



**GRAY**  
DECISION INTELLIGENCE

# **Program Evaluation System**

## **Overview of Markets Module**

## Elevate Your Decision-Making with Gray Decision Intelligence

Gray Decision Intelligence (Gray DI) is pleased to present this overview of PES Markets, a module of our Program Evaluation System (PES) software application.

Gray DI software helps higher-education institutions make better-informed decisions that improve growth, efficiency, and student success. The Gray DI academic Program Evaluation System (PES) is the only platform that provides data by program on external markets and institutional performance.

- **PES Markets** includes data on student demand, jobs, skills, and competition for over 1,500 academic programs. It predicts potential enrollment for your current and new programs. It corrects labor supply data; for example, 200,000+ online students are usually shown at headquarters' locations; Gray DI reports them where they live.
- **Data Dashboards:** Your subscription to PES Markets includes access to Gray DI's Data Dashboards, which offer robust datasets on **Job Postings**, **Program Enrollment**, **Google Keyword Searches**, **International Student Demand**, **Athletics Benchmarking**, and **Non-Degree Demand**.



## Make Better, Faster Decisions on Which Programs to Start, Stop, or Grow.

PES software, combined with Gray DI Implementation Services, enables institutions to make data-informed program decisions that maximize outcomes for students, institutions, and their constituencies.

### Grow Enrollment and Revenue

Identify new program opportunities with the highest potential for growth in your markets and existing programs for investment and growth.

### Reduce Cost

Highlight weak programs in tough markets that you can cut. Automate time-consuming work on program evaluation.

### Accelerate Time to Market

Employers, competitors, and prospective students are moving fast. PES Markets provides all the data you need in one place to make program decisions faster while reducing internal obstacles to implementation. It establishes a consistent, well-understood approach to program evaluation, which will speed up approvals so you can get to market quickly and stay ahead of the crowd.

The goal of a program portfolio strategy fueled by PES is to enable investments in programs that drive institutional growth, financial vitality, and realization of the mission. PES Markets brings data, rigor, speed, and scale to program analysis. Schools no longer need to evaluate one new program at a time—and hope to hit a winner. You can evaluate all potential new programs and pick the best for development. Schools can also evaluate all current programs by campus and decide where to invest and where to cut. The time required to make programmatic decisions can be reduced from months to days (or even minutes), which is increasingly important as the pace of change in education continues to accelerate and competition becomes more intense.

Fundamentally, PES Markets enables you to:

## **1. Launch the best new programs**

A successful new program can attract hundreds of students, stimulate millions in tuition and alumni giving, and generate considerable prestige. Using PES, institutions can consider all programs and select the best for your school.

## **2. Reduce the risk of failure**

Poor program decisions incur actual losses and opportunity costs. The most visible penalties are for new programs that fail. Fortunately, these failures tend to be small, since few students enroll, but they are expensive, somewhat embarrassing, and may increase regulatory risk.

## **3. Avoid missed opportunities**

Traditional, one-at-a-time program evaluations allow colleges to identify good programs to launch; however, they are often not the best programs. This leads to the most expensive error in program strategy: missing the biggest opportunities for growth. PES, combined with the judgment of faculty and institutional leaders, helps schools choose the best programs.

## **4. Ensure student demand**

PES contains metrics on student demand including Google keyword searches, job postings, market completions, and enrollment. This information helps your team evaluate student demand for current and new programs.

## **5. Properly allocate resources to existing programs**

Existing programs fall into three groups: Start, Stop, or Grow. Deciding which programs fall into each category ensures that the right programs receive the resources they need.

## **6. Focus program research and development resources**

Program research and development become more expensive as the work on a program proceeds. PES enables you to quickly select the programs that merit more expensive research and development.

# PES Markets



Gray DI

PES

Markets

## Better Inform Program Decisions with PES Markets

For over 1,500 programs and six award levels, PES Markets provides the best available information on student demand, competition, wages, skills, and jobs. Unlike other sources, PES analyzes data on careers by academic program and aligns programs with the jobs graduates actually get – by degree level. It provides data on student demand so you can identify opportunities for growth and efficiency. It allows you to evaluate hundreds of programs in minutes or drill down for the details of one program.



