

Agbioscience as a Development Driver

**Presentation to the 2014
Minnesota Bioscience
Conference,
April 3, 2014
Worthington, MN**



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Who we are

Agricultural Innovation from Idea to Reality



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Introduction

Every ecosystem
starts with a dynamic
opportunity



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Introduction

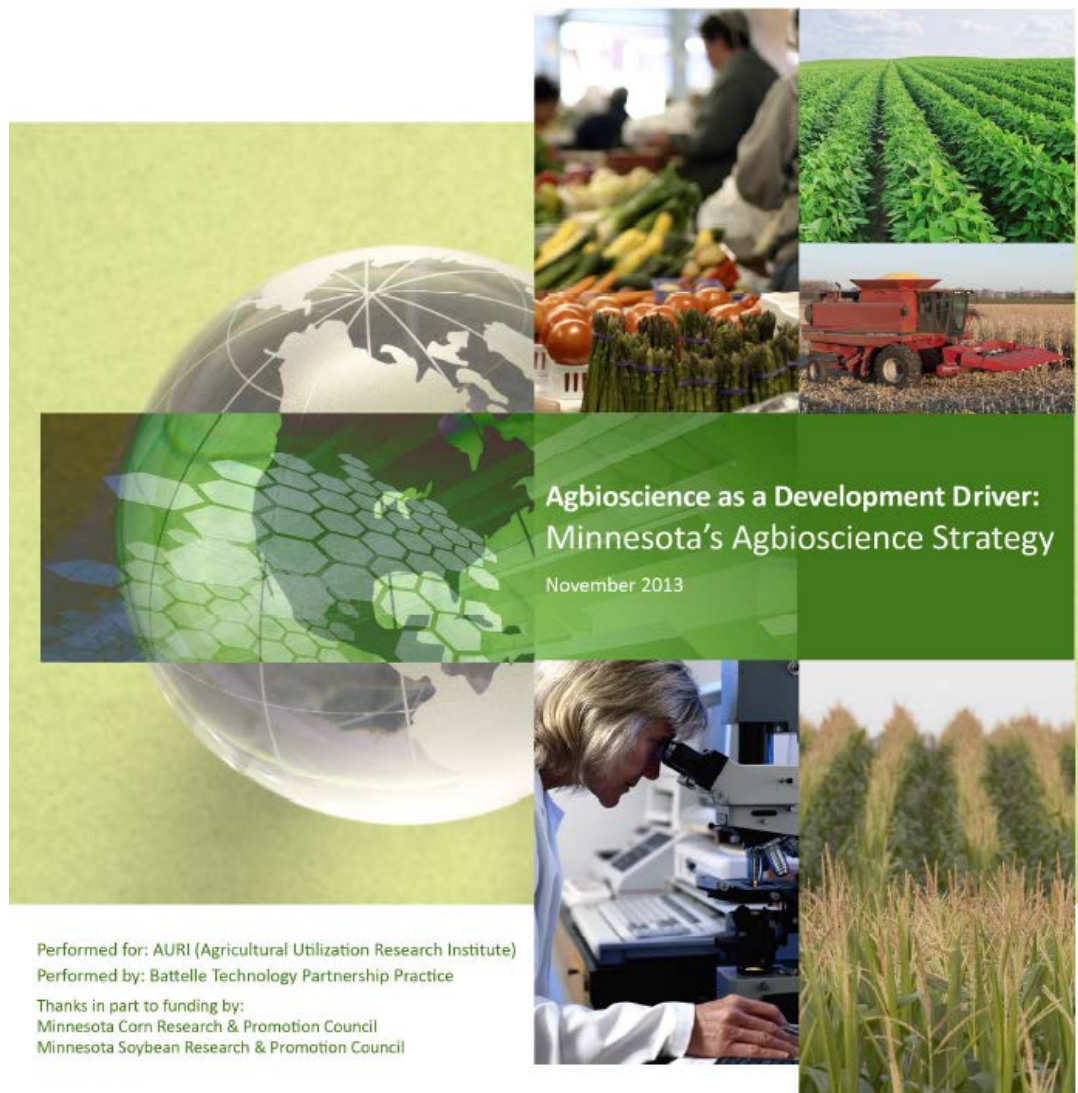
- Ecosystems are essential
- Recent study shows the importance of establishing an agbioscience ecosystem



