

NSF ASCEND ENGINE in Colorado and Wyoming

Federal grant to support regional economic development through climate resilience solutions

Metro Denver Regional Networking Roundtable
September 9, 2025
Denver Chamber of Commerce



NSF Advanced Sensing and Computation for Environmental Decision-making Engine in Colorado and Wyoming

ASCEND Team



Jeni Cross

Director of Co-Creation



Amber Rahn

Workforce & Regional
Engagement Director
Organizational Development
& Talent Director



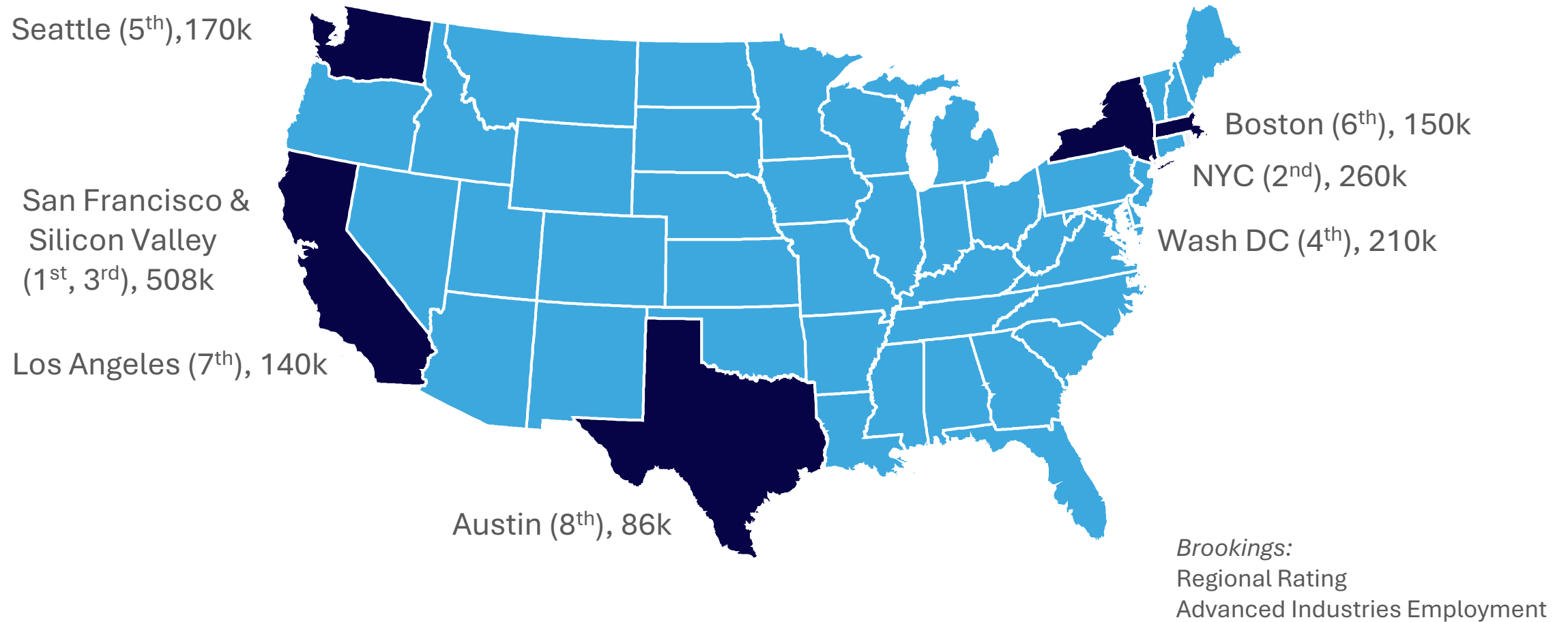
Robert Simon

Social Science Fellow

Agenda

