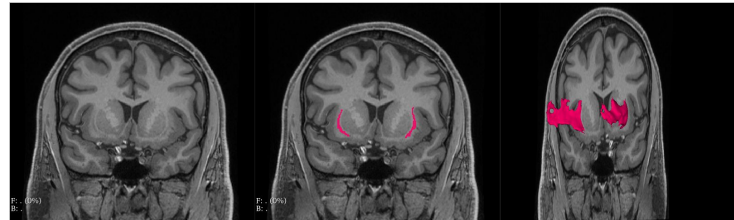


Students on the Forefront: Science

# Students on the Forefront Summer 2024 Science Information Night



# Students on the Forefront: Science

## Programs - Summer 2024

- ➔ **Coastal Restoration and Climate Resilience Lab**, through the University of New Hampshire, Northern Seacoast
- ➔ **Clinical Rotations in Cardiology and General Surgery**, Lawrence General Hospital (LGH)
- ➔ **Surgical Clinical Rotation**, Massachusetts General Hospital (MGH)\*
- ➔ **Amyloidosis Laboratory Research**, Boston Medical Center (BMC)\*
- ➔ **Orthopedic Medicine Rotation**, Tufts Medical Center (TMC)\*
- ➔ **Internship in Communications and Science Writing**, Quebec Labrador Foundation, Ipswich, MA / remote hybrid
- ➔ **Psychiatric Neuroimaging Laboratory**, Brigham and Women's Hospital (BWH)\*
- ➔ **Medical Device Development and Testing**, Globus Medical
- ➔ **Engineering Technology Camp**, Cupertino CA - unsure if offered this summer

*All programs are subject to change and we are waiting for final details*

\* Can be combined with coursework and housing at Harvard for local and non-local students

## Coastal Restoration and Climate Resilience Lab

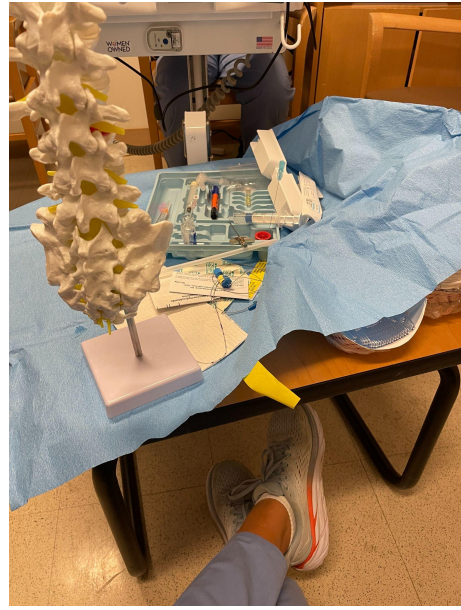
- The lab focuses on anthropogenic impacts to wetlands and the management of invasive species within these habitats
- The student will act as a professor assistant and help with any ongoing projects for the lab in general or members of the lab (generally graduate students)
- Work and learning are both very hands on
- Good opportunity if you are looking for experience in the field performing research
- Works best with a more flexible summer schedule





Students on the Forefront: Science

# MGH Clinical Surgery Rotation





## Schedule at MGH

From Christina Liu (2023 Intern)

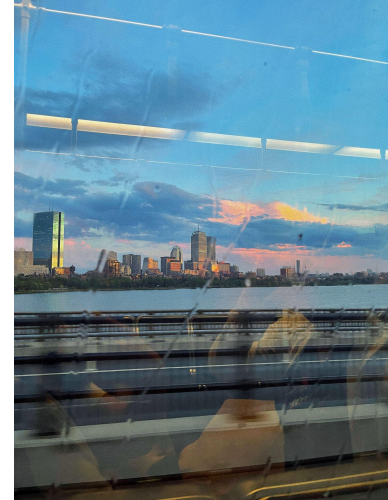
- Arrived via Train from Harvard to MGH at 7:00am
- Assigned to a different unit every day by Dr. Peter Dunn, Brooks School alumni and parent, who is the Executive Medical Director of Perioperative Administration at MGH.
- Viewed many different types of surgeries - heart, brain, spinal, C-sections, transplants, orthopedic
- Spent time in the ICU, Emergency Department, and Biomedical Engineering Department
- Discussed research papers with Dr. Dunn
- 5 days a week



