

Linking MEP, Universities and SMEs

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for the

National Academies

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The Innovation Ecosystem



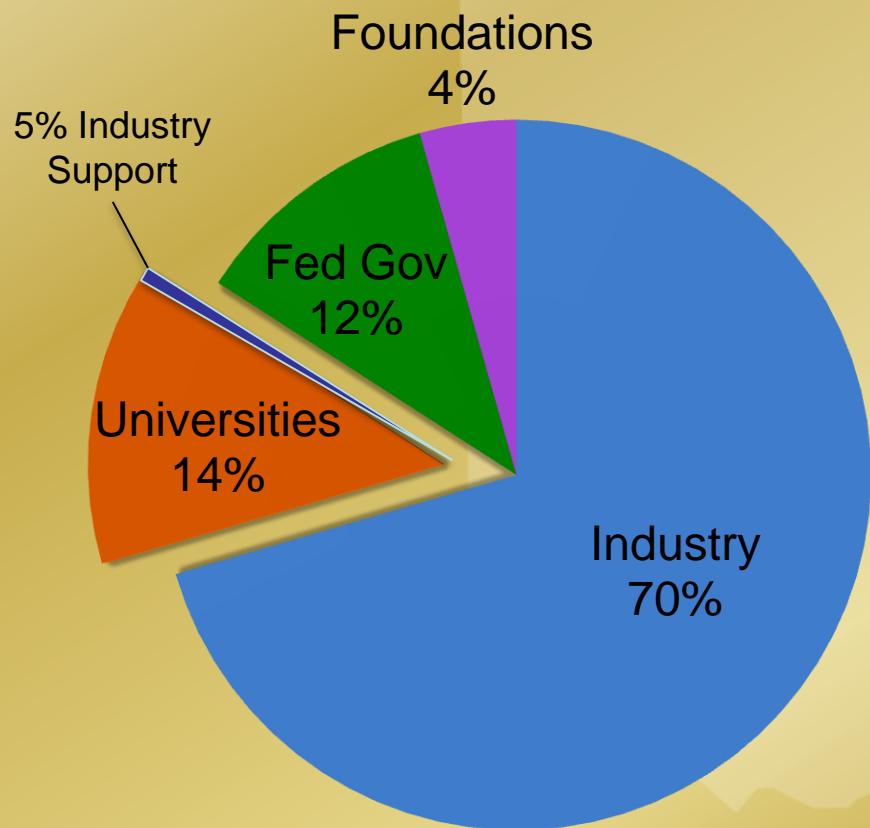
No component can afford to be disconnected from the others.

Universities Are No Longer “Ivory Towers”

- Key role in 21st Century knowledge economy
- Serve as “anchor” for clusters of innovation
 - Promote creative capital
 - Generate knowledge capital
 - Train human capital
 - Build social capital
 - Attract financial capital
 - Preserve natural capital
- As convener and developer
- With a broad product line, common challenges, models and opportunities,

YET...

...Still Barely Linked to Industry



Major opportunities exist for businesses/industry to partner with universities and gain access to new talent, cutting-edge technologies and open innovation opportunities.

Innovating on Innovation: Universities & SMEs

- **Talent:**
 - Collaboration with world-class researchers
 - Access to well-trained graduate students at modest cost
 - Identify high-potential talent for future hires
- **Technology:**
 - Access to cutting-edge research technology
 - Prototype development
 - Pilot plant capabilities
- **Partnerships:**
 - Linkage to the regional innovation ecosystem
 - Open innovation partnerships
 - Licensing opportunities,

YET...

