



## Career Equity Resource Center

funded by the NJ Department of Education,  
Office of Career Readiness, housed at Rutgers  
University's Center for Women and Work



# *Career and Technical Education Issue Brief: Central Jersey*

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## Introduction

Career and Technical Education (CTE) is an excellent opportunity for advancing students' college and career readiness, yet not all students enter CTE with the same advantages. Persistent and significant gaps in achievement still exist in our schools and CTE programs. Particular subpopulations of students often face additional barriers to success. Through the Career Equity Resource Center (CERC), the NJ Department of Education, Office of Career Readiness has produced a series of regional issue briefs in order to provide a high-level overview of the state of equity in NJ's career and technical education programs. The information included in these briefs is meant to inform educators and administrators at the local level about equity gaps in high skill, high wage, in-demand CTE programs, and outline how these programs align with regional workforce needs and economic priorities. The specific questions that were used to guide this brief are:

1. What are the key industry sectors in Central New Jersey, and how are they aligned with overall student enrollment in Perkins-approved CTE programs?
2. Do all students have access to the Perkins-funded CTE programs that are expected to prepare them for the key industry sectors in Central New Jersey? Where are the biggest inequities/disparities/gaps in enrollment?

### Perkins Special Populations:

- Individuals with disabilities
- Individuals from economically disadvantaged families, including low-income youth and adults
- Individuals preparing for nontraditional fields\*
- Individuals with limited English proficiency
- Single parents, including single pregnant women
- Out-of-workforce individuals
- Homeless individuals
- Youth who are in, or have aged out of, the foster care system
- Youth with a parent who is a member of the armed forces and is on active duty

## Central NJ Demographic Data and Student Information

Central NJ is comprised of the following counties: Hunterdon, Mercer, Middlesex, Monmouth, Ocean, Somerset, and Union. These seven counties had a total estimated population of 3,428,119 in 2019. The demographics of all the counties are 57.9% White, 18% Hispanic or Latinx, 10.2% Black or African American, 11.1% Asian, less than 1% Native American or Pacific Islander, and 2% other or multiple races<sup>1</sup>. Though Hunterdon County is the least populated in this region at only 124,371 residents, it was the wealthiest county in NJ in 2019 with a per capita net worth of \$160,010. Middlesex County has the largest population, 825,062 people, and the highest concentration of Asians in the entire state at 24.9%.

The second most populous region in the state, Central Jersey is home to the state's capitol Trenton, the largest 4-year institution Rutgers University, and the state's only Ivy league college Princeton University. Once a manufacturing hub for the east coast, and the birthplace of Thomas Edison's industrial research lab, this region is the epicenter of NJ's biopharma industry containing approximately 50 pharmaceutical companies<sup>4</sup>.

<sup>1</sup> ACS 2019, US Census Bureau

<sup>2</sup> <https://smartadvisormatch.com/data/places-with-the-highest-net-worth-2019-edition/new-jersey>

<sup>3</sup> ACS 2019, US Census Bureau

<sup>4</sup> <https://www.pharmapproach.com/lists-of-pharmaceutical-companies-in-new-jersey/10/>

The overall high school student population in Central NJ for the 2019-2020 school year was approximately 160,013. Of that number, 7,615 students (about 4.7%) were enrolled in Perkins approved secondary CTE courses and/or programs. The following tables demonstrate the demographic breakdown for both of these populations (overall HS students and CTE HS students).

| Enrollment by Race/Ethnicity | Overall HS population | CTE HS population |
|------------------------------|-----------------------|-------------------|
| White                        | 75,901 (47.4%)        | 3,075 (40.3%)     |
| Black                        | 18,385 (11.4%)        | 1,190 (15.6%)     |
| Hispanic/Latinx              | 40,783 (25.4%)        | 2,294 (30.1%)     |
| AAPI                         | 22,429 (14%)          | 971 (12.7%)       |
| Multiple/Other               | 2,515 (1.5%)          | 85 (1.1%)         |

