

## 12-Month Research Agenda Fiscal Year July 2024-June 2025

The Virginia Office of Education Economics (VOEE) serves as a pivotal resource for state-administered education and workforce programs. VOEE data and analyses inform a diverse group of stakeholders as they make programmatic and policy decisions related to workforce education and training. This includes the governor and the General Assembly, who look to VOEE as a guide as they make strategic investments in current and future education and workforce training programs.

The mission of VOEE includes the following key areas of focus:

1. **Coordinate Workforce and Higher Education Alignment:** Conduct data analysis and translate findings to partners to ensure alignment between the workforce and higher education.
2. **Provide Unified, Consistent, and Impartial Information:** Serve as a reliable source of information and analysis for policy development and implementation related to education, the labor market, and workforce development.
3. **Identify Emerging Trends:** Identify and analyze emerging trends in education and workforce development to proactively address future challenges and opportunities.
4. **Support Economic Growth:** Align research initiatives with the state's economic growth objectives, ensuring that education and workforce programs contribute to broader economic development goals.
5. **Foster Collaboration:** Enhance collaboration between state agencies, educational institutions, and industry partners to create a cohesive and effective education and workforce ecosystem.
6. **Enhance Data Utilization:** Improve the collection, analysis, and dissemination of education and workforce data to support evidence-based decision-making.

### Purpose of the Research Agenda

VOEE collaborates with its Research Advisory Group to develop and report an annual research agenda to the governor and General Assembly on or before June 30th of each year. The current Research Advisory Group comprises the Secretaries of Education, Labor, and Commerce and Trade; the State Council of Higher Education for Virginia; the Virginia Initiative for Growth and Opportunity Board; and the Department of Workforce Development and Advancement.

The purpose of the annual research agenda is to:

1. Establish a clear focus for the Office's work in the upcoming fiscal year.
2. Guide research and activity efforts to align with and support current state education and workforce development initiatives.
3. Describe the Office's major research projects and data priorities for the upcoming fiscal year.

### **Notable Achievements within Fiscal Year 2023-2024**

Three years into operations, VOEE has successfully integrated a variety of state, public, and proprietary datasets to establish a comprehensive VOEE data model. VOEE has also developed a cloud-based infrastructure for data management, visualization, and reporting. Together, the VOEE data model and infrastructure support ongoing analyses, reports, and dashboarding.

With the foundational data model and infrastructure in place, VOEE has been able to release six self-service dashboards on [www.voee.org/data](http://www.voee.org/data), publish six key studies, and develop a new College and Career Outcomes Dataset. This unique dataset includes up to 14 years of data on a sample of Virginia graduates, including information on occupations, industry progression, skills, and earning outcomes. The accompanying dashboard allows users to filter these data by broad academic discipline, field of study, and institution of higher learning.

### **Looking Ahead to FY 2024-2025**

Moving into FY 2024-2025, VOEE aims to build on and move beyond its foundational work. A significant part of VOEE's research this year will draw on the College and Career Outcomes Dataset to address core questions relevant to the Office's mission, including regional supply and demand, occupational and skill adjacencies, and the emerging and future workforce. This year VOEE will also focus on improving the dissemination of data and insights to stakeholders and communities of practice. As part of this effort, there will be an increased emphasis on storytelling in making data and analyses more engaging and accessible to users.

VOEE's work this year will align with five major themes to enhance the Office's impact and effectiveness in supporting a deeper understanding of education and workforce alignment across Virginia.

### **Theme 1: Prioritized Focus on Higher-Level Analysis and Translation**

**Objective:** Provide higher-level analysis and translation of data.

**Key Actions:**

- Develop analyses, insights, and takeaways tailored to stakeholders who do not require or desire self-service.
- Focus on storytelling and data translation.
- Implement a comprehensive communication plan to regularly disseminate data and analyses.

**Impact:** Make VOEE analysis accessible for a more diverse group of stakeholders and communities of practice.

**Key Stakeholders:** Career Technical Education (CTE) coordinators and other K-12 administrators, higher education administrators, and workforce program administrators.

## Theme 2: Broaden the Sharing of VOEE's Data Model

**Objective:** Expand the sharing and utilization of the VOEE data model across various platforms and stakeholder groups.

**Key Actions:**

- Develop a new user-initiated custom reports option for distinct user groups to access analysis beyond dashboards.
- Promote the adoption of VOEE workforce definitions and analytical frameworks through collaborations with state agencies and partners.
- Embed dashboards into relevant practitioner websites and portals.

**Impact:** Further VOEE's mission to become the primary source for data and analysis of education and workforce alignment in Virginia.

**Key Stakeholders:** All VOEE stakeholders.

## Theme 3: Extend Analysis and Data on Regional Education and Workforce Alignment

**Objective:** Enhance the Education and Workforce Alignment Dashboard to include additional education and training pathways by region and career cluster.

**Key Actions:**

- Integrate CTE high school credential completion data into the dashboard.
- Focus on High-Quality Work-Based Learning and Youth Apprenticeship programs.
- Visualize historical trends of Registered Apprenticeship programs by region.

