Biostatistics), joint with Ryan Peterson, 2024-Present
- Jared Rieck (Colorado Biostatistics), joint with Ryan Peterson, 2023-Present
- Suneeta Godbole (Colorado Biostatistics), joint with Andrew Leroux, 2022-Present

### Master’s Thesis Advising

- Savannah Ngo (MSPH, Emory Biostatistics) 2024-2025
- Sarah Bird (Colorado Biostatistics), joint with Ryan Peterson, 2023-2024
- Dustin Rogers (Colorado Biostatistics), joint with Andrew Leroux, 2022-2023
- Jared Rieck (Colorado Biostatistics), 2022-2023
- Savannah Mierau (Colorado Biostatistics), joint with Alex Kaizer, 2021-2023
- Shelby Smith (Colorado Biostatistics), joint with Mary Sammel, 2021-2022
- Benjamin Steinhart (Colorado Biostatistics) 2020-2022
- Samantha Bothwell (Colorado Biostatistics), 2019-2021

### Doctoral Examination and Defense Committees

- Ying Jin, Department of Biostatistics and Informatics, Expected graduation 2024
- Yanran Wang, Department of Biostatistics and Informatics, Expected graduation 2024
- Alex Jensen, Department of Biostatistics and Informatics, Graduated Fall 2022
- Connor McCullough, Department of Bioengineering, Graduated Fall 2022