Presentation Outline

- Agbioscience study background
- Study conclusions
- Agbioscience ecosystem
- Application to this region
- Conclusions





**Agbioscience as a Development Driver:
Minnesota's Agbioscience Strategy**

November 2013

Performed for: AURI (Agricultural Utilization Research Institute)
Performed by: Battelle Technology Partnership Practice
Thanks in part to funding by:
Minnesota Corn Research & Promotion Council
Minnesota Soybean Research & Promotion Council



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About the Agbioscience Study

- **What is agbioscience?**

- Science and innovation related to agriculture and associated biosciences



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About the Agbioscience Study: Objectives

- Identify the areas in which Minnesota could be world-class
- Compare those findings with the most promising market opportunities and global trends
- Focus on where these strengths and opportunities overlap to position Minnesota as a global leader in agbioscience



About the Agbioscience Study

- Cosponsored by MN Corn Research & Promotion Council, MN Soybean Research & Promotion Council, and AURI



**Minnesota Soybean
Research & Promotion Council**



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About the Agbioscience Study



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About the Agbioscience Study

Battelle
The Business of Innovation



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About the Agbioscience Study: Expected Outcomes

- Job growth and wealth creation
- Increased commodity values
- All organizations and regions have access to latest R&D in these platforms
- Dynamic ecosystem in place that builds the industry potential



Study: Ohio's Outcomes The Ohio Third Frontier

**Ohio's
Direct
Investment:
\$681M**



**Additional
Investment
Attracted:
\$4,152M**



**Economic
Impact of
Investment:
\$6,611M**



Study: Arizona's Outcomes Bioscience Investments



**46.6% growth
in economy**



**15,000 new
jobs**



**35% growth in
taxes
generated**



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About the Agbioscience Study: Quantitative

- Identified patterns and clusters of R&D activity in the public realm
- Analysis of peer-reviewed publication statistics
- Presence of research centers
- Links to agbioscience companies/applications



About the Agbioscience Study: Qualitative

- More than 100 individuals:
 - Faculty, researchers and research administrators
 - Professionals in applied research, technology transfer and economic development.
 - Entrepreneurs and businesses



Study Conclusions



Study Conclusions: Determining Competencies

- Strong R&D position
- Strong industrial base
- Deep intellectual property position
- Substantial venture capital investment
- Global market potential



Study Conclusions: Four Competency Platforms

- Microbial Agbioscience
- Resilient, Efficient & Productive Agricultural Systems
- Biobased Industrial Products
- Value-added Food & Health Products



Study Conclusions: Market Potential

- **Microbial Agbioscience:**
\$259 billion in 2016
- **Resilient & Sustainable Agriculture Systems:**
\$17.7 billion in 2016



