

IOWA STATE UNIVERSITY

**Economic Development and Industry Relations**

**ECONOMIC DEVELOPMENT &  
INDUSTRY RELATIONS**

DAVID SPALDING

*Vice President, Economic Development and Industry Relations*

CONNECT WITH US FOR:

# IOWA STATE UNIVERSITY

## Economic Development and Industry Relations

### IOWA STATE UNIVERSITY Office of Innovation Commercialization

- Commercialize technologies
- Negotiate industry research & partnerships
- Innovations and IP resulting from the research efforts at ISU
- Industry funded research
- Execute research agreements with industry and commodity groups



IOWA STATE UNIVERSITY  
ResearchPARK

- Economic development asset
- Space for lease
- Job creation, workforce solutions
- Access to talent, research and specialized equipment



AMERICA'S  
**SBDC**  
Small Business Development Center  
IOWA

- One-on-one counseling
- Training and webinars
- Market research
- Rural Business Innovators



**CIRAS**

- Business and technical assistance
- Training and education
- Growth, leadership, Productivity, Technology & workforce

### IOWA STATE UNIVERSITY Pappajohn Center for Entrepreneurship

- In-classroom
- Out-of-classroom experiences
- Programs and competitions
- Competitive funding opportunities
- Venture support

# IOWA STATE UNIVERSITY

**\$5**  
**BILLION**  
**ECONOMIC IMPACT**



\$123 million financial impact



\$41.1 million in capital raised



1,661 jobs + 211 business starts



\$301.3 million in research funding



1,336 workforce grants for high demand jobs



\$5 + million ROI

# Innovation & Economic Prosperity University Awards

*Recognized nationally and globally for our work in Economic Development and Innovation. Iowa State has had an IEP University designation since 2016.*

## IEP Awards:

2023 – Connections Award Winner - top IEP prize

2022 – Innovation Award Winner

2021 – Place Award Winner

2020 – Innovation Award Winner

2018 – Innovation Award Finalist

2017 – Talent Award Winner



# ISU Pappajohn Center for Entrepreneurship

## Recent Awards:

2025 – Ranked #14 Princeton Review

2024 – USASBE Model University Accelerator

2024 – Ranked #12 Princeton Review

2023 – ACEEU's Triple E Awards Entrepreneurial University of the Year in the Americas

2022 – Nasdaq Center for Entrepreneurial Excellence from the GCEC

2021 – USASBE Model Program Award

**\$245,000+**  
awarded to young  
entrepreneurs



**4,600+** individuals  
participated in  
programs, advocacy  
events, training, and  
student programs

**Delivered 6,545**  
hours of mentoring  
which led to 129 new  
ventures, 234 jobs, and  
~\$13.4M in capital  
raised last year



