Harvard Graduate School of Arts and Sciences (GSAS) offers life sciences PhDs in 13 areas of study across 3 Harvard faculties—Harvard Faculty of Arts and Sciences, Harvard T. H. Chan School of Public Health, and Harvard Medical School. HILS programs offer students a diverse range of options to find the best fit in regards to subject area, program structure, and size. While there is a lot to choose from, the fact that each program has its own identity allows students and faculty to be integrated into supportive communities while also being able to take advantage of all that Harvard has to offer. Visit gsas.harvard.edu/HILS to learn more.
Studying the Life Sciences at Harvard

GSAS provides exceptional opportunities for study across the breadth and depth of the life sciences through the Harvard Integrated Life Sciences (HILS) alliance. Whether you are interested in conducting research on virus structures at the atomic level or on environmental impact in large ecosystems, you will find a good fit for your academic goals in one of HILS’s 13 life sciences PhD programs.

What HILS Offers

The HILS alliance promotes interdisciplinary academic and research collaboration and builds community among students, faculty, and staff through programming across research areas, PhD programs, departments, and schools. As a HILS student, you will have access to University-wide training resources and facilities, and more than 800 affiliated faculty. HILS offers flexibility, including options to take courses, do laboratory rotations, and even choose a dissertation advisor from across HILS, subject to specific program requirements and lab availability. However you customize your training, HILS is with you every step of the way.
Let’s say you go to the gym and lift weights. The strain creates microtears in muscles that signal to a wide variety of cell types, including immune cells, motor neurons, and satellite cells that play a role in muscle regeneration. But what are those signals? Where do they come from? And what is their vehicle? Those are some of the questions that GSAS student Anita Reddy and her colleagues in the lab of Harvard Medical School Assistant Professor Edward Chouchani wanted to investigate.

“We found that, during exercise, the metabolite succinate is selectively released from exercising muscles,” Reddy says. “It signals to non-muscle cells—specifically stromal cells—that play an important role in muscle repair. When succinate is released, there is an increase in the muscle motor neurons and the strength of mice in our experiments. That’s really important because increased muscle innervation leads to increased strength—and increased strength helps with the prevention of arthritis and bone fractures.”

The daughter of Indian immigrants, Reddy says she chose GSAS because she wanted to work with brilliant people at facilities as good as any in higher education. As a student of color, she also wanted to be part of a community in which she felt she belonged. Fortunately, Reddy says she’s found both at GSAS.

“We can run some experiments in a day that might take a month at other institutions,” she says. “And as a member of the Minority Biomedical Scientists of Harvard group, I’ve found people that I can really look up to and confide in as well, even about non-lab-related things.”
Are Harvard Life Sciences Right for You?

We are looking for creative people from a variety of backgrounds who are passionate about the life sciences, who have enjoyed a previous research experience and are ready to dedicate time to identifying and investigating new ideas. If this describes you, we encourage you to explore the cutting-edge science and training opportunities in the HILS programs and apply.

A Diverse Scholarly Community

Different points of view are critical to life sciences research, where advancing knowledge often requires bringing a new perspective or approach to a problem. At GSAS, we strive to create an inclusive community where all students can thrive and grow academically and personally. The School is proud of its diverse community representing many races, ethnicities, belief systems, nationalities, abilities, socioeconomic statuses, genders, and sexual orientations and welcomes applications from individuals from underrepresented or disadvantaged backgrounds.

Visit gsas.harvard.edu/diversity to learn more or contact the GSAS Office of Equity, Diversity, Inclusion & Belonging at minrec@fas.harvard.edu or 617-495-5315.
GSAS student Harry Won is taking aim at tuberculosis (TB), an infectious disease that sickens and kills millions around the world every year. Using targeted protein degradation (TPD), a relatively new way of treating disease, Won and his colleagues at the lab of Harvard T.H. Chan School of Public Health Professor Eric Rubin are trying to engineer a drug molecule that would target and destroy the proteins that TB cells need to survive.

"Imagine an old pocket watch," Won says. "If you took the mainspring and totally destroyed it, the machine would stop. In the same way, if we can degrade the proteins that TB cells need to live using TPD, that would hopefully kill the bacterial cell and stop the disease.

Won credits his mentor, Rubin, and his colleagues at GSAS for helping advance his research on TB and for enabling him to look at careers beyond academia. After graduation, Won hopes to join a venture capital firm and use his scientific training to advise companies developing breakthrough therapeutics.