## Tufts Medical Center: Dr. Charles Cassidy



- Brooks Graduate
- Chief-of-Orthopaedic Surgery at Tufts
- Specializes in hands and upper extremities
  - Elbow
  - Shoulder
  - Wrist
  - Plastic surgery



# Students on the Forefront: Science

## Tufts Typical Day:

### Fridays

- Clinic
- 8am-12PM
- See 20+ patients for consultations, X-ray analysis, post-op check ups

### Tuesdays/Thursdays

- Operating Room (Tuesdays→ bigger surgeries. Thursdays = 2 ORs)
- 7:00AM-2:30PM
- Observed up to 12 surgeries a day

### Mondays/Wednesdays

- Commuter student at Harvard
- Evolutionary Biology
- Lecture: 8:30am-11:30 am
- Lab: 1:00pm to 4:00pm





# Students on the Forefront: Science

## Psychiatry Neuroimaging Lab of Brigham and Women's Hospital

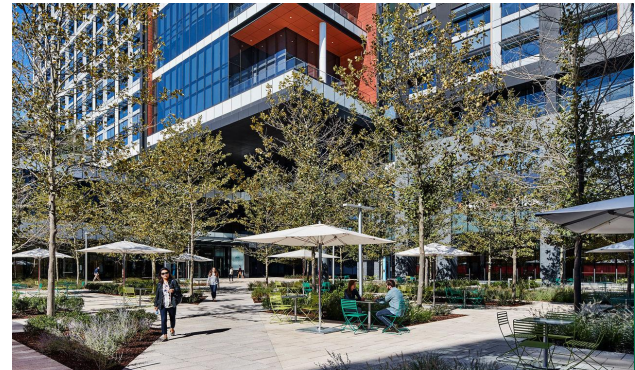
- Everyone who works in the lab uses state-of-the-art neuroimaging techniques to understand brain abnormalities and their roles in neurologic disorders.
- Working at the lab, we had flexible hours. As long as we were successfully doing our work, we could come or go whenever we pleased!
- There's a cohort of other interns but everyone works on their own projects

Breakdown of activities:

1. Individual projects with mentors that are senior Investigators + RA
2. Journal club
3. Lectures with staff (AI, 3D slicer, programming, and more)

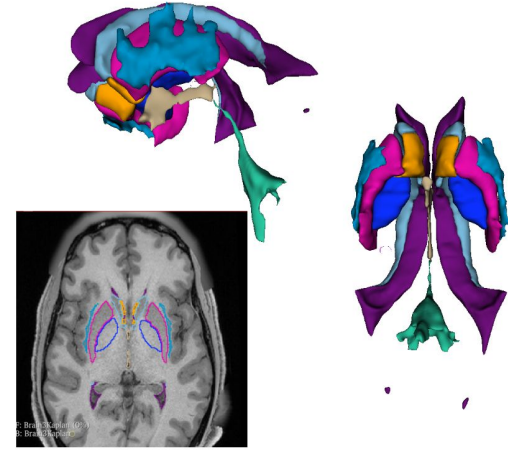
And everyone sits together for lunch - you really get to converse with the coworkers! (There's quite a bit of socializing needed)

Location: Assembly Row and brand new office. Orange line right nextdoor.



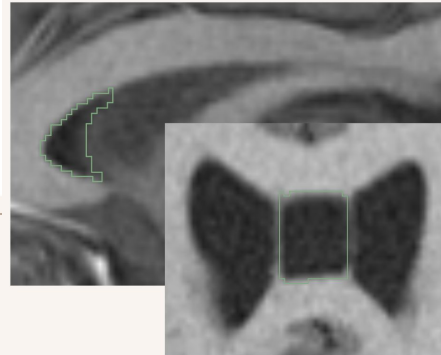
# Students on the Forefront: Science

- Focus on MRI scans and manual segmentation using 3D slicer
  - Focused on the Fifth Ventricle and improving manual segmentation protocol
  - Created and presented a final presentation of all of my work:



## THE EFFECTS OF RACE AND SEX ON FIFTH VENTRICLE VOLUME

Zhaohan (Jasmine) Shi Final Presentation  
PI: Jarrett Rushmore  
RA: Alana Wickham



The fifth ventricle connects with the cavum vergae.

