

BYRON C. JAEGER

I am an Assistant Professor of Biostatistics and work in the School of Public Health at the University of Alabama at Birmingham.

My research focuses on blood pressure, cardiovascular disease, and machine learning.



EDUCATION

2017
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2012

- **PhD, Biostatistics**
Gilling's School of Global Public Health 📍 Chapel Hill, North Carolina
 - Thesis: [Extending R-squared to the Generalized Linear Mixed Model](#)
 - Honors: Recipient of ENAR Distinguished Student Paper Award
- **BS, Mathematics**
Furman University 📍 Greenville, South Carolina
 - Thesis: Modeling three-dimensional pathways for the [Tsunami Bar](#)
 - Honors: Recipient of DeLany Medal for Excellence in Mathematics

2012
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2008

PROFESSIONAL EXPERIENCE

Present
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2017

- **Assistant Professor of Biostatistics**
University of Alabama at Birmingham 📍 Birmingham, Alabama
 - Investigating mechanisms of cardiovascular disease and hypertension
 - developing machine learning algorithms to identify who may benefit from initiating antihypertensive medications
- **Adjunct Professor of Statistics**
North Carolina Central University 📍 Durham, North Carolina
 - Undergraduate and graduate instructor in biostatistics and statistical learning

2017
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2016

- **Graduate Teaching Assistant**
Gilling's School of Global Public Health 📍 Chapel Hill, North Carolina
 - Intro to Biostatistics and Longitudinal Data Analysis
 - Statistics Tutor, School of Nursing

2017
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2014

- **Graduate Research Assistant**
Gilling's School of Global Public Health 📍 Chapel Hill, North Carolina
 - [China Health and Nutrition Survey](#)
 - [Sheps Center](#)
 - [Big Data to Knowledge Awardee](#)

2017
|
2012

CONTACT

bjaeger@uab.edu
[GitHub](#)
[Twitter](#)

SKILLS

Statistical analysis:

Linear mixed models
Survival analysis

Statistical / Machine learning:

Clinical risk prediction
Missing data

Statistical Programming:

R
C++

STATS

Citations: 461
First author papers: 9
CRAN downloads: 34,722
Active grants: 7

This resume was made with the R package [pagedown](#).



TEACHING EXPERIENCE

Present
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2017

- **BST 680: Introduction to R**

University of Alabama at Birmingham

- Students develop core competencies in data analysis (import, clean, transform, visualize, and tabulate) using R.
- Course structure promotes interactive lectures and group exercises.
- Final exam: a comprehensive research project using R markdown.



PUBLICATIONS

2020

- **When to Impute? Imputation before and during cross-validation**

BC Jaeger, NJ Tierney, NR Simon

ArXiv, 2010.00718

Citations: 0

2020

- **Underutilization of Treatment for Black Adults With Apparent Treatment-Resistant Hypertension**

AT Langford, OP Akinyelure, G Howard, **BC Jaeger**, ...
Hypertension, 120.14836

- Citations: 0
- DOI: 10.1161/HYPERTENSIONAHA.120.14836

2020

- **Trends in blood pressure control among US adults with hypertension, 1999–2000 to 2017–2018**

P Muntner, ST Hardy, LJ Fine, **BC Jaeger**, ...
JAMA, 324 (12), 1190-1200

- Citations: 3
- DOI: 10.1001/jama.2020.14545

2020

- **The Use of Statistical Learning in Pediatric Research**

BC Jaeger

Journal of Pediatrics, epub

- Citations: 0
- DOI: 10.1016/j.jpeds.2020.04.005

2020

- **Using Predicted Atherosclerotic Cardiovascular Disease Risk for Discrimination of Awake or Nocturnal Hypertension.**

S Sakhija, JN Booth III, DE Anstey, **BC Jaeger**, ...
American Journal of Hypertension, epub

- Citations: 1
- DOI: 10.1093/ajh/hpaa099

Impact metrics (In the top 5% of all research outputs scored by Altmetric)

