SCIWS9: Fostering GEO-STEM Learning Ecosystems

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Creating More Diverse, Inclusive, and Resilient Communities Engaged in the Geosciences

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AGENDA

- Introductions (1:40-2)
- Overview of the STEM Education Strategic Plan (2-2:30)
- Break (2:30-45)
- Developing STEM Learning Ecosystems (2:45-4)
- Breakout Session (4-5)
- Report & Discussion (5-5:30)
- Evaluation

Introductions

Name

Location and Vocation

Goals for Workshop

Moving Beyond CO-STEM

Overview of the STEM Education Strategic Plan

The Strategic Plan for STEM education presents a vision for a future where all Americans have access to high-quality STEM education.

It is intended to serve as a “North Star” for the broader STEM community as it collectively charts a course for the Nation’s success and the United States will be the global leader in STEM literacy, innovation, and employment.

Learn more at:
https://www.whitehouse.gov/wp-content/uploads/2018/12/STEM-Education-Strategic-Plan-2018.pdf

GOALS FOR THE STRATEGIC PLAN FOR STEM EDUCATION

Build Strong Foundations for STEM Literacy	Increase Diversity, Equity, and Inclusion in STEM	Prepare the STEM Workforce for the Future




Federal STEM Education Partners

U.S. Department of Agriculture
U.S. Department of Commerce
U.S. Department of Defense
U.S. Department of Education
U.S. Department of Energy
U.S. Department of Health & Human Services
U.S. Department of Homeland Security
U.S. Department of Labor
U.S. Department of the Interior
U.S. Department of State
U.S. Department of Transportation
U.S. Department of Veterans Affairs
U.S. Environmental Protection Agency
Office of the Director of National Intelligence
Office of Science and Technology Policy
National Aeronautics and Space Administration
National Science Foundation
Smithsonian Institution

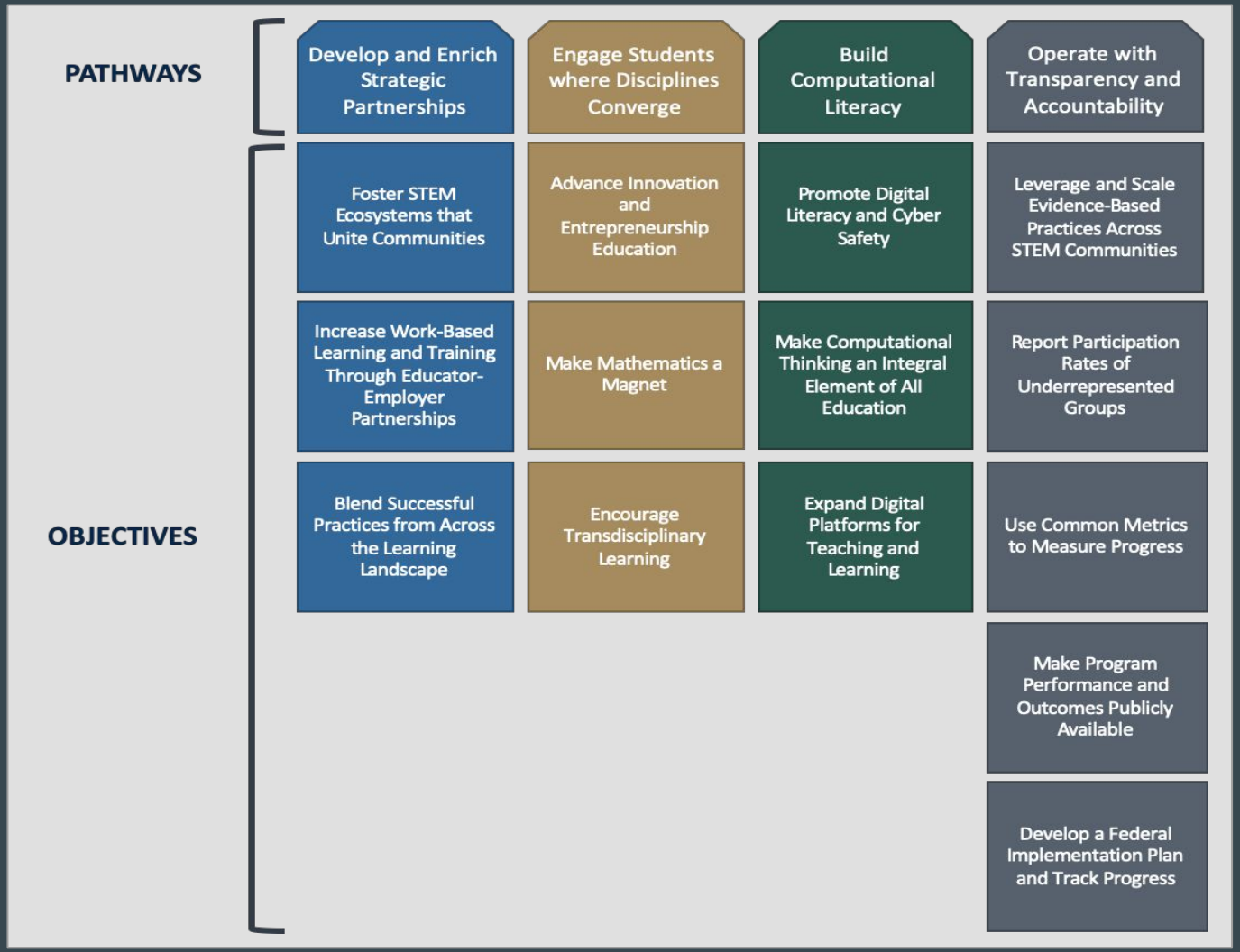
Pathways and Objectives Representing Cross-Cutting Approaches

