

# **Universities and their Regions: The Akron Model**

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**The University of Akron**

**Growing Innovation Clusters for American Prosperity**

**National Academy of Sciences**

**3 June 2009**

# The economic geography of the nation . . .

## Spiky & clustered, not flat



## the economic geography of the nation . . .



Thousands of universities,  
“mind specialists” in knowledge economy,  
... employing hundreds of thousands of people  
... educating millions of students  
... spending billions of dollars  
all in the urban core and fringe . . .

87%  
of economic  
activity

80%  
of colleges &  
universities

83%  
of students

“ . . . universities could and should be a resource, a secret asset,  
for the health and growth of great cities.”

Neal Peirce. “Wake-up call for academia.” The Washington Post, 2002.

# Assessing Opportunities & Resources

Pictured:  
Our regional  
economic  
geography

A nighttime satellite image reveals our Northeast Ohio region as a single, luminous whole that is inclusive of Cleveland, Akron and Canton, integrating many adjacent communities across several counties.

The glow of this constellation of industrial clusters defines our economic strengths and opportunities and obliterates the artificial patchwork of political, geographical and social boundaries. Regional Clusters of Innovation, as defined by the national Council on Competitiveness, create prosperity by transforming ideas into new technologies that, in turn, create new wealth.

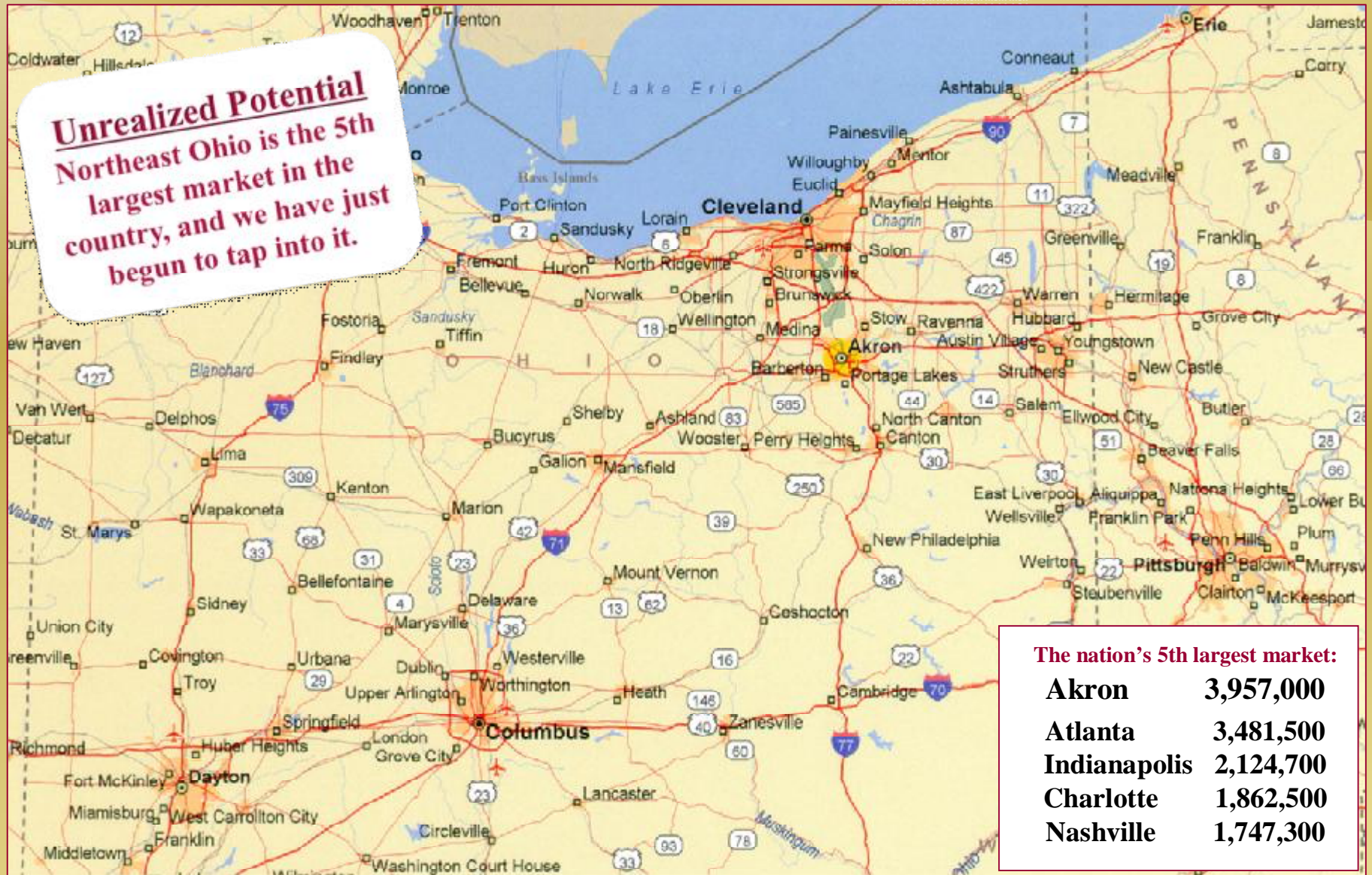
The shape of our regional economy.

