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Environmental and
Energy Study Institute

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CONGRESSIONAL BRIEFING

How Start-Up Accelerators Can Drive Climate Action

Briefing Series: Scaling Up

Innovation to Drive Down Emissions

Tuesday, July 12, 2022

About EESI



Non-partisan Educational Resources for Policymakers

A bipartisan Congressional caucus founded EESI in 1984 to provide non-partisan information on environmental, energy, and climate policies



Direct Assistance for Equitable and Inclusive Financing Program

In addition to a full portfolio of federal policy work, EESI provides direct assistance to utilities to develop “on-bill financing” programs



Commitment to Diversity, Equity, Inclusion, and Justice

We recognize that systemic barriers impede fair environmental, energy, and climate policies and limit the full participation of Black, Indigenous, people of color, and legacy and frontline communities in decision-making



Sustainable Solutions

Our mission is to advance science-based solutions for climate change, energy, and environmental challenges in order to achieve our vision of a sustainable, resilient, and equitable world.

Polymaker Education

Briefings and Webcasts



Live, in-person and online public briefings, archived webcasts, and written summaries

Climate Change Solutions



Bi-weekly newsletter with everything policymakers and concerned citizens need to know, including a legislation and hearings tracker

Fact Sheets and Issue Briefs



Timely, objective coverage of environmental, clean energy, and climate change topics

Social Media (@EESIONline)



Active engagement on Twitter, Facebook, LinkedIn, and YouTube



Upcoming Briefings & Series



Living with Climate Change

Polar Vortex – April 13

Sea Level Rise – May 18

Wildfires – June 13

Extreme Heat – June 24

Integrating Equity into Emergency
Management – July 14

Scaling Up Innovation to Drive Down Emissions

Green Hydrogen – April 27

Direct Air Capture – May 25

Electric Vehicle Charging – June 02

Offshore Wind Energy – June 29

Climate Innovation – July 12

Activate

About Us

July 2022

Executive Summary

- Activate seeds new ventures into the early-stage innovation ecosystem
- Focus on eight industries to address global challenges
- Two-year entrepreneurial fellowship funded by .gov and .org
- 142 Activate Fellows across eight cohorts
- Founded in 2015 as a 501(c)(3) non-profit to support Cyclotron Road
- Fellow communities in Berkeley, Boston, New York, and across the U.S.



The world needs scientists, now more than ever.

For humanity to thrive in the face of climate change and other global challenges, we need to reinvent our economy to be sustainable, resilient, and equitable.

To do that, we'll need scientists to bring their groundbreaking research to market as new products and businesses faster and with more impact.



Time & Funding

A Two-Year Fellowship

- Fellows turn research into a first product and secure financing
- \$80K-\$110K/yr stipend, plus travel allowance, health insurance
- \$100K in R&D funds
- Access to at least \$100,000 in additional flexible capital



An Expert Community

Advisers, Partners, and Champions

- The Activate Fellowship team and managing directors
- An unparalleled network of scientists, engineers, technologists, and entrepreneurs
- A vibrant fellow community

World-Class Tools for Scientists

World-Class Research Labs

- Hard-to-access facilities
- Work with experts and facilities while retaining IP rights

Entrepreneurial Education

- Regular guests
- Custom-built curriculum
- Intensive mentorship, workshops, virtual classes, and professional development services

Our Mission



**We empower scientists to reinvent the world by
bringing their research to market.**

The Activate Fellowship is a proven path for science entrepreneurs to move their breakthrough research into the market.



ACTIVATE FELLOWSHIP

Our two-year fellowship empowers the most promising science entrepreneurs to transform their research into products that can benefit society.

KEY FELLOWSHIP PARTNERS



NYSDA
Supported



ECOSYSTEM OF EARLY-STAGE INNOVATION

Nearly all Activate Fellows receive follow-on financing from corporate, venture, or government partners to bring their products to market.

KEY FOLLOW-ON FUNDING PARTNERS



The Activate Fellowship works.

Since 2015 our **142 Activate Fellows** have created **106 science-based companies**, some of which will go on to change the world.

\$860_M
in follow-on
funding

\$3.6M average follow-on-funding
cohort companies raised during
fellowship

17.9x leverage on every dollar spent
to support the fellowships

>700 new jobs created in the U.S. by
Activate Fellows



SELECT ACTIVATE FELLOWS

First Products and Milestones

To date, nearly half of all companies started by Activate Fellows have reached a first product. These early proof-of-market milestones signal the shift to a maturing product-driven company.



MANUFACTURING: Resonant Link is bringing wireless charging to electric fleets, but its first product is a wireless charger for medical implants.



POWER: CEO Andrew Ponc reveals the highest efficiency solid state TPV heat engine (> 33%) ever measured.

