



## **BBS Community Education and Service-Learning Initiative**

Some BBS students/trainees are eager to learn about approaches to community education at the K-12 level or for the general public. Because we value contributions of this nature to education in the broadest sense, we have established the Community Education Initiative, which provides opportunities for BBS students in secondary schools and after school programs in the Boston area. The programs described below are available as volunteer opportunities for HMS students, faculty, postdoctoral fellows, technicians, and staff. These programs are already in place and are enthusiastic about having help from the HMS community. If you are interested in any, please contact the programs directly. The contact information for each program is listed under the program description in alphabetical order.

### **Cambridge School Volunteers (CSV)**

CSV is the private, non-profit agency that recruits, trains, places, and supports volunteers in the Cambridge Public Schools, grades K-12. At the K-5 level, volunteers serve as one-to-one and small group tutors, classroom and library assistants, early math and literacy tutors, and more. After-school homework helpers are always needed at the five middle schools serving students in grades 6 through 8. At the Cambridge Rindge & Latin School (CRLS, the city's public high school), volunteers provide one-to-one tutoring before, during and after-school, as well as classroom assistance, Science Olympiad advising, college planning and essay writing help, and more. At the high school, there is a biotech program, AP Bio and Chem classes, as well as other possibilities like assisting with our College Mentoring program for students, primarily first generation, going through the application process. For over 48 years, volunteers have helped thousands of Cambridge students with almost every subject. Tutors, especially in math and science, are always needed.

Contact Information:

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

[csv@cpsd.us](mailto:csv@cpsd.us)

### **Ed Furshpan and David Potter Native American Education Program**

The Native American High School Summer Program is a three-week summer program for high school students from participating Native communities. Students, teachers, and community representatives come to Harvard Medical School to learn about the science of substance abuse and addiction.

NAHSSP is a collaborative effort among four Native communities and a group at Harvard Medical School. Each group of students is accompanied by two teacher/chaperones from their home community; these adults live in the same residence hall as the students and attend all Program sessions. In this intensive three-week program, students attend lectures, participate in small-group, case-based learning sessions, do homework assignments, and present a final project demonstrating what they have learned and how it might be useful to

their home communities. There are also extracurricular activities designed to enhance group cohesion and reward hard work.

In collaboration with two Native American communities, the goals of the program are: 1) to increase participants' knowledge of STEM disciplines and their relevance to issues in participants' communities via a three week case-based summer course for Native American high school students; 2) to help enhance secondary school STEM education in Native American communities by providing opportunities for curriculum development and classroom enhancement for secondary school teachers in the participating Native American communities; and 3) to familiarize students with the college experience and application process and enhance their readiness for college through workshops, college courses, and internships. The program goals are to encourage students to complete high school and prepare them for college and to also consider degrees in science, technology, engineering, and math.

### **Options for graduate student mentors:**

**Tutorial leader:** works with a subset of students to review, teach, and break down the “Spotted Eagle” case and introduces students to the style of case-based learning. This role meets with students every day for two weeks and requires prep work and meeting with the program directors before and after the program. Total hours- 25

**Graduate Student Mentor:** This program requires a 1:1 mentoring system between graduate students and their assigned high school student. Typically, graduate student mentors will work with their mentee on resumes, personal statements and final projects. They are also asked to attend several meetings before the start of the program. Total hours- 30

**Lecturer:** Graduate students have the option to apply to lecture for the program. Each lecture runs approximately 2 hours per day. Students will have to create content, meet with program directors, and attend a mentor meeting.

Contact: DMS, [dms@hms.harvard.edu](mailto:dms@hms.harvard.edu), 617-432-0157.

### **Health Professions Recruitment and Exposure Program (HPREP)**

Are you interested in teaching high-school students about science in a fun and interactive way or helping plan a high-impact program for adolescents? Then join the Health Professions Recruitment and Exposure Program (HPREP)!

HPREP is an HMS sponsored high school enrichment program organized by graduate, dental, and medical students to recruit Boston-area high schools’ students from underprivileged backgrounds into careers in science and medicine. We have served nearly 300 students from over 60 high schools since 2011. Students participate in nine full-day Saturday sessions from November to February.

Representative curriculum topics:

- Genetics
- Viruses & Vaccines
- Microbiology
- Taking vital signs

- Development
- The nervous system
- Cancer biology
- Sexual health
- Scientific reasoning

Other opportunities we provide for our students:

- One-on-one mentoring to help with essay writing and a final research presentation
- College guidance workshops
- Career fair with professionals from various fields in healthcare and science

How can YOU help?