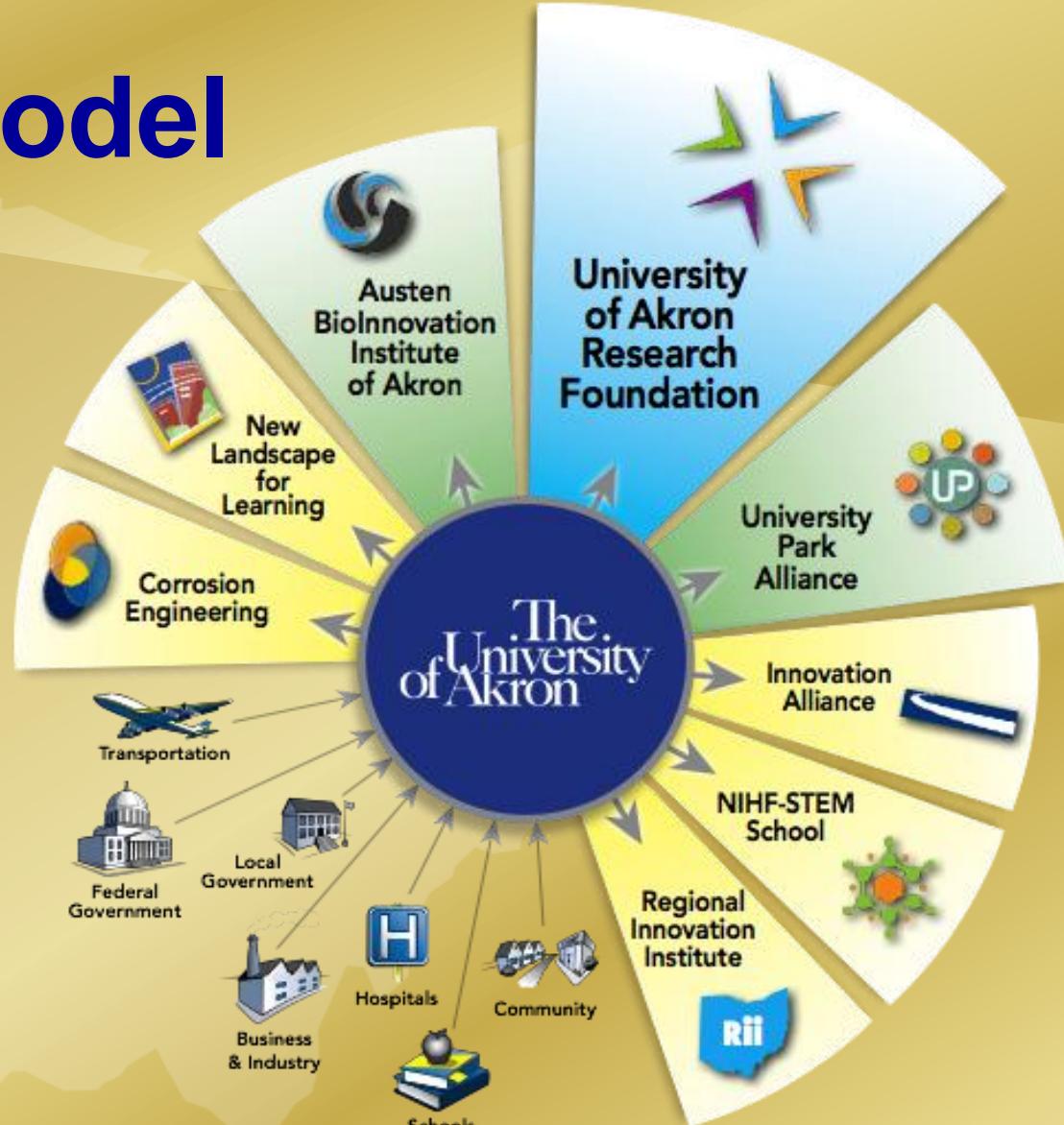
...Companies Also Not Well-Linked...

Many don't know:

- **what they need**
- **what to ask**
- **who to ask, or**
- **even that they need to ask.**

