

**IOWA STATE UNIVERSITY**

Vice President for Research and Economic Development

# **Iowa State University's System for Economic Development**

*Presented to: Iowa House and Senate Economic Growth  
Committees and Economic Development Appropriations  
Subcommittees*

Presented by: John Brighton, Ph.D.  
Vice President for Research & Economic Development  
08 February 07

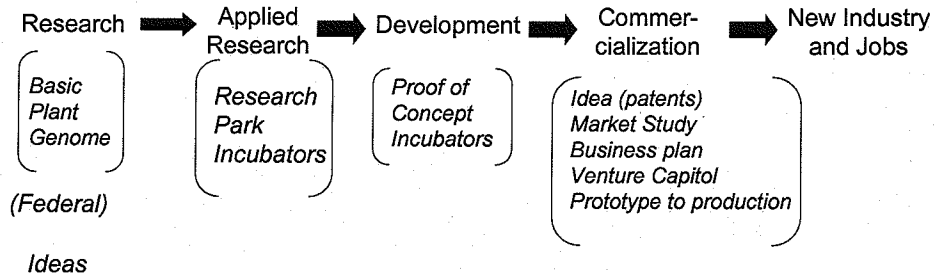
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## **ISU Research & Economic Development Infrastructure**

- People
  - Scientists, Engineers, Economists
- Equipment
  - Instruments Computers, Laboratories
- Support Units
  - IP, Patents, Grants, Compliance
- Networks
  - Expertise, Assistance, Collaboration

## Pathway to Commercialization

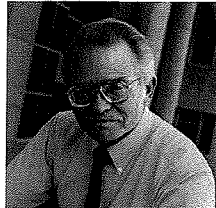


## Investment In ISU For Success

- Core Economic Development Programs
- Continuation of **Grow Iowa Values Fund**
- Support for **Battelle Initiatives**
- Support for the **BioFuels** opportunity
- **Core Funding** to support university

# Core Ec/Dev Programs

- *IPRT Company Assistance*
- *ISU Research Park*
- *Small Business Development Center*



Tom Barton, Director

## IPRT Company Assistance

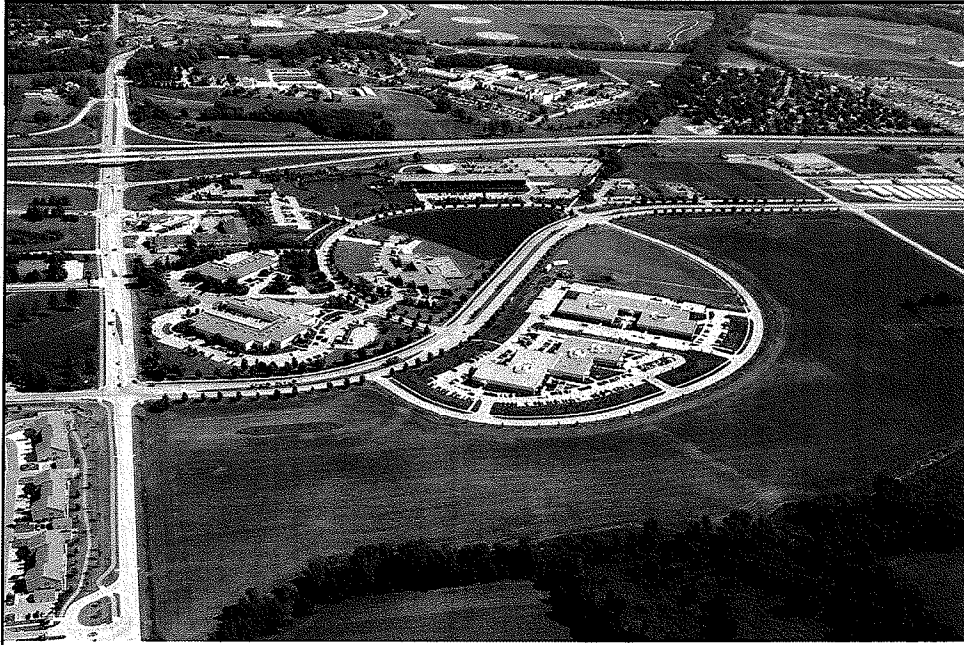
### Mission

- **IPRT Company Assistance** is the industry outreach arm of IPRT (a federation of scientific research centers). It is a project-oriented, client-driven technical outreach program for companies and entrepreneurs in Iowa.
- Provide cost-sharing funds for research & development projects with Iowa industry and no-cost technical assistance for projects up to 40 hrs
- Each year IPRT Company Assistance:
  - Conducts approximately 120 no cost technical assistance projects
  - Provides cost-sharing funds for approximately 30 research & development project

