



Welcome

Workforce Panel Discussion





Esteemed Panelists



Julie Michael Smith
Workforce and Economic Development Specialist
Vista Azul



Mark Mason, PhD
Professor of Chemistry; Founding director of the School of Green Chemistry and Engineering
The University of Toledo



Mark Henning
Research Supervisor Energy Policy Center
Cleveland State University



Moderator

Lisa Rimpf
Director Strategic Improvement
Babcock & Wilcox

Professional experience includes:

- Decade with Ohio Dept of Development & Governor's Office as regional representative in Mahoning Valley.
- Chief Development Officer at Youngstown Business Incubator, a technology incubator, urban redevelopment catalyst and industry driver.
- Owner in educational technology integration company using digital fabrication and project-based learning in grades 6-12 and post-secondary.
 - Projects with AmericaMakes, DARPA and NASA
- Consultant for industry sector partnerships in NE Ohio and W. PA
- Forming and leading with business and program development
- Strategic planning, grant writing and project management
- Leading workforce and community development initiatives

Academic Programs to Address Hydrogen-Related Workforce Needs in Ohio and Michigan

Professor Mark R. Mason
The University of Toledo
October 28, 2025



The project *Hydrogen Academic Programs to Enhance the Hydrogen Economy* is supported by the United States Department of Energy's Hydrogen and Fuel Cell Technologies Office: Award DE-EE00010706, University of Toledo.

Great Lakes Clean Hydrogen Hub Application



**Davis Besse Nuclear Power Plant
Oak Harbor, OH**



**Northwest Ohio is a Leading
Solar Panel Producer**



**Electrolysis from Nuclear and PV
Supplemented with Wind Energy**

Industry Partners:



University Partners:



Project Goal and Objectives

Goal: To develop programs at universities and community colleges in northern Ohio which will prepare the workforce required to support the hydrogen economy in Ohio and Michigan.

Phase 1

- Develop ecosystem map and perform social network analysis
- Identify the key occupations and the knowledge, skills, and abilities required for each occupation

Phase 2

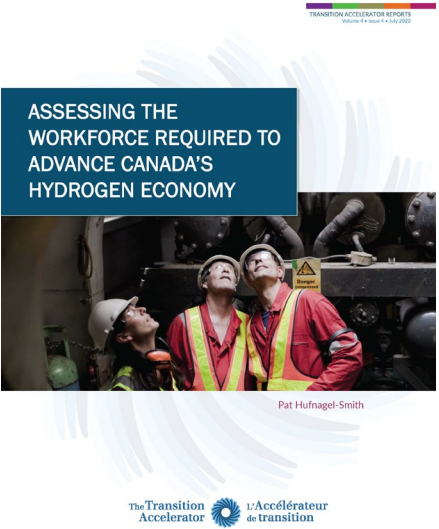
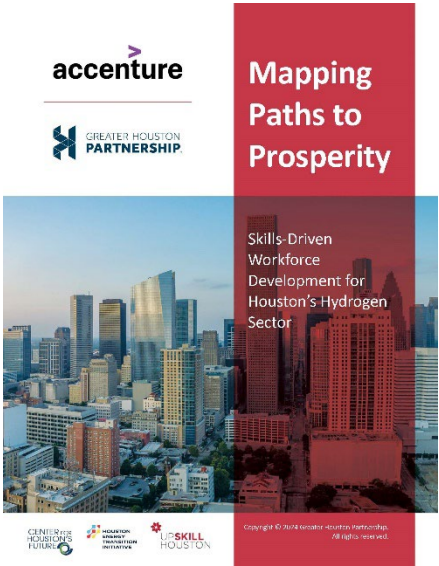
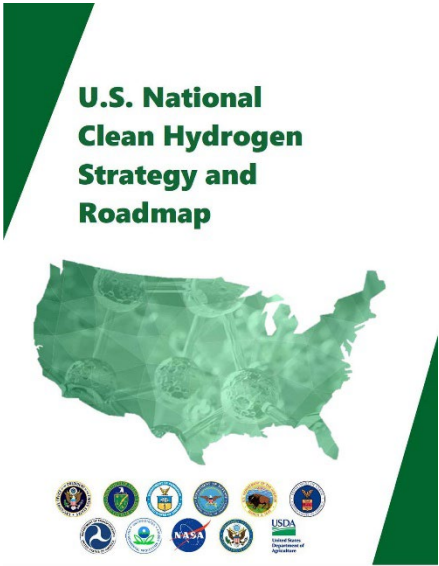
- Develop pertinent course modules, curricular materials, training programs and degree programs

Phase 3

- Develop student recruitment pipelines
- Implement programs and recruit students and workers



Current and Prior Workforce Development Efforts



Ecosystem Mapping and Social Network Analysis by Workforce Intelligence Network

Staff searched for open-source data with a focus on media articles, company sponsored websites, and available meeting information from known conveners of Hydrogen Industry stakeholders.