Study Conclusions: Market Potential

- **Biobased Industrial Products:**

\$4.6 billion in 2016

- **Value-added Food & Health Products:**

Anticipated to grow at a 6.5 percent annual rate from 2011 to 2016

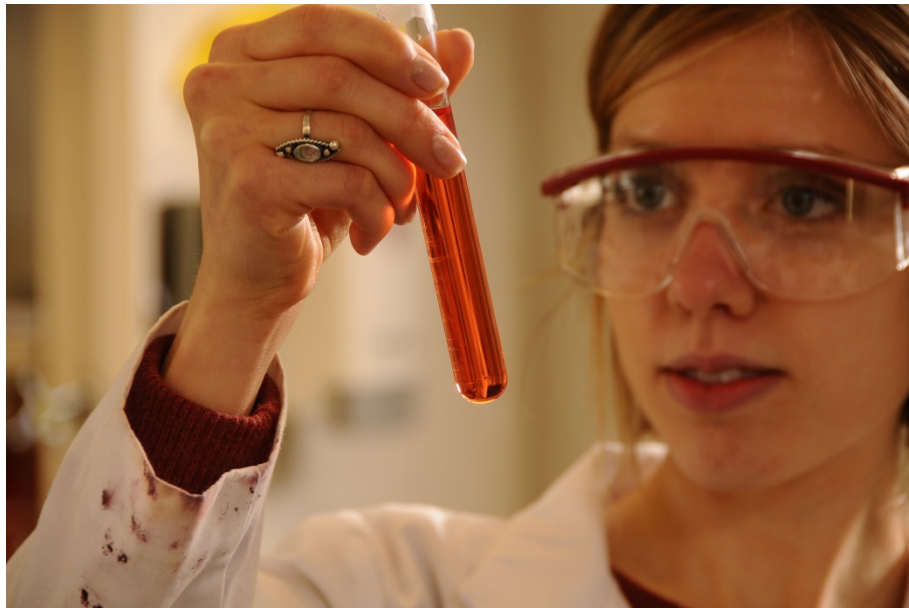


Study Conclusions

- Build the capital entrepreneurs and businesses need to bring opportunities to market
- Create a well-aligned agbioscience-specific innovation ecosystem



Agbioscience Ecosystem



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Innovation Ecosystem: Definition

“The **innovation ecosystem** describes the relationship between economic development oriented organizations supplying needs resources to industry so they can make their companies grow and create the jobs and income that strengthens the economy.”

Source: Jobs & Innovation Systems, TECNA. June 2011



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Agbioscience Ecosystem: Why is it important?

- Create an environment in which:
 - Agbioscience research leads to product innovations
 - Technological advancements quickly make their way into the hands of entrepreneurs and industry leaders