The Akron Model

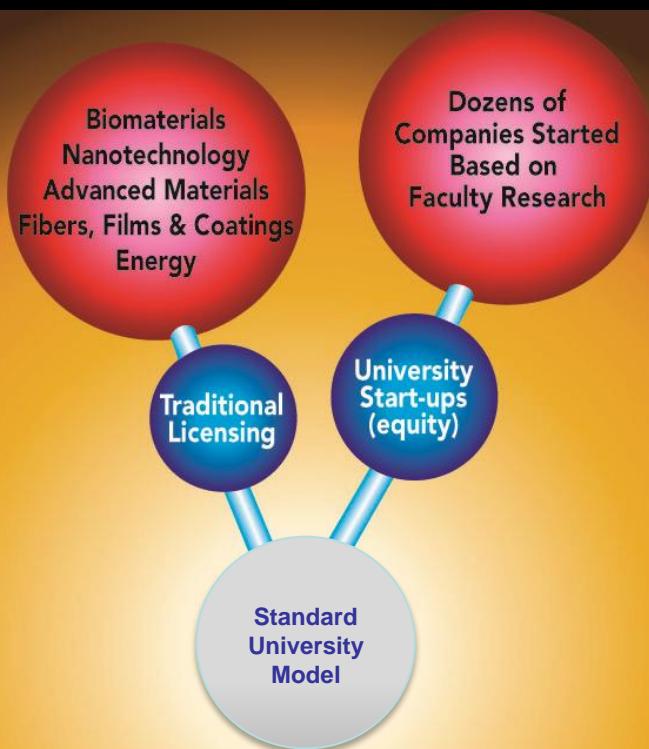
A Robust and
Broad-based
Platform or
“Tool Chest”
for Economic
Development

