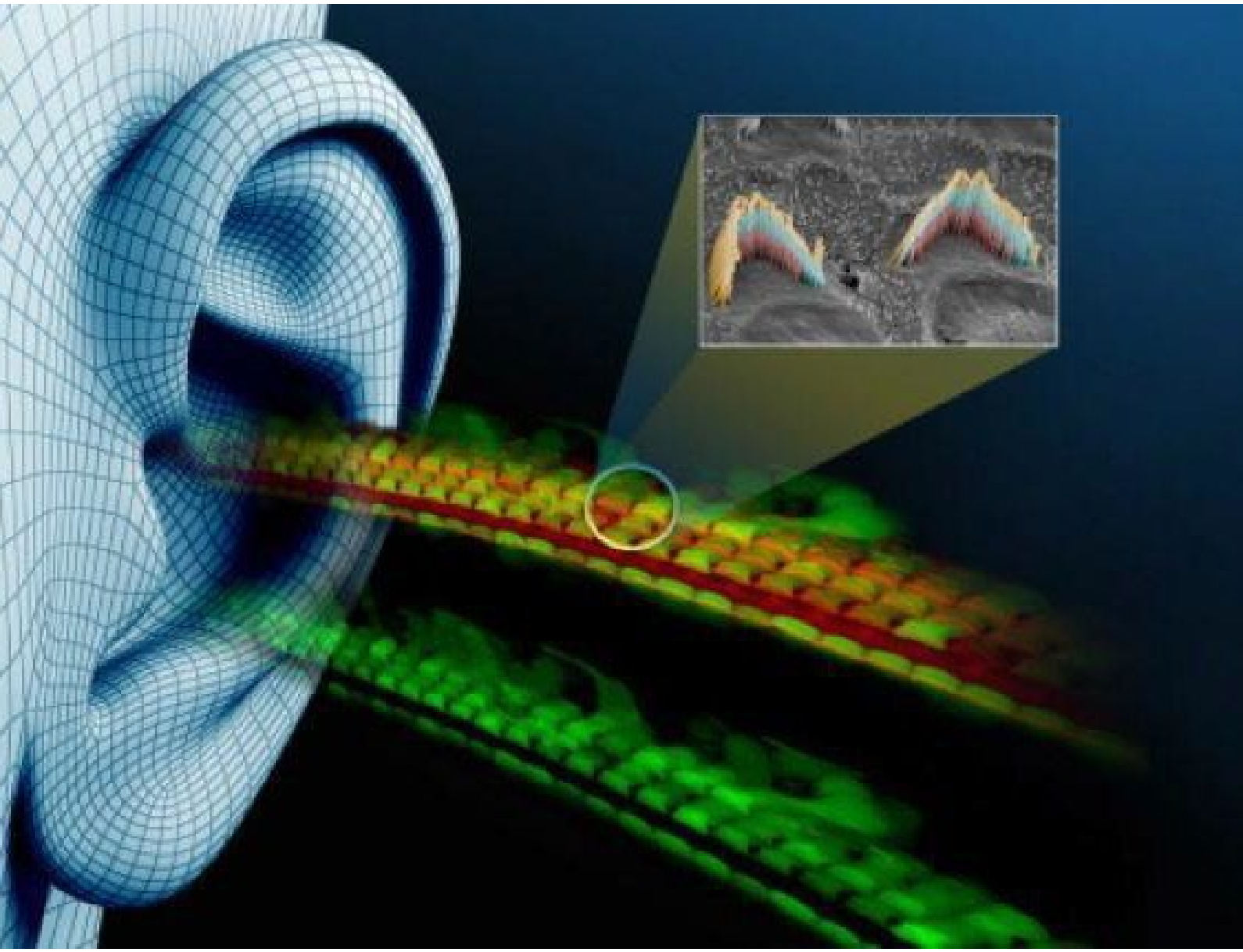
SHBT
Harvard University

Speech and Hearing
Bioscience and Technology



SHBT STUDENT HANDBOOK

2024–2025

Griffin Graduate School of Arts and Sciences

Division of Medical Sciences

SHBT Harvard University Speech and Hearing Bioscience and Technology

Harvard Program in Speech and Hearing Bioscience and Technology

https://shbtphd.hms.harvard.edu/

Director: Gwenaëlle Géléoc, PhD
Administrator: Franceny Johnson

Table of Contents

SHBT Program Overview

The Harvard Program in Speech and Hearing Bioscience and Technology (SHBT) is the only one of its kind in the country—a tight-knit research community dedicated to multidisciplinary training in basic, clinical and translational approaches to study all aspects of human communication and the treatment of its disorders. SHBT faculty and students pursue research questions related to all areas of communication, including hearing, vestibular, taste, smell, voice, speech, language and music. This includes auditory neuroscience, signal processing, perception and cognition, and speech-language pathology, combining rigorous training in a range of rigorous scientific disciplines with valuable exposure to clinical practice.

The SHBT program is one of six interdisciplinary PhD programs offered by the Division of Medical Sciences (DMS). It is administered by DMS at the Harvard Medical School and leads to a PhD degree awarded by the Harvard Kenneth C. Griffin Graduate School of Arts and Sciences (GSAS). SHBT includes roughly 45 students completing their doctoral work out of more than 50 different labs at Harvard, MIT, and the Harvard teaching hospitals.

The program was administered by the Massachusetts Institute of Technology (MIT) from its inception in 1992 until 2011. In 2011, the program moved to Harvard to better match the overwhelming Harvard faculty participation in the program. Many MIT faculty continue to participate in SHBT, and Harvard SHBT students may work in their laboratories.

The SHBT program is funded in part by a training grant from the National Institute on Deafness and Other Communication Disorders (NIDCD) of the National Institutes of Health (NIH). The contents of this document are solely the responsibility of the SHBT program and do not necessarily represent the official views of the National Institutes of Health. The SHBT PhD Program employs a two-tiered approach to multidisciplinary education.

First Tier: Core Curriculum – Master core material in the field of speech and hearing.
The core curriculum provides a breadth of scientific and clinical knowledge, and exposure to diverse ways of thinking that are necessary to be an effective leader in the speech and hearing sciences. Knowledge of the physical, biological and cognitive sciences is necessary to appreciate and understand basic science research in the field of speech and hearing. An introduction to clinical issues in otology, laryngology, audiology, and speech-language pathology is similarly important.

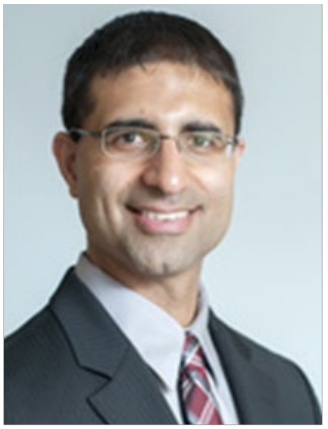
Second Tier: Area of Concentration – Plan a concentration with a program combining coursework and research in a specific focus area. The critical feature of this tier is depth. Mastery of fundamental concepts is expected and tested by the Qualifying Exam.

Concentration in Speech-Language Pathology
The Speech-Language Pathology concentration provides interested SHBT students an opportunity to complete the academic and clinical requirements set by the American Speech-Hearing-Language Association (ASHA) for certification as a speech-language pathologist.

Research
A major focus of the first year is finding the right lab for dissertation research. Students are required to complete at least two laboratory rotations of three to four months length to expose them to different research areas and different mentors. Our goal is for each student to find an area of research that they are passionate about and a lab that is a good match. Some students may decide to start their rotation in the summer before classes start.
The central training experience of the Ph.D. is a focused research project culminating in the dissertation, and usually several substantial research publications. The average time from enrollment to degree is approximately 5½ years. Throughout the dissertation research, advising is provided by the student's Dissertation Advisor, an assigned Academic Advisor, a Concentration Advisor and the Dissertation Advisory Committee.

Faculty Leadership

Gwenaëlle Géléoc
Program Director



Daryush Mehta
Director of Student Affairs

Sunil Puria
Director of Admissions

Josh McDermott
Chair of Curriculum Committee

Heidi Nakajima
Director of Diversity, Equity and Inclusion

David Jung
Clinical Director

SHBT Program Administration

Franceny Johnson
Program Administrator
shbt_program@hms.harvard.edu

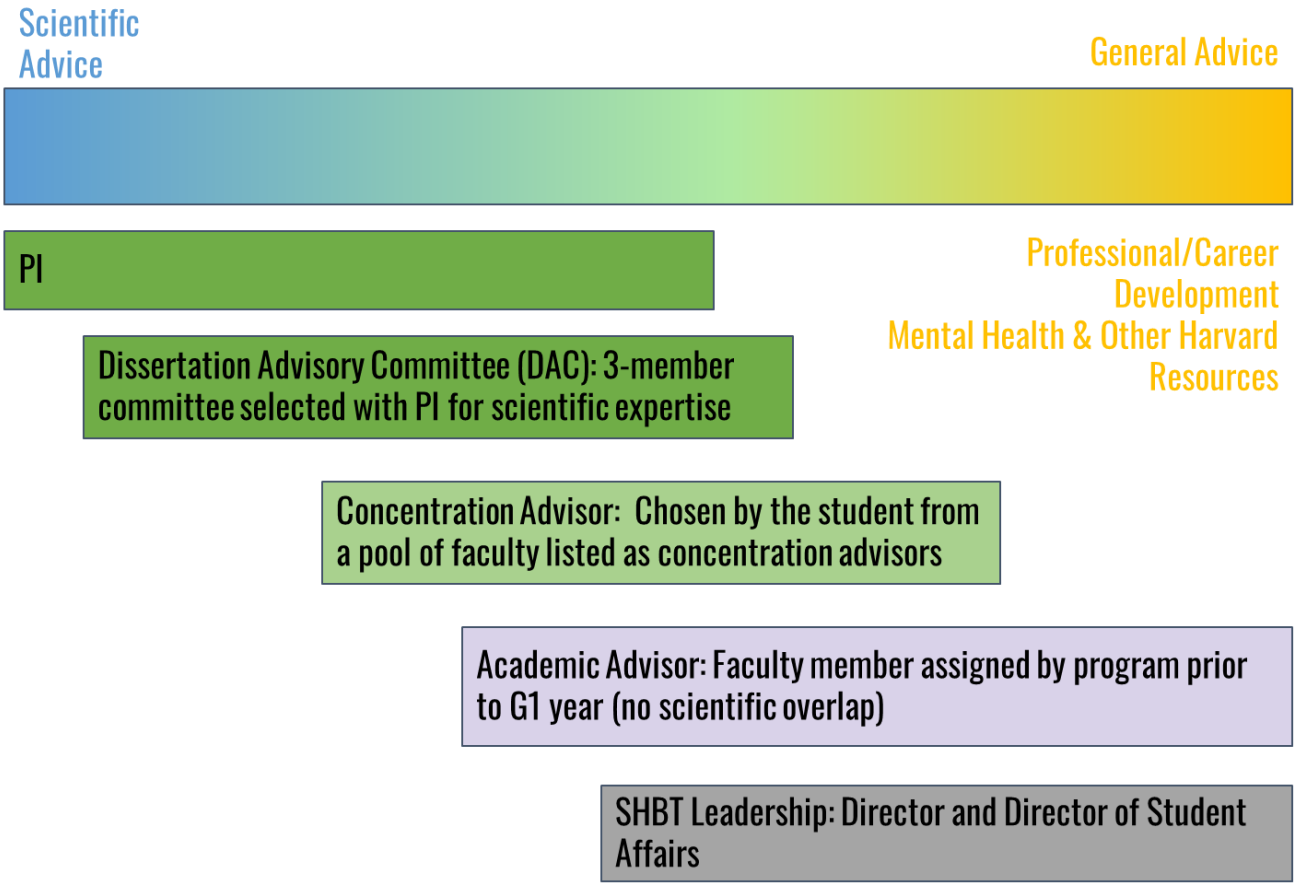
Harvard Division of Medical Sciences Student Affairs and Administration