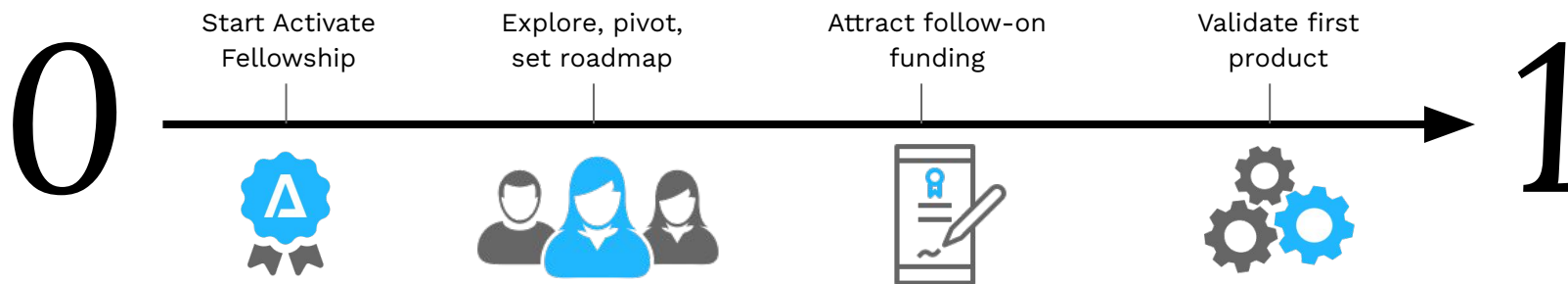


AGRICULTURE: CTO Kevin Kung developed a decentralized waste biomass-to-fertilizer platform for carbon negative precision agriculture.

Seeding Entrepreneurs: The Activate Transformation

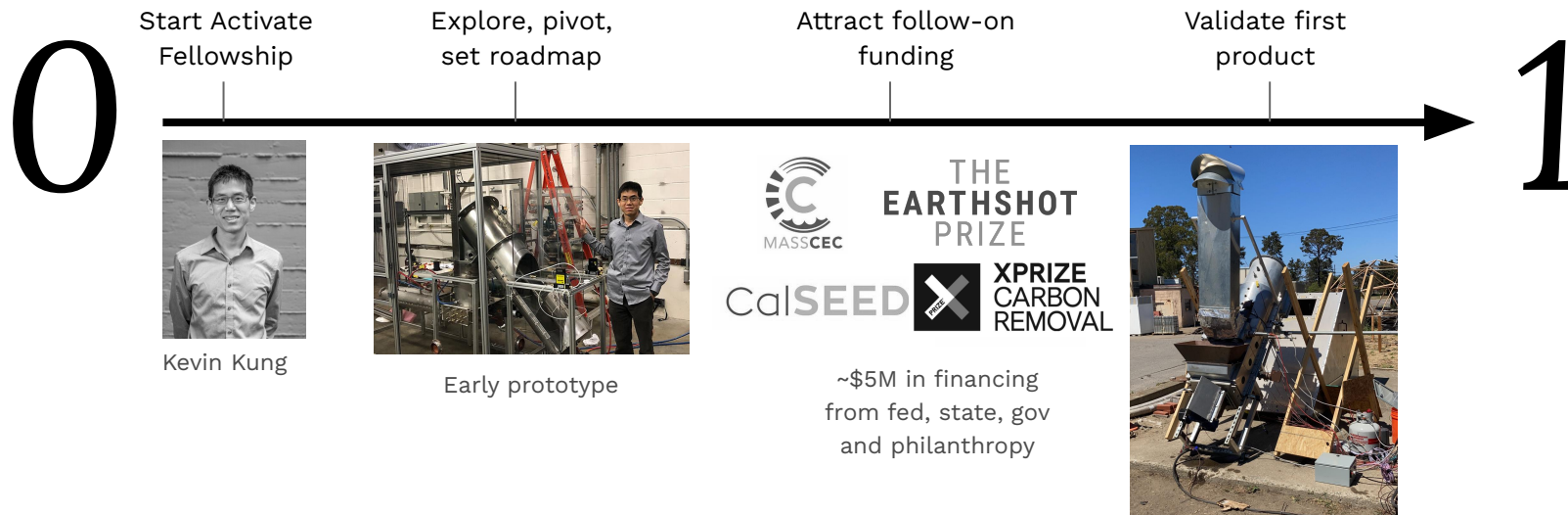
The US government spends \$70B every year creating academic scientists, and the private sector spends \$120B every year scaling early businesses. Activate works between government and the private sector, transforming scientists into high-impact entrepreneurs through a fellowship experience that guides them along every step of the journey. Without us, these entrepreneurs and their companies simply wouldn't exist.

The Zero-to-One Journey



Case Study: Takachar

Takachar is economically turning residual agricultural and forest biomass into useful products. Its small-scale, low-cost, portable systems latch onto tractors and pickup trucks, providing a new revenue stream for farmers, supporting food production, and mitigating climate harms from burning. At scale, Takachar could mitigate more than one gigaton of carbon dioxide equivalent annually.



Born from the U.S. National Labs

Founded in 2015, Activate partners with U.S.-based funders and research institutions to support our fellows. Activate's entrepreneurial fellowship model originated at Cyclotron Road, a division of Lawrence Berkeley National Laboratory and founding Activate partner.

