



Cyclotron Road: activating tomorrow's technology leaders

Sebastien Lounis, PhD

Cofounder and Managing Director

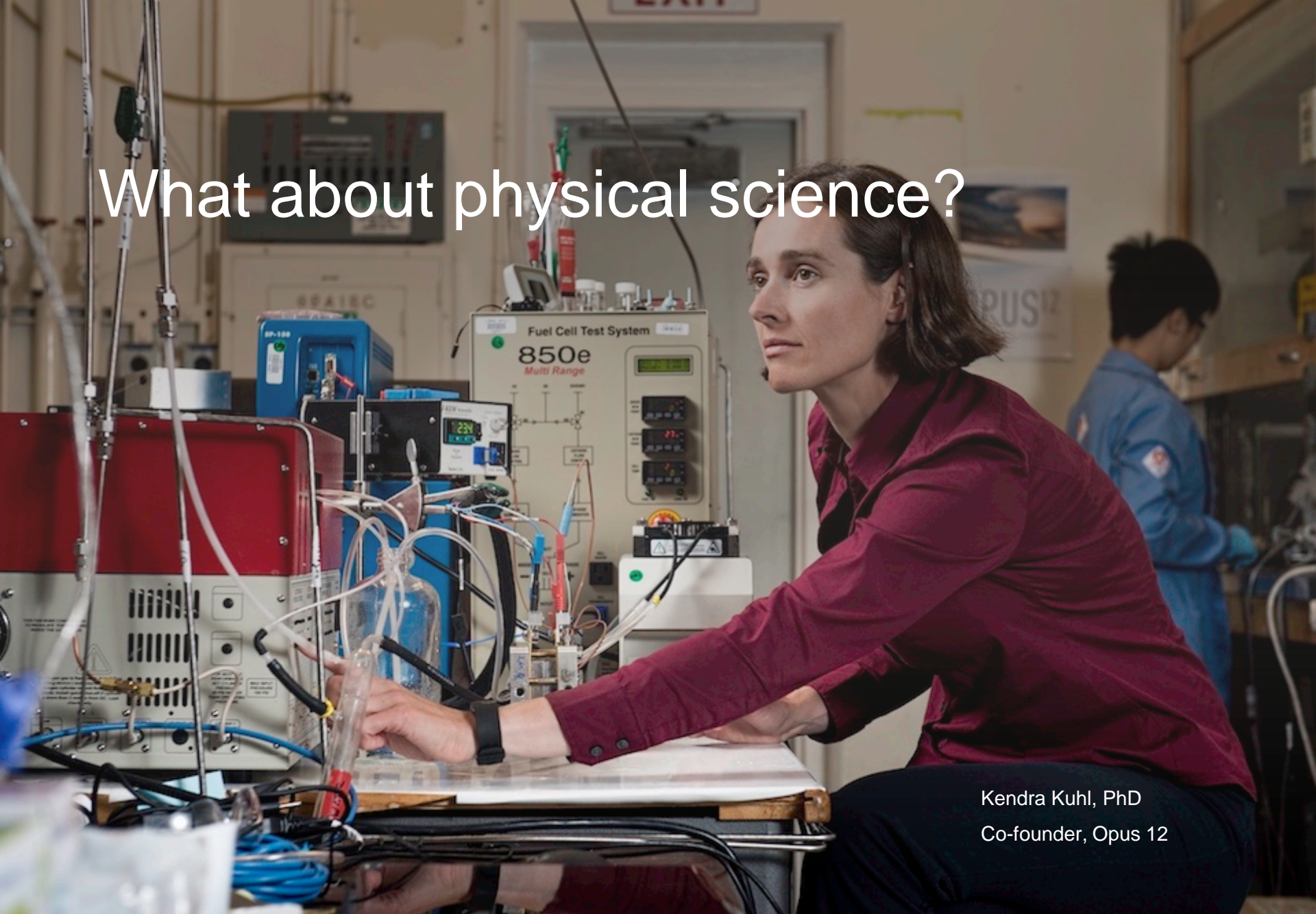
DOE SBIR Phase I PI Meeting

August 9th, 2018

The age of lean innovation



What about physical science?



