BROOKE MCGINLEY

CURRICULUM VITAE

Department of Biostatistics
Boston University School of Public Health
801 Massachusetts Avenue, 3rd Floor
Boston, MA 02118, USA

Updated 7/23/2026
Email: bmcgin4@gmail.com
Phone: (856) 562-2136
Google Scholar

SUMMARY

PhD Candidate in Biostatistics with doctoral training and research focused on causal inference, real-world evidence, and longitudinal observational studies. Dissertation research investigates and extends statistical methods to better understand disease progression heterogeneity of knee osteoarthritis and the long-term effects of total knee arthroplasty. Serves as a statistical analyst supporting interdisciplinary clinical and epidemiological research in rheumatology, contributing to research question development, study design, statistical analysis plan, analysis implementation, interpretation and communication of findings across interdisciplinary teams.

EDUCATION

Ph.D., Biostatistics **Expected May 2027**
Boston University, Boston, MA
Advisors: Dr. Michael LaValley, Dr. Fatema Shafie Khorassani

Master of Science in Biostatistics **January 2025**
Boston University, Boston, MA

Bachelor of Science in Mathematics, Minor in Statistics **May 2021**
Bachelor of Arts in Computing & Informatics, Minor in Data Analytics
Rowan University, Glassboro, NJ
Magna Cum Lade

PROFESSIONAL EXPERIENCE

Statistical Analyst, Boston University Section of Rheumatology **September 2023 – Present**

- Conduct analyses using repeated measures, machine learning, and survival analysis methodology for a variety of rheumatology applications
- Communicate statistical results and methodologies to interdisciplinary research teams
- Produce high-quality tables and figures for publications, grant applications and presentations
- Developed documentation on standardized analytic approaches applicable to the larger research group

Statistical Consultant, Boston University Genetic Counseling Capstone Projects **January 2024 – Present**

- Identify supporting statistical materials for students to aid their understanding
- Provide a safe environment for growth in both office hours and lab sessions
- Facilitate meetings with students and faculty advisors to devise a statistical plan for their project

Trainee, Interdisciplinary Training Program for Biostatisticians **September 2021 – August 2023**

- Clinical Trial Exploratory Analysis - Symptom and Viral Rebound
  Advisor: Carlee Moser, PhD at The Center for Biostatistics in AIDS Research, Harvard T.H. Chan School of Public Health
  - Developed and carried out an exploratory statistical analysis plan to investigate symptom and viral rebound using survival analysis and repeated measure techniques

- Identifying Subgroups of Patients Undergoing Knee Replacement
  Advisor: Michael LaValley, PhD at Boston University School of Public Health
  - Applied K-means Clustering, unsupervised Random Forest with Principal Component Analysis and Principal Coordinate Analysis to identify and interpret clinical phenotypes

- Modeling Alcohol Trajectories of Tuberculosis Patients
  Advisor: Laura White, PhD at Boston University School of Public Health
  - Performed trajectory modeling to investigate longitudinal trends of alcohol use in TB patients

Clinical Statistical Programming Summer Intern, DeltaMed Solutions, Inc. **June 2020 –August 2020**

- Gained comprehensive knowledge of clinical trial processes and statistical programming
- Produced SDTM and ADAM Datasets using SAS for compliance with CDISC standards
- Automated generation of tables using provided table shells

Peer Tutor, Rowan University Tutoring Center **September 2018 – May 2021**

- Led one-on-one and small group tutoring sessions for statistics, mathematics and computer science students
- Supported students with exam preparation, applied problem solving and improved content comprehension

Assistant Club Director, South Jersey Edge Field Hockey Club **November 2019 –Present**

- Oversee club operations, communications, and coach recruitment/training for the youth field hockey program

Field Hockey Umpire, USA Field Hockey & NCAA **February 2015 –Present**

- Enforce rules and communicate split-second decisions in high-pressure competitive matches

Head Coach, South Jersey Edge Field Hockey Club **November 2014 –Present**

- Develop practice plans and provide support to promote player development

RESEARCH EXPERIENCE

Trainee, Taste of Boston University Summer Institute for Biostatistics (SIBS) **June 2020 - August 2020**

Under the guidance of Anita Destefano, Ph.D., Jacquiline Hicks, Ph.D., and Gina Peloso, Ph.D. at Boston University

- Developed skills in biostatistics, epidemiology, clinical trials, and statistical genetics
- Contributed to an exome wide association study of hypertension and blood pressure in a Hispanic population
- Performed analysis of genetic data using principal component analysis, Hardy-Weinberg Equilibrium testing, multiple linear regression, logistic regression, and burden testing

Undergraduate Research Student, Rowan University **January 2019 – May 2021**

- Classification Method Optimization
  Advisor: Umashanger Thayasivan, Ph.D. at Rowan University
  - Developed a tool to compare the results of various classification methods including Decision Tree, Naïve Bayes, Logistic Regression, Random Forest, Boosting, Bagging, Neural Networks, and Support Vector Machine.