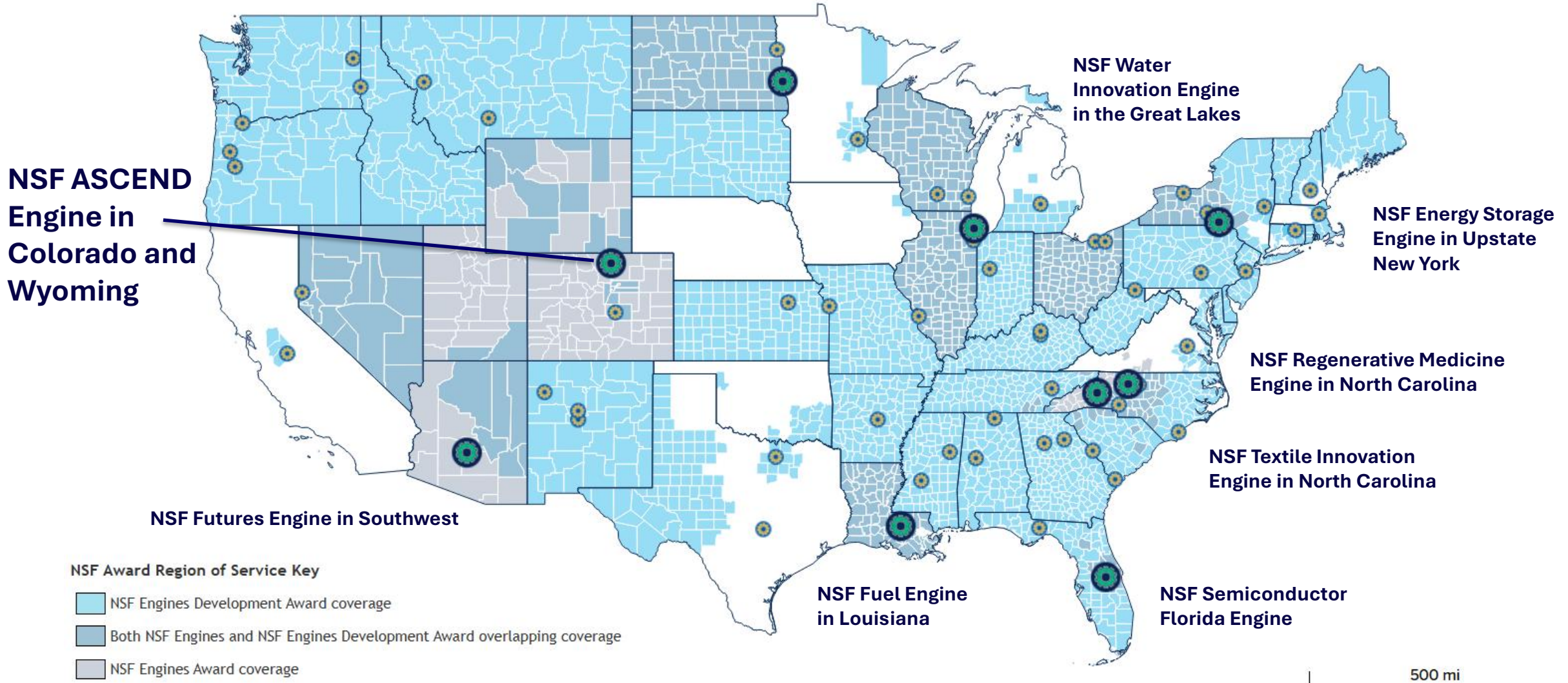
10:00	Introduction to the Engine
10:10	Four Strategic Areas
10:25	Stages of Ecosystem Development
10:35	Evolving an Innovation Ecosystem
11:15	Discussion
11:35	Connecting the Engine to your work
11:45	Closing Discussion

Eight Dominant Tech-based Metros (50% of tech job creation 2015-2019)



Nine Inaugural NSF Engines

NSF AgTech Engine in North Dakota



NSF Award Region of Service Key

- NSF Engines Development Award coverage
- Both NSF Engines and NSF Engines Development Award overlapping coverage
- NSF Engines Award coverage