Kendra Kuhl, PhD
Co-founder, Opus 12



“

Today, our highly optimized, venture-capital-driven innovation system is simply not structured to support complex, slower-growing concepts that could end up being hugely significant...

...the kind that might lead to disruptive solutions to existential challenges in sustainable energy, water and food security, and health.

”

- L. Rafael Reif
President, MIT



A home for hard tech innovators



What are we?

A **fellowship program** for entrepreneurial scientists and engineers

What is our mission?

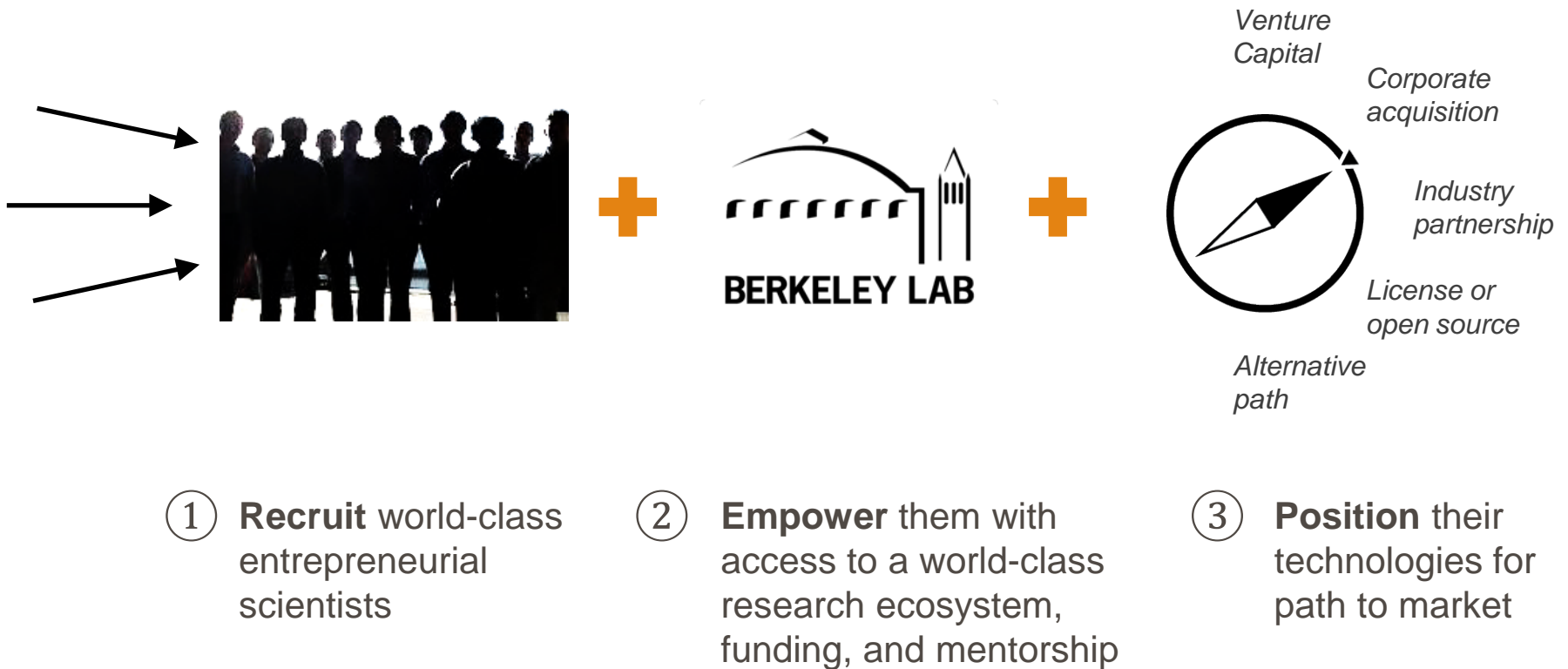
Empower these innovators to advance their technologies from **concept to first product**

Our goal?

