

DAC EPIC Semifinalist Presentations

8/31/23



supercharge A REVOLUTION OF **BOLD IDEAS**

Fast track your ideas for the clean energy revolution





\$200M in cash prizes 55+ and support





400+ Network members

DAC EPIC Prize

The DAC Pre-Commercial Energy Program for Innovation
Clusters (EPIC) Prize awards incubator teams that submit
impactful plans to support DAC entrepreneurs and
innovators.

Prize Overview:

- Up to \$3.8 million in cash prizes
- 13 semifinalists
 announced on 8/28/23

Learn more & get involved: www.herox.com/DAC-pre-commercial-EPIC

DAC Tech Prize

The DAC Pre-Commercial
Technology Prize awards teams
that identify a critical need in
the DAC industry, develop a
solution, and test the idea to a
degree of scale.

Prize Overview:

- Up to \$3.2 million in cash prizes and \$800,000 in technical assistance
- Phase 1 applications due by September 26
- Winners receive funds to work with NETL and DAC EPIC incubators



Learn more & get involved: www.herox.com/DAC-pre-commercial-tech



NETL Carbon Management Research Project Review Meeting

Activate

DOE American-Made DAC EPIC Prize

NETL Conference | August 31

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



ACTIVATE FELLOWSHIP

ECOSYSTEM OF EARLY-STAGE INNOVATION

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

KEY FELLOWSHIP PARTNERS





















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



















Time & Funding

A Two-Year Fellowship

- \$80K-\$110K/yr stipend, plus travel allowance, health insurance, relocation
- \$100K in R&D funds
- Access to at least \$75,000 in additional flexible capital



An Expert Community

Advisers, Partners, and Champions

- The Activate team and Managing Directors
- An unparalleled network of scientists, engineers, technologists, and entrepreneurs
- A vibrant fellow and alumni community

World-Class Tools for Scientists

Entrepreneurial Education

- Curriculum tailored for the scientist-turned-founder
- Custom-built mentorship to support your individual growth and professional development
- Intensive workshops, virtual classes, and professional development opportunities

World-Class Research Labs

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

The Activate Fellowship works.

Since 2015, our **188 Activate Fellows** have created **145 science-based companies**, some of which will go on to change the world.

\$1.38B

in follow-on funding

\$6.3M average follow-on-funding cohort companies raised during fellowship

23x leverage on every dollar spent to support the fellowships

1.9K new jobs created in the U.S. by Activate Fellows

\$62M in total revenue earned by Activate companies







SELECT ACTIVATE FELLOWS

DOE FECM: DAC Pre-Commercial EPIC Prize

Activate's MVP will address four main challenges: 1. Outreach to diverse scientists developing DAC technologies Gaps 2. Properly evaluating DAC technologies during application review 3. Ensuring promising applicants remain in the application pipeline 4. Lack of entrepreneurial education and support tailored to DAC

DOE FECM: DAC Pre-Commercial EPIC Prize: MVP

Recruitment	Selection	Education	Network
Direct recruitment leveraging artificial intelligence Phone banking and hands-on applicant	Application review by DAC- specific subject matter experts	DAC audit of Activate's program + curriculum Collaboration with	Mentor matching, ecosystem events, affinity groups
support		CDI on DAC-specific educational modules	

Outcome

A comprehensive DAC fellowship offering which supports 3-5 new DAC founders annually to navigate academic spinout and achieve strong commercialization outcomes (funding, jobs, etc.).