### FY06 Appropriation

- \$800,000





**ISU Research Park – 7<sup>th</sup> largest research park located at a land grant university**

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Steve Carter  
Director

### ISU Research Park

#### Mission

ISURPC will provide an environment where established technology-related organizations and science and technology entrepreneurial ventures can develop and prosper in Iowa.

#### Budget

- State Appropriation \$143,000
- Grow Iowa Values Funds \$200,000
- Self Generated \$2.4 million

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### ISU Research Park - Impact

- More than 325,000 sq. ft. of business and incubator space
- Has served 151 companies that currently employ more than 2000 people
- 42 current tenants that employ more than 600 people
- 40 companies have moved from the Research Park employing 1400 people

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Jon Ryan  
State Director

### Small Business Development Centers

#### Mission

- Comprehensive, statewide resources which help entrepreneurs start, operate, and grow their businesses & help existing businesses expand and grow
- Are the only nationally-accredited entrepreneurial development organization in Iowa
- Are located by Iowa State University (since 1981) via a contract with the U.S. Small Business Administration
- Have regional assistance centers across the state

#### FY06 Appropriation

- \$1,000,000

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### **Small Business Development Centers**

**Impact, in one year, for companies working with the SBDC:**

- Created 1,001 new jobs and retained/saved 351 jobs
- Increased sales \$125.3M
- Saved/retained \$6.4M in sales
- Received more than \$41M in outside financing
- Grew 24% faster than the average Iowa existing business
- Had a benefit-to-cost ration of \$4.41 returned in tax revenues for every \$1 invested in the SBDC

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# ***New Initiatives***

- *Battelle*
- *Grow Iowa Values Fund*

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## Battelle

### Strategy -

- Build research capabilities in targeted platforms
- Build upon BAI efforts and establish similar efforts in IT and advanced manufacturing
- Increase the quality and quantity of research in the platform areas

### Expected Results

- Expanded research and development capabilities in targeted platform areas
- Increase industry/university collaboration
- Increase research funding

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## Battelle

### 2005

- \$700,000 Wellness Center - Advanced Food & Feed
- \$ - Animal Systems
- \$ - BioSecurity

### 2006

- \$6.41M (3.69M Project funds & \$2.72M Infrastructure funds)
  - Advanced Food & Feed \$1,007,000
  - Advanced Manufacturing \$100,000
  - Animal Systems \$620,000
  - BioEconomy \$2,012,000
  - BioSecurity \$944,000
  - Information Technology \$1,727,000
- \$2M Endowed Chair funds



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Ruth MacDonald, ISU  
Platform Leader

## Advanced Food & Feed

### Mission

- Develop novel foods and food ingredients and evaluate their impact on human health
- Develop improved animal feeds to optimize products
- Support and encourage food related industry in Iowa.



Michael Budnick, Proliant  
Platform Leader

### Budget

- 2005: \$700,000 to establish the Nutrition and Wellness Research Center
- 2006: \$665,000 for staff and research projects
- 2006: \$350,000 for NWRC Director startup funds

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## Advanced Food & Feed

### Impact:

- Renovation of NWRC facility in the ISU Research Park began Nov 2006, expect completion March 2007
- Search for NWRC Director began Nov 2006, expect hire by May 2007
- Two new faculty positions in nutrition and health are open
- Symposium on "Advances in Slowly Digested Starch" scheduled for May 2007
- Four research projects underway related to advanced carbohydrates for health – all with industry partnerships
- Partnerships with companies developing

