# Building an AI-Ready Workforce: Lessons from New Jersey's Life Sciences & Technology Sectors

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HELDRICH CENTER FOR WORKFORCE DEVELOPMENT

## Research Objectives & Multi-Modal Approach

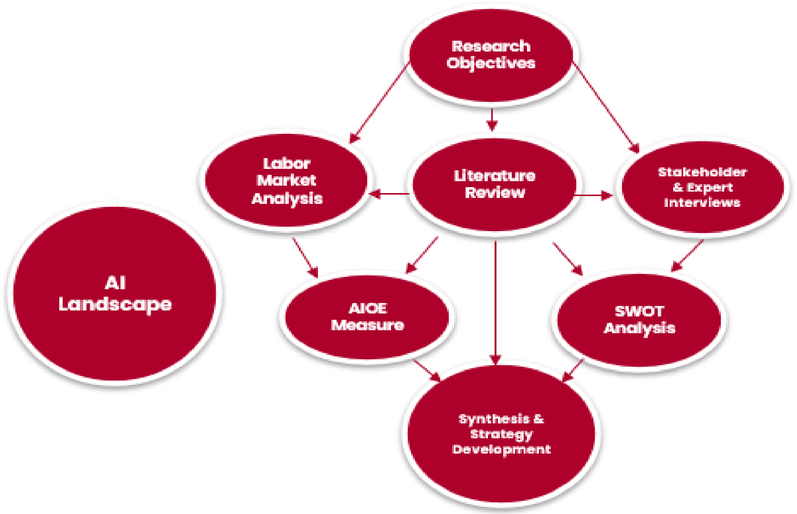
1. To establish a baseline understanding of the workforce characteristics and changing dynamics of the Life Sciences and Technology sector workforces in New Jersey.

2. To understand how AI is currently affecting occupational demand and skill requirements for occupations in these sectors and predict how AI is likely to affect them in the future.

- An **iterative, comprehensive literature review** to ground our methods in existing research.
- An analysis of **public labor market data** to define the sectors and subsectors and examine key labor market dynamics.
- Use of the **AI Occupational Exposure*** measure to assess the exposure risk of AI for occupations in the sectors.
- **Individual, semi-structured interviews** and **focus groups** with industry stakeholders and AI experts to understand real-time considerations and sector dynamics.
- A sector-specific **Strengths, Weaknesses, Opportunities, and Threats** analysis to examine existing programs, policies, regulations, and investments.
- These diverse methods laid the foundation for developing **actionable workforce strategies and recommendations.**

*Felten, E., Raj, M., & Seamans, R. (2021). Occupational, industry, and geographic exposure to artificial intelligence: A novel dataset and its potential uses. Strategic Management Journal, 42(12), 2195–2217.

## A Framework for Continued Research & Evaluation




## Research Findings

| Themes | Key Elements | Data Summary | Recommendations |
|---|---|---|---|
| Role of Leadership | Equity, Bias, and Ethical Policy Considerations | ➢ Recognize the need for and identify mechanisms to ensure human oversight of AI adoption<br>➢ Address concerns about bias across varied entry points<br>➢ Explore AI applications to correct historical inequities<br>➢ Consider regulation centered on ethical AI practices, transparency, and explainability, that does not stifle innovation | ➢ Develop guidance around skills-based hiring and competency to strengthen talent acquisition and workforce diversity<br>➢ Identify strategies and initiatives to promote diversity, equity, inclusion, and accessibility in hiring |
| Role of Partnerships | Workforce Impacts and AI Adoption | ➢ Measure how AI will augment job roles<br>➢ Collaborate with employers, education and training providers, and technology experts to ensure workers are trained to use AI tools effectively<br>➢ Focus on leveraging technology for job creation, with training and pathways for workers to transition into emerging roles instead of facing displacement<br>➢ Champion small business AI adoption to promote inclusive innovation and workforce development | ➢ Expand and strengthen key partnerships to better align goals across industry, educational institutions, and employers<br>➢ Develop initiatives that enhance domain knowledge and technical proficiency skills that allow participants to develop a deeper understanding and practical application of AI |
| Role of Worker- and Student-Centered Policy Development, Program Development, and Deployment | Education and Upskilling | ➢ Foster a robust workforce pipeline through coursework, research, and opportunities at educational institutions<br>➢ Develop diverse pathways to access education and training<br>➢ Prioritize adaptation and upskilling in the workplace<br>➢ Communicate the value of foundation skills (general literacy, digital and AI literacy, critical thinking, domain knowledge, technical proficiency, and communication) | ➢ Expand education-to-employment pathways in key sectors<br>➢ Facilitate collaboration between state agencies to cultivate education and training opportunities focused on retaining top talent |

## Research Participants' Voices: AI Equity & Integration in the Workplace

> *"Bias in, bias out – but also equity in, equity out."*

> *"As human society requires more and more data, it needs to be complete, and as much as possible, reduce bias, to be able to trust what AI produces."*

> *"There's also a lot of possibilities for setbacks, and that has to be recognized and also addressed."*

> *"We're small and taking an aggressive approach to AI. We need to do this since we're not going to have, and can't add, resources. How do we become more productive with AI?"*

> *"Culture and leadership will play a crucial role in AI adaptation, requiring leaders to merge enthusiasm with wisdom and encourage open communication across all levels."*

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