Rosalind Segal
Dean for Graduate Education

Sam Reed
Director of Academic Administration

Other DMS contacts:
https://dms.hms.harvard.edu/contact-us

Faculty Advising for Students

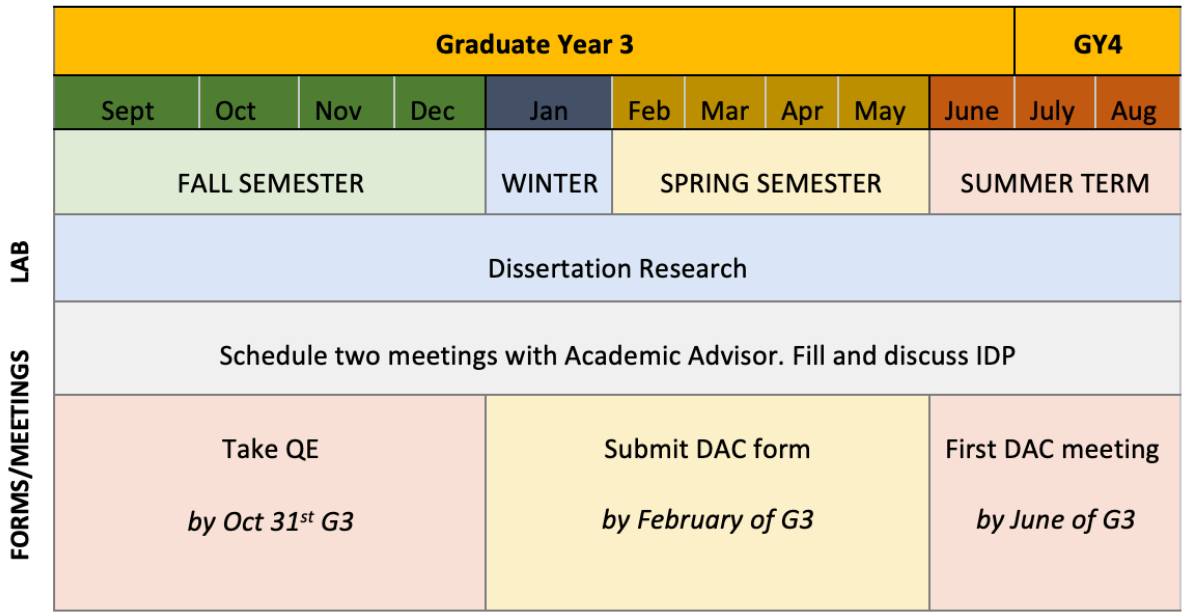


Faculty advising for SHBT students is provided by the SHBT leadership, as well as an Academic Advisor, a Concentration Advisor, a Dissertation Advisory Committee, and a Dissertation Advisor.

Course of Study Overview: Main Track

	Graduate Year 1											GY2
	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug
CLASSES	FALL SEMESTER				WINTER	SPRING SEMESTER				SUMMER TERM		
	SHBT 201 SHBT 301qc				*SHBT 203* *Elective*	SHBT 202 SHBT 205						
LAB	Fall Rotation				Winter/Spring Rotation					Summer Rotation		
FORMS/MEETINGS	Schedule three meetings with Academic Advisor- Fill and discuss IDP											
	Submit Rotation Registration *Due 9/20*		Submit Rotation report *Due 12/10*		Submit Rotation Registration *Due 2/20*		Submit Rotation report *Due 5/10*			Submit Rotation Registration *Due 6/20*		
					Pick Area of Concentration		Meet with CA *Due 05/01*			Submit Plan for Concentration *Due 06/01*		

	Graduate Year 2											GY3
	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug
CLASSES	FALL SEMESTER				WINTER	SPRING SEMESTER				SUMMER TERM		
	MedSCI 300 Electives				Electives							
LAB	Fall Rotation				Winter/ Spring rotation					Dissertation Research		
FORMS/MEETINGS	Schedule two meetings with Academic Advisor- Fill and discuss IDP											
	Rotation Report presented at SHBT retreat		Submit Rotation report *Due 12/10*		Submit Rotation Registration *Due 2/20*			Submit Rotation Report *Due 5/10*		*Aug 31st G3:* Submit Request for Oral exam (Qualifying Exam)		
	Submit Fall Rotation Registration *Due 9/20*				Submit DAD *Due 03/01*							



Subsequent meetings (through G4): Subsequent DAC meetings must be held every 9 months, and in some cases more frequently (e.g. every 6 months), depending on DAC recommendations. G5 and after: It is recommended that DAC meetings be held every 6 months or more frequently pending DAC recommendations.

Fall of G6: Take MedSci 302QC "Conduct of Science Refresher"

Course of Study Overview: SLP Track

	Graduate Year 1- SLP Track											GY2
	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug
	FALL SEMESTER				WINTER	SPRING SEMESTER				SUMMER TERM		
CLASSES	SHBT 201 SHBT 301qc				SHBT 203	SHBT 202 SHBT 205						
LAB	Summer/Fall Rotation				Winter/Spring Rotation					Summer Rotation		
FORMS/MEETINGS	Schedule three meetings with Academic Advisor- Fill and discuss IDP											
	Submit Rotation Registration *Due 9/20*		Submit Rotation Report *Due 12/10*		Submit Rotation Registration *Due 2/20*		Submit Rotation Report *Due 5/10*			Submit Rotation Registration *Due 6/20*		
SLP concentrators			Contact SLP chair and express interest in SLP concentration		Define course work required for SLP		Meet with CA *Due 05/01*			Enroll at IHP as non-degree student Submit concentration plan (06/01)		

	Graduate Year 2- SLP Track											GY3
	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug
	FALL SEMESTER				WINTER	SPRING SEMESTER				SUMMER TERM		
CLASSES	MedSCI 300											
LAB	Fall Rotation				Research							
FORMS/MEETINGS	Schedule two meetings with Academic Advisor- Fill and discuss IDP											
	Summer Rotation Report Fall Rotation Registration 9/20		Submit Rotation Report *Due 12/20*		<u>Pick SLP</u> as area of Concentration and meet with Concentration Advisor			*March 1st* G2: Submit DAD		*Aug 31st G3*: Submit Request for Oral exam (Qualifying Exam).		
SLP concentrators	12* MGH-IHP credits-worth of SLP CSD coursework at the MGH-IHP + clinical work in the MGH-IHP Interprofessional Practice Center				6* MGH-IHP credits-worth of SLP CSD coursework at the MGH-IHP + clinical work in the MGH-IHP Interprofessional Practice Center					11-14* MGH-IHP credits-worth of SLP-CSD coursework at the MGH-IHP + first potential semester of off-site clinical placement. Three off-site clinical placements must be completed.		

	Graduate Year 3- SLP Track										GY4	
	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug
	FALL SEMESTER				WINTER	SPRING SEMESTER				SUMMER TERM		
LAB	Research											
FORMS/MEETINGS	Schedule two meetings with Academic Advisor											
	Take QE *by Oct 31st G3*				Submit DAC form *by February of G3*					First DAC meeting *by June of G3*		
SLP concentrators	5-8* MGH-IHP credits-worth of SLP-CSD coursework at the MGH-IHP + potential off-site clinical placement				3-6* MGH-IHP credits-worth of SLP-CSD coursework at the MGH-IHP + potential off-site clinical placement					MGH-IHP potential off-site clinical placement		

Following DAC meeting should be scheduled no less frequently than every 9 months.

Credits reflect the number of course credits as they are accounted for by the MGH-IHP. This is intended to give SHBT students an idea of the MGH-IHP course load that they will be carrying while completing the SLP concentration each semester. Please note, however, that SHBT students register for SHBT 311: Clinical Work at MGH-IHP at Harvard to account for their IHP coursework and will receive between 8–16 credits at Harvard for this coursework.

Subsequent meetings (through G4): Subsequent DAC meetings must be held every 9 months, and in some cases more frequently (e.g. every 6 months), depending on DAC recommendations. G5 and after: It is recommended that DAC meetings be held every 6 months or more frequently pending DAC recommendations.

Fall of G6: Take MedSci 302QC "Conduct of Science Refresher"

First Year of Study (G1)

Core Curriculum

During their first year, students take a series of graduate-level courses and carry out laboratory rotations that serve as the basis for selection of a dissertation advisor. A faculty Academic Advisor is assigned to each first-year class to assist in course selection. Students must complete **three core courses**, along with **SHBT 301QC** (lab visits), and **two electives** that must be taken within the first two years. The SHBT courses are:

G1 Fall:
SHBT 201: From Sound to Neuron
SHBT 301qc: Speech and Hearing Lab Visits

G1 January:
Elective: SHBT 203: Anatomy of Speech and Hearing
Note that this course is required in G1 for students opting to join the SLP track. Students who want to take this elective should plan to take it during G1.

G1 Spring:
SHBT 202: Clinical Aspects of Speech and Hearing
SHBT 205: Speech and Hearing: From Neuroscience to Perception

The three core courses are normally taken in the first year of study and must be completed by June of G2 year. Students who earn at least three A's and two B's in the core courses automatically pass the Core requirements. Students who fail to meet this criterion may be assigned a remedy at the discretion of the Curriculum Committee. Successful completion of the core courses is a prerequisite for taking the Qualifying Exam.