- Searched by keywords:

Hydrogen Energy

Hydrogen transportation

Hydrogen Fuel Cell

Clean Hydrogen

Hydrogen Hub

Hydrogen Transportation

Hydrogen Glass Making

Hydrogen Production

Hydrogen economy

Hydrogen

Hydrogen College Programs

Hydrogen Delivery

Hydrogen chemical industry

Hydrogen Safety

Hydrogen Industry

Hydrogen emissions

Hydrogen Research

Hydrogen Distribution

Hydrogen Storage

Hydrogen Cement Production

Hydrogen Semiconductor

Manufacturing

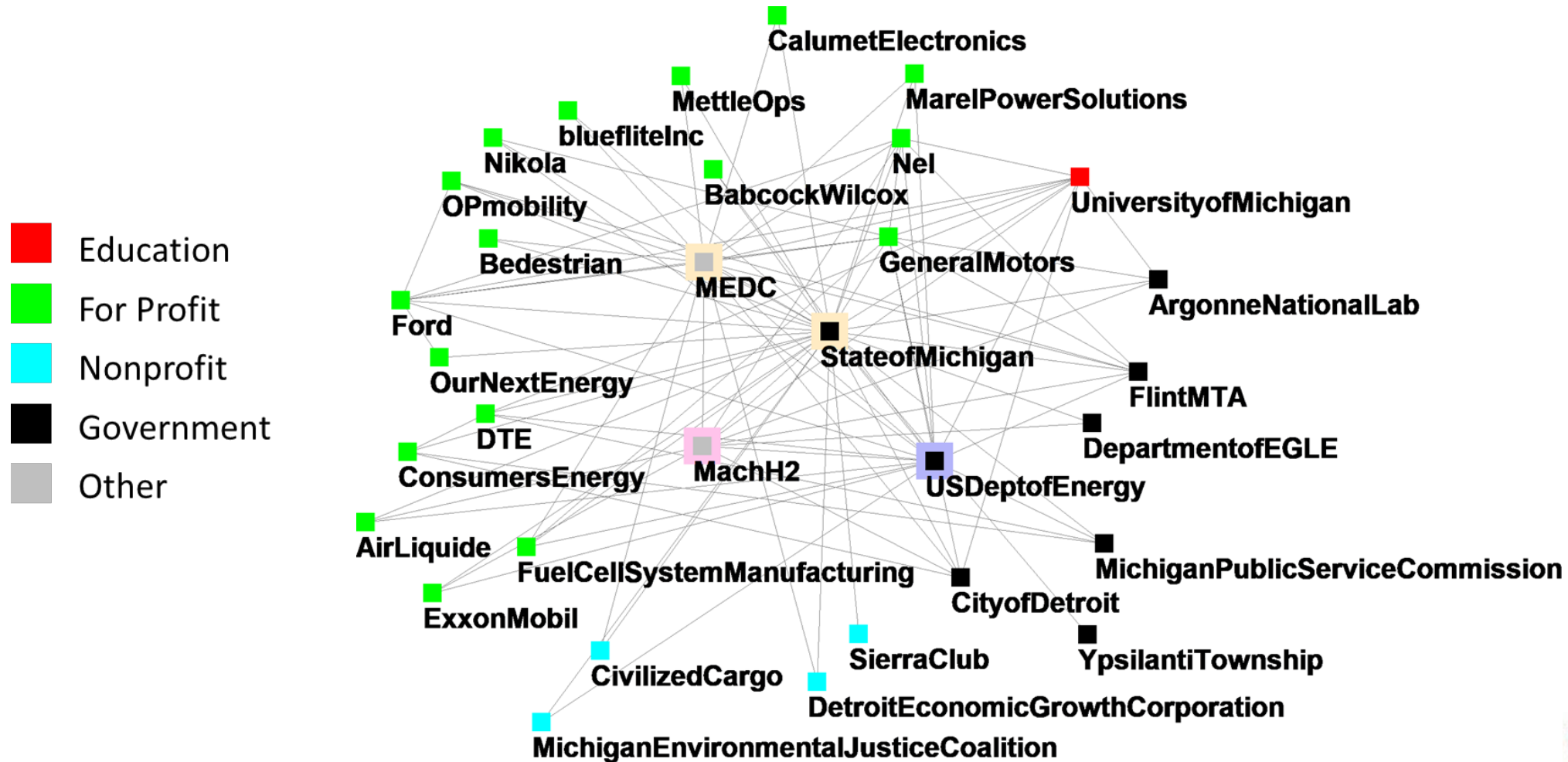
- Focused on reliable sources

- Additional training and consulting provided by Orgnet, LLC
an Ohio-based contractor specializing in social network analysis



Ecosystem Mapping and Social Network Analysis

Influencer: State of Michigan



Upcoming Events

In-Person Events

The Hydrogen Economy-Workforce Needs and State of Activities in the Region

Ohio Aerospace Institute, Brook Park, Ohio

November 18, 2025

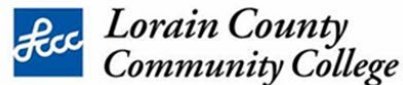
Feedback on Workforce Gaps and Needs

Please provide us with feedback on your company's workforce needs at mmason5@utoledo.edu

Also, please complete the hydrogen skills survey at <https://www.surveymonkey.com/r/QNXK3HP>

Collaborations on Workforce Development

Please contact us if you are interested in collaborating on workforce development efforts.