- 2020 ● **Factors associated with breast cancer screening behaviors in a sample of Jamaican women in 2013**
N Balas, H Yun, **BC Jaeger**, M Aung, PE Jolly
Women & Health, 8-Jan
• Citations: 0
• DOI: 10.1080/03630242.2020.1789260
- 2020 ● **Deep neural network analyses of spirometry for structural phenotyping of chronic obstructive pulmonary disease**
S Bodduluri, A Nakhmani, JM Reinhardt, **BC Jaeger**, ...
JCI insight, 5(13)
• Citations: 0
• DOI: 10.1172/jci.insight.132781
- 2020 ● **Association of Sleep Characteristics With Nocturnal Hypertension and Nondipping Blood Pressure in the CARDIA Study**
SJ Thomas, JN Booth, **BC Jaeger**, D Hubbard, ...
Journal of the American Heart Association, 9(7), e015062
• Citations: 0
• DOI: 10.1161/JAHA.119.015062
- 2020 ● **Improving Mortality Predictions for Patients with Mechanical Circulatory Support Using Follow-Up Data and Machine Learning**
BC Jaeger, RS Cantor, V Sthanam, R Rudraraju
Circulation: Genomic and Precision Medicine, 13(4), e002877
• Citations: 0
• DOI: 10.1161/CIRCGEN.119.002877
- 2020 ● **Morning Blood Pressure Surge and Cardiovascular Disease Events and All-Cause Mortality in Blacks: The Jackson Heart Study**
JN Booth, **BC Jaeger**, L Huang, M Abdalla, ...
Hypertension, 75(3), 835-843
• Citations: 0
• DOI: 10.1161/HYPERTENSIONAHA.119.14233
- 2020 ● **Development of Predictive Equations for Nocturnal Hypertension and Nondipping Systolic Blood Pressure**
BC Jaeger, JN Booth III, M Butler, LJ Edwards, ...
Journal of the American Heart Association, 9 (2), e013696
• Citations: 2
• DOI: 10.1161/JAHA.119.013696
- 2019 ● **Wearable Technology To Reduce Sedentary Behavior And CVD Risk In Older Adults: A Pilot Randomized Clinical Trial**
LM Roberts, **BC Jaeger**, LC Baptista, SA Harper, ...
Clinical Interventions in Aging, Volume 2019:14 Pages 1817-1828
• Citations: 0
• DOI: 10.2147/CIA.S222655

- 2019 ● **Oblique Random Survival Forests**
BC Jaeger, DL Long, DM Long, M Sims, JM Szychowski, ...
Annals of Applied Statistics, 3 (2019), 1847-1883
• Citations: 1
• DOI: 10.1214/19-AOAS1261
- 2019 ● **Prediabetes and Risk for Cardiovascular Disease by Hypertension Status in Black Adults: The Jackson Heart Study**
D Hubbard, LD Colantonio, AP Carson, S Sakuja, BC Jaeger, ...
Diabetes Care, c191074
• Citations: 10
• DOI: 10.2337/dc19-1074
- 2019 ● **Associations of awake and asleep blood pressure and blood pressure dipping with abnormalities of cardiac structure: The CARDIA study**
NA Bello, BC Jaeger, JN Booth., M Abdalla, DE Anstey, ...
Journal of Hypertension, epub
• Citations: 2
• DOI: 10.1097/HJH.0000000000002221
- 2019 ● **Prevalence of Activity Limitations and Association with Multimorbidity Among US Adults 50 to 64 Years Old**
CB Bowling, L Deng, S Sakuja, MC Morey, BC Jaeger, P Muntner
Journal of general internal medicine, pages 1-7
• Citations: 3
• DOI: 10.1007/s11606-019-05244-8
- 2019 ● **Association of Daytime and Nighttime Blood Pressure With Cardiovascular Disease Events Among African American Individuals**
Y Yano, RM Tanner, S Sakuja, BC Jaeger, ...
JAMA cardiology, 4 (9), 910-917
• Citations: 8
• DOI: 10.1001/jamacardio.2019.2845
- 2019 ● **Association of Region and Hospital and Patient Characteristics with Use of High-Intensity Statins after Myocardial Infarction among Medicare Beneficiaries**
V Bittner, LD Colantonio, Y Dai, M Woodward, BC Jaeger, ...
JAMA Cardiology, 4 (9), 865-872
• Citations: 6
• DOI: 10.1001/jamacardio.2019.2481
- 2019 ● **Sex Differences in Masked Hypertension: The Coronary Artery Risk Development in Young Adults Study**
DN Pugliese, JN Booth III, L Deng, DE Anstey, BC Jaeger, ...
Journal of Hypertension, epub
• Citations: 0
• DOI: 10.1097/HJH.0000000000002175

