AMELIA H. TRAN

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CONTACT INFORMATION

E-mail: tran26h@mtholyoke.edu

Personal website

RESEARCH INTEREST

Survival analysis, causal inference, time series, machine learning for biomedical data, global health, health policy, health economics

EDUCATION

University of Pennsylvania, Philadelphia, PA — May 2023
M.S. in Biostatistics
Advisor: Douglas Schaubel, Ph.D.

Mount Holyoke College, South Hadley, MA — May 2021
B.A. in Statistics, Data Science. *Summa Cum Laude*

INDUSTRY EXPERIENCE

Genentech Inc/Roche, South San Francisco, CA

Analytical Data Scientist — Jun 2023 -

- Perform SDTM/ADaM derivation and TFL generation by CDISC standards for different activities: PK analysis, iDMC, DSUR, SREP, CSR, conference abstracts, and other regulatory requests from FDA, Health Canada, and EMA
- Manage TFL mockshells, SAP, output risk assessment, metadata programs, R-Shiny apps for clinical exploratory and analytical purposes
- Contribute to programming template standards, tools, and processes that improve the efficiency of producing analytics across molecule programs
- Communicate with stakeholders from different scientific backgrounds and areas of expertise to negotiate timelines and scope of deliverables
- Foster collaborations with internal ADS and contractors across study teams

Cross-Department Collaboration

- Conduct biomarker analyses to validate novel genetic classification method & detect cancer-associated proteins and gene mutation in follicular lymphoma
- Co-develop open-source R packages for clinical programming, reporting, and filing as part of **Pharmaverse** movement through collaboration
- Explore clone-censor-weight (CCW) methods for target trial emulation with real-world evidence through observation data and simulation

Highlighted Professional Services

- Coordinate Data and Statistical Science (DSS) summer and long-term internships for 2025-2026 cohort. Oversee recruitment, onboarding, and training processes
- Lead Git/Gitlab training workshops and internal Git efforts to facilitate data science workflow and enhance efficiency for programming teams
- On-board molecule study teams on their migration into new R-based tools and computing environment that supports best practices in reproducible code
- Co-host internal North America Data Sciences Forum (NADF) series where colleagues share knowledge and experience on process rollout and general drug development

Regeneron Pharmaceuticals Inc., Tarrytown, NY

Biostatistics Intern Jun 2022 - Aug 2022

- Quantified physical activity with ***arctools*** R package to generate analysis for minute-level accelerometry data from NHANES and Regeneron clinical trials
- Performed harmonization mapping on internal clinical data to obtain physical activity summaries on reproducible metrics for comparison purposes
- Investigated day-to-day physical activity variability through intraclass correlation coefficient (ICC): independent, auto-regressive, exchangeable

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ACADEMIC EXPERIENCE

University of Pennsylvania, Philadelphia, PA

Graduate Research Assistant Sep 2021 - May 2023

- *MS thesis*: Evaluated a novel prognostic score-based weighting approach for facility profiling metrics and its application to U.S. kidney transplant centers
- Estimated causal effects of transplant centers, multiple wait-listing, HCV-infected kidney transplants on survival on kidney disease related projects
- Completed PhD coursework on statistical inference and theories (Casella Berger)

Institute for Pure and Applied Mathematics, Los Angeles, CA

Applied Math Research Fellow Jun 2021 – Aug 2021

- Develop physics-informed neural network (PINN) models in Python to simulate wave propagation for engineering applications. Project sponsored by NSF and Advanced Micro Devices Inc. (AMD Inc.)
- Embedded physics constraints, i.e. PDEs of wave equation and initial/boundary conditions, into loss function to design optimal network architecture
- Delivered final presentation at the RIPS-LA symposium and AMD Inc. headquarter in Santa Clara. Project accepted to NeurIPS and JMM conferences

Memorial Sloan Kettering Cancer Center, New York City, NY

Biostatistics Research Fellow Jun 2020 – Aug 2020

- Investigated association between biomarker bilirubin and survival in cirrhosis with Joint Model for longitudinal and survival data
- Compared survival results with Cox Proportionality Hazards and time-dependent Cox models. Evaluated pros and cons of each model
- Produced Kaplan-Meier curves and spaghetti plots for data visualization