500 mi

NSF Innovation Ecosystem Life Cycle



Phase 2: NASCENT

Solidify organization and partnerships

Ramp up innovation activities



Phase 3: EMERGENT

Scale technological products and services

Scale workforce capabilities

Attract sizeable external funding to promote innovation-based economic activity



Phase 4: GROWTH

Grow innovation ecosystem as a national leader

Attract increasing levels of economic activity and business creation

Support from state, local and federal governments



Phase 5: MATURE

Innovation ecosystem is well established and can sustain itself without NSF funding

Year 1-2
NSF \$7.5M/Year
Cost Share
\$7.5M/Year

Years 3-5
NSF \$15M/Year
Cost Share
\$30M/Year

Years 6-10
NSF \$20M/Year
Cost Share \$60M/Year

Four Focus Areas

Air Quality



Boulder County, *Boulder Daily Camera*

Soil Health



CSU Extension

Water Quality & Availability



Urban sewage, CSU Colorado
Water Quality

Wildfire Mitigation & Response



Alexander Mountain Fire, July 2024
– *The Denver Post*

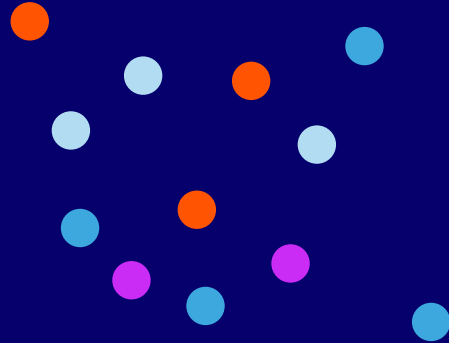


Stages of Innovation Ecosystem Development

Stages of Ecosystem Growth & Development

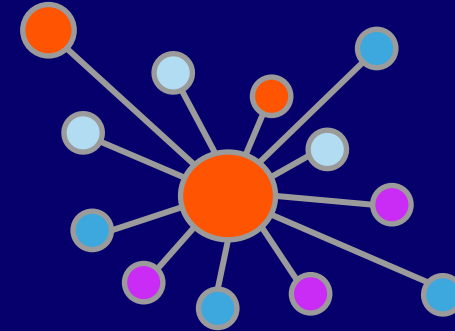
1. Fragments

Organizations are not working in a coordinated way, towards shared goals.



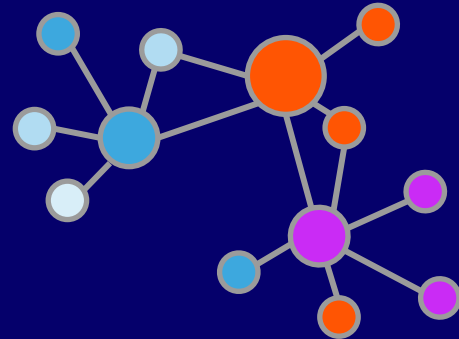
2. Single Hub

One organization takes on the coordinating and connecting role.



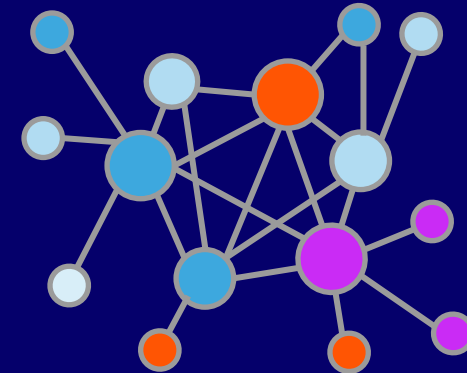
3. Multi-Hub

Multiple organizations act as bridges across the network, preserving focus and innovation among members.