Position them to **align with the most suitable path** to market and long-term impact

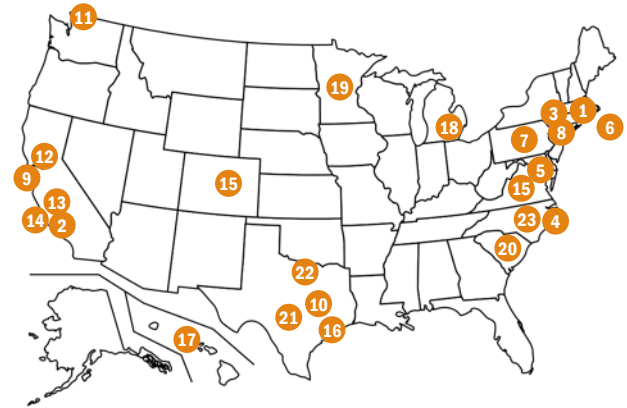
Cyclotron Road Overview

Our model:

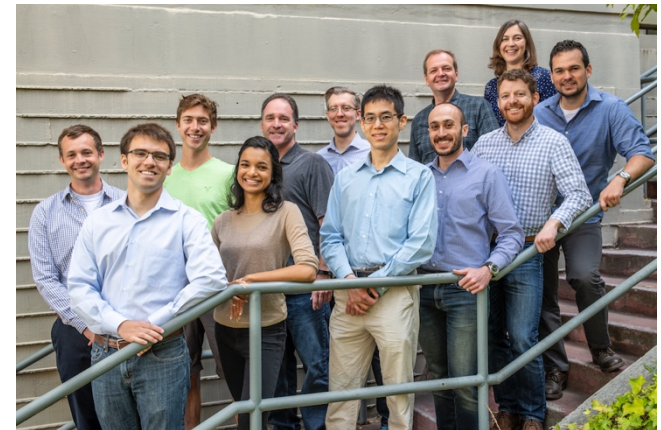


How does it work?

- ① **International competition every fall to identify the most promising entrepreneurial scientists**
 - **Current tracks:** Advanced Manufacturing, Clean Power, Electronics
- ② **Selected fellows get:**
 - **A two-year fellowship:** including stipend and \$100k research funding
 - **Berkeley Lab and UC Berkeley access:** work with experts/facilities while retaining rights to IP
 - **Programming:** intensive mentorship, education and professional development, network engagement
 - **Community:** 150+ scientists, engineers, technologists, and entrepreneurs across our projects



Finalist graduate universities



Cohort Four at Berkeley Lab in May 2018

Cyclotron Road Overview

Berkeley Lab

Stats:

- 4000 scientists
- \$850 million annual budget
- ~100 National Academies
- 13 Nobel prizes

Facilities:

- Molecular Foundry
- Advanced Light Source
- Joint Bioenergy Institute
- ABPDU
- JCAP
- Flexlab™
- Joint Genome Institute
- NERSCC
- ...and more!



What happens at Cyclotron Road?

Weekly: Speakers, visitors, and professional development

Lunch	Topic-specific presentation by fellow, staff, or guest
2 – 4:30 pm	Meet w/ VIP guests 1:1
4:30 – 7 pm	Happy hour – team members, friends & visitors

Recent topics: leadership, IP strategy, market research, project management, hiring

Recent founder talks: Neil Renninger, Gaetan Bonhomme, Alain Harrus, Danielle Applestone,

Recent visitors: Breakthrough Energy Ventures, Overlook international, Intel Capital, Gates Foundation, Exelon, BMW, Shell, Exxon, Solvay