Additionally, incoming G1 students attend the Summer Boot Camp and Orientation, which is typically offered over the last two weeks of August as the students arrive on campus. The camp is designed to introduce the students to the program with orientation led by SHBT and DMS administrators and provide basic information on topics relevant to the core curriculum, such as auditory neuroscience, acoustics, processing and visualization using Matlab, genetics of hearing, signals and systems, phonology.

Course Descriptions

SHBT 201: From Sound to Neuron
Director: Sunil Puria
Acoustics, anatomy, normal biology, biophysics, physiology and morphology of the middle ear and inner ear, its sensory innervation and efferent control systems, and the mechanisms underlying sensorineural hearing loss and medical devices used to treat pathology. Material is presented through lectures, laboratory exercises, discussions of the primary literature, and textbooks.

Elective: SHBT 203: Anatomy of Speech and Hearing
Director: Barbara Fullerton
Anatomical dissection of the head, neck, and thorax in human cadavers with an emphasis on structures important for speech and hearing. Lecture topics include the thorax and respiration; structures of the neck, including the larynx and pharynx; the anatomy of the face and jaw; the oral cavity; the cranial cavity; the eye; and the ear. Basic neuroanatomy of the brain is covered, along with cranial nerves and major fiber tracts. Head and neck radiographic imaging is introduced to bridge the gap between gross anatomy and clinical case analysis.

SHBT 205: Speech and Hearing: From Neuroscience to Perception

Director: Anne Takesian

Neural structures and mechanisms that mediate speech and audition, combining perspectives from neurophysiology, psychoacoustics, cognitive neuroscience, and cognitive science. The material is presented via a combination of didactic lectures and laboratories, directed readings, student-led discussions of primary literature, and critical literature reviews. Topics include auditory masking and frequency selectivity, temporal coding, sound localization, neural maps, coding transformations across the auditory system, learning and plasticity, the role of feedback, cochlear implants, effects of hearing impairment on neural representation, musical pitch, speech perception, auditory scene analysis, attention, and auditory working memory.

SHBT 202: Clinical Aspects of Speech and Hearing

Director: David Jung

An extensive exposure to clinical approaches to speech and hearing disorders as practiced by physicians, audiologists, speech clinicians, rehabilitation specialists, pathologists, and bioengineers. The course includes a series of didactic lectures, as well as extensive observations of patient care in clinic and operating room. Clinical and surgical experience includes observations of diagnostic and therapeutic procedures in otology, laryngology, audiology, voice and speech clinic, and vestibular neurology.

Additional Required Coursework

SHBT 301qc: Speech and Hearing Laboratory Visits

Director: Gwenaelle Geleoc

Coordinator: Franceny Johnson

This Year 1 course consists of blitz talks from SHBT faculty from various affiliated research laboratories. Each session lasts approximately one hour and includes presentations and demonstrations by both faculty and their trainees of ongoing research projects and approaches. The course familiarizes first-year students with the breadth of research opportunities available through Program faculty and helps them choose mentor(s) for research rotations and, ultimately, dissertation research.

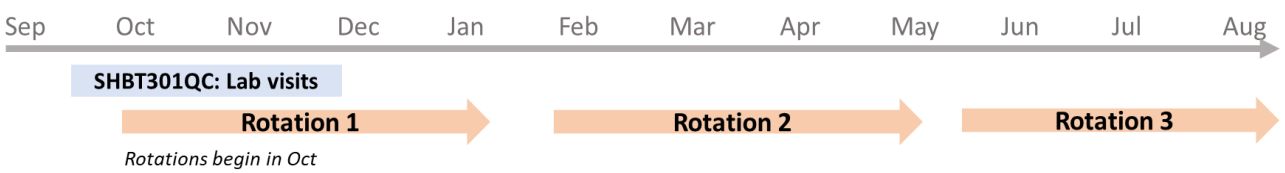
Rotations

SHBT 333r: Research Rotation in Speech and Hearing

Each student is required to complete at least two laboratory rotations of three to four months length. These rotations are usually not full-time except during the summer, and generally take place while the student attends classes during the first year. They are designed to provide hands-on experience in different techniques and laboratories, and they serve as a basis for the selection of a dissertation advisor. Incoming students who have done research with a SHBT faculty prior to joining the program cannot do their first rotation in the same lab. To help students choose labs for rotations, we have designed **SHBT 301qc: Speech and Hearing Laboratory Visits** which is led by the SHBT administrator.

Timeline

Students are strongly encouraged to start their first rotation in the Fall of their G1 year. Students are expected to do a minimum of two rotations by the end of their first year. Students who have not yet identified a dissertation advisor should plan on continuing or completing another rotation during their summer term. Students must have been accepted into a lab by March 1st of G2.



Host Labs
Students may rotate in any of the laboratories of affiliated faculty. In some circumstances, it may be appropriate for students to rotate in a non-affiliated laboratory, with explicit permission from the Program Director and the Chair of the Curriculum Committee.

Rotation Registration
Rotation registration forms are due at the beginning of each semester in which a student enrolls in SHBT 333r and also in the Summer term of G1. They need to be submitted to the SHBT Program: SHBT_Program@hms.harvard.edu by the deadline corresponding to the term of enrollment:

Fall term: September 20
Spring term: February 20
Summer term: June 20

Rotation Report
To receive credit for your rotation, at the end of the term, write a brief narrative rotation report of your work during the rotation. The rotation report should be written much like an abstract for a scientific conference, and address Background/Significance of the project, Methods, Results (including setbacks) and Conclusion/Interpretation. Add a sentence about future plans if appropriate. The report must be signed or endorsed by your Rotation Supervisor (cc'd on email when submitting is acceptable).
Send to: SHBT_Program@hms.harvard.edu by the deadline corresponding to the term of enrollment:

Fall term: December 10
Spring term: May 10
Summer term: August 31

Academic Advisor

SHBT students are assigned an **Academic Advisor** when they matriculate. Each incoming class is typically assigned to one or two advisors who will follow the students throughout their PhD training.

Role
The Academic Advisor helps the students choose rotations, choose a dissertation lab, prepare for the qualifying exam (administratively), discuss the student Individual Development Plan (IDP) and generally guides the student through his or her course of study. Academic Advisors are not scientific advisors.

Meetings
Academic Advisors meet with their assigned students three times in the first year, twice in the second and third year, and at least once every year through defense. Academic Advisors are asked to document when they meet with the students as this will be included in the spreadsheet overseen by the tracking committee.

My.harvard
Academic Advisors are granted access to academic records of the students they have been assigned to in my.harvard. For the student to be able to enroll in courses, they are required to meet with their Academic Advisors who will electronically acknowledge enrollment plans by removing the advising hold in my.harvard at the beginning of each term.

Individual Development Plan (IDP)

Academic Advisors are expected to discuss the student IDP once a year prior to the student selecting a Dissertation Advisor. A six-month checkup can be scheduled if the student wishes to do so. Students are requested to report completion of this discussion each year. A new IDP form is now available. An IDP is a resource generated by the student to help guide their career development. The IDP provides a shared point of reference for conversations between the student and the academic advisor to help them identify strengths and weaknesses along with short- and long-term goals, academic and personal. This discussion is confidential and for the benefit of the student. Once a student has selected a Dissertation Advisor, they may choose to discuss their IDP with their Dissertation Advisor rather than their Academic Advisor.

Tracking Committee

At the end of each semester, all Academic Advisors meet as the SHBT Tracking Committee to review the academic and research progress of each trainee. It is the responsibility of the Tracking Committee to ensure that each student reaches major program milestones in a timely fashion.

Re-assignment of an Academic Advisor

In case a student decides to join the lab of their Academic Advisor, a new SHBT faculty member will be designated to take this role on behalf of the student. If students wish to change advisors, they should contact the Director of Student Affairs.

Plan for Concentration

Meet with Concentration Advisor by May 1st of G1

Submit Plan for Concentration by June 1st of G1

In Spring of the G1 year, each student chooses a Concentration Advisor to help them craft a coordinated set of coursework, research, and independent study in a specific research area to be tested in the Qualifying Exam. The Concentration Advisor typically also serves as Chair of the Qualifying Exam Committee. Due to this, the Concentration Advisor cannot be the student's Dissertation Advisor.

The Concentration Advisor and other advisors (e.g. academic, research, etc.) will help the student select elective coursework. The combination of coursework and research must lead to the student mastering a significant accomplishment in an academic area. As the student progresses in research and masters fundamentals, the Qualifying Exam tests concepts in the concentration area.

The research project conducted before the Qualifying Exam should have a scope equivalent to half-time effort for one academic term or full-time effort for a summer, and apply scientific principles from the chosen Concentration Area.

Elective coursework can be chosen from the full catalog of Harvard and MIT science and engineering offerings, including electives organized by the SHBT Program. Taking challenging elective coursework is encouraged to further knowledge and expertise.

Concentration Advisors and their areas of expertise are available online.

Speech-Language Pathology Track

The Speech-Language Pathology concentration provides interested SHBT students with the opportunity to complete the academic and clinical requirements set by the American Speech-Hearing-Language Association (ASHA) for certification as a speech-language pathologist.

Students complete a series of 13 CSD courses (31 credits total) and 5 clinical practicum placements (400 hours of supervised clinical experience for 15 credits) offered by the Communication Sciences and Disorders Master's Program at the MGH Institute of Health Professions (MGH-IHP), which is accredited by ASHA.

The academic and clinical requirements are typically completed during G2 and G3 of the SHBT Program. Students who complete the concentration coursework, pass the SHBT Qualifying Exam, and earn a PhD degree in SHBT, can then earn the ASHA Certificate of Clinical Competence (CCC-SLP) by passing a national written exam and completing a post-graduate clinical fellowship. The latter two postdoctoral activities are not part of the Speech-Language Pathology concentration of SHBT and are not funded by the SHBT training grant.

This concentration also requires a one-time payment (~$10,000) per student.

Sofia Vallila Rohter
SLP Concentration Director
svallilarohter@mghihp.edu

Second Year of Study (G2)

During their second year, students focus on research training. Students must be officially accepted into a lab by March 1st of G2 when they submit the Dissertation Advisor Declaration form (DAD).

During the later part of G2, SHBT students prepare their Qualifying Exam. They are required to submit a **Request for Qualifying Exam** no later than **August 31st of G3**. The **Qualifying Exam** must be taken by **Oct 31st of G3**.

The students are also required to attend the **Responsible Conduct of Science** course (or refresher if already taken). This training is mandatory for all DMS students.

MEDSCI 300QC: Responsible Conduct of Science
MEDSCI 302QC: Responsible Conduct of Science Refresher
R. Kucherlapati, Director
The Division of Medical Sciences at Harvard Medical School requires all G2 students to participate in a Responsible Conduct of Science course during their second fall semester. This course outlines best practices for the ethical conduct of scientific research. All students are required to participate in the Conduct of Science Refresher course fall of G6 year if they are still enrolled in the program.