The  
University  
of Akron



# Northeast Ohio is the 5<sup>th</sup> Largest U.S. Market

**Unrealized Potential**  
Northeast Ohio is the 5<sup>th</sup> largest market in the country, and we have just begun to tap into it.



# NE Ohio Industrial Clusters:

- **Polymers/advanced materials**
- **Biosciences**
- **Information technology**
- **Instruments, controls & electronics**
- **Aerospace**
- **Power and propulsion**
- **Financial Services**
- **Chemicals**
- **Metalworking**
- **Motor vehicles**

# Challenges and opportunities:

## The Challenges . . .

- Older industrial area
- Risk averse
- Lack of investment capital
- In the “shadow” of OSU and CWRU

## The Opportunity . . .

- Underutilized assets
- New economic realities
  - globalization and regional economies
  - entrepreneurship and innovation drivers
- Increasing urbanization – nationally and globally
- Converging roles among private and public entities
- Focus on differentiation
- Focus on productivity

New Landscape  
for  
Learning

The.  
University  
of Akron



University  
Park  
Alliance

*Revitalizing Neighborhoods Together*

BioInnovation

INSTITUTE IN AKRON

RESEARCH - EDUCATION - HEALTH

INNOVATION ALLIANCE



jumpstart

BioEnterprise

The.  
University

THE UNIVERSITY SYSTEM OF

OHIO

- **Founded in 1870 as Buchtel College**
- **Same decade as four major tire companies**
- **First rubber chemistry program (1909)**
- **Home to ACS Rubber Division**
- **Developed alongside rubber/polymer industry**
- **Largest polymer program in the world**
- **Synergy with other chemical sciences**
- **Among top producers of chemistry PhD's**
- **Remarkably high productivity in IP & start-up businesses**
- **\$50 million total research expenditures**
- **Research intensive, focused research programs**

# National Recognition

#1 in Ohio in rate of return per research dollar in technology commercialization 2007



Exemplary smaller institution for advanced innovation partnerships 2007

Winner of 2007 Award of Excellence in Technology Commercialization



#1 in patents issued per million research expenditures, 2000-2004

# 2007 AUTM licensing revenue data – UA most productive in the nation!

- (1) MIT, (2) Iowa State, (3) University of Georgia, (4) Cal Tech, (5) Rutgers, (6) University of Texas–Austin, (7) The University of Akron, . . .
- The University of Akron is **No. 1** in licensing revenue normalized to total research expenditures (12.5% for 2007) for U.S. universities, without a medical school (96 reporting)

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*Association of University Technology Managers (AUTM) 2007 Rankings  
(released in February 2009)*

## **A transformational \$500 million campus enhancement initiative:**

- **15 new buildings**
- **17 major additions and renovations**
- **36 acres of new, green space**
- **30,000+ new trees, bushes and plantings**
- **Closed 2 streets**
- **New walkways, plazas, terraces and gardens**

**Includes a new 30,000 seat football stadium and residence halls that are helping to catalyze neighborhood redevelopment and to spur the success of University Park Alliance**