Monthly: 1:1 Check-ins



Quarterly: Advisory Board meetings

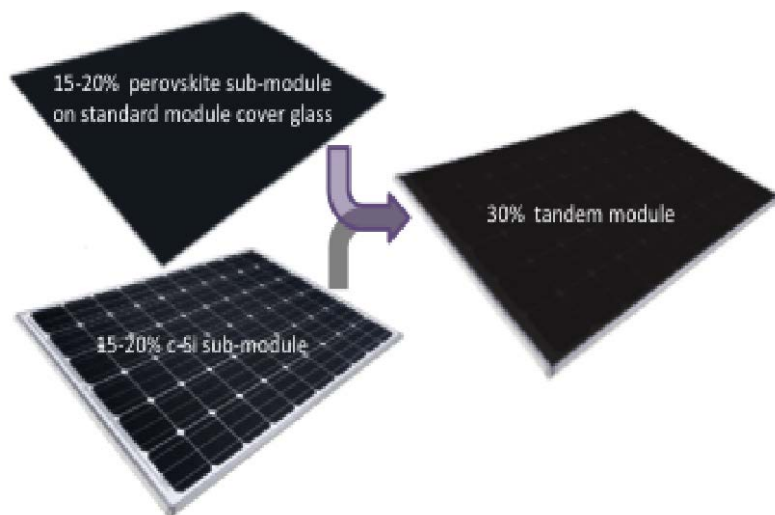


Example: Tandem PV Advisory Board



Colin Bailie, President & CEO

- PhD MatSci, Stanford
- 3.5yrs exp. with perovskite technology
- Forbes 30 under 30 2016



Dr. Douglas Hall

- Fmr. Director, Corning
- Fmr. Portfolio manager, SunShot



Dr. Dave Eaglesham

- Fmr. Director Applied Materials
- Fmr. CTO First Solar
- CEO Pellion Technologies



Dr. Chris Eberspacher

- Fmr. VP Eng. Nanosolar
- Fmr CTO Applied Materials, Hanwha
- CTO SoloPower



Dr. Gregory Nielson

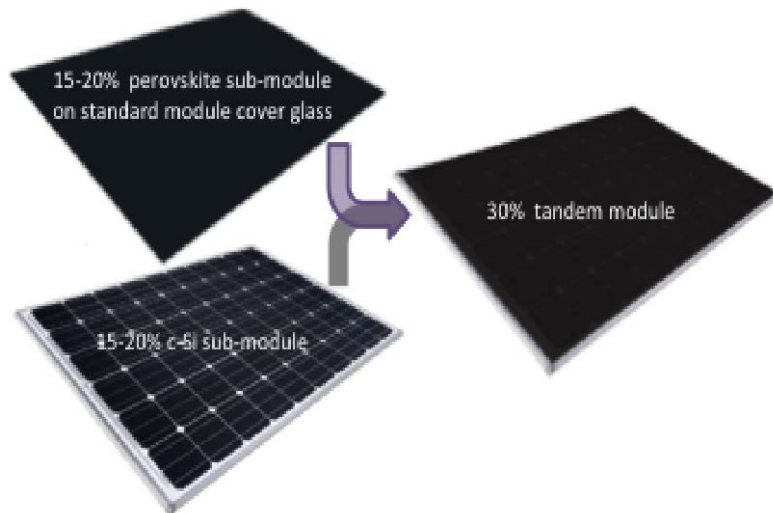
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- CTO SoloPower