### STREAMLINED PROGRAM EVALUATION

Access over 40 essential metrics, including Student Demand, Employment Opportunities, and Competitive Intensity.



### CUSTOMIZED DATA SETS AND SCORING

Tailor market definitions and scoring to align with your institutional priorities. Use your scoring to identify opportunities to start, stop, or grow programs.



### COMPREHENSIVE REPORTING AND ANALYSIS

Pull custom reports in seconds, export data to Excel, and download visualizations in PNG format.



### UNPARALLELED DATA

Gain insights into Student Demand, Employment, Skills, Wages, Competitive Intensity, and Degree Fit.

### Rank and Compare Programs

45.0603 Econometrics and Quantitative Economics	99
45.0601 Economics, General	99
45.0401 Criminology	96
45.1001 Political Science and Gov't, Gen'l	96
45.0901 International Relations/ Affairs	96
45.1101 Sociology	95
45.0201 Anthropology	91
45.1102 Applied/ Public Sociology	88
45.0203 Medical Anthropology	86
45.1103 Rural Sociology	86
45.1099 Political Science and Government, Other	86
45.0101 Social Sciences, General	83
45.0602 Applied Economics	83
45.1004 Political Economy	81
45.1201 Urban Studies/ Affairs	78
45.9999 Social Sciences, Other	78
45.0604 Development Economics and Int'l Dev.	73
45.1301 Sociology and Anthropology	70
45.0202 Physical and Biological Anthropology	68
45.0199 Social Sciences, Other	68
45.0902 National Security Policy Studies	65
45.0605 International Economics	65
45.0701 Geography	61
45.0699 Economics, Other	55

### Student Demand

Student Demand				
Score: 24 Percentile: 98				
Category	Pctl	Criterion	Value	Score
	86	Google Search Volume (3 Months)*	58,208	2
	85	International Page Views (12 Months)	853	NS
	89	New Student Enrollment Volume (12 Mo.)	19,873	8
			41,157	4
			1,355	4
			42,512	4
			-16,447	-1
			49	1
			595	3
			0%	-1
			1%	0

### Competitive Intensity

Competitive Intensity				
Score: -9 Percentile: 3				
Category	Pctl	Criterion	Value	Score
	99	Campuses with Graduates**	1,029	-8
	85	Campuses with Grade YoY Change (Units)**	1	-1
	97	Institutions with Online In-Market Students**	46	NS
	91	Average Program Completions	40	2
			16	0
			0	0
			0	0
			\$11	-2
			0.08	0
			65	NS
			6%	NS
			3%	NS

### Employment Opportunities

Employment				
Score: 3 Percentile: 94				
Category	Pctl	Criterion	Value	Score
	99	Job Postings Total (12 Months)	123,308	2
	99	BLS Current Employment	283,424	2
	99	BLS Annual Job Openings	28,950	NS
	81	Underemployed Percent of Graduates**	48%	-2
	82	BLS 1-Year Historical Growth	-0.8%	NS
	83	BLS 3-Year Historic Growth (CAGR)	2.3%	0
	66	BLS 10-Year Future Growth (CAGR)	1.6%	0
	74	Job Postings per Graduate	2.9	0
	80	BLS Job Openings per Graduate	0.7	NS
	64	Entry 25th Percentile	\$47,803	NS
	73	Post Entry Median	\$74,584	NS
		Post Entry w/Associates Median	NA	NS
	68	Post Entry w/Bachelors Median	\$77,133	NS
	69	Post Entry w/Masters Median	\$98,061	3
	49	Post Entry w/Doctoral Median	\$101,657	0
	84	% with Any Graduate Degree*	53%	NS
	48	% with Masters*	25%	NS
	92	% with Doct/Prof Degree*	28%	NS
	87	% Unemp. (Age <30)**	4%	-2
	0	% in Direct Prep Jobs*	0	NS

# PES Data Dashboards



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## JOB POSTINGS

Our dashboard features millions of US employer job postings with powerful customization tools for users. Explore national and regional job trends, academic disciplines, employers, and more, even individual postings.



## PROGRAM ENROLLMENT

Track student enrollments by program, award level, and location. Get a clear picture of program demand and trends, including Total Enrollment and First-Time Full-Time student data.