NETL Carbon Management Research Project Review Meeting

AIRMINERS

EPIC DAC PRIZE

Tito Jankowski, CEO tito@airminers.org

WE EMPOWER RISK TAKERS TO REVERSE CLIMATE CHANGE VIA CARBON REMOVAL

AirMiners: Accelerating Carbon Removal

- Accelerator, community, events, education
 - Launchpad accelerator
 - Network of more than 2,000 members supports collaboration, thought leadership, investment
 - 100+ public events on YouTube channel, "DAC Hubs 101" yesterday
 - Carbon Removal "Boot Up" course, Investor Academy course
- 100% focused on carbon removal



















Anthropocene Institute













MEASURING SUCCESS

95 STARTUPS **24 MONTHS**

MEASURING SUCCESS

Launchpad Accelerator

- **95 teams** graduated in 24 months years
- **\$93 million** raised by graduates
- 3x XPRIZE milestone winners, \$1M Earthshot Prize
- 2,000 tons cumulatively removed, on track for millions in the next few years



ALUMNI INCLUDE:





















WHAT'S WORKING

- Quarterly program, pilot and iterate
- 8 batches, 885 applications, 95 graduates
- TEA and LCA, Buyer interviews, pitch coaching, needs and leads
- USA teams in California, Texas, Washington, Pennsylvania, Massachusetts, Oregon, New York, New Hampshire, Colorado, and more around the planet
- Investor Demo Day
 - Private startup pitch to accredited investors
 - Hundreds of investors registered, hundreds of intros requested by investors

INCREASE CORPORATE PURCHASES

- Off-the-record Q&A with industry leaders
 - 1:1 with buyers during our program: Stacy Kauk, Shopify; Joanna Klitzke, Frontier; James Burbridge, Carbon Direct
- **Buyer's Demo Day**
 - Largest Carbon Buyer Demo day in the world: 30+ **buyers** registered
- Sold millions of dollars of credits to:



Unpacking the Latest Milkywire Carbon Credit Purchases

203 views • 2 months ago









WHAT'S NEXT

Accelerator batch #9

- 2x our previous batch!!
- Average applicant fit is up, quantity is up too

EPIC DAC

- Build out DAC-specific support
- Environmental justice program support with Carbon180

• Events:

- "DAC Hubs 101" even yesterday
- Coming soon: Next generation carbon credit buyers, Federal procurement for carbon removal credits
- Batch #10: applications close October 11

AIRMINERS TEAM

CORE TEAM



Tito Jankowski - **AirMiners CEO**; Carbon removal innovator and engineer



Adina Mangubat - AirMiners Accelerator
Director, Forbes 30 under 30, Exited
YCombinator biotech startup



Jason Grillo - AirMiners Director

Partnerships and Operations, Advisor to

Carbon Business Council

ADVISORS



Rodney Payne - AirMiners Strategy Director.

Founding Partner at Creative Destruction
Lab Climate



Nikki Batchelor - Executive Director, \$100M

XPRIZE Carbon Removal



Paul Cubbon - AirMiners accelerator architect,

Creative Destruction Lab West Lead,

Assistant Dean, Innov. & Entrepreneurship UBC



Tyler Robinson - AirMiners Strategic Consultant, **Climate Change Initiatives at Destination Think**

1 BILLION TONS REMOVED CUMULATIVELY BY 2030

Tito Jankowski, CEO tito@airminers.org



NETL Carbon Management Research Project Review Meeting







IgniteX Accelerator Overview

- 12-week engagement program with startups
 - Competitive process 500 applicants to date,
 - 5-8 Startups per cohort
 - Partnered with BV champions from Market Sectors and **Operations**
 - Partnering includes pilots, co-development, marketing, etc.
 - Public showcase at conclusion of program
 - Startups provided up to \$15k in grants / in-kind support
 - Potential equity investments and long-term relationships with most promising startups
- Theme and focus areas aligned with BV's strategies
 - 2019 Clean Tech
 - 2020 COVID-19 Response
 - 2021/22 Climate Tech
 - 2023 Climate Tech
 - 2023/2024 DAC
- https://bv.com/ignite



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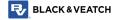
IgniteX Aligns BV and Startup Objectives



- Access to disruptive innovations leading to competitive advantage
- Efficiently explore new markets and business models at low cost and risk
- Enhance and expand solutions portfolio in a targeted way
- Reinforce BV as the most rapidly evolving and innovative company
- Increase opportunity for underrepresented & undersupported entrepreneurs and increase diversity in the ecosystem