- 2019 ● **Blood-Flow Restriction Resistance Exercise for Older Adults with Knee Osteoarthritis: a Pilot Randomized Clinical Trial**
SA Harper, LM Roberts, AS Layne, **BC Jaeger**, AK Gardner, ...
Journal of Clinical Medicine, 8 (2), 265
• Citations: 14
• DOI: 10.3390/jcm8020265
- 2019 ● **Multimodal Intervention to Improve Functional Status in Hypertensive Older Adults: a Pilot Randomized Controlled Trial**
LC Baptista, **BC Jaeger**, SD Anton, AA Bavry, EM Handberg, ...
Journal of Clinical Medicine, 8 (2), 196
• Citations: 4
• DOI: 10.3390/jcm8020196
- 2019 ● **Race and Sex Differences in Asleep Blood Pressure: The Coronary Artery Risk Development in Young Adults (CARDIA) Study**
JN Booth, DE Anstey, NA Bello, **BC Jaeger**, DN Pugliese, ...
The Journal of Clinical Hypertension, 21 (2), 184-192
• Citations: 7
• DOI: 10.1111/jch.13474
- 2019 ● **An R-squared Statistic for Covariance Model Selection in the Linear Mixed Model**
BC Jaeger, LJ Edwards, MJ Gurka
Journal of Applied Statistics, 46 (1), 164-184
• Citations: 2
• DOI: 10.1080/02664763.2018.1466869
- 2019 ● **Out-of-Clinic Sympathetic Activity is Increased in Patients with Masked Uncontrolled Hypertension**
M Siddiqui, EK Judd, **BC Jaeger**, H Bhatt, T Dudenbostel, B Zhang, ...
Hypertension, 73 (1), 132-141
• Citations: 11
• DOI: 10.1161/HYPERTENSIONAHA.118.11818
- 2019 ● **CVD and Mortality in Adults Aged 60+ Years According to Recommendations by the ACC/AHA and ACP/AAFP**
BC Jaeger, DE Anstey, AP Bress, JN Booth III, M Butler, D Clark III, ...
Hypertension, 73 (2), 327-334
• Citations: 3
• DOI: 10.1161/HYPERTENSIONAHA.118.12291
- 2018 ● **Low Agreement Between Modified-Schwartz and CKD-EPI eGFR in Young Adults: a Retrospective Longitudinal Cohort Study**
M Webster-Clark, **BC Jaeger**, Y Zhong, G Filler, A Alvarez-Elias, ...
BMC Nephrology, 19 (1), 194
• Citations: 1
• DOI: 10.1186/s12882-018-0995-1

