

# Data-Informed Diversity

Crafting a Program for Corporate Recognition

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**Strategic Higher Ed  
Analytics  
&  
Research**



## Executive Summary

The purpose of this report is to conduct a comprehensive examination of the potential for implementing a data-driven diversity recognition program at Great Minds in STEM (GMiS). This involves a detailed investigation into the practicality of collecting specific types of data that are crucial for recognizing and enhancing diversity within corporations. The report addresses the three key questions that follow about the potential data to inform a diversity corporate recognition program.

### What types of diversity-related data can be easily captured by a company?

For companies with more than a 100 employees, current and continuing employees by race, ethnicity and gender in alignment with the EEO-1 data collection by the general job classifications used by the EEO-1 form.

### What are the current benchmarks for employee retention across different groups and sectors?

There is current data about new hires and quit rates that allow a program to be reliably calibrated for current market conditions. Both the Bureau of Labor Statistics and Census Bureau publish data regularly that establish an upper and lower bound for gauging how well corporations do recruiting and retaining underrepresented groups. The program can adjust benchmarks for different underrepresented groups as it gathers submissions.

### Who are the potential participants in such a program?

The most recent data indicate there are 189,095 businesses across all sectors that have 100 employees or more. This indicates an extensive pool of potential participants for a data-driven corporate diversity recognition program.

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## Introduction

A data-driven corporate diversity recognition program, especially one focusing on traditionally underrepresented and underserved groups in STEMM, serves multiple purposes that align with strategic business objectives for many organizations. The value proposition to potential participants include the following:

### Enhancing Innovation and Creativity

Incorporating individuals from a variety of backgrounds into teams enhances innovation and creativity by bringing diverse perspectives to problem-solving and innovation<sup>1</sup>. This diversity in thought is crucial for generating more creative solutions and driving advancements in STEMM fields. Additionally, diverse teams bring a broader range of skills and experiences to the table, which is particularly valuable in these rapidly evolving sectors. The combination of varied perspectives and a wide array of skills contributes significantly to the dynamism and innovative capacity of organizations operating in STEMM.

### Reflecting the Customer Base


Surveys indicate that for Gen Z and Millennials<sup>2</sup> diversity is a significant factor in their consumer preferences. In this context, having a diverse workforce is more than just a corporate responsibility; it's a strategic advantage. A workforce that mirrors the diversity of the global customer base enhances a company's ability to understand and cater to a broad spectrum of consumer needs. This alignment is especially crucial as these younger generations become increasingly influential in the market. In technology development, the importance of user-centered design is amplified when the team creating a product reflects the diversity of its user base. This approach not only fosters innovation but also ensures that the products are accessible and user-friendly for a diverse population. Ultimately, embracing diversity in the workforce aligns with the values of younger consumers and leads to products and services that resonate more effectively with a global and diverse audience.

### Improving Employee Satisfaction and Retention

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<sup>1</sup> Van Knippenberg, Daan, Lisa H. Nishii, and David JG Dwertmann. "Synergy from diversity: Managing team diversity to enhance performance." *Behavioral Science & Policy* 6.1 (2020): 75-92.

<sup>2</sup> What workforce diversity means for Gen Z:  
<https://hiring.monster.com/resources/workforce-management/diversity-in-the-workplace/workforce-diversity-for-millennials/>



Focusing on diversity and inclusion cultivates a supportive and inclusive workplace culture, enhancing job satisfaction and bolstering employee retention. Such an environment not only nurtures the well-being of existing staff but also attracts new talent who value inclusivity. Moreover, implementing programs that support underrepresented groups in science and technology fosters career advancement for these individuals. This, in turn, contributes to a more equitable representation in leadership positions, ensuring that diverse perspectives are included in decision-making processes and that the workplace truly reflects the diversity of the wider community.


## Data Accessibility and Benchmarks

In order to increase the likelihood of a response to a diversity recognition program, alignment with already existing data collections is needed. The EEO-1 Component 1 report is an important yearly requirement where businesses with at least 100 employees, as well as federal contractors with at least 50 employees who meet specific conditions, must provide detailed information about their workforce to the Equal Employment Opportunity Commission (EEOC). This information includes the number of employees broken down by job classification, gender, and race/ethnicity.