## KEYWORD SEARCH

Track Google search volumes for academic programs at county and state levels, revealing demand trends and competitors. Compare your institution's brand awareness to 1,000+ colleges.



## INTERNATIONAL STUDENT DEMAND

Analyze global academic program demand with Studyportals' data. Explore pageviews by discipline, student origin, award level, destination, and modality across 3,750+ institutions in 110 countries.



## ATHLETICS BENCHMARKING

Get a comprehensive view of varsity athletic program finances and external benchmarks for expenses, staff, and participation. Customize and optimize your athletic programs for strategic decisions.



## NON-DEGREE DEMAND

Access data on thousands of courses and specializations, track enrollments, and explore popular courses and skills by course, provider, and more.

Gray's PES approach to academic program evaluation and prioritization combines comprehensive and customized data, advanced analytics, and a robust BI platform to improve and accelerate the evaluation of current and potential programs.

- 1. Comprehensive and Customized Data:** PES Markets combines over a dozen data sources on the market drivers of a successful academic program, including enrollment, Google keyword searches, demographics, competition, job openings, job postings, wages, and placement rates. We have mapped all the data down to the census tract level so you can pull data for the exact geographies you serve or aspire to enter. We have developed sophisticated crosswalks that link related variables, such as jobs, skills, and wages, to academic programs. We have invested in a BI tool (Qlik) that enables you to rigorously screen hundreds of programs in several markets at one time.
- 2. Advanced Analytics:** Often, institutions research a few new programs per year and rely on manual processes to pull data from industry and regulatory databases. This approach has several weaknesses. It tends to be slow, error-prone, and difficult to scale up. Resource constraints may lead to simplistic analyses, such as lists of competitors that miss IPEDS data on program size. BLS data may be pulled for the most common job for a program, ignoring other fields that compete for these jobs, and other jobs that may be appropriate for graduates. Since not all program options can be explored manually, programs that emerge from this approach may be good, but far from the best programs the school could have chosen, leaving millions of dollars in potential revenue on the table.

In contrast, PES enables you to evaluate and compare all potential IPEDS programs for each individual local market using the best available data on student demand, competitive intensity, and job opportunities.

- 3. Robust BI Platform:** PES provides its data using secure, private, cloud-based servers and a BI application called QlikView. This combination ensures that you have fast, reliable access to PES from any device, anywhere there is internet access. In particular, Qlik allows you to point and click to select data (no SQL needed) and pull a custom report in a few seconds from the millions of records in our dataset.

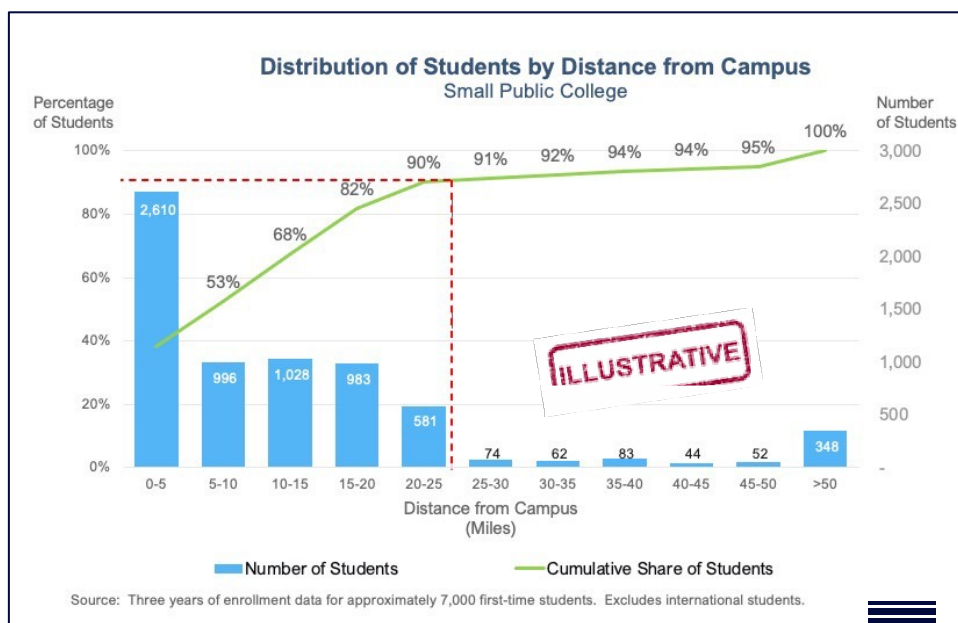
To customize PES Markets for your institution, we pull data for your markets and work with you to tailor a program scoring rubric for your school. Your markets are custom-defined, typically a radius around your main campus and other campus locations or geographic regions you serve. Using the data on these markets, we score current programs and work with you to refine the scoring rubric until it correctly evaluates your current programs. The validated scoring rubric is then applied to over 1,400 IPEDS programs in Markets. A typical work plan is outlined below:

