

Sara Kapasi

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EDUCATION

Georgia Institute of Technology

Atlanta, GA

Bachelor of science in biomedical engineering, chemistry and biochemistry minor

Aug. 2022 – Present

- GPA: 3.76/4.0, Major GPA: 3.71/4.0
- Relevant coursework: Systems Physiology, Principles and Applications of Engineering Materials, Intro to Bioengineering Statistics, Biochemistry I, Problems in Biomedical Engineering, Synthesis Lab I
- Activities: DramaTech, URA, BMES, Women in Engineering Mentor, Honors Program

EXPERIENCE

MIT Summer Research Program Intern

Jun. 2024 - Present

Traverso Lab at MIT

Cambridge, MA

- Stabilized bacteria for long-term delivery of live biotherapeutics by optimizing excipient formulations
- Jointly organized and maintained the lab chemical library with >700 compounds for streamlined excipient testing
- Presented to the MIT community and the Traverso lab about stabilizing anaerobic *B. infantis* and *L. crispatus* in low-income areas for neonatal and female health applications in >100F temperatures and oxygenated environments
- Accepted to MSRP, a competitive summer research fellowship hosted by MIT's Office of Graduate Education
- Presenting a poster on the bacterial stabilization process and stability results at the ABRCMS 2024 conference
- Skills: Anaerobic culture, aseptic technique, agar plating, chemical library development

Undergraduate Researcher

Jan. 2023 - Present

Kostas Lab at Georgia Tech

Atlanta, GA

- Conducted statistical analysis and genomic assignment for crayfish metagenomes to see how composition of intestinal microbiomes affect survival in lakes impacted by climate change
- Investigated how intrinsic and acquired antigen response influences murine intestinal microbiome composition
- Analyzed the difference in the severity of diarrheal diseases through gut microbiome composition of remote and urban populations in Ecuador
- Compared quality of group-developed usearch and vsearch pipelines to standard dada2 pipeline
- Skills: R, 16S amplicon sequencing, metagenomics, HPC, bioinformatics pipelines, PCR, DNA extraction

Summer Undergraduate Research Fellow

Jun. 2023 – Aug. 2023

Appel Lab at Stanford University

Stanford, CA

- Chemically synthesized and characterized the material properties of controlled-release polymer-nanoparticle hydrogels containing GLP-1 receptor agonists
- Developed and presented a research poster and oral talk to the general Stanford community at the 2023 SURF Symposium and Lightning Talks
- Accepted to a competitive (0.3% acceptance rate) research fellowship hosted by Stanford's School of Engineering
- Presented at the 2024 Out for Undergrad Engineering and Life Sciences Conference about the rheology and pharmacokinetic stability of GLP-1 RA-containing hydrogels
- Skills: rheology, ELISA, DLS, hydrogel synthesis, animal handling, in-vitro release assays

Undergraduate Researcher

Aug. 2022 - Dec. 2023

Yeo Lab at Georgia Tech

Atlanta, GA

- Fabricated soft wearable electronics and biosensors for cardiovascular monitoring and early arrhythmia detection
- Presented a poster on a novel soft SCG sensor at the 2023 BMES Annual Meeting
- Created figures and gathered >50 papers for a literature review on wearable neonatal health technologies
- Skills: FEA, AutoCAD, COMSOL, Altium, elastomer synthesis, soldering, spin coating

PUBLICATIONS

Wireless batteryless soft sensors for ambulatory cardiovascular health monitoring

Jan. 2023 – May 2023

- Fabricated and helped develop a soft wireless battery-less SCG monitoring device comparable to clinical standards based on an LC circuit integrating a capacitive strain sensor, *doi:10.20517/ss.2023.17*

Gut microbiome composition in diarrheal disease across a rural-to-urban gradient

Jan. 2023 – present

- Bioinformatics research uncovering and confirming microbial biomarkers present in rural and/or urban occurrences of diarrheal disease, *prepared for publication*

HONORS AND AWARDS

DEEPenn STEM Scholar

University of Pennsylvania

October 2024

Philadelphia, PA

- Participated in a selective all-expenses-paid graduate preview weekend for marginalized communities at the University of Pennsylvania, hosted by the Perelman School of Medicine

ABRCMS Travel Award

American Society of Microbiology

October 2024

Pittsburgh, PA

- Scholarship awarded to cover full registration, hotel, and travel to the ABRCMS 2024 conference

George Family Foundation Scholarship

Women in Engineering, Georgia Institute of Technology

May 2024

Atlanta, GA

- Scholarship awarded for academic achievement and commitment within Women in Engineering

President's Undergraduate Research Award (PURA)

Georgia Institute of Technology

Fall 2023, Spring 2024

Atlanta, GA

- Competitive funding from Georgia Tech supporting undergraduate student involvement in faculty research
- Salary Award for Spring 2024 semester research, Travel Award for travel to the 2023 BMES Annual Meeting

1st Place Poster Presentation - Hardware and Devices

2022 VIP Innovation Competition, Georgia Institute of Technology

April 2023

Atlanta, GA

- Georgia Tech's Annual VIP Innovation Competition, where students in the VIP program share research with students and faculty throughout campus

ACTIVITIES AND ORGANIZATIONS

Production Manager - DramaTech Theatre

Georgia Institute of Technology

Aug. 2022 - Present

Atlanta, GA

- Lead and organize technical production of five shows within the DramaTech 2024-2025 season, coordinating technical deadlines and space usage amongst 100+ members of crew working with Atlanta theatre professionals
- Sound designed Fall 2023 production Puffs, sound engineered Summer 2023 production Student-Directed One-Acts
- Assistant director for Spring 2024 production Animals Out of Paper
- Mentor in DramaTech mentorship program for queer students new to the theatre
- Awarded the Dave Clark Scholarship for service and community building within the technical aspect of the theatre

Women's Committee Member

US Squash

Nov. 2022 – Present

Virtual

- Meet monthly with national women's squash leaders to expand accessibility of women's squash in Southeast US based on feedback from the 2022 Women's National Championships
- Member of College Outreach initiative and City Ambassadors - 1/2 Atlanta ambassadors for women's squash
- Tutoring and training A+ Squash participants, Atlanta's urban squash program

Crisis Counselor

Crisis Text Line

Aug. 2022 – Dec. 2023

Virtual

- Participated in over 30 hours of crisis intervention training, 240 hours of intervention
- Conduct risk assessments, utilize and execute psychological first aid: integrating prosocial coping skills, reducing distress, stabilizing mental and physical health, providing detailed and specific resources and plans