The categorizations of race/ethnicity (Appendix A) and gender employed in data collections by the Equal Employment Opportunity Commission (EEOC) may not fully encompass the wide spectrum of diversity, potentially limiting a more expansive understanding of inclusivity. These categories, primarily centered around race and ethnicity, are instrumental for consistency in federal labor data collection and are based on self-reporting by employees. However, this approach might not capture the full breadth of individual identities and experiences, which can include aspects such as gender identity, sexual orientation, disability, veteran status, and more nuanced cultural or ethnic backgrounds that go beyond the predefined categories.

The challenge lies in balancing the need for comprehensive inclusivity with the practical considerations of reporting burdens for businesses participating in a corporate diversity recognition program. Aligning with EEOC's established categories ensures a level of standardization and comparability across different organizations and sectors, which can facilitate the evaluation and benchmarking process within recognition programs. This standardization is crucial for a program's success, as it provides a clear framework for businesses to report their diversity metrics and for program administrators to assess and compare these metrics in a consistent manner.

In the fields of Science, Technology, Engineering, Mathematics, and Medicine (STEMM), certain groups remain significantly underrepresented, reflecting broader societal inequities and systemic barriers that limit access and opportunities for these individuals. The underrepresentation of these groups not only diminishes the diversity of perspectives and



ideas in these fields but also impacts the equity and inclusivity of scientific and technological advancements. The primary groups that are underrepresented in STEMM include those listed below.

## Women

Despite progress in recent years, women continue to be underrepresented in many STEMM disciplines, particularly in engineering, computer science, and certain physical sciences. This gender gap is often attributed to stereotypes, cultural norms, and biases that discourage girls from pursuing STEMM subjects from an early age, as well as challenges related to career progression and work-life balance that women face in these fields.

## Under-served Minorities

Individuals from certain racial and ethnic backgrounds, including African Americans, Hispanics/Latinos, Native Americans, and Pacific Islanders, are significantly underrepresented in STEMM fields compared to their representation in the general population. This underrepresentation is linked to a variety of factors, including disparities in access to quality education, lack of representation and role models, and systemic biases and discrimination within educational and professional settings.

## People with Disabilities

Individuals with disabilities face numerous barriers in accessing and advancing in STEMM fields. These barriers can range from physical accessibility issues in laboratories to a lack of adaptive technologies and inclusive practices that accommodate diverse needs and abilities.

## LGBTQ+ Individuals

While data on the representation of LGBTQ+ individuals in STEMM is limited, studies suggest that these individuals may face unique challenges, including discrimination, harassment, and a lack of supportive environments in professional settings, which can impact their participation and retention in these fields.

## Socioeconomically Disadvantaged Individuals

Students and professionals from low socioeconomic backgrounds often encounter significant barriers to entering and succeeding in STEMM fields. These barriers can include financial constraints, limited access to quality STEMM education and resources, and a lack of networking opportunities and mentorship.



## Data Availability

For certain groups, such as women and underrepresented minorities, there is a relatively abundant availability of benchmark data. To a lesser extent, similar data is available for individuals with disabilities although it may not be as comprehensive or consistently collected across all STEMM fields. This data might include information on the accessibility of educational and professional environments, the availability of support services, and the representation of people with disabilities in various STEMM occupations. However, the variability in the types of disabilities and the accommodations required can make it challenging to collect and analyze this data in a standardized way.

Conversely, for LGBTQ+ individuals and socioeconomically disadvantaged individuals, there is a notable lack of good benchmarking data. It is anticipated that any inclusion of these groups would require less stringent benchmarks.

## Measuring Diversity in a Recognition Program

When considering the data to use for a recognition program, the challenge lies in deciding the metrics for measurement. Three potential measures, derived from federally available data, could serve as benchmarks for each underrepresented group included in the submission for a diversity recognition program: the count of full-time employees, new full-time hires, and the quit rates among full-time staff. It's important to note that quit rates refer to employees who have voluntarily left their positions, excluding those who retire or transfer to different locations.