**CyBIZ Lab served**  
48 companies and  
employed 65 students



# ISU Startup Factory



137

# of companies that have completed the Startup Factory Program

21

# of companies completed the program last FY

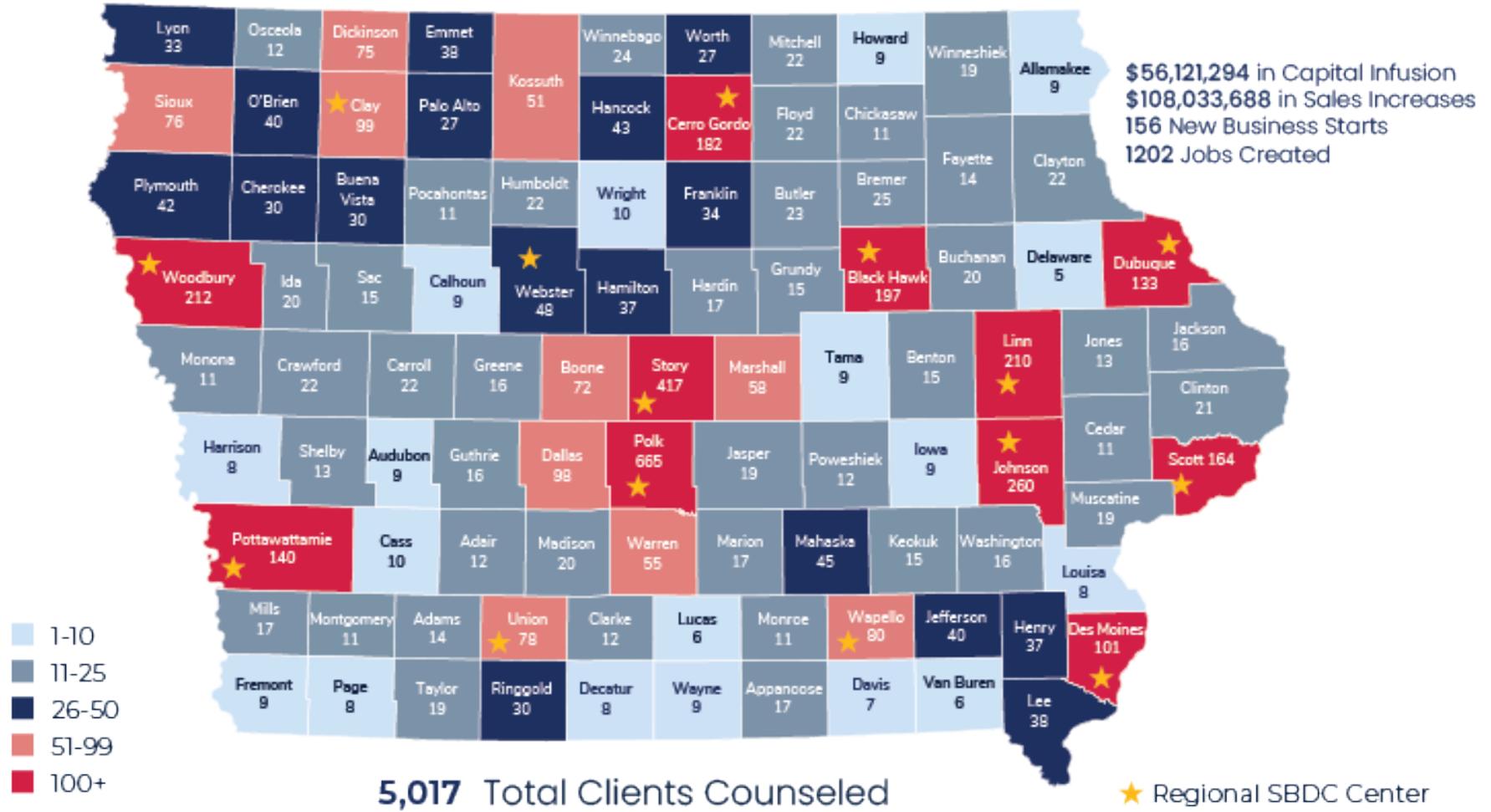
147

# of jobs created by the program

\$98M

Total capital raised since 2016 (non dilutive)

# America's SBDC Iowa – Clients Counseled State FY24



# SBDC Disaster Relief Efforts

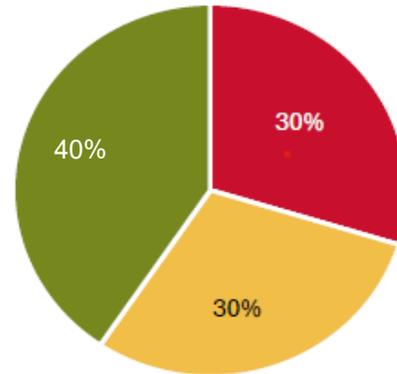
## Tornados

- Assisted with obtaining the Disaster Recovery Centers for SBA in both Minden and Greenfield.
- Staffed both centers immediately with a team in both locations.
- Worked directly with the SBA Disaster team as a point of contact for Iowa.

## Floods

- Affected 25 counties with six communities being affected the most.
- Modified the way that the Iowa SBDC does business
- Partnered with ISU Surplus to deliver furniture and computers to businesses devastated by flooding

## Initial Survey Results



- No
- Yes, at reduced capacity
- Yes, at full capacity



# CIRAS

The Center for Industrial Research and Service (CIRAS) helps Iowa businesses solve complex problems and stay one step ahead by providing **expertise**, **connections**, and the **confidence** to move forward.

Over the past five years, CIRAS and our partners have helped more than **4,600** clients in all **99 Counties**; generating an economic impact of more than **\$2.8 billion**.

## Innovative Problem Solving



### Koomia Ag

**Employees:** 125

**Impact:** Empowered significant growth and innovation through advanced technology, successful grant applications, market expansion, and improved workplace ergonomics.



