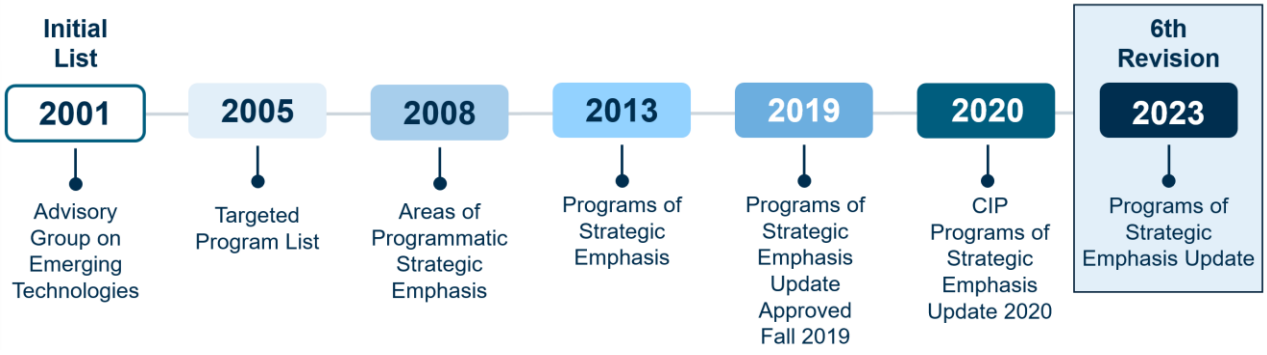
STATE UNIVERSITY SYSTEM OF FLORIDA

# Programs of Strategic Emphasis Update 2023 – Work Plan

Emphasizing and encouraging the development of academic programs with strategic significance is one of several tools used to better align the degree production goals of the State University System with the economic and workforce needs of Florida. Periodically, the Board of Governors' office conducts an environmental scan to identify labor market demand for university graduates. Several economic and workforce-related reports are reviewed during this process, and trends are identified to assist in updating the Board's official list of academic Programs of Strategic Emphasis. This process identifies occupational areas with high demand for postsecondary graduates and provides an opportunity to identify emerging and evolving business sectors and occupations. The Board approved updates to the Programs of Strategic Emphasis list in October 2019 due to changes in the economy and the job market and, most recently, in September 2020 to accommodate the Classification of Instructional Programs (CIP) 2020 taxonomy implementation.

The Board of Governors is now entering the sixth iteration of this exercise, with each yielding programs for the System upon which to strategically focus resources. Although there is considerable overlap in actual programs from one iteration to the next, the terminology has changed over time. The original methodology and program list were created as part of a 2001 Advisory Group on Emerging Technologies. The first revision occurred in 2005 as part of the development of the SUS Strategic Plan and was referred to as the Targeted Program List. The second revision was developed in 2008 and titled Areas of Programmatic Strategic Emphasis, which was also part of the Board of Governors' Strategic Plan. The third revision was carried out in November 2013 as part of the Board's Strategic Plan Alignment effort and became effective in the 2014-15 academic year. The title was simplified to Programs of Strategic Emphasis at that time. The fourth revision was approved on October 30, 2019, and the current iteration of the Programs of Strategic Emphasis list was approved by the Board on September 16, 2020. That list went into effect for the 2021-22 academic year and is the currently active list. Refer to Exhibit 1 for a historical timeline of Programs of Strategic Emphasis updates.

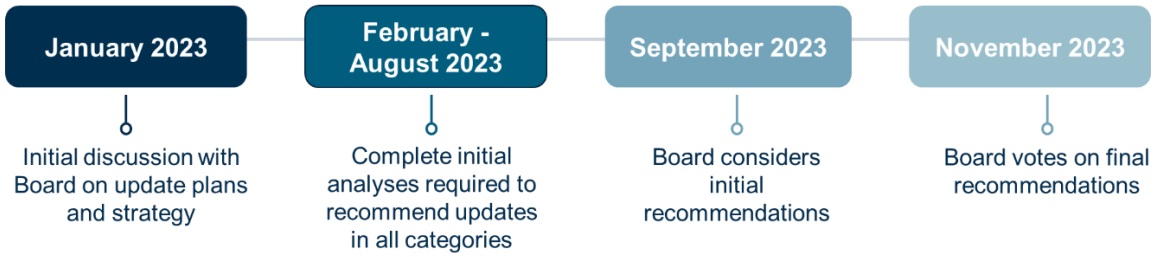
**Exhibit 1 – Historical Timeline**



Periodic updates to the Programs of Strategic Emphasis are critical because the categories and associated program list are used in key Board planning documents, including the annual Accountability Plans, Academic Program Coordination, and New Academic Program Approval. Programs of Strategic Emphasis have also become an important component of Performance Based Funding.