<b>Total private</b>	2.4
<b>Information</b>	1.1
<b>Finance and insurance</b>	1.2
<b>Durable goods</b>	1.3
<b>Financial activities</b>	1.5
<b>Manufacturing</b>	1.6
<b>Educational services</b>	1.6
<b>Mining and logging</b>	1.8
<b>Other services</b>	1.8
<b>Construction</b>	1.9
<b>Education and health services</b>	2
<b>Nondurable goods</b>	2.1
<b>Real estate and rental and leasing</b>	2.1
<b>Health care and social assistance</b>	2.1
<b>Wholesale trade</b>	2.2
<b>Transportation, warehousing, and utilities</b>	2.3
<b>Trade, transportation, and utilities</b>	2.5
<b>Professional and business services</b>	2.5
<b>Retail trade</b>	2.7
<b>Arts, entertainment, and recreation</b>	3.3
<b>Leisure and hospitality</b>	4.3
<b>Accommodation and food services</b>	4.5

Table 1: Quit Rates By Sector for Private Industry.

## Quit Rates

The Bureau of Labor Statistics publishes data about the number of quits in each industry as a percent of employment. This can be used to set a benchmark for turnover in each company in the initial phases for the program. For December 2023 (<https://www.bls.gov/news.release/jolts.t04.htm>), quit rates ranged from 1.1% to 4.5% over the previous month as seen in Table 1. The sector of industry, of course, has an impact with Accommodation and Food Services showing the highest quit rates and Information industry showing the lowest turnover. The benchmarks that seed the initial formation of the diversity recognition program would need to be calibrated based on current BLS data to allow for seasonality as well as trends in the general job market.

Government roles, not covered in the table, exhibit a quit rate of less than 1% across all categories, including federal, state, and educational positions, among others. To effectively leverage this data for a diversity recognition program, it would be imperative to draw comparisons between companies within identical sectors. Additionally, incorporating an analysis of industry-specific seasonal trends would be crucial to ensure a fair and accurate assessment. While overall quit rates are available, detailed quit rates are not currently

publicly available from the Bureau of Labor Statistics and similar data is not available from the US Census bureau.

## Full-Time Employees and New Hires

The distribution of employees by race, ethnicity or gender across occupations from federal data provides a good benchmark for the initial phase of a diversity recognition program. For example, in all STEMM occupations, African Americans represent less than 1 % of the workforce for Marine Engineers to over 12% of the workforce for Operations Research Analysts. The largest percent of Native Americans in a STEM occupation, however, is 2.3% of the workforce for Biological Technicians.

## Job Classifications

In Appendix B, the job categories used in the EEO-1 report are fully described. Employees are classified into specified job categories, such as Executive/Senior Level Officials and Managers, First/Mid-Level Officials and Managers, Professionals, Technicians, Sales Workers, Administrative Support Workers, Craft Workers, Operatives, Laborers and Helpers, and Service Workers. Aligning the data collected with these classifications ensures that participating companies will readily be able to report this as many Human Resource Information Systems store demographic data by these categories to make federal reporting easier. It may be that focusing on a subset of these classifications, specifically, Executive/Senior Level Officials and Managers, First/Mid-Level Officials and Managers, Professionals and Technicians, may make the most sense as these are most likely to require some college training, if not a four year degree outright.

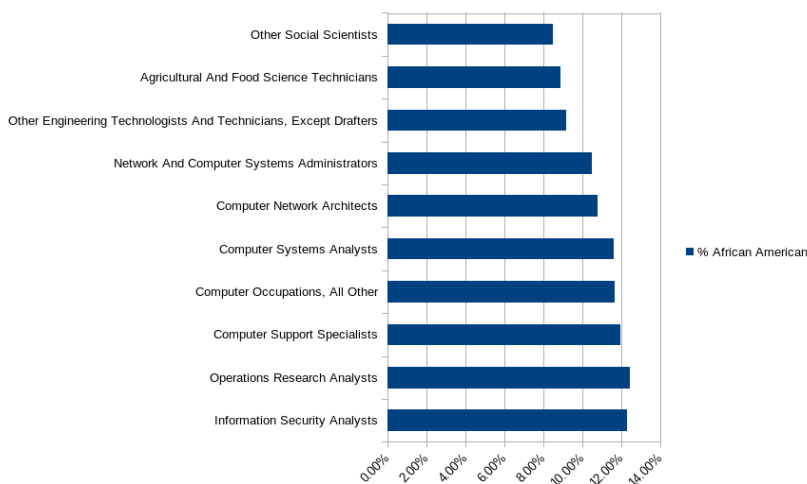


Figure 1: Highest Percent of African Americans in Science, Engineering and Computer Occupations

Representation by occupation changes and an example can be seen in figure 1. African Americans represent 13% of the working population, but equally represented in any scientific, engineering or computer related occupation.