IgniteX Startups

- Access to BV's capabilities and resources
 - Technical & market expertise
 - Network of clients, partners, etc.
 - Mentorship
 - Enhanced marketing
- De-risk technology through product testing, co-development, piloting, technical support
- Accelerated growth



IgniteX Participating Startups (https://www.bv.com/ignite/program-partners)

2019: Clean Tech















2020: COVID-19 Response





































2021-22: Climate Tech















2023 Climate Tech Selections

Digitization / AI / ML

- Looq AI automates the creation of 3D digital twins, accelerating surveying, mapping, and electrification
- Simerse AI ML for utilities, telecoms, and cities to efficiently manage their infrastructure

Renewable Energy / Storage

EarthEn – hybrid thermal and mechanical long duration storage solution using CO2

Carbon Capture / Materials

- CarbonQuest CO2 capture for commercial and industrial CO2 sources
- Mars Materials sequesters captured CO2 into everyday products such as carbon fiber

Ag Tech

- Strive Nutrition Corp sustainable nutrition focused protein-enriched beverages
- Spira proteins, lipids, and carbohydrates from algae while capturing CO2





Ignite^X DAC Accelerator



	RTI RTI LABORATORIES				BLACK & VEATCH				
	TRL 1	TRL 2	TRL 3	TRL 4	TRL 5	TRL 6	TRL 7	TRL 8	TRL 9
Technology Maturation Plan	Idea	Lab	Technology	Pilot	Process Development	Viability Demonstration (1/100 th Scale)	Transition to Commercial (1/10 th Scale)	Commercial Scale Demonstration	Commercial Deployment
Startup Activities and Objectives	 Basic Techn Research Basic sciency through peed publications Lab scale appresearch to scientific ris Well defined proposition 	ce validated r reviewed and patents oplied reduce k	 key unit ope Lab Scale, requality, quality, quality, resident Bench/Protestesting of te Conceptual 	epeatability, ntitative of process otype scale	 & all unit ope Developmen TEA to inforr (technology, Pilot Scale w tests product final product 	ogy demonstration erations t and utilization of moptimization experiments) with integrated ing samples of . Process Eng. ng to inform scale-	 Demonstration scale plant (including all sub-systems) development, testing and final operation conditions Continuous integrated operation of 1/10th scale for 1,000 hours and data collection Document pilot performance and engage with independent engineer to obtain investor confidence 		Detailed process model & engineering deliverables to support project execution & const. planning & estimate 1st commercial scale project development & plant operations
Ignite ^X - DAC Accelerator Activities	Technology Review & Validation Preparation for Project Execution			•	or FEL-1 Project cution	Preparation for FEL-2 Project Execution	Project Exc Detailed Des	n for FEL-3 & EPC ecution including ign, Construction & missioning	



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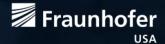
CATALYZING THE CARBONTECH ECOSYSTEM

The next chapter for DAC and carbon management innovation and deployment

A COLLABORATION BY

URBAN FUTURE LAB





CURRENT CLC MEMBER ORGANIZATIONS

GOVERNMENT



CORPORATES

CARBONTECH EXPERTS

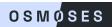
CARBON TO VALUE COHORT STARTUPS (YEAR 1-3)

Point source capture









Direct and Ocean
Air Capture









Carbon conversion to fuels and chemicals

AIR COMPANY.





☼ Dioxycle





Carbon Mineralization





CARB NFREE



Biomass & Biochar



ecoL@cked







Carbon conversion to advanced materials





Enabling Technologies

Patch

THE NEXT THREE YEARS OF C2V

INNOVATION COHORT (TRL 2-4)

DEPLOYMENT COHORT (TRL 5-7)

ESSENCE OF COHORT

Provide early-stage startups with the resources they need to get to scale Help later-stage startups de-risk their transition toward a FOAK demonstration or commercial-scale deployment

2 DEIA CURRICULUM

Curriculum will systematically cover environmental justice components such as diverse hiring, equitable deployment, and involvement in climate policy

CARBONTECH LEADERSHIP COUNCIL Technology and carbon specialists with benchmarking expertise and real-life applications

Greater focus on federal government and deployment-driven capital partners

FOCUS ON DAC

25% DAC minimum requirement for both cohorts with an emphasis on collaborating within the greater CDR ecosystem



THANK YOU!