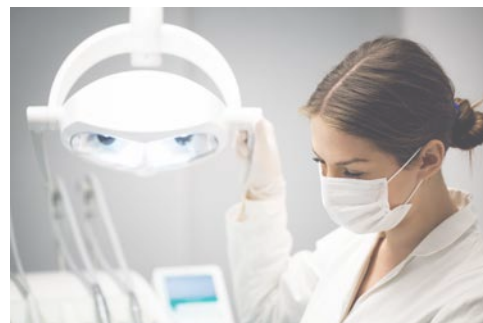
| Enrollment by Gender | Overall HS Population | CTE HS Population |
|----------------------|-----------------------|-------------------|
| Male                 | 82,411 (51.5%)        | 3,956 (51.9%)     |
| Female               | 77,594 (48.4%)        | 3,659 (48%)       |

| Additional Demographics             | Overall HS Population | CTE HS Population |
|-------------------------------------|-----------------------|-------------------|
| Students with Disabilities          | 24,793 (15.4%)        | 1,177 (15.4%)     |
| Economically Disadvantaged Students | 43,803 (30.4%)        | 2,339 (30.7%)     |

## Industry profile for Northern New Jersey

In June 2012 New Jersey’s State Employment and Training Commission passed a resolution establishing sector strategies as the framework for New Jersey’s workforce system. Adopting this key industry/ sector focus serves as the organizing principle of New Jersey’s workforce development system that drives policy development, system planning, performance oversight and resource investments<sup>5</sup>. The nine key industry sectors that have been identified as key drivers of NJ’s overall economy are listed below. Subsequent sections in this brief will outline how local CTE programs are aligned with the key industries represented in Central NJ:

- Biopharmaceuticals & Life Sciences
- Transportation, Distribution, and Logistics (TDL)
- Financial Services
- Retail Trade
- Manufacturing
- Healthcare
- Technology
- Construction and Energy
- Leisure and Hospitality



<sup>5</sup> <https://www.nj.gov/njsetc/industry>

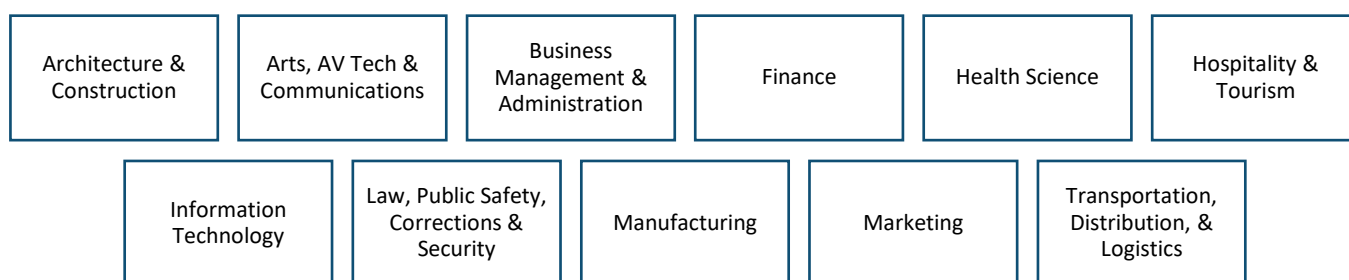
According to the NJ Department of Labor and Workforce Development (NJLWD) the top 5 key industries that were expected to grow in this region between 2016 and 2026 included healthcare; transportation, distribution, and logistics (TDL); leisure and hospitality; technology; and construction/energy, in that order<sup>6</sup>. Within these five industries, the three that had jobs paying the highest range of salaries (on average) are 1) technology, 2) transportation, distribution, and logistics, and 3) construction/energy. As such, these are the three career clusters we will focus on for the remainder of this brief.