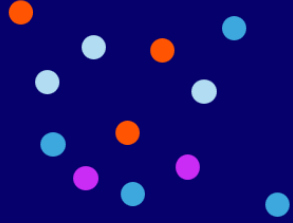
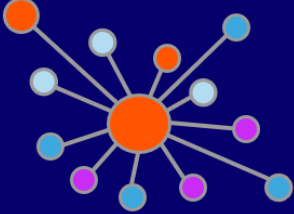
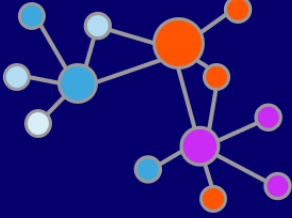
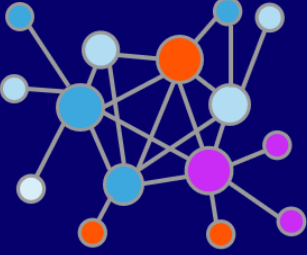


4. Core-Periphery

A densely connected group of organizations in the center connect to a diverse group of other orgs in the periphery.



Activities in Different Stages

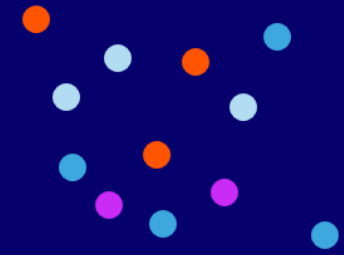
1. Fragments	2. Single Hub	3. Multi-Hub	4. Core-Periphery
			
<ul style="list-style-type: none"> • Each organization is working in parallel to others • Information & knowledge exchange • Initial conversations about a) common problems, or b) opportunities that could come from linking assets 	<ul style="list-style-type: none"> • Central hub begins to invest seed \$ in new programs and collaborations • Central hub acts as a convener • More companies and orgs join the conversation • Network connections emerge 	<ul style="list-style-type: none"> • Strategic agenda develops • Members begin to focus on strategic opportunities • Additional companies and investors contribute resources to advance strategic opportunities • Sub-topics start to emerge around multiple-hubs 	<ul style="list-style-type: none"> • A portfolio of shared investments accelerates activity • Portfolio includes multiple investments (talent, entrepreneurship, marketing, incubators, and research) • Connections in the network become stronger and more dense • A few orgs emerge as “boundary spanners”

Identifying Ecosystem Stage

1. Consider the ecosystem stages to the right.
2. Write on a Post-it note ONE example from our strategic areas that is "evidence" for the Front Range's current stage.
3. Place your Post-it note on the corresponding poster board around the room and pick up a colored sticker from that station.

1. Fragments

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2. Single Hub

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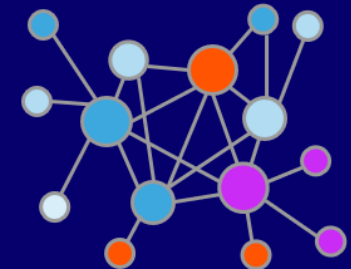
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Small Group Formation:

Assemble in small groups of 4-5, aiming for as much diversity across ecosystem stages as possible.

How to Evolve the Ecosystem

In your group, discuss potential opportunities that would evolve further across the ecosystem stages.