This sixth planned revision will be a comprehensive review of the entire Programs of Strategic Emphasis list. It will focus on replicating the entirety of the methodology as well as gaining the input of vital stakeholders during the review process. The methodology will be first reviewed for areas of improvement and will then be carried out to provide a list of staff recommendations for changes to the Programs of Strategic Emphasis. This process will begin in January of 2023 and is anticipated to conclude by the end 2023, as shown in Exhibit 2.

**Exhibit 2 – Tentative Update Timeline**




Stakeholder feedback will be integral during this year's review process. Board staff plan to confer with multiple partners to get input on the process and feedback on the general principles governing the methodology and resulting list. See Exhibit 3 below for a sampling of those stakeholders and reference Exhibit 4 for a table with major project tasks/milestones, estimated time requirements, and tentative start/completion dates.

**Exhibit 3 – Examples of Stakeholders**

**Stakeholder Feedback**

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

## Exhibit 4 – Major Tasks & Estimated Time Required

| | January | February | March | April | May | June | July | August |
|---|---|---|---|---|---|---|---|---|
| Review current methodologies and consider any possible improvements | 2 Weeks | | | | | | | |
| Meet with stakeholders | 6 Weeks | | | | | | | |
| Identify the recommendations of Florida's leading economic and workforce councils (key councils) and national reports | | 3 Weeks | | | | | | |
| Merge and evaluate the areas of interest and emphasis from the key councils to determine appropriate broad program categories that are in alignment | | 1 Week | | | | | | |
| Identify specific academic programs and program clusters by CIP code that should be included in each broad program category | | | 16 Weeks | | | | | |
| Consolidate all information into updated methodology documents and a new recommended program list | | | | | | 4 Weeks | | |
| Review the new list with leadership staff, incorporate feedback, and prepare Board meeting materials for September consideration | | | | | | | 2 Weeks | |

# Appendix A

## Methodology for Updating Programs of Strategic Emphasis in the State University System of Florida, Board of Governors 2019 Mid-Course Correction - 2025 Strategic Plan

**September 2019**

An essential component of the 2025 Strategic Plan mid-course correction initiative is the need to update the current State University System list of Programs of Strategic Emphasis (PSE). The Programs of Strategic Emphasis exist as one of several tools for aligning the degree production goals of the State University System with the economic and workforce needs of Florida. Also, the Programs of Strategic Emphasis are a component of Performance-Based Funding.

As in past revisions to the Programs of Strategic Emphasis list, a meta-analysis of the current reports and data of key economic and workforce councils in Florida was conducted. These "key councils" include Enterprise Florida, Inc., the Council of 100, the Florida Chamber of Commerce, and the Department of Economic Opportunity. Other organizations whose reports and data were used to inform this process include the Florida Center for Nursing, the Florida Department of Education, and the U.S. Department of Labor.

The methodology used to reevaluate assumptions and forecasts that provide the framework for targeting degree programs is relatively straightforward.

1) Identify the recommendations of Florida's leading economic and workforce councils (key councils) and national reports.
2) Merge and evaluate the areas of interest and emphasis from the key councils to determine appropriate broad program categories that are in alignment. This review did not reveal any reason to adjust the current broad program categories.
3) Identify specific academic programs and program clusters by CIP code[1] that should be included in the broad program categories (Appendix A).