# Students on the Forefront: Science

## Weekly Schedule at BWH Neuropsych Lab

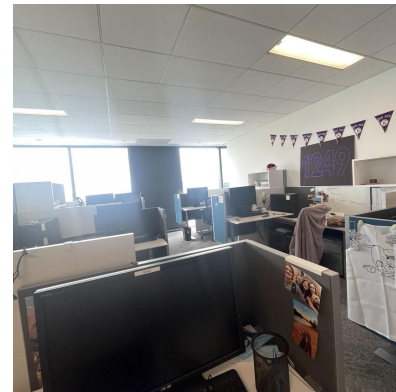
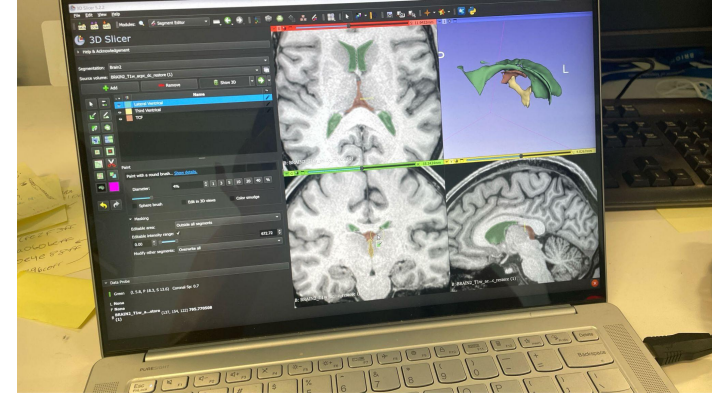
### 3 days a week:

- Take the T from Harvard (where I lived) to the lab (arriving anywhere between 8 and 10 was fine)
  - (50-minute train ride and a 5-minute walk)
- Worked on individual project (9am-4/5pm)
  - Some days we had lectures on various topics (1h)
  - Some days we had journal clubs (everyone had one, introduces an article) (30m)
  - Workshop on R

### 2 days a week:

- Worked remote and did tons of reading (social sciences have a lot of reading) and wrote papers.
- Attend *Human Ethics: Moral Philosophy* at Harvard from 6:30-9:30pm

the 3-hour lectures were brutal but still really interesting!





## Lawrence General Hospital

### Clinical Rotation Opportunity

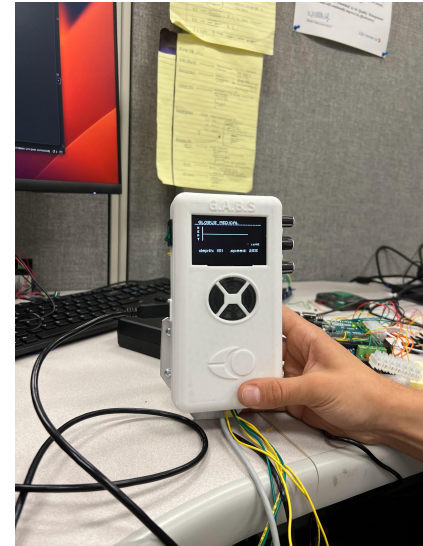
- 1 student will be participating in a 4 week clinical rotation
- Meet with Dr. Mukherjee in the mornings to learn more about his speciality (Cardiology)
- Going on rounds in the morning
- Shadowed Doctors, Nurse Practitioners, Physicians Assistants, and Cath Lab Staff
- Rotations in Cardiology, Cath Lab, General Surgery, Intensive Care Unit (ICU), and Emergency Department (ED)
- Viewed general surgeries and catheterizations



## Globus Medical

### Medical Device Development and Testing

- This internship will partner two Brooks students with design and test engineers who design, develop, and test medical robotics.
- This internship will be hands-on
- Interns will be work with a team to build a device or project.
- [Final Device](#)



## Quebec-Labrador Foundation

### Internship in Communications and Science Writing

- Environmental Conservation non-profit group based out of Ipswich
- The Internship is designed to provide experience in research, writing, and editing one or more articles on current QLF programs
- Articles (two pages with photographs) will be included in Compass, the QLF online newsletter, and will be posted on the QLF website as well.
- Intern can work remotely or at Ipswich office



Promoting global leadership-one person at a time-through conservation and stewardship of natural resources and cultural heritage. Inspired in the Atlantic Region, shared worldwide.