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## Research Projects

- Designing corn lines with resistant starch to produce ethnic foods with enhanced health benefits
  - Genetic Enterprises International
- Flaxseed lignans for health
  - Archer Daniels Midland.
- Role of complex carbohydrates from soybeans in inflammatory bowel disease (IBD)
- RS and SDS from cornstarch through ingredient processing.
  - Danisco, GPC and Tate & Lyle (potential)
- New varieties of slowly digestible and resistant starches from corn, through plant biotechnology
  - Starch Design LLC

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## Information Technology



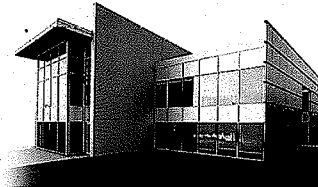
Jim Oliver  
Platform Leader

### Mission

- Strengthen ISU's research in information sciences and information technologies (IT) and leverage it to grow Iowa's economy

### Budget

- 2006: \$1,000,000 for establishment of the *Cyber Innovation Institute*

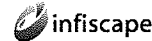


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## CyberInnovation INSTITUTE

Regional IT  
Industry Partners



ISU IT  
Research Centers



VRAC/HCI

Center for Computational Intelligence,  
Learning, & Discovery (CCILD)



Information Infrastructure Institute

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## Information Technology

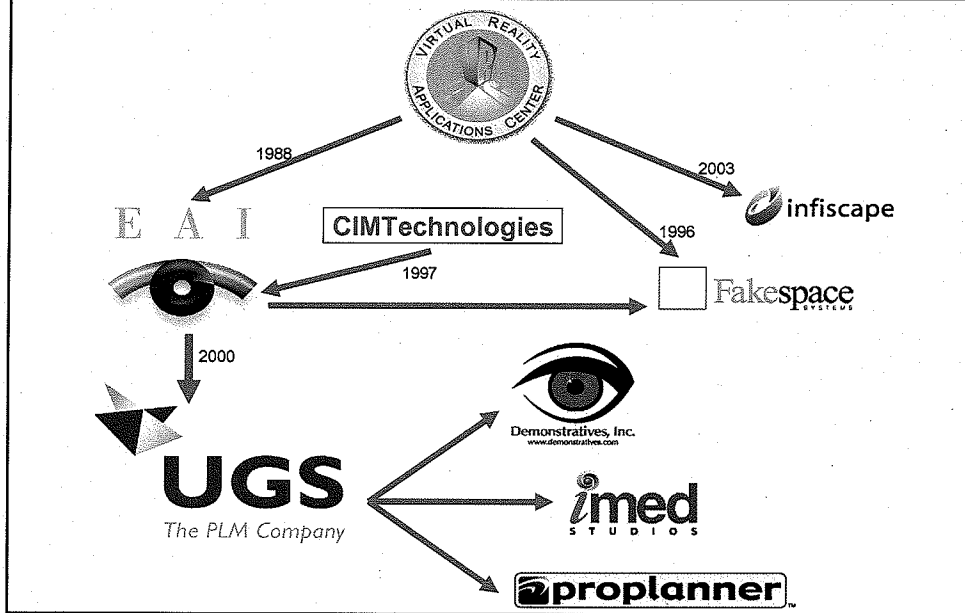
## CyberInnovation INSTITUTE

### Impact:

- Directly facilitate at least 6 new IT-focused startup companies in Iowa.
- Establish 3 new major research collaborations with established companies.
- Increase IT research expenditures at ISU by 40% compared to FY07.
- Establish research and commercialization relationships with SUI and/or UNI.
- Secure a major (multi-year, multimillion dollar) federally supported IT research initiative.

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## Grow Iowa Values Fund

### Strategy:

- Fund Technology Transfer resources
- Fund projects that move research to application
- Commercialization through partnerships with Iowa companies or creation of new companies.
- \$1 to \$1 match minimum

### Expected Results

- Advance more basic research to application
- Encourage more private investment in research by providing matching funds
- Advance developments created by Battelle platform investments

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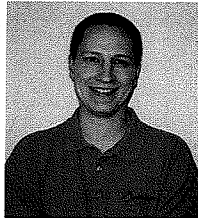
### Grow Iowa Values Fund

