“Stakeholders and the Bioeconomy”

OBIC
OBIC, the Bioproducts Innovation Center located at The Ohio State University, was created in 2005 to integrate academia and industry linking expertise from two major industries, agriculture and polymers/specialty chemicals.
US Market Position

#1 Polymers

- paints & coatings
- rubber
- adhesives
- soaps
OBIC’s Mission

Expedite Bioproduct Commercialization

Original Pathway
Interest in Purchasing Biobased Categories

Please rate your level of interest in buying biobased products in the following categories: (Rating based upon 7-point scale)

![Bar chart showing interest in various biobased categories for National 2014 and Ohio 2014.](chart.png)
The OBIC Sustainable World Tour...
“We can virtually make everything and anything from biobased materials. It’s a new economy, it’s a new way of doing business.”
By the Numbers:

- 11 Sponsors
- 41 Exhibitors
- 250 Attendees
- 50 High School Students
- 16 Education Session Speakers
- 8 Mini Session Speakers
- 24 Bioproduct Innovation of the Year Finalists
- 2 Bioproduct Innovation of the Year Winners
- 550 Days Spent Planning
Quick Facts

• 392 Facebook Likes
• 643 Twitter Follows
• Over 20 articles written on the conference
• 7 Countries Represented
  • Belgium
  • Canada
  • China
  • Denmark
  • France
  • Mexico
  • United States

• 20 U.S. States Represented
  • California
  • Florida
  • Georgia
  • Illinois
  • Iowa
  • Louisiana
  • Maryland
  • Michigan
  • Minnesota
  • Missouri
  • New Jersey
  • New York
  • North Carolina
  • North Dakota
  • Ohio
  • Pennsylvania
  • Texas
  • Virginia
  • Washington D.C
  • Wisconsin
The “Bioeconomy”

**Feedstocks**
- agriculture/forestry crops/residue
- wood residue
- livestock manure

**Technologies**
- extraction/separation
  - mechanical, chemical
- bioconversion
  - microbes, algae
- hydrolysis
  - acids, enzymes
- gasification
  - high heat, low oxygen
- pyrolysis
  - catalysis, heat, pressure

**Markets**
- food
  - oil
  - proteins
  - carbohydrates
  - additives
- fuels/energy
  - ethanol/butanol
  - biodiesel
  - heat
  - electricity
- materials
  - plastics
  - fibers
  - adhesives
  - rubber
  - paints/coatings
  - dyes/pigments/ink
  - detergents/solvents
The “Bioeconomy”

Feedstocks
- agriculture/forestry
- crops/residue
- wood residue
- livestock manure
- industrial/municipal
  - municipal
  - solid waste
  - CO₂ emissions
  - food/industrial by-products

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  - fibers
  - adhesives
  - rubber
  - paints/coatings
  - dyes/pigments/ink
  - detergents/solvents
OBIC expedites bioproduct commercialization by focusing diverse stakeholders across five strategic initiatives.

**Initiatives:**
- Cluster Stewardship
- Biomass Supply & Biorefining
- Market Support
- Education/Outreach

**Stakeholder Groups...**
“Cell to Sell”® Innovation Pipeline

- Identify enabling technologies
- Assess available feedstocks
- Establish market needs and business case
- Facilitate linkages within and between clusters
  - Provide impartial advocacy
  - Build relationships and value propositions
  - Leverage policy, industry, and academic assets
- Develop and manage functional supply chain
Cluster Agent Activities

- Prospecting
  - Market Data
  - Needs & Opportunities
  - Technology & Feedstock Assets
  - Resources

- Networking
  - Industry Outreach
  - Collaborator Input & Ideation

- Assessment
  - Technical & Economic Analysis
  - Application & Market Analysis
  - Value Proposition/Business Case

- Leverage Resources
  - Talent – Public & Corporate
  - Facilities
  - Strategic Investments
  - Grant Proposal Development

- Program Oversight
  - Partnerships & Agreements
  - Project Development
  - Project Deployment

Goal: Increase probability of success
Stages of Cluster Development

- **Nascent**
- **Immature**
- **Mature**

**ELEMENTS**

**Assets**
- Feedstocks
- Facilities
- Technology
- Talent
- Fund$ ($)

**Drivers**
- Industry
- Markets
- Policy

**OBIC**

Public
Private

**Discover**

**Assist**

**Connect**

**Assess**

**Steward**
Example: Alternative elastomers cluster

OBIC assisted with securing a $3 million Ohio Third Frontier Award to initiate the Program of Excellence in Natural Rubber Alternatives (PENRA) research and pilot plant in Wooster, Ohio to commercialize renewable and alternatives sources of rubber.
Integrated Anaerobic Digestion
Biobased innovations offer consumers intelligent, sustainable choices because they use renewable materials derived from plants.