Electives Available to SHBT Students

Two full-term equivalent electives are required starting with the entry class of 2023. Full-term courses are 4 credits (in Harvard terms) or 12 units (in MIT terms). For previous students, elective courses are strongly encouraged. The course work should be crafted with the input from the concentration advisor and dissertation advisor. Here is a list of courses that have been offered at Harvard and MIT. For courses not listed, please consult with Josh McDermott, Chair of the Curriculum Committee. Check my.harvard for an updated list.

Course Title	Instructors	Term	Credit
SHBT 203: Anatomy of Speech and Hearing	Barbara Fullerton	January (4 weeks)	4
NEURO 200 / HST 130: Neuroscience	John Assad, Matthew Frosch	Fall Full Term	4
NEUROBIO 215A: The Discipline of Neuroscience (by petition)	Lisa Goodrich, John Assad, etc.	Fall Full Term	4
HST 160: Genetics in Modern Medicine	Salil Garg, Sahar Nissim	Fall Full Term	4
BE 110: Physiological Systems Analysis	Maurice Smith	Fall Full Term	4
APMTH 226: Theory of Neural Computation	Cengiz Pehlevan	Fall Full Term	4
NEUROBIO 240: Biological and Artificial Intelligence	Gabriel Krieman	Spring Full term	4
APMTH 115: Mathematical Modeling	Zhiming Kuang	Spring Full term	4
MCB 145/ NEURO 145: Neurobiology of Perception and Decision Making	Naoshige Uchida	Fall Full Term	4

Course Title	Instructors	Term	Credit
NEUROBIO 212: Mathematical tools for Neuroscience	Eleanor Batty	Fall Full Term	4
BMI 715: Computational Statistics for Biomedical Sciences	Aparna Nathan	Fall Half Term	2
CELLBIO 201: Principles of Cell Biology	Susan Shao/Daviel Finely	Spring Full Term	4
MIT 9.35: Perception	Josh McDermott	Spring Full Term	12
MIT 9.66: Computational Cognitive Science	Josh Tenenbaum	Fall Full Term	12
MIT 9.07: Statistics for Brain and Cognitive Science	Emery N. Brown	Fall Full Term	12
MIT 9.014: Quantitative Methods and Computational Models in Neurosciences	Mehrdad Jazayeri	Fall Full Term	12
MIT 9.011: Systems Neuroscience Core I	Robert Desimone/ Earl K. Miller	Fall Full Term	18
MIT 9.390: Language in the Mind and Brain	Ev Fedorenko	Spring Full Term	12
MIT 9.40: Introduction to Neural Computation	Michael Fee	Spring Full Term	12
MIT HST.524: Design of Medical Devices and Implants	I. V. Yannas, M. Spector	Spring Full Term	12
MIT HST.141: Molecular Medicine	V. Sankaran, S. Agarwal	Fall Full Term	6
MIT 6.871 / HST.956: Machine Learning for Healthcare	D. Sontag, P. Szolovits	Spring Full Term	12
MIT 6.100L: Introduction to Computer Science and Programming	A Bell	Fall Term/Spring Full Term	9
MIT 6.341: Discrete Time Signal Processing	A.V. Oppenheim, J. Ward	Fall Full Term	12
MIT 6.867: Machine Learning	T. Jaakkola	Fall Full Term	12
MIT IDS.012: Statistics, Computation and Applications	N. Azizan, S. Sra, Stefanie Jegelka	Spring Full Term	12
MIT 6.4812: Cellular Neurophysiology and Computing	Staff	Spring Full Term	12

Course Title	Instructors	Term	Credit
MIT 6.8620/HST 728: Spoken Language Processing	Jim Glass	Spring Full Term	12
MIT 9.073: Statistics for Neuroscience Research	Emery N. Brown	Spring Full Term	12
Neurobio 315C: Human Neuroanatomy and Neuropathology	Matthew Frosh	Fall Half Term	2
PSY 1950: Intermediate Statistical Analysis in Psychology	Patrick Mair	Fall Full Term	4
MIT 6.8620/HST 728: Spoken Language Processing	Jim Glass	Spring Full Term	12
MIT 9.073: Statistics for Neuroscience Research	Emery N. Brown	Spring Full Term	12
Neurobio 315C: Human Neuroanatomy and	Matthew Frosh	Fall Half Term	2
PSY 1950: Intermediate Statistical Analysis in Psychology	Patrick Mair	Fall Full Term	4

Dissertation Advisor Declaration

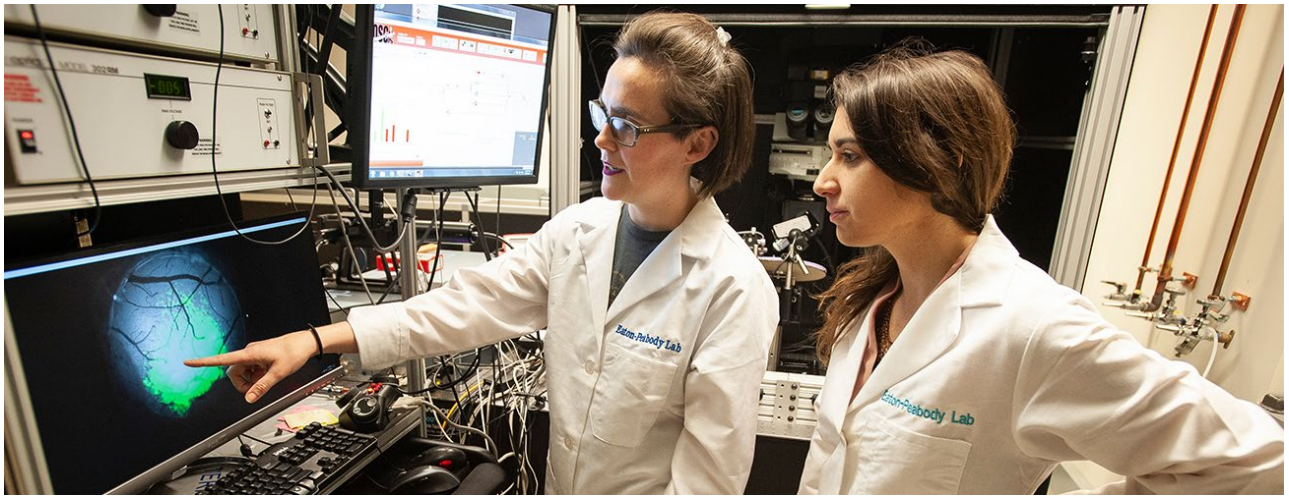
Form signed by March 1 of G2

The Dissertation Advisor is responsible for overseeing the student's dissertation project, providing a supportive research environment, and mentoring the student. The Dissertation Advisor is chosen by the student and is normally a faculty affiliate of SHBT. Exceptionally, non-affiliated individuals may be approved as Dissertation Advisors on a case-by-case basis.

To select a dissertation advisor, the DAD form must be completed in accordance with the following guidelines:

- Student declares dissertation advisor and describes dissertation project
- Selection of a dissertation advisor must then be approved by the director of SHBT with the DAD form and then the director of the graduate Studies for DMS
- Dissertation advisor commits to supporting and funding student
- Student and dissertation advisor are required to complete a Conflict of Interest disclosure form.
- To avoid conflict of interest, the dissertation advisor cannot be the student's appointed academic advisor. In the event that an academic advisor becomes the dissertation advisor, a new academic advisor will be found.

Harvard co-Advisor (New- 2021): All SHBT students who work with an outside Harvard /MIT advisor must have a Harvard co-advisor. The policy is not retroactive, i.e. it will be enforced at the time a student submits their DAD form from this point onward. Note that the role of the Harvard co-advisor is to provide administrative and legal oversight and ensure Harvard policies are adhered to. There is no financial responsibility.



Qualifying Exam

To be taken by Oct 31st of G3

The **Qualifying Exam** (QE) is designed to test the student's preparedness for doing research in a chosen area. Examiners will assess the student's knowledge, aptitude, and readiness for research. It is distinct from a dissertation research proposal.

Concentration Advisor:
At the beginning of G2 year, each student chooses an **Area of Concentration and a Concentration Advisor** to help him/her/them craft a coordinated set of elective coursework, research, and independent study in the specific research area. Two elective course work have to be completed by the end of G2 for students entering Fall 2023. For previous years and incoming students, other elective courses that may benefit the student's area of concentration should also be considered. Prior to taking the QE, the student must consult with the concentration advisor, their dissertation advisor, their academic advisor and other mentors to clarify expectations for the exam. The concentration advisor plays an important role in the design and preparation for the QE and will, in most cases, chair the exam.

Examiners:
The qualifying exam is administered by an **ad hoc committee comprising three faculty members,** typically including two SHBT faculty. Upon consultation with the dissertation advisor and other mentors, the student will propose a list of people who would be suitable examiners by completing a Request for Oral Examination Form submitted to the program administrator and the concentration advisor. The concentration advisor will review the proposed list with the student and decide on the final composition of the examination committee. The student's dissertation advisor cannot serve on this committee. The chair must be a member of the SHBT Program and familiar with program policies. As noted above, the concentration advisor will often chair the committee to ensure a fair and consistent process. The student is responsible for reaching out directly to the faculty and setting up a date and place for the meeting. The chair is responsible for reporting the outcome of the exam to the program administrator and the chair of the tracking committee, with CC to the student and the dissertation advisor. In case a member of the examination committee cannot be scheduled in a timely manner, the student will consult with the Concentration Advisor to find an alternate examiner.

Preparation:
The Qualifying Exam assesses the student's comprehension of the fundamental ideas and approaches related to the student's research area, and their ability to think incisively and critically about the theoretical and practical aspects of this field.

The student prepares a presentation of a research project he/she/they actively participated in. This may be preliminary results for the anticipated dissertation project, or an independent research project completed during one of the rotations. Note that this is not a grant proposal, rather a summary and discussion of work performed by the student. During the examination, the student should be prepared to discuss the rationale for the experiments, background literature that has led to the research, expected outcomes and alternative experiments or conclusions. Detailed knowledge of experimental protocol and analysis is also expected.

Additionally, the student is expected to be familiar with material taught in the core classes during the first year, particularly classes that are directly relevant to the student's area of research. This may also include material taught in elective classes taken by the student. In theory, the questions from the committee should be confined to topics directly related to the student's research, but they can also be asked questions about fundamental concepts. As such, it is encouraged that the student revisits all course work as well as literature that is relevant to their research project. The Dissertation Advisor may help the student prepare for the exam by giving general advice and participating in practice exams but cannot directly assist the student in writing the research summary and cannot be present at the exam.

