# Paige Tomer

*Contact info redcated.*

**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 6$^{th}$ 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