- Exploring Patient's Perception of Medical Code Status and Factors that Influence It
  Advisor: Charalampos Papachristou Ph.D at Rowan University
  - Investigated patients' knowledge of medical code status

- Mindfulness Practice Pilot Program in Medical Students
  Advisor: Charalampos Papachristou Ph.D at Rowan University
  - Evaluated the impact of a mindfulness elective on medical students' lives

- Geriatric Bariatric Surgery
  Advisor: Charalampos Papachristou Ph.D at Rowan University
  - Analyzed geriatric bariatric surgery weight excessive loss results

TECHNICAL AND PROGRAMMING SKILLS

- **Statistical Software:** R, SAS, SQL
- **Causal Inference & Clinical Trials:** Target Trial Emulation, Data Integration, Survival Analysis, Confounding Adjustment, Power and Sample Size Calculations
- **Machine Learning & Clustering:** Unsupervised Clustering, SuperLearner
- **Regulatory & Reproducible Programming:** CDISC Standards, SDTM/ADaM Dataset Creation, Markdown Creation, SAS Macro Creation, R Function Creation
- **High-Performance Computing:** Linux, BU Shared Computing Cluster

GRANTS AND FELLOWSHIPS

CAUSALab Summer Courses Student Tuition Award (2 Courses) **Summer 2026**

Competitive award supporting advanced training in causal inference methods for observational data
Courses: Target Trial Emulation, Combining Information for Causal Inference

Rheumatology Research Foundation Graduate and Medical Student Preceptorship **2025**
Competitive preceptorship that supports mentored research training in rheumatology

T32 Interdisciplinary Training Program for Biostatisticians Trainee **2021-2023**
NIH funded predoctoral training program focused on methodological and multidisciplinary training in biostatistics
Award Number: T32 GM140972

AWARDS AND HONORS

Boston University Graduate Student Professional Development Award **2026**

Mu Sigma Rho Member **2024**

Boston University GWISE Professional Development Award **2023**

Advances in Statistical and Computational Methods for Analysis of Biomedical, Genetic and Omics Data Conference Travel Award **2023**

Rowan University College of Science & Mathematics Dean's Outstanding Senior Award (DOSA) **2021**

Rowan University Pi Mu Epsilon Member **2019- 2021**

National Field Hockey Coaches Association (NFHCA) Academic Squad Selection **2016 – 2018**

Long Island University Leadership Award Recipient **2017**

TEACHING EXPERIENCE

Boston University:

Introduction to R for Genetic Counseling Research, Genetic Counseling Research Methods **October 2025**
Guest Lecturer 2 Sessions (10-15 Graduate Level Students)

Multiple Comparisons for Continuous and Binary Endpoints, Applied Statistics in Clinical Trials I **March 2025**
Guest Lecturer 1 Session (40-45 Graduate Level Students)

Logistic Regression and Survival Analysis **Spring 2024**
Teaching Assistant (50-60 Graduate Level Students)

Summer Institute in Biostatistics (SIBS) **Summer 2022 – 2024**
Teaching Assistant (20 Undergraduate Level Students)

Accelerated Statistical Training **Summer 2022**
Teaching Assistant Led 4 Hands-On Practice Sessions (20 Graduate Level Students)

PRESENTATIONS

Oral Presentations – Invited Talks

1. **Introduction to Target Trial Emulations** **January 2025**
   Boston Musculoskeletal Clinical Research Collaboratory Methodology Journal Club

Oral Presentations – Contributed

1. **Identifying Subgroups of Patients Undergoing Knee Replacement** **November 2022**
   American College of Rheumatology Convergence, Philadelphia, Pennsylvania
2. **Classification Method Optimization** **August 2020**
   Joint Statistical Meetings, Philadelphia, Pennsylvania

Poster Presentations

1. **Performance Evaluation of Clustering Methods for Mixed Data: A Simulation Study** **March 2026**