The Hydrogen Economy: Workforce Needs and State of Activities in the Region

Ohio Aerospace Institute, November 18, 2025

Creating a Hydrogen Workforce Development Pipeline with Hands-On, Industry Emphasis

Anil Bika, Director of Workforce Development, Center for Clean Hydrogen, University of Delaware

TBD

David Blekhman, Technical Director, Hydrogen Research and Fueling Facility, California State University, Los Angeles

Mapping the Hydrogen Economy in Ohio and Michigan

Kevin Cranick, Economic Research Manager, Workforce Intelligence Network

BrightLoop™ Chemical Looping H₂ Commercial Demonstration in Massillon, Ohio

Nick Vargo, Project Developer, BrightLoop; Lisa Rimpf, Director, Strategic Improvement, Babcock & Wilcox

Liquid Hydrogen Refueling System for Aircraft

Mark Haberbusch, President and CEO, NEOEx Systems, Inc.

Hydrogen Workforce Development: Community College Solutions in Times of Economic Stagnation

Tiffany Howard, Vice President of Economic Workforce Development & Continuing Education,
South Louisiana Community College

Building a Resilient Energy Workforce Amid Uncertainty

Pat Hufnagel-Smith, Partner, Creative Links Inc.

Liquid Hydrogen in Aviation

Matt Moran, Managing Member, Moran Innovation LLC

The **U.S. Department of Energy** (DOE Award Number: DE-EE0010706) is funding a regional initiative to develop comprehensive workforce development, training, and certification programs across northern Ohio and southern Michigan. This effort is led by the **University of Toledo**, in collaboration with local community colleges and universities.

The project seeks to identify current workforce needs and gaps related to technician, skilled trades, scientist, and engineering roles within the hydrogen sector. Insights from this assessment will guide the development of training pathways and credentialing programs aligning with industry requirements for building and maintaining hydrogen infrastructure safely and effectively.

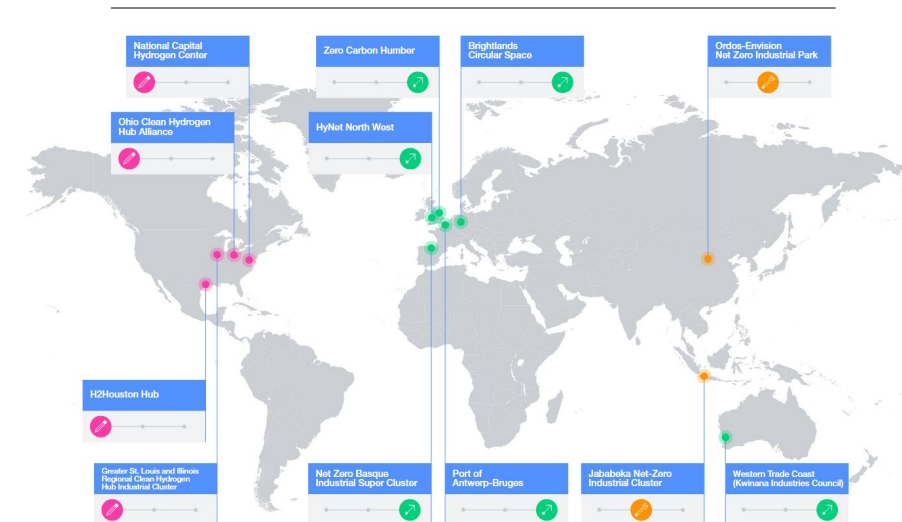
The survey targets employers and industry stakeholders with expertise in workforce needs, skills development, and training design. Key survey focus areas include:

- Identifying critical skill sets and job roles
- Highlighting training format preferences
- Informing curriculum and credential development

All responses will contribute to strategic planning efforts, strengthening the hydrogen workforce across the region.



- Midwest Hydrogen Center of Excellence
 - FTA-funded initiative to accelerate deployment of hydrogen-fuel-cell technology and infrastructure
 - Operated out of CSU since 2018
- Ohio Clean H₂ Hub Alliance → ARCH2
 - Early coordination and ongoing support for Battelle's successful regional hydrogen hub proposal
- WEF Transitioning Industrial Clusters
 - Best practices on scaling new technologies while maintaining regional economic competitiveness and job growth
 - Hydrogen-centric industrial clusters



Question Prompts



Audience questions and engagement appreciated!
Please raise your hand and wait for the microphone.

There seems to be a disconnect in the labor market: employers report difficulty finding qualified talent, while many skilled individuals are actively seeking work.

What factors might be contributing to this apparent disconnect in the workforce?

**Given recent changes in USA energy priorities,
how might Hydrogen workforce development
initiatives need to adjust?**

Industry sector partnerships (ISP) have been leveraged in other areas, how could such a model help with Hydrogen workforce development?

Audience Questions



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Please raise your hand and wait for the microphone.



Thank You!

Workforce Panel Discussion

