Paige Tomer

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Dedicated and adaptable student with a strong background in biostatistics, epidemiology, and public health. Passionate about advancing human health through evidence-based, integrated approaches at the intersection of these disciplines.

Education

MAY 2024

Bachelor of Arts (Honors) in Applied Mathematics and Statistics | Macalester College | St. Paul, MN
Cumulative GPA: 3.9; **Major GPA:** 4.0
Graduated Summa Cum Laude
Applied Mathematics and Statistics Major (Honors), Anthropology Minor, Community and Global Health Concentration
Honors Thesis: *An investigation into the causes of home advantage in professional soccer*
Activities: Co-Chair (2023-2024) and founding member (2022-2023) of the Mathematics, Statistics, and Computer Science Department's Student Advisory Board • Varsity Women's Soccer Team (2020 – 2022)
Relevant Coursework: Mathematical Statistics • Real Analysis • Multivariable Calculus II & III • Statistical Machine Learning • Causal Inference • Probability • Data Science • Epidemiology • Linear Algebra • Medical Anthropology

SUMMER 2023

Summer Program | Columbia University | New York, New York
Participant in Columbia University's Summer Institute in Biostatistics and Data Science (SIBDS)
Coursework: Introduction to Biostatistics; Introduction to Data Science

FALL 2022

Study Abroad | Leiden University College | The Hague, NL
Coursework: Global Health Policy; Aging and Society; Perspectives on Globalization; Introduction to Geographical Information Systems (GIS); Independent Study Project
Research: *COVID-19 governmental stringency and the subsequent effect on birth rates*
Activities: HVV Women's Football Team; LUC Women's Football Team

Relevant Work Experience

2024 – PRESENT

National Institute of Environmental Health Science, National Institutes of Health | Durham, North Carolina
***Post baccalaureate IRTA Research Fellow**, June 2024 – Present*
Mentor: Mandy Goldberg, Independent Research Scholar, NIEHS (head of the Puberty and Cancer Epidemiology Group)
Branch Chief: Dale Sandler, Epidemiology Branch, NIEHS

- Lead and contribute to ongoing research projects (see below)
- Complete literature reviews on topics such as: premenopausal benign breast disease, pediatric diet and pubertal timing, previous infant breast bud literature

- Write manuscripts to summarize research findings
- Participate on the Epidemiology Branch's Engagement Committee
- Act as Post-Baccalaureate Representative on the Epidemiology Branch's Fellows Council

SEPTEMBER 2021 – DECEMBER 2023
Macalester College | St. Paul, MN
Teaching Assistant for Epidemiology (STAT 125) | *Mathematics, Statistics, and Computer Science Department | August 2023 – December 2023*
Supervisor: Dr. Vittorio Addona, Macalester College

- Assisted in answering questions during class time
- Held office hours to support students with homework and concepts
- Graded quizzes and assignments promptly

Teaching Assistant for Probability (MATH/STAT 354) | *Mathematics, Statistics, and Computer Science Department | January 2023 – May 2023*
Supervisor: Dr. Vittorio Addona, Macalester College

- Provided office hours support for student questions on homework and class concepts
- Assisted students with problem-solving
- Graded assignments promptly

Math and Economics Peer Tutor | *Macalester Academic Excellence Center | September 2021 – May 2022*
Supervisors: Dr. Dave Ehren, Ms. Stephanie Alden, Macalester College

- Tutored various subjects including Multivariate Calculus II, Multivariate Calculus III, Introduction to Statistics, and Principles to Economics
- Attended trainings and completed peer reviews to achieve CRLA Level 1 certification

Research Works in Progress

As a part of my work as an IRTA fellow at the NIEHS, I am currently leading the following projects:

- A project on the investigating of group-based trajectories using ultrasound and bead-based measurements in infancy.
    - Applying longitudinal methods such as growth mixture models and latent class linear mixed models to identify trajectories in dataset.
    - With support from the following investigators: Goldberg M, Umbach DM, Rogan WJ.