Write your paper:
A written summary of the research project must be submitted to the committee at least one week before the exam. This research summary should be 6–8 pages long (not counting figures and references). Remember that this is not a grant proposal, rather a summary/discussion of work performed during one of the rotations. The format of the paper should be similar to a publication (introduction, methods, results, discussion, references). The research summary should be written by the student using their own words, with no direct contribution from the Dissertation Advisor. The research summary paper needs to be submitted no later than one week before the exam.

Preparing for the exam:
The student prepares a ~20 min presentation of a research project that was completed during one of the rotations. This synopsis must indicate why the research question is important, describe the techniques used to address the question, present, and interpret results, and discuss how the approach advances knowledge in the research area. The combination of coursework and research must lead to the student mastering a significant accomplishment in an academic area. As the student progresses in research and masters fundamental concepts, the Qualifying Exam is designed to test knowledge in the concentration area.

Taking the exam:
This consists of four people (student and three examiners) meeting in a room for approximately two hours. The student will present their research project lasting about 20 min (see details above). The examiners will interrupt with questions during the presentation, so the actual process will take longer. The oral presentation generally takes the form of a PowerPoint presentation, but any format that effectively communicates the main ideas is acceptable, including writing on a whiteboard. While the written research summary is the initial focus of the exam, the student is also expected to demonstrate substantial knowledge in their field of research and related scientific areas.

Exam Evaluation:
The chair of the examination committee is responsible for reporting the outcome of the exam to the Program Administrator and the Chair of the Tracking Committee. Possible outcomes are Clear Pass, Conditional Pass, or Fail.

Pass/Fail:
If the first attempt is not a pass, the student may be given a second chance. Continued enrollment for any student who has not attained a clear pass after a second examination (if a second chance had been approved) will be considered and determined by the SHBT Student Tracking committee and the director of graduate studies of the DMS. The exam's outcome may also be a conditional pass, where the student has to complete additional work such as coursework or a writing assignment without having to retake the exam. The pass becomes final when the student demonstrates completion of the required additional work to the Examining Committee. It is the responsibility of the exam chair to follow up with the student and confirm completion of the additional work. The chair of the Examining Committee must report successful final completion to the program administrator and the director of student affairs by submitting the Qualifying Exam report form.

Third Year of Study and Beyond (G3+)

SHBT students are required to take the SHBT Qualifying Exam by **Oct 31st of G3** (See G2 section for details about the QE). After passing the Qualifying Exam, students may devote full-time to their dissertation research.

Students are encouraged to submit their Dissertation Advisor Committee (DAC) form and Abstract **three months after passing their QE (Feb of G3)**, with the actual first DAC meeting taking place no more than 4 months later (June of G3). Note that students are not allowed to register for the fourth year if they have not passed the qualifying examination.

Dissertation Advisory Committee

The DAC has three main missions:

- First and foremost, the DAC is a scientific advisory committee that will provide expert advice on all aspects of the dissertation, extending from experimental paradigms to project feasibility within the time frame of a PhD dissertation and to the scientific impact of the work.
- Second, the DAC will help monitor student progress to ensure that the major objectives and standards (discussed below) for completion of a PhD dissertation are being met in a timely fashion. In this capacity, the DAC determines whether the student's research meets the program requirements and the student may begin writing the dissertation. In addition to evaluating completed experiments and manuscripts, progress will also be considered with respect to maturity in scientific judgment.
- Third, the DAC will help resolve any conflict between student and advisor or other lab members.

Forming the DAC

Students must declare a DAC and submit the **DAC Proposal** form within three months after passing their qualifying exam, no later than Feb of G3 year.

The DAC should be formed in consultation with the Dissertation Advisor and the SHBT Academic Advisor. The composition of the DAC needs to be approved by either the Program Director and Director of Student Affairs. This is done by the approval of the form submitted with the dissertation advisory committee proposal form. The Dissertation Advisory Committee Proposal Form should be submitted to the SHBT Program Administrator.

The committee should have at least three members, not including the advisor. Two members of the DAC should be formally affiliated with the SHBT Program and one member not be affiliated with the Program.

- Faculty 1. The DAC Chair must be a SHBT faculty and must be well acquainted with the academic policies of DMS. The DAC share will also be responsible for reporting on each DAC meeting by submitting a DAC report to the Program Administrator.
- Faculty 2. SHBT faculty member
- Faculty 3. Non-SHBT (Harvard or non-Harvard) Faculty member with relevant expertise. Members who do not hold faculty positions (Assistant or higher) cannot participate in the DAC. Deviations from this recommended pattern may be allowed if approved by the SHBT Program Directors. When in doubt about the DAC composition, the student should consult the Program Director or Director of Student Affairs prior to submitting the DAC Proposal Form.

The Chair of the DAC committee is expected to serve as Chair of the dissertation examination committee.

DAC Chair

Each DAC is headed administratively by a Chair, chosen by the student in consultation with the Dissertation Advisor. The DAC Chair is responsible for overseeing the committee meetings and submitting a report after each DAC meeting. The DAC chair is responsible for making sure that the views of the DAC are effectively

communicated to the student and that any major concerns of the DAC are effectively communicated to the advisor and to the SHBT Director of Student Affairs via the Program Director.

The DAC chair is responsible for the preparation and submission of the DAC report, which should be approved by all committee members immediately upon conclusion of the meeting.
Immediate submission of the DAC report is important, not only so potential problems can be remedied quickly, but so student registration status is not jeopardized.

Initial DAC meeting
The initial DAC meeting must be held within 7 months of the QE, by June at the latest.
Before the first DAC meeting, the student submits a written dissertation proposal which is formally presented at the meeting. The proposal should clearly define the research problem, describe the proposed research plan, and articulate the significance of the work. The length is comparable to that required for NIH F31 applications. An NIH F31 approved for funding or equivalent funded fellowship application may serve as the dissertation proposal.

Students should consult their Dissertation Advisor on the proposal before submitting it to the DAC.
Following the presentation, the student must correct any deficiencies in the proposal identified by the DAC until the DAC approves the proposal.

Procedures for setting up DAC meetings
Students are responsible for scheduling their DAC meetings. Helpful web-based scheduling services include Doodle (http://www.doodle.com/) and When is good (http://whenisgood.net/). Scheduling also includes reserving a room.

Submission of Proposal Package for the initial DAC meeting (To be submitted no later than one week prior to your first DAC meeting)
The proposal package (no longer than 7 pages of 11-point font with single line spacing and 0.5" margins) includes the following:

- Abstract (<300 words)
- Specific Aims (1 page)
- Concise description of the proposed work, which can be read independently of the full proposal.
- Research Strategy (6 pages max).
- Background and Significance: Concise review of relevant scientific literature and brief description explaining why the work is important.
- Scientific Premise & Preliminary Results: Data relevant to the proposal generated by the student and/or other members of the laboratory.
- Approach: Methods proposed to study each Specific Aim, including methods of analysis. Includes hypotheses and statistical procedures to test hypotheses. Also includes potential problems and pitfalls.

The proposal should be submitted, no later than one week before the initial meeting, to the SHBT Program Administrator, the Dissertation Advisor, and all DAC members.

Organization of the DAC meeting
DAC meetings take about 2h. The student and faculty alternately leave the room. To provide an opportunity for both the student and the adviser to communicate with the DAC members on a confidential basis, the meeting will start with first the student leaving the room and then the advisor leaving the room. In the absence of the student, the advisor will have a chance to present their assessment of the student's progress and whether the student is on course to graduate in a timely fashion. In the absence of the advisor, the student may likewise communicate their own assessment of their progress and whether the advisor and the

laboratory environment provide the support that they need. This is also an opportunity to share with the committee any other problems of a confidential nature that the student needs help with.

Student presentation: The main part of the meeting will consist of a 20–40 minute presentation by the student of results and plans. Committee members will typically interrupt the presentation with questions and the presentation is followed by a discussion of progress and future plans. The Dissertation Advisor should interject minimally so that the student has the opportunity to demonstrate mastery of their field and scientific maturity surrounding ongoing and future work.

Assessment of student's progress: The student's progress will be assessed by the DAC in several areas:

- Progress on a line (or multiple lines) of experimentation having potential to lead to one or more first-author publications;
- Development of an ability to think independently, including development of hypotheses, practical approaches for testing hypotheses, critical interpretation of data, understanding relevance of results in light of current thinking in the field, and judging how to effectively pursue the line of investigation;
- The DAC Research Progress Report is an opportunity for the committee members to assess the development of the student's ability in science writing and give constructive feedback;
- The DAC Research Progress Report and meeting is an opportunity for the committee members to assess the student's knowledge and analysis of the scientific literature relevant to his/her field of investigation. Note that it is helpful to the student that scientific maturity and independence are discussed as these are often areas in which students excel yet are not always adequately reflected by the status of manuscripts.

Timing, Frequency of Subsequent DAC meetings

Subsequent meetings (through G4): Subsequent DAC meetings must be held every 9 months, and in some cases more frequently (e.g., every 6 months), depending on DAC recommendations. A DAC report needs to be submitted a week before each DAC meeting.

G5 and after: It is recommended that DAC meetings be held every 6 months or more frequently pending DAC recommendations.

Final DAC meeting

In preparation for the final DAC meeting, the student must submit to the committee the general outline and content of the dissertation. With the student, the committee will discuss the general outline and content of the dissertation. Students must have the final dissertation advisory committee report on file in the Division of Medical Sciences office stating that the student may begin writing the dissertation with approval of the general outline and content of dissertation prior to processing dissertation defense paperwork. (For this form, see your program administrator or visit the Division of Medical Sciences website at http://dms.hms.harvard.edu/.

After receiving approval and permission from the committee to write the dissertation, students should contact the DMS Dissertation Coordinator, dmsphddefense@hms.harvard.edu, to schedule a dissertation packet meeting and review dissertation requirements and regulations. Additionally, the expectation is students will defend their dissertation no later than 4-6 months from the date of permission to write.

Dissertation Defense

The dissertation is the capstone project for PhD students. It is perhaps the most important and far-reaching undertaking in the entire doctoral program, having an impact that extends well beyond graduate studies.

Harvard has strict policies to ensure that the dissertation and defense meets high standards of scholarship.

Requirements
Every PhD candidate is required to successfully complete and submit a dissertation to qualify for degree conferral. Completion of the PhD requires writing a dissertation, presenting a seminar describing the results of this research, and passing an oral examination. Additionally SHBT expects that most students will graduate with at least one first-author paper or two or more other papers. The average time to completion for the PhD is approximately 5½ years.

