ABOUT CLUSTERS

Session 1 | What clusters are and how they fit into economic development

COURSE GOALS

1. Know how to identify clusters

2. Understand how to prioritize clusters for public support

3. Be prepared to lead your region in cluster identification and prioritization process

HOW THE COURSE WAS BUILT

- o Experience working with cluster development professionals
- o Assessments of federal cluster funding
- o Reviews of academic literature and regional reports
- o Interviews with cluster leaders
- o Testing with two cohorts of regional practitioners

COURSE SESSIONS

1. About Clusters

2. Location Quotient

3. Qualitative Assessment

4. Prioritizing Assistance

5. Beyond Identification

ABOUT CLUSTERS

Session 1 | What clusters are and how they fit into economic development

SESSION AGENDA

1. Explaining cluster development's appeal

2. Unpacking jargon

3. Comparing clusters to other economic development approaches

4. Funding cluster development strategies

REASONS TO LEARN ABOUT REGIONAL INDUSTRY CLUSTERS

You have a limited budget for company recruitment and want to understand how to maximize your impact.

Your region is seeking greater economic diversification, and you need to identify your existing and emerging clusters.

Local education and workforce providers want to organize industry-driven training and need to know where to start.

A federal, state, or philanthropic funder wants to support a regional industry cluster, and you need to start with an assessment.

You think an industry gives your region a competitive edge, but you want to be able to benchmark its strength against your peers.

WHAT IS A CLUSTER?

A cluster is a concentration of interconnected businesses, assets, and institutions operating in a sector (or related sectors) within a region.

WHAT IS A CLUSTER?

Location quotient is the most common tool to measure cluster "concentration." See session 2 for details.

Here, think of relevant tangible (e.g., research facilities) and intangible (e.g., skilled workforce) assets.

A cluster is a **concentration** of interconnected businesses, **assets**, and institutions operating in a sector (or **related sectors**) within a **region**.

Proximity to suppliers or to related fields that in different sectors are often important to cluster success. This is discussed more in later sessions.

The definition of region here is flexible but usually should be small enough for geographic proximity to be meaningful, such as a metro area or a small state.

BOSTON-CAMBRIDGE LIFE SCIENCES CLUSTER

One of the well-known U.S. clusters is biotech in Boston-Cambridge. The reputation is well-deserved:

o Nearly 20% of all U.S. biotech investments are made in the metro's startups.

o Cambridge's county has the greatest concentration of life sciences R&D employees in the U.S. (Boston's county also ranks in the top 15).

o The metro has the largest lab inventory by square feet in the country.

This sector has been the subject of regular, proactive policy and investment support from Massachusetts economic development initiatives, federal R&D, and local universities and nonprofits.

* Sources: Venture capital data from PitchBook. Concentration data from U.S. Bureau of Labor Statistics. Lab space from CBRE.

EXAMPLES OF CLUSTERS

Well-known clusters include:

o Movie production in Hollywood

o App development in Silicon Valley

o Investment banking in New York City and London

o Lobster fishing in Maine

o Leatherworking in Northern Italy

o Winemaking in Western France

Caveats:

o These examples are illustrative to help define clusters – not as models to copy in your region.

o Each cluster can be unique, even if within the same industry.

o Focus on what exists and can be built in your region, not on replicating activity elsewhere.

WHY DO BUSINESSES FORM CLUSTERS?

WHY DO MANY REGIONS SUPPORT CLUSTERS?

"The enduring competitive advantages in a global economy lie increasingly in local things— knowledge, relationships, motivation—that distant rivals cannot match."