**Impact:** Provide a more comprehensive view of regional education program activity aligned to the local workforce, enabling users to identify pathways that are satisfying regional demand and to address gaps and misalignments between education and training and the workforce.

**Key Stakeholders:** Policymakers, CTE coordinators, and higher education and workforce program administrators.

#### Theme 4: Evaluate How Degrees and Credentials Support the Regional Workforce

**Objective:** Use the College and Career Outcomes Dataset to understand career pathways and performance by field of study.

**Key Actions:**

- Evaluate career pathways by field of study in terms of earnings and career trajectory metrics, including time to self-sufficiency attainment, retention in career clusters, and industry.
- Measure the impact of additional education, training, and upskilling on career outcomes.

**Impact:** Provide empirical evidence of education's effects on career access, job, and wage progression in Virginia, allowing for more informed investments and decisions around higher education programming.

**Key Stakeholders:** Policymakers and higher education administrators.

#### Theme 5: Identify Workforce and Skillset Adjacencies for Difficult-to-Hire Occupations

**Objective:** Assess similar and adjacent occupations and skillsets.

**Key Actions:**

- Develop a hybrid model that compares knowledge, skills, and abilities data with the most frequently advertised skills from online job postings to assess their level of relatedness.
- Analyze skillset compatibility aligned to jobs of interest through testing and feedback with business and industry.
- Assess the availability of workers in regional economies and observe workforce transitions in the College and Career Outcomes Dataset.

**Impact:** Foster a deeper understanding of workforce adjacencies, allowing for identification of new talent pools for difficult-to-hire jobs and the development and provision of targeted upskilling to improve both worker and employer outcomes.

**Key Stakeholders:** Employers, higher education administrators, and workforce program administrators.

## FY 2024-2025 Select Planned Activities and Projects by Thematic Focus

<p><b>Theme 1: Prioritized Focus on Higher-Level Analysis and Translation</b></p> <ul style="list-style-type: none"> <li>▪ Develop and launch communication strategy to systematically and regularly disseminate VOEE analyses and insights to stakeholders</li> <li>▪ Create expanded analyst team to develop thematic and summary analyses and insights to support communication strategy</li> </ul>
<p><b>Theme 2: Broaden the Sharing of VOEE's Data Model</b></p> <ul style="list-style-type: none"> <li>▪ Pilot a new program labor market assessment report in partnership with the State Council of Higher Education for Virginia (SCHEV) to use as part of the academic program approval process</li> <li>▪ Establish new data agreements to address gaps within VOEE's data model</li> </ul>
<p><b>Theme 3: Extend Analysis and Data on Regional Education and Workforce Alignment</b></p> <ul style="list-style-type: none"> <li>▪ Extend visualized analysis in the Education and Workforce Alignment Dashboard to include VDOE Career Technical Education (CTE) data on high school credential completion and related career clusters</li> <li>▪ Expand Registered Apprenticeship data elements with visualized historical trends by Virginia regionalities</li> </ul>
<p><b>Theme 4: Evaluate How Degrees and Credentials Support the Regional Workforce</b></p> <ul style="list-style-type: none"> <li>▪ Begin to identify credentials of value and conduct a gap analysis of education system offerings across the Virginia K-12 and higher education landscape</li> <li>▪ Develop and publish an empirically derived program-to-occupation crosswalk for bachelor's and associate degrees as an alternative to NCES CIP-to-SOC for Virginia-specific education and workforce development research</li> <li>▪ Publish a new series of research briefs analyzing the career outcomes of graduates sampled from the College and Career Outcomes Dataset with a first focus on manufacturing, data science and AI, and liberal arts and humanities</li> </ul>
<p><b>Theme 5: Identify Workforce and Skillset Adjacencies for Difficult-to-Hire Occupations</b></p> <ul style="list-style-type: none"> <li>▪ Develop an Adjacent Workforce Model to identify similarly skilled workers and adjacent talent available to hard-to-hire jobs that are aligned to occupations that are prioritized by the Commonwealth</li> <li>▪ Integrate College and Career Outcomes Dataset to develop a skills-based hiring tool and partner with relevant business and industry to assess its value to the market</li> </ul>