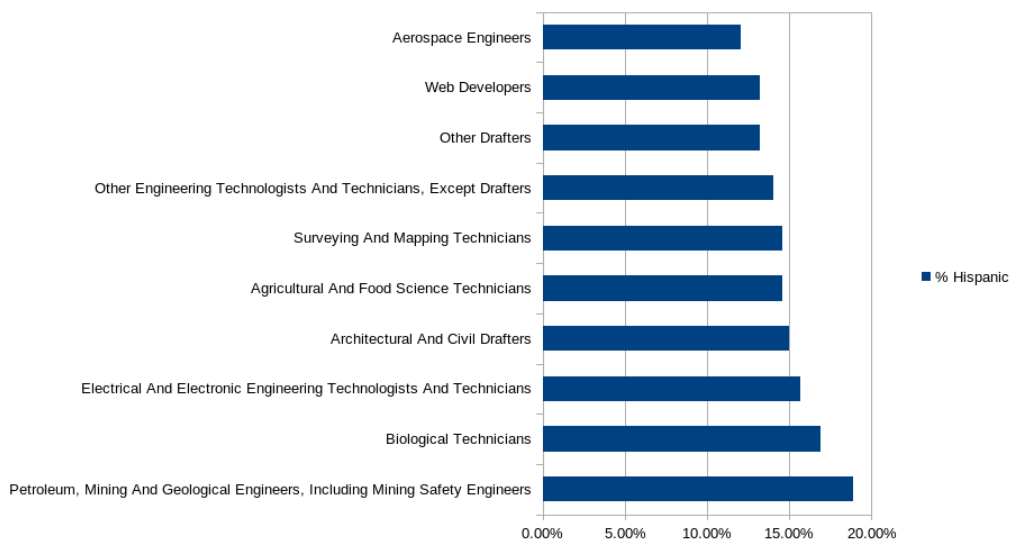


Figure 2: Highest Percent of Hispanics in Science, Engineering and Computer Occupations

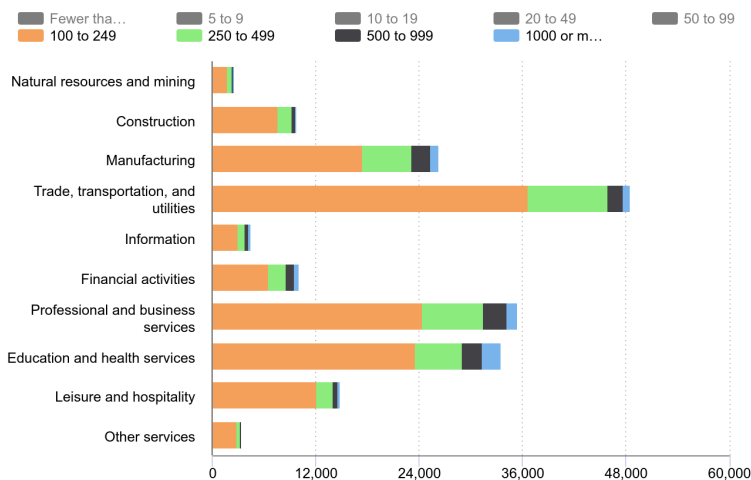
This can be compared with the distribution of hispanics in Science, Engineering and Computer occupations and the different fields with the highest representation as seen in Figure 2. Even though both sets of occupations are represented by the EE0-1 job classification as professional or technicians, it may make sense to collect representation data for occupations in which an employer has more than 30 employees.

## Minimum Sample Size

If only large companies, those with over a 100 employees, participate in this program, it would be advisable to collect data at both a global underrepresented category and then, at the level of 10 or more employees for each group. For example, if there are only 8 African Americans at a participating corporation with 327 employees it would be advisable to only include their data at the underrepresented group level rather than in their self-identified race. Further, focusing on quit rates rather than other measures of turnover allows for an additional level of privacy to prevent involuntary terminations from being exposed. During the initial phase of the program, the program data may need to be benchmarked against the national quit rates (or new hire rates) for each industry until a more demographically detailed set of data is available.

## Potential Participants

**Number of business establishments by size of establishment in selected private industries, March 2023**



Source: U.S. Bureau of Labor Statistics.