Dissertation Examination Committee
A Dissertation Examination Committee is formed when the Dissertation Advisory Committee has decided that the student is ready to defend his/her dissertation. At that time, the student makes an appointment with a staff member of the Division of Medical Sciences to review dissertation requirements and regulations. The Exam Committee consists of three examiners plus an Exam Committee Chair. Members of the Exam Committee are selected by the student with the help of the student's DAC and the dissertation advisor and must be approved by the Program Director.

The exam committee should be assembled as follows:

When the Chair is a Harvard faculty member:

- Exam Chair: The chair of the exam committee must be an SHBT faculty member and be a member of the student's Dissertation Advisory Committee (DAC). None of the members other than the chair may have served on the student's DAC.
- Examiner 1: In addition to the Chair, at least one examiner must be a Harvard SHBT faculty member.
- Examiner 2: To broaden the examination and enhance its significance, one member of the examination committee must be from outside Harvard.
- Examiner 3: Faculty member from any institution.

When the Chair is a non-Harvard faculty member (e.g., MIT faculty):

- Exam Chair: The chair of the exam committee must be an SHBT faculty member and be a member of the student's Dissertation Advisory Committee (DAC). None of the members other than the chair may have served on the student's DAC.
- Examiner 1: This examiner must be a Harvard SHBT faculty member.
- Examiner 2: This examiner must be a Harvard Division of Medical Sciences faculty member who may or may not be SHBT faculty.
- Examiner 3: To broaden the examination and enhance its significance, one member of the examination committee must be from outside Harvard.

Important point to consider when assembling the exam committee:

1. The dissertation advisor is not eligible to be an examiner or the chair, but usually attends the exam ex officio.
2. All proposed examiners must be the rank of assistant professor or higher at an academic institution.
3. Past collaborators and co-authors are usually not appropriate to be examiners. Faculty members who have collaborated with the student or the student's advisor on the student's area of research within the past five years may not serve on the exam committee. Faculty with whom the student has done

a regular laboratory rotation in the process of selecting the dissertation laboratory are eligible if there are no other collaborations. Students may therefore petition DMS to approve examiners whose collaboration with the student or advisor was not directly related to the dissertation research.

4. Emeritus Faculty may not serve on a student's examining committee unless that student has been under the supervision of that faculty member.
5. If the student's non-Harvard examiner is a former Harvard professor, then the following requirements must be met before s/he is eligible to serve on the committee as an external examiner: the faculty member should have served in their post-Harvard position for at least one year the faculty member should have not participated directly with the student in any other capacity (e.g. as a program advisor, dissertation advisory committee member, qualifying exam committee member) during her/his time at Harvard.
6. An alternate examiner may be requested by the student, the dissertation advisor, the program, or the Division. If an alternate examiner is selected, the alternate must be available to attend the seminar and defense, and must receive and read a copy of the dissertation.
7. All exceptions to these rules must be approved by the Director of Academic Administration of the Division of Medical Sciences.

Timing

Harvard awards official degrees only three times during the year: March, May, and November. However, a student may defend his or her dissertation any time during the year. Specific deadlines can be found on the DMS and GSAS websites. Recipients of November, March, and May degrees may participate in Harvard University Commencement and the GSAS Diploma Awarding Ceremony.

Forms

All of the following Defense forms must be submitted to DMS four weeks prior to the defense via email or in person (see degree application for specific deadlines and instructions).

1. DAC Report: Before scheduling the defense and submitting any of the forms, a DAC report stating the student has the permission to write the dissertation must be on file in the Division Office
2. Dissertation Packet meeting: Students must attend a dissertation packet meeting. The packet meeting will give the student all the relevant information for planning the defense. This meeting usually lasts 30-45 minutes.
3. Program Approval Form – signed by Program Head & Dissertation Advisor (electronic signatures are accepted) and delivered via email/in person
4. Proposed Examiners Form - signed by Program Head & Dissertation Advisor (electronic signatures are accepted) and delivered via email/in person. DMS will obtain the Vice Chairman's signature
5. Exam Information Sheet
6. Title Page and Abstract should be sent to samantha_reed@hms.harvard.edu four weeks or earlier before the date of the defense in one Word document.
7. Post-Graduation Information Sheet

All the forms can be found here: https://dms.hms.harvard.edu/dissertation-and-defense

Final Dissertation Submission Steps

Corrections

Following the examination, the candidate must, with the help of the dissertation advisor, make any necessary corrections to the dissertation. If corrections require review, those revisions should be approved by the examination committee chair or by a faculty member designated by the committee chair, who will then notify the Division in writing that all revisions are complete.

Dissertation Acceptance Certificate

If no corrections are required or once the corrections are complete, the DMS office will email the student an electronic copy of the Dissertation Acceptance Certificate. The student will attach this Dissertation Acceptance Certificate to the dissertation right before the title page with a blank page

immediately following the Dissertation Acceptance Certificate. No page number should be assigned to this page.

Submission

- Before submitting your dissertation, review your final copy and make sure it abides by all of the formatting requirements set by Harvard Griffin GSAS. Students can embargo their dissertation for six months, one year, two years, or more. Embargo periods over two years require a signed approval of delayed release form.
- The dissertation must be submitted electronically through ProQuest ETD to the FAS Registrar's Office for approval in order to receive the degree. Dissertations must be received by 11:59 PM on the deadline date for the given degree period. No extensions to this deadline are provided. Any supplemental material or copyright permissions should be included in the submission. Please see the Harvard Griffin GSAS website for more information on dissertation submission or the tutorial on the homepage of the ProQuest ETD submission tool for additional information.
- Review the instructions for submitting your dissertation.

SHBT students should consult the DMS Dissertation and Defense page for important information regarding their dissertation and defense.

After Submission

Once the dissertation is submitted, you will receive an initial email stating that the dissertation has been received. The Registrar's Office will review the document for formatting compliance, and you will then receive a second email once your dissertation has been approved. Any required changes or corrections will be communicated to you and must be resolved before the degree can be conferred. You will have up to one week past the submission deadline to submit any corrections requested by the Registrar's Office.

Other Information

Stipend

If a student defends their dissertation before the 15th of the month, the stipend will be terminated at the end of that month. If the student defends on or after the 15th, the next month's stipend will be the final month the student is paid, at the discretion of their advisor.

Students are encouraged to speak to their advisors directly about how they should be paid as they complete their graduate work. If an advisor wishes to pay the student for an additional month, beyond what has been explained above, the advisor must notify David Jablon via email as early as possible: dmsaccounting@hms.harvard.edu

For administrative reasons, a stipend cannot be issued to a student after his/her graduation date. If you defended and received a clear pass, you can no longer remain an enrolled DMS student for the upcoming semester.

Registration & Health Insurance:

Please review the HUSHP graduating student website: https://hushp.harvard.edu/graduating-students

Acknowledging the NIH Training Grant (T32)

For any research involving students who are or have been supported by the SHBT T32 NIH Training Grant: It is essential that students and their PI acknowledge the SHBT NIH T32 award in all publications, journal articles, conference presentations, posters, etc. This includes papers published after students are formally on the training grant (even after graduation). Keep in mind that NIH Public Access policy requires all NIH-supported papers to be eventually available via PubMed Central (info). Many journals do this automatically for authors but many do not and require authors to manually submit to NIH the accepted manuscript version that is processed for open access.

Then, authors must ensure that published papers are then linked to the T32 and other grants supporting the work. This linking is critical because SHBT annually reports the productivity of the SHBT Training Grant, which is major factor in SHBT continuing to receive NIH funding. Log in to your PubMed Bibliography to check out publications and linking to grant awards. It's never too late to link past and new papers to grants here".

Example text:
"This work was supported by the National Institutes of Health (NIH) National Institute on Deafness and Other Communication Disorders (Grant T32 DC000038, awarded to G. Géléoc, supporting [trainee name]). The contents are solely the responsibility of the authors and do not necessarily represent the official views of NIH."

SHBT Annual Events

Check out SHBT news and events at: https://shbtphd.hms.harvard.edu/news-events.

Fall Retreat

Organized by the rising G4s, the Fall Retreat (new in 2022; formerly the End-of-Summer Talks) provides the opportunity for all SHBT students to congregate in a setting outside Boston to present and discuss their research, attend workshops on the topic of their choice (careers, mental health, etc.), and participate in team building activities. This annual event is supported by DMS and planned in coordination with the SHBT Program Administrator. Rising G2s and G3s present their ongoing rotation work to their peers and faculty (in person or virtually). Each presenter is given 10 minutes to speak, with 2–3 additional minutes for questions. All students are strongly encouraged to attend this retreat in person. A few selected faculty may be invited onsite as well. Lodging (one night) and food are included.

Midwinter Research Forum

This event features student research posters and a keynote address by a member of the SHBT faculty. The Forum provides an opportunity for SHBT students to get feedback on their research from faculty and classmates in a friendly, informal setting. Since the Forum is timed to occur during admissions interviews weekend, it also gives candidates for admission an overview of research activities within SHBT and serves as a recruitment tool. All SHBT students in Year 3 or later are expected to present a poster. Year 2 students are also encouraged to present, if interested. This is not meant to be onerous, so it is fine to reuse a poster you already presented at a conference or use a draft of a poster you are about to present elsewhere. Previous keynote speakers link.

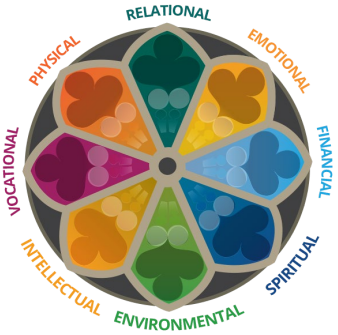
Distinguished Lecture Series

A talk organized by a committee of G2s in which an invited speaker outside the SHBT faculty gives a lecture on a research topic related to Speech and Hearing Bioscience and Technology. The specific topic varies from year to year so as to cover the diverse research interests of faculty and students ranging across speech,

hearing, voice, language, neuroscience and balance. The organizing committee chooses and invites the speaker in coordination with the program director. The talk usually lasts 1.5 hours. This is an opportunity for students to invite and interact with researchers they admire. As part of the event, we typically hold a student luncheon with the speaker, which gives students an opportunity to informally interact with the researchers who are pushing boundaries in the fields of speech and hearing sciences. Past speakers: link.

Wellbeing Workshop

Organized by the SHBT Mental Health Working Group, this event aims to be a thoughtful discussion led by a CAMHS therapist, current students and select faculty advisors. Discussion topics range from maintaining a healthy work-life balance, combating imposter syndrome, exploring and engaging in extracurricular activities, and remaining mentally well throughout your studies.