UAB SOPH featured article

UAB SOPH featured article

ENAR Distinguished Student Paper Award

- 2018
- **Impact of Bladder Cancer on Health Related Quality of Life**
AB Smith, **BC Jaeger**, LC Pinheiro, LJ Edwards, HJ Tan, ME Nielsen, ...
BJU International, 121 (4), 549-557
 - Citations: 51
 - DOI: 10.1111/bju.14047
- 2018
- **Assessing Responsiveness over Time of the PROMIS Pediatric Symptom and Function Measures in Cancer, Nephrotic Syndrome, and Sickle Cell Disease**
BB Reeve, LJ Edwards, **BC Jaeger**, PS Hinds, C Dampier, DS Gipson, ...
Quality of Life Research, 27 (1), 249-257
 - Citations: 21
 - DOI: 10.1007/s11136-017-1697-z
- 2017
- **An R-squared Statistic for Fixed Effects in the Generalized Linear Mixed Model**
BC Jaeger, LJ Edwards, K Das, & PK Sen
Journal of Applied Statistics, 44 (6), 1086-1105
 - Citations: 139
 - DOI: 10.1080/02664763.2016.1193725
- 2016
- **Responsiveness of PROMIS Pediatric Measures to Hospitalizations for Sickle Pain and Subsequent Recovery**
C Dampier, **BC Jaeger**, HE Gross, V Barry, L Edwards, Y Lui, ...
Pediatric Blood & Cancer, 63 (6), 1038-1045
 - Citations: 38
 - DOI: 10.1002/pbc.25931
- 2014
- **Enumerating Graph Depletions**
BC Jaeger & TM Lewis
Online Journal of Analytic Combinatorics, 9, 1-17
 - Citations: 0

BJUI International Article of the Week

R PACKAGES

- 2020
- **table.glue**
Make and Apply Customized Rounding Specifications for Tables
 - [GitHub Repository](#)
 - Total downloads: 384
- 2020 | 2018
- **obliqueRSF**
Oblique random survival forest (ORSFs)
 - [GitHub Repository](#)
 - Total downloads: 10,034

2020
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2016

- **r2glmm**
Compute model and semi-partial R-squared for mixed models
 - [GitHub Repository](#)
 - Total downloads: 24,304
 - Total citations: 112

≡ PRESENTATIONS

- 2019
- **Novel 24-Hour Blood Pressure Profile in Patients with Resistant Hypertension**
BC Jaeger
Journal of the American College of Cardiology, 73 (9 Supp. 1), 1818
Citations: 0
 - **Hypertension Awareness is Associated with Negative Psychosocial Outcomes in Africans Americans in the Jackson Heart Study (JHS)**
BC Jaeger
Circulation, 139 (Supp. 1), AP179
Citations: 0
 - **Wearable Technology to Reduce Sedentary Behavior and Cvd Risk in Older Adults: a Pilot Trial**
BC Jaeger
Medicine & Science in Sports & Exercise, 51 (6), 1004
Citations: 0
 - **Young Adult Risk Factor Burden and Sleep Hypertension in Middle-Age: the Coronary Artery Risk Development in Young Adults Study**
BC Jaeger
Circulation, 139 (Supp. 1), AP181
Citations: 0
 - **Change in Metabolic and Inflammatory Biomarkers after a 24-Week Multimodal Intervention**
BC Jaeger
9th International Conference on Frailty & Sarcopenia Research,
Miami, FL
Citations: 0
 - **Oblique Random Survival Forests**
BC Jaeger
ICSA Applied Statistics Symposium, Raleigh, NC
Citations: 0

- 2019 ● **Prolonged Hospital Length Of Stay After Pediatric Heart Transplantation And Its Impact On Outcomes: A PHTS Database Analysis**
BC Jaeger
Circulation, A13365
Citations: 0
- 2019 ● **Improving mortality predictions for mechanical-circulatory-support-patients using follow-up data and machine learning**
BC Jaeger
Circulation: Genomic and Precision Medicine, 13.4 (2020): e002877
Citations: 0
- 2018 ● **An R-squared Statistic for Covariance Model Selection in the Linear Mixed Model**
BC Jaeger
ENAR Spring Meeting, Atlanta, GA
Citations: 0
- 2018 ● **An R-squared Statistic for Covariance Model Selection in the Linear Mixed Model**
BC Jaeger
Joint Statistical Meeting, Vancouver
Citations: 0
- 2017 ● **Changes in Health-Related Quality of Life among Older Adults with Prostate Cancer: a Case-Control Study**
BC Jaeger
Journal of the American College of Surgeons, 225 (4), e105
Citations: 1