Mount Holyoke College, South Hadley, MA

Undergraduate Research Assistant Jun 2019 – May 2020

- Developed *ncopula* R package to construct nested Archimedean copula models with different nesting structures dependent on bivariate correlations
- Designed comprehensive unit tests to examine the package functionality, parameter estimation, and dependency nesting structure
- Collaborated on GitHub and documented the *ncopula* package with relevant mathematical formula for code reproducibility

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HONORS AND AWARDS

1. Student Travel Award. *ASA Women in Statistics and Data Science.* 2023
2. Most Valued Player Award for Service to Advocacy, *University of Pennsylvania Graduate and Professional Student Assembly.* 2023
3. Phi Beta Kappa, *Theta Chapter of Massachusetts.* 2021
4. Mu Sigma Rho, *The Boston Chapter of the American Statistical Association.* 2021
5. Five College Statistics Prize, *The Five College Statistics Program.* 2021
6. Mary Lyon Scholar, *Mount Holyoke College.* 2021
7. Global Competence Award, *McCulloch Center for Global Initiatives.* 2021
8. Electronic Undergraduate Statistics Research Best Video Presentation Winner, *The Consortium for the Advancement of Undergraduate Statistics Education and the American Statistical Association.* 2020
9. George Cobb Statistics Prize for Excellence in Statistics, *Mount Holyoke College Department of Mathematics and Statistics.* 2020
10. Paul Saintonge Prize for Superior Achievement in French, *Mount Holyoke College French Department.* 2019

PEER-REVIEWED PUBLICATIONS

1. **AH Tran**, PP Reese, DE Schaubel. Evaluating a facility-profiling metric based on survival probability: Application to U.S. transplant centers. 2025+
2. VS Potluri, **AH Tran**, N Kye, N Al Haddad, S Tandukar, TB Dunn, P Reese, DE Schaubel. Multiple Listing In Kidney Transplantation Following Implementation Of The Concentric Circle Kidney Allocation Policy. 2025+
3. Lee Y, Reese PP, **Tran AH**, Schaubel DE. Prognostic score-based methods for estimating center effects based on survival probability: Application to post-kidney transplant survival. Statistics in Medicine. 2024.
4. Schaubel DE, **Tran AH**, Abt PL, Potluri VS, Goldberg DS, Reese PP. Five-Year Allograft Survival for Recipients of Kidney Transplants From Hepatitis C Virus Infected vs Uninfected Deceased Donors in the Direct-Acting Antiviral Therapy Era. Journal of American Medical Association (JAMA). 2022;328(11):1102–1104.
5. Davini D*, Samineni B*, Thomas B*, **Tran AH***, Zhu C*, Ha K, Dasika G, White L. Using physics-informed regularization to improve extrapolation capabilities of neural networks. Machine Learning and the Physical Sciences Workshop, Neural Information Processing Systems (NeurIPS) 2021.

* *indicates co-first authorship*

ACADEMIC THESES

1. **Tran AH**. Evaluating a facility-profiling metric based on survival probability: Application to U.S. transplant centers. University of Pennsylvania Perelman School of Medicine Masters Thesis. May 2023.
2. **Tran AH**. Statistical Analysis of the Association between Bilirubin and Survival in Primary Biliary Cirrhosis. Mount Holyoke College Honors Thesis. May 2021.

