Ohio’s State Workforce and Education Alignment Project (SWEAP)
A brief description of project’s purpose
Ohio’s State Workforce and Education Alignment Project (SWEAP) was proposed to catalyze efforts to develop Ohio’s publicly facing resources to help businesses assess the supply of workers for in-demand occupations. The state’s second objective was to begin to analyze the workforce-employment supply-and-demand relationships.

A description of the state SWEAP team
Ohio recognized at the inception of the project the importance of a dedicated team drawn from the Governor’s Office of Workforce Transformation (OWT), members of the Ohio General Assembly, the Ohio Department of Higher Education (ODHE), the Ohio Department of Job and Family Services (ODJFS) and The Ohio State University, Center for Human Resource Research - Ohio Educational Resource Center (OERC). Each group brought specific skills, data, insights and relationships to the project. This diverse team includes individuals with broad experience in workforce development, data and analysis, public policy development and evaluation, and economic development. Project team participants are listed below by organization:

**OWT**
Ryan Burgess, Director
Michael Evans, Project Manager
Emily Modell, Outreach Coordinator
Jonathan Bocanegra, Data & Analytics Associate

**ODHE**
Cheri Rice, Associate Vice Chancellor, Higher Education Workforce Alignment
John Magill, Assistant Deputy Chancellor, Economic Advancement
Jill Dannemiller, Director, Data Management and Analysis
Josh Todorovski, Data Quality Auditor

**ODJFS**
Dr. Keith Ewald, Project Manager

**OERC**
Dr. Josh Hawley, Director, Ohio Education Research Center
Kristin Harlow, Research Associate
Julie Maurer, Research Specialist
Brian Stamper, Data Manager

**Ohio House of Representatives**
Rep. Tim Derrickson, Ohio House District 53
Rep. Bill Reineke, Ohio House District 88

**Ohio Senate**
Sen. Bill Beagle, Ohio Senate District 5

**JobsOhio**
Cheryl Hay, Director, Project Talent Acquisition
A description of the Workforce Supply Tool
(https://workforcesupply.chrr.ohio-state.edu)

The Office of Workforce Transformation (OWT) sought to provide information about workforce supply to businesses either moving to Ohio, or relocating or expanding within Ohio, but did not have ready access to that information. As a team, the SWEAP agencies (OWT, ODHE, ODJFS, and OERC) agreed that an online tool providing easy-to-access and easy-to-understand workforce data will fulfill this need.

The resulting Workforce Supply Tool provides businesses, employers, higher education institutions, and job seekers with critical information about Ohio’s talent supply and workforce features in key occupations. The Workforce Supply Tool, part of OhioMeansJobs.com, is a one-stop site where visitors can learn about in-demand occupations at the state and regional levels, including:

- The number employed in each in-demand occupation;
- Average earnings by occupation;
- The number of graduates earning credentials and degrees that led to in-demand occupations; and
- Institutions of higher education that offer credentials or degrees in in-demand areas.

The Workforce Supply Tool provides users the information they need to make important decisions.

- Businesses considering relocating or expanding can identify the number of skilled workers available in a region.
- Recruiters and human resource leaders can identify sources of talent and forge relationships with institutions that train the workers they need.
- Job seekers and those considering pursuing a certification or degree can use the tool to identify their chosen occupations’ earnings and obtain specific contact information for educational programs that train individuals.
- Higher education providers can use the tool to identify similar programs, and coordinate degree and certificate offerings.

Each chart and graph on the site has source information and a link that lets the user know from where the data come. In addition, for those graphs for which we calculated results (such as the projected graduates), detailed information about those calculations is included in the Data Details tab. Data included in the site were analyzed in part using data from the Ohio Longitudinal Data Archive (OLDA). The OLDA is an archive of a variety of state-level administrative data, which are stored such that individual records may be linked across time and between agencies. In this case, we used unemployment insurance claims data, as well as Ohio Technical Center completers, to populate various parts of the Supply Tool site.

The top portion of the site is static, while there are tabs to navigate below. The top portion includes dropdown menus for users to choose an occupation of interest and a region of Ohio. In addition, there is a map of Ohio with the six JobsOhio economic regions identified by color. The homepage (About tab) displays some background and “getting started” information.

After choosing an occupation from the dropdown menu (in this case, we chose Computer Programmers), the Occupation tab is populated with background information about Computer Programmers. On the left there is a definition and skill information about the occupation from O*NET, and a link to more detail about
Ohio’s State Workforce and Education Alignment Project (SWEAP)

Workforce Supply

Occupation

15-1131: Computer Programmers

Jobs

Ohio Region

Statewide

About

Occupation

Workforce Supply

Graduating Institutions

Data Details

O*Net Occupation Description

Create, modify, and test the code, forms, and script that allow computer applications to run. Work from specifications drawn up by software developers or other individuals. May assist software developers in analyzing user needs and designing software solutions. May develop and write computer programs to store, locate, and retrieve specific documents, data, and information.