- Michael E. Porter

Porter, M.E. (1998). "Clusters and the New Economics of Competition." *Harvard Business Review, 76,* 6, 77-90. Retrieved: https://hbr.org/1998/11/clusters-and-the-new-economics-of-competition.
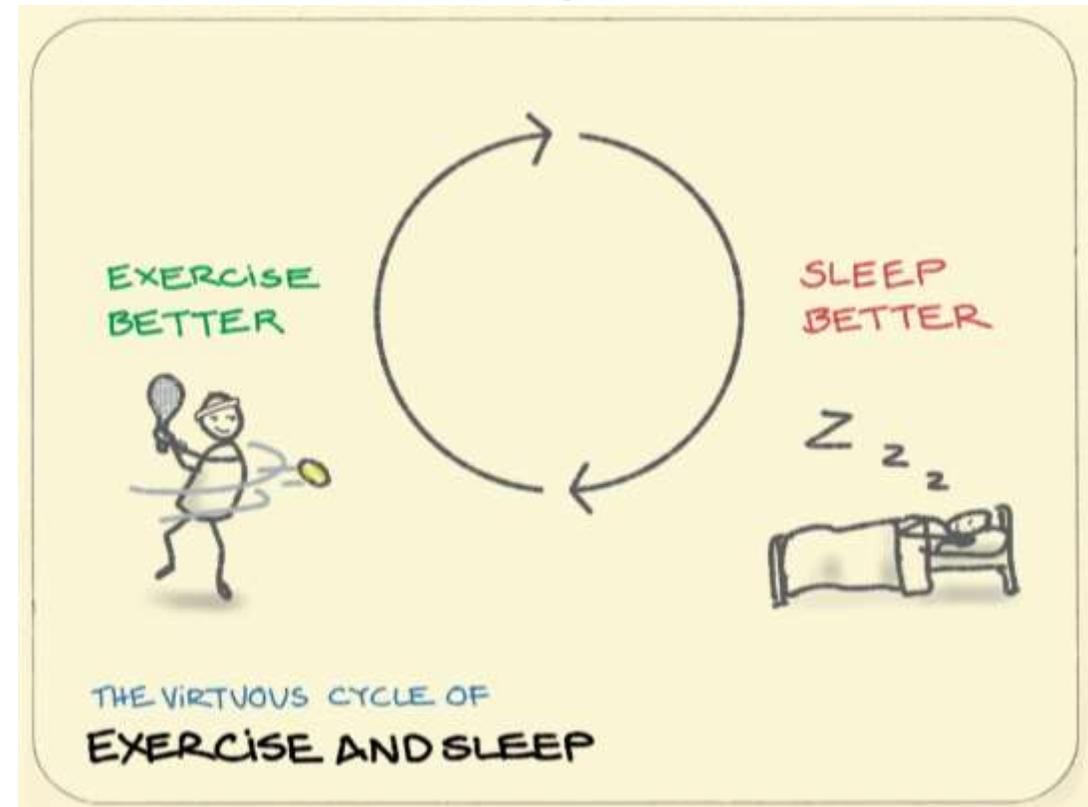
ECONOMIC BENEFITS OF CLUSTERS

When compared to businesses in the same industry that are located outside of a cluster, **businesses within industry clusters tend to achieve these economic outcomes** for themselves and the region:

Improved productivity

Faster innovation

Stronger supply chains

Increased entrepreneurship

More skilled workforce

Benefits to other sectors

HOW DOES CO-LOCATION IN A CLUSTER ACHIEVE GREATER IMPACT?

o Proximity to suppliers, customers, and competitors shortens feedback loops

o Proximity improves formal and informal communications channels

o Some think proximity heightens companies' sense of competition

o Each explanation describes a sort of virtuous cycle

Example of a virtuous cycle.

EXERCISE BETTER

SLEEP BETTER

Z z z

THE VIRTUOUS CYCLE OF
EXERCISE AND SLEEP

Available via CC license from Sketchplanations.

FURTHER READING ON CLUSTER BENEFITS

o Industry clusters are a comparatively well-researched area of economic development.

o For additional information on regional economic impacts of industry clusters, see the sources listed at right.

- De Almeida Tavares, M. S., Gohr, C. F., Morioka, S., & Da Cunha, T. R. (2021). Systematic literature review on innovation capabilities in clusters. *Innovation & Management Review*, *18*(2), 192–220. https://doi.org/10.1108/inmr-12-2019-0153.