| Industry Title<br>(ranked by projected job growth) | Projected Job Growth<br>(2016-2026) | Average Salary Ranges |
|--|-------------------------------------|-----------------------|
| 1 - Healthcare                                     | 41,0505                             | Range: \$49-60K       |
| 2 - Transportation, Dist., & Logistics             | 17,500                              | Range: \$60-94K       |
| 3 - Leisure and Hospitality                        | 16,600                              | Range: \$18-24K       |
| 4 - Technology                                     | 13,050                              | Range: \$71-249K      |
| 5 - Construction/Energy                            | 9,250                               | Range: \$61-79K       |

The average salary range for technology jobs in Central NJ in 2018 were \$71,600-\$249,930/year<sup>7</sup>. During this same time period, TDL jobs paid between \$60,600-94,210, and jobs in construction/energy paid approximately \$61,440-\$79,580. While jobs in leisure and hospitality were expected to grow significantly and appear to be a substantial economic driver in the region, they represent the lowest wages in any industry sector at about \$18,870-\$24,030/year<sup>8</sup>. Healthcare ranked 1st in terms of job growth but were 4th in terms of average salary earnings for the industries on this list.

### How do these career clusters alignment with high-skill, high-wage, or in-demand industries?

There were 87 Perkins-approved CTE programs in Central New Jersey and as noted above, a total of 7,615 students were enrolled in these programs during the 2019-20 school year. These programs were categorized into 11 (out of 16 possible) career clusters:



The career clusters with the highest number of students were Health Science (1,822), Business Management & Administration (1,173), and Hospitality & Tourism (1,086). The CTE programs within these clusters included Health Services/Allied Health/Health Sciences, Dental Assisting, Athletic Training, Administrative Assistant & Secretarial Science, Business Administration & Management, Cooking & Related Culinary Arts, and Culinary Arts/Chef Training. Of these three, Business Management & Administration cluster is the only one that does not directly align with the industries expected to see the most growth in the region over the next few years.

<sup>6</sup> NJLWD Labor Profiles

<sup>7</sup> 6/7 counties reported

<sup>8</sup> 5/7 counties reported

As mentioned above, when wage information from the top five Central Jersey sectors is factored in, the three with the highest earning potential were Information Technology, Architecture and Construction, and Transportation, Distribution, and Logistics (TDL). Information Technology, which aligns with NJ's Technology industry sector, had 109 students enrolled in only 1 program across the entire region. Conversely, there were 13 programs containing 659 students in the Architecture and Construction cluster, which feeds into the state's Construction and Energy industry. And lastly, Transportation, Distribution, & Logistics had 205 students in 8 programs.

| Programs with the Top 3 Highest Enrollment Numbers in Central Jersey |       | Enrollment in Programs that Align with North Jersey's Top 3 Growth Industries |     |
|--|-------|---|-----|
| Health Science   | 1,822 | Information Technology  | 109 |
| Business Management & Administration                                 | 1,173 | Architecture and Construction   | 659 |
| Hospitality & Tourism  | 1,086 | Transportation, Distribution, and Logistics                                   | 205 |

Only 13% percent of students were in programs/clusters that line up with the top 3 key industries expected to grow and pay higher salary ranges. The majority (87%) of students enrolled in CTE programs were not in those clusters. At the same time, there were higher numbers of students enrolled in programs that align with the lowest paid sector - Leisure & Hospitality - than in the top three highest paying sectors combined. This suggests that overall CTE enrollment in Central NJ is not well aligned with high skill, high wage, in-demand jobs in the region. There is more work to be done to get students enrolled in clusters that are aligned with expected high growth industries and higher salary ranges.