- 1. Conduct Kick-off Meeting:** This meeting will help Gray begin to set up your instance of PES. We will review the tasks and schedule for your system installation. You will let us know the users you would like trained. We ask for the data needed to define custom markets. We will also give your team an overview of
- 2. Define the Relevant Market:** We work with you to clarify the geographic scope for program analysis (e.g., within 30 miles of a city center). In most cases, our clients provide a list of campus locations and a file of starts that Gray analyzes to find a radius that covers substantially all your students.
- 3. Create Custom Markets:** For the selected geographic areas, Gray creates a unique instance of PES with the relevant student demand, competition, and employment data for all programs in IPEDS. This includes metrics created from National Student Clearinghouse enrollment, IPEDS completions, BLS employment and job openings, job postings, and wages.
- 4. Optional Draft and Refine Scoring Rubric:** Your original instance of PES comes with generic scoring rules for ranking programs and markets. In this task, we meet with you twice to refine and customize these scoring rules and ensure that the scoring correctly identifies programs that fit your goals and strategies.
- 5. Provide User Training:** Once Markets is customized and configured, we provide you with secure login details and one half-day of training for your users. In the training session, we start with an explanation of the data we use and its limitations. We review the scoring system and help your users learn to pull program reports by program and location.
- 6. Refresh Data:** As part of your subscription, we refresh your instance of Markets as new data becomes available. Our PES Markets Data Dashboards are updated monthly. We update monthly for keywords, job postings data, international page views, and non-degree demand, and annually for data derived from IPEDS and BLS. Enrollment data is updated three times per year by term.
- 7. Provide Ongoing Support:** Gray's Customer Support Hub is available 24/7 on our website, and our Customer Success team hosts monthly office hours to answer questions and discuss new features or use cases. We provide a limited amount of coaching to help your users get the most value from our systems. For example, on request, we will walk them through how to pull custom data and reports. We also answer questions about data interpretation. We have also reviewed and commented on draft analyses using data from these systems. This service is intended to support your use of PES but is not a substitute for a consulting or analytical support engagement. Therefore, Gray reserves the right, at Gray's sole discretion, to limit the amount of coaching provided.



PES allows for custom market analytics. Because we map market data down to the census tract level (tracts are twice as precise as zip codes), PES can be customized to your exact market definitions. Using census tracts also ensures PES data aligns precisely with US Census data on population, ethnicity, income, and other factors. Gray will work with you to clarify the geographic scope for program analysis (e.g., within 30-35 miles of your campuses for on-ground programs, or a larger radius for online programs). This task may involve discussions about whether to include or exclude particular markets or sites. We can create multiple market definitions to align with different campuses, programs, degree levels, and/or modalities.

In the example below, 90% of students come from within 25 miles of a campus. In this case, a 25-mile radius would be appropriate for defining markets since it would include the vast majority of students without accidentally including potential students, competitors, or jobs that are not really part of the college's market.





For the selected geographic markets, Gray creates a dataset for all programs in IPEDS. We pull all the data for the radius you choose, around each of your campuses. Using Qlik, you can evaluate campuses one at a time, in groups, or in total.

Our program evaluation criteria fall into four categories: student demand, employment, competitive intensity, and degree fit. Within each category, we use several different metrics to cross-validate the information and provide a comprehensive rating. We can also construct additional or different metrics to better align with your view of the market. For example, different institutions target very different mixes of award levels for their programs. The chart below illustrates the categories and metrics we normally use.