# Improving on the past...



# Enhancing economic growth...





**University  
Park  
Alliance**

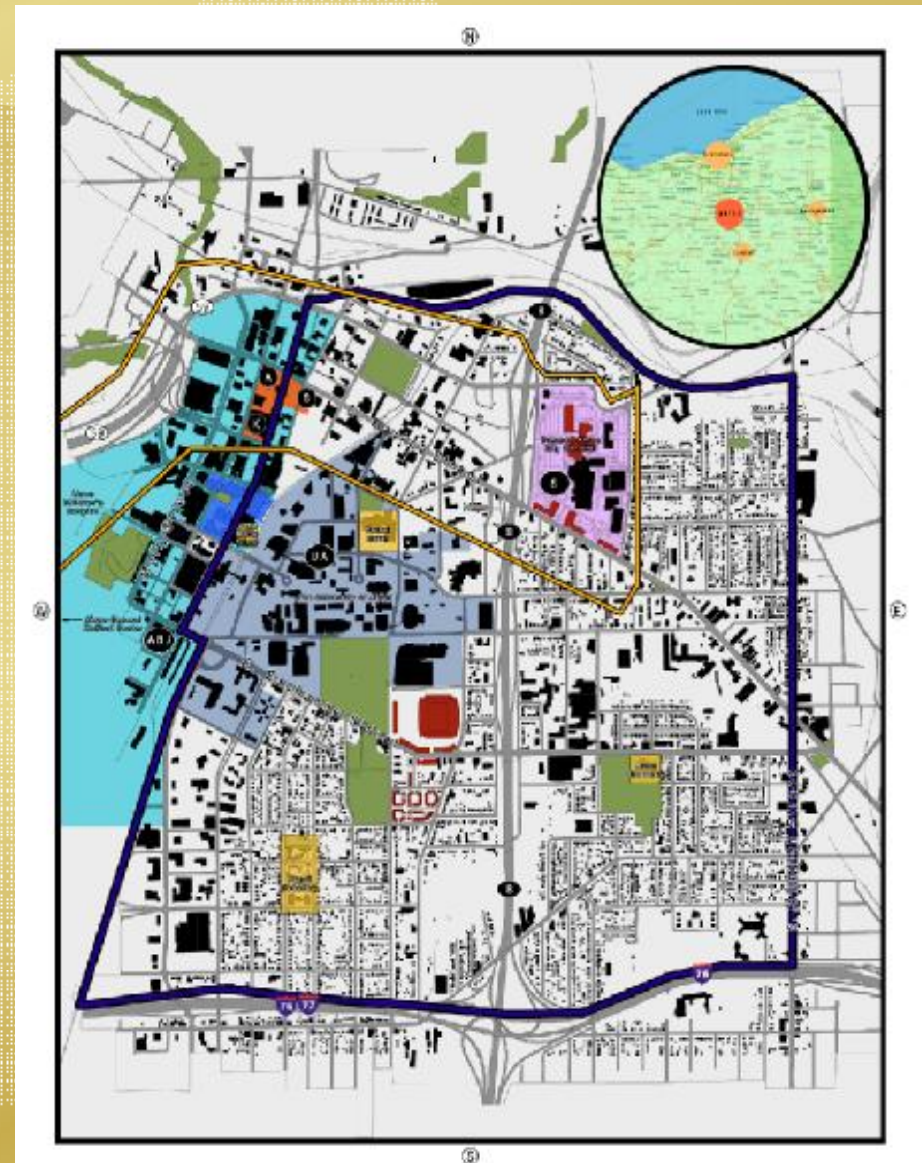
*Revitalizing Neighborhoods Together*

# Transforming University Park Building Our Future Together



# University Park - the Neighborhood

- ✓ 1,000+ Acres
- ✓ 15,500 Residents in 5,200 households
- ✓ Culturally rich
- ✓ 300+ businesses with 24,000 employees
- ✓ 26,000 UA students (7,000 as residents)
- ✓ Strategically located high investment area



# University Park Alliance - Mission

- ✓ *To revitalize and transform University Park as a vibrant and healthy place to live, learn, work, shop and play – through engaging the community and catalyzing private investment.*



# University Park Alliance - Partners



AKRON METROPOLITAN HOUSING AUTHORITY



# University Park Alliance - Priority 5-year Goals

- ▼ *1000 new jobs*
- ▼ *500 new housing units*
- ▼ *\$500m private investments*
- ▼ *\$80m civic investments*
- ▼ *National/State recognition*



# University Park Alliance – Progress to Date

- 920 new jobs confirmed and 100 more announced
- 80 new housing units approved, under construction, or completed
- \$52 million in confirmed civic investments (not including UA)
- \$300+ million in confirmed private investments
- Multiple awards and recognition at the regional, state, and national levels





# University of Akron Research Foundation

- **Independent of University and state**
  - UARF administers industrial grants and contracts, including those that UA cannot
    - Intellectual property component
    - Indemnity to sponsor requirements
    - Holding and disposing of equity in private companies
  - UARF is proactively building collaborations with and responding to community partners on a commercial timeframe and with flexible decision making authority
  - Independence requires that a majority of UARF board are not university personnel

