

**U. S. Department of Education
Office of Career, Technical, and Adult Education**

**2020 Nontraditional Occupations Crosswalk
September 30, 2020**

Background

The *Carl D. Perkins Career and Technical Education Act*, as amended by the *Strengthening Career and Technical Education for the 21st Century Act (Perkins V)* identifies nine student subgroups as “special populations” for whom the State agency that administers *Perkins V* (State eligible agency) and local recipients have particular responsibilities for serving in their career and technical education (CTE) programs. “Individuals preparing for nontraditional fields” are one of these special populations (section 3(48) of *Perkins V*).

Perkins V also establishes core indicators of performance for which State eligible agencies and local recipients are accountable. States set annual levels of performance for these indicators and States and subrecipients report annually on their success in attaining these performance levels. “The percentage of CTE concentrators in career and technical education programs and programs of study that lead to nontraditional fields” is a core indicator at both the secondary and postsecondary levels (section 113(b)(2)(A)(v) and (113)(b)(2)(B)(iii), respectively, of *Perkins V*).

Section 3(33) of *Perkins V* defines the term “nontraditional fields” to mean “occupations or fields of work, such as careers in computer science, technology, and other current and emerging high skill occupations, for which individuals from one gender comprise less than 25 percent of the individuals employed in each such occupation or field of work.”

Introduction to the 2020 Nontraditional Occupations Crosswalk

The Office of Career, Technical, and Adult Education (OCTAE) in the U.S. Department of Education prepared this technical assistance tool as one option to help States and subrecipients identify CTE programs and programs of study that prepare individuals for nontraditional fields. Its use is optional, and States have flexibility and discretion to use other data sources to identify CTE programs and programs of study that prepare individuals for nontraditional fields. States should use this crosswalk with care and review the results of their CIP matching to the crosswalk to be sure that they do not inadvertently identify a program that is clearly nontraditional based on its enrollment to be gender neutral because it is so indicated in the crosswalk. States have the flexibility to designate which CIPs most closely match for their CTE programs and the nontraditional designations for the programs in their State.

This crosswalk uses data from five sources:

- The [Classification of Instructional Programs](#) (CIP) is a taxonomic coding scheme of instructional programs developed by the National Center for Education Statistics (NCES) in the U.S. Department of Education to facilitate the organization, collection, and reporting of fields of study and program completions. The most recent CIP was published in 2020.
- The [Standard Occupational Classification](#) (SOC) System is developed by the U.S. Bureau of Labor Statistics (BLS) in the U.S. Department of Labor and is used by Federal statistical agencies to classify workers and jobs into occupational categories for the purpose of collecting, calculating, analyzing, or disseminating data about employment and occupations. It classifies workers into 867 detailed occupations according to their occupational definition. The most recent SOC was published in 2018.
- A [CIP-SOC Crosswalk](#) prepared by NCES and BLS was published by NCES in 2020. It provides data users with a resource for relating 2020 CIP and 2018 SOC codes. A CIP-SOC relationship indicates that instructional programs classified in a CIP category typically prepare individuals directly for jobs classified in a SOC category. [Guidelines for Using the Classification of Instructional Programs to Standard Occupational Classification \(CIP-SOC\) Crosswalk](#) explains how the crosswalk was developed.
- An unpublished table obtained from BLS that includes Current Population Survey (CPS) 2019 annual average data on employed persons ages 16 and older by detailed occupation and sex. CPS is a monthly survey of households conducted by the Bureau of Census for BLS. It provides a comprehensive body of data on the labor force, employment, unemployment, persons not in the labor force, hours of work, earnings, and other demographic and labor force characteristics, including occupation.
- The [National Career Clusters® Framework](#) was developed by Advance CTE to serve as an organizing tool for CTE programs, curriculum design and instruction. There are 16 Career Clusters in the [National Career Clusters® Framework](#), representing 79 Career Pathways to help learners navigate their way to greater success in college and career.

This nontraditional occupations crosswalk organizes the 2020 CIP codes according to the 16 [National Career Clusters® Framework](#), maps each CIP code to one example of an occupation for which they provide preparation, and identifies the gender composition of that occupation using the 2019 CPS annual average data. It also flags CIP codes that are associated with at least one occupation in which individuals from one gender comprise less than 25 percent of the individuals employed in this occupation.