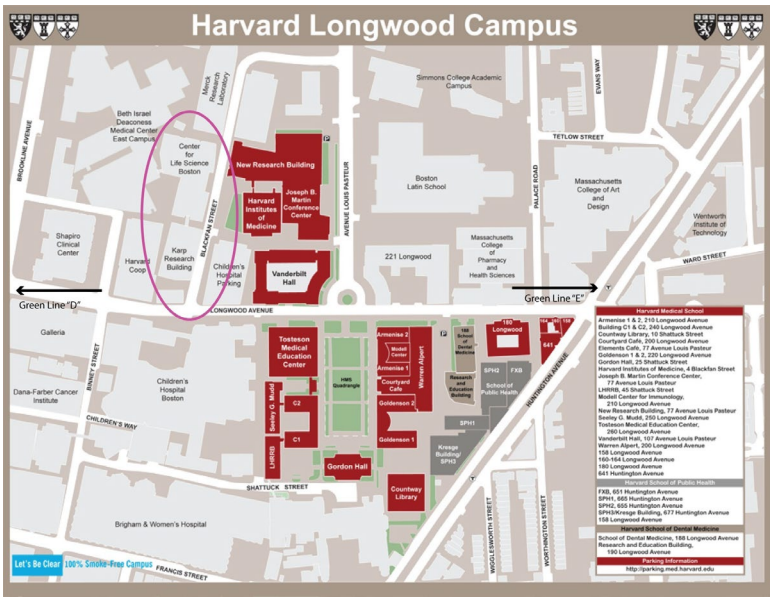
SHBT Labs Locations

Massachusetts Eye and Ear

Many SHBT faculty have their lab at the Massachusetts Eye and Ear (MEE), adjacent to Massachusetts General Hospital. Many of the courses are also taught at MEE. MGH runs a free shuttle service between Longwood and the MGH campus. There is an MBTA redline stop immediately adjacent to the MEE.

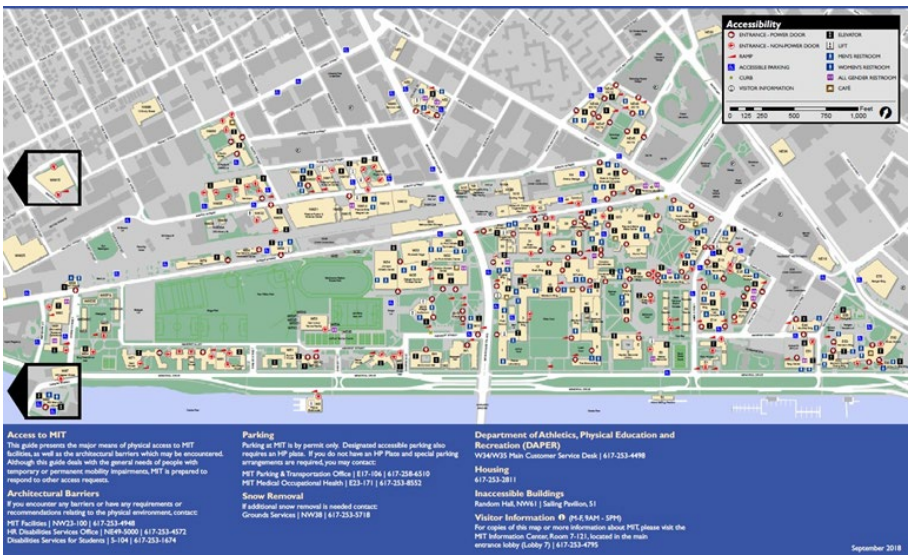
Longwood Medical Area

Several SHBT faculty have their labs in the Longwood Medical area which include the Harvard Medical School (HMS) Longwood campus, The Center for Life Science at Boston Children's hospital (BCH), Brigham Women Hospital and Dana Farber. These labs are within walking distance of many parts of Brookline and Boston, and are within a 20– to 30-minute ride from Cambridge on the free shuttle provided to Harvard stude.



Massachusetts Institute of Technology (MIT)

Several faculty at MIT Cambridge welcome SHBT for rotations and dissertation research. The main campus is located across from the MEE along the Charles River.



List of Faculty by Research Area

Auditory Mechanics

J Cheng, PhD (HMS, MEE)
DM Freeman, PhD (MIT)
H Nakajima, MD PhD (HMS, MEE)
S Puria, PhD (HMS, MEE)

Voice and Speech-Language Pathology

J Green (MGH IHP)
RA Franco, MD (HMS, MEE)
J Heaton, PhD (HMS, MGH)
RE Hillman, PhD (HMS, MGH)
T Hogan (MGH IHP)
DD Mehta, PhD (HMS, MGH)
M Richardson, MD, PhD (HMS, MGH)
SM Vallila Rohter, PhD (MGH IHP)
L Zipse (MGH IHP)

Speech Production & Perception

JR Glass, PhD (MIT)
D Gow, PhD (HMS, MGH)
E Liebenthal, DSc (HMS)
S Shattuck-Hufnagel, PhD (MIT)
K Simonyan, MD PhD (HMS, MEE)

Auditory Neuroscience, Periphery

ZY Chen, PhD (HMS, MEE)
DP Corey, PhD (HMS)
A Edge, PhD (HMS, MEE)
G Géléoc, PhD (HMS, BCH)
L Goodrich, PhD (HMS)
JR Holt, PhD (HMS, BCH)
A Indzhykulian, PhD (HMS, MEE)
DH Jung, MD, PhD (HMS, MEE)
K Koehler, PhD (HMS, BCH)
S Kujawa, PhD (HMS, MEE)
MC Liberman, PhD (HMS, MEE)
S Maison, PhD (HMS, MEE)
S Megason, PhD (HMS)
B Shrestha (HMS, MEE)
DB Welling, MD, PhD (HMS, MEE)

Auditory Perception, Hearing Assistive Devices

JG Arenberg, PhD (HMS, MEE)
D Lee, MD (HMS, MGH)
J McDermott, PhD (MIT)

Auditory Neuroscience, Central

MC Brown, PhD (HMS, MEE)
B Delgutte, PhD (HMS, MEE)
M Fee, PhD (MIT)
BC Fullerton, PhD (HMS, MEE)
A Golby, MD (HMS, BWH)
TK Hensch, PhD (HMS)
E Kozin, MD (HMS, MEE)
DJ Lee, MD (HMS, MEE)
DB Polley, PhD (HMS, MEE)
A Takesian, PhD (HMS, MEE)

Cognitive Neuroscience of Language and Music

E Fedorenko, PhD (MIT)
N Gaab, PhD (HGSE)
J Gabrieli, PhD (MIT)
S Ghosh, PhD (MIT, HMS)
T Hogan (MGH-IHP)

Genetics of Hearing & Deafness

C Morton, PhD (HMS, BWH)
E Shearer, MD (HMS, BCH)

Vestibular System, Balance

F Karmali, PhD (HMS, MEE)
SD Rauch, MD (HMS, MEE)

Abbreviations:

BCH	Boston Children's Hospital
BWH	Brigham and Women's Hospital
HMS	Harvard Medical School
MEE	Massachusetts Eye and Ear
MGH	Massachusetts General Hospital
MGH-IHP	MGH Institute of Health Professions
MIT	Massachusetts Institute of Technology

Student Life

Housing

The Harvard housing office has a wide variety of housing options available to students from dormitory rooms in Longwood and Cambridge, to one- and two-bedroom off campus apartments. Some students choose to take part in the Harvard Resident tutor program, in which graduate students may earn free housing and a limited meal plan in exchange for providing a variety of services to undergraduate students (Contact Blake Roberts for more information).

Transportation

Students use a wide variety of modes of transportation: MBTA/subway, buses, commuter trains, shuttles (Harvard/Masco; MGH/Partners Healthcare, MIT), bicycles, Uber/Lift, etc. All Harvard students may get a discounted MBTA pass during the academic year. Discounts are also available to car rental with Enterprise and Avis through the Harvard Travel Portal (http://travel.harvard.edu).

Finances

All SHBT students (both domestic and international) receive full funding for the duration of their enrollment. Funding includes tuition, stipend, fees and health insurance. For US citizens and permanent residents, the first two years are supported, in part, by the Training Grant T32 DC000038 from the NIDCD entitled “Training for Speech and Hearing Sciences”.

Domestic students need to be aware that for at least the first two years of enrollment, their stipend is not considered "earned wages" by the Internal Revenue Service. This means that (1) the student will not receive a W-2 at the end of the calendar year for figuring out taxes in April, and (2) income tax will not be withheld from the stipend check, so nearly all domestic students must file quarterly tax returns.

Incoming students receive a $1000 relocation allowance from DMS upon matriculation. Students also receive a one-time $600 in travel funds from DMS, to be used to attend professional conferences during the course of their enrollment.

For students who are also parents, there is a childcare scholarship available through the Division of Medical Sciences. The Graduate School of Arts and Sciences also provides financial support for expectant parents. Students are not permitted to accept outside employment while they are enrolled in the program. The exception to this rule is serving as a teaching assistant, teaching fellow, or tutor: Students who have successfully passed the Qualifying Exam and have maintained a grade point average of B or better, and have received permission of their advisor, may serve as a teaching assistant. Since SHBT does not have a teaching requirement, students who work as TAs receive financial compensation, usually somewhere between $1,000 to $5,000 per semester, depending on the demands of the course.

Students are encouraged to apply for grants and fellowships as part of their training as graduate students. The Division of Medical Sciences provides staff help to students in locating and applying for possible fellowships.

Harvard Social Activities

Harvard offers several social activities and personal/professional resources for graduate students. For more information, visit our sister program page: Harvard Program in Neuroscience PhD Program.

Student Organizations

SHBT Alumni Association
The purpose of the Speech and Hearing Bioscience and Technology Alumni Association (SHBT-AA) is to create a network of past and current students and facilitate communication among alumni. We organize seminars, lectures, informal meetings, and curate an email listserv (SHBT_alumni@listserv.med.harvard.edu).

Biomedical Graduate Student Organization (BGSO)
Graduate Student Council (GSC)
Harvard Graduate Women in Science and Engineering (HGWISE)
Science in the News (SITN)

Harvard Graduate Student Union: HGSU-UAW
Office of the Provost | Student Unionization
HGSU-UAW website: http://harvardgradunion.org/

Harvard International Office

The HIO is part of the University's Central Administration and offers services to international students and scholars at Harvard College, the graduate and professional schools, as well as the numerous research centers and affiliated teaching hospitals, to minimize the difficulties they may experience both upon arrival and later during their stay at Harvard.

HIO provides information on a wide range of topics, including immigration issues (work permits, travel), financial questions, social and cultural differences, and resources at Harvard and in the community. International students are given the opportunity to participate in Harvard's International Student Host Program, which connects them with Americans living in the Cambridge and Boston areas.

