"The Homeland Security Startup Studio team has to be one of the most proactive, supportive, and intentional teams I've ever worked with"
- HSSS21 Entrepreneur
Program Goal

Identify, accelerate and deliver commercial applications of technologies from US laboratories and research centers to raise awareness of the Department of Homeland Security's mission.
As the research, development, test, and evaluation arm of the Department of Homeland Security (DHS), the Science and Technology Directorate (S&T) ensures that the Department has the capabilities to secure our nation in the face of natural and human-caused threats.

S&T leverages a broad network of partners in its mission to deliver effective and innovative insight, methods, and solutions for homeland security challenges. S&T’s Office of Industry Partnerships offers a variety of tools and mechanisms like the Homeland Security Startup Studio that allow S&T to partner with the private sector to develop and deliver technology solutions that meet the needs of homeland security end users.
Homeland Security Startup Studio
Program Snapshot

The Homeland Security Startup Studio
Approach

The twelve-week first phase of the Homeland Security Startup Studio kicked off in April 2021. 30 entrepreneurs formed ten teams based on their unique backgrounds. The second phase lasted six weeks, culminating in “Converge” a virtual demo day hosted by DHS S&T.

Phase I
Customer Discovery
Understand technology
Identify potential use cases
Explore potential for commercialization

Phase II
Company Formation
Establish Objectives and Key Results (OKRs)
Determine pathway for securing IP
Identify funding opportunities

"Bootcamp" - A Virtual Kickoff
10 teams in Phase I and 5 teams Phase II
Preliminary Pitches
"Converge" - A Virtual Demo Day
2 Audience Choice Finalists
Cohort Snapshot
10 Teams

Companies Formed
As of September 2021

Discontinued

Teams continuing to develop solutions

4 teams

5 teams

1 team

Reasons for discontinuation from program:

- Team disbanded
- Immaturity of technology
- Market competition too strong
- Technology better suited for larger company
Eight Lab Partners Represented

10 Handpicked Technologies

The Homeland Security Startup Studio is a diverse, location-agnostic, open call for any U.S. entrepreneur seeking to build their next venture around a technology from one of our federal or university lab partners.
Overall Program Metrics

275+ customer discovery interviews to date

Overall Experience

Phase 1

4.6
Average score out of 5 on overall cohort experience

Phase 2

4.5
Average score out of 5 on overall cohort experience

4 Companies Incorporated as of September 2021
Team Demographics

Highest Level of Education

- PhDs & MBAs: 23%
- Bachelors: 34%
- Masters: 30%
- JD: 8%
- Other Graduate Degree: 5%

Gender

- Female: 20%
- Male: 73%
- Prefer not say: 7%

Race

- Caucasian: 37%
- Asian/Pacific Islander: 23%
- Black or African American: 15%
- Hispanic/Latino: 10%
- Multiracial: 5%
- Other: 10%
Phase I Pitch Day
10 June 2021

8 of the 10 teams were judged by a panel of experts on their problem-solution fit, market and competitor analysis, team/founder aptitude, technology plan and go-to-market plan.

Judges

Sarah Mahmood
Technical Director
DHS S&T

Benjamin Henry
Technology Scout
DHS S&T

Mark Dadgar
VP of Product
Explorers' Lab

Don Woodbury
Director, Innovation and Partnerships
University of Maryland

Lex McCusker
Director of Student Entrepreneurship Programs at George Washington University

Bob Oros
President
Business Development Resources, Inc.
Phase II Participants

Charisma Cyber

Charisma Cyber's vulnerability prioritization tool uses machine learning to think like a world-class hacker penetrating your enterprise network. Its insights supercharge the efficiency of your IT team by telling you which vulnerabilities to resolve first. Using trusted open source data, the tool links vulnerabilities across multiple nodes to identify previously unknown attack paths, allowing you to focus on running your business.

charismacyber.com

Hawk NQR Detection Systems

Nuclear quadrupole resonance (NQR) is a radio frequency spectroscopic technique that can be used to detect solid-state compounds containing quadrupolar nuclei, a characteristic of most high explosives and narcotics. NQR works by applying an external electrical field which is easy to generate thereby making our device considerably more portable than any magnetic technology equivalent.

hawknqrsystems.com
Phase II Participants (Cont.)