GRANTS SUBMITTED

- 2020 ● **Cardiovascular Disease and Mortality Risk Reduction with Antihypertensive Medication for Adults with White Coat Hypertension and Masked Hypertension**
Primary Investigator: Muntner, Paul M
• Submitted to NIH - National Institutes of Health/DHHS
• OSP Processing
- 2020 ● **Implementation and Accuracy Of Blood Pressure Self-Measurement In The Waiting Room**
Primary Investigator: Muntner, Paul M
• Submitted to National Heart, Lung, and Blood Institute/NIH/DHHS
• Pending, R01HL151609

- 2020 ● **Kidney Tubule Dysfunction and Future Risk of Acute Kidney Injury**
Primary Investigator: Gutierrez, Orlando M.
• Submitted to VETERANS MEDICAL RESEARCH FOUNDATION
• Pending
- 2020 ● **Incorporation of a Hypertension Working Group into the Jackson Heart Study**
Primary Investigator: Muntner, Paul M
• Submitted to National Heart, Lung, and Blood Institute/NIH/DHHS
• Pending, R01HL117323
- 2020 ● **Decoding Human Movements with Cortical and Subcortical Field Potentials with Directional DBS for Parkinson's Disease**
Primary Investigator: Walker, Harrison
• Submitted to National Institute of Mental Health/NIH/DHHS
• Pending, R01MH125925
- 2020 ● **Effectiveness of Video Conferencing on Self-measured Blood Pressure Accuracy**
Primary Investigator: Muntner, Paul M
• Submitted to National Heart, Lung, and Blood Institute/NIH/DHHS
• Pending, R01HL157500
- 2020 ● **NEAT X: Non-Exercise Activity Tracking & Exercise for Later Life Blood Pressure**
Primary Investigator: Buford, Thomas
• Submitted to National Heart, Lung, and Blood Institute/NIH/DHHS
• Pending, R61HL156827
- 2020 ● **Determining True Versus Apparent Treatment-Resistant Hypertension Among African Americans in the Jackson Heart Study**
Primary Investigator: Tanner, Rikki M.D.
• Submitted to National Heart, Lung, and Blood Institute/NIH/DHHS
• Not Funded, R01HL151687
- 2020 ● **Leveraging the 24-Hour Movement Paradigm to Preserve Cognitive Function and Prevent Alzheimer's Disease: The Multi-Ethnic Study of Atherosclerosis (MESA) 24H-ACT Study**
Primary Investigator: Gabriel, Kelley Pettee
• Submitted to Columbia University
• Pending
- 2020 ● **Use of Blood Pressure and Predicted Cardiovascular Disease Risk to Guide the Initiation of Antihypertensive Medication**
Primary Investigator: Colantonio, Lisandro D
• Submitted to NIH - National Institutes of Health/DHHS
• Pending

- 2020
- **Predicting Pediatric Transplant Outcomes using Machine Learning - A Collaboration between Physicians and Data Scientists**
Primary Investigator: Rudraraju, Ramaraju
 - Submitted to American Heart Association
 - Pending
- 2020
- **Regenerative Niches in Bronchoalveolar Lavage Discovered by Exosomal Proteomics for Sepsis**
Primary Investigator: Jaeger, Byron C.
 - Submitted to UNIVERSITY OF TEXAS
 - Pending
- 2019
- **Angiotensin (1-7) Expressing Lactobacillus for Treating Alzheimer's Disease**
Primary Investigator: Buford, Thomas
 - Submitted to National Institute on Aging/NIH/DHHS
 - Pending, 1R01AG068912-01
- 2019
- **Establishing Medicare Based Estimation for Cardiovascular Disease (EMBED)**
Primary Investigator: Jaeger, Byron C.
 - Submitted to National Heart, Lung, and Blood Institute/NIH/DHHS
 - Pending, 1K01HL153624-01
- 2019
- **Decoding Human Movements with Cortical and Subcortical Field Potentials with Directional DBS for Parkinson's Disease**
Primary Investigator: Walker, Harrison
 - Submitted to NIH - National Institutes of Health/DHHS
 - Withdrawn
- 2019
- **Non-Traditional Blood Pressure Parameters from Ambulatory Blood Pressure Monitoring and Left Ventricular Hypertrophy**
Primary Investigator: Muntner, Paul M
 - Submitted to American Heart Association
 - Not Funded
- 2019
- **Determining True Versus Apparent Treatment-Resistant Hypertension among African Americans in the Jackson Heart Study**
Primary Investigator: Tanner, Rikki M.D.
 - Submitted to National Heart, Lung, and Blood Institute/NIH/DHHS
 - Active, R56HL151687
- 2019
- **Implementation and Accuracy of Blood Pressure Self-measurement in the Waiting Room**
Primary Investigator: Muntner, Paul M
 - Submitted to National Heart, Lung, and Blood Institute/NIH/DHHS
 - Not Funded, R01HL151609