### Puck Custom Enterprises

**Employees:** 117

**Impact:** \$750K impact and improved relationships with key suppliers.



### Prairie Farms of Dubuque

**Employees:** 205

**Impact:** Costs avoided of up to \$400K per day of production loss.



# Iowa State University Research Park:

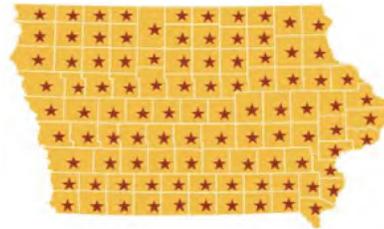


This year, the Research Park organized nearly

**30 EVENTS**

including workshops, seminars, and networking sessions, attracting more than

**1,000 PARTICIPANTS.**



The Research Park has a 99 county tenant research impact.

In Q4, the Park attracted

**60+ PROSPECTS.**

In 2025, the Research Park completed construction on

**3 NEW BUILDINGS,**

costing a total of

**\$32 MILLION,**

resulting in

**123,000 SQUARE FEET**

of space.



We have begun construction on our first housing initiative, which will provide

**125 CRITICAL HOUSING UNITS.**

In 2024, the Park welcomed

**24 NEW TENANTS.**

**140 TENANTS**

**2491 EMPLOYEES**

**400 STUDENT INTERNS**

**5 COMPANY STARTS > IPO**

# Office of Innovation Commercialization

Iowa State received a record \$364.2 million in external research funding in FY24

Top 3% national ranking for research among universities without a human medical school

Iowa State University  
researchers submitted

**101 INTELLECTUAL  
PROPERTY DISCLOSURES**

(not including datasets) and ISURF filed

**129 PATENT APPLICATIONS.**

In FY24, Iowa State was awarded

**64 U.S. UTILITY PATENTS**

and an additional **15** patents from  
foreign countries for an overall total of

**79**

In calendar year 2023, Iowa State  
was recognized for having

**49 ISSUED U.S. UTILITY PATENTS**

ranking **42nd** of the top 100 U.S. universities  
and **64th** of the top 100 worldwide universities  
granted U.S. utility patents by the  
National Academy of Inventors.

ISURF executed

**25 LICENSE AND  
OPTION AGREEMENTS**

for ISU technologies in FY24, **13** of  
which were with Iowa companies.

# Summary of Skilled Worker and Job Creation Fund

## *ISU Economic Development: \$2.43M*

Recipient	Amount	Leveraged Funds	Use
<b>Center for Industrial Research and Service (CIRAS)</b>	\$1,365,602	\$380K Federal \$300K private	Technology Assistance Program
<b>Small Business Development Center (SBDC)</b>	\$936,345	\$1.4M Federal \$524K local	SBDC & FAST Programs
<b>ISU Research Park</b>	\$122,355	\$122K private	ISU and Research Park connections & collaborative program development

## *Regents Innovation Fund (RIF): \$1.05M*

Recipient	Amount	Leveraged Funds	Use
<b>ISU Research Park</b>	\$245,000	\$245K private	ISU and Research Park connections & collaborative program development
<b>Office of Innovation Commercialization</b>	\$448,000 \$15,000	\$448K	Innovation Acceleration Fund Iowa Biotech and Practical Farmers of Iowa Annual Conferences
<b>Pappajohn Center</b>	\$222,000 \$15,000	N/A	Startup Factory, Go-To-Market Accelerator, and Pappajohn Hands-On Learning Student wages for CyBIZ Lab commercialization validation
<b>Small Business Development Centers</b>	\$105,000	\$105K local	Support of statewide SBDC centers (\$7K each)

# IOWA STATE

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# RESEARCH

OFFICE OF THE VICE PRESIDENT FOR RESEARCH



IOWA STATE UNIVERSITY  
OF SCIENCE AND TECHNOLOGY

- Iowa State continues to support and grow innovation ecosystems and foster tech transfer from the three ISU-advantaged Bioscience Platforms



***BioBased Products (BBP)***



***Vaccines, Diagnostics, and Immunotherapeutics (VDI)***



***Digital and Precision Agriculture (DPA)***



## Biobased Products

### ROI in 2024

- \$3 M Federal and private funding for basic research
- 3 new start-ups thriving
- 18 Iowa-based companies engaged as partners
- 12 growing start-up company partnerships
- Invitation from DOD BioMADE to plan a \$40M scale-up facility for industry partners

