

FirstHand

2022 Impact Report



FirstHand offers free year-round supplemental STEM learning for middle and high school students. Our curriculum is designed to provide skills-based career exposure through real-world, hands-on experience. Our FirstHand Lab connects students from surrounding neighborhoods to the entrepreneurial and innovation ecosystem in Philadelphia.



"FirstHand helped me learn different perspectives about different types of science and helped open up new ideas for me"
AISHA, 8TH GRADER



paid internships



"Speaking and working with STEM professionals has helped me be able to have an idea of what working as a scientist in the future would be like. I was able to ask a variety of questions and learn information that I did not know before."
ZIGGY, 9TH GRADER

mentor companies include:



11 SCHOOL PARTNERS

- Alain Locke Elementary
- Belmont Charter Middle School
- KIPP West Philadelphia Preparatory Charter
- James Rhoads Elementary
- S. Weir Mitchell Elementary
- John F. McCloskey Elementary
- Martha Washington Elementary
- Science Leadership Academy Middle School
- William C. Longstreth Elementary
- Young Scholars Charter
- Paul Robeson High School

**Plus high school students from 19 other schools*



new curricula launched

Cybersecurity | UX Design | Designing with Bio



Working with FirstHand students is always eye opening. Something that might seem monotonous to me after years of working with it might be incredible to a student. Their excitement and interest can often ignite that spark back in the mentors.

- **SHELBY BROWN**
CENTURY THERAPEUTICS

UNIVERSITY CITY SCIENCE CENTER <> FIRSHAND

FirstHand is an initiative of the Science Center, a mission-driven 501(c)(3) non-profit and Philadelphia's premier catalyst of entrepreneurial activity, healthcare innovation, and economic growth. Beyond providing best-in-class startup support, we recognize that the success of Philadelphia's growing life sciences industry hinges on our collective ability to grow and diversify the STEM talent pipeline.

CURRICULUM

MIDDLE SCHOOL

POLYMER PLAY

Create, test, and design biodegradable polymers while gaining an understanding of what it really means to be a materials scientist.

DNA SELFIE

Understand the structure and many functions of DNA through microscopy and gel electrophoresis, the same technologies that biotechnology companies use every day.

BIOMAKE

Create genetically modified organisms (GMOs) and then design, bake, and market a snack utilizing the GMOs. Developed in collaboration with Penn researchers.

HEALTH HACKERS

An introduction to coding and app development through an empathy-based design lens. Co-developed with Children's Hospital of Philadelphia computer scientists.

STEM IN THE REAL WORLD

"When would I ever use this in real life?!" - a question often asked by students. This program explores real-life applications of science.

HI-5

Five days, five STEM career paths. Hi-5 highlights careers in microscopy, material science, taste and smell research, and more. FirstHand alumni serve as mentors by helping to develop student activities and supporting facilitation of the sessions.

HIGH SCHOOL

BIODESIGN CHALLENGE

Students develop projects and submit to the Biodesign Challenge, an international competition that encourages the exploration of biotech's entanglements within society. A collaboration with Berlin-based AULA Future.

SPRINTS

6-8 week curricula that are co-designed and co-delivered by the mentors and the FirstHand team to reflect the skills and topics of the emerging industry while centering the needs of Philadelphia students. Sprints include UX Design, Cybersecurity with the Navy, Designing with Bio with AULA Future, Biotechnology with uCity Square-based companies, and Entrepreneurship with NFTE.

PAID INTERNSHIPS

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FirstHand alumni participate in a variety of paid internships including biotechnology with Cabaletta Bio, marketing and design with Cohere, UX Design with RightOn Education, and even opportunities with FirstHand to help develop and implement future STEM programming.

MAJOR FUNDERS

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2022 MILESTONES

PASmart Grant

A \$500K grant through an initiative created by Governor Wolf was awarded to pilot industry-relevant sprints with more high school students, credentialing, and internships with regional STEM partners.

Office of Naval Research Grant

A 3-year, \$600K grant was awarded to expand curricula to include naval-relevant themes for middle school students, focused on e-textiles and wearable technologies.

Biodesign Challenge Winners

The FirstHand high school team, Sista-sis Biodoula Services, took home the Social Critique Prize at the International Biodesign Challenge.

Return to In-Person Classes

Students returned to the FirstHand lab for in-person classes after a 2+ year hiatus during the pandemic. As of fall 2022, all classes have been in-person.

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