The Federal strategy is built on cross-cutting pathways and objectives to achieve its goals.

These pathways will guide coordination and collaboration across communities to achieve success.

Ensuring all Americans have access to high-quality STEM education is a critical element of all pathways and is essential to building a diverse talent pool that benefits the Nation.

Pathways and Objectives Representing Cross-Cutting Approaches



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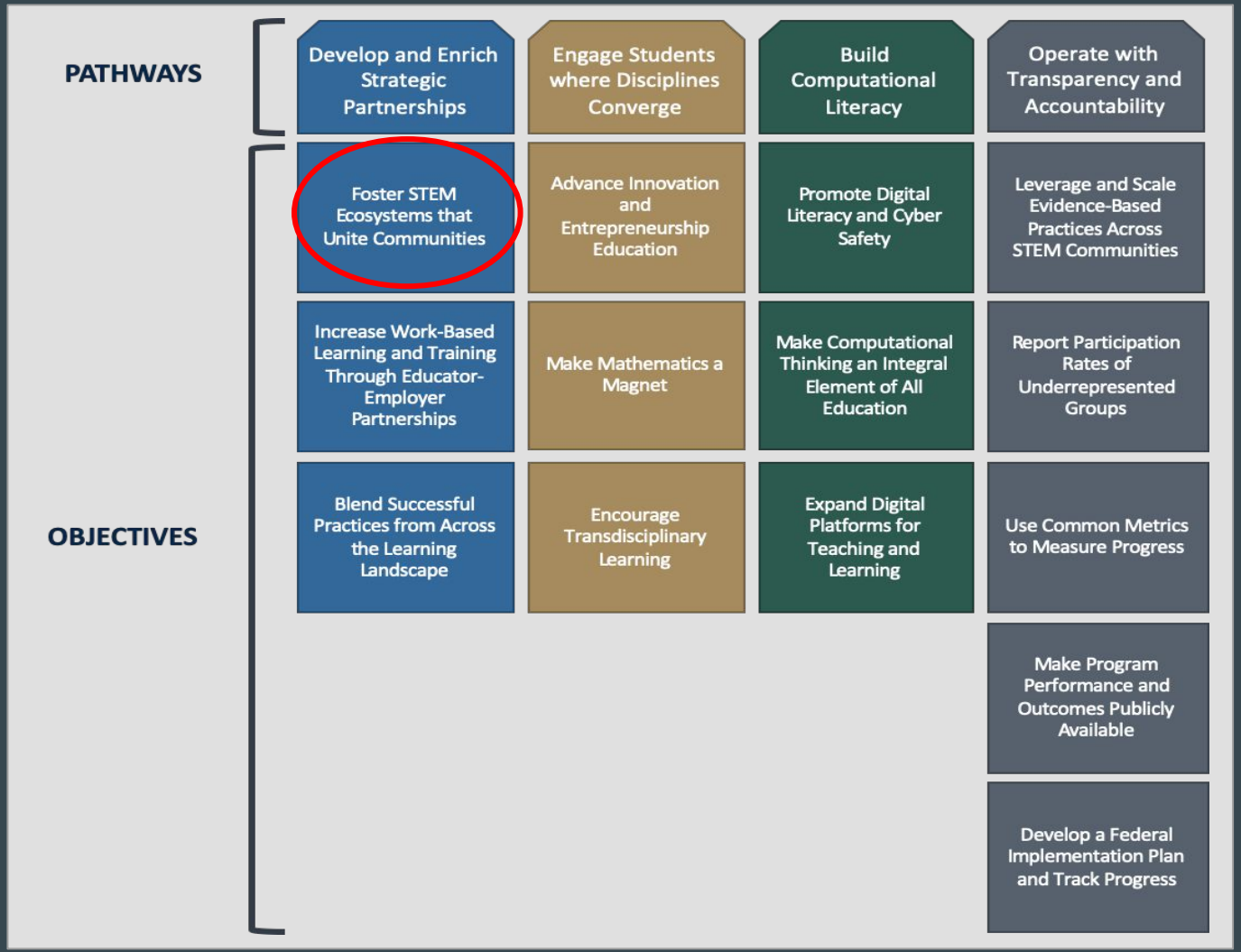
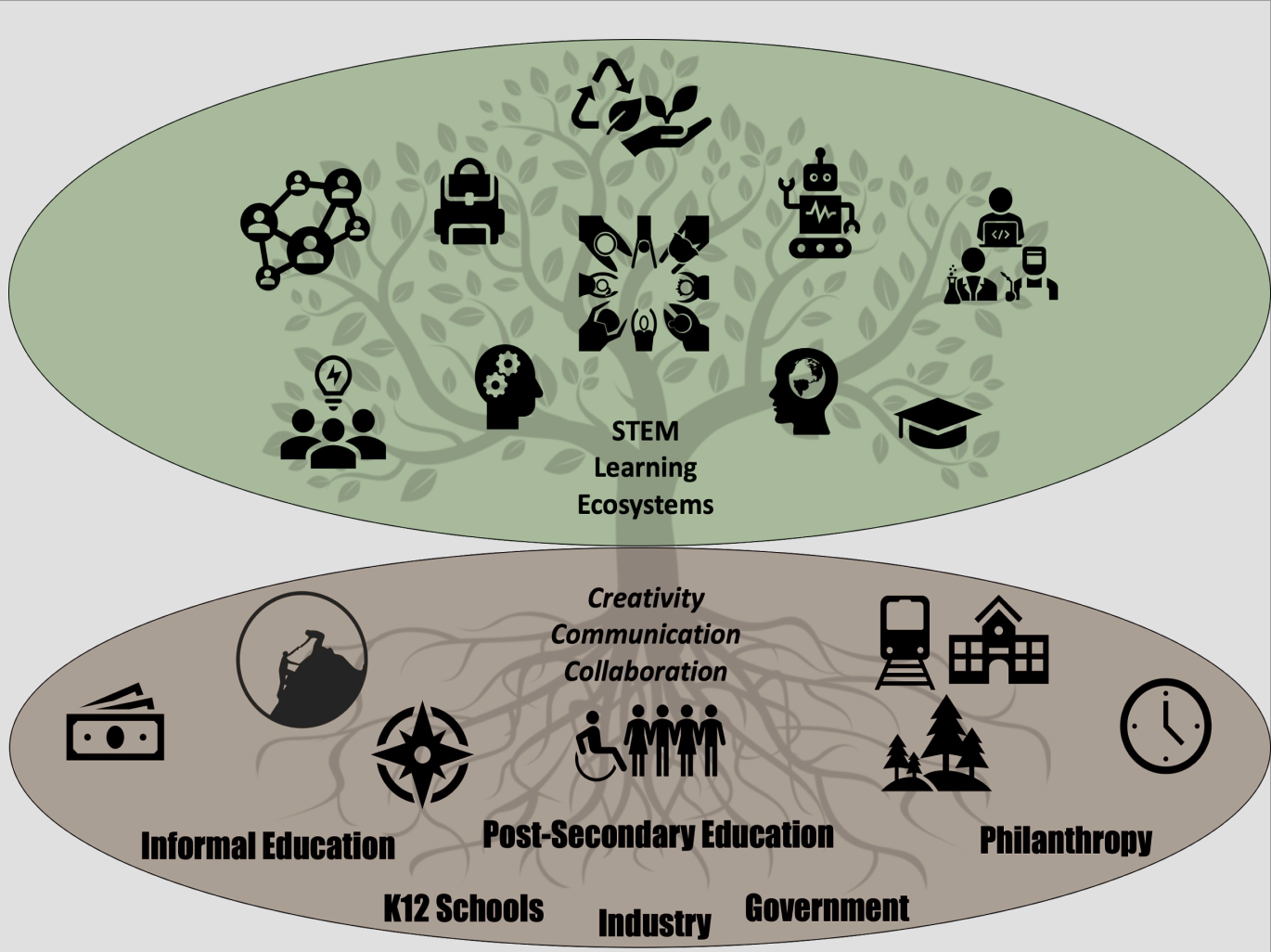