- Delgado, M., Porter, M. E., Stern, S., Center for Economic Studies, & U.S. Census Bureau. (2010). *Clusters and entrepreneurship*. http://ssrn.com/abstract=1689084.

- Ketels, Christian & Sergiy Protsiv (2021) Cluster presence and economic performance: a new look based on European data, Regional Studies, 55:2, 208-220, DOI: 10.1080/00343404.2020.1792435.

- Delgado, M., & Porter, M. E. (2021). Clusters and the Great Recession. *SSRN*. https://ssrn.com/abstract=3819293.

- Campi, M., & Dueñas, M. (2022). Clusters and Resilience during the COVID-19 Crisis: Evidence from Colombian Exporting Firms. In Inter-American Development Bank, *IDB Working Papers Series* (No. 1375). http://www.iadb.org.

WHY IS YOUR REGION INTERESTED IN CLUSTERS?

o Complete the matrix at right

o Which of these common goals for cluster development best aligns with your region's broader goals for economic development?

Economic Goal	Does it apply to your region?	
	Yes	No
Improving productivity in key sectors		
Accelerating development and adoption of technology & innovation		
Training a skilled workforce		
Increasing entrepreneurship		
Strengthening supply chain & other businesses related to your key sectors		

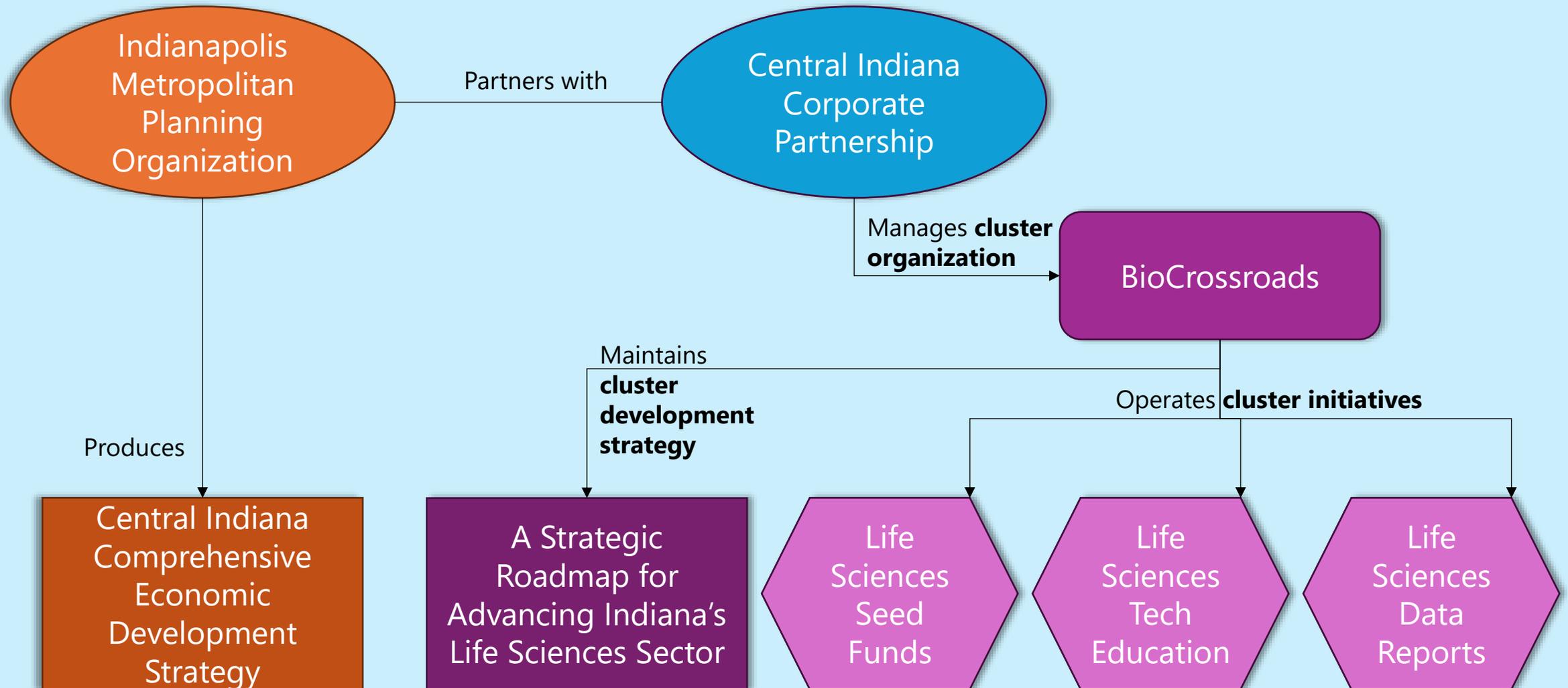# DEFINING TERMS & UNPACKING JARGON
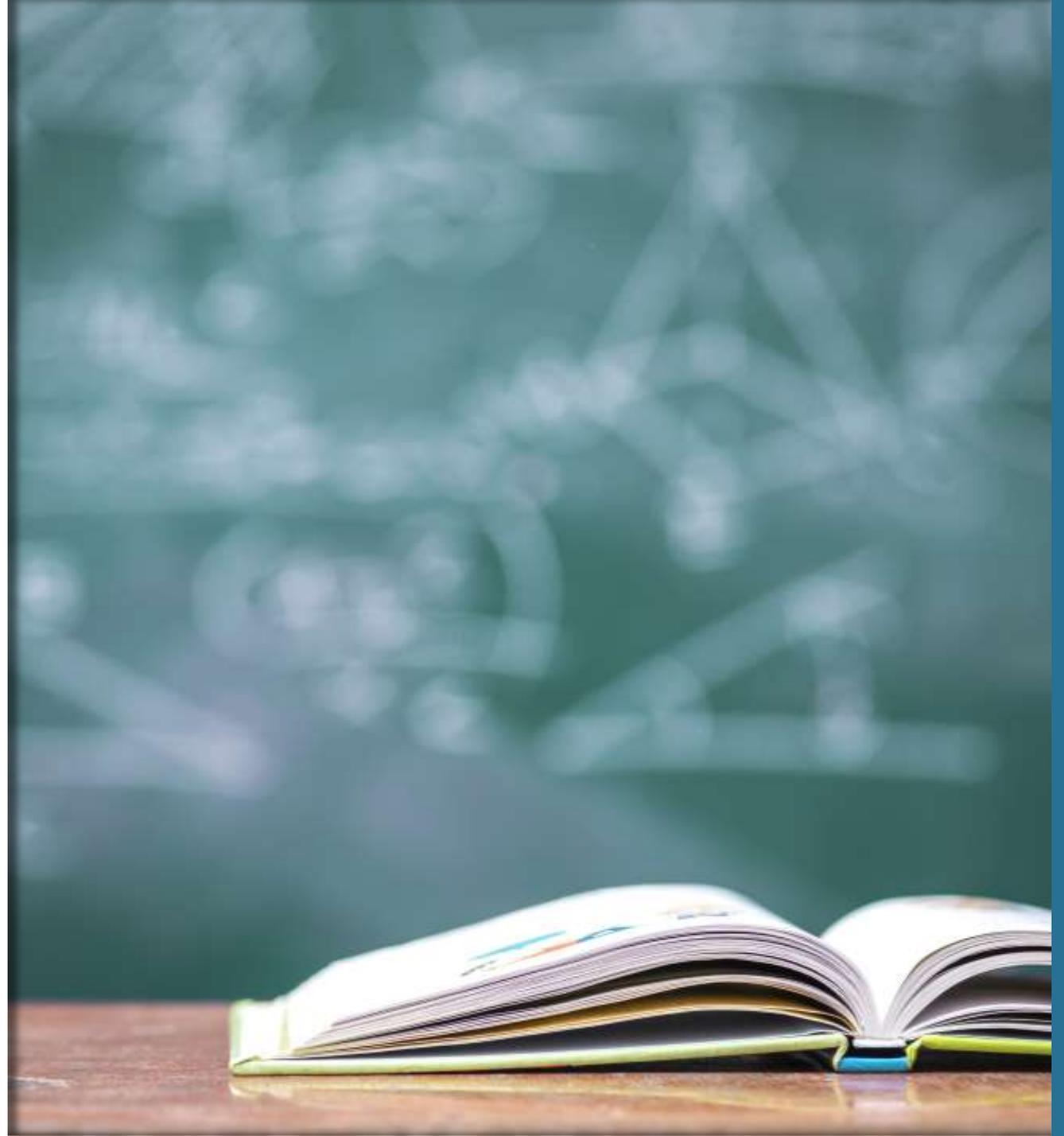
CLUSTER TERMINOLOGY