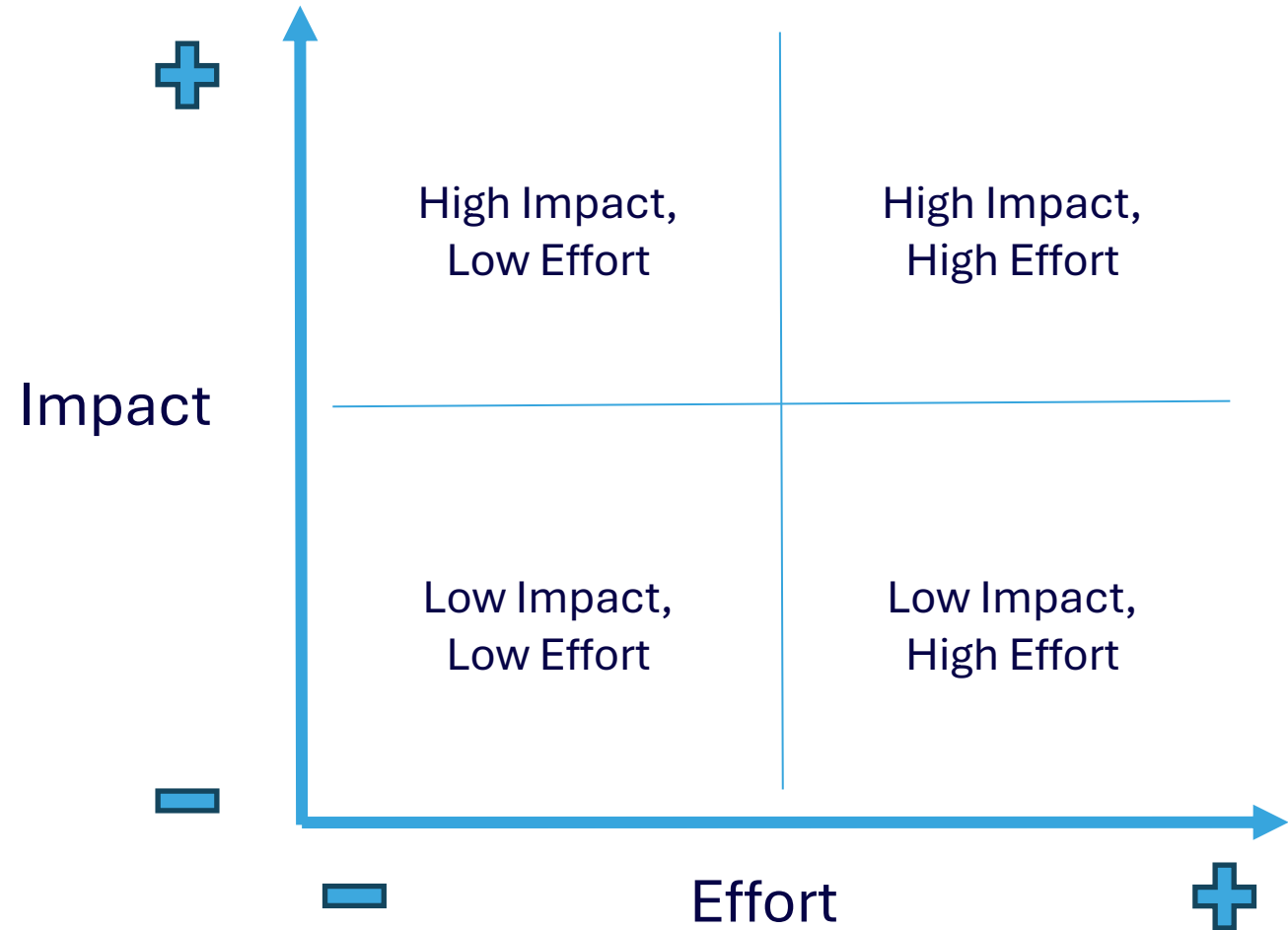
Write down on a Post-it note each opportunity your group identifies. Every opportunity should get its own Post-it note.



The Impact-Effort Matrix

Now take each opportunity your group generated and place them in the relevant quadrant from the matrix below.

(Each of the quadrants has its own poster around the room.)