**13%**

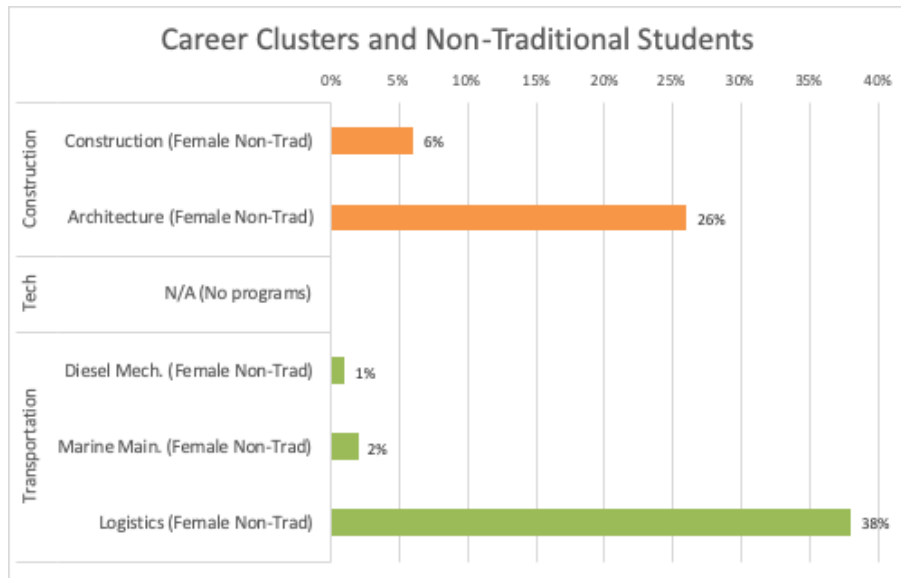
of CTE students are enrolled in one of the career clusters feeding into the top three key industries in Central New Jersey (Information Technology, Architecture & Construction, and Transportation, Distribution & Logistics).

## Do all students have access to the Perkins-funded CTE programs that are expected to prepare them for the key industry sectors in Central New Jersey?

### *Student Enrollment in Nontraditional Programs*

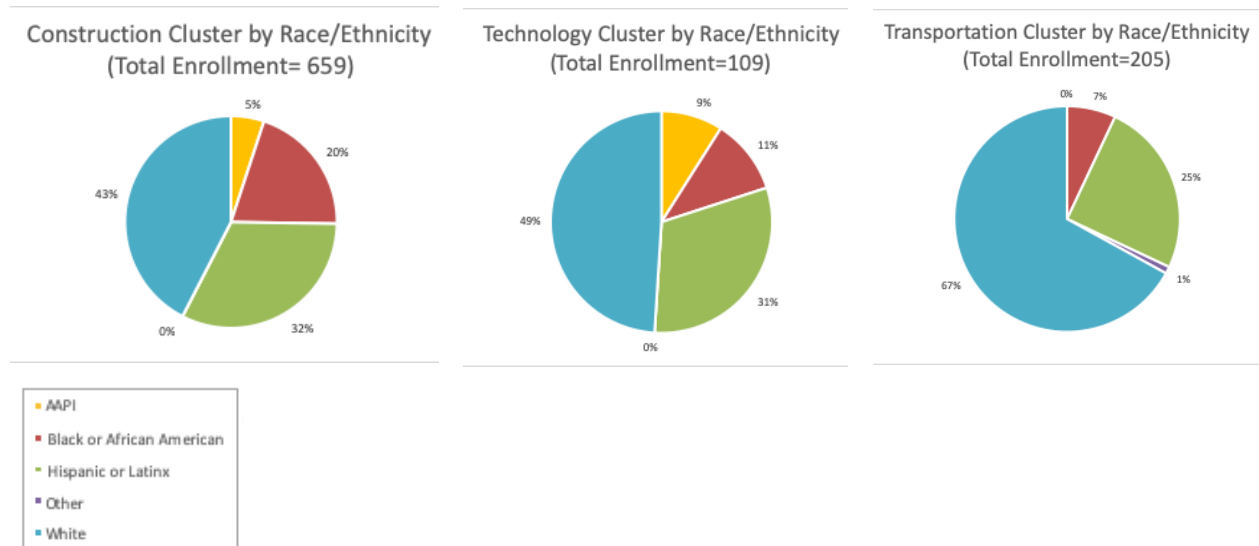
CTE Programs considered to be “nontraditional” are those connected to occupations or fields of work in which individuals from one gender comprise less than 25 percent of the individuals employed in those occupations or fields of work. Overall, the highest percentages of nontraditional students were in Logistics and Materials programs (38%). The lowest percentages were in Diesel Mechanics programs (1%).

