

Methodology for Updating Programs of Strategic Emphasis

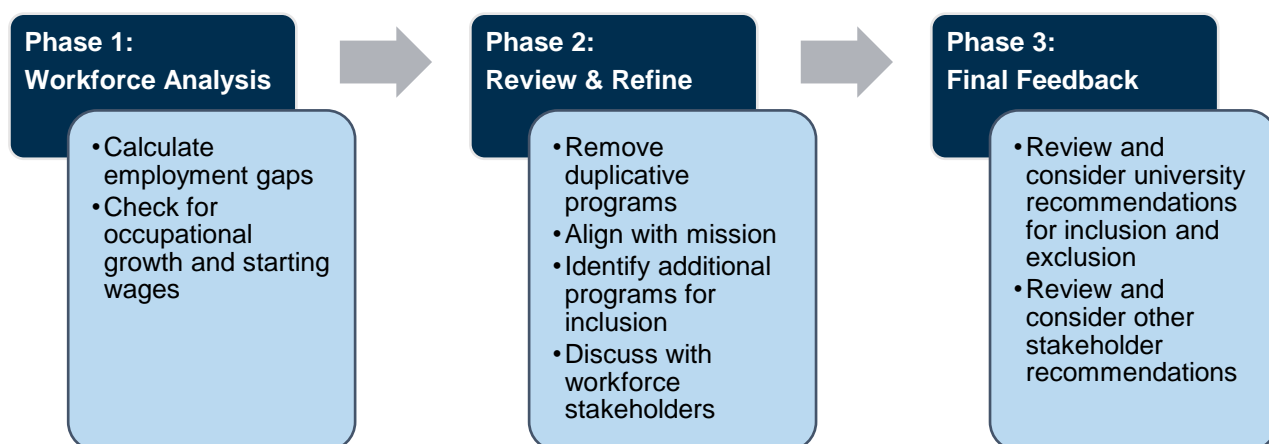
Overview

Programs of Strategic Emphasis are one of several tools for aligning the degree production goals of the State University System with the economic and workforce needs of Florida. The list helps to provide highly qualified talent to support Florida's most critical workforce shortages and is a valuable resource to help students select a major that will ensure a positive return on investment for the time and money spent to earn a degree. Additionally, the Programs of Strategic Emphasis are a component of Performance Based Funding.

In 2021 and 2022, the legislature amended section 1001.706, Florida Statutes, requiring that the Programs of Strategic Emphasis list be reviewed every three years, use specific data sources, and follow a methodology similar to the one used by the Credentials Review Committee. To implement these changes, Board staff requested feedback from the Board in January 2023. During this meeting, the Board provided guidance that a more targeted and workforce-driven list would be appropriate for the Programs of Strategic Emphasis. In response to this guidance, staff completed a comprehensive review and revision of the prior methodology to address Florida's workforce needs using a more refined approach. During the spring and summer of 2023, Board staff met with key stakeholders to obtain feedback and recommendations regarding methodology and data sources.

The process for identifying Programs of Strategic Emphasis in 2023 differs significantly from that in 2019 and 2020. Previously, Board staff primarily utilized a qualitative approach and supplemented those findings with a gap analysis to quantitatively identify workforce needs. The prior process focused on academic programs at the bachelor's degree level and automatically applied to all programs at the graduate level. For this iteration, Board staff used a three-phase approach outlined in Exhibit 1 below. Each phase is described in depth in the next section of the document.

Exhibit 1 – Phases of Programs of Strategic Emphasis Methodology



Phase one focused on reviewing Florida workforce demand data and analyzing occupations based on the degree level required to enter each job. Staff reviewed projected demand and growth for all Florida occupations and conducted a supply/demand gap analysis to identify occupations in Florida requiring a bachelor's degree or higher with

substantial annual gaps in the talent supply. The list was further narrowed at the baccalaureate level to only include occupations that met or exceeded a \$40,000 starting wage threshold, consistent with the Board's 2025 Strategic Plan Goal to have 80% of bachelor's degree graduates employed and earning \$40,000 or more per year. After identifying the initial list of occupations, Board staff matched them to academic programs using the Classification of Instructional Programs (CIP) - Standard Occupational Classification (SOC) crosswalk developed in conjunction with the Florida Department of Education, Board staff, the Governor's REACH Office, and other partners.