- Develop and teach a lecture (one-session commitment + practice lectures)
- Mentor a student (weekly commitment)
- Help with volunteer coordination, grant writing, session logistics, and curriculum development as a member of the planning committee
- There are many roles to fill, some with very little time commitment

IF YOU'RE INTERESTED IN LEARNING MORE ABOUT THIS STUDENT-RUN PROGRAM:

Contact us at [HPREP@hms.harvard.edu](mailto:HPREP@hms.harvard.edu) for more details on how to get involved! Visit our website at <http://www.hprep.wordpress.com>

### **Hinton Scholars**

Hinton Scholars AP Biology Program is an after-school enrichment program that provides tutoring to Boston Public Schools (BPS) high school students, particularly underrepresented minority and/or low-income students. The program is designed to enhance understanding of AP Biology concepts, provide laboratory exposure, and increase knowledge about careers in science.

Tutors gain teaching experience by working with a cohort of approximately 8 students from a local Boston Public School (BPS) class who are studying AP Biology throughout the academic year. Materials are provided including the Campbell AP Biology textbook, student study guide and supplementary materials such as electronic slide presentations and animations. Tutors will also communicate and share curriculum resources through a course wiki.

In addition to tutoring the students, tutors will accompany their students into the lab to help facilitate student integration of key biology concepts and principles into the student laboratory experience. Tutors will collaboratively work with AP Biology teachers and lab assistants to develop effective instructional strategies that support student understanding of scientific inquiry in an AP Biology laboratory.

Available positions:

- Tutors

Interested students can visit <https://express.adobe.com/page/acvhoeVNlrJGj/> and click on the Hinton Tutor Job Posting link at the bottom of the page to apply. For more general information on the program, read this website <https://dicp.hms.harvard.edu/dicp-programs/k-12/high-school-programs/ap-biology-hinton-scholars-program>

Interested students should contact [robert\\_simpson@hms.harvard.edu](mailto:robert_simpson@hms.harvard.edu) or 617-432-1557 (office).

### **The Journal of Emerging Investigators (JEI)**

The Journal of Emerging Investigators (JEI) is an open-access journal that publishes original research in the biological and physical sciences written by middle and high school students. JEI provides students, under the guidance of a teacher or advisor, the opportunity to submit and gain feedback on original research and to publish their findings in a peer-reviewed scientific journal. Much of this original work comes from classroom-based projects, science fair projects, or other forms of mentor-supervised research. Our hope is that JEI will serve as an exciting new forum to engage young students in a novel kind of science education that nurtures the development and achievements of young scientists throughout the country.

JEI is a non-profit organization started by graduate students at Harvard University in 2012. Today, the Journal is a widely recognized publication for student authors with a volunteer staff of over 200 graduate students, post-doctoral students, and is managed by a few staff.

Available positions are approximately 6-8 hours per month:

- Associate Editors
- Copy Editors
- Proofing Editors
- Peer Reviewers

We have open positions and accept applications all year. Interested students can visit [https://emerginginvestigators.org/prospective\\_staff](https://emerginginvestigators.org/prospective_staff) and click on the JEI Staff Application link to learn more.

Interested students should contact Scott Soldat-Valenzuela [scott@emerginginvestigators.org](mailto:scott@emerginginvestigators.org)

### **Science Club for Girls (SCFG)**

The Science Club for Girls (SCFG), winner of the 2009 Non-Profit of the Year awarded by the City of Cambridge, is looking for female volunteer-mentors to lead our hands-on science clubs. SCFG's mission is to increase the self-confidence and science literacy of K-12<sup>th</sup> grade girls belonging to groups that are underrepresented in the sciences, through free after school and Saturday programs. Girls work with mentor-scientists who model and foster leadership, affirm college as an expectation, and promote careers in science and technology as goals and options. Volunteers are provided with training, supplies, staff support, and a flexible, hands-on curriculum. Our mentors work in pairs leading 8 to 10 public school girls in fun science and technology experiments. Please join us to make a difference in the futures of these young girls!

**Science Clubs asks BBS volunteers to commit to one of the following options:**

- 2 hours twice a week for 8 weeks per semester plus 1 training week. These 2 hours include prep and planning time.
- 2 hours once a week for both the fall and spring semesters; each semester lasting 8 weeks plus one training week.
- NOTE: In addition to the mentoring, there is a 3–4-hour preservice training for all staff prior to working with the students.

Clubs are held at 4 different schools in Cambridge, with smaller sites in Boston, Newton, and Lawrence. You may choose the days and location which is most convenient for you from our site options. View [www.scienceclubforgirls.org](http://www.scienceclubforgirls.org)., email: [scfg@scienceclubforgirls.org](mailto:scfg@scienceclubforgirls.org).

This year's application will be available on August 30, 2022.