Clarifying some common terms (as they'll be used in this course and will generally be used elsewhere).

o **Cluster development** – describes a set of policies, actions, and initiatives intended to support one or more clusters

o **Cluster development strategy** – a plan for supporting one or more clusters

o **Cluster initiative** – a specific program/activity for cluster development

o **Cluster organization** – an entity that supports a particular cluster

CENTRAL INDIANA & BIOCROSSROADS

An overview of the Indianapolis life sciences **cluster** and its leaders' **cluster development** approach.

Indianapolis Metropolitan Planning Organization

Partners with

Central Indiana Corporate Partnership

Manages **cluster organization**

BioCrossroads

Produces

Maintains **cluster development strategy**

Operates **cluster initiatives**

Central Indiana Comprehensive Economic Development Strategy

A Strategic Roadmap for Advancing Indiana's Life Sciences Sector

Life Sciences Seed Funds

Life Sciences Tech Education

Life Sciences Data Reports

CLUSTERS IN YOUR REGION

○ Complete the matrix at right for known or suspected cluster activities in your region.

○ For each cluster organization or initiative, note what you know about its goals.

Activity	Present?	Name & Description
Clusters		
Cluster strategies		
Cluster organizations		
Cluster initiatives		

"TECH" IS MORE THAN INFO TECH!

o When this course talks about "tech" and many other entities talk about "tech-based" economic development, we:

- Do not just mean information technologies or "IT"

- We typically are referencing any industry that has a high reliance on research, new intellectual property (IP), and/or a STEM workforce

- Examples include advanced manufacturing, life sciences, and modern mining.

o Clusters do not have to be in "tech" sectors to deserve support

➢ Increasing productivity and competitiveness does often require a strong connection to technology & innovation, particularly through the adoption of recent advances and development of new products or services.

AN OVERVIEW OF CLUSTER DEVELOPMENT

HOW DO CLUSTERS RELATE TO ECONOMIC DEVELOPMENT?

o Clusters are a way to understand your local industry

  ➤ Which sectors have a notable concentration that could/should yield benefits greater than the sum of its parts?

o Cluster development is an economic development approach that fits within a broader regional strategy

  • Lean into a competitive advantage by supporting a strong industry

  • Diversify your economy by cultivating a locally emerging industry

  • Buttress a declining sector through targeted support

BASIC PRINCIPLES OF CLUSTER DEVELOPMENT

1. Focus support on the whole industry

2. Engage industry in cluster strategy design and implementation

3. Invest in measurement and evaluation

4. Adapt approach to evolving cluster needs

5. Only do what private sector will not or does not do

6. Design efforts to encourage beneficial private activity / investment

FUNDING CLUSTER DEVELOPMENT STRATEGIES

o Cluster development can use any tool available to economic development, and often should tap industry support

o Common sources include –

- State: general fund, infrastructure bonds

- Local: general fund, special assessments, specific tax/fee

- Federal programs, including (as of March 2026): Regional Innovation Clusters, Regional Technology & Innovation Hubs, Regional Innovation Engines

