AMELIA H. TRAN

Department of Biostatistics and Epidemiology
University of Pennsylvania
501 Blockley Hall
423 Guardian Drive
Philadelphia, PA 19104, USA

Phone: (413)-326-6989
Email: Huong.Tran@Pennmedicine.upenn.edu
Website: sites.google.com/view/ameliatran

EDUCATION

University of Pennsylvania — Philadelphia, PA
M.S. in Biostatistics — Expected 2023

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

PROFESSIONAL EXPERIENCE

University of Pennsylvania — Philadelphia, PA
Graduate Research Assistant — *Sept 2021 -*
Supervisor: Douglas Schaubel, Ph.D. Department of Biostatistics and Epidemiology

- *Project 2*: Conduct a simulation study to evaluate competing risks methods in survival analysis (i.e. subdistribution and cause-specific hazards function) in small sample size settings
- *Project 1*: Perform descriptive statistics and formal analysis, i.e. Logistic and Cox regression, to model delayed graft function and time until graft failure to assess transplant center effects

Institute for Pure and Applied Mathematics — Los Angeles, CA
Applied Maths Research Fellow — *June 2021 – Aug 2021*
Supervisors: Laurent White, Ph.D. (AMD Research) and Kyung Ha, Ph.D. (UCLA)

- Worked for Advanced Micro Devices (AMD) to develop physics-informed neural network (PINN) models in Python using Keras and TensorFlow to simulate wave propagation
- Designed optimal network architecture by embedding physics constraints, i.e. PDEs of wave equation and initial/boundary conditions, and sampling unlabeled input values
- Extrapolated in time for acoustic wave and in space from different source locations

Mount Holyoke College — South Hadley, MA
Undergraduate Research Assistant — *Sept 2020 – May 2021*
Supervisor: Marie Ozanne, Ph.D. Department of Mathematics and Statistics

- Conducted a literature review to incorporate the MSK cirrhosis project into an honors thesis
- Learned LASSO, ridge, and elastic net regularization for variable selection, and methods for competing risks, i.e. cause-specific and subdistribution hazards in survival analysis
- Performed statistical analysis on applied projects, i.e. modeling the progression of neglected tropical disease Visceral Leishmaniasis, and investigating the effects of lamb massage

Memorial Sloan Kettering Cancer Center — New York, NY
Biostatistics Research Fellow — *June 2020 – Aug 2020*
Supervisor: Audrey Mauguen, Ph.D. Department of Epidemiology and Biostatistics

- Evaluated the association between biomarker bilirubin and survival in Primary Biliary Cirrhosis with Cox Proportional Hazards, Time-Dependent Cox and Joint Model
- Performed data visualizations with Kaplan-Meier survival curves and spaghetti plots
- Implemented algorithms in R to extract time interval endpoints and impute missing data
- Conducted sensitivity analysis and examined correlation structures to detect outliers

Mount Holyoke College South Hadley, MA
Undergraduate Research Assistant *June 2019 – May 2020*
Supervisor: Evan Ray, Ph.D. Department of Mathematics and Statistics

- Contributed to the *ncopula* package to calculate cumulative distribution function, probability density function, and log-likelihood to develop hierarchical Archimedean copulas
- Included helper functions to transform the parameters within appropriate copula bounds
- Implemented S3 object-oriented programming in R to represent copula and perform MLE
- Carried out comprehensive unit tests to examine the package functionality

HONORS AND AWARDS

- Phi Beta Kappa, *Theta Chapter of Massachusetts* 2021
- Mu Sigma Rho, *The Boston Chapter of the American Statistical Association* 2021
- Five College Statistics Prize, *Five College Statistics Program* 2021
- Mary Lyon Scholar, *Mount Holyoke College* 2021
- Global Competence Award, *McCulloch Center for Global Initiatives* 2021
- Electronic Undergraduate Statistics Research Best Video Presentation Winner, *ASA* 2020
- George Cobb Statistics Prize for Excellence in Statistics, *Mount Holyoke College* 2020
- Lynk Fellowship for Qualied Research Position, *Mount Holyoke College* 2019
- Saintonge Prize for Superior Achievement in French, *Mount Holyoke College* 2019
- Sylvia Sherk Hubbell Book Prize for Excellence in French, *Mount Holyoke College* 2018
- Sylvia Sherk Hubbell Summer Scholarship, *Mount Holyoke College* 2018

PUBLICATIONS

* indicating equal contribution

1. Leite LO, Matos VS, Andrade MA, Silva MR, Maciel SF, Fernandes CC, Ozanne MV, **Tran AH**, Hötzel MJ, Rondina D, and Nunes-Pinheiro DC (2021). The effects of relaxing massage on lambs and on the human-animal relationship: perspectives on the horizon. Submitted to *Research in Veterinary Science.*
2. **Tran AH** and Ozanne MV (2021). Statistical Analysis of the Association between Bilirubin and Survival in Primary Biliary Cirrhosis. *Mount Holyoke College Mathematics and Statistics Department Senior Thesis.*

SELECTED PRESENTATIONS

Contributed Talks

- Using physics-informed regularization to improve extrapolation capabilities of neural networks, *Joint Mathematics Meetings*, Seattle, WA, January 2022
- Accelerating scientific applications with deep neural networks, *Research in Industrial Projects for Students (RIPS) Research Symposium*, Institute for Pure and Applied Mathematics, University of California, Los Angeles, CA, August 2021
- Association between bilirubin and survival in Primary Biliary Cirrhosis, *Honors Thesis Defense*, Mount Holyoke College Mathematics and Statistics Department, South Hadley, MA, May 2021
- Association between bilirubin and survival in Primary Biliary Cirrhosis, *Electronic Undergraduate Statistics Research Conference (eUSR)*, The Consortium for the Advancement of Undergraduate Statistics Education (CAUSE) and the American Statistical Association (ASA), November 2020
- Association between bilirubin and survival in Primary Biliary Cirrhosis, *Quantitative Sciences Undergraduate Research Experience (QSURE) Summer Research Symposium*, Memorial Sloan Kettering Cancer Center, New York, NY, August 2020

Contributed Posters

- Using physics-informed regularization to improve extrapolation capabilities of neural networks, *Joint Mathematics Meetings*, Seattle, WA, January 2022
- Using physics-informed regularization to improve extrapolation capabilities of neural networks, *35th Conference on Neural Information Processing Systems (NeurIPS) workshop on Machine Learning and Physical Sciences*, December 2021

TEACHING EXPERIENCE

Mount Holyoke College

- Teaching Assistant, STAT 343: Mathematical Statistics — Spring 2021
- Teaching Assistant, COMSC 312: Algorithms — Spring 2021
- Teaching Assistant, STAT 242: Intermediate Statistics — Spring 2020
- Teaching Assistant, COMSC 205: Data Structures — Fall 2019
- Teaching Assistant, MATH 101: Single Variable Calculus — Spring 2019

PROFESSIONAL SERVICE

Student Liaison, Department of Mathematics and Statistics — 2020 – 2021
Mount Holyoke College

Co-President, French Club — 2020 – 2021
Mount Holyoke College

Board Member, HackHolyoke (24-hour hackathon) — 2020
Mount Holyoke College

PROFESSIONAL MEMBERSHIPS

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

TECHNICAL SKILLS

Statistical Software: R, Stata, SAS, SPSS
Computing : Python, Java, SQL
Technologies : Eclipse, Git, LaTeX, Jupyter Notebook