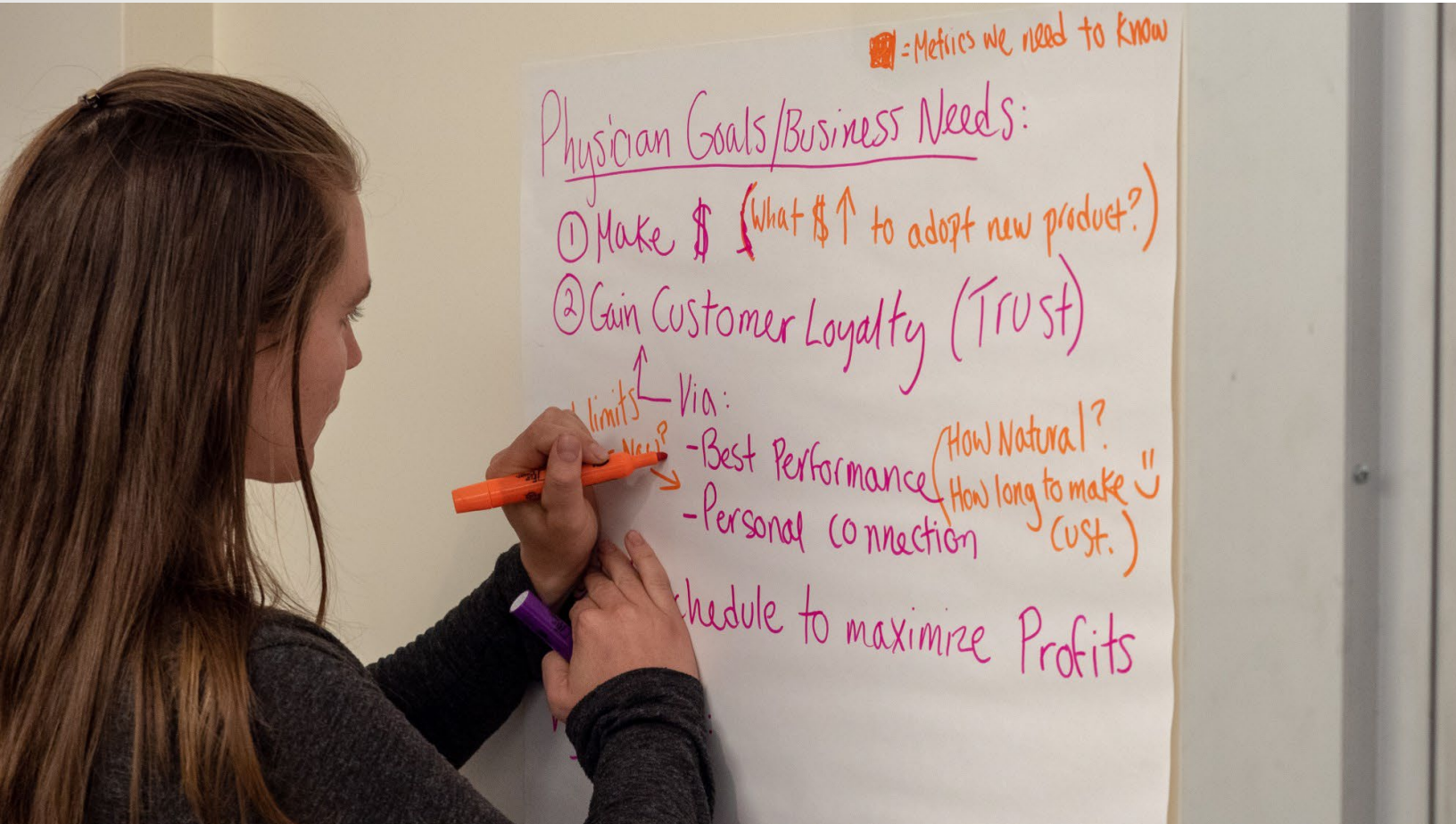




ASSOCIATION OF
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University of Colorado
Boulder



CECE

INNOVATION AND ECONOMIC PROSPERITY UNIVERSITIES
AWARDS PROGRAM

CASE
STUDY
2021

IEP CATEGORY – INNOVATION

University of Colorado Boulder: PHAST

ABOUT THE PANDEMIC HYPER-ACCELERATOR FOR SCIENCE AND TECHNOLOGY - PHAST

The Pandemic Hyper-Accelerator for Science and Technology (PHAST) rapidly translates the most urgently needed COVID-19 solutions from lab to market. PHAST is a 34-week accelerator that fuels innovation and drives economic growth by bringing together leading technologists, entrepreneurs, and startup resources to commercialize COVID-19 solutions developed at CU Boulder.