- Philanthropy: grants, program-related investments

- Industry & Investors: membership, sponsorship, fee-for-service

EXAMPLE OF REVENUE VARIETY

o BioSTL is the cluster organization for life sciences in St. Louis

o The proportion of funding sources will change over time

o Federal & philanthropic sources are good for launching efforts, but state/local and industry are better for long-term.

o Organizations put themselves in the best position to withstand shocks by having multiple sources *and types* of funding.

BIOSTL 2021 PROJECTED SOURCES

- Corporate/Foundation Support
- Individual Support
- Federal and State Awards
- BioGenerator Investment Returns
- Earned Sources

6%
35%
14%
16%
29%

* Source: https://www.biostl.org/what-we-do/impact-report
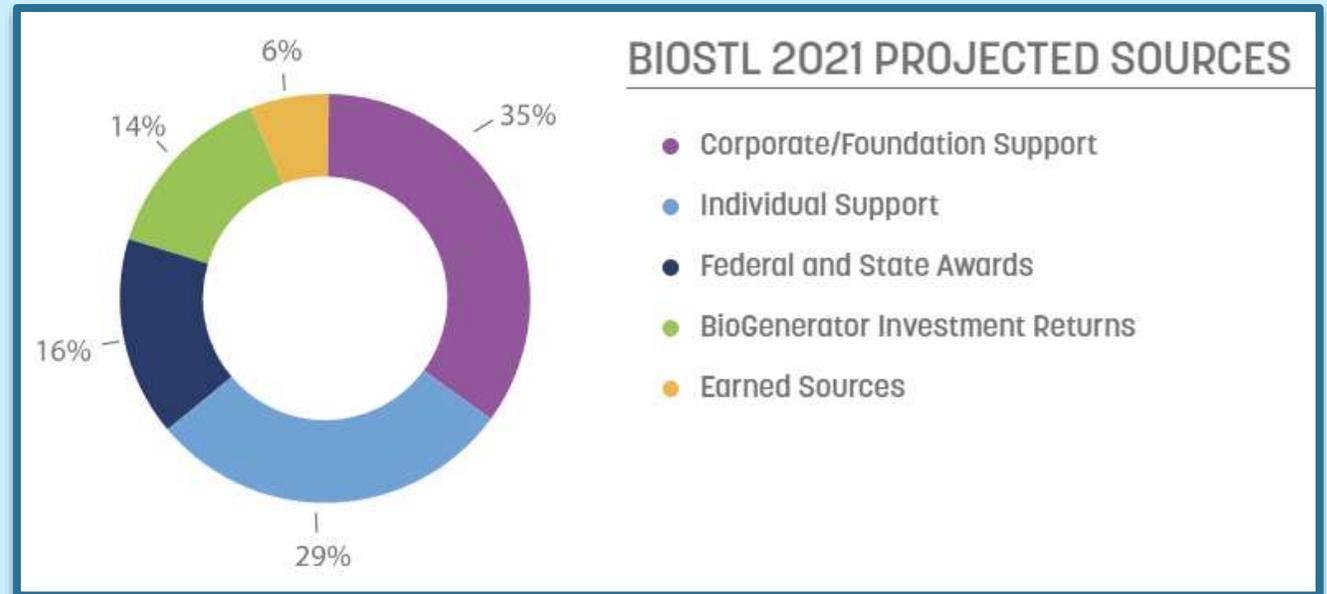
ABOUT CLUSTERS TAKEAWAYS

o **Clusters** are a common lens used to understand regional economies.

o **Cluster development** is an approach to economic development that seeks to strengthen one or more of a region's industry clusters.

o Industry clusters can produce improved productivity, a more highly skilled workforce, and other benefits that are greater than when activity is scattered.

o Cluster development can be funded from a wide variety of sources.