## Seed Grants – Incubating Innovation

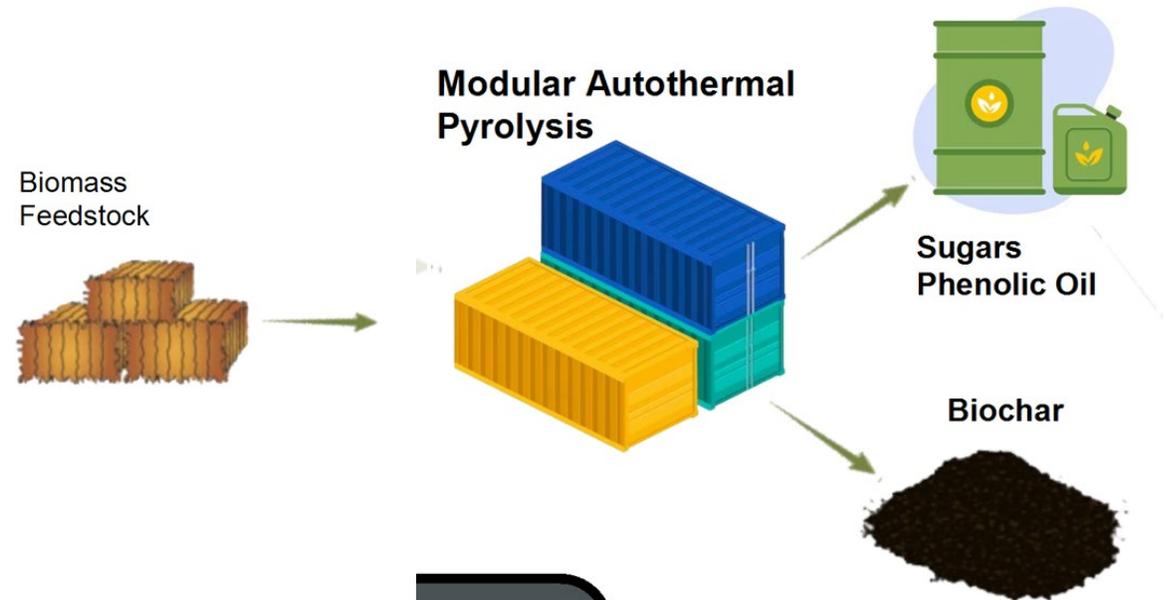
ISU's Biobased Products platform has provided funding for more than 50 different projects supporting 12 ISU startups and partnering with 25 Iowa-based companies, including:

- Production of Sustainable Aviation Fuel (SAF) using Ethanol Dry Mill assets
- Probiotics for immune enhancement in poultry
- Carotenoid production via fermentation
- Biochar enhanced concrete



## Startup – Rise Energy

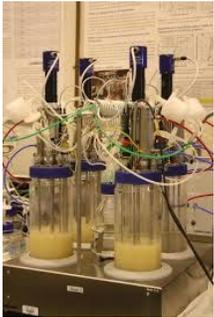
- Designing modular biomass refineries using pyrolysis technology developed at ISU
- Converting stover / straw / wood waste feedstock to biofuels and biochar soil amendment
- Selected as initial partner company for BioConnect Iowa Fast Path / Venture Studio model



## Gemini 2: Addresses Scale-Up Gap for Project De-risking

- \$40 million project with BioMADE (DOD)
- Two 5,000-liter and one 10,000-liter fermenters with full set of down stream processing and finishing equipment

LAB



SMALL PILOT



GEMINI 2



FULL SCALE



What?