Across the three clusters, generally 25% or more of students enrolled were nontraditional, which suggests that recruitment efforts have been generally successful. However, the exception was Diesel Mechanics, where there needs to be additional attention in order to ensure availability to all students



### ***Student Enrollment by Race/Ethnicity***

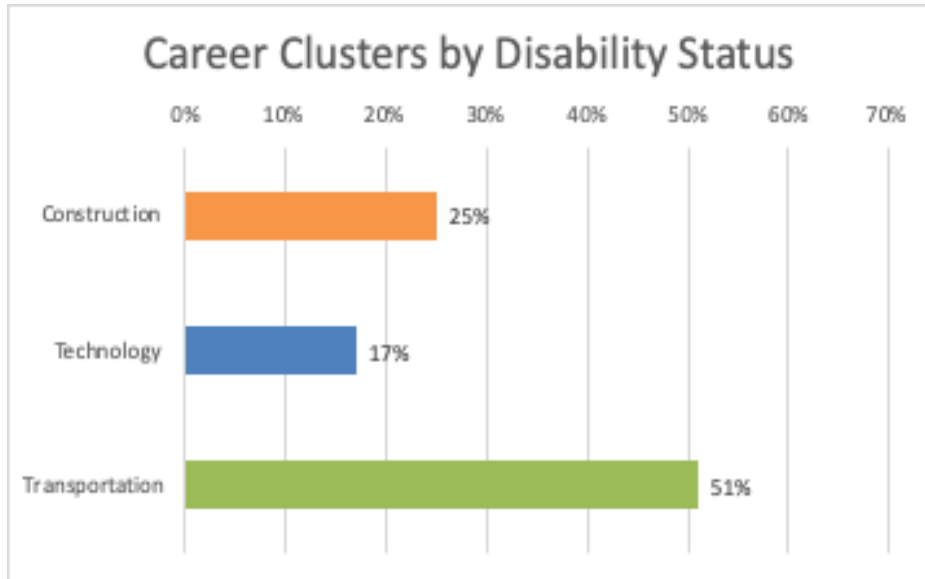
Assessing the three clusters by student enrollment by race/ethnicity, we identified several notable demographic patterns. First, the cluster with the highest percentage of Black students was construction (20%), and the cluster with the lowest percentage of Black students was transportation (7%). Similarly, the cluster with the highest percentage of Hispanic or Latinx students was construction (32%), and the cluster with the lowest percentage of Hispanic or Latinx students was transportation (25%).



Next, we noted that the Transportation cluster was where we saw the most disproportionate numbers across the board. While White students made up 40.3% of the CTE population, there were 67% enrolled in this cluster. For all other racial/ethnic groups, Hispanic/Latinx, Black, and AAPI, there was an underrepresentation in Transportation programs.

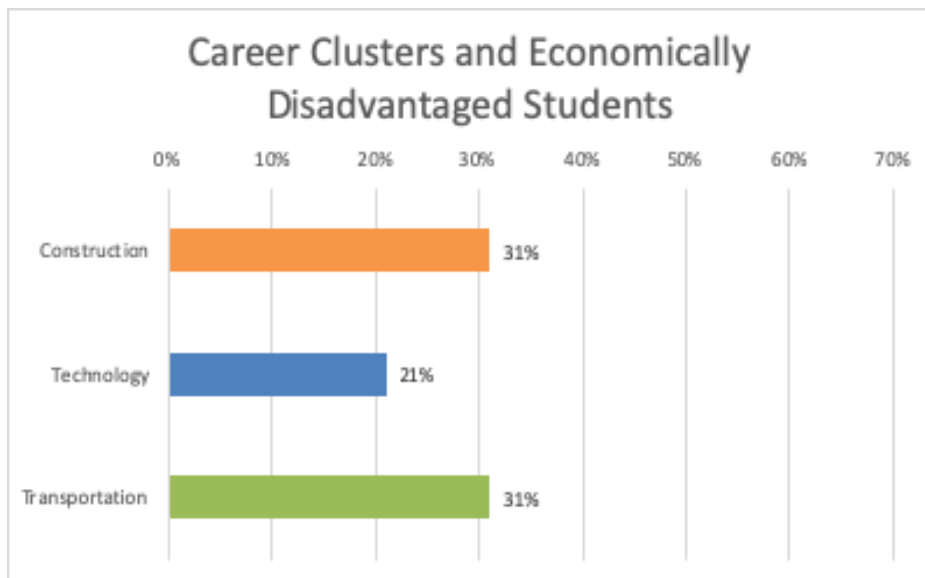
### ***Student Enrollment for Students with Disabilities***