- A brief report summarizing the findings that analyze the difference between ultrasound and bead-based measurements in infant breast buds.
    - Used Passing-Bablok regression and other mechanisms to compare the two measurements.
    - With support from the following investigators: Goldberg M, Umbach DM, Rogan WJ.

- Research aimed at identifying early adolescent diet patterns and their relation to pubertal and breast cancer risk in the Sister Study dataset.
    - Employing hierarchical clustering and principal component analysis to identify naturally occurring patterns.
    - Use the detected patterns as an exposure in Cox proportional hazards models and multinominal logistic regression with breast cancer and pubertal timing as the outcomes.

- With support from the following investigators: Goldberg M, O'Brien KM, Sandler DP.

I am also assisting with the following project:

- A research paper considering the trajectories of estradiol in early infancy, as a possible indicator of thelarche in later life.
  - I applied and developed code on SITAR models to assist my mentor (Goldberg M) with this project.

Publications

Tomer, Paige E. "An investigation into the causes of home field advantage in professional soccer." Mathematics, Statistics, and Computer Science Honors Projects. 2024. 86.

- Available at https://digitalcommons.macalester.edu/mathcs_honors/86/

Research Experience

The effectiveness of antipsychotic medications for schizophrenic patients: Perphenazine vs olanzapine | Summer research, Columbia University Mailman School of Public Health | Completed Summer 2023

COVID-19 governmental stringency and the subsequent effect on birth rates | Independent study project, Leiden University College (under advisement of Dr. Kristin Makszin) | Completed Fall 2022

A better Reimann integral | Macalester College, Real Analysis Final Project | Completed Fall 2023

Predicting wins in the premier league with a shiny app | Machine Learning Project, Machine Learning Group Project |Completed Fall 2023

Awards and Certifications

Kaplan Endowed Prize in Statistics and Data Science | Macalester College | May 2024

Summa Cum Laude | Macalester College | May 2024

Honors in Statistics | Macalester College | May 2024

Dean's List | Macalester College | 2021 – 2024

All-MIAC Academic Honors | Minnesota Intercollegiate Athletic Conference | Fall 2021

College Reading and Learning Association Level 1 | Macalester College | Spring 2022

Vulnerable Subject (Researching Involving Children) Certification| CITI Program | Summer 2024

Good Clinical Practices Certification| CITI Program | Summer 2024

Biomedical 101 Certification| CITI Program | Summer 2024

Presentation Experience

Honors Defense | Macalester College | April 2024 | *An investigation into the causes of home advantage in professional soccer*

Senior Symposium | Community and Global Health Concentration, Macalester College | April 2024 | *The effectiveness of antipsychotic medications for schizophrenic patients: Perphenazine vs olanzapine*

Capstone Presentation | Mathematics, Statistics, and Computer Science Department, Macalester College | February 2024 | *Home sweet home: How and why home advantage exists in soccer*

Real Analysis Final Presentation | Macalester College | December 2023 | *A better Reimann integral*

Summer Research Symposium Poster Presentation | Columbia Mailman School of Public Health | July 2023 | *The effectiveness of antipsychotic medications for schizophrenic patients: Perphenazine vs olanzapine*

Community Service Experience

Hospice Companion Volunteer | Our Lady of Peace Hospice | January 2024 – May 2024

In-Class Volunteer for 6th Grade Math | Hidden River Middle School | January 2023 – May 2023

Girls U9 Soccer Coach | Bainbridge Island Football Club | February 2019 – December 2019

Camp Counselor | Girls Rock Math Camp | 2018, 2019 Summers

Skills

Software Background in R & RStudio (primary), Python, Mathematica
Technical Skills: Statistics, Probability, Data science, Machine Learning, Calculus
Soft Skills: Intermediate Spanish, Writing, Organized, Motivated, Excellent time management, Team player, French skills