Diversity, Equity, and Inclusion

SHBT is committed to fostering an inclusive environment having a diverse makeup, in which all students, administrators, lab members, researchers, and faculty are treated with dignity, fairness, and equity. Differences strengthen our academic and personal growth, and SHBT will continuously work towards a safe, inclusive environment where we can all respectfully express our unique perspectives and individuality.

We are determining how to best increase diversity in our community and how to provide an environment that fosters a feeling of belonging for everyone, regardless of background or disability, and in which all are able to flourish to their full potential. This will include increasing diversity in the student and faculty body, and providing services to support this initiative.

After defining some short-term and long-term objectives, we will form a task force of students, faculty, and others where objectives will be further clarified to increase diversity and to work towards a healthy environment of equity and inclusion.

We will also be active in contributing to and learning from other groups within Harvard, Boston, and other communities with similar interests. Activities will include workshops, educational activities, mentorship and social gatherings to discuss topics of interest for students and faculty.

Harvard Resources

- **Minority Biomedical Scientists of Harvard.** MBSH is dedicated to promoting diversity and inclusion among life sciences students at Harvard. They offer a variety of community-building and career development events throughout the year; these events bring together graduate students, undergraduates, research assistants and staff at Harvard University and Harvard Medical School.

- **W.E.B. Du Bois Graduate Society.** The oldest diversity group on campus, the W.E.B. Du Bois Graduate Society serves as a forum for GSAS students to deal with concerns about race and ethnicity. It has worked with all minority students over the years, and has expanded its mission to include fostering interactions with Harvard's minority faculty and administrators.

- **HMS Office for Diversity Inclusion and Community Partnership**. The mission of the Office for Diversity Inclusion and Community Partnership (DICP) is to advance diversity inclusion in health, biomedical, behavioral, and STEM fields that builds individual and institutional capacity to achieve excellence, foster innovation, and ensure equity in health locally, nationally, and globally.

- **GSAS Diversity and Inclusion Fellows.** GSAS created two positions for graduate students as Diversity and Inclusion Fellows. The Fellows have the opportunity to make significant contributions to supporting underrepresented students at Harvard, and to participating in recruiting and outreach to underrepresented undergraduates. The program has been so successful that GAS is adding a third Fellow to represent students in the BGLTQ community.

- **Harvard College Office of BGLTQ Student Life.** This office brings together all of the resources available at Harvard for student members of the BGLTQ community. It is a great resource for finding the many student groups that serve the community, as well as finding resources and groups in the greater Boston area.

- **Harvard University Native American Program.** HUNAP is an interfaculty initiative; as such it brings in Native American, Alaska Native, and Native Hawaiian undergraduates, graduate students, and faculty from across the university. Their efforts serve to promote curriculum development on issues relevant

to Native Americans, and to engage the Harvard community in outreach activities that address issues important to Native Americans.

- **Harvard GSAS Latinx Student Association.** The Latinx Student Association draws students from across Harvard. It seeks to build community through academic, social, and cultural events.

Summer Internship Programs offered by HILS

SHBT Committees

Tracking Committee
At the end of each semester, all academic advisors meet as the Tracking Committee to review the academic and research progress of each trainee. It is the responsibility of the Tracking Committee to ensure that each student reaches major Program milestones in a timely fashion.
Chair: Daryush Mehta

Curriculum Committee
The Curriculum Committee reviews and approves changes to courses offered to SHBT students, including the adoption of new courses. The curriculum committee includes student representatives.
Chair: Josh McDermott
Student representatives: Amanda O'Brien, Christine Liu, Rahul Brito

Admissions Committee
The Admission Committee defines criteria for admission and reviews applications sent to the SHBT program. The admission committee includes student representatives.
Chair: Sunil Puria

Social Committee
The Social Committee plans events and activities for all SHBT students that help to build a strong community, coordinating social gatherings such as athletic, recreational, and cultural events. These events are scheduled in coordination with the buddy program. Importantly, the social committee organizes recruitment events during admission weekend.
Members: Gabriel Alberts, Ginnie Hu, Lena O'Flynn, Anna Guo, Anna Frazier, Natalie King-Shaw

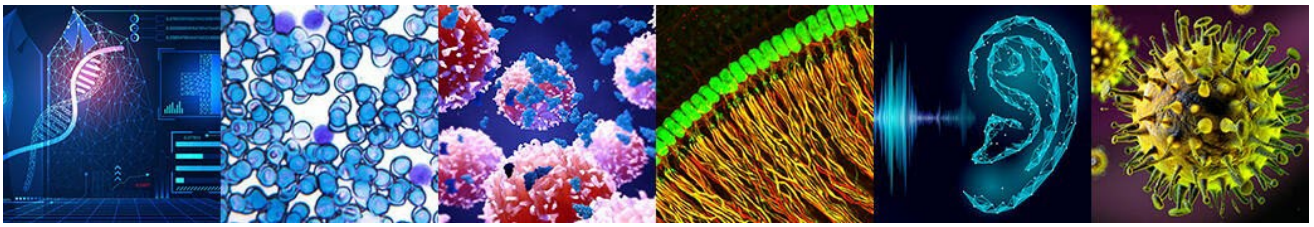
Buddy Program

The SHBT Buddy System pairs incoming G1s with older students who serve as mentors/resources for the G1s throughout their first year. Students in this role are offered Peer Mentoring training via the Harvard Griffin GSAS Office of Student Services social and program-sponsored events throughout the year to help promote community within SHBT and provide students with valuable resources.

Administered by Student Social Committee and Program Administrator

Mental Health Workgroup
The mental health workgroup facilitates conducting the annual graduate student mental health survey, sharing the results with students and faculty, and works on implementing changes to address concerns raised in the survey results.
Student workgroup members: Christine Liu, Victoria Sanchez, Rahul Brito, Ginnie Hu
Faculty workgroup members: Gwenaelle Geleoc, Daryush Mehta, Josh McDermott, Sunil Puria, Sofia Vallila Rohter, Einat Liebenthal

Funding Opportunities



Below is a list of fellowship/grant opportunities to which SHBT students have applied. In the event that a student received the award, an asterisk (*) appears next to the fellowship name. These are not the only fellowship opportunities available to PhD students! Please see Harvard and MIT's graduate student fellowships webpages for other opportunities/guidance.

FOR INTERNATIONAL STUDENTS:

Country/Region	Fellowship	Notes regarding eligibility
Europe	- Boehringer Ingelheim Fonds PhD Fellowship*	- Must be younger than 27
Germany	- DAAD German Exchange Service* - German Academic Scholarship Foundation ERP Fellowship*	
Korea	- Kwanjeong Educational Scholarship*	
Spain	- La Caixa Fellowship*	- must be a Spanish citizen
Switzerland	- Bakala Fellowship*	- must have obtained a degree from a Swiss institution

FOR U.S. CITIZENS and PERMANENT RESIDENTS:

Fellowship	Notes regarding eligibility
American Association of University Women Dissertation Fellowship*	
Department of Defense National Defense Science and Engineering Graduate Fellowship*	
Ford Foundation Fellowship	
Hertz Fellowship	
Howard Hughes Medical Institute Gilliam Fellowships for Advanced Study	
NIH F31*	
NSF Graduate Research Fellowship Program*	- individuals focused on clinical practice are not eligible

Paul and Daisy Soros Fellowship	

FOR POST-DOCTORAL STUDENTS:

Fellowship	Notes regarding eligibility
NIH/NIDCD F32 Research Dissertation Fellowship for Au.D. Audiologists *	- must be a U.S. citizen/permanent resident
NIH F99/K00	- must be a U.S. citizen/permanent resident
NIH K01/K08	

FOR ALL STUDENTS:

Fellowship	Notes regarding eligibility
Acoustical Society of America Raymond H. Stetson Scholarship in Phonetics and Speech Science*	
American Otological Society*	
ASHA New Century Doctoral Scholars*	
Center on the Developing Child Science and	- project must be related to child development
GSAS Summer School Tuition Fellowship*	
Harvard Brain Institute Young Scientist Development Award*	
Harvard GSAS Graduate Student Council	
Harvard GSAS Professional Development Fund*	- all students are extremely likely to receive the funds they request
Harvard Mind Brain Behavior Graduate Student Awards*	- must be an interdisciplinary proposal
Helen Carr Peake Prize*	- must be nominated by faculty - must be doing research at the MEE EPL or MIT
Herchel Smith Fellowship*	- must be nominated by Program Director
International Phonetic Association student award*	
MIT McGovern Institute graduate fellowships*	- must be nominated by faculty - must be doing research in a MIT BCS lab
William Orr Dingwall fellowship*	- must be nominated by department - must be studying neural bases of language

Recipients of SHBT Herchel Smith Fellowship (June 2019)

Other Student Resources

Learn about these resources and more at https://shbtphd.hms.harvard.edu/resources.

Teaching Support

Resources are available to help graduate students learn how to teach, use technology, access accommodations for the classroom, and to become comfortable speaking publicly.

Derek Bok Center for Teaching and Learning. By supporting experimentation, innovation, and evidence-based practices, the Derek Bok Center for Teaching and Learning seeks to create transformational learning experiences for faculty, graduate students, and undergraduates in Harvard's Faculty of Arts and Sciences.

Curriculum Fellows. The CFP works directly with faculty members to bring new energy, creativity, and innovation to graduate and medical coursework and provides teaching and learning resources for all members of the HMS community.

HMS IT has curated a selection of training resources focused on the tools and tasks most common for TAs/TFs.

Disability Access Office. The Disability Access Office serves as the central campus resource for GSAS students with clinically-documented disabilities.

Academic Technology Group The FAS Academic Technology Group provides expert advice, consulting, training, development, andsupport.

Harvard University - Teach Remotely

Harvard Griffin GSAS Fellowship and Writing Center
The Fellowships & Writing Center (FWC) helps GSAS students to heighten the impact of their research. At the FWC, students can work with specialists on their writing and presentational skills, whether in the context of composing a fellowship proposal, working on a dissertation chapter, preparing an article for publication, or refining a conference presentation. Students can come to the FWC for individual consultations, peer workshops, and other programming, including the Writing Oasis, which connects you with small writing groups that meet weekly and are designed to provide community and accountability.

Mignone Center for Career Success (MCS)
The Mignone Center for Career Success (MCS) assists Harvard Griffin GSAS students and alumni in preparing for their professional futures. Through individual advising, workshops, guest speakers, and extensive online resources, OCS provides information about career opportunities within and beyond academia, as well as guidance in the processes of self-assessment, career exploration, and the job search. Mock interviews are also available for students at the interview phase of the job search process.

SHBT Administrative Forms

Click here to access a folder containing 2024–2025 versions of SHBT administrative forms. The latest forms are available at https://shbtphd.hms.harvard.edu/program/forms.