Important skills:

Reading Comprehension
Critical Thinking
Complex Problem Solving
Programming

Read more about Computer Programmers at the O*Net.


The right side provides regional labor statistics about Computer Programmers. The top graph shows median earnings per hour for Computer Programmers in each region of the state, as well as the range from 25th percentile to 75th percentile. Below the earnings is a graph displaying the number of people employed as Computer Programmers in each region. The regional labor statistics are pulled from Ohio’s labor market information that the Ohio Department of Job and Family Services provides to the Bureau of Labor Statistics.

When choosing a region of Ohio (in this case, the Northeast), the map zooms in and dots appear, representing institutions that supply recent graduates.

The Workforce Supply tab provides region-wide information about supply of Computer Programmers. The graph on the left-hand side displays the total number of graduates from programs in Northeast Ohio that

Computer Programmers.
train students to be Computer Programmers. The graph is divided into degree level, and it shows two years of historical data, as well as two years of projected data. Projected data are missing where there were fewer than 10 years of graduates for a particular occupation. Below the graph is a list of postsecondary program categories that we identified as training Computer Programmers, using the CIP/SOC crosswalk.

On the right is a graph of the number of individuals who filed for unemployment claims in the last year and who identified their occupation prior to unemployment as a Computer Programmer, by region. There were 182 individuals identified as Computer Programmers who filed for unemployment insurance in 2015.

By clicking on the Graduating Institutions tab, a list of postsecondary institutions offering programs relevant to Computer Programmer appears. By either clicking on an institution on the map or choosing from the list of options, details about that institution appears.

We chose Case Western Reserve University. A graph appears to the right of the list with two years of graduates and two years of projections related to Computer Programmers. Case Western produced 47 bachelor’s degrees and six master’s degrees in computer science in 2015. Below the graph is the list of program areas that are included in the graph. Case Western's website and physical address appear, for users to contact them for more information.

How the Supply Tool will be used
The Supply Tool is a publicly available resource for Ohio’s business community and policy makers to help them plan and find a source of employees for in-demand occupations. Businesses can search by occupation at the state and regional levels. At the regional level, the tool provides information and connection to education providers educating and training individuals in the selected occupation.

Ohio developed the Workforce Supply Tool with business input after listening to the challenges in finding employees with appropriate skills, education, and training. The tool can assist business planning by offering

the ability to see the projected number of individuals completing a program. ODHE anticipates businesses will contact institutions for the opportunity to interview students and offer curriculum insights based on changing industry needs and dimensions.

Ohio’s supply tool complements existing resources available on OhioMeansJobs (OMJ). OMJ serves as the gateway for Ohio businesses and individuals to seek work and post positions. It also provides data and information regarding in-demand occupations and career pathways, with dedicated portals for student and veterans. The OMJ site links to the Supply Tool in various places, including on the page offering employers tools for finding staff.

Future data tool development

The Workforce Supply-Demand comparison tool under development will offer a prism to begin to understand supply of worker and occupational demand relationships at the state and regional levels. Initial users, workforce policy professionals, higher education, and business will analyze data to identify areas where supply and demand are not in balance. Ohio recognizes supply-demand data require context with additional economic information and data to determine appropriate recommendations and actions to develop balanced labor markets. Research reviewing changes in industry composition, growth and decline of industries, and technology changes will bring perspective and inform discussions.

Policy leader engagement

ODHE developed a process to engage policy leaders from the Governor’s office, General Assembly, higher education, and business throughout the project. OWT and General Assembly members’ desire to offer a project with immediate business impact led us to develop the Supply Tool first. JobsOhio, the organization that leads Ohio’s efforts to attract new capital investment and support job creation, also saw the importance of a business-focused resource. Supply of talent is a leading factor inhibiting business growth and the first question asked by companies considering capital investment in Ohio.

Policy leaders from all of the participating groups attended the National Skills Coalition events in Miami and Chicago. This level of collaboration continued throughout the project, with updates provided to members of the General Assembly. ODHE facilitated weekly project calls with OERC, ODJFS, and OWT and organized face-to-face meetings to address questions as they arose and maintain the project schedule. The coordinated project schedule included time for an iterative development plan for the supply tool, including testing by business, higher education, and policy leaders.

All members of the SWEAP team were part of the Supply Tool rollout in December 2016. ODHE, OERC and ODJFS organized briefings for the members of the General Assembly and OWT prior to the event. After the rollout, the team prepared a short summary of the project that can be shared with interested parties, from local businesses to elected officials.

Policy impacts

The Supply Tool was highlighted at the Governor’s Executive Workforce Development Board meeting on December 13, 2016; Ryan Burgess, director of OWT, leads the board along with Blane Walter (Chair) of Talisman Capital Partners. Senator Beagle and Representative Reineke are also members of the board. The board released its Future of Workforce Report with two recommendations calling for the use of the Supply Tool as a permanent Ohio resource.