PHAST is an award to CU Boulder from the US Economic Development Administration (EDA). The EDA's SPRINT Challenge, "addresses the economic, health, and safety risks caused by the coronavirus pandemic through regional innovation and supporting the growth of scalable, technology-driven businesses. This national competition was designed to support the development, creation, or expansion of programs that accelerate technology-based economic development and respond to the challenges caused by the coronavirus pandemic."



Darwin Biosciences CEO Nick Myerson examines samples while performing a rapid, saliva-based SARS-CoV-2 diagnostic he co-invented at CU Boulder

BARRIERS BETWEEN UNIVERSITY INNOVATION AND PANDEMIC NEEDS

Universities are a source of technology leadership and science-based innovation. At the same time, university generated startup companies attempting to commercialize innovation can struggle to obtain early-stage capital between 1) basic research funding and 2) readiness for private capital. During this same period, university startups often lack experienced executive leadership and face difficulty in attracting executive talent. These barriers result in many university startups taking years to attract the capital and management talent to effectively launch. In some cases, university startups languish and never launch at all. The resulting delays limit economic growth and are even more damaging during the COVID-19 pandemic. Rapid and successful commercialization of university innovations is desperately needed to overcome the health and safety challenges of COVID-19 and accelerate economic recovery. Scientists and engineers at CU Boulder have developed COVID-19 solutions that include:

- Vaccines
- Therapeutics

- Diagnostics
- Environmental sensors
- Air decontaminants
- Supply chain innovations
- Contact tracing

These technologies require entrepreneurial support and acceleration to rapidly be brought to market and meet the urgent needs related to the pandemic.

PHAST CONNECTS UNIVERSITY OF COLORADO BOULDER INNOVATION TO PANDEMIC NEEDS

PHAST is one of 44 SPRINT Challenge awards (from a pool of 238 total applicants) and launched in April of 2021. Through the PHAST program, early-stage startups commercializing technologies to combat COVID-19 will advance through a rigorous 34-week curriculum (May 2021 through January 2022) to drive technologies to commercialization. PHAST merges community assets from CU Boulder, Rockies Venture Club (Colorado’s angel investment network), the Pandemic Impact Fund (a Denver-based \$100M venture capital fund investing in innovative companies addressing the impact of pandemics), and Colorado’s deep pool of startup mentors. Venture Partners at CU Boulder manages and funds intellectual property (IP) during the program, and licenses IP to PHAST startups under Venture Partners’ startup-friendly Licensing with EASE® program. In addition to workshops on pandemic commercialization, company incorporation, and FDA regulation, PHAST has two core components: Entrepreneurs in Residence, and the Pandemic Hyper-Accelerator.

Entrepreneurs in Residence (EIRs) coach PHAST startups from concept and research phase to commercialization and investment readiness. Coaching centers on market research, beachhead market identification, customer interviews, competitive landscape analysis, identification of early stage capital, and development of a commercialization plan or business model canvas. EIRs are excellent candidates to formally join and/or invest in PHAST startups after program completion.

Designed and delivered in partnership with Rockies Venture Club, the Hyper-Accelerator grows ventures addressing the direct and indirect social, health, business, education, and economic impacts of COVID-19. This 6-day immersive experience has nine units, with the startups completing deliverables for each unit:

1. Pitch Academy
2. Exit Strategy
3. Business Planning and Strategy

4. Due Diligence
5. Legal
6. Go-to-Market
7. Financial Pro Forma and Capital Strategy
8. Term Sheets
9. Valuation

In a program-culminating Demo Day, participants present their ventures to the investment community.