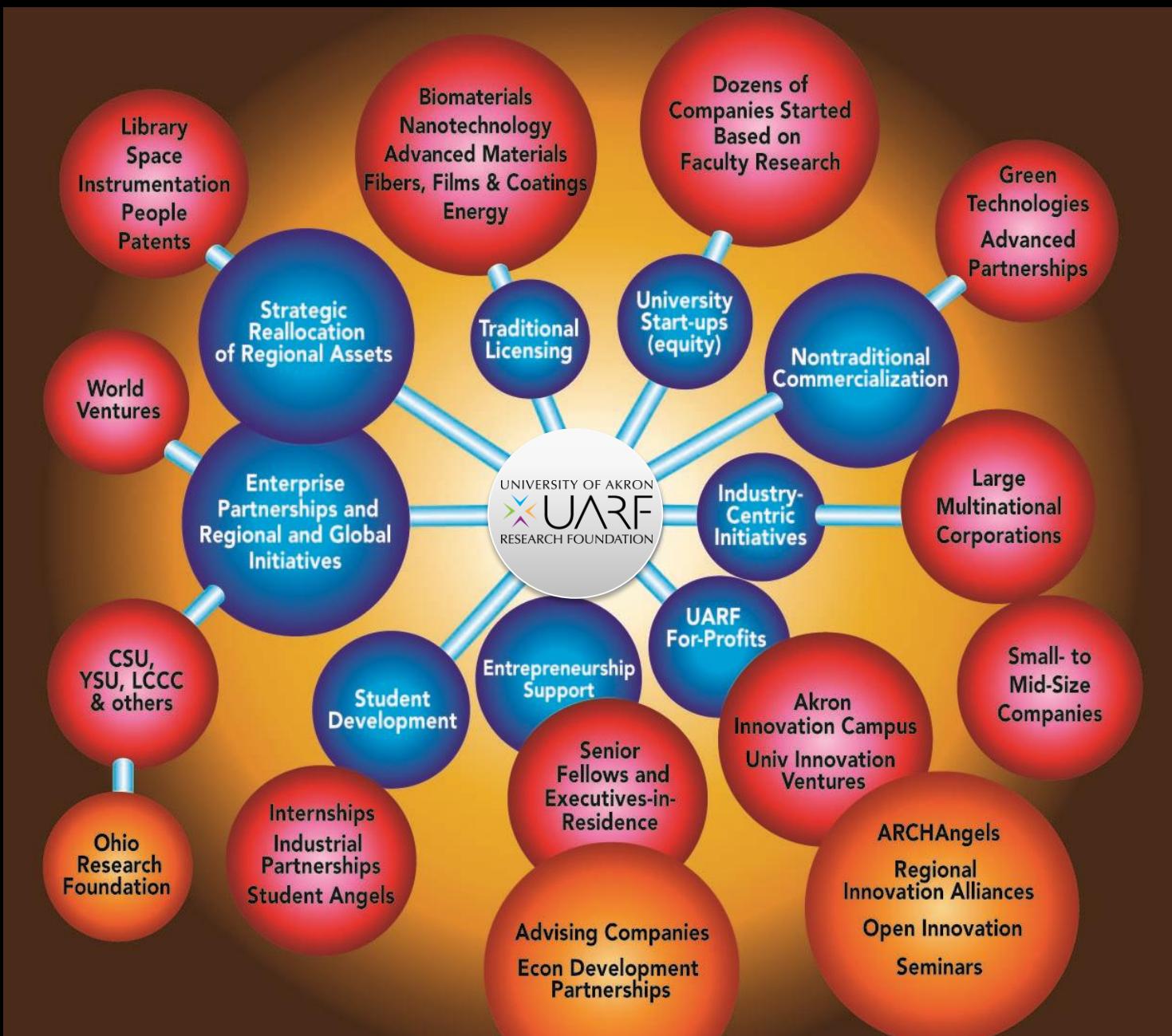


An Independent Entity Chartered to Benefit UA

**UARF is a boundary-spanning organization
that links industry and the University.**

- **Assesses public/private resources for mutually beneficial reconfiguration and reallocation.**
- **Facilitates tech transfer and start-ups, administers industry contracts, houses outreach efforts.**
- **Provides innovation services to internal and external researchers/organizations.**
- **Utilizes talents of industry retirees to promote innovation and entrepreneurship.**
- **Increases research funding and seed capital opportunities.**







National Polymer Innovation Center

Wright Center of Innovation in Polymer Engineering

1. Multi-laboratory facility

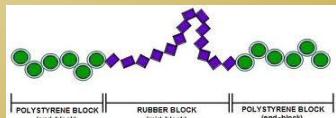
- Fabrication processes can be developed, characterized and scaled to production at one site.

2. State-of-the-art research and technology

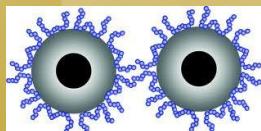
3. Large high bay areas:

- prototype manufacturing machinery
- materials and device fabrication
- workforce training

Functional Films for Flexible Electronics



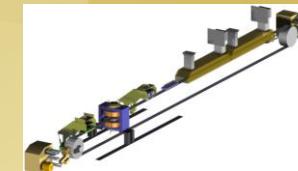
Block Copolymers



Nanoparticles

Material Source

The
University
of Akron



Roll-to-Roll Manufacturing
with External Fields

Spin-Off
Company



Flexible Displays



National Polymer Innovation Center

Wright Center of Innovation in Polymer Engineering

Potential Applications for Wright Center Technologies

- Medical Devices
- Biomedical materials
- Sensors
- Defense
- Automotive
- Aerospace
- Battery/fuel cells
- Consumer and Industrial Electronics
- Filtration
- Construction Materials
- Space Agency/Industry



National Polymer Innovation Center

Akron Functional Material Center (AFMC)

- 1. Advanced Materials Research**
- 2. Class II bioresearch**
- 3. Characterization**
- 4. High-throughput and combinatorial testing**