STEM Learning Ecosystems: A Conceptual Model

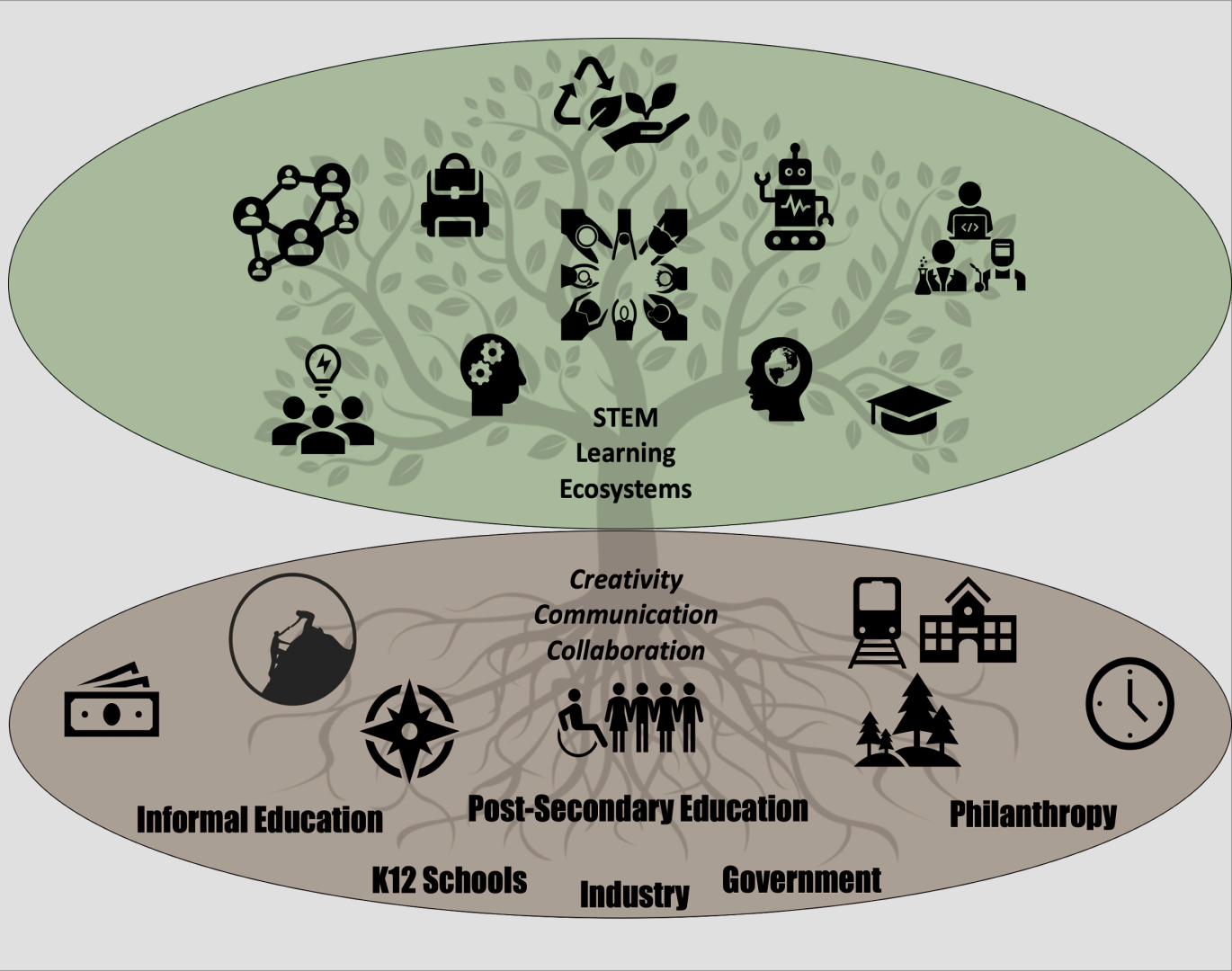
Community organizations develop systemic collaborations that engage learners from all walks of life, facilitate enduring and effective STEM learning opportunities, elevate community literacy and innovation, improve networks, and activate sustainable and transformative solutions for the broader community.