## Student Demand

- **Keyword Search Volume:** Indexed units and % growth
- **Enrollment:** Units and % growth
- **Completions:** Units, unit growth, % growth, in-market students
- **International:** Student page views

## Employment

- **Employment:** Total, % growth, annual openings, 10<sup>th</sup> percentile and mean wages
- **Wages** by major and career stage.
- **Job Postings:** Units, unit growth, % growth, and job postings per graduate
- **Placement Rates:** % of graduates employed

## Degree Fit

- **Degree Level:** % of completions and enrollment by degree level
- **Degree Level:** % of current workers by level of educational attainment
- **Cost:** National instructional cost index, student:faculty ratio index

## Competitive Intensity

- **Completions:** Total and % change in number of competitors, unit and % change in program size, completions per capita
- **Programs Offered Online:** % of programs offered online, % of completions in online programs, online completions for in-market students.
- **Keyword Search:** Total and % change, cost per click, competitive index

PES includes a **scoring rubric** in which you can assign values for every metric. It sums these values to calculate scores for each program in each of the four categories: student demand, employment opportunities, degree fit, competitive intensity, as well as an overall score for each program. We will work with you to refine the rubric and ensure that it correctly identifies programs that fit your strategy.

The image below shows a scoring rubric for a few of the student demand metrics in a selected market. The columns list the metrics used for scoring. The area below each column is a user-editable table for setting scoring rules.

Category	Min Score	Max Score	% of Max
Student Demand	-6	40	47%
Employment	-27	25	29%
Competitive Intensity	-21	20	24%
Degree Fit	0	0	0%
Totals	-54	85	

Select Scoring Category Below:

- Scoring Rubric Options
- Student Demand: Size**
- Student Demand: Growth
- Competitive Intensity: Volume
- Competitive Intensity: Saturation
- Employment: Size & Growth
- Emp.: Saturation & Pay
- Employment: ACS Outcomes
- Degree Fit: Completions
- Degree Fit: Educational Attainment
- Degree Fit: Cost Benchmarks

**Set Percentile**  
 >= High  
 >= Medium  
 >= Low  
 <= Minimum

Percentile High	98	98	98	98
Percentile Med	95	95	95	95
Percentile Low	90	90	90	90
Percentile Min	80	80	80	80

**Set Score**  
 High to 100  
 Med to High  
 Low to Med  
 Min to Low  
 0 to Min

High to 100	8	0	8	4
Med to High	6	0	6	3
Low to Med	4	0	4	2
Min to Low	2	0	2	1
0 to Min	0	0	0	0

In the “Set Percentile” section (blue box) you can define your percentile targets for each metric.

Next, you can assign scores for each percentile target in the “Set Score” section (green box).

Size: New Student Enrollment Volume (12 Mo.)	Size: International Page Views (12 Months)	Size: Google Search Volume (3 Months)*	Size: Sum of On-ground and Online Completions	Size: Online Completions by In- Market Students
Benchmark Value: 140,856	Benchmark Value: 7,867	Benchmark Value: 1,553,669	Benchmark Value: 278,856	Benchmark Value: 70,700
Percentile: 99	Percentile: 96	Percentile: 100	Percentile: 99	Percentile: 99
Score: 8	Score: 0	Score: 8	Score: 4	Score: 4

Pctl	Value	Pctl	Value	Perc	Value	Pctl	Value	Pctl	Value
100	398,569	100	112,825	100%	1,553,669	100	408,003	100	144,044
98	25,262	98	10,480	98%	336,664	98	32,367	98	5,496
95	12,298	95	5,253	95%	165,835	95	12,816	95	1,774
90	6,388	90	1,974	90%	73,242	90	6,736	90	789
80	2,525	80	0	80%	40,968	80	2,449	80	241
70	1,272	70	0	70%	19,950	70	1,165	70	96
50	349	50	0	50%	6,050	50	333	50	16
20	42	20	0	20%	960	20	47	20	0
10	8	10	0	10%	430	10	13	10	0
5	1	5	0	5%	200	5	4	5	0
2	0	2	0	2%	66	2	1	2	0
0	0	0	0	0%	0	0	0	0	0