In phase two, Board staff reviewed the list of academic programs aligned with the identified occupations and refined the list by removing programs that were either duplicative or unrelated to the mission of the System. In addition, staff augmented the list with essential programs based on analyst expertise, stakeholder input, and other supplemental data sources used to inform the process. At this point in the process, the methodology and draft list were reviewed with key stakeholders in Florida's higher education, business, economic development, and workforce ecosystem.

Finally, in phase three, Board staff solicited university feedback regarding the proposed list. This feedback from institutions provided insight into program offerings, workforce requirements, regional demand, and graduate outcomes.

Based on this revised methodology, Board staff developed the recommended 2023 Programs of Strategic Emphasis. It includes 95 bachelor's degree programs, 72 of which are currently being offered in the System. The list also includes 75 master's degree programs, 65 of which are currently active, and 57 doctoral programs, 54 of which are presently offered. All programs on the list support Florida's most critical workforce needs and help ensure State University System graduates earn competitive salaries upon graduation.

The academic degree programs associated with the proposed new list are identified in a document titled "Programs of Strategic Emphasis List November 2023." The remainder of this document provides more details regarding the analysis and data sources used to develop the 2023 Programs of Strategic Emphasis list.

2023 Proposed Methodology

To develop the 2023 list of proposed Programs of Strategic Emphasis, Board staff used a methodology that included three distinct phases: workforce data analysis, stakeholder- and expertise-informed refinement, and State University System institutional input.

Phase One: Workforce Analysis

In the first phase of the process, staff identified academic programs linked to high-demand occupations in Florida based on a supply/demand gap analysis, starting wage data, and projected job growth thresholds. This new methodology considers the supply of graduates across all Florida higher education sectors and matches it to labor market demand across all occupations in the state. Board staff completed this analysis for all professions that typically require a bachelor's, master's/specialist, or doctoral degree for entry. See Appendix B for a final listing of occupations identified during the gap analysis process by the degree level typically required to enter the field.

Consistent with the data sources used by the Credentials Review Committee and referenced in section 1001.706, Florida Statutes, demand was based on the Florida Department of Commerce's 2022-2030 Employment Projections.¹ The Department's Bureau of Workforce Statistics and Economic Research produces 8-year employment projections annually for all industries and occupations.² The projections consider transfers and exits rather than just replacement openings, which provides a more accurate picture of the workforce by differentiating between those who are leaving the labor force entirely and those who are permanently leaving an occupation to enter a new field.

Each occupation is assigned a SOC code and an educational attainment level by the U.S. Department of Labor, Bureau of Labor Statistics (BLS), consistent with the prior methodology.³ The BLS taxonomy classifies occupations by the typical level of skills needed to enter an occupation. The BLS designation is used to determine the gap between supply and demand for workers in Florida because it provides the most accurate depiction of the actual educational level that workers should complete to meet initial job requirements.

Board staff used the new Florida CIP-SOC crosswalk developed jointly by the Florida Department of Education, Board staff, the Governor's REACH Office, and other state agency partners, as well as the national crosswalk built by the BLS and the U.S. Department of Education's National Center for Education Statistics (NCES).⁴ Both referenced crosswalks link occupations (the SOC code) to educational programs (the CIP code). For more detailed information about the CIP taxonomy, refer to Appendix A at the

¹ <http://www.floridajobs.org/workforce-statistics/data-center/statistical-programs/employment-projections>

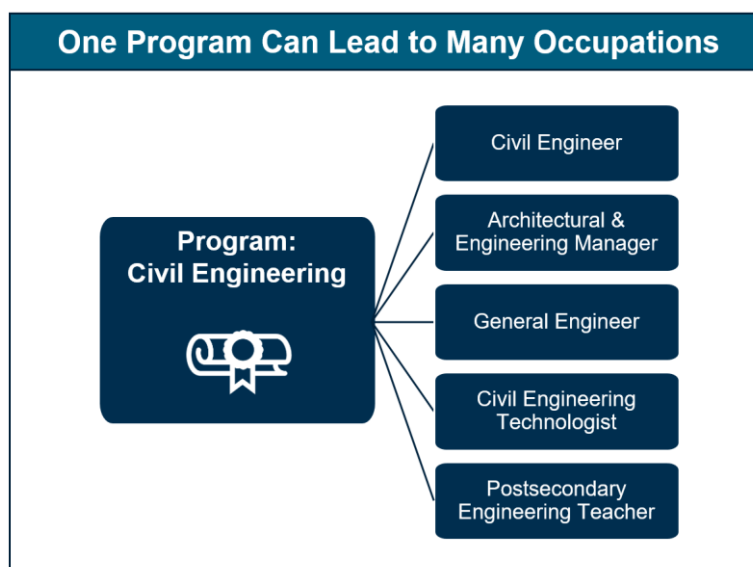
² The data used to create these projections are the Quarterly Census of Employment and Wages (QCEW), the Occupational Employment Statistics (OES), and the Current Population Survey (CPS).