STEM Learning Ecosystems: A Conceptual Model



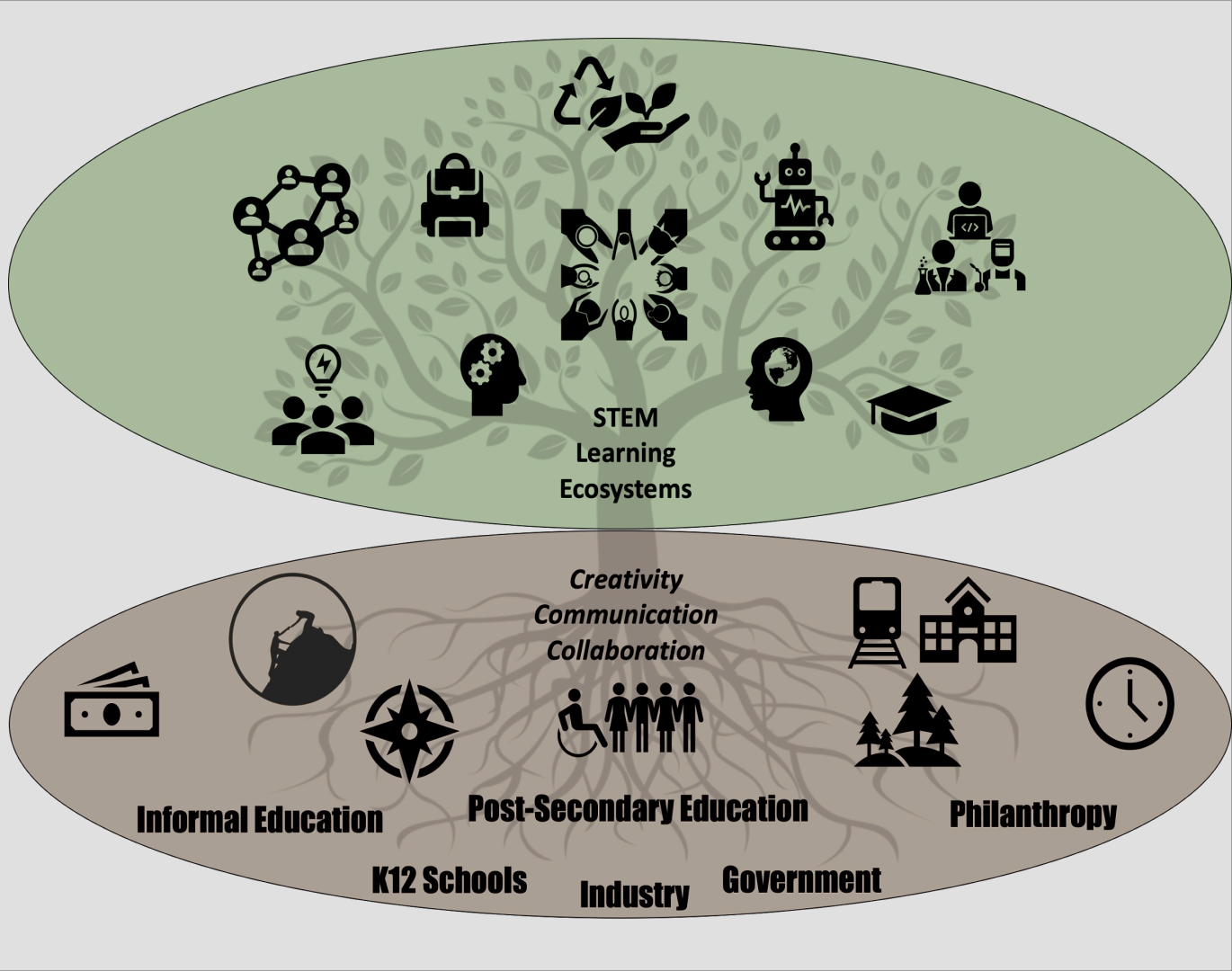
Inputs and Collaborations

- Infrastructure
- Direction and Vision
- Accessibility
- People
- Natural Resources
- Financial Support
- Time
- Leadership