#### TAKING THE LONG VIEW

Mr. Wright described a wonderful tribute to QLF in his and Ms. Wright's book, *Nature Connections: Perspectives in Community-based Conservation* (2009). "QLF should have been a chapter," Mr. Wright said to me. This unique, forward-looking organization was a true pioneer in connecting culture, community, and conservation in an effort to address what our legendary Chairman Executive Officer (CEO) called the only two problems we humans face: people getting along with people, and people getting along with "Mother Nature." Dealing with these two problems has kept QLF busy for over a half century. And as this said, QLF has made it a point to do so with these two problems that the CEO states form the essence of QLF's two-part mission statement.

Doesn't say it? It's just a decade with this organization has gone by in a blink. Now under my rather colorful-sounding title of Executive Director I find it hard to keep my mouth shut. I am enjoying using the long time in describing the chosen word "comprehensive."

In both mundanely serious longitudinal research in marine bird conservation, we have a story that not only defines one of QLF's principal accomplishments, but tells the story of this organization through an extraordinary case study that weaves people and community against a spectacular physical backdrop and associated very special natural history.

In many "non-professional" working in QLF, interns and volunteers have had their eyes opened, and in many cases their careers blossomed or at least mightily influenced through their experiences working for QLF. The

daughter of a Newfoundlanders who emigrated to Connecticut from the Colby Mills, Kathy's passion, and commitment, for conservation is expressed only by her knowledge of subject. In the new north she has taken this story, her family has seen the value for what it eventually, in a time, contribution to the scientific literature describing a piece of the environmental resources of the last 20th and early 21st centuries. Here is a "good news" story — in so many ways — just one not without setbacks and challenges all along the way. Throughout, the creative spirit and passion — emotions the convey to the young interns working for her. Perhaps more exciting, Kathy's story of conservation becomes an example for a single purpose, let's that what QLF says it does — north across borders.

Just years ago, Kathy presented her story in a talk at the Greater Cambridge in New York. A friend later told me to share with a much larger audience and so I carefully copied the content of QLF.

It was the donation last winter of our beautiful natural habitat in our former Massachusetts headquarters in Brookline College's attic. Moments that opened us to action. Just recently QLF completed the new interpretive panel for the natural sanctuary at Thompson Island that further reinforced the strength of this article.

As we will be introduced in the following section to among conservation forces, the Canadian Council on the Arts and the Canadian Council on the Arts, and American Josh Sims, an American College graduate who worked for Kathy for five years, interns have, meeting in an engagement in Alaska, in a huge time of life, Josh has his life there.

[www.qlf.org](http://www.qlf.org)



Fondation  
Québec-  
Labrador  
Foundation

B  
BROOKS  
SCHOOL



## Boston Medical Center

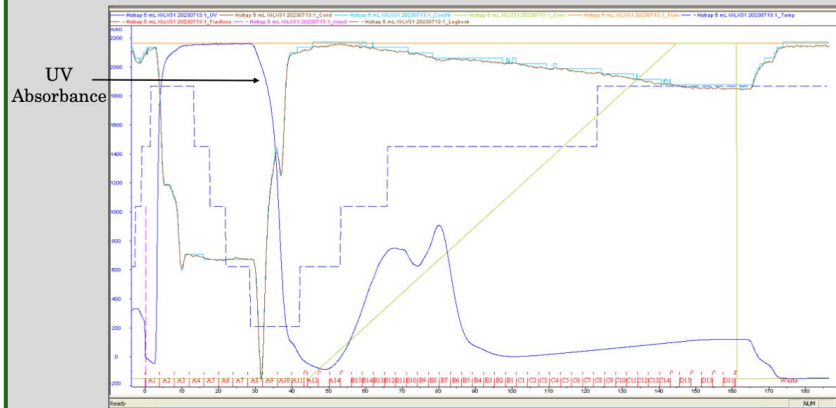
### Amyloidosis Center Research Intern

- The Amyloidosis Center at Boston University Chobanian and Avedisian School of Medicine and Boston Medical Center is recognized internationally as a leader in basic and clinical research on amyloidosis and related diseases.
- The student will have the opportunity to accompany Dr. Sanchorawala and other clinicians in the clinic, work in the laboratory and with research assistants and data managers to maintain a clinical database.