Axle
Axle is building an API that allows organizations to securely monitor and upgrade commercial, industrial, and military vehicles. The competitive advantage of Axle is that it is original equipment manufacturer (OEM) agnostic, does not require extra hardware, and is a universal, secure API. Axle allows users to improve vehicle uptime, upgrade vehicle capabilities, and secure critical vehicle functions. It does this by letting users connect to almost any vehicle enabling access to aftermarket hardware.

axleapi.com

Electrum Smart Alerts (ESA)
Electrum Smart Alerts (ESA) relies on technology focused on night time facial recognition. This technology has been developed with hardware that allows our system to be deployed in a small, all-in-one, easy-to-use package that is deployable on any roadside. Our technology will give the authorities real time updates when a possible missing child or adult is identified. Allowing users to act instantly gives authorities the best chance for a positive outcome.

esaunlimited.com

Dynasec
Cyber attacks are increasing by the day, in spite of existing technologies to protect IT infrastructure. Infrastructure is static and vulnerable to hackers, with repeated attempts to breach security. By randomly rotating user access requests between servers, Dynasec's technology adopts the 'moving target defense' mechanism to make infrastructure access dynamic, thereby forcing hackers to repeat attempts to breach the security.

dynasec.co
## Converge: Final Demo Day Metrics

<table>
<thead>
<tr>
<th>Event Registrations</th>
<th>429</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Attendees</td>
<td>191</td>
</tr>
<tr>
<td>Audience Questions</td>
<td>69</td>
</tr>
<tr>
<td>Audience submitted</td>
<td>81%</td>
</tr>
<tr>
<td>Team Founders are</td>
<td></td>
</tr>
<tr>
<td>Women or BIPOC</td>
<td></td>
</tr>
</tbody>
</table>
Converge Attendees

By Affiliation
- Federal Employee: 21%
- Industry: 28%
- Academia: 12%
- Investor: 5%
- General: 34%

By Region
- Northeast: 8%
- Southeast: 21%
- West: 19%
- Midwest: 10%
- DMV: 31%
- International: 2%
- NA: 9%
Converge Keynote Speaker

Kathryn Coulter Mitchell
DHS Senior Official Performing the Duties of the Under Secretary for Science and Technology (S&T)

"We in government need to act more like venture capitalists in delivering security technologies to the front line. This is a significant change for government agencies, but I'm proud to say that we're making significant progress."
Converge Audience Choice Winners

26 August 2021

The culminating event of the Homeland Security Startup Studio 2021 cohort produced 2 audience choice finalists.

Charisma Cyber

Hawk NQR Detection Systems
As of September 2021

SBIR Sprint Support

2 teams
Participating in FedTech Small Business Innovation Research (SBIR) training and actively applying for DoD SBIR awards

Funds to Support Winning Teams

$1500
Audience choice teams awarded $1500 in advisory services to support their new company
About FedTech

FedTech is a venture builder that thrives at the intersection of U.S. entrepreneurship, breakthrough technologies, and mission-driven organizations. Since 2015, we have been driving forward deep tech ventures across NASA, DoD, DoE, universities, and federal labs. Through our startup studios, accelerators, internal innovation curriculum, and corporate venture programs, we work with individuals, companies, and government agencies to stay ahead of the curve of innovation.
Contact Us

Kalpana Reddy, Branch Chief of Technology Transfer & Commercialization, DHS S&T
kalpana.reddy@hq.dhs.gov

Jake Kramer
Managing Partner, FedTech
jake.kramer@fedtech.io

Robyn Brazzil
Director, FedTech
robyn.brazzil@fedtech.io