### FY 2024-2025 Major Planned Activity and Project Work Breakdown Structure

	Major Research Activity/Project Name	Start	Finish
<b>1</b>	<b>Extend Visualized Analysis in the Education and Workforce Alignment (EWA) Dashboard</b>	6/1/2024	6/30/2025
	1.1 Integrate VDOE Career Technical Education (CTE) high school credential completion data	6/1/2024	10/1/2024
	1.2 Expand Registered Apprenticeship data elements with visualized historical trends by Virginia regionality	5/1/2024	9/30/2024
	1.3 Develop a new skills analysis in the Job Posting Analytics Explorer: skills showing the greatest growth and decline as well as those identified as emergent. Add an industry filter capability.	6/1/2024	11/1/2024
	1.4 Expand regionality to include Superintendent Regions	6/1/2024	12/1/2024
<b>2</b>	<b>Develop and Test a Graduate Supply and Demand (GSD) Model Based on Historical Observations Estimating Where College Graduates from Regional Institutions Have Obtained Employment Within Regional Economies Across the State</b>	7/1/2024	6/30/2025
	2.1 Apply GSD model to estimate the number of regional graduates that are remaining in a region, post-completion, and filling local jobs	7/1/2024	9/1/2024
	2.2 Develop a Percent of Adequacy regional metric and accompanying Rubric for Interpretation	9/1/2024	2/1/2025
	2.3 Create a Regionalized GSD Data Visualization and assess on a test version of the EWA Dashboard	2/1/2025	5/1/2025
<b>3</b>	<b>Develop a VOEE- Hybrid Adjacent Workforce Model (including Skills Adjacencies)</b>	5/1/2024	1/1/2025
	3.1 Test model incorporating knowledge, skills and abilities, and skill cluster methods to develop an adjacency score	5/1/2024	10/1/2024
	3.2 Integrate data visualization into EWA dashboard	10/1/2024	1/1/2025

**FY 2024-2025 Major Planned Activity and Project Work Breakdown Structure (continued)**

Major Research Activity/Project Name	Start	Finish
<b>4 Apply Skills-Matching Data to VOEE Data Tools</b>	5/1/2024	4/1/2025
4.1 Further test and assess VOEE/AdeptID model incorporating AI-based skills-matching data to labor market	5/1/2024	10/1/2024
4.2 Assess possible integration into EWA or other VOEE online tool/dashboard	10/1/2024	1/1/2025
<b>5 Pilot a New Program Labor Market Assessment Report for SCHEV</b>	7/1/2024	12/30/2024
5.1 Develop Scope of Work with SCHEV	7/1/2024	8/1/2024
5.2 Create prototype for testing	9/1/2024	12/30/2024
5.3 Launch "Report Version 1.0" as pilot for use with new program/curriculum proposals	1/1/2025	4/1/2025
5.4 Identify other applications and stakeholder groups	1/1/2025	4/1/2025
<b>6a Develop and Launch Communications Strategy to Systematically and Regularly Disseminate VOEE Analyses and Insights</b>	5/1/2024	6/30/2025
6a.1 Define VOEE stakeholder channels in VEDP Salesforce.com	6/1/2024	8/1/2024
6a.2 Develop thematic analysis plan aligned to relevant stakeholder groups to guide content creation for pilot 12-month communications plan	8/1/2024	10/15/2024
6a.3 Launch stakeholder communications plan with regular stakeholder communication	11/1/2024	6/30/2025
<b>6b Create Expanded Analyst Team to Support Thematic and Summary Analyses and Insights to Support Communications Strategy</b>	5/1/2024	6/30/2025
6b.1 Hire new analysts to support launching summary and highlight analysis communications strategy	5/1/2024	8/1/2024
6b.2 Post revised Research and Data Analyst position and hire 1-2 FTEs	5/1/2024	8/1/2024
6b.3 Develop thematic analysis plan aligned to relevant stakeholder groups to guide content creation for pilot 12-month communications campaign	8/1/2024	10/15/2024

**FY 2024-2025 Major Planned Activity and Project Work Breakdown Structure (continued)**

Major Research Activity/Project Name	Start	Finish
<b>7 Establish New Data Agreements to Address Gaps in Data within VOEE's Data Model</b>	7/1/2024	6/30/2025
7.1 Identify data elements available through agencies and third parties to strategically augment current VOEE data portfolio	7/1/2024	12/30/2024
7.2 Establish new data agreements as necessary and begin migration of new data into VOEE's data cloud	9/1/2024	6/30/2025
<b>8 Identify Credentials of Value and Conduct a Gap Analysis (multi-year project)</b>	7/1/2024	6/30/2026
8.1 Develop a methodology to identify jobs and skills that align with state talent initiatives (FY26)	7/1/2024	12/30/2024
8.2 Create a crosswalk linking credentials to aligned jobs to identify valuable credentials (FY26)	1/1/2025	6/30/2025
8.3 Conduct an audit of current K-12 CTE, higher education, and workforce systems (FY26)	7/1/2025	12/30/2025
8.4 Publish a report assessing alignment and areas for improvement to enhance system-to-talent initiative alignment (FY27)	1/1/2025	6/30/2026
<b>9 Research and Development Projects</b>	7/1/2024	6/30/2025
9.1 Explore effectiveness of select AI models for application to VOEE data and analysis (RAG, LLM, Tableau Pulse, etc.)	7/1/2024	12/30/2024
9.2 Review options for sourcing data of interest from select data marketplaces and make recommendations for implementation	9/1/2024	6/30/2025
9.3 Audit data and analytical subscription services to identify new sources of data that can be used in VOEE's data model and analyses	9/1/2024	6/30/2025
9.4 Develop an empirically derived education program-to-occupation crosswalk by degree level as an alternative to NCES CIP-to-SOC for Virginia-specific education and workforce development research(ers)	10/1/2024	6/30/2025