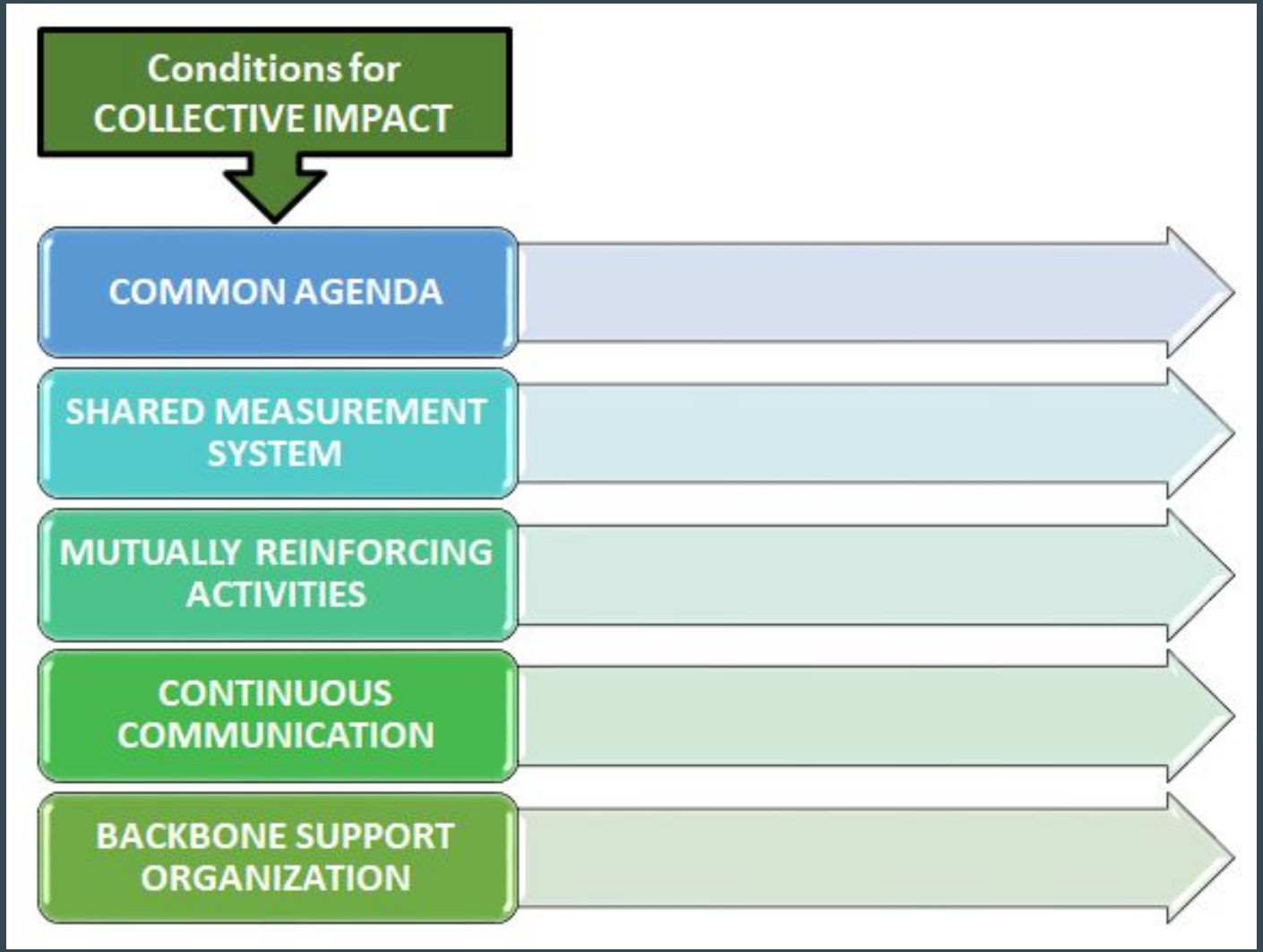
Outputs & Goals

- Critical Thinking
- Broader Participation
- Literacy
- Sustainability and Resilience
- Geo-STEM Identity
- Technology Innovation
- Strong & Enduring Networks
- Collaborative Ideas
- Transferrable Skills
- Jobs



Opportunities to Optimize Learning

Structured	Unstructured
K12 Schools	Museums
Community Colleges	Nature Centers
Colleges and Universities	Afterschool Programs
	Youth Clubs & Organizations
	...


Conditions for
COLLECTIVE IMPACT
COMMON AGENDA
SHARED MEASUREMENT SYSTEM
MUTUALLY REINFORCING ACTIVITIES
CONTINUOUS COMMUNICATION
BACKBONE SUPPORT ORGANIZATION

BREAK!

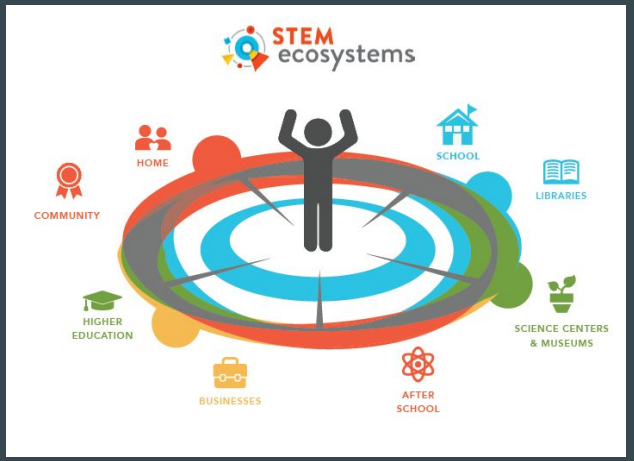
What are you thinking so far?

What examples of STEM Learning Ecosystems are you a part of?

How can you build on these to make them stronger?

Example STEM Learning Ecosystems

THRIVING EARTH EXCHANGE



SEAS
SUPPORTING EMERGING AQUATIC SCIENTISTS

Discussion --

What are you thinking so far?

What examples of STEM Learning Ecosystems are you a part of?

How can you build on these to make them stronger?

Work Time

- Identify stakeholders, participants, & audience
- Connect networks to scale up efforts
- Increase the intentionality to broadening participation
  - engaging social scientists
  - identifying barriers
  - creating a welcoming and inclusive environment.
- Create opportunities to build skills
- Develop career options and pathways

Funding Opportunities

- NSF
  - GEOPAths -- letter of intent 12/20/19
  - INCLUDES Planning Grant --7/13/20
  - Other Big Ideas -- Data Revolution, Midscale Infrastructure, Convergence

- AGU Education Section

Breakout Sessions -- Possible Topics

1. Identify stakeholders, participants, & audience
2. Connect networks to scale up efforts
3. Increase the intentionality to broadening participation
    a. engaging social scientists
    b. identifying barriers
    c. creating a welcoming and inclusive environment.
4. Create opportunities to build skills
5. Develop career options and pathways

Reporting Out & Discussion

- Defining this concept for Geosci communities
- Taking control of the process

Evaluation