NEXT SESSION: LOCATION QUOTIENT

TOPICS WE WILL COVER

o Calculating and interpreting Location Quotients

o Data sources for LQs

o Problems with relying on LQ alone for cluster IDs

PREP TO MAXIMIZE YOUR TIME

o Access Bureau of Labor Statistics, Census, or other data (or ask your favorite AI) and identify one or more industries that have a large presence in your region.

o If possible:

- Record the NAICS codes for these industries

- Download employment and/or establishment data

FEEDBACK SURVEY

https://forms.gle/NyXRTVgUhS8mXP5g9
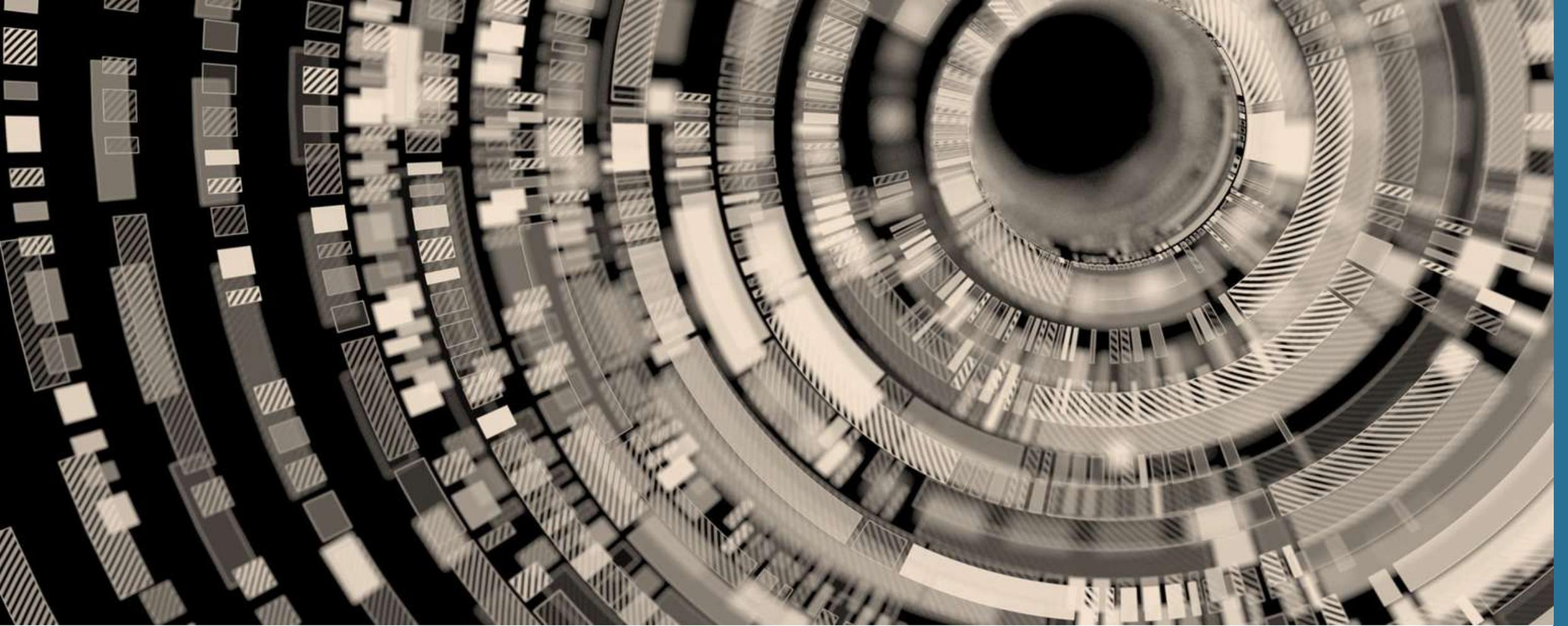
AUTHOR & ACKNOWLEDGEMENTS

EXCEL REGIONAL SOLUTIONS