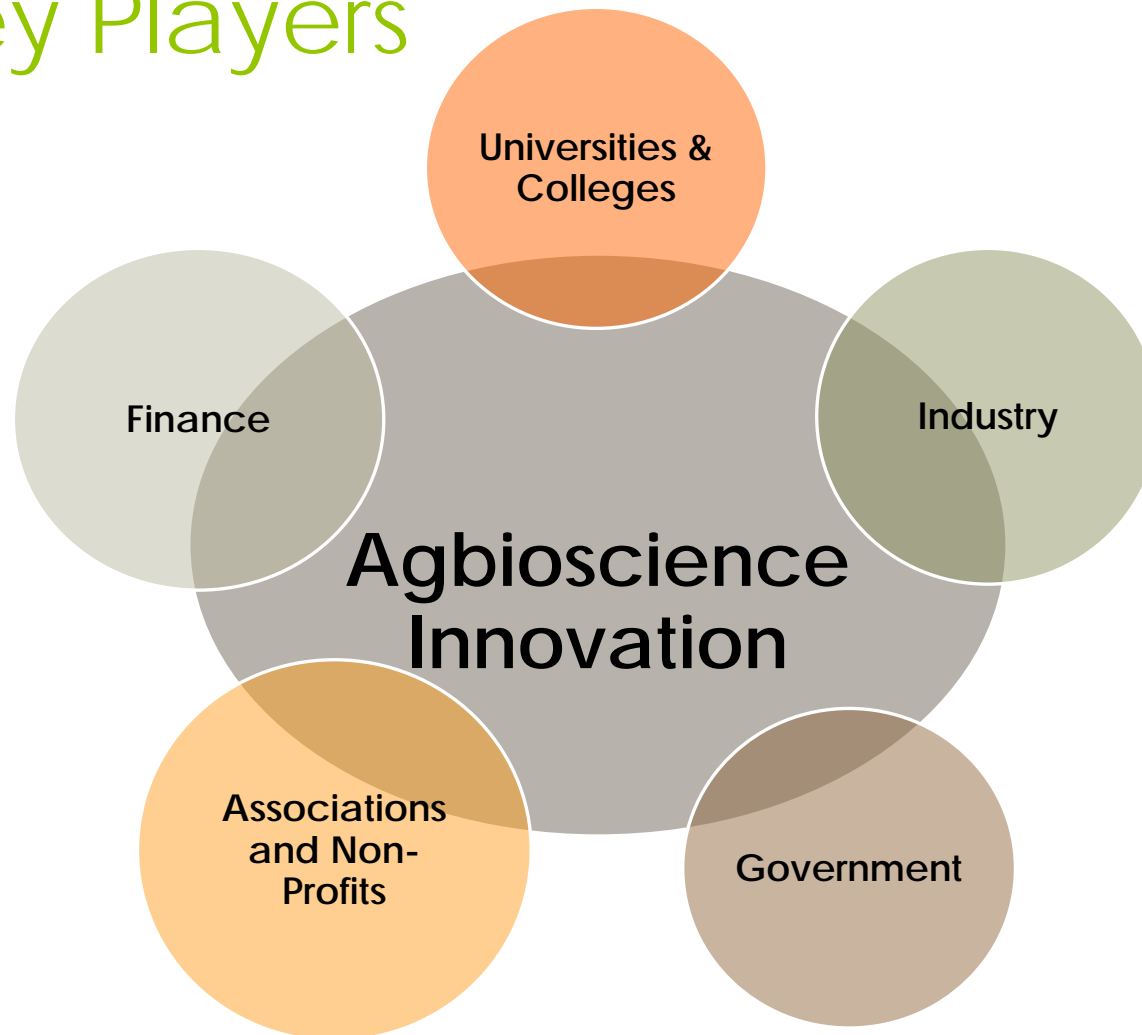


Agbioscience Ecosystem: Why is it important?

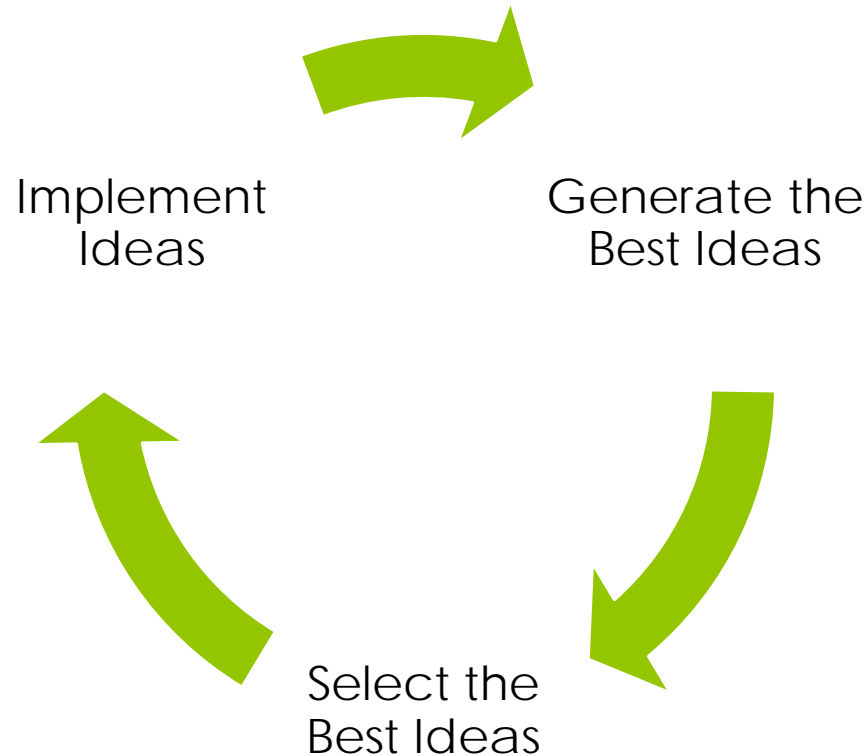
- Create an environment in which:
 - Agbioscience companies are able to secure resources to move innovative products into the market place
 - Existing agbioscience industry clusters are supported and emerging clusters are formed, creating a global competitive advantage