- 2019 ● **Development of a Patient Decision Support Tool for Mechanical Circulatory Support**
Primary Investigator: Kirklin, James K
• Submitted to National Heart, Lung, and Blood Institute/NIH/DHHS
• Not Funded, R01HL151843
- 2019 ● **Continuation of the Coordinating Center for the Chronic Renal Insufficiency Cohort (CRIC) Study**
Primary Investigator: Colantonio, Lisandro D
• Submitted to University of Pennsylvania
• Active, 576894
- 2019 ● **Home Versus Ambulatory Blood Pressure Monitoring and Falls in Older Adults**
Primary Investigator: Muntner, Paul M
• Submitted to Kaiser Foundation
• Not Funded
- 2019 ● **Crosstalk Between Common Disease-Related Pathways in Stroke and Dementia: Mechanisms Underlying Shared Susceptibility**
Primary Investigator: Long, Dorothy Leann
• Submitted to Northwestern University
• Pending
- 2019 ● **Resveratrol and Exercise to Enhance Mitochondrial Function in Older Adults**
Primary Investigator: Buford, Thomas
• Submitted to National Institute on Aging/NIH/DHHS
• Pending, F32AG066276
- 2019 ● **Automated Clinic Blood Pressure Assessment and Detection of White Coat and Masked Hypertension Study in African Americans**
Primary Investigator: Muntner, Paul M
• Submitted to Columbia University
• Active, 2(GG015903-01)
- 2019 ● **NRT-HDR Where Health Meets Data: Training Biostatisticians for the World of Big Health Data**
Primary Investigator: Cofield, Stacey S
• Submitted to NSF - National Science Foundation
• Not Funded
- 2019 ● **Building and InnovatinG: Digital heAlth Technology and Analytics (BIGDATA) - Methodologic Core**
Primary Investigator: Redden, David T
• Submitted to NIH - National Institutes of Health/DHHS
• Pending

- 2019 ● **Building and Innovating: Digital Health Technology and Analytics (BIG DATA)**
Primary Investigator: Curtis, Jeffrey R
• Submitted to National Institute of Arthritis & Musculoskeletal & Skin Diseases/NIH/DHHS
• OSP Processing, P30AR072583
- 2018 ● **Home Blood Pressure and Falls Among Older Adults**
Primary Investigator: Muntner, Paul M
• Submitted to National Heart, Lung, and Blood Institute/NIH/DHHS
• Active, R01HL147601
- 2018 ● **Automated Clinic Blood Pressure Assessment and Detection of White Coal and Masked Hypertension Study**
Primary Investigator: Muntner, Paul M
• Submitted to Columbia University
• Resubmitted
- 2018 ● **Improving the Detection of Masked Hypertension: Analysis of Pooled Population-and Community-Based Studies**
Primary Investigator: Muntner, Paul M
• Submitted to Duke University
• Active, A030965
- 2016 ● **Incorporation of a Hypertension Working Group into the Jackson Heart Study**
Primary Investigator: Muntner, Paul M
• Submitted to National Heart, Lung, and Blood Institute/NIH/DHHS
• Active, R01HL117323
- 2016 ● **Noninvasive Biomarkers to Advance Emerging DBS Electrode Technologies in Parkinson's Disease**
Primary Investigator: Walker, Harrison
• Submitted to National Institute of Neurological Disorders and Stroke/NIH/DHHS
• Active, UH3NS100553