Research  
Proof of Concept

Process Development  
and Optimization

Engineering  
Customer Samples  
Applications Develop  
Project Derisking

Large Investment  
Full Scale Build and  
Production  
Commercialization



## Vaccines, Diagnostics, and Immunotherapeutics

### ROI in 2024

- ISU Research Park CyVAX scale-up facility
  - Hosted 12 Iowa-based companies
  - Training facility for 100 learners in 4 sessions
  - Microcredentialling in bioproduction/processing
- Developing an expansion plan with corporate partners
- Hosted the inaugural Iowa Bioscience Showcase

## Bioscience Platform Drives Success

### CyHawk Collaboration



Thomas Waldschmidt  
**Secretary**

Kevin Legge  
**Vice President**

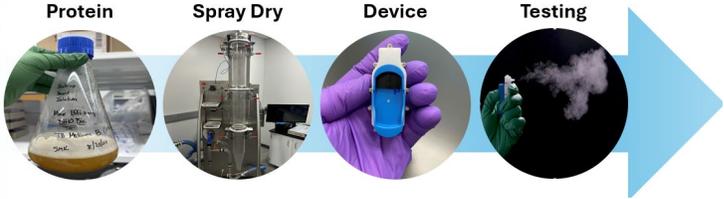
Balaji Narasimhan  
**President**

Michael Wannemuehler  
**Treasurer**

Sean Kelly  
**CSO**

### Innovation Ecosystem

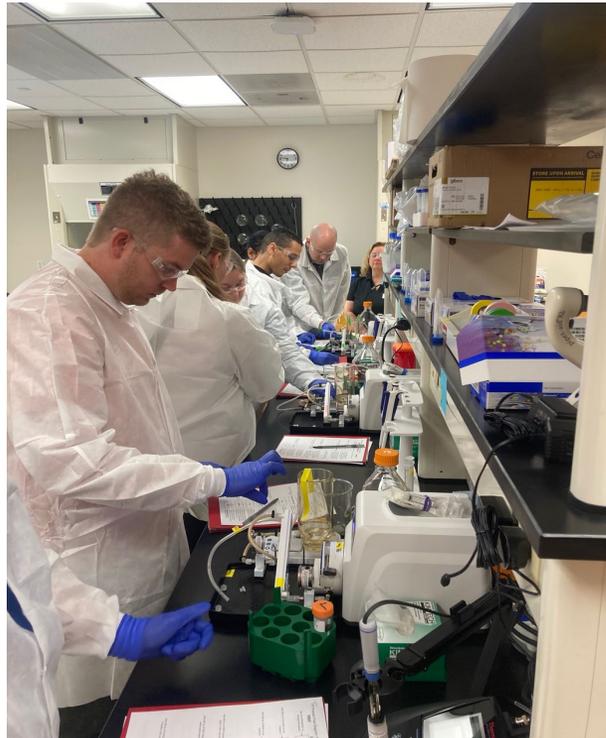
- VPR Seed Grants
- VPR Commercial Fellowship
- Startup Factory
- Innoventure Iowa
- Bioscience Showcase
- CYVAX



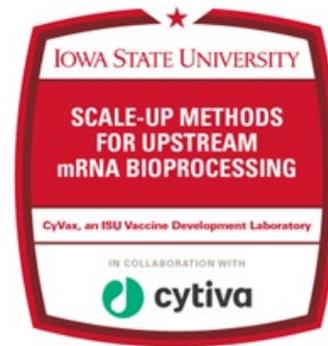
<b>Inhalable dry powder delivery platform</b> <ul style="list-style-type: none"><li>• Needle-free</li><li>• Combination products</li></ul> 	<b>Safe &amp; Effective preclinical data</b> <ul style="list-style-type: none"><li>• Improved immunity</li><li>• No adverse events</li></ul> 	<b>Shelf stable at room temperature</b> <ul style="list-style-type: none"><li>• No refrigeration</li><li>• No wastage</li></ul> 
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## Workforce Development

### CYVAX



- Antigen Production
- Antigen Processing
- Potency/Product Testing
- RNA Manufacturing



### Supporting Established Companies and Startups

#### Established

- Merck
- Elanco
- Boehringer Ingelheim

#### Startups

- Immuno Nano Med
- Genvax Technologies
- Syntherna
- Phagelux
- Hermes Biomaterials



## Digital and Precision Agriculture

### ROI in 2024

- Partner in the new Digital Ag Innovation Lab building
- ISU start-up EnGenious Ag sold to CropX
- ISU start-up Hermes BioMaterials – faculty + student
  - Iowa InnoVenture Challenge finalist
- Developed Iowa State Fair public engagement display

## Startups Commercializing Technologies



EnGenious Ag  
Hermes Biomaterials



### FINALIST SPOTLIGHT

Hermes Biomaterials Inc. is pioneering advancements in gene transformation and gene-editing for food and bioenergy crops. As the global demand for resilient, high-yielding crops surges, Hermes empowers Agtech companies with technological solutions that enhance biolistic gene transformation and gene-editing efficiencies by 5x while reducing costs by 50%.