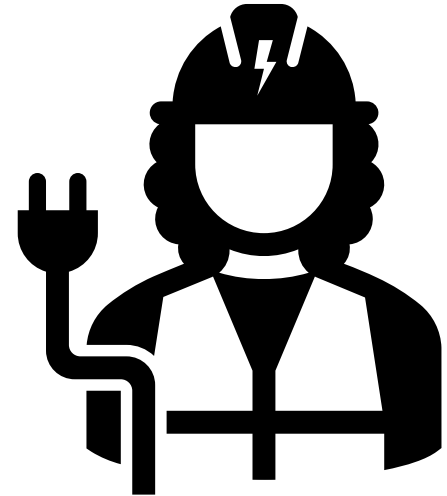
How the Engine Can Help



Research & Development



**Entrepreneurship &
Commercialization**



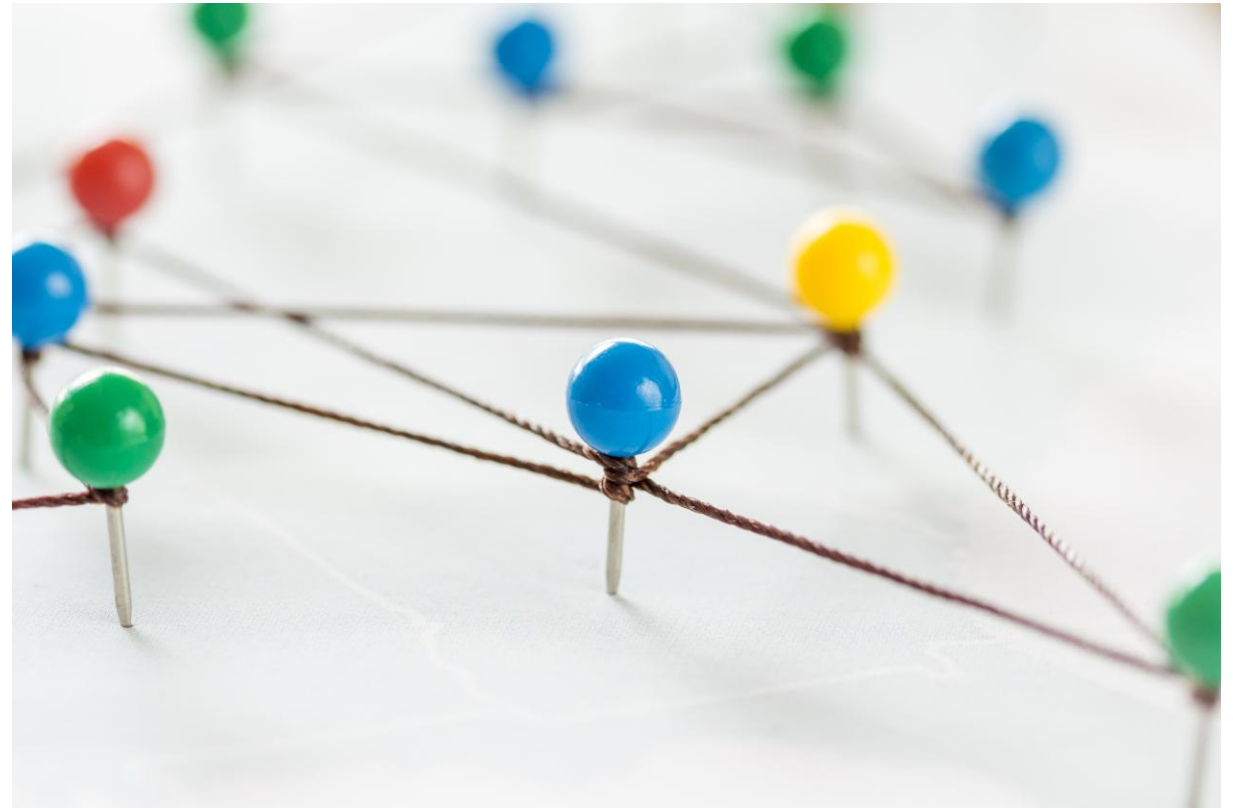
Workforce Development

**In addition to traditional support offered through Innosphere, including funding, acceleration, and incubation.*

Opportunities to Connect

On a lined Post-it note, write down:

- Name
- Organization
- One action item you can take to connect with the Engine



MOVING FORWARD

- Who is one person you want to connect with?
- What are opportunities for collaboration that we may not have discussed today?
- Please provide any additional feedback you wish to share.



Post-workshop Feedback

Thank You!

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Robert Simon – Social Science Fellow
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