Agbioscience Ecosystem: Key Players

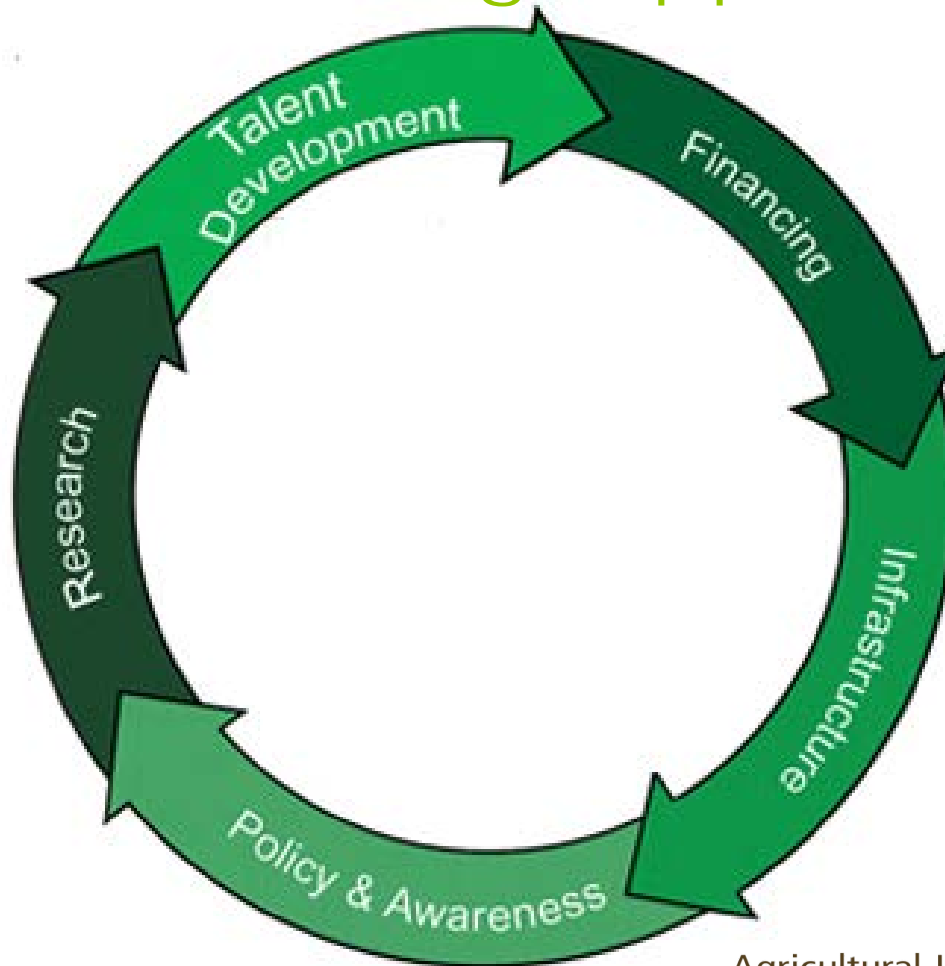


Agbioscience Ecosystem: What do they do?



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Agbioscience Ecosystem: Areas of a Strong Support System



Agbioscience Ecosystem: Potential Barriers

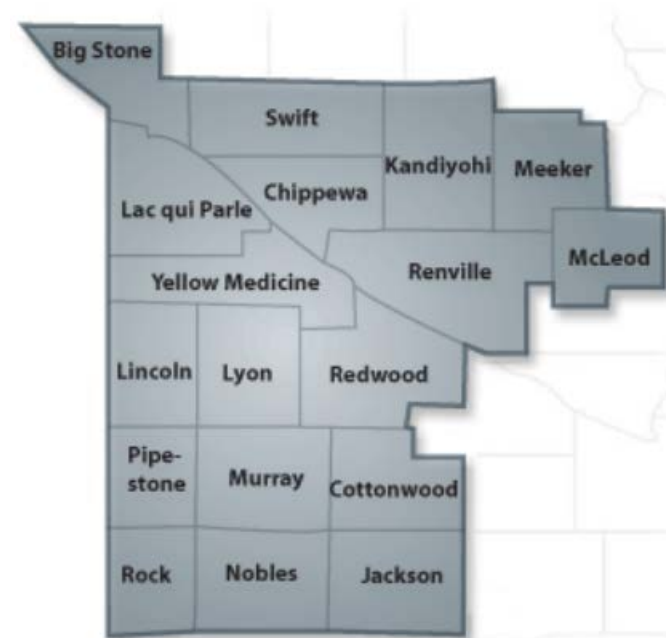
- Poor communication
- Limited tools and resources
- Fear of change
- Unfocused innovative activity
- Restrictive vertical relationships