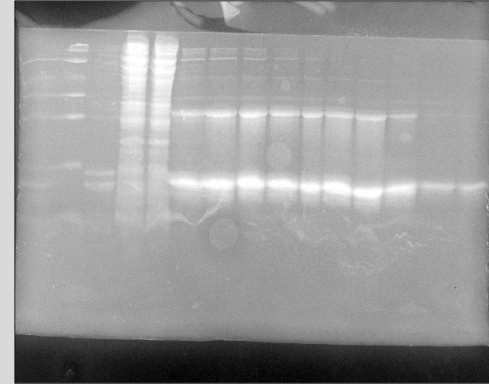
# Students on the Forefront: Science

## IGLV 31 HisTrap Chromatogram



## IGLV 31 HisTrap Gel

Protein Ladder  
Control  
A6  
A8  
B13  
B12  
B11  
B10  
B9  
B8  
B7  
B6  
B5  
B4



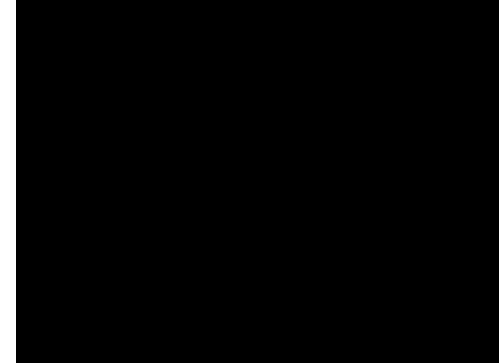
# Students on the Forefront: Science

## Apple Engineering Technology Camp (ETC)

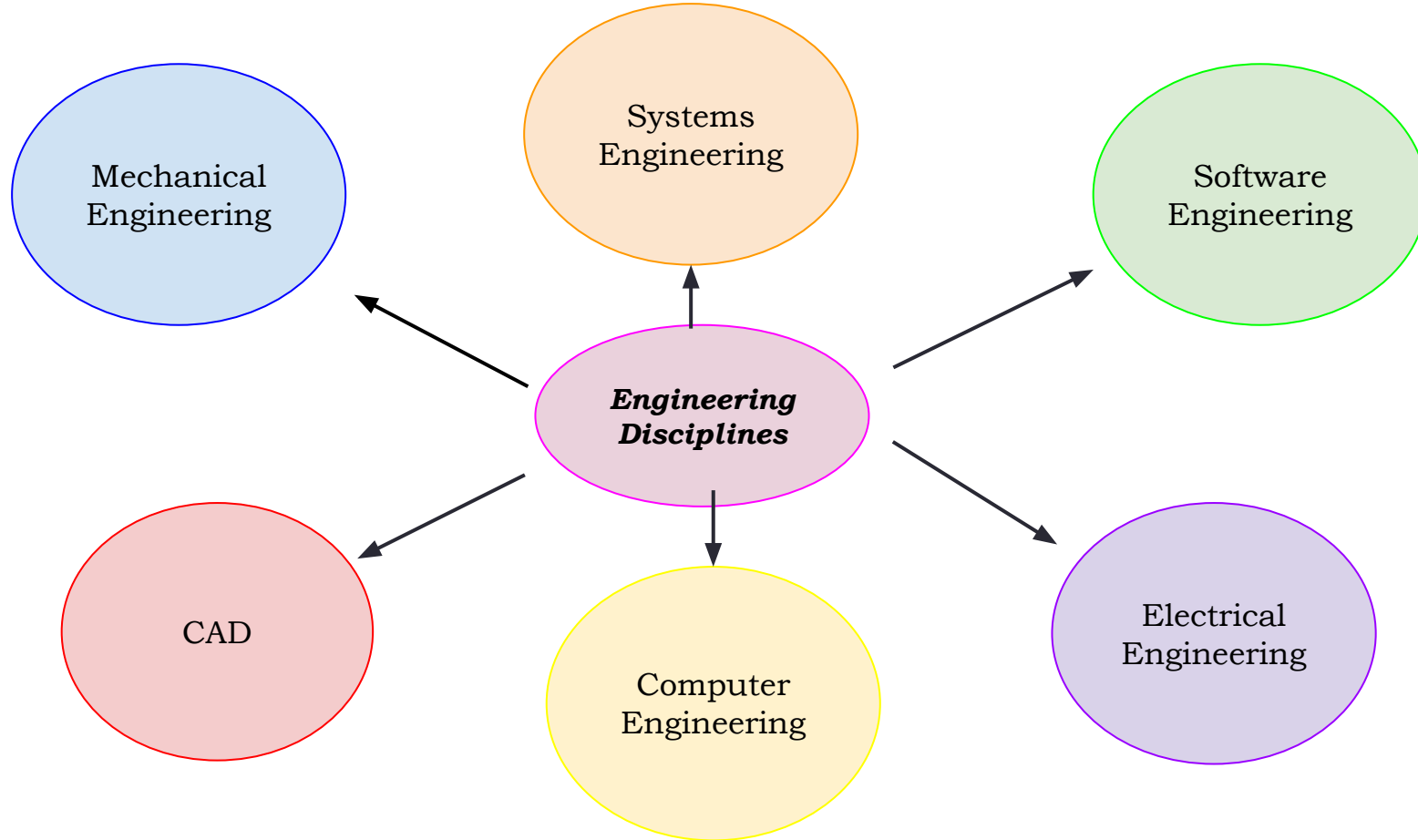




# Students on the Forefront: Science

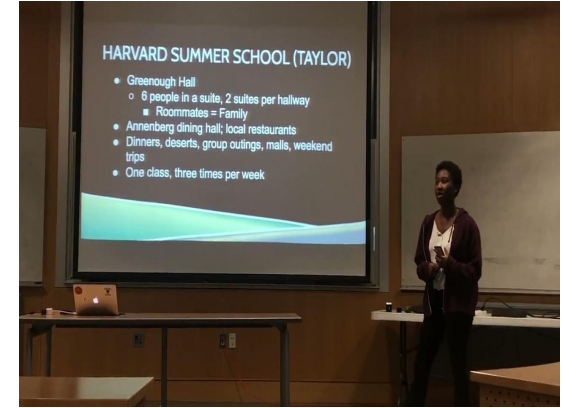
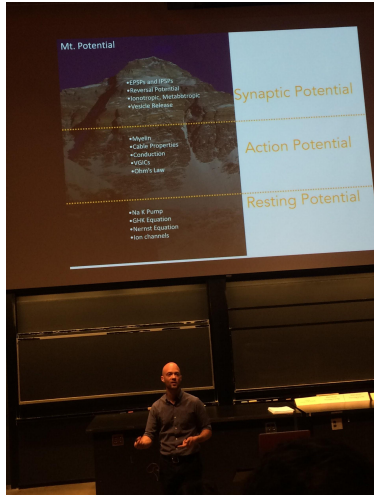


# Students on the Forefront: Science



## Harvard Summer School

- 7 week program
- Courses range from Neuroscience to Creating the Next Uber
- Take 1 course - 2x per week
- Explore Boston
- Live on campus - number of different housing options
- For anyone participating in Boston programs who does not live locally



## Program Dates

December 7, 2023	Junior information Night & <a href="#">Application</a> Period opens
January 2, 2024	Application period closes
January 8-12, 2024	Interview Period
Jan 29- Feb 2, 2024	Second Round of Interviews if necessary
February 9, 2023	Decisions made
June 22, 2024	Classes begin at Harvard Summer School
June 24, 2024	Internships start (tentative)*
August 10, 2024	Harvard Summer School ends

\*ETC historically begins during the first week of July and runs into the first week of August.