There were varying percentages of students with disabilities enrolled across the three clusters. Overall, students with disabilities made up 15.2% of the overall high school population but only 11.9% of the CTE population. However, within the three clusters associated with the top three growth industries in the region, students with disabilities made up 51% of student enrollment in Transportation programs, 25% of students enrolled in Construction programs, and 17% of students enrolled in Technology programs.



### ***Student Enrollment for Economically Disadvantaged Students***

The percentages of economically disadvantaged students overall (30.4%) and of those students enrolled in CTE (30.7%) were similar to the percentages economically disadvantaged students in the career clusters aligned with the top three growth industries in the region. Overall, the highest percentages of economically disadvantaged students were in construction (31%) and transportation (31%), and the lowest percentages of economically disadvantaged students were in technology (21%).



## Summary of Major Findings

Overall, findings indicated that there may be a need for more attention to be paid to the alignment between Perkins-approved CTE career cluster student enrollment and the industries considered to be high-skill, high-wage, and in-demand for Central New Jersey. In addition, there were some important demographic patterns in student enrollment across the three career clusters by race/ethnicity, gender, and disability status that might point to areas for additional attention.

Specifically, of the three clusters that we focused on for this brief, the Architecture and Construction cluster had the most access and variety of programs for Central Jersey. These programs had the highest representation of Black and Hispanic/Latinx students, but a very low percentage of AAPI students, and a proportional number of White students. This data indicates that the pipeline for careers in the Construction & Energy sector for this region is fairly equitable for traditionally underserved racial/ethnic groups. On the contrary, the Technology cluster had the least access, and TDL had the most disproportionate numbers when compared to the overall CTE population in each racial/ethnic groups. The fact that technology had the least number of students in all the region's clusters, not just the three that were focused on in this brief, makes the case for examining how to expand these programs in the coming years.

Overall, White and AAPI students were enrolled in CTE schools/programs at lower rates when compared with the general HS population. Whereas their Black and Hispanic/Latinx counterparts were enrolled at slightly higher rates, with CTE numbers ranging between 4-5% more than the general HS population enrollment. Of all racial/ethnic groups, AAPI students represented the lowest enrollment in Technology, Architecture & Construction, and TDL.

With respect to enrollment in nontraditional programs, an important finding was that there were no nontraditional programs for males in the top three clusters examined here. This indicates that the region's most significant economic drivers where workers stand to earn the highest salaries, are predominately male dominated industries. Within these, there appeared to be meaningful opportunities for women in the Architectural Drafting and Architectural CAD/CADD programs, as well as Logistics, Materials, and Supply Chain Management programs. The only Technology program in the region, Web Page, Digital/Multimedia and Information Resources Design, was not considered nontraditional for males or females, which may indicate that occupations in this field have a proportionate representation of both.

There were also noteworthy prospects for students with disabilities, who despite making up only 15.4% of the total CTE population, represented levels of enrollment that were 2, 10, and 35 percentage points higher within these clusters. Overall, economically disadvantaged students, who made up 30.4% of the CTE population, were the most proportionally represented in these programs at 31%, 21%, and 31% enrollment levels.

