LESSONS LEARNED ABOUT WORKFORCE DEVELOPMENT FROM A TAACCCT BIOECONOMY CONSORTIUM: OPPORTUNITIES, CHALLENGES, SUSTAINABILITY
OUR PARTNERSHIP
Bioeconomy in a Snapshot

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Background

2014: U.S. Department of Labor awards the Building Illinois’ Bioeconomy consortium $10 million through a Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant (Round 4)

2016: Building Illinois’ Bioeconomy consortium partners sign Memorandum of Understanding for the purpose of providing multiple pathways for students to meet education and career goals

2016-2017: articulation agreements
Partner Schools

Spanning the state of Illinois
One university, four community colleges

- Southern Illinois University Edwardsville (SIUE)
- Lewis and Clark Community College (L&C)
- Southeastern Illinois College (SIC)
- Lincoln Land Community College (LLCC)
- Carl Sandburg College (CS)
Lead School

Hands-on experiences

Two research and training centers

- **The National Corn-to-Ethanol Research Center (NCERC)**
  - Public-private partnership
  - Commercial testing of products, technologies, and ideas

- **The Environmental Resources Training Center (ERTC)**
  - Designated by IEPA as the Illinois center for continuing education of personnel of drinking water and waste water treatment systems
Resources

- Dedicated case managers
- Partnerships with local community development and employment & training agencies
  - Emsi Career Coach and Analyst
  - Corporation for a Skilled Workforce (CSW)
  - Hawthorne Strategy Group
  - Council for Adult and Experiential Learning (CAEL)
OUR APPROACH
Mission & Vision

🌿 development of a well-trained quality workforce by merging the collective strengths and resources of each partner school with a network of committed regional employers

🌿 preparing residents of Illinois and neighboring states for in demand, high wage jobs in the bioeconomy

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Building Illinois Bioeconomy’s Value

- Foster partnerships between industry and education
- Develop flexible, targeted training programs
- Streamline process for connecting displaced and disadvantaged workers to programs
- Promote bioeconomy jobs and career paths
Bioeconomy Career Clusters

- **Energy and Manufacturing**
  - Entry: Computational Science Technician
  - Mid: Civil / Environmental Engineer
  - Advanced: Lead Mechanical Engineer

- **Agriculture, Life and Physical Sciences**
  - Entry: Plant Sciences Technician
  - Mid: Biological Scientist
  - Advanced: Senior Plant Scientist

- **Infrastructure**
  - Mid: Industrial Equipment Manager
  - Advanced: Plant Manager

- **Operations, Management and Business**
  - Mid: Policy Analyst
  - Advanced: Business Operations Manager

- **Education, Communication and Outreach**
  - Mid: Education Program Specialist
  - Advanced: Communications Manager

- **Operations, Management and Business**
  - Mid: Business Operations Assistant
  - Advanced: Business Operations Manager

- **Education, Communication and Outreach**
  - Mid: Educational Aide
  - Advanced: Communications Manager
Bioeconomy Employers in Our Region

Energy and Manufacturing
- Ameren
- COPE
- CDG
- Green Plains Renewable Energy
- Phillips 66
- SunCoke Energy
- USS
- Valero

Agriculture, Life and Physical Sciences
- AB InBev
- Bunge
- ADM
- Cargill
- Kraft Foods
- Monsanto

Infrastructure and Logistics
- Cassens
- Illinois American Water
- Missouri American Water

Operations, Management and Business
- BIOSL
- Bryan Cave
- CoBank
- National Corn Growers Association
- NCM Yieldlab

Education, Communication and Outreach
- Agrinews
- FleishmanHillard
- Lewis&Clark Community College
- SIUE
- Southwestern Illinois College
Industries Our Programs Prepare for

**Bioprocessing**
Converting organic matter (like corn) or waste into products that we use every day, like plastic or fuel.

**Biofuels**
A form of bioprocessing, which focuses on turning organic matter (like corn or food waste) into fuel.

**Water Management**
Treatment of waste or drinking water in a government or private facility, as well as in agriculture watersheds.