Graduating PHAST Startups are poised to leverage regional innovation assets. Prospective PHAST startups have been invited to pitch for early-stage capital by both the Pandemic Impact Fund and Buff Venture Fund. The Buff Venture Fund is an impact venture fund investing in deep tech companies affiliated with CU Boulder. Graduating PHAST startups are also eligible candidates for Early-Stage Capital Retention Grants from the Office of Economic Development and International Trade. Lastly, PHAST Startups will be ideal candidates for Destination Startup®, the annual investor event for technology-based startups in the Mountain-West region (See Destination Startup Case Study for more info)

PHAST'S EARLY IMPACT SECURING FUNDING AND IDENTIFYING COVID-19 INNOVATIONS

The PHAST model to accelerate pandemic innovation was validated through a \$500,000 grant to CU Boulder from EDA, \$125,000 in matching funds from CU Boulder, and another \$250,000 allocated from the Colorado Office of Economic Development and International Trade. Within days of PHAST's April 2021 launch, many eligible pandemic innovations were identified. Examples are shown in [Table 1](#) and exemplify the multi-disciplinary and solution-focused nature of the technologies CU Boulder is developing to help combat COVID-19 and its related challenges. CU Boulder anticipates that 10-12 new ventures will graduate from PHAST by January 2022. PHAST is managed by Venture Partners at CU Boulder, which is responsible for the tracking of the following core metrics:

- new pandemic inventions
- new patent filings
- startups formed
- EIR-startup pairings
- startup capital raised
- jobs created

- products launched.

PHAST PARTICIPATION SPOTLIGHT: HUG SOLUTIONS

As part of their capstone senior design project, several CU Boulder undergraduate engineering students created a portable device for transport of COVID-19 vaccines. The students founded the startup HUG Solutions to commercialize their product “PortaVax” and have gained early traction, winning first prize at CU Boulder’s 2021 New Venture Challenge. PortaVax is specifically designed to maintain the exceptionally cold temperatures required for mRNA vaccines (Pfizer’s requires -70°C) to facilitate transit and distribution in rural areas where cold-chain resources are limited. Participation in PHAST will enable HUG Solutions to continue advancing PortaVax toward clinical deployment, while providing these students with unique opportunities to work closely with Colorado’s leading EIRs, investors, and entrepreneurship educators. PHAST provides commercialization resources so that innovations like PortaVax have every opportunity to reach the market and yield economic and positive social impact.

LINKS TO FURTHER INFORMATION

Figures:

- [Table 1. CU Boulder Pandemic Technologies Supported by the Pandemic Hyper-Accelerator for Science and Technology](#)

Articles:

- [CU Boulder launches accelerator for university-developed COVID-19 innovations](#)
- [University of Colorado Students Develop, Test ‘Porta Vax’ To Keep COVID Vaccines At Cold Storage Levels](#)

Partners/Assets to PHAST:

- [SPRINT Challenge](#)
 - [EDA announcement of award to CU Boulder](#)
- [Rockies Venture Club](#)
- [Venture Partners at CU Boulder](#)
- [Pandemic Impact Fund](#)
- [Licensing with EASE program](#)
- [Hyper Accelerator](#)
- [Buff Venture Fund](#)
- [Early-Stage Capital Retention Grants](#)

ABOUT APLU

The Association of Public and Land-grant Universities (APLU) is North America's oldest higher education association. APLU is a research, policy, and advocacy organization dedicated to strengthening and advancing the work of public universities in the U.S., Canada, and Mexico. The association's membership consists of public research universities, land-grant institutions, state university systems, and affiliated organizations.

APLU's mission is to: expand access and improve student success to deliver the innovative workforce of tomorrow; advance and promote research and discovery to improve society, foster economic growth, and address global challenges; and build healthy, prosperous, equitable, and vibrant communities locally and globally.

Based in Washington, DC, the association's work is furthered by an active and effective advocacy arm that works with Congress and the administration as well as the media to advance federal policies that strengthen public universities and benefit the students they serve.

ABOUT THE IEP UNIVERSITIES PROGRAM

APLU and its **Commission on Economic and Community Engagement (CECE)** established the Innovation and Economic Prosperity (IEP) Universities Program to help higher education institutions codify, elevate, and advance their campus enterprise supporting economic and community development.

The **IEP designation program** recognizes institutions that have demonstrated a meaningful, ongoing and substantial commitment to economic and community development, growth, and economic opportunity.

The **IEP awards program** recognize exemplary and innovative projects in university-based economic and community engagement:

- **Talent** and workforce development
- **Innovation**, entrepreneurship, and tech-based economic development
- **Place** development through public service, outreach, and community engagement

Learn more at: www.APLU.org/IEP