³ https://www.bls.gov/oes/current/oes_stru.htm

⁴ The Florida-developed crosswalk includes only active education programs in Florida. Board staff used the national crosswalk to identify programs not offered in Florida to align with future workforce demand.

end of this document. It is essential to note a given educational program can often lead to multiple occupations, and many different educational programs can often supply a given occupation, as shown in Exhibits 2 and 3 below. It is also important to note that the educational attainment level was maintained when matching occupations and degree programs so that only the appropriate credential level was considered for each job.

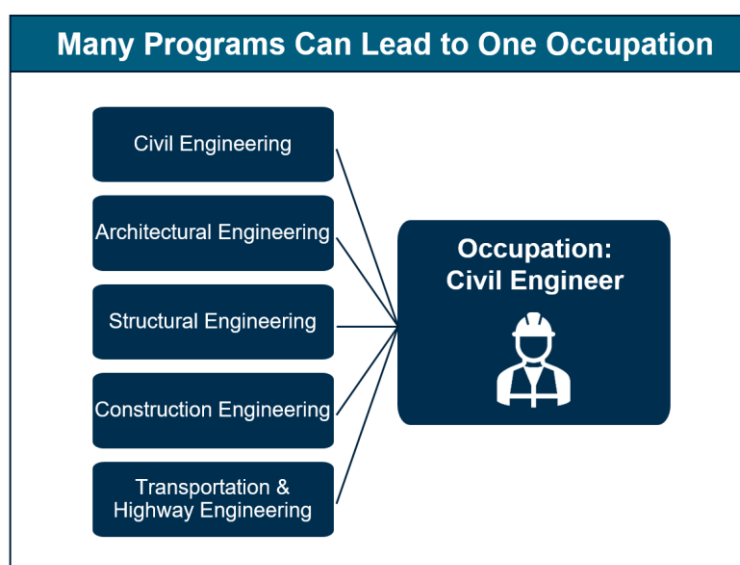
Exhibit 2 – Example of CIP-SOC Linkages



Source: Board staff analysis of the aforementioned CIP-SOC crosswalks.

Note: The above exhibit is not an exhaustive list of all occupations supplied by a Civil Engineering program.

Exhibit 3 – Example of SOC-CIP Linkages



Source: Board staff analysis of the aforementioned CIP-SOC crosswalks.

Note: The above exhibit is not an exhaustive list of all academic programs that can lead to an occupation as a Civil Engineer.

Board staff used two strategies to address the challenge of potentially overstating supply because numerous occupations link to multiple academic disciplines.

- Managerial occupations (SOC codes beginning with '11') were excluded from the initial analysis because certain levels of work experience are generally required in addition to a degree, and such occupations link to the highest number of academic disciplines.
- Supply data was adjusted to acknowledge that graduates typically have more than one choice of occupation after graduating. After the initial SOC-to-CIP match to derive the total number of recent graduates qualified for a particular 'target' occupation, it is imperative to look in reverse, or from CIP-to-SOC, to get a sense of all the careers competing for those graduates. Thus, the adjusted supply was derived by multiplying the total supply of graduates linked to a target occupation by the target occupation's percentage of projected total openings for all occupations, excluding managers, as noted above, connected with the disciplines associated with the target occupation.
 - For example, the Budget Analyst occupation has 305 projected annual openings that could be filled by 7,166 graduates annually earning bachelor's degrees from eight different academic disciplines: General Finance, Business Analytics, Financial Analytics, Accounting and Finance, Accounting and Other Related Services, Public Finance, Econometrics and Quantitative Economics, and Accounting. At first glance, there appears to be a substantial oversupply of graduates qualified for the budget analyst openings. However, if one considers the number of other occupations for which graduates of these eight programs could qualify, there are more than 65,000 annual openings across a multitude of occupations.⁵

Supply was calculated using the number of bachelor's, master's, and doctoral degrees awarded by Florida postsecondary institutions in 2020-21, as reported to the National Center for Educational Statistics' Integrated Postsecondary Educational Data System (IPEDS).⁶ All educational institutions receiving Title IV Financial Aid must report these data to IPEDS, assigning a CIP code to each educational program.