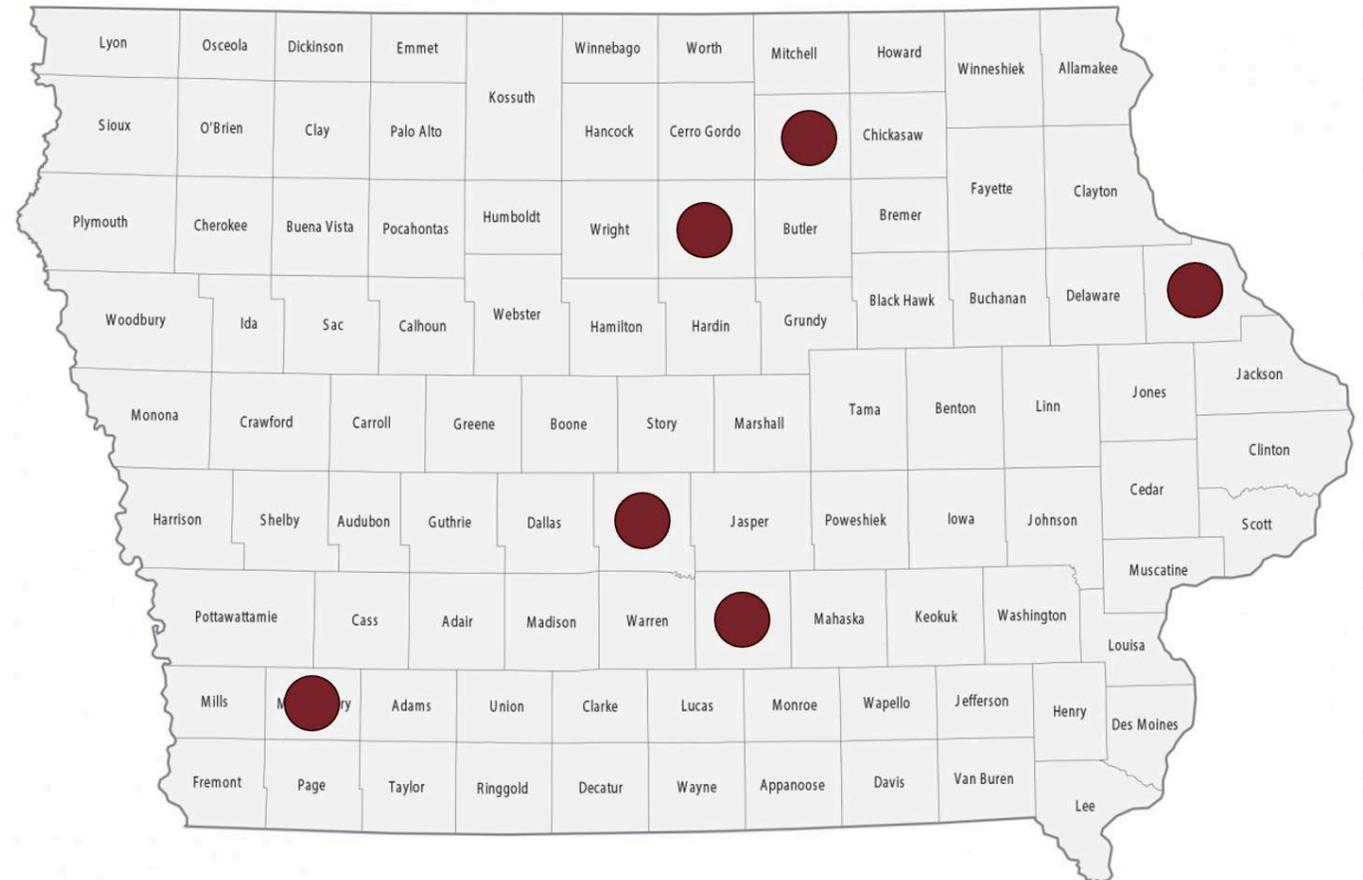
Connor Thorpe  
FOUNDER



## Collaborations with Iowa-Based Companies

### Projects

- Digital Twins
- Drones for spraying
- Drones for water quality monitoring
- Microalgae soil amendments
- Gene-delivery precision system
- Digital decision support tools for nitrogen
- Small-plot sprayer technology
- AI-enhanced precision planting tools
- Automation for seed storage and drying
- AI-enhanced weed control
- Digital tools for land management and valuation