Nour Ghadanfar Sr. Director of Partnership Programs GREENTOWN LABS nghadanfar@greentownlabs.com

A COLLABORATION BY

URBAN FUTURE LAB







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Carbontech Development Initiative – Accelerate DAC (aDAC)

Development

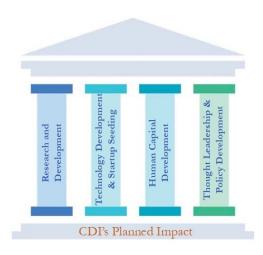
August 2023

CDI - Overview

CDI at Columbia University's Center on Global Energy Policy (CGEP), is a first-of-its-kind, large-scale carbontech market transformation and grant-seeding commercialization hub.

CDI catalyzes carbontech market transformation through a multipronged approach based on:

- Grant programs
- Startup accelerators
- Policy research
- Thought leadership



In its inaugural grant round, CDI awarded \$2.7M to 14 carbontech startups, 6 of which focused on Direct Air Capture technology.

Challenges Facing the DAC Ecosystem

CDI's Accelerate DAC (aDAC) program addresses three challenges facing DAC as an emerging, hard-tech asset class

Conventional
Accelerator Fit
Challenge



Accelerator best practices and programming have been validated for "conventional" startups, but are not adequately calibrated for DAC / hard-tech startups

Sector Knowledge Gap Challenge



Commercial and investment partners have low sector knowledge inhibiting understanding of key factors for investment decisions, including:

- baseline assumptions for valuing startups
- benchmarking innovation
- understanding regulatory environment

Human Capital Challenge



DAC startups must scale in an under-developed workforce environment, and lacks widespread efforts to crosstrain workers in adjacent sectors to work in DAC. As a result, even motivated startups will likely struggle to meet workforce needs and meet DEIA goals.

Solution: CDI aDAC



Driving Priorities

The DAC innovation ecosystem faces unique challenges as a nascent, hard tech sector



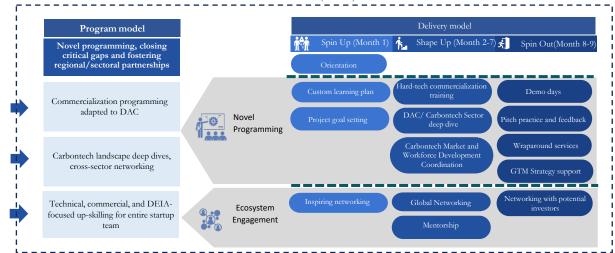
Conventional accelerators are note calibrated for hard-tech DAC start-ups



Lower investment due to limited understanding of the sector



Human capital and DEIA gaps



Expected Outcomes

Better product market fit understanding -Increased chances of success for DAC start-ups

Cross-sector coordination on policy, DEIA, workforce development Market development for DAC as a sector

Success model for other DAC and hard-tech accelerators

CDI has assembled a highly experienced and expert team to develop and deliver the aDAC MVP. The CDI aDAC team brings:

- Deep expertise in carbontech and direct air capture
- Extensive experience with accelerator program development
 Strong ecosystem partnerships and extensive network
- · Broad access to resources and a proven track record of success