Once the supply and demand data were established for each occupation, Board staff narrowed the list by applying minimum calculated gap thresholds for each degree level. The academic programs must link to an occupation with a calculated gap of at least 100 unfilled annual openings for bachelor's degrees, 50 openings for master's degrees, and 25 openings for doctoral degrees. Additionally, certain occupations and programs were excluded, including those not related to the System mission and those without a strong educational program-to-occupation relationship.

⁵ The openings for budget analysts comprised only 0.47% of all the jobs available to these graduates (305 budget analyst openings divided by 65,453 total openings). As a consequence, only 0.47% of the initial supply of 7,166 graduates is used in the gap analysis, resulting in an adjusted annual supply of 33.

⁶ <https://nces.ed.gov/ipeds/>

The final stage of the phase one analysis focused on targeting those academic programs meeting the gap threshold that also met the projected growth and starting wage thresholds. Consistent with the data sources used by the Credentials Review Committee and referenced in section 1001.706, Florida Statutes, Board staff used the projected growth rates from the Florida Department of Commerce's Employment Projections and representative starting wages for bachelor's graduates as identified by the Labor Market Estimating Conference (LMEC).⁷ The growth rate threshold used was 8.6%, based on the Florida Department of Commerce's projected 2022-30 growth rate for all occupations in Florida. The starting wage threshold for jobs requiring a bachelor's was set at \$40,000, consistent with the Board's 2025 Strategic Plan Goal to have 80% of bachelor's degree graduates employed and earning \$40,000 or more per year.⁸

Phase Two: Review and Refine

After establishing the list of programs for inclusion based on available workforce data, Board staff identified and removed programs deemed duplicative or unrelated to the mission of the System and added programs not captured by the phase one analysis but deemed appropriate based on the System mission and staff/stakeholder expertise. These steps were implemented based on the directive from the Board to reduce the total number of programs on the list while remaining focused on critical and relevant occupations. These steps also help compensate for lagging or imperfect labor market data by incorporating analyst and stakeholder expertise.

Board staff also reviewed the list with Florida's workforce leaders and other stakeholders to collect feedback and input. Board staff met with representatives from the following organizations and groups:

- Governor's REACH Office
- Florida Department of Education
- Florida Chamber of Commerce
- Florida Department of Commerce (formerly Department of Economic Opportunity)
- Florida Council of 100
- CareerSource Florida
- Florida Credentials Review Committee
- Florida Talent Development Council
- Legislative staff

Prior to the meetings, Board staff shared the methodology and list of proposed Programs of Strategic Emphasis. Board staff then reviewed the method and the list with stakeholders to determine whether any changes should be made based on statewide workforce needs and priorities.

⁷ <http://edr.state.fl.us/content/conferences/labormarket/index.cfm>

⁸ <https://www.flbog.edu/board/strategic-plan/>

Phase Three: Final Feedback

Phase three involved obtaining input on the methodology and draft list of programs from staff at State University System institutions. The institutions provided feedback through a formal data request. As presented at the June 21, 2023, Strategic Planning Committee meeting, institutions were required to submit at least two forms of documentation, which included letters of support from employers, supplemental regional workforce data documenting unfilled job openings, projected growth, and starting salaries, updated occupational linkages to academic programs, pathways between degree levels, and data on new and emerging workforce needs. Board staff met with academic program staff from all 12 state universities on July 6, 2023, and university presidents on July 24, 2023, to review this process and answer any questions.

Board staff received 87 requests for program additions from the universities. All university feedback was thoroughly and simultaneously reviewed by two independent analysts who agreed on recommended program additions and removals based on the quality of the supplemental data provided. After reviewing and analyzing the feedback, Board staff recommended adding 36 programs to the proposed list. The remaining requests did not meet the minimum criteria outlined by Board staff and in this methodology.

Special circumstances that warranted inclusion included the following.