Methodology

Association of CIP Codes with Career Clusters

The 2020 CIP codes were mapped to the 16 [National Career Clusters® Framework](#) using as the base the original December 2007 Office of Vocational and Adult Education (OVAE)¹-led Table 1, which matched CIP to the 16 Career Clusters. CIP codes were matched to Career Clusters using the decision rules that were described in the October 2012 publication, “The Crosswalk Validation Project: Final Report” by the OCTAE-funded National Research Center for Career and Technical Education.²

CIP codes that are not typically associated with career and technical education were not included: 5 (Area, Ethnic, Cultural, Gender, and Group Studies), 16 (Foreign Languages, Literatures, and Linguistics), 23 (English Language and Literature/Letters), 24 (Liberal Arts and Sciences, General Studies and Humanities), 25 (Library Science), 32 (Basic Skills and Developmental/Remedial Education), 33 (Citizenship Activities), 34 (Health-Related Knowledge and Skills), 35 (Interpersonal and Social Skills), 36 (Leisure and Recreational Activities), 37 (Personal Awareness and Self-Improvement), 38 (Philosophy and Religious Skills), 39 ((Theology and Religious Vocations), 53 (High School/Secondary Diplomas and Certificates), 54 (History), 60 (Health Professions Residency/Fellowship Programs), and 61 (Medical Residency/Fellowship Programs).

Association of CIP Codes with Nontraditional Occupations

The CIP-SOC crosswalk identifies the occupations associated with each instructional program catalogued by the CIP. To construct the nontraditional occupations crosswalk, we reviewed and report the CPS annual average data about the gender composition of the associated occupations. Because the CIP-SOC crosswalk includes many smaller occupations about which CPS did not report data in its annual average table, the nontraditional occupations crosswalk reports on the larger occupational grouping of which this smaller occupation is a part. For example, the CIP-SOC crosswalk associates Surgical Technology/Technologist (CIP 51.0909) with the occupation “surgical technologist” (SOC 29-2055), a category that is not reported on by CPS. However, the CPS does report data for “Health Practitioner Support Technologists and Technicians” (SOC 29-2050), an occupational category of which the SOC indicates surgical technologists are a part. The nontraditional occupations crosswalk reports on the gender composition of this larger occupational category.

Each CIP category is often associated with multiple SOC categories because the instructional program prepares individuals with the knowledge and skills that are applicable to the performance of multiple occupations. For example, in the CIP-SOC crosswalk the 2020 CIP

¹ OVAE was the prior name for the Office of Career, Technical, and Adult Education (OCTAE).

² See http://ctetrailblazers.org/files/2020/01/nrccte_crosswalk_validation_final_report.pdf

program category “Clinical and Industrial Drug Development” is associated with two occupations in the 2018 SOC: “industrial production managers” (SOC 11-3051) and “natural sciences managers” (SOC 11-9121). In these instances, to determine whether a CIP category associated with multiple occupations prepares individuals for a nontraditional occupation, we applied a simple and objective decision rule: if any one of the associated occupations was nontraditional for men or women in 2019, we identified the CIP category as an instructional program that prepares individuals for a nontraditional occupation. To use the example of the CIP category “Clinical and Industrial Drug Development,” women comprised 22.3 percent of industrial production managers and 33.3 percent of natural sciences managers in 2019. Because one of these occupations, industrial production managers, is nontraditional for women, the crosswalk flags this CIP category as nontraditional and reports industrial production managers as the exemplar occupation in column 3.

If more than one of the occupations associated with a CIP code was nontraditional for men or women in 2019, the crosswalk identifies the occupation in which there was the greatest disparity between men and women in 2019. If none of the associated occupations on the CIP-SOC crosswalk were nontraditional for men or women in 2019, the crosswalk identifies one example of the occupations that are associated with the CIP code. Readers can consult the CIP-SOC crosswalk to identify other examples of associated occupations.

There are three CIP categories that are associated with an occupation that was nontraditional for women and an occupation that was nontraditional for men in 2019:

- Assistive/Augmentative Technology and Rehabilitation Engineering (51.2312) is associated with “counselors,” a nontraditional occupation for men, and “engineers, all others,” a nontraditional occupation for women.
- Clinical Pastoral Counseling/Patient Counseling (51.1506) is associated with “counselors,” a nontraditional occupation for men, and “clergy,” a nontraditional occupation for women.
- Anthrozoology (30.3401) is associated with “farmers, ranchers, and other agricultural managers,” a nontraditional occupation for women, and “nonfarm animal caretakers,” which is a nontraditional occupation for men.

The crosswalk includes two entries for each of these CIP codes, one of which reports the occupation that was nontraditional for men and another which reports the occupation that was nontraditional for women.

Military Occupations

Data on the gender of individuals in specific U.S. military occupations were not available. In lieu of those data, the nontraditional occupations crosswalk uses U.S. Department of Defense data on the total number and percentage of women who were officers, enlisted personnel, and military academy cadets and midshipmen in May 2020 (17.2 percent). For more information,

see the [Table of Active Duty Females by Rank/Grade and Service](#) published by the Defense Manpower Data Center, U.S. Department of Defense.