Thank you



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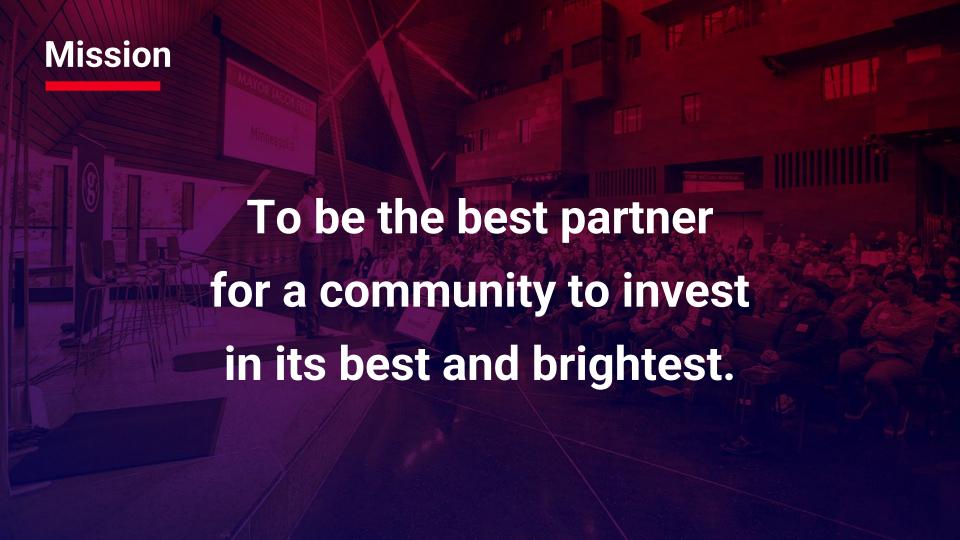




DAC Accelerator

in partnership with the Clean Air Task Force





2012 **Founded** 1,212 **Startups**

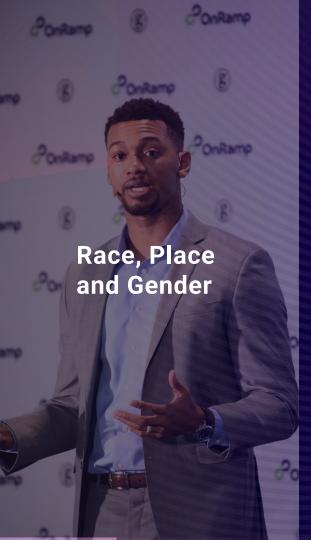
243
Accelerator
Cohorts

41 Communities

\$1.59B+

Follow-on Financing

10,261 Jobs



Venture Capital Average

2.6%

Startups with a Founder of Color

2.3%

Startups with a Woman Founder

<1%

Startups with a Woman of Color Founder

20%

Startups Outside a Major Tech Hub

gener8tor

45%

Startups with a Founder of Color

33%

Startups with a Woman Founder

17%

Startups with a Woman of Color Founder

82%

Startups Outside a Major Tech Hub

One of the most active early-stage investors in climate-tech









1000's of applications / year

100's of active mentors & investors

50+ of corporate partners



Demonstrated ability to invest and accelerate the best and brightest climate tech startups

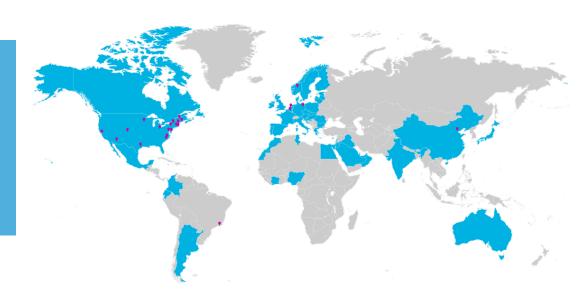
Energy	Food & Land Use	Transportation	Carbon	Industrial
d+ d	CARBON YIELD	itselectric	RUSHNU	MYCOCYCLE
SQLAR ST≓AM	% gentian	Torque, Evolved	M A R K L A B S	PHSENIX WASTE SOLUTIONS
	Cultured	nectar		rego-
Scanalytics Inc.	Cultured Decadence	NEW DAY HYDROGEN	IN BOLD PRINT.	AkitaBox
SilisiumTech	frakktal frakktal	PAXAFE	CEDAR	NEER

Sustainability investment performance: 2.3x MOIC





Leading global NGO with significant advocacy, analytical and technical expertise with regards to carbon management technologies.





