



THE UNITED STATES' EXPERIENCE

**TITLE:**  
**INNOVATIVE SOLUTIONS FOR INVENTION XCELERATION (ISIX)**

**GENERAL INFORMATION**

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**Country:** United States of America

**Coordinating Institution:** Austen BioInnovation Institute in Akron (ABIA)

**Other institutions involved:** The University of Akron Research Foundation

**Duration of the experience:** October 1, 2011 - present

**Webpage:** [www.abiakron.org](http://www.abiakron.org)



**1) Objectives**

The goals of the ISIX project were to develop a collaborative entrepreneurial ecosystem among the five institutions: The University of Akron, Summa Health System, Akron Children's Hospital, Akron General Health System, and the Northeast Ohio Medical University, in order to increase the number of inventions commercialized and companies formed.

**2) Relevance**

As a metric, the ISIX process increased the number of invention disclosures from an average of three per year to about 100 per year among the three hospitals. It also improved the ability of the five institutions to recruit leading basic scientists and clinical scientists with experience in translational research both in Biomaterials and Clinical Specialties.

### 3) Concrete activities and actions

1) Synergy Seminars in which multidisciplinary audiences discuss solutions for patient-centered problems; 2) Structured invention sessions in which our engineers discuss solutions to problems faced by patients; 3) Prototype generation using 3D systems to rapidly generate prototypes tested in real-life settings; 4) Assessment of commercial attractiveness and patentability help to identify best potential products for further development and product creation; 5) Collaborative Demonstration Grants to foster collaboration among polymer scientists and clinical experts to produce biomaterials based inventions in Orthopedics and Wound Healing; 6) Creation of Akron Functional Materials Center, an open collaboration innovation space where polymer and materials companies meet with ABIA and University of Akron faculty to discuss and work on novel materials, and 7) BioDesign Innovation Course done in collaboration with the University of Akron brings together teams of MBA, MD and graduate students in the science and engineering fields, who do ethnographic research to generate product solutions for patient-centered problems.

### 4) Achievements and results

Seven companies have been spun out from this effort. The first company APTO Orthopedics has raised over \$300,000 including an STTR grant from the NIH. Seven products are in active licensing discussions and PacerMan, our first product, has been licensed. ABIA has contributed to the creation of over 450 jobs over five years. Invention Disclosures from the three hospitals have increased from an average of 3 per year in the previous decade (2001-2009) to 100 per year (2010-2013).

### 5) Sustainability

Sustainability is a challenge. This year ABIA converted from an organization focused on providing services to the five founding institutions, to a revenue-generating organization focused on providing solutions to universities, hospitals and companies in the areas of biomaterials, regulatory and product development, use of simulation for human factors engineering studies and the ISIX process. Very active marketing regionally and beyond is a critical success factor. Sustainability comes from a mixture of memberships, fee for service and grants.

### 6) Lessons learned

The ISIX Process consisting of Idea Generation, Technical and Commercial Potential Assessment, Prototype Development, Regulatory/Product Development Process, Commercial Strategy and Mentoring of teams has proven to be very effective. This has to be done holistically. What we would have changed would be to have evolved much sooner to an open revenue generation

model consisting of partnerships, fee for service and grants. We would have focused earlier, and more, on marketing our capabilities aggressively.

**7) Capacity for the exchange of this experience**

Cooperation modality	Cooperation modalities the institution can provide to others	The institution may be able to provide this cooperation to others by
Information Sharing	X	September 2014 – year 2016
Conference Calls	X	September 2014 – year 2016
Videoconferences	X	September 2014 – year 2016
Workshops	X	September 2014 – year 2016
Technical and Experts Visits	X	October 2014 - year 2016

**8) Author of this story**

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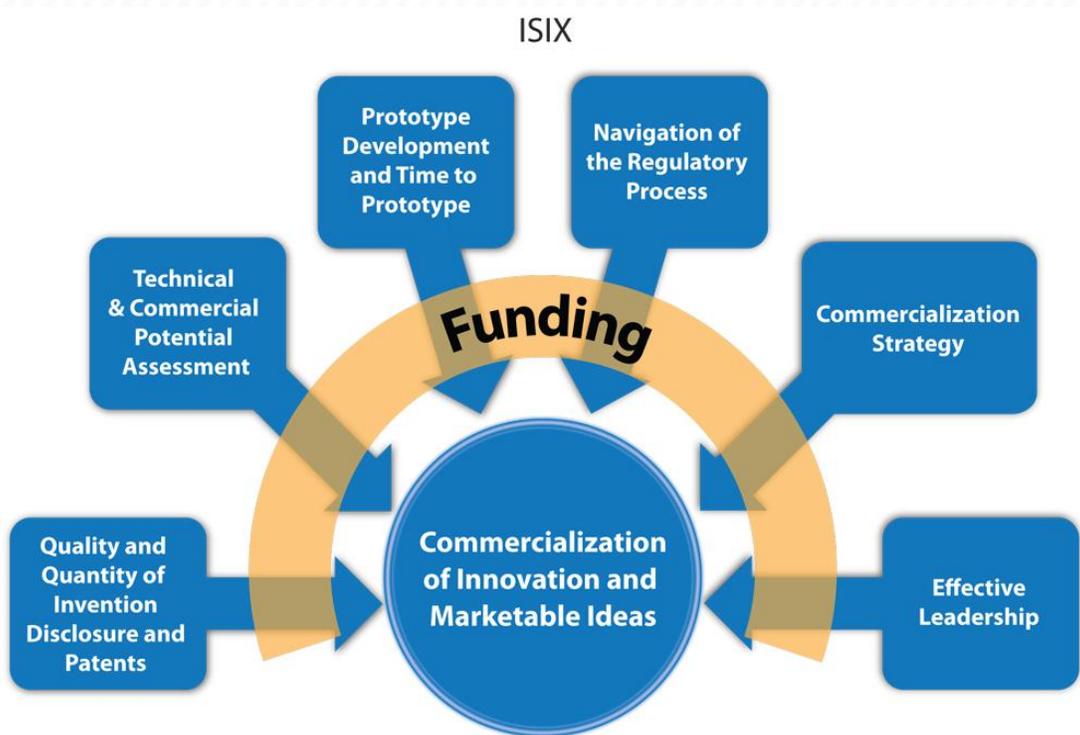
**9) Key persons involved in the design, implementation, and evaluation of the experience**

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**Figure 2.** Innovative Solutions to Invention Xceleration (ISIX).  
Six critical functions in the process of converting clinical ideas into new ventures.



## ISIX Outcomes

- 2001-2009 : 11
- 2010: 27
- 2011: 129
- 2012: 102
- 2013: 48

- 36 Funded Projects to date
  - VibraEase
  - Uterine Manipulator
  - Intubation Mouth Guard

- 6 Licenses
  - PacerMan
  - Pipette Syringe
  - Mouth Guard
  - AptoOrtho
  - MRI Compliance
  - Self Retaining Radiolucent Femoral Retractor



- 15 Projects in Prototype stage
- 7 Companies Spun out
  - AptoOrtho
  - PolyMed Tech
  - Design Flux Technologies, LLC
  - GorMonjee Inc
  - Gadzco International, LLC
  - Guaranteed Horse Products
  - Digital DX



*The Signs of Competitiveness in the Americas Report 2014 is a product developed by the Government of Trinidad and Tobago as RIAC Chair Pro Tempore 2014 and the OAS as RIAC Technical Secretariat with contributions received by the countries in the region, multilateral and academic institutions, and world-renowned experts.*

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