### **Science in the News (SITN)**

Science in the News (SITN) is a graduate student organization at Harvard with a goal that is two-fold: (1) to bridge the communication gap between scientists and non-scientists, and (2) to effectively train the next generation of scientists to be able to communicate their research and engage with people of all backgrounds. SITN is the largest student-run science outreach group at Harvard, providing the community with over 30 events per year including a Fall and Spring lecture series, science cafes called Science by the Pint, various school outreach events, regular publication of articles on our online blog, and various social media engagement events. In 2015, we produced a day-long science conference for the general public called DayCon, which now regularly gathers more than 70 members of the public each year. In Fall 2015, we launched our monthly podcast series entitled "SIT'N Listen" exploring topics ranging from GMOs, allergies, and women in science. Each of our events is entirely prepared and executed by graduate students and covers topics spanning most scientific fields. Our model of peer-to-peer feedback, in conjunction with our large-scale engagement of members of the public, allows graduate students to evaluate and hone broad communication skills. There are many ways to be involved with SITN:

**Long and short form blog** - volunteers work with a managing editor and a graphics designer to write blog posts highlighting various scientific topics of interest to the general public, and/or communicating new research findings in an accessible manner. In particular, managing editors are experienced volunteers who help mentor and guide new writers through the process of writing a blog post for SITN. Writing commitments are usually month/semester-long commitments, as it can take time to draft and edit a writing piece. The number of hours per week/month, however, are variable.

**Seminar series** - volunteers work with initiative leaders to give a talk on their current research to the general public. Although most volunteers only give one talk per semester, more time is involved in preparing a talk and practicing the talk with other members of the seminar series. In addition, volunteers who have previously given a seminar series talk regularly serve as mentors for upcoming seminar series talks as well. Therefore, the overall commitment for a semester probably amounts to at least a month/semester.

**Podcast** - volunteers work with initiative leaders to record and edit a podcast. Volunteers (for example, for the Pint-Sized Science podcast) are trained by initiative leaders on how to conduct interviews with researchers about their work that will be accessible to the general public. Volunteers are then responsible for contacting faculty and conducting interviews. Furthermore, with the mentorship of initiative leaders, volunteers work to edit their interview into a podcast episode. Volunteers typically will produce one podcast episode per

semester. Due to both the time spent on content creation as well as editing, the podcast-making process typically takes several months or the full semester.

Contact the current co-directors at [sitnboston@gmail.com](mailto:sitnboston@gmail.com) or SITNBoston.com to get involved today!

### **Summer Honors Undergraduate Research Program (SHURP)**

SHURP is a ten-week summer program offered by the Division of Medical Sciences at Harvard Medical School and the Graduate School of Arts and Sciences. It seeks to provide underrepresented minority college students an opportunity to gain training and mentorship in scientific research.

Undergraduate Participants will:

- Conduct 10 weeks of paid, scholarly research under the guidance of a faculty or research mentor
- Attend professional development workshops and research discussions
- Meet with peer mentors
- Present at the Leadership Alliance National Symposium
- Gain a professional network of mentors and SHURPers

If you are interested in this opportunity, please reach out to the SHURP program co-directors at [shurp@hms.harvard.edu](mailto:shurp@hms.harvard.edu) to express their interest between January to mid-April prior to the start of the program.

#### **SHURP Graduate Student Mentor Position:**

A graduate student fully mentors a student by:

Developing project for the summer: 5 hours

Prepare to discuss expectations with students for the summer: 1-2 hours

Gathering literature and background material for SHURP mentee: ~3 hours

Discussing literature or research project with student: 40 hours (~4 hours/week)

Teaching student lab techniques and supervision/guidance: 20 (2 hrs/week)

Planning experiments: 10-20 hours (2 hrs/week)

Overseeing and providing guidance to student for presentations: 10 hrs (~1 hr/week)

### **Wellesley Biochemistry Winter Session Research Week**

This program is an intensive introduction to research for first-year undergraduate students at Wellesley College. Many of the students who participate in our program are members of underserved communities and have not had access to good lab-based science classes in high school. We aim to provide a low-stakes, fun research experience where students can build confidence and skills in the lab outside of the normal semester instructional structure.

**Curriculum:** The curriculum consists of a protein purification and study of enzymatic properties. No advanced knowledge is needed for either curriculum and all training will be provided.

**Responsibilities:** This year's bootcamp is scheduled tentatively for January 11-13 and 17-20. There's also a welcome gathering in late December and two training sessions in early January. Your primary responsibility will be to help your mentees with their experiments. Each mentor will be paired with 2 students, and at the

end of the program, students will present their work to their peers and Wellesley faculty. Throughout the week you'll also be asked to give a short chalk talk on your research, a teaching talk from our curriculum, and an informal talk about your path to science.

**Mentors:** Since many of our students are from underserved backgrounds, we're really hoping to recruit graduate student mentors who have had similar paths to science. A lot of the students are first gen, minorities, and many of them identify as women, so we would love to recruit mentors with these aspects in common. If you don't fall into any of these groups but are passionate about mentoring or teaching at a liberal arts college, please do apply as well.

**Location:** We are hoping to return to an in-person Winter session this year. Wellesley College is a historically women's liberal arts college located in Wellesley, MA, 12 miles from Boston and accessible on the commuter rail.

**If interested, please contact Yuming Cao ([Yuming.cao@umassmed.edu](mailto:Yuming.cao@umassmed.edu)) for more information. We will be sending out an application form in early September.**