CLEAN AIR
TASK FORCE

A DAC Accelerator focused on the Illinois Basin



Ideal for geological sequestration

Base layer of sandstone topped with layers of shale

Billions of tons of storage potential

Preliminary studies indicate 11-150B tons of storage potential

A leader in carbon capture technology

Largest number of in-progress carbon capture projects.

Ideal ecosystem for DAC startups

State incentives, diverse industrial sector, significant agricultural footprint

)1

02

03

04



Elements of the Accelerator

5 startups per cohort



Investment

Potential \$100K investment



Retreats

One-on-one with the gener8tor + CATF team



Mentor Swarm

100+ mentor speed networking



Investor Swarm

One-on-one pitches scheduled with 85+ unique investors/funds



Bi-weekly Meetings

Two weekly, one-hour meetings with the gener8tor + CATF team



Showcase

Demo Day Showcase



Weekly Content

Guest speakers Fireside chats



Ongoing Support

Most valuable investor



Q Ryan Jeffery
Senior Managing
Director, Sustainability



G Soham Dalal Managing Director, Sustainability



John Thompson
Technology &
Markets Director



Quincy Childs
Policy Associate

+120 additional team members and admin support staff

gener8tor



gener8tor



Thank you ryan@gener8tor.com



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DAC-ATTACC by RAD CLE



Direct Air Capture – Advancing Technology That Accelerates Carbon Containment

AVP PLAN

IDENTIFY

Create a robust pipeline for emerging DAC technologies through targeted networking

DEVELOP

Select three CDR clients and collaboratively mature their prototypes through a design, build, and iterate process

DEMONSTRATE

Validate performance through internal testing programs and ruggedize systems for pilotscale field trials

Differentiated from a typical incubator, Radicle uses our resources & expertise to rapidly mature emerging ClimateTech innovations. DAC-ATTACC will be Radicle's first targeted program that tailors our model to **building out and scaling up carbon** removal technology.



IPPROACE

BETTER

Focusing on deep and collaborative relationships under flexible terms enhances the odds of successful product commercialization

FASTER

Combining a startup mentality with a standing team and infrastructure allows Radicle to execute quick-turn projects in superior fashion

CHEAPER

Creating economies of scale with shared resources and treating hardware engineering as a specialty reduces the cost of development



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People

- Mentors-in-Residence
- Subject Matter Experts
- UACI Programmatic Staff
- Interns
- Extended Network
- Other Entrepreneurs
- Community Resources
- Customers
- Investors
- Sponsors
- Municipalities