National Polymer Innovation Center

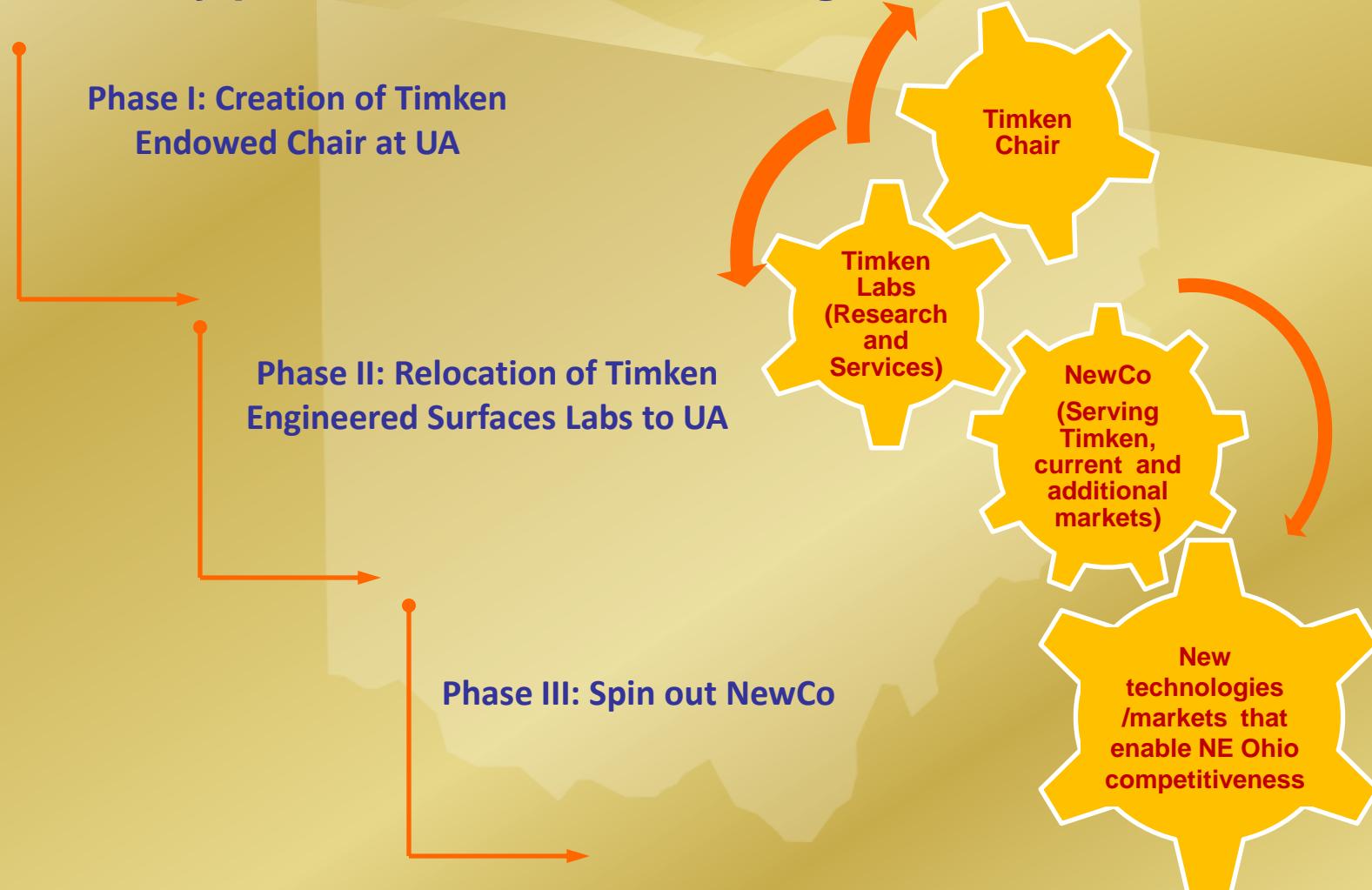
Akron Functional Material Center (AFMC)

Current AFMC Partners

- **Austen BioInnovation Institute in Akron***
- **ATRP Solutions***
- **BASF Corp.**
- **Coloplast**
- **Cook Medical**
- **DOW Corning Corp.**
- **EXXON Mobil Corp.**
- **Kraton Polymers, LLC***
- **Lord Corp**
- **Lubrizol Corp**
- **Polyone Corp**
- **Schneller***
- **Terumo Corp**
- **United Technology Research Center**