The academic degree programs associated with the proposed new categories are identified in

Appendix A. An expanded list of all available programs for those targeted at the two and four-digit CIP code level can be accessed online.[2] It should be noted that not all the CIP codes found in the online expanded list represent programs currently offered within the State University System. Having a complete list allows for new degree programs to be appropriately categorized when they are added to the State University System Academic Degree Program Inventory. It should also be noted that a transition is underway from the current CIP 2010 taxonomy to the new CIP 2020 codes. During this transition, any CIP 2010 that qualifies as a

[1] CIP is the Classification of Instructional Programs code required for reporting degrees and enrollments to the National Center for Educational Statistics and used by the Board of Governors to inventory approved degree programs in the State University System (SUS). The standardized CIP code allows for comparative data to be collected and analyzed at both the state and national level.
[2] http://nces.ed.gov/ipeds/cipcode/default.aspx?y=55

PSE under this methodology and is moved to a new CIP code under the 2020 designation will automatically qualify as a PSE.

APPENDIX A: Proposed Programs of Strategic Emphasis for the State University System of Florida, Board of Governors 2025 Strategic Plan

**About CIPs**

The Classification of Instructional Programs (CIP) provides a taxonomic scheme that supports the accurate tracking and reporting of fields of study and program completion activity. CIP was originally developed by the U.S. Department of Education's National Center for Education Statistics (NCES) in 1980, with revisions occurring periodically since that time as new programs emerged and existing program curriculums evolved.

The CIP taxonomy is organized on three levels:

1. The two-digit series, representing the most general groupings of related educational programs (e.g., 14. Engineering)
2. The four-digit series, representing intermediate groupings of educational programs that have comparable content and objectives (e.g., 14.08 Civil Engineering)
3. The six-digit series, representing 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), online manual.[3]

## Proposed Categories for Programs of Strategic Emphasis with Associated CIP

### 1. Critical Workforce – Education

The Education category is largely based on the Florida State Board of Education's list of critical teacher shortage areas, which is published annually. This list can change from year to year but typically remains the same with only one or two additions/deletions. It is also important to consider the critical shortage list within the broader context of the workforce demand for teachers in all specialties, and for this reason, all teacher education programs were included in the original targeted list associated with the SUS 2005-2013 strategic plan.

It is proposed that the updated program list include all the programs related to teacher preparation and student counseling at the K-12 level. However, it is recommended that 13.0101 - Education, General be removed from the list as this program is overly broad, does not typically lead directly to teacher certification, and does not typically lead to employment as a K-12 teacher in an area of critical need per the Florida Department of Education. It is also recommended that 42.2805 – School Psychology be added to the list as this is a critical mental health support function for K-12 education.

[3] http://nces.ed.gov/ipeds/cipcode/default.aspx?y=55

The overall approach will allow for targeting academic programs at the 4-digit CIP code level and eliminate any need for annual updates to the category due to changes in the state board list or programmatic reorganizations at the universities.

**EDUCATION CIP CODES:**

- 13.0301 Curriculum and Instruction
- 13.10 Special Education and Teaching (all)
- 13.11 Student Counseling and Personnel Services (all)
- 13.12 Teacher Education and Professional Development, Specific Levels and Methods (all)
- 13.13 Teacher Education and Professional Development, Specific Subject Areas (all)
- 13.14 Teaching English or French as a Second or Foreign Language (all)
- 42.2805 School Psychology

### *2.* Critical Workforce - Healthcare

The Healthcare category is based primarily on workforce projections by the Florida Department of Economic Opportunity. These organizations have identified the healthcare professions that exist as critical shortage areas in Florida. Also, a shortage of nursing faculty is frequently cited as a critical need occupation because of the direct impact on registered nurse education programs.

There are several health-related technology and data management programs that have emerged in recent years as high-demand and high-wage occupations. Also, there is a consensus that Florida will need to expand its healthcare workforce in all related occupations as the population continues to grow and the state experiences a demographic transition as the Baby Boom Generation retires.

It is proposed that this category include all health-related degree programs (not just healthcare practitioners) under the 51 CIP Code, along with selected programs that may exist under other two-digit CIP families.

**HEALTHCARE CIP CODES:**

- 51 Health Professions and Related Programs (all)
- 30.1101 Gerontology

### 3. Economic Development - Global Competitiveness

The Global Competitiveness category represents more of an over-arching concept found in the various reports reviewed rather than a specific industry or occupational area. Degree programs that assist in making the SUS globally competitive can be found throughout the system across many disciplines, especially within the sciences, engineering, and information technology programs. However, some programs directly support globalization through program graduates and focused research. Some of these programs have an international focus, such as international affairs, international business, international construction, and international law. Area studies and foreign language programs that focus on critical trade partners or foreign competitors also fall under the broad umbrella of increasing globalization.