37 Active  
Licenses

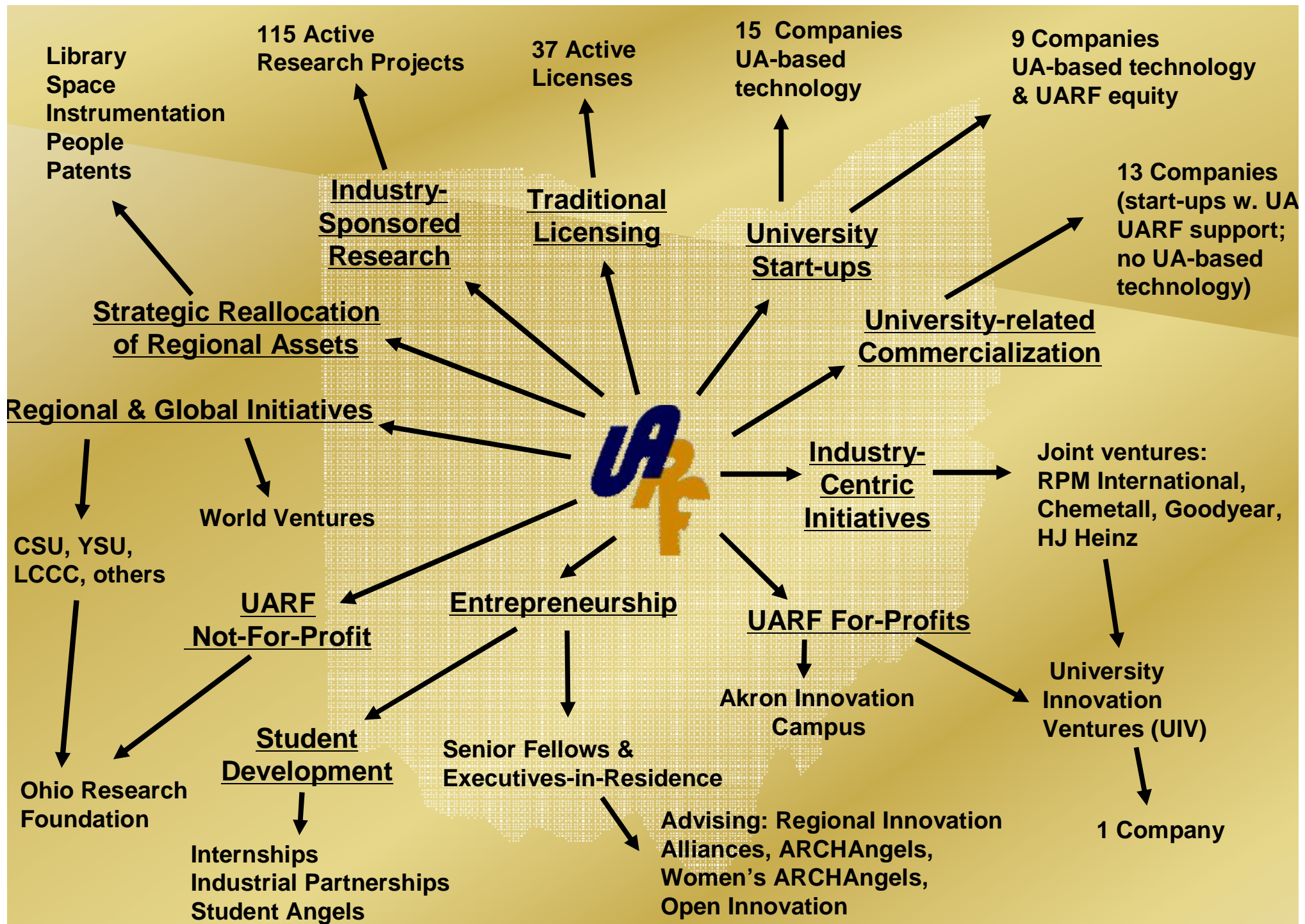
15 Companies  
UA-based  
technology

9 Companies  
UA-based technology  
& UARF equity

Traditional  
Licensing

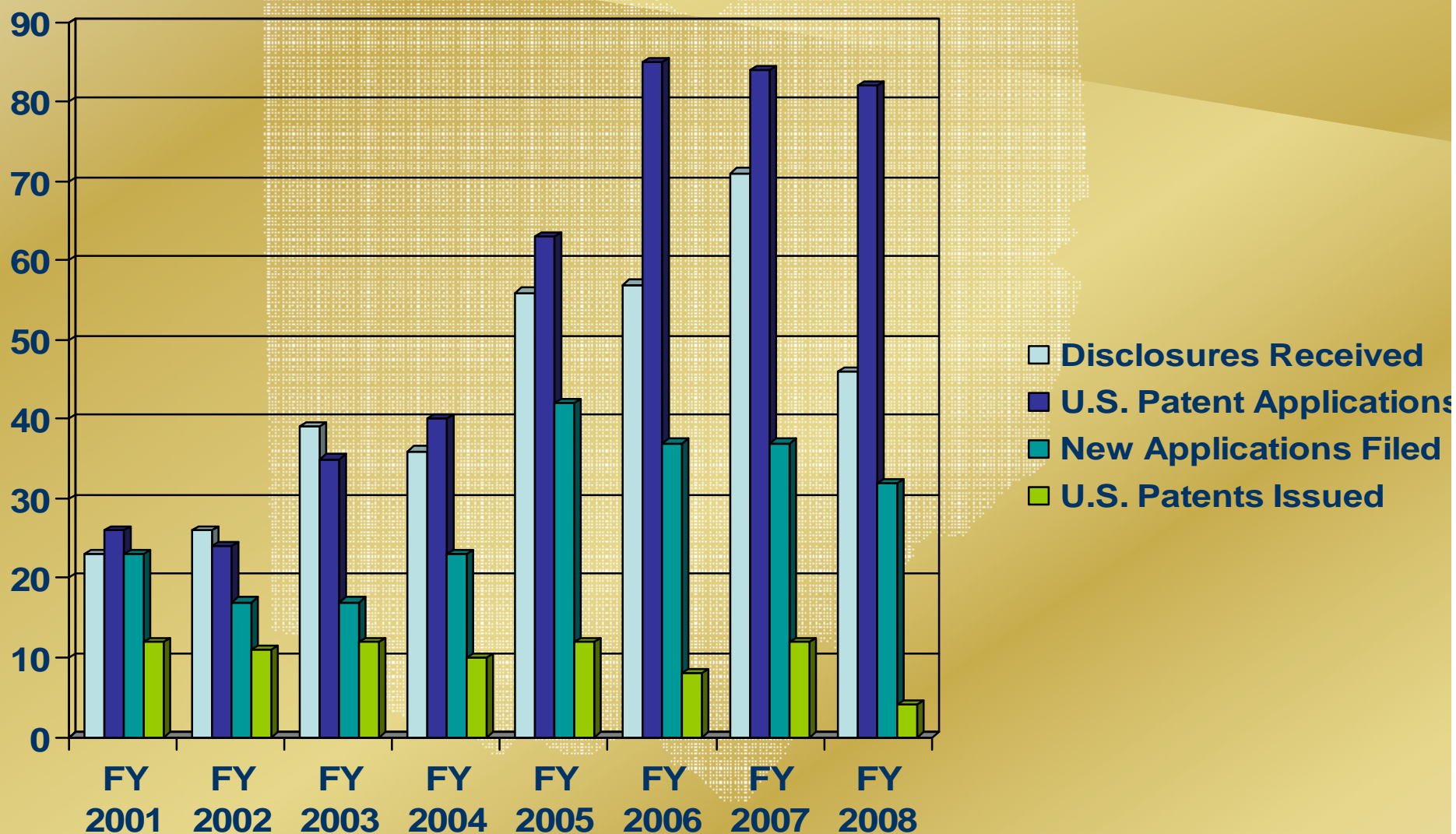