Joined as co-founder



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Cyclotron Road Overview

Results: pivots, prototypes, and public + private funding

Cohort 1 and 2 results during 2-year program

80%

Teams made a significant market or technology pivot

100%

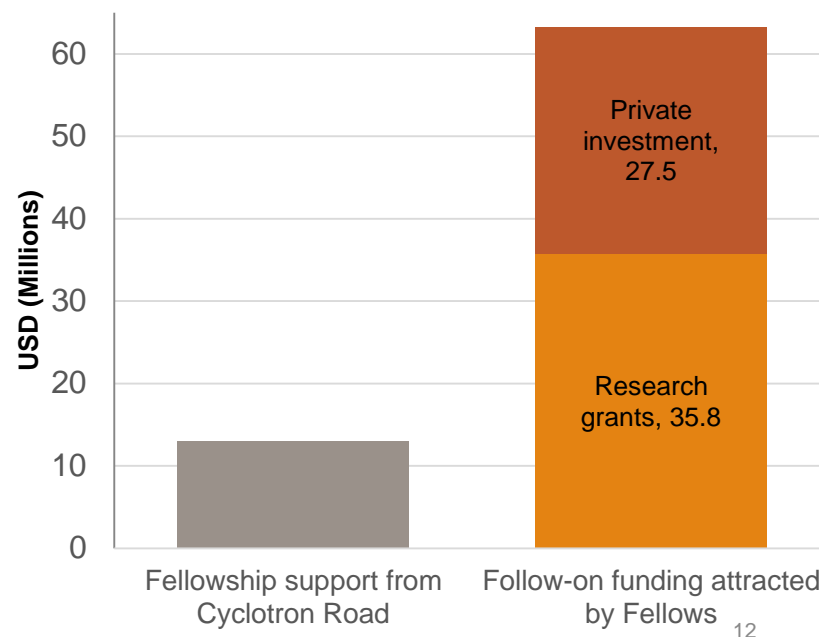
Teams built first prototype or secured funding to do so

Cumulative funding to date

\$63M

Follow on funding secured from public and private sources

Cumulative funding results for Cyclotron Road projects



SCIENCE

Researchers Aim to Put Carbon Dioxide Back to Work

By HENRY FOUNTAIN MAY 2, 2016

RollingStone

25 People Shaping the Future in Tech, Science, Medicine, Activism and More



Steve Weidman

By Jeff Goodell, Mark Binelli, Tessa Stuart, Ben Wofford, Amanda Chicago Lewis, Zoe Carpenter, Alexander Zaitchik, Jonah Weiner, Tim Dickinson, Saul Elbein, Justin Nobel, Brian Patrick Eha, Gillian Brassil

November 17, 2017



Kendra Kuhl, Nicholas Flanders and Etosha Cave: How to Rid the World of CO2

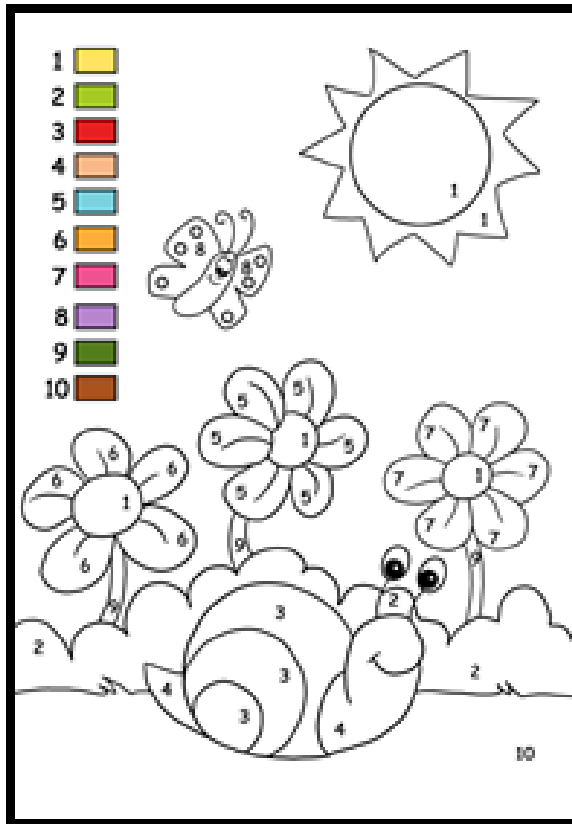
One of the keys to solving global warming is: How can we make carbon pollution useful? Opus 12, founded by former Stanford scholars Kendra Kuhl, Nicholas Flanders and Etosha Cave (from left), has built a reactor to trap the greenhouse gas and convert it into carbon-based compounds that are used to make plastics and liquid fuels. The point, says Flanders, the CEO, is to "recycle our customers' emissions into new products rather than just throwing that CO₂ away." And Opus 12 isn't the only company doing it: In June, the world's first industrial-

MIT
Technology
Review

INNOVATORS UNDER 35



Application process



Super
simple!