## Connecting technologies with lowans



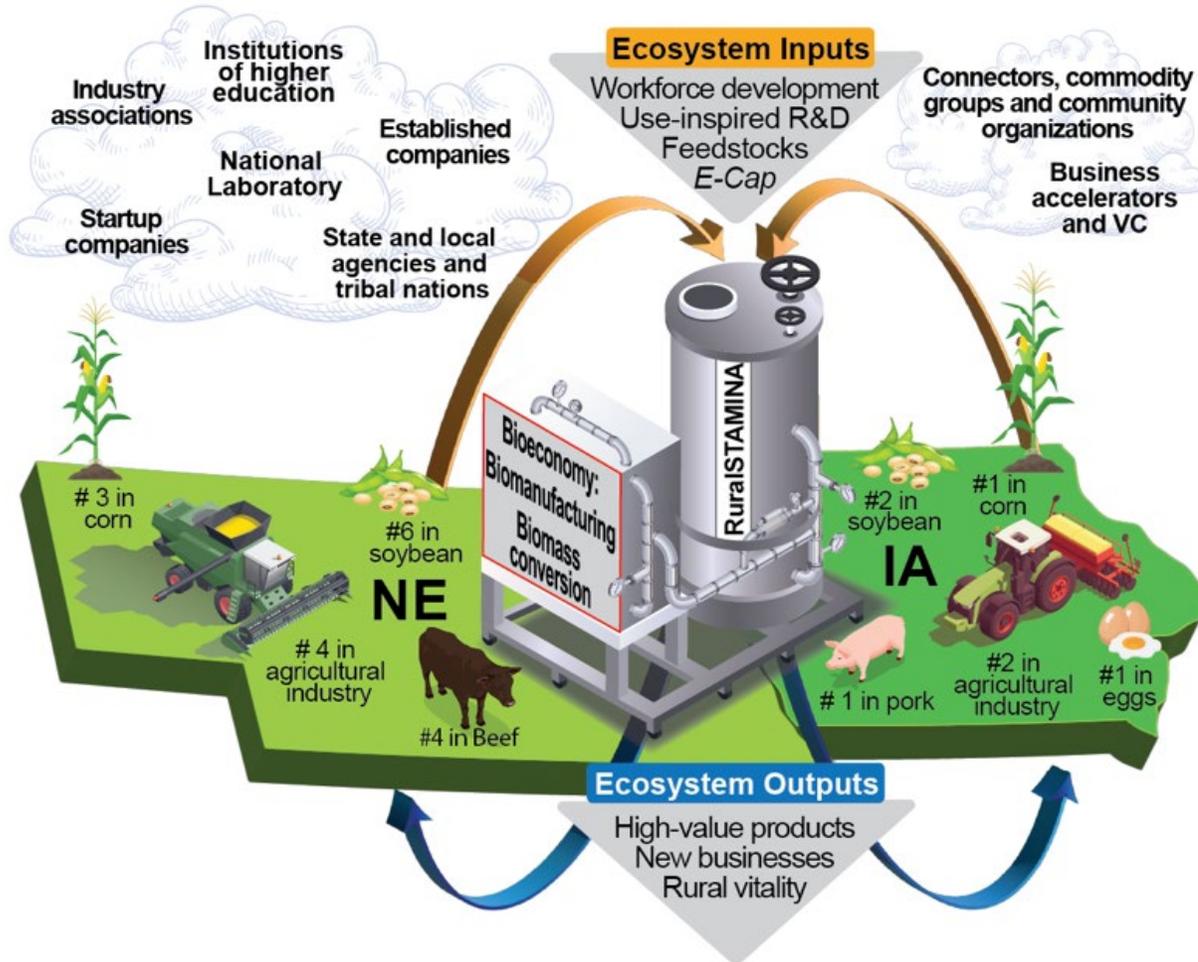
# Inaugural Iowa Biosciences Showcase



# IOWA STATE | RESEARCH

Office of the Vice President for Research

## NSF Regional Innovation Engine - \$150M





**Questions?**

IOWA STATE UNIVERSITY