**Figure 3: Number of business by Number of Employees, March 2023**

In the United States, the corporate landscape encompasses a wide array of industries across the major employment sectors. A significant portion of this landscape is made up of businesses that employ a substantial workforce, with at least 100 employees or more. This size threshold is indicative of established organizations that have the potential to implement structured programs and initiatives, including those aimed at promoting diversity and inclusion within the workplace.

As of March 2023, Bureau of Labor Statistics data indicates that there are 189,095 businesses across all sectors that have a 100 employees or more. This indicates an extensive pool of potential participants for a data-driven corporate diversity recognition program. As seen in Figure 3, Even if only one sector were targeted for the initial program, there are well over 3,000 businesses in each major employment sector with at least 100 employees or more for the pool of potential participants in a corporate diversity recognition program.

The diversity of these businesses, spanning various sectors, provides a unique opportunity to tailor diversity recognition programs to address specific industry challenges and opportunities. For instance, the technology sector might face different diversity issues compared to the healthcare or manufacturing sectors. As such, a one-size-fits-all approach to diversity recognition may not be as effective as sector-specific strategies that take into account the unique dynamics of each industry. The benchmarks discussed above would need to be calibrated for different sectors.

## Conclusion

In conclusion, this report has established a strong foundation for the feasibility of implementing a data-driven diversity recognition program for corporations. The investigation has illuminated the types of diversity-related data that can be effectively captured by corporations, offering a clear pathway for recognizing and bolstering diversity initiatives. The potential pool of participants for such a program is large, reflecting the national landscape of corporations with a significant workforce. This broad base of potential participants underscores the program's capacity for widespread impact, fostering a more inclusive and equitable environment in the STEM fields, particularly for those groups traditionally underrepresented and underserved.

## Appendix A

### Race/Ethnicity Categories in EEO-1 Form

Hispanic or Latino: A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race.

White: A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.

Black or African American: A person having origins in any of the black racial groups of Africa.

Native Hawaiian or Other Pacific Islander: A person having origins in any of the peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

Asian: A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian Subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.

American Indian or Alaska Native: A person having origins in any of the original peoples of North and South America (including Central America), and who maintain tribal affiliation or community attachment.

Two or More Races: All persons who identify with more than one of the above five races (White, Black or African American, Native Hawaiian or Other Pacific Islander, Asian, American Indian or Alaska Native). For the purposes of this group, identifying as Hispanic or Latino and only one of the listed 5 race groups does NOT qualify.

Table A-1: Race/Ethnicity Categories used by EEOC<sup>3</sup>

<sup>3</sup> This has been taken from the most recent instructions for EEO-1 ([https://www.eeocdata.org/pdfs/2022\\_EEO\\_1\\_Component\\_1\\_Instruction\\_Booklet.pdf](https://www.eeocdata.org/pdfs/2022_EEO_1_Component_1_Instruction_Booklet.pdf)) accessed on February 10, 2024

## Appendix B

### Job Classifications for EEO-1 Form

Sourced from EEO-1 instruction booklet

[https://www.eeocdata.org/pdfs/2022\\_EEO\\_1\\_Component\\_1\\_Instruction\\_Booklet.pdf](https://www.eeocdata.org/pdfs/2022_EEO_1_Component_1_Instruction_Booklet.pdf)

### Executive/Senior Level Officials and Managers

Individuals who plan, direct and formulate policies, set strategy and provide the overall direction of enterprises/organizations for the development and delivery of products or services, within the parameters approved by boards of directors or other governing bodies. Residing in the highest levels of organizations, these executives plan, direct or coordinate activities with the support of subordinate executives and staff managers. They include, in larger organizations, those individuals within two reporting levels of the CEO, whose responsibilities require frequent interaction with the CEO.


Examples: chief executive officers; chief operating officers; chief financial officers; line of business heads; presidents or executive vice presidents of functional areas or operating groups; chief information officers; chief human resources officers; chief marketing officers; chief legal officers; management directors and managing partners.

### First/Mid-Level Officials and Managers

Individuals who serve as managers, other than those who serve as Executive/Senior Level Officials and Managers, including those who oversee and direct the delivery of products, services or functions at group, regional or divisional levels of organizations. These managers receive directions from the Executive/Senior Level management and typically lead major business units. They implement policies, programs and directives of executive/senior management through subordinate managers and within the parameters set by Executive/Senior Level management.

Examples: vice presidents and directors; group, regional or divisional controllers; treasurers; human resources, information systems, marketing, and operations managers.