CONTRIBUTED TALKS

1. Evaluating a Facility-Profiling Metric based on Survival Probability: Application to U.S. Transplant Centers, *Women in Statistics and Data Science*, Bellevue, WA, October 2023
2. Quantifying Physical Activity with Accelerometry Data: Application to Observational Study, *Regeneron Pharmaceuticals Inc.*, Tarrytown, NY, August 2022
3. Using Physics-Informed Regularization to Improve Extrapolation Capabilities of Neural Networks, *Joint Mathematics Meetings*, April 2022
4. Using Physics-Informed Regularization to Improve Extrapolation Capabilities of Neural Networks, *Institute for Pure and Applied Mathematics*, Los Angeles, CA, August 2021

3. Association between Bilirubin and Survival in Primary Biliary Cirrhosis, *Electronic Undergraduate Statistics Research Conference*, November 2020

4. Association between Bilirubin and Survival in Primary Biliary Cirrhosis, *Memorial Sloan Kettering Cancer Center*, New York, NY, August 2020

CONTRIBUTED POSTERS

1. Evaluating a Facility-Profiling Metric based on Survival Probability: Application to U.S. Transplant Centers, *Women in Statistics and Data Science*, Bellevue, WA, October 2023

2. Multiple Listing In Kidney Transplantation Following Implementation Of The Concentric Circle Kidney Allocation Policy, *American Transplant Congress*, San Diego, CA, June 2023

3. Using Physics-Informed Regularization to Improve Extrapolation Capabilities of Neural Networks, *Joint Mathematics Meetings*, April 2022

4. Using Physics-Informed Regularization to Improve Extrapolation Capabilities of Neural Networks, *Neural Information Processing Systems*, December 2021

PROFESSIONAL SERVICE

Genentech/Roche, South San Francisco, CA

Product Development Data and Statistical Sciences

- Coordinate recruitment and activities for summer internship programs, 2025 -
- Co-host internal North America Data Science Forum (NADF) meetings, 2024 -
- Co-lead Git/Gitlab training workshops for internal data science workflow, 2024
- On-board study teams to Next Generation R-based tools and systems, 2024
- Co-host Genentech Research and Development (gRED) Oncology meetings, 2024

University of Pennsylvania, Philadelphia, PA

Graduate and Professional Student Assembly (GAPSA)

- Committee Member, GAPSA International Student Affairs, 2022 – 2023

Mount Holyoke College, South Hadley, MA

Extracurricular Activities

- Invited Panelist, MHC Chapter for Association for Women in Mathematics Graduate School Information Session, Spring 2022
- Student Liaison, Department of Mathematics and Statistics, 2020 – 2021
- Co-President, French Club, 2020 – 2021
- Board Member, HackHolyoke (24-hour hackathon), Fall 2020

TEACHING

Mount Holyoke College, South Hadley, MA

Teaching Assistant & Grader

- Stat 343: Mathematical Statistics, Spring 2021
- Comsc 312: Algorithms, Spring 2021
- Stat 242: Intermediate Statistics, Spring 2020
- Comsc 205: Data Structures, Fall 2019
- Math 101: Single Variable Calculus, Spring 2019

PROFESSIONAL MEMBERSHIPS

American Statistical Association (ASA)
Association for Women in Mathematics (AWM)
International Biometric Society Eastern North American Region (ENAR)

TECHNICAL SKILLS

Programming Languages: R, Python, SAS/SQL, Java
Technologies: Git, Jupyter Notebook, PyCharm, VS Code, LaTeX

Alice Birnbaum, M.S.
People & Products Leader
Product Development Data & Statistical Sciences
Genentech, Inc.
1 DNA Way
South San Francisco, CA 94080, USA
E-mail: birnbaua@gene.com

Douglas Schaubel, Ph.D.
Professor of Biostatistics
Department of Biostatistics, Epidemiology, and Informatics
University of Pennsylvania
423 Guardian Drive
Philadelphia, PA 19104, USA
E-mail: Douglas.Schaubel@pennmedicine.upenn.edu

Jacek Urbanek, Ph.D.
Director of Biostatistics
Biostatistics and Data Management Department
Regeneron Pharmaceuticals, Inc.
777 Old Saw Mill River Road
Tarrytown, NY 10591, USA
E-mail: Jacek.Urbanek@regeneron.com

Audrey Mauguen, Ph.D.
Associate Attending Biostatistician
Department of Epidemiology and Biostatistics
Memorial Sloan Kettering Cancer Center
633 3rd Avenue
New York, NY 10017
E-mail: mauguena@mskcc.org