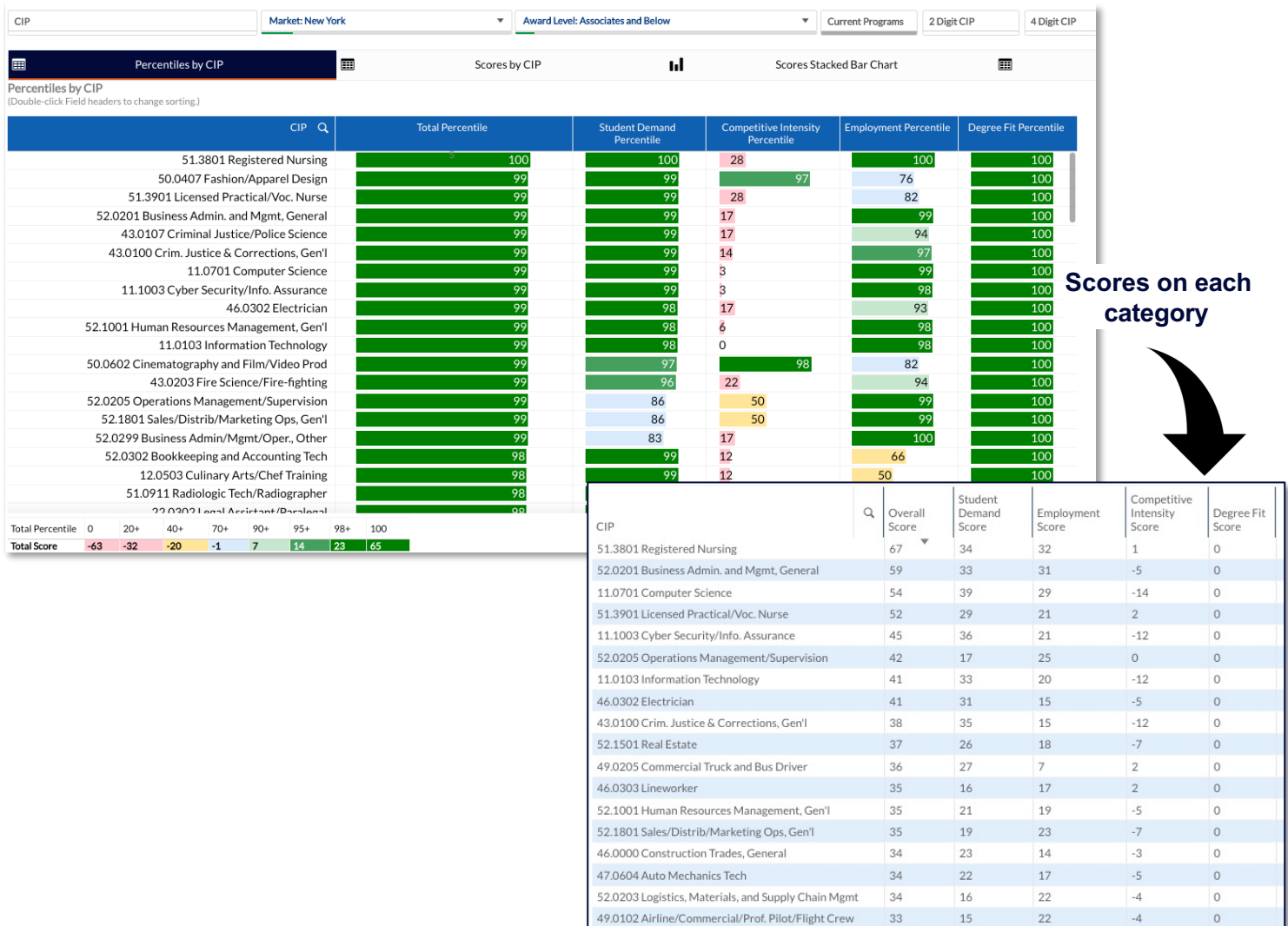
To inform your scoring decisions, the next section (red box), shows percentile values for each metric in that market. This information allows you to set targets that reflect the actual values achieved in this market. As you reset the targets and weights, the scores for the program being evaluated (gold box), automatically update.

There are similar scoring sheets for employment opportunities, competitive intensity, and degree fit.

PES produces a **Program Ranking Report**. Once you set your scoring and select a market, the Program Ranking Report scores and ranks your current programs, all other IPEDS programs, and any other groups of programs you choose. This report allows you to identify current programs with strong growth potential and the best new programs to offer in this market. It will also identify current programs that may not be a