Aside from the top three clusters, Health Science had the highest number of students and programs, thus still providing access to a viable option of in-demand jobs, just not ones that pay the highest in the region. However, the high enrollment numbers in Hospitality & Tourism programs may signify that a disproportionate number of students in Central Jersey could end up in lower wage occupations.



## Directions for Future Research/Attention

This brief represents an important step forward toward improving our understanding of the state of equity in Perkins-approved Career and Technical Education programs in Central New Jersey. However, it has some important limitations. For example, it only examines enrollment data and does not provide the complete picture of CTE participants vs. concentrators or completers. Further research into each of these categories along specific demographic groups would present a more comprehensive view and offer insights into where additional challenges lie with respect to recruitment, retention, and overall access.

At the same time, a few areas for future attention and research stand out. First, expanding access to Technology programs in Central Jersey is critical. Having only one program available in the entire region poses a significant barrier for all students, but even more so for students in Special Populations groups who may be underrepresented in many high-skill, high-wage, in-demand occupations. Second, further examination of trends in TDL is necessary to understand some of the existing barriers/opportunities in enrollment, especially for Black students and female students pursuing specific nontraditional careers in this cluster. And third, it would be beneficial to identify some of the best practices for recruitment of students with disabilities in this region to determine if these may be replicated elsewhere.

Lastly, additional research in this area could also include qualitative components such as surveys, interviews, and/or focus groups to further examine challenges and opportunities at the district/program level. An analysis of best practices throughout the region, as well as identifying the barriers or limitations in CTE program development would help administrators address some of the root causes. These steps would also help to lay the groundwork for leveraging resources in order to meet the needs of their student populations.

## Notes on Methodology

Data for this assessment came from the New Jersey Department of Education's (NJDOE) Office of Career Readiness, which collects information from secondary school districts, county vocational school districts with adult programs and community colleges on students enrolled in state-approved CTE programs. This information, which is provided by the schools, is revised on a yearly basis to more completely meet the data requirements of the Strengthening Career and Technical Education for the 21st Century Act (Perkins V).

Data used for this assessment were from the year 2019-2020. For the purposes of this assessment, only programs that are considered "Perkins approved" as of January 7, 2021 (in that they operate based on Perkins V funding) were included. In addition, in order to be included in this assessment, programs needed to be considered likely to lead to jobs considered to be "high-skill, high-wage, and in-demand" by the State of New Jersey.

This assessment used the following race/ethnicity categories: Asian or Pacific Islander (AAPI), Black or African American, Hispanic or Latinx, Other, and White. The Asian and Pacific Islander category includes students classified by NJDOE as Asian, Native Hawaiian, or Pacific Islander. The Other category includes students classified as American Indian, Alaskan Native, or Multiple Race/Ethnicity.

This assessment follows the federal definition of a nontraditional program: "A program is considered nontraditional if the underrepresented gender comprises less than 25 percent of individuals employed in the occupation or field of work. Nontraditional fields are determined on a national level and not on the local level."

## Notes on Methodology (cont.)

Students with disabilities includes any student who meet the disability eligibility criteria under section 3 of the Americans with Disabilities Act of 1990 (42 U.S.C. 12102).

Students were considered to be economically disadvantaged based on having received free or reduced lunch on the most recent School Performance Report.

## About the Career Equity Resource Center:

The Career Equity Resource Center (CERC) is a program funded by the NJ Department of Education, Office of Career Readiness. CERC provides data-informed, research based professional development and technical assistance to secondary schools and county colleges operating or planning to operate career and technical education (CTE) programs.

The aim of CERC is to assist schools in building their own internal capacity to broaden access and opportunity to prepare special populations to high-skill, high-wage, or in-demand CTE careers.

CERC services are offered through a partnership with Rutgers University, Center for Women and Work (CWW). All requests for services and/or technical support concern equity in CTE can be submitted through [CERC@doe.nj.gov](mailto:CERC@doe.nj.gov).