Timken Open Innovation Agreement

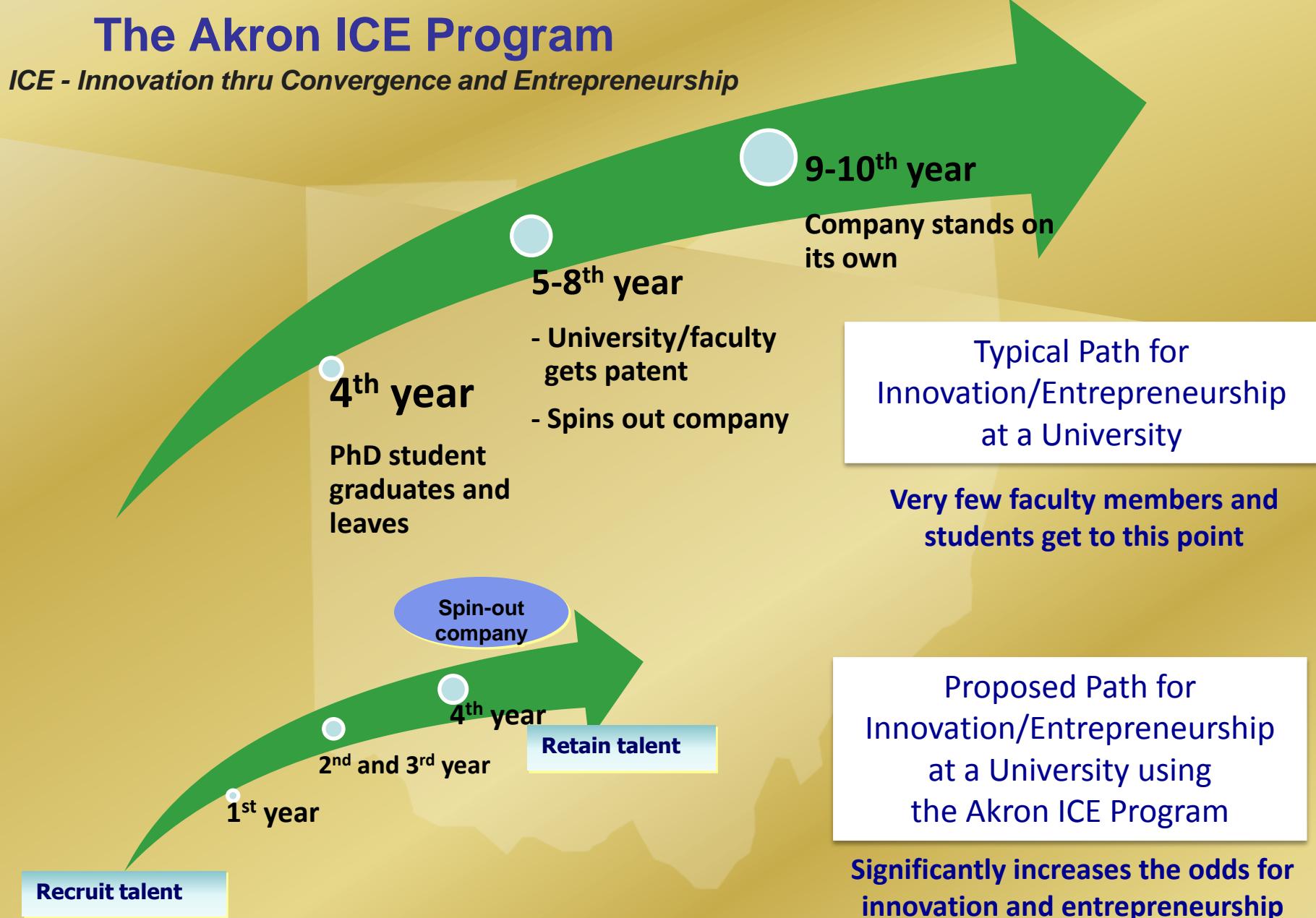
Three key phases that enable an endgame



New Technologies/Markets → NE Ohio
Competitiveness

The Akron ICE Program

ICE - Innovation thru Convergence and Entrepreneurship

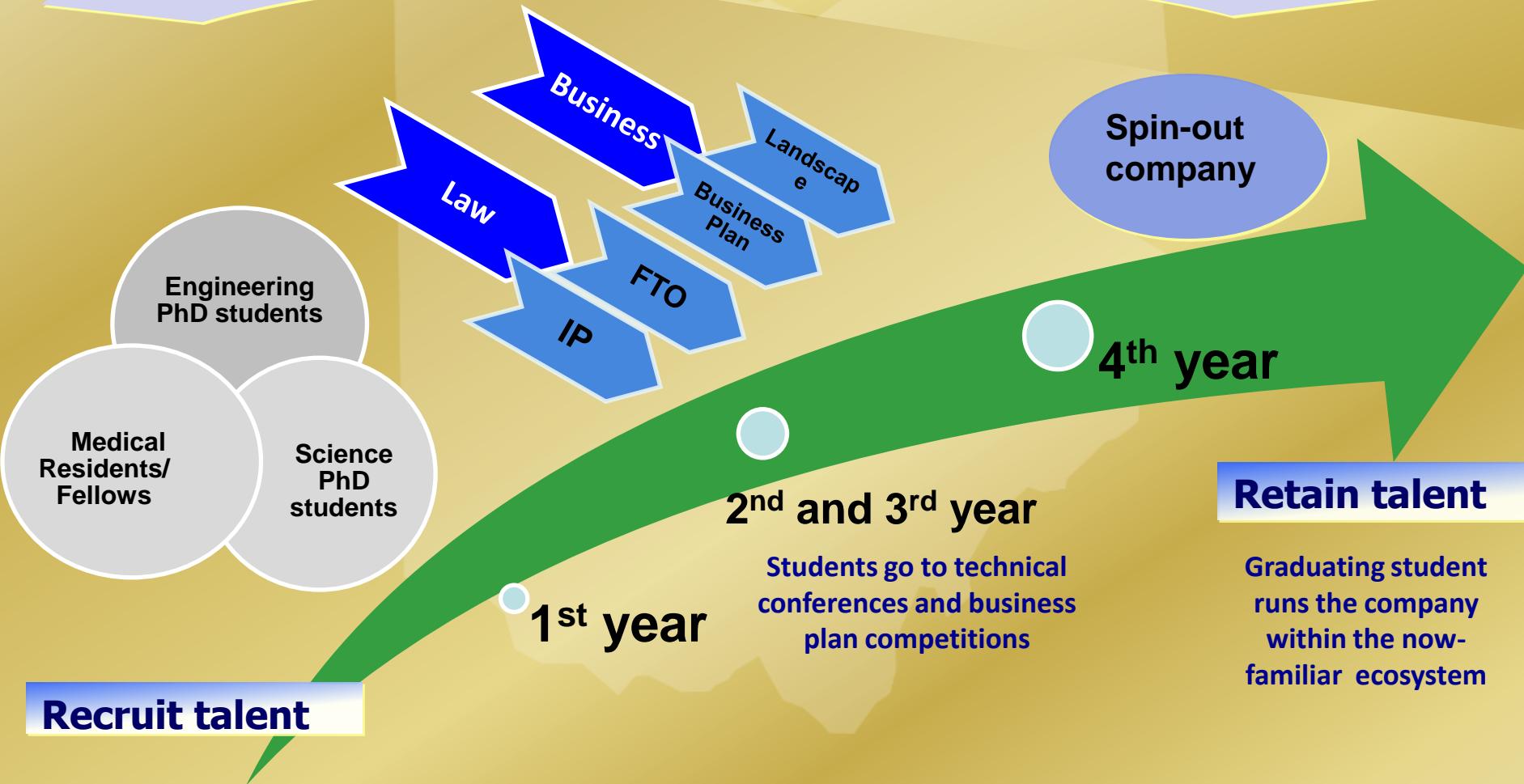


The Akron ICE Program

ICE - Innovation thru Convergence and Entrepreneurship



Regional Ecosystem: University Faculty, Hospital Physicians, Investors, Business People, Entrepreneurs, Lawyers, etc.



Summary: Benefits to SME Manufacturers

- **Linkage to the regional innovation ecosystem**
- **Access to**
 - **research professionals – faculty and experienced master's/Ph.D. candidates**
 - **potential new employees**
 - **cutting-edge research, technologies and processes**
- **Participation in collaborations and innovation opportunities**
- **Accelerated pathways from innovation to commercialization**

Silo Busting



Thank you

The
University
of Akron

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