University  
Start-ups



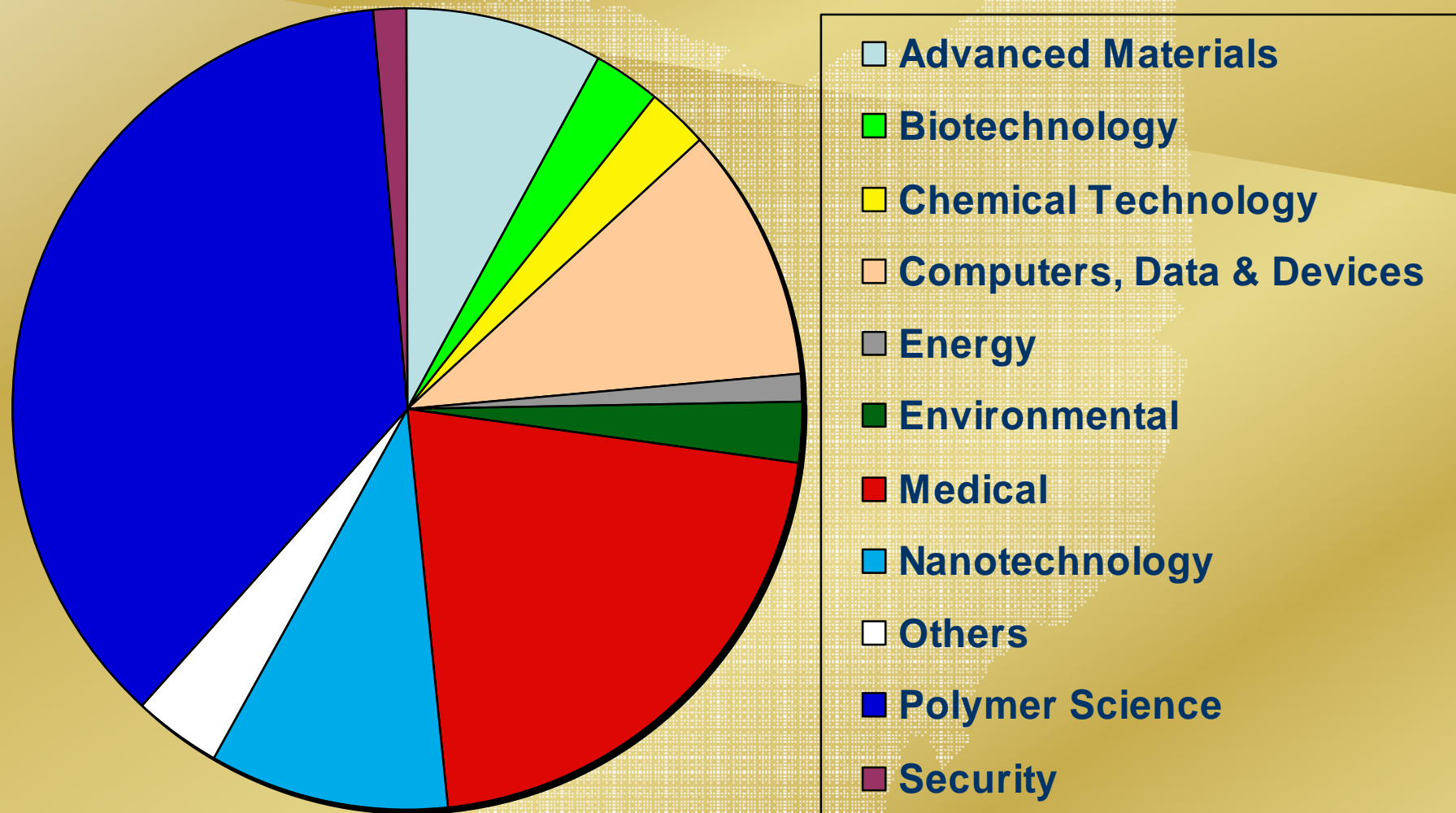


# UA Research and Inventions

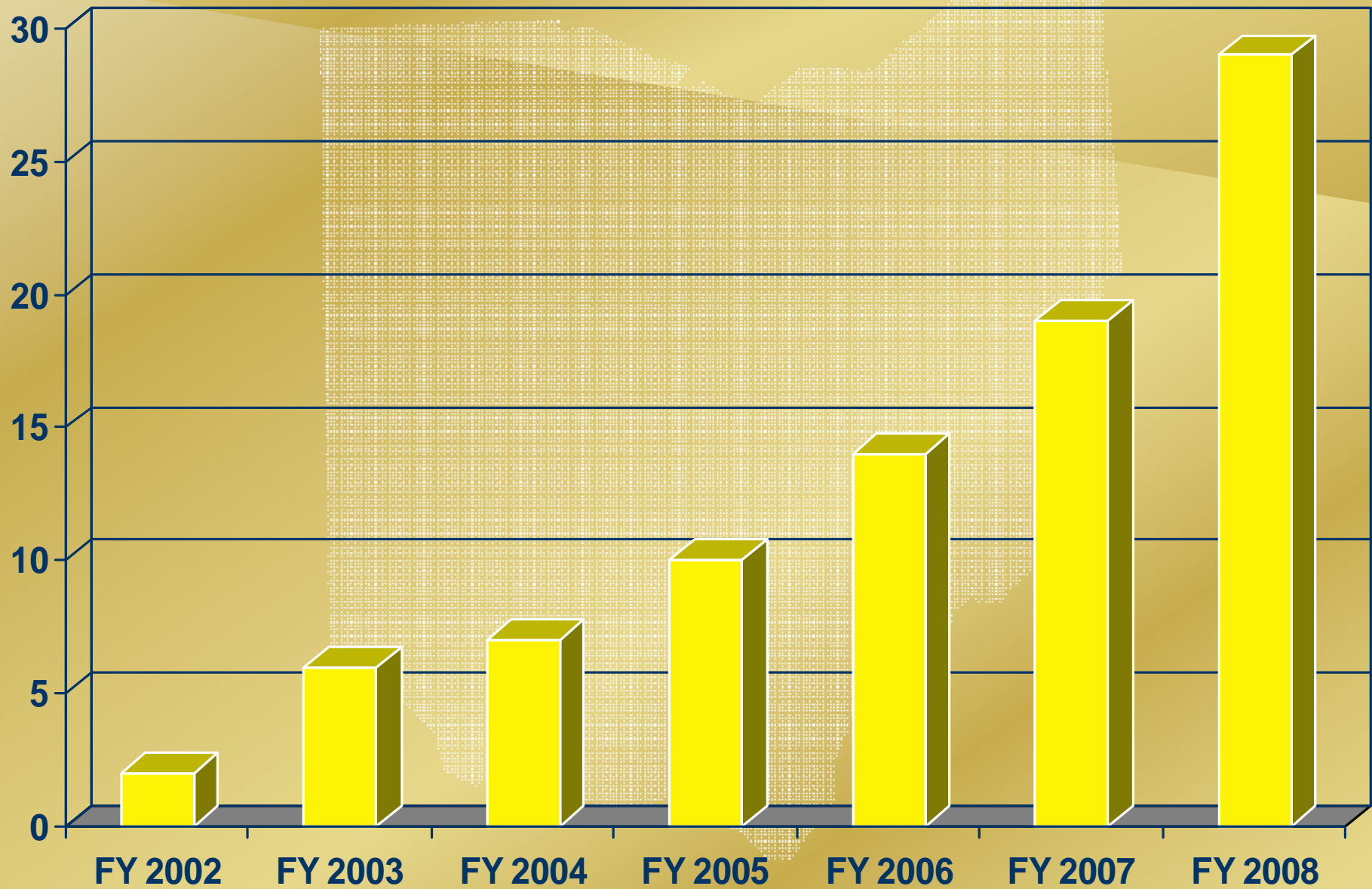
The University of Akron's technology and invention portfolio includes more than 450 active and pending patents. Compared to the national average, UA has 50 percent more patents and twice the number of invention disclosures per research dollar spent.