The “First/Mid-Level Officials and Managers” subcategory also includes those who report directly to middle managers. These individuals serve at functional, line of



business segment or branch levels and are responsible for directing and executing the day-to-day operational objectives of enterprises/organizations, conveying the directions of higher-level officials and managers to subordinate personnel and, in some instances, directly supervising the activities of exempt and non-exempt personnel.

Examples: first-line managers; team managers; unit managers; operations and production managers; branch managers; administrative services managers; purchasing and transportation managers; storage and distribution managers; call center or customer service managers; technical support managers; and brand or product managers.

## Professionals

Most jobs in this category require bachelor and graduate degrees, and/or professional certification. In some instances, comparable experience may establish a person's qualifications.

Examples: accountants and auditors; airplane pilots and flight engineers; architects; artists; chemists; computer programmers; designers; dieticians; editors; engineers; lawyers; librarians; mathematical scientists; natural scientists; registered nurses; physical scientists; physicians and surgeons; social scientists; teachers; and surveyors.

## Technicians

Jobs in this category include activities that require applied scientific skills, usually obtained by post-secondary education of varying lengths, depending on the particular occupation, recognizing that in some instances additional training, certification, or comparable experience is required.

Examples: drafters; emergency medical technicians; chemical technicians; and broadcast and sound engineering technicians.

## Sales Workers

These jobs include non-managerial activities that wholly and primarily involve direct sales.

Examples: advertising sales agents; insurance sales agents; real estate brokers and sales agents; wholesale sales representatives; securities, commodities, and financial services sales agents; telemarketers; demonstrators; retail salespersons; counter and rental clerks; and cashiers.



## Administrative Support Workers

These jobs involve non-managerial tasks providing administrative and support assistance, primarily in office settings.

Examples: office and administrative support workers; bookkeepers; accounting and auditing clerks; cargo and freight agents; dispatchers; couriers; data entry keyers; computer operators; shipping, receiving and traffic clerks; word processors and typists; proofreaders; desktop publishers; and general office clerks.

## Craft Workers

Most jobs in this category include higher skilled occupations in construction (building trades craft workers and their formal apprentices) and natural resource extraction workers.

Examples: boilermakers; brick and stone masons; carpenters; electricians; painters (both construction and maintenance); glaziers; pipe layers, plumbers, pipefitters and steamfitters; plasterers; roofers; elevator installers; earth drillers; derrick operators; oil and gas rotary drill operators; and blasters and explosive workers.


This category also includes occupations related to the installation, maintenance and part replacement of equipment, machines and tools.

Examples: automotive mechanics; aircraft mechanics; and electric and electronic equipment repairers.

This category also includes some production occupations that are distinguished by the high degree of skill and precision required to perform them, based on clearly defined task specifications.

Examples: millwrights; etchers and engravers; tool and die makers; and pattern makers.

## Operatives



Most jobs in this category include intermediate skilled occupations and include workers who operate machines or factory-related processing equipment. Most of these occupations do not usually require more than several months of training.

Examples: textile machine workers; laundry and dry-cleaning workers; photographic process workers; weaving machine operators; electrical and electronic equipment assemblers; semiconductor processors; testers, graders and sorters; bakers; and butchers and other meat, poultry and fish processing workers.

This category also includes occupations of generally intermediate skill levels that are concerned with operating and controlling equipment to facilitate the movement of people or materials.

Examples: bridge and lock tenders; truck, bus or taxi drivers; industrial truck and tractor (forklift) operators; parking lot attendants; sailors; conveyor operators; and hand packers and packagers.

## Laborers and Helpers

Jobs in this category include workers with more limited skills who require only brief training to perform tasks that require little or no independent judgment.

Examples: production and construction worker helpers; vehicle and equipment cleaners; laborers; freight, stock and material movers; service station attendants; construction laborers; refuse and recyclable materials collectors; septic tank servicers; and sewer pipe cleaners.

## Service Workers

Jobs in this category include food service, cleaning service, personal service, and protective service activities. Skill may be acquired through formal training, job-related training or direct experience.

Examples (Food Service): cooks; bartenders; and other food service workers.

Examples (Personal Service): medical assistants and other healthcare support positions;

hairdressers; ushers; and transportation attendants.

Examples (Cleaning Service): cleaners; janitors; and porters.

Examples (Protective Service): transit and railroad police and fire fighters; guards; private detectives and investigators.