Postsecondary Teachers

Some of the CIP categories are associated with SOC categories for postsecondary teachers who provide instruction to individuals preparing for the particular occupation, as well as persons employed in the occupation. For example, the CIP category “Play Therapy/Therapist” is associated with the SOC categories “Therapists, All Other” and “Health Specialties Teachers, Postsecondary.” In constructing the nontraditional occupations crosswalk, postsecondary teachers were only identified as being associated with a CIP category if the occupation with which it is associated was in the field of education (e.g., “Nursing Professions Education”) except in several instances in which postsecondary teachers was the only occupation that the CIP-SOC crosswalk identified as being associated with a CIP. In most cases, these latter CIP codes are for “other” programs with a CIP code that ends in “99” (code format XX.XX99 or XX.9999) and a title that ends in “Other.” These codes are intended to include specialized programs that are not classified into other detailed six-digit CIP codes in the same group. The NCES and BLS analysts who constructed the CIP-SOC crosswalk did not associate these CIPs with occupations other than postsecondary teachers either because the content of the program is too broad to be associated with another occupation or the description includes too little information to associate the CIP with an occupation other than postsecondary teachers. These CIP codes include:

03.0299	Natural Resources Management and Policy, Other.
03.9999	Natural Resources and Conservation, Other.
04.0299	Architecture, Other.
04.0499	Environmental Design, Other.
04.0899	Architectural History, Criticism, and Conservation, Other.
51.2099	Pharmacy, Pharmaceutical Sciences, and Administration, Other.

If a State finds that a school in its State uses one of these CIP codes, it should use its discretion to investigate the content of the program in order to identify the occupation for which it prepares students and whether that occupation is nontraditional for men or women. Another exception is CIP Code 51.3603, “Hypnotherapy/Hypnotherapist,” which the CIP-SOC crosswalk associates only with “Health Specialties Teachers, Postsecondary.” Should this CIP code be in use in a State, a State has the discretion to identify another occupation it deems to be associated with the content of this program.

“No Match”

Some 2020 CIP categories are not associated with a 2018 SOC category in the CIP-SOC crosswalk. Often these are “other” CIP codes (code format XX.9999) such as “Construction

Trades, Other” (46.9999) that NCES and BLS analysts determined cover content that is so wide-ranging that they could not assume that they provide direct preparation for a specific occupation. In other cases, the CIP provides little or no guidance or information about what specialties are actually classified in the “other” CIP code that NCES and BLS analysts could use to identify a specific occupation for which it prepares students. As in the CIP-SOC crosswalk, the nontraditional occupations crosswalk identifies these CIPS with the phrase “No Match.” If a State finds that one of these “No Match” CIP codes is in use by its schools, it can use its discretion to determine the occupation for which it prepares students, if any, and identify whether or not it is a nontraditional occupation for men or women.

Gender Composition of Occupations with Fewer than 50,000 Employed Persons

In early 2020, the BLS published 2019 annual average [data](#) about the gender, race, and ethnicity of individuals in occupations in which 50,000 or more individuals are employed. The Economic Development and Employer Planning System (EDEPS) has produced a [crosswalk](#) that uses these published data to identify occupations that are nontraditional by gender. Based on consultations with the field, it was determined that there was interest in a more detailed crosswalk that relied on unpublished CPS data because it would include many more occupations in which women or men are believed to comprise less than 25 percent of workers.

BLS cautions that because the unpublished data we rely on for this crosswalk have not been reviewed for publication, some of the data may be based on insufficient sample and therefore may not be representative of some occupations. BLS also does not calculate the percentages of men and women employed in an occupation where the number of persons employed in the occupation is fewer than 50,000 out of concern for the reliability of the resulting estimate. We have calculated these percentages in constructing this crosswalk. Users concerned about the reliability of the data in this crosswalk may choose to use instead the alternative EDEPS crosswalk that is limited to the smaller universe of occupations with 50,000 or more workers. Please note that the National Alliance for Partnerships in Equity Nontraditional Crosswalks of [2007 and 2013](#) followed this same logic and used the occupations under 50,000 in addition to those over 50,000.

Additional Information about the Current Population Survey Data

The CPS is a monthly survey of the U.S. civilian noninstitutional population who live in housing units and members of the Armed Forces living in civilian housing units on a military base or in a household not on a military base. The nontraditional occupations crosswalk uses data on the occupations of employed persons ages 16 and older. Employed persons comprise two groups: (1) all civilians who, during the survey week did any work at all as paid employees or in their own business or profession, or on their own farm, or who work 15 hours or more as unpaid workers on a farm or a business operated by a member of the family; and (2) all those who have jobs but who are not working because of illness, bad weather, vacation, or labor-management dispute, or because they are taking time off for personal reasons, whether or not they are seeking

other jobs. Respondents were asked the occupation in which they worked during the week preceding the survey. Those persons who held more than one job were counted in the job at which they worked the greatest number of hours during the survey week. If they worked an equal number of hours at more than one job, they were counted at the job they held the longest. Technical documentation for the 2019 CPS is available on the [website](#) of the U.S Bureau of the Census.

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