# UA Technology and Patent Portfolio



# Start-up Companies - Cumulative



# Akron Innovation Campus



- Two buildings adjacent to UA campus on Wolf Ledges
- Purchased May 2007 - \$3.9 Million
- 66,650 sf
- 82% leased
- 17 tenants –
  - UA Development Office
  - UARF Senior Fellows and related offices
  - Mix of University spinouts, research partners and community organizations

# UARF Fellows

## Senior Fellows & Executives:

Wil Hemker, Executive-in-Residence

John Myers, Executive-in-Residence

Barry Rosenbaum, Senior Fellow

Gordon Schorr, Senior Fellow

Ed Weil, Intellectual Property Fellow

## Student Interns:

Neil Keating

Aaron Johnson

- UARF Fellows have had discussions with 459 contacts of which 350 are companies and the others are individual entrepreneurs
- Companies are primarily early stage development, but also include more established companies looking for *Open Innovation* assistance, personnel (usually interns), access to UA technologies, and networking contacts

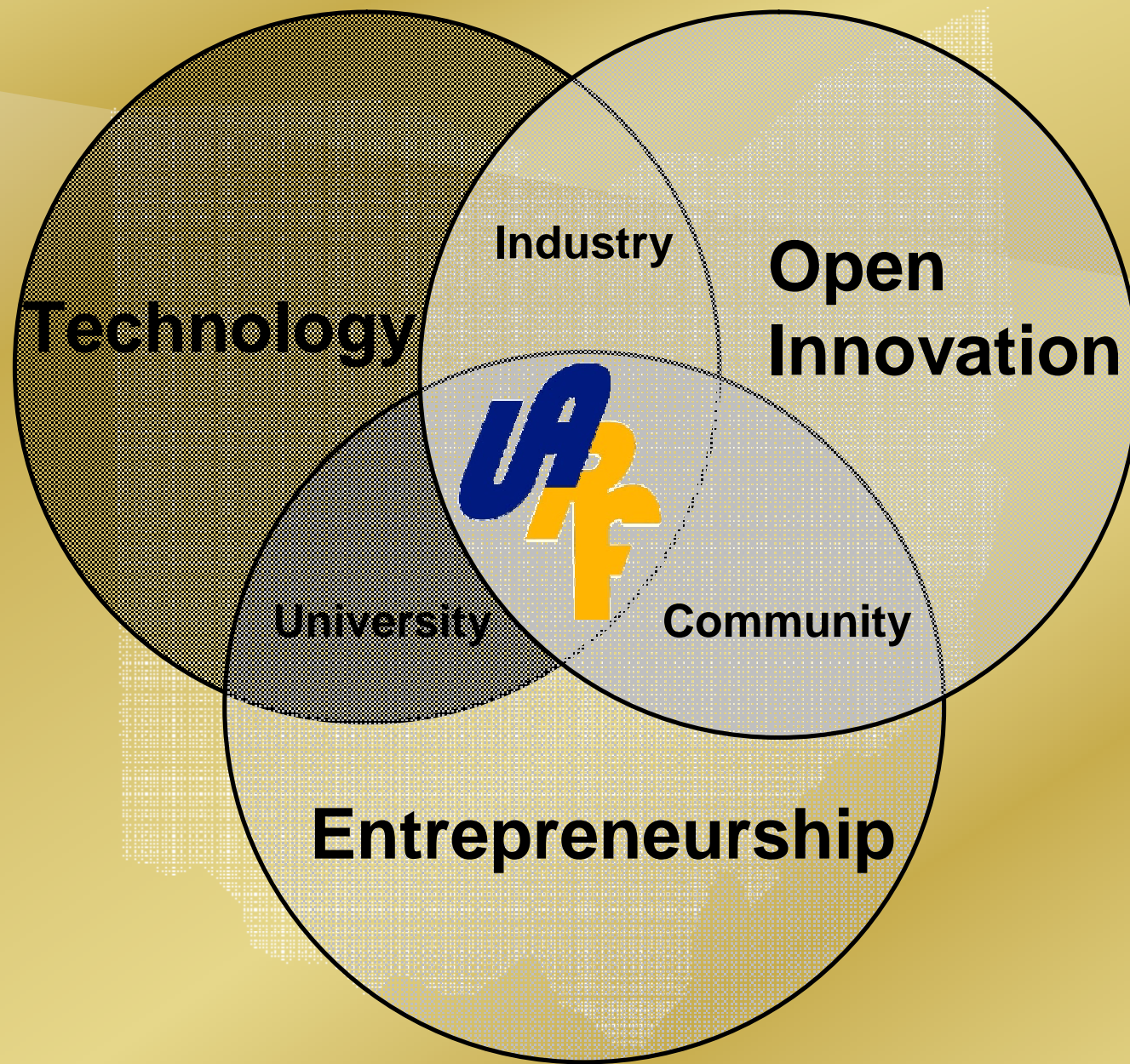


## Regional network of investors

- Supplements Jumpstart, BioEnterprise and other regional partners
- UARF acts as host of event and counsels presenters
- Over 200 projects considered by the ARCHAngels Deal Flow Committee
- Contacted by hundreds of companies annually
- Presented **45 companies** to investors at quarterly events since November 2005
- 22 reported follow-on funding of **\$36 million**

# Open Innovation Seminars

- **Stimulated by Proctor & Gamble**
  - Corporate culture changed from primarily internal to “proudly invented elsewhere”
- **Events sponsored by UARF**
- **Nationally-recognized thought leaders**
- **100 community business leaders, policy makers and innovators**
- **Only event of its kind in Ohio**
- **Transforming regional companies**