The release of the Supply Tool based on enrollment and completion data submitted to ODHE and IPEDS is leading institutions to review their data for accuracy. Institutions recognize they will not appear on the supply tool as a resource to businesses without consistent and timely data. Three Ohio Technical Centers (OTCs) contacted ODHE in December 2016 to ask about the tool after they realized their programs did not appear on the tool. ODHE determined that the OTCs needed to send updated information; once they did so, they were added.
The tool’s ability to show certificate information related to in-demand occupations is of particular interest to businesses as they focus increasingly on skills during the hiring process. Occupations falling into this classification include welding, computer and information systems managers, electrical and electronic engineering technicians, and machinists. A secondary benefit of the inclusion supply ranging from certificate to master’s degree is a visualization of a career pathway in a particular occupation.

In parallel with students finding pathways through the Supply Tool, the Supply-Demand Tool under development will further conversations between business and higher education and curriculum review to prepare for emerging issues and changes in labor markets. Information technology and advanced manufacturing are industries seeing rapid change that will benefit from additional resources. Institutions may choose to use the existing advisory committee to review the data and accelerate the pace of change.

Challenges and responses
Ohio’s SWEAP project’s challenges arose during the data gathering and matching phases as job demand and higher education data were integrated to develop a robust tool. A policy challenge was determining what supply data elements would comprise the total; the unemployment claims by occupation were added as a separate visual to the tool to allow businesses to see new and existing available talent.

A challenge related to graduating institutions was the recognition at the institutional level that staff turnover makes it difficult to provide accurate local contacts. The team decided to post institutional contacts and links unlikely to change as the basis for the business contact. As ODHE updates its data and reporting system, it may be possible to provide referrals to specific institutional program leads.

The unexpected success of the tool to display data and information for 18 in-demand occupations accelerated the gathering and development phases to bring nearly 200 additional in-demand occupations. OERC and ODHE are coordinating planning and project management to deliver this product by July 2017; this requires reallocation of resources in the technical and policy areas.

Key lessons learned
Four valuable lessons Ohio learned during the project began with an emphasis on collaboration and communication from planning, project management, and implementation through evaluation. The scale of the SWEAP project with its impact on workforce, higher education, and business required a commitment to regular meetings and weekly phone calls with agendas and defined outcomes. While many meetings involved researchers and agency staff including OWT, ODHE provided reports to elected officials to maintain project support and disseminate progress.

Ohio’s second insight was the importance of a diversified project composed of policy, research and technology to build an interactive tool helping to grow Ohio’s economy. ODHE staff brought economic and workforce development policy and implementation experience along with deep knowledge of the supply data provided by higher education institutions. ODJFS, led by Dr. Ewald, was able to explain the nature of employment and demand data with a historical policy perspective. OERC was a cornerstone of the project with policy knowledge complemented by research and the capability to deliver a technical solution. Lastly, OWT shared policy perspectives from the executive branch, General Assembly and business community.

Ohio saw the importance of creating actions and allowing time to check data and review the project along the way. An example of this was testing a beta version of the supply tool with small-medium size businesses in July 2016. After reviewing their comments, the tool was redesigned to provide details on regional education-training providers. This iterative approach assisted the team during the interview element of the project, starting with the questionnaire design, selection of institutions, and review of preliminary findings.
A final lesson is there is inability to predict the opportunities and value of a highly collaborative project with broad-based support. Ohio is drawing on the interview work to inform discussions related to information technology careers and pathways as the state strives to retain and attract talent in the “innovation economy.” Manufacturing firms are looking to the supply tool to help find employees to meet their growing needs as the industry changes and baby-boomer employees retire.

**Plans for sustainability**
Ohio’s sustainability plan is a four-corner strategy resulting in the SWEAP resources becoming part of the data and policy framework.

- Ohio Means Jobs, with strong state support and committed resources, will showcase the Supply Tool with nearly 200 in-demand occupations in July 2017. The site will be updated on a regular basis by OERC with data from ODHE, ODJFS, and OWT.

- The Ohio Analytics governance structure, with representatives from ODHE, ODJFS, OERC, the Ohio Department of Education, and Opportunities for Ohioans with Disabilities (OOD), will oversee collection and guidance of data related to the project. This will offer a forum to discuss research and technical issues that may influence the site’s functionality and policy issues.

- ODHE leads a collaborative effort to develop a statewide and regional interactive supply and demand tools in 2017. Evaluation of the tools will incorporate usability by business, education, and elected officials to determine policy implications and future actions.

- Ohio anticipates an early success in 2017 of the SWEAP project will be budget and policy language referencing the tool as a key resource for future actions. This step places the SWEAP project as an acknowledged success and part of Ohio’s approach to workforce development.