- The degree program is a bridge or pathway to a graduate degree on the Programs of Strategic Emphasis list.
 - For example, the Biochemistry program was initially excluded at the bachelor's level due to low starting wages. However, universities and the State University Database System data showed that most graduates of this program go on to attend medical school, leading to a degree on the Programs of Strategic Emphasis list.
- The degree program meets specific workforce requirements for high-demand occupations.
 - For example, the Athletic Trainers program was initially only considered at the bachelor's level. Institutions provided information that per section 468.717, Florida Statutes, Athletic Trainers must be licensed to practice in Florida. In addition, institutions showed that Athletic Trainers must obtain a master's degree to be considered for Florida licensure.
- The degree program at the bachelor's level has a tremendous workforce need of over ten times the standard bachelor's gap threshold, meaning the program is linked to an occupation with 1,000 or more unfilled annual openings. In such cases, the master's level degree was considered for inclusion.
 - For example, the Mechanical Engineering program was initially not on the Programs of Strategic Emphasis draft list at the master's level because data did not indicate a master's degree was required to enter the workforce. However, data shows a gap of over 1,000 openings, indicating individuals at the master's level would also be needed in Florida's workforce.

- Graduates with a bachelor's degree earn a salary above the LMEC starting wage data initially used.
 - For example, the Business Marketing and Management program was initially excluded from the Programs of Strategic Emphasis draft list at the bachelor's level due to low LMEC starting wages. However, institutions showed that the starting salary for State University System of Florida graduates exceeded the \$40,000 requirement.⁹

The institutions also recommended removing 95 programs considered duplicative of existing active programs or inappropriate for the degree level. A program was evaluated for exclusion if it was duplicative of another program on the list, did not meet licensure requirements, or would typically not be offered at the level indicated. For example, Rehabilitation Science, which is not currently active in the System at the master's level, was initially included at the master's level due to its connection to the high-need occupation of rehabilitation counselors. However, institutions provided evidence that credentials in Florida require a specific rehabilitation focus like those taught in physical therapy or occupational therapy, so the program was removed. Staff recommended removing 59 of the 95 programs and retaining the remaining 36 on the latest list for various reasons, including high workforce demand and evidence that other states/systems are actively and independently offering the programs.

⁹ The initial data analysis used LMEC starting wage data to determine whether programs at the bachelor's level met the \$40,000 starting wage goal, in line with the Board of Governor's goal for graduates. The Programs of Strategic Emphasis included programs currently offered and programs institutions should consider offering to meet state workforce needs. For programs currently offered, Board staff is able to determine the starting salaries of State University System graduates, using more precise data to determine whether the starting wage threshold is met.

Proposed Programs of Strategic Emphasis List

Using the above methodology, Board staff narrowed the list of 2,325 possible academic programs to identify the final proposed list of Programs of Strategic Emphasis. The proposed list draws from all possible programs defined by NCES to identify specific bachelor's degrees, master's degrees, and doctorate degrees for inclusion as Programs of Strategic Emphasis, as shown in Exhibit 4.

Exhibit 4 – Program Counts

	Bachelor's Programs	Master's Programs	Doctoral Programs
Total CIP Codes	2,325	2,325	2,325
Proposed CIP Codes- Total Programs of Strategic Emphasis	95 (4%)	75 (3%)	57 (2%)
Proposed CIP Codes- Active Programs of Strategic Emphasis	72 (3%)	65 (3%)	54 (2%)

The academic degree programs associated with the proposed new list are identified in a document currently titled "Programs of Strategic Emphasis List November 2023," provided concurrently with this document. It should be noted that some academic programs found on the list are not currently offered within the State University System. A complete list of program options, including both active and inactive programs, allows institutions to plan for new programs. Programs on this list are also recognized through Performance Based Funding Metric 6 - Bachelor's Degrees Awarded in Areas of Strategic Emphasis and Metric 8a - Graduate Degrees Awarded in Areas of Strategic Emphasis.

Appendix A

In order to identify academic programs that lead to in-demand jobs, Board staff matched Classification of Instructional Programs (CIP) academic program codes with Standard Occupational Classification (SOC) codes from the U.S. Bureau of Labor Statistics.

About CIPs

The Classification of Instructional Programs provides a taxonomic scheme that supports accurately tracking and reporting fields of study and program completion activity. The Classification of Instructional Programs was initially developed by the U.S. Department of Education's National Center for Education Statistics (NCES) in 1980, with revisions regularly occurring as new programs emerge and existing program curriculums evolve.

The CIP taxonomy is organized on three levels:

1. The two-digit series represents the most general groupings of related educational programs (e.g., 14. Engineering)
2. The four-digit series represents intermediate groupings of educational programs that have comparable content and objectives (e.g., 14.08 Civil Engineering)
3. The six-digit series represents specific instructional programs with very similar content and objectives (e.g., 14.0803 Structural Engineering as a subset of Civil)

Postsecondary educational institutions use six-digit CIP codes when completing the IPEDS Completions Survey required for participation in federal financial aid programs. Six-digit codes are the most detailed program classifications within the CIP and represent the basic unit of analysis used by NCES and institutions in tracking and reporting program completions and fields of study data.

Source: NCES, *Integrated Postsecondary Education Data System (IPEDS)*, Introduction to the Classification of Instructional Programs: 2020 Edition (CIP-2020).¹⁰

¹⁰ https://nces.ed.gov/ipeds/cipcode/Files/2020_CIP_Introduction.pdf

Appendix B

Table 1 - Occupations Identified Using the Programs of Strategic Emphasis Phase One Methodology that Typically Require a Bachelor's Degree for Entry

	SOC Code	Occupation
1	13-2011	Accountants and Auditors
2	13-2061	Financial Examiners
3	15-1211	Computer Systems Analysts
4	15-1212	Information Security Analysts
5	15-1244	Network and Computer Systems Administrators
6	15-1245	Database Administrators and Architects
7	15-1256	Software Developers and Software Quality Assurance Analysts and Testers
8	15-2098	Data Scientists and Mathematical Science Occupations, All Other
9	17-1011	Architects, Except Landscape and Naval
10	17-2011	Aerospace Engineers
11	17-2051	Civil Engineers
12	17-2061	Computer Hardware Engineers
13	17-2071	Electrical Engineers
14	17-2072	Electronics Engineers, Except Computer
15	17-2081	Environmental Engineers
16	17-2112	Industrial Engineers
17	17-2141	Mechanical Engineers
18	19-2042	Geoscientists, Except Hydrologists and Geographers
19	25-2032	Career/Technical Education Teachers, Secondary School
20	25-2057	Special Education Teachers, Middle School
21	25-2058	Special Education Teachers, Secondary School
22	29-1141	Registered Nurses

Table 2 - Occupations Identified Using the Programs of Strategic Emphasis Phase One Methodology that Typically Require a Master's Degree for Entry

	SOC Code	Occupation
1	15-2041	Statisticians
2	19-3051	Urban and Regional Planners
3	21-1012	Educational, Guidance, and Career Counselors and Advisors
4	21-1013	Marriage and Family Therapists
5	21-1015	Rehabilitation Counselors
6	21-1019	Counselors, All Other
7	21-1022	Healthcare Social Workers
8	21-1023	Mental Health and Substance Abuse Social Workers
9	29-1071	Physician Assistants
10	29-1122	Occupational Therapists
11	29-1127	Speech-Language Pathologists
12	29-1151	Nurse Anesthetists
13	29-1171	Nurse Practitioners

Table 3 - Occupations Identified Using the Programs of Strategic Emphasis Phase One Methodology that Typically Require a Doctorate Degree for Entry

	SOC Code	Occupation
1	19-1021	Biochemists and Biophysicists
2	19-1042	Medical Scientists, Except Epidemiologists
3	19-3031	Clinical, Counseling, and School Psychologists
4	25-1011	Business Teachers, Postsecondary
5	25-1021	Computer Science Teachers, Postsecondary
6	25-1022	Mathematical Science Teachers, Postsecondary
7	25-1031	Architecture Teachers, Postsecondary
8	25-1032	Engineering Teachers, Postsecondary
9	25-1041	Agricultural Sciences Teachers, Postsecondary
10	25-1042	Biological Science Teachers, Postsecondary
11	25-1051	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary
12	25-1052	Chemistry Teachers, Postsecondary
13	25-1054	Physics Teachers, Postsecondary
14	25-1063	Economics Teachers, Postsecondary
15	25-1071	Health Specialties Teachers, Postsecondary
16	25-1081	Education Teachers, Postsecondary
17	25-1113	Social Work Teachers, Postsecondary
18	29-1123	Physical Therapists
19	29-1131	Veterinarians
20	29-1181	Audiologists
21	29-1215	Family Medicine Physicians
22	29-1223	Psychiatrists
23	29-1228	Physicians, All Other and Ophthalmologists, Except Pediatric