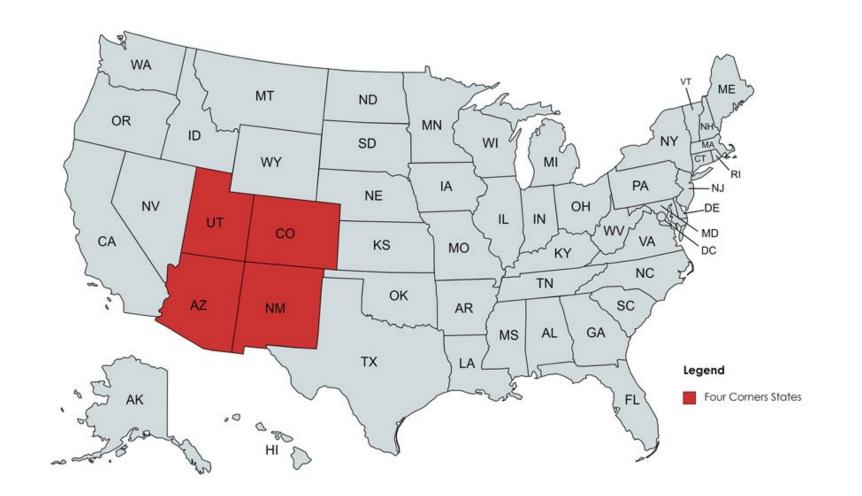




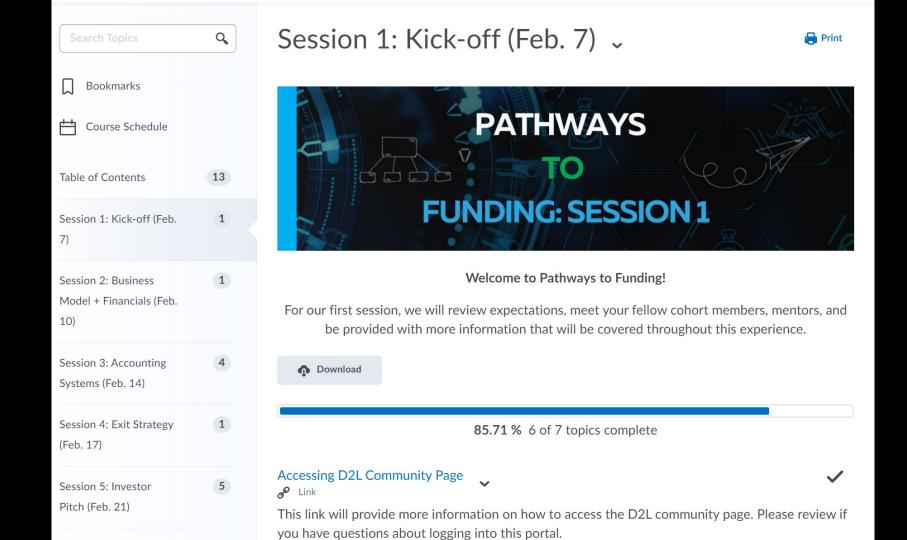




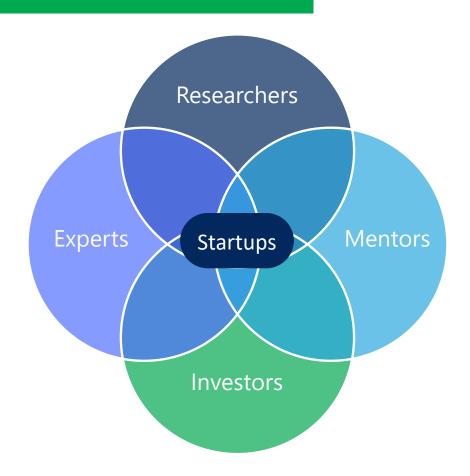




Funding	Product-Market Fit	Operation Excellence	Business Basics
Financials	Problem Identification	Milestone Development	Entity Formation
Accounting System	Customer Discovery	Regulatory Requirements	Market Assessment
Exit Strategy	Product Validation	Team Development	Marketing Collateral
Dilutive Funding	Customer Segments	Board Development	Marketing Strategy
Non-dilutive Funding	Customer Relationships	IP Protection Strategy	Executive Summary
Pitch	Formulation of Value Proposition	Operations	Competitive Analysis
Business Model	New Sales	Business Model	Business Plan



Collaboration



Team

SUBJECT MATTER EXPERTS PROGRAMMATIC STAFF **MENTORS IN** RESIDENCE PRIMARILY WOMEN LED MORE THAN 25 YEARS OF STARTUP TEAM AND BOARD DEVELOPMENT MORE THAN 125 YEARS OF STARTUP **EXPERIENCE EXPERIENCE** FINANCE AND ACCOUNTING RENEWABLE ENERGY HIGHER EDUCATION **FUNDING STRATEGY PROFESSIONAL**

DAC Key Risks + Subject Matter Expertise



Pre Assessment



Instruction



Post Assessment

Capital

Revenue

Employees

Current demographics

Program/Resource Engagement

Completion of Tasks

Feedback on Program

Capital Attracted

Jobs Created

Revenue

Demographics of staff, customers and communities served

Partners/Stakeholders

