5-6 pages

You
Your vision
Why CR?



4 months

Cyclotron Road Overview

What to do now

Sign up for our newsletter (cyclotronroad.org) to stay informed

Develop your team and idea:

- **Talk to people** – especially people outside of academia
- **Do market research** – what is the value proposition?
- **Build a back-of-the-envelope cost model** – will it be economical?
- **Team up** – with cofounders and advisors
- **Learn** – there are lots of programs, courses, blogs, videos, etc. about entrepreneurship

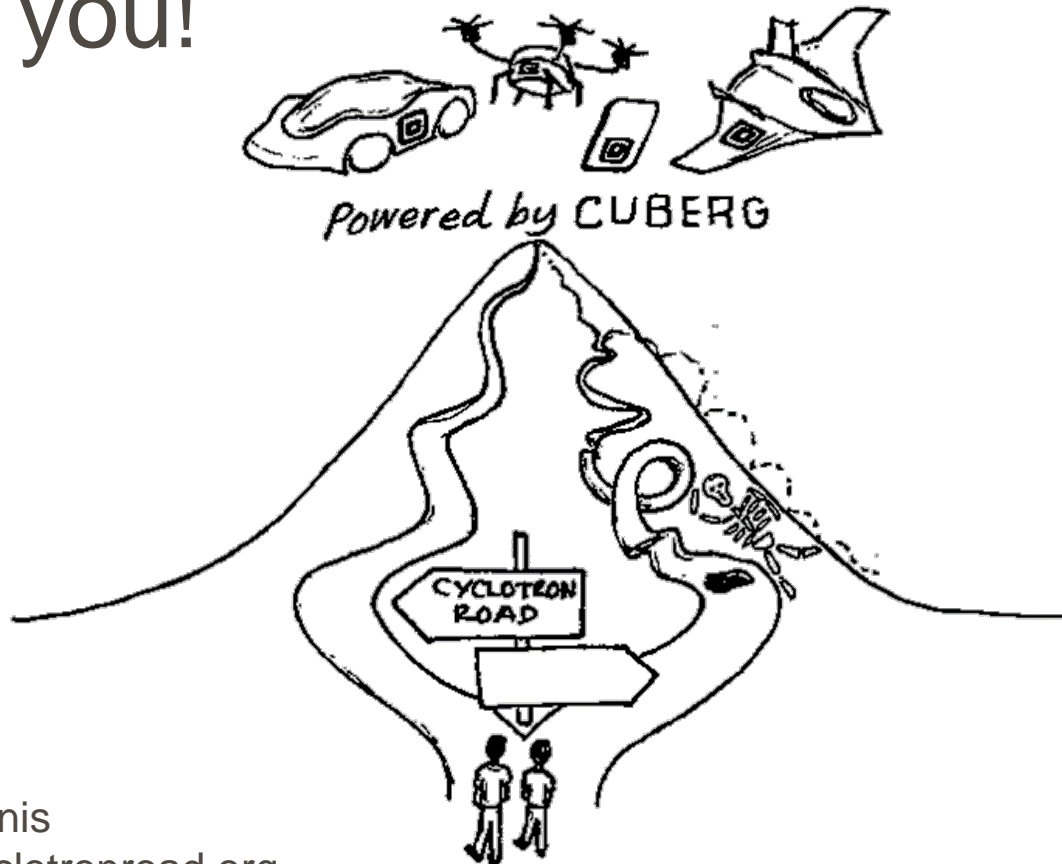
Helpful resources:

- Cyclotron Road Technomics course: [link to beta site](#)
- Cyclotron Road Founder's Playbook resource library: [link to beta site](#)
- Sister programs: Chain Reaction Innovations (ANL) and Innovation Crossroads (ORNL)



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Thank you!



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