It is proposed that this category include only programs for which a strong case has been made for enhancing Florida's global competitiveness.

**GLOBAL COMPETITIVENESS CIP CODES:**

- 05.0103 Asian Studies/Civilization
- 05.0107 Latin American Studies
- 05.0134 Latin American and Caribbean Studies
- 05.0201 African-American/Black Studies
- 13.0701 International and Comparative Education
- 16.0101 Foreign Languages and Literatures, General
- 16.0102 Linguistics
- 16.0399 East Asian Languages, Literatures, and Linguistics, Other
- 16.0904 Portuguese Language and Literature
- 16.0905 Spanish Language and Literature
- 22.0210 International Business, Trade, and Tax Law
- 30.2001 International/Global Studies
- 45.0901 International Relations and Affairs
- 52.1101 International Business/Trade/Commerce
- 52.1502 International Real Estate - CIP assigned by BOG staff (does not exist in NCES)

## 4. Economic Development – STEM

STEM is a critical category in that it emphasizes the importance of science, technology, engineering, and mathematics programs to Florida's economy. Active STEM lists were researched to identify those that are used nationally to determine whether a program qualifies as STEM. Four such lists were selected as primary references to determine programs eligible to be added to the STEM PSE list, including those produced and published by the Florida Department of Economic Opportunity, the Department of Homeland Security, the National Science Foundation, and the Washington State Education Research and Data Center. Under this year's methodology, programs needed to appear on at least two of these four lists to be considered for addition to the STEM PSE list.

Many of the STEM academic programs can be targeted at the two-digit CIP level, and others can be targeted at the four- or six-digit level. However, there are STEM-related degrees at the four- and six-digit CIP level embedded in disciplines that are not generally associated with science, technology, engineering, and math, such as education and management. These have also been included in the list of STEM CIP codes.

**STEM CIP CODES:**

- 01.01 Agriculture, General
- 01.0308 Agroecology and Sustainable Agriculture
- 01.09 Animal Sciences
- 01.10 Food Science and Technology
- 01.11 Plant Sciences
- 01.12 Soil Sciences
- 01.9999 Agriculture, Agriculture Operations, and Related Sciences, Other
- 03 Natural Resources and Conservation (all)
- 04.0201 Architecture

- 04.0401 Environmental Design/Architecture
- 04.0601 Landscape Architecture
- 04.0902 Architectural and Building Sciences/Technology
- 04.0999 Architectural Sciences and Technology, Other
- 09.0702 Digital Communication and Media/Multimedia
- 11 Computer and Information Sciences and Support Services (all)
- 13.0501 Educational/Instructional Technology
- 14 Engineering (all)
- 15 Engineering Technologies and Engineering-Related Fields (all)
- 26 Biological and Biomedical Sciences (all)
- 27 Mathematics and Statistics (all)
- 29.0207 Cyber/Electronic Operations and Warfare
- 30.01 Biological and Physical Sciences
- 30.06 Systems Science and Theory
- 30.08 Mathematics and Computer Science
- 30.10 Biopsychology
- 30.15 Science, Technology, and Society
- 30.16 Accounting and Computer Science
- 30.17 Behavioral Sciences
- 30.18 Natural Sciences
- 30.19 Nutrition Sciences
- 30.25 Cognitive Science
- 30.27 Human Biology
- 30.30 Computational Science
- 30.31 Human Computer Interaction
- 30.32 Marine Sciences
- 30.33 Sustainability Studies
- 31.0505 Kinesiology and Exercise Science
- 40 Physical Sciences (all)
- 42.27 Research and Experimental Psychology
- 43.0106 Forensic Science and Technology
- 43.0111 Criminalistics and Criminal Science
- 43.0116 Cyber/Computer Forensics and Counterterrorism
- 43.0303 Critical Infrastructure Protection
- 45.0301 Archeology
- 45.0603 Econometrics and Quantitative Economics
- 45.0702 Geographic Information Science and Cartography
- 50.0102 Digital Media
- 52.0203 Logistics, Materials, and Supply Chain Management
- 52.1201 Management Information Systems, General
- 52.1301 Management Science
- 52.1302 Business Statistics
- 52.1304 Actuarial Science
- 52.1399 Management Sciences and Quantitative Methods, Other

**5. Critical Workforce – Gap Analysis**

Gap Analysis is a category that includes degree programs leading to the occupational categories projected to be critically under-supplied in the Board of Governors' analysis of labor

market projections and related degree production. Consequently, the academic programs included in this category correspond to Florida's high-need, high-wage occupational areas identified through the gap analysis. A comprehensive methodology for conducting the gap analysis is available on the Board of Governors' website.