"My graduate training at Harvard has given me the skills to be a bacterial geneticist," he says. "At the most fundamental level, though, it’s taught me how to ask good questions and find the answers. Along the way, the people of GSAS have given me every tool and resource I need for success and have made me feel I belong, even far away from home. Now, I think the best way to use these gifts is to pursue those questions which repair our world. For me, that lies in the process of developing new treatments for devastating diseases."
Why Choose Harvard?

Harvard and GSAS Support Your Academic and Scholarly Goals

PhD students are guaranteed full financial support, including stipends and grants for tuition and health insurance. In addition, GSAS resources to support your growth as a scholar and a scientist include:

• Exceptional breadth of cutting-edge research, access to state-of-the-art facilities, and the opportunity to learn from and work with faculty at the forefront of their fields;

• Professional development assistance for enhancing writing, research, and teaching skills and for planning academic and nonacademic career paths;

• Access to a large, vibrant, and diverse alumni network for mentorship, career exploration, and social, cultural, and intellectual engagement;

• Connection to Boston’s scientific hub, where students in HILS programs are well-positioned to network with colleagues at other local institutions, such as MIT, and interact with scientists at any of the more than 1,000 life sciences and biotech companies based in the Greater Boston area.
SCHOOL OF LIFE

The daughter of Ghanaian immigrants, Lisa Awaitey learns from biological processes with the aim of building synthetic models that mimic them. The PhD student in chemistry and chemical biology focuses on nitrogenases, the class of enzymes that enables nitrogen to transform into ammonia.

In nature, this change takes place at an ambient temperature. The industrial production of ammonia, on the other hand, takes enormous amounts of energy, heat, and pressure that leave a large carbon footprint. To study the biological reaction more closely, researchers must build a synthetic model. And to do that, they need to know more about metal hydrides—materials that consist of metals like iron bonded to hydrogen. That’s where Awaitey’s research comes in.

“For nitrogenase to spur the reaction to ammonia, a metal hydride must be formed,” she says. “The same thing applies to the industrial process. That means that there’s something special about metal hydrides in the transformation from nitrogen to ammonia. I want to know what that is.”

Awaitey says she chose GSAS because she knew that the School and her advisor, Professor Ted Betley, would be committed to advancing the careers of underrepresented minorities in science. At Harvard, she’s not only found brilliant people and outstanding facilities, but also a community that enables her to succeed.

“Ted is incredibly supportive of my research and my career,” she says. “Along with my advising relationship, the programs and people of the GSAS Office of Equity, Diversity, Inclusion & Belonging have allowed me to meet people trying to achieve the same things academically that I am and to build a network of friends and colleagues that help me to thrive.”
Why Choose Harvard?

Harvard and GSAS Support Your Personal Growth and Well-Being

In addition to access to unparalleled facilities, faculty, and academic resources at Harvard, GSAS supports your physical, social, and mental well-being through resources including:

• Health and wellness services, such as comprehensive health care and a range of resources promoting physical and mental wellness;

• A community of inclusion fostered by GSAS and supported in part by GSAS Office of Equity, Diversity, Inclusion & Belonging and the Disability Access Office;

• Opportunities to connect with a community of students who share common interests and goals through graduate student groups such as GSAS Minority Biomedical Scientists of Harvard, Harvard Graduate Women in Science and Engineering, GSAS Harvard Biotechnology Club, and more;

• The GSAS Student Center, where students and faculty from multiple disciplines interact with one another and participate in activities such as dinners, discussion groups, language tables, dances, concerts, ski trips, and other outings.
How to Apply

Interested students should visit gsas.harvard.edu/hils to identify the program that best suits their interests and learn more about the application process. HILS programs offer students a diverse range of options to find the best fit with regards to subject area, curriculum, and size. In order to choose the program that best suits your needs and interests, carefully consider your own preferences in terms of research subject, educational programming, and learning environment. You can visit the individual program websites and compare each program’s offerings and requirements.

Choosing where to go to graduate school is an important decision. One of the benefits of applying to study at Harvard is the ability to truly explore the scope of the life sciences by expressing interest in more than one area. This informed flexibility enables you to apply to more than one HILS program or area of study for a single application fee.

All HILS programs strive for inclusive excellence, based on the belief that diversity in every dimension makes our programs stronger. While each program has its own admissions requirements and committee, all HILS programs take an integrated look at each application, holistically evaluating all aspects of the application rather than relying on any single factor to determine admission.

If you decide that graduate study in one of the HILS PhD programs is for you, review the specific application requirements for your program of interest and then visit gsas.harvard.edu/apply to apply.
For More Information about Harvard Integrated Life Sciences:

PROGRAMS gsas.harvard.edu/hils
APPLY gsas.harvard.edu/apply
DIVERSITY gsas.harvard.edu/diversity

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