Eastern North American Regional Internation Biometric Society (ENAR), Indianapolis, Indiana

2. **Detection of Clinically Relevant Subgroups in Patients Undergoing Knee Replacement Using Machine Learning** **November 2023**
   American College of Rheumatology Convergence, San Diego, California

3. **Alcohol Consumption Trajectories during Tuberculosis Treatment: A longitudinal cohort in the Western Cape, South Africa** **October 2023**
   The Annual Evans Department of Medicine Research Day, Boston University, Boston, Massachusetts

LEADERSHIP AND SERVICE EXPERIENCE

Camden County Community Cat TNR Initiative **2023-2024**

Graduate Student Representative, Adrienne Cupples Award Selection Committee **2023-2024**

Institutional Review Board Intern, Boston University, *Boston University Medical Campus* **2022**

Admissions Committee, *Boston University Summer Institute for Biostatistics (SIBS)* **2022**

Biostatistics Association Co-Chair, *Boston University* **2022-2024**

Mathematics Team President, *Rowan University* **2020-2021**

Mathematics Team Secretary, *Rowan University* **2019-2020**

President of Resident Hall Association, *Long Island University - Brooklyn* **2017**

Student Government Freshman Council Treasurer, *Long Island University - Brooklyn* **2016-2017**

Student Athlete Advisory Committee Representative, *Long Island University - Brooklyn* **2016-2017**

PROFESSIONAL MEMBERSHIPS

Eastern North American Region International Biometric Society (ENAR)
Association of Rheumatology Professional (ARP)
American College of Rheumatology (ACR)
American Statistical Association (ASA)

PUBLICATIONS, PEER-REVIEWED

1. Sieberer JM, Park N, Desroches S, Brennan K, Rancu A, **McGinley B**, Manafzadeh AR, Segal NA, Felson DT, Tommasini SM, Wiznia DH, Fulkerson JP, Breaking down tibial tuberosity to trochlear groove distance into two components to enable patient-specific treatment strategies. *Journal of ISAKOS*. 2026;16:101025. doi:10.1016/j.jisako.2025.101025

2. **McGinley B**, LaValley MP, Sieberer JM, Fulkerson JP, Lynch J, Guermazi A, Roemer FW, Lewis CE, Segal N, Felson DT, Most Study Investigators, Adverse patellofemoral morphology and worsening osteoarthritis: an exploration of composite vs. single MRI outcomes. *Osteoarthritis Imaging*. Published online November 20, 2025:100383. doi:10.1016/j.ostima.2025.100383

3. Park N, Sieberer JM, **McGinley B**, Manafzadeh AR, Lynch J, Segal NA, Lewis CE, Guermazi A, Roemer FW, Stefanik J, Felson DT, Fulkerson JP, Measures of Patellofemoral Morphology Predict the Risk of Local Cartilage Damage Progression: A Yale/MOST Collaborative Study. *Am J Sports Med*. 2025;53(12):2881-2888. doi:10.1177/03635465251367716

4. Ferrandiz-Espadin R, Rabasa G, Gasman S, **McGinley B**, Stovall R, Jafarzadeh SR, Liew JW, Dubreuil M, Disparities in time to diagnosis of Radiographic Axial Spondyloarthritis. *The Journal of Rheumatology*. 2025;52(4):jrhuem.2024-0574. doi:10.3899/jrheum.2024-0574

5. Chew KW, **McGinley B**, Moser C, Li JZ, Evering TH, Ritz J, Javan AC, Margolis D, Wohl DA, Hughes MD, Daar ES, Currier JS, Eron JJ, Smith DM, Study Sites for the Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV)-2/A5401 Study Team and Investigators. Viral and Symptom Rebound Following Anti–Severe

Acute Respiratory Syndrome Coronavirus 2 Monoclonal Antibody Therapy in a Randomized Placebo-Controlled Trial. *The Journal of Infectious Diseases*. 2025;231(1):131-136. doi:10.1093/infdis/jiae501

6. Lee S, Neogi T, **McGinley B**, Wang N, Frey-Law L, Torabian KA, Aoyagi K, Stefanik JJ, Carlesso LC, Hausdorff JM, Gazit E, Segal NA, Lewis CE, Nevitt MC, Kumar D, Associations of pain sensitivity and conditioned pain modulation with physical activity: findings from the Multicenter Osteoarthritis Study (MOST). *Osteoarthritis and Cartilage*. 2024;32(8):982-989. doi:10.1016/j.joca.2024.04.020