**A \$200 million, ten-year program**

**Five partners: The University of Akron**

**Akron General Medical Center**

**Akron Children's Hospital**

**Summa Health System**

**NEOUCOM**

**Catalyzed by a grant from the Knight Foundation**

**Matched by State, private and partner investments**

**Supporting the City of Akron's Biomedical Corridor**

**Dedicated to becoming the #1 biomaterials and orthopaedic research program in the world.**

**To implement this vision, embarking on five major initiatives including:**

- **Center for Biomaterials and Medicine;**
- **Medical Device Development Center;**
- **Center for Healthcare Training;**
- **Center for Clinical Trials;**
- **Community Outreach to the Medically Underserved.**



## Current Projects

### 1. Educational Efficiency: Increasing Efficiency – Enhancing Operational Excellence

- \* Business Processes - Enterprise Resource Planning (ERP)

A shared -service provider model utilizing PeopleSoft Campus Solutions software.

- \* Driving Down Costs

Six Sigma principles applied across LCCC and UA operations.

### 2. Job Growth: Discovery to Application

- \* Accelerating Growth

By combining resources, the Alliance will engage and accelerate the growth of small- to medium-sized technology-dependent companies and entrepreneurs by providing wrap-around business support services, incubation, access to technology transfer, intellectual property resources, and creation of educational pathways aligned with industry engagement.

- \* The Innovation Fund

A pre-seed fund established through LCCC Foundation provides entrepreneurs with awards ranging from \$10,000 to \$100,000. LCCC and UA students will engage in work-based learning opportunities.

### 3. Talent Growth: Growing Talent - Growing Jobs

- \* Efficient Degrees – Lower Cost and Less Time

Create and deliver joint applied baccalaureate degrees in the high-growth areas of advanced manufacturing, health care and entrepreneurship in order to expand higher education's impact on the adult workforce.

- \* STEM Education and Career Pathways

Jointly develop STEM strategies linking UA and LCCC with PK-12 districts throughout the Innovation Corridor designed to inspire, attract, and train the next generation of innovators.

# Lessons learned . . .

- Assemble “weak” assets to create strengths
- Assemble “guerrilla” entrepreneurial talent
- Find uncommon, synergistic partners
- Recognize City and Community as integral partners
- Markedly expanded concept of university’s product-line & tool-chest
- Manage closely with other regional assets to pursue unique opportunities
- Relevance and connectivity
- Be prepared for . . .
  - Conflict of egos
  - Partnering Paranoia
  - Relationship fatigue
  - Loosing control to gain net leverage

# Evolving Roles of Universities in Economic Development:

- 1862 - Morrill Land Grant Act - applied agriculture & mechanical arts
- 1887 - Hatch Act - responsibility for extension in agriculture and mechanical arts
- 1940s - World War II - engineering and physical sciences for war effort
- 1944 - GI Bill - pumps talent into economy
- 1947 - Transistors initiate the era of microelectronics
- 1957 - Sputnik spurs space race
- 1970s - Genetic engineering and molecular biology emerge
- 1980 - Bayh-Dole Act – ability to commercialize results of federally funded research  
*(becomes an inflection point)*
- 1980s - Research parks, technology transfer & incubator initiatives become common
- 1990s - Internet emerges
- 2000s - Era of global research alliances driving a knowledge based, open innovation economy . . . and still evolving . . . Towards an expanded sense of relevance and connectivity for every university discipline!

# 21<sup>st</sup> Century Role of Universities. . .

- Key role in knowledge-conceptual economy
- Convener
- Developer
- As “Anchor” for Clusters of Innovation\*
  - Generate creative capital
  - Generate knowledge capital
  - Train human capital
  - Build social capital
  - Attract financial capital
  - Preserve natural capital

\*(from Michael Crow, ASU)

# Five elements of a new university strategy . . .

1. Public purpose tied to enhancing health of regional economies
2. Workforce development, community development and economic development fully integrated into common strategies at the national, state and regional levels
3. Regions must be based on economic spheres of interconnected communities (not political boundaries) and have critical mass

# Five elements of a new university strategy . . .

## 4. All regions should have a competitive strategy and the collaborations to act upon it

- Identify niche by identifying & analyzing unique regional assets (human, capital, business, infrastructure)
- Focus on strategy for regional competitiveness
- Address critical needs for implementing
- Build infrastructure (intellectual, digital, physical) as basis for sustainable growth

# Five elements of a new university strategy . . .

## 5. Strengthening communities not the sole province of government

- “Encourage a system of simplified compacts or other incentives to remove barriers and to encourage multi-jurisdictional and inter-institutional regional cooperation”
- Universities are “ . . . Critical to building knowledge-driven, innovation-based economies”
- Relevance and connectivity

Thank you!

✓ Questions?

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for  
Learning



**BioInnovation**  
INSTITUTE IN AKRON  
RESEARCH - EDUCATION - HEALTH



**University  
Park  
Alliance**

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