Stage 1

2015: The Experiment

With Cyclotron Road (a division of LBL), we identified a gap in the science-to-market ecosystem and launched an experiment with a new model of innovation.

Stage 2

2019: Proving the Fellowship

Four cohorts later, we began to scale, launching Activate Boston and proving out that fellowships for scientists on a mission can work outside our first community..

Stage 3

2021: Expanding our Reach

With the fellowship model proven, we're now supporting fellows across the country and developing additional ways to support our fellows.

Activate

A network of the world's top scientists distributed across four communities in partnership with the world's top research institutions.



We are focusing our efforts in three areas where we believe our work will have the most impact.



Climate Change

the defining scientific challenge of our time



U.S. Innovation Ecosystem

the world's best environment for science entrepreneurship



Diversity, Equity, Inclusion

the greatest opportunity to empower scientists and engineers

Intimacy at Scale

We have dedicated ourselves to supporting Activate Fellows throughout their journeys, building an organization designed to help drive impact whenever and however needed.

And if we can't help, we know someone who can.



A National Ecosystem at Work



Academia

National labs and universities provide the backbone of our fellowship, yielding immense opportunities for scientist-turned-entrepreneurs to find product-market fit for their scientific discoveries.



Government

Agencies charged with setting long-term investment strategies, aligned with federal or local interests, work with Activate to increase the size of high-risk, high-reward markets.



Corporations

Activate connects startups to the private sector. Corporate partners and investors can propel a new venture's early growth into the market.



Philanthropy

World-class foundations partner with Activate to advance their missions around climate, energy, science, and environment by catalyzing their capital into growing our fellows' companies.



Critical Role of Government

- Early investments by federal agencies such as NSF and DOE (e.g., I-Corps and the Lab-Embedded Entrepreneurship Program) have shown tremendous success in supporting entrepreneurs
 - a. Activate has also leveraged critical support from state agencies like California Energy Commission and New York State Energy Research and Development Authority
- Given increasing global competition and major investments in clean energy research in the bipartisan infrastructure package, annual appropriations bills, and proposed in the innovation package, it is clear these activities need to be scaled up to meet the moment and NSF and DOE are well positioned to do so
 - a. NSF and its new TIP Directorate
 - b. DOE Foundation currently proposed in the innovation package
- As we build toward these new and exciting avenues for federal support for startup growth in critically important sectors, we must also preserve the important tools we have
 - a. SBIR/STTR reauthorization facing a potential lapse and is in danger of expiring if Congress doesn't come up with a compromise by the end of September

Summary

Invest in **people** and provide education, time, and tools for them to grow into leaders & operators.

Shared **community** of hard-science entrepreneurs, mentors and MDs who can provide guidance. Alumni serve as fantastic advisors and local cohorts learn & grow together.

Strong **partnerships** with innovation ecosystem including government, universities, investors, corporations and other accelerators and programs that can further support company development.

Serve our Fellows and act as a bridge from basic science to first markets and pilots. We've taken **142 scientists from zero to one, helping them start 106 impactful companies.**



“My company would not exist without the support of this fellowship.”

Sarah Richardson

CEO, MicroByre

Activate Fellow Cohort 2017



Activate

For scientists on a mission.



[@activatefellows](#)

Garrett Boudinot: Activate NY 2022 fellow

- Background in **climate science**, geochemistry
 - PhD @ Univ. Colorado Boulder
- Research in **CDR in ag**, negative emissions tech
 - Research Associate @ Cornell



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 - Research Associate @ Cornell
- **ID problems** in existing CDR market, **solutions** from climate science and geochemistry
 - NSF I-Corps
 - Cornell EIRs, tech transfer
- **Scale up solution via commercialization**
 - Activate



How does Activate help scientists scale up climate solutions?

- Facilitate **transition** from research/academic to entrepreneurial/business
 - **From idea, data, concept** to impact, solution, economy
 - **Build** company (legal, corporate, culture, economic)
- Training, guidance, mentorship, advising in **Entrepreneurship**
 - Fundraising for R&D, scale up
 - Strategic partnerships, advisors
 - Business model, value prop, product-market fit
 - Pivoting (“Invested in the person, not the idea”)
 - Complement w other training, advising, incubators, EIRs, etc.

How does Activate help scientists scale up climate solutions?

- Activate NY: **CDR imperative**
 - **Cohort** of CDR-focused startups
 - Ecosystem of startup, climate tech, investor **networks**
 - **Climate policy** momentum - local (NYC), state (NYSERDA), national
 - Support and guidance in **nascent CDR market**
- **Activate supporting and empowering scientists**
“on a mission” to scale up innovation to drive down emissions



Garrett Boudinot is a climate scientist and Activate NY 2022 fellow working to scale up verified land- and water-based carbon dioxide removal. Boudinot also serves on the New York State Climate Impacts Assessment.





What did you think of the briefing?

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www.eesi.org/survey

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