#### Funding:

- \$1.9M /year (FY07 is year 2 of 10)
  - \$600,000 Infrastructure
  - \$1,300,000 Research funding to promote partnerships with Iowa industry and to commercialize the results of ISU research
- \$2.6M has been invested in research in the past 2 years
  - 26 projects (23 related to Battelle recommended platforms)
  - Involves more than 30 Iowa companies from 14 different counties
    - Large companies like GPC in Muscatine
    - Small companies like Remington Hybrid Seeds in Osceola
    - 4 new start-up companies are in various stages of formation

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Allen Bierbaum,  
President & CEO

**Infiscap**



#### Mission

- Spin off from VRAC, founded in 2003
  - 4 full-time employees, several part-time students and contractors
  - Self-funded and profitable
- Assists customers in applying immersive technologies to real-world problems
- Currently focus on consulting and contracting
- Goal to become a more product-based business
- Identified several new markets but lacked the resources to pursue these opportunities
- GIVF provided funding for 2 full-time employees

**GIVF Funding: \$100,000**

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### Infiscape

#### Impact:

- GIVF funds have allowed us to dramatically increase our internal product development efforts and have jumpstarted our company growth.
- Successfully developed a prototype software product for the architectural and design market. This has been shown at several conferences and is being evaluated by potential customers.
- Made significant progress in the engineering software market. Details are still confidential.
- Added one full-time software engineering position and currently looking to fill another position.

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Steve Nissen

### Metabolic Technologies Inc.

#### Project Objective:

Determine if bioactive vitamin- D compounds found in Solanum decreased egg breakage in laying hens



solanum  
glaucophyllum  
(Argentina)

#### GIVF Funding:

\$150,000 (mostly equipment)

#### Other Funding:

SBIR: \$75,000 and internal funding of \$75,000

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### Metabolic Technologies

#### Outcomes:

- Egg breakage lessened but food intake in hens compromised. Further purification is necessary to remove food intake suppressants
- **Spin-off opportunity:** Purified fractions of Solanum indicate bioactivity against certain cancers in cell culture. We are currently pursuing isolation/identification further testing.

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***BioFuels Opportunity***

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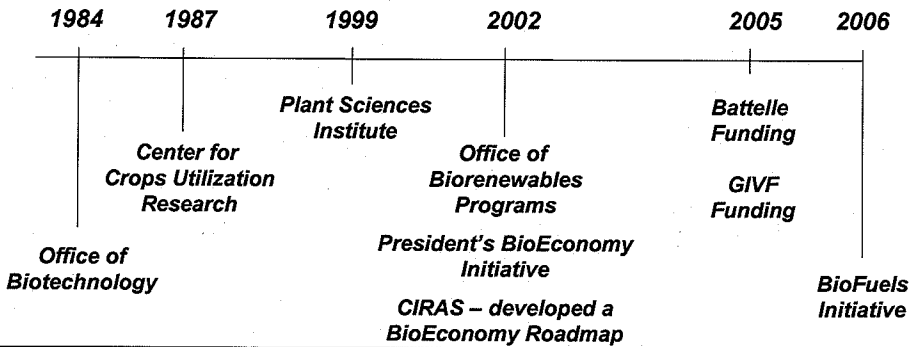
Grow Iowa Values Fund – 9 research projects

Battelle Funding – Core support and 8 research projects

Industry Collaborations

*Economy*

## BioFuels Opportunity



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*economy*

## BioFuels Initiative – Coordinated by the Office of Biorenewables Programs



Robert Brown  
Director

### Mission

To have Iowa State University and the State of Iowa be recognized as *the* national leader in biofuels research and commercialization



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### **BioFuels Initiative – Seizing an Opportunity**

- **Summit Conference**
  - 420 people from all walks of life
  - Report and action plan developed
- **Sloan Center**
- **Industry Interactions**
  - 12 companies are in various stages of discussions regarding collaborations for research and development efforts
  - One company has already committed to locating a facility in our Research Park
- **Federal Funding**



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### **SUMMARY: Investment In ISU For Success**

- **Core Programs – IPRT Company Assistance, Research Park, SBDC**
- **Continuation of Grow Iowa Values Fund**
- **Support for Battelle Initiatives**
- **Support for the BioFuels opportunity**
- **Core Funding to support university**