**Restoration Ecology**
The preservation and restoration of forestry and natural environments (like forests and plains).

**Process Maintenance**
The operation behind any manufacturing facility, including both machine and computer process systems.

**Integrative Studies**
Business, marketing, HR, communications, accounting and other professional positions needed to support bio-based industries.
Target Audiences

1. Immediate Need
   - Less than 6 months
   - Very – online, flexible time table

2. Betterment
   - 6 months to 2 years
   - Somewhat

3. Traditional Student
   - More than 2 years
   - Limited

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Targeted Information & Outreach: “Grow Your Future” Project

- Head Start parents in East St. Louis
- Laid off steelworkers in Granite City, IL
- Current staff of energy employers
- Veterans, air force base families
- Amazon Career Choice beneficiaries
- New immigrants in St. Louis Metro area
- Farmers in Southern and Central Illinois

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OUR CURRICULUM
Flexibility

- Stackable credentialing
- Articulation of A.A.S. degrees into Bachelor’s degree
- Hands-on training components
- Possibilities for Prior Learning Assessment
- Possibilities for soft skills training (digital badges)
- Some opportunities for:
  - rolling enrollment
  - self-paced coursework
  - hybrid/online coursework
Certificates

- **SIUE:**
  - NCERC: Bioprocess Technology

- **L&C:** Bioprocess Technician, Restoration Ecology, Green Roofs

- **SIC:** 5 certificates in biofuels/bioenergy production and technology

- **LLCC:** 5 certificates in agricultural watershed, landscape, and turf management and in conservation practice

- **CS:** 4 certificates in bioprocess technology and maintenance

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A.A.S. Degrees

**L&C:** Process Operations Technology, Restoration Ecology

**SIC:** Biofuels Production and Sustainability

**LLCC:** Horticulture (Agricultural Watershed, Landscape, and Turf Management)

**CS:** Bioprocess Operation Technology, Process Maintenance
Bachelor’s Degree

Integrative Studies at SIUE – 3 focus areas:

- Bioprocess Science
- Bioprocess Management
- Industrial Bioprocess

Designed to give students customized learning to achieve career goals (i.e. balance science with business for management positions)
Strong articulation from two year programs
Department of Energy Education Wheel

Four-year graduates are needed, too!

- Communications, Trade, Public Policy, Education
- Transfer and traditional Students
- BIB students experience at NCERC, ERTC or employer partner

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OUR SUSTAINABILITY EFFORTS
SIUE as Anchor Institution Regionally

Accessibility of programs (equity)
- K-12 intervention
- Targeted information

Environment that prioritizes student learning
- Case management
- Hybrid and online learning
- Hands-on and experiential learning
- Tutoring, mentoring, coaching, learning communities
- PLA, credit/non-credit balance, “earn and learn”

Employability of graduates
- Soft skills training
- Employer engagement

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Additional Grants

Future of the Illinois Workforce
A comprehensive partnership of providers across the spectrum, from fossil fuels to biofuels and beyond, with education institutions and the workforce/economic development systems, help employers and job seekers better navigate a changing energy world, balancing regulation with innovation.

DoE Strengthening Institutions Program
This project will marry the best of community college workforce readiness with undergraduate excellence as well as with an internal, earn and learn model for hands-on learning, by using SIUE’s existing research, education, and community centers as the bridge between the academic and the industry sides, between the classroom and real life.

USDA National Institute for Food and Agriculture grants

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Further Curricular Expansion

- Additional articulation agreements in progress between SIUE and community colleges, effort to create a network of SIU system programs and centers

- Additional Integrative Studies focus areas
  - Fermentation
  - Instrumentation
  - Water Technology

- Efforts towards credit and non-credit options in all areas
Further Employer Engagement

From advisory boards to sector partnerships
From sector partnerships to mapping and engaging the cluster or energy and water sectors regionally

🌱 Partnerships with county-based workforce, economic, and community development agencies
🌱 Bioenergy Alliance of Illinois (BAIL)
Ongoing Targeted Information & Outreach

Expanding “Grow Your Future” Project

- Visits to high schools, community organizations
- Listening tour
- Speakers bureau
- Earned media
- Thought leadership

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QUESTIONS?

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