Innovation and Entrepreneurship, Second Edition, John Bessant and Joe Tidd, p. 172

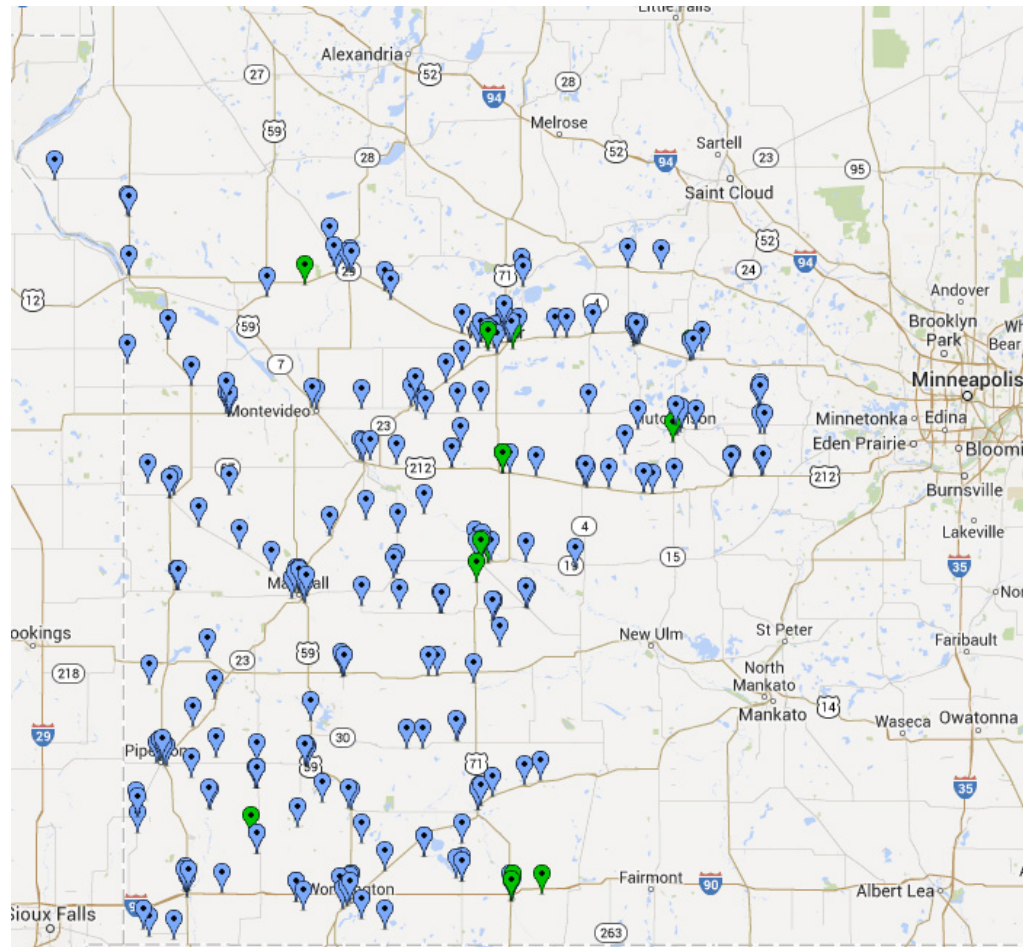


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Application to this Region



Application to this Region



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Agbioscience Ecosystem: Next steps

- Identifying the network
- Identifying areas of strength
- Building partnerships and relationships to determine the roles of different players



Agbioscience Ecosystem: Network Mapping

- One of AURI's first steps to help build an agbioscience ecosystem is to create networks around the four agbioscience platforms.
- We are working with Minnesota Rural Partners to create network maps to generate participants for each of the platforms.



Conclusions

- Agbioscience presents a great opportunity for Minnesota to be a global leader.
- We need a strong agbioscience-specific, innovation ecosystem to capitalize on this opportunity.



Conclusions

- How do you fit into the agbioscience ecosystem?
- Drop off your business card!



Questions?

www.auri.org



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