Institutions will still be expected to work with local industries and employers to identify academic programs needed to support local or regional economic development and workforce needs.

This category only includes academic programs identified in the gap analysis that are not included in another category of Programs of Strategic Emphasis (e.g., industrial engineering would be captured under STEM, so it is not necessary to include it under gap analysis).

**GAP ANALYSIS CIP CODES:**

- 04.1001 Real Estate Development
- 09.0101 Speech Communication and Rhetoric
- 09.0900 Public Relations, Advertising, and Applied Communication
- 09.0902 Public Relations/Image Management
- 09.0905 Health Communication
- 19.0203 Consumer Merchandising/Retailing Management
- 43.0117 Financial Forensics and Fraud Investigation
- 43.0121 Suspension and Debarment Investigation
- 45.0602 Applied Economics
- 50.0401 Design and Visual Communications, General
- 50.0402 Commercial and Advertising Art
- 50.0404 Industrial and Product Design
- 50.0409 Graphic Design
- 50.0411 Game and Interactive Media Design
- 50.0702 Fine/Studio Arts, General
- 50.0705 Drawing
- 50.0706 Intermedia/Multimedia
- 50.0708 Painting
- 52.0205 Operations Management and Supervision
- 52.0301 Accounting
- 52.0303 Auditing
- 52.0304 Accounting and Finance
- 52.0305 Accounting and Business/Management
- 52.0801 Finance, General
- 52.0804 Financial Planning and Services
- 52.0806 International Finance
- 52.0807 Investments and Securities
- 52.0808 Public Finance
- 52.0809 Credit Management
- 52.1001 Human Resources Management/Personnel Administration, General
- 52.1003 Organizational Behavior Studies
- 52.1401 Marketing/Marketing Management, General
- 52.1402 Marketing Research
- 52.1403 International Marketing

- 52.1501 Real Estate
- 52.1601 Taxation
- 52.1701 Insurance

# Appendix B

## The 2019 Gap Analysis: Explanation of Method
## July 2019

As in the previous iteration of the gap analysis undertaken in 2013, supply was represented by the number of baccalaureate degrees awarded by Florida postsecondary institutions in 2017, as reported to the National Center for Educational Statistics' Integrated Postsecondary Educational Data System (IPEDS).[4] All educational institutions receiving Title IV Financial Aid (approximately 400 in Florida) are required to report these data to IPEDS, assigning a Classification of Instructional Programs (CIP) code to each educational program.

Demand was based on the Florida Department of Economic Opportunity's 2018-2026 Employment Projections.[5] Florida's Bureau of Workforce Statistics and Economic Research (WSER) produces these 8-year employment projections annually for all industries and occupations. 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). The projections are based on the separations methodology, which is a change from the previous replacement method. The new separations method considers transfers and exits rather than just replacement openings, which results in a more accurate picture of the workforce, generally reflecting a much higher number of job openings. The separations method better reflects 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.

The separations method:[6]

- is regression-based and statistically more robust than the prior method;
- incorporates demographic variables in its model and other longitudinal data from the CPS monthly surveys; and
- more accurately accounts for future occupational change by incorporating employment projections data, also from OES; and can quickly adjust to new occupations added to the classification system and more accurately estimate occupations with small employment levels.

Each occupation is assigned a Standard Occupational Classification (SOC) code[7] and an educational attainment level by the U.S. Department of Labor, Bureau of Labor Statistics (BLS).[8] The BLS taxonomy classifies occupations by the typical level of skills needed to enter an occupation. However, Florida's Workforce Estimating Conference has traditionally used a modified version of educational codes as determined by the Florida Department of Education (FLDOE). The FLDOE codes consider the minimum level of skills needed to enter an

[4] https://nces.ed.gov/ipeds/
[5] http://www.floridajobs.org/workforce-statistics/data-center/statistical-programs/employment-projections
[6] http://lmsresources.labormarketinfo.com/library/ep/separations_method_overview.pdf
[7] https://www.bls.gov/soc/
[8] https://www.bls.gov/

occupation. As per the 2013 analysis, this analysis uses the BLS taxonomy rather than the FLDOE coding. The BLS designation is used to determine the gap between supply and demand for workers at the bachelor's degree level in Florida because it provides the most accurate depiction of the actual educational level that workers should complete to meet job requirements.

For the 2019 gap analysis, a national CIP-SOC crosswalk[9] built by the BLS and the U.S. Department of Education's National Center for Education Statistics (NCES) was used as a basis for linking occupations (the SOC code) with their correlated educational programs (the CIP code). When warranted, supplemental CIP to SOC linkages were applied if the BLS crosswalk was deemed incomplete. Unfortunately, there is often no one-to-one correspondence between CIP and SOC codes because a given educational program can often lead to multiple occupations, and many different educational programs can often supply a given occupation. It is important to note that the educational attainment level was maintained when matching occupations and degree programs so that only the baccalaureate-level program completers were matched to occupations classified at the bachelor's level.

In an effort to limit the problem of occupations linked to multiple academic disciplines and potentially overstating supply, the two following strategies were used.

- Managerial occupations (SOC codes beginning with '11') were excluded from the analysis because they require certain levels of experience beyond a degree, and managerial occupations had the highest number of links to 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 also look from CIP-to-SOC to get a sense of all the occupations 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 the occupations (excluding managers) linked with the disciplines associated with the target occupation.

    - For example, the Financial Analyst occupation has 1,235 projected annual openings that are potentially supplied by the 3,378 graduates annually earning bachelor's degrees from seven academic disciplines: Financial Mathematics, Accounting and Finance, Accounting and Business/Management, General Finance, International Finance, Investments and Securities, and Public Finance (the SOC-to-CIP analysis). At first glance, it appears that there is a substantial oversupply of graduates qualified for the financial analyst openings. However, if one considers the other perspective (the CIP-to-SOC analysis), one also sees that these graduates are qualified for multiple occupations with a combined 18,678 annual openings. (Also note that, as explained above, managerial occupations were excluded from the gap analysis because these occupations also generally require experience.) Therefore, the openings for financial analysts comprised only 6.6% of all the jobs available to these graduates (1,235 financial analyst openings divided by 18,678 total openings). Therefore, only 6.6% of the initial supply of 3,378 graduates is used in the gap analysis, resulting in an adjusted annual supply of 223.

[9] https://nces.ed.gov/ipeds/cipcode/resources.aspx?y=55

Once the supply and demand data were calculated for each occupation, the 84 occupations that showed any supply gap (where supply was less than the projected annual demand) were sorted. Next, three occupations were removed from consideration because there were no related CIP codes, indicating systemic classification error.[10] From the remaining list of occupations, a 100-opening threshold was used as an analytical safety net to account for methodological uncertainties (e.g., CIP-SOC mismatches and the vagaries of projecting long-term occupational demand). Additionally, certain SOC and CIP codes were excluded, including those not related to the system mission and those ending in 99, which is used to designate a catch-all category and does not imply a strong educational program-to-occupation relationship.

The final phase of the analysis focused on targeting those academic programs with the highest gap, growth, and wage. The need for additional graduates in these occupations was further confirmed by examining and applying certain contextual metrics, including annual projected demand growth rates and average median wage rates. Staff reviewed the initial gap analysis results, which identified over 140 potential programs, and determined additional criteria that refined the number of programs to focus the list on high-demand, high-growth, and high-wage occupations. The additional criteria developed were to include only occupations that have a projected growth rate that is equal to or higher than the statewide average growth rate for all jobs of 10.1% and a median salary of at least $45,000 per year. It is important to note that certain occupations fell outside the scope of the analysis because they are educationally coded either above the baccalaureate level (e.g., physicians) or below the baccalaureate level (e.g., technicians).

[10] The three occupations were Compliance Officers [13-1041]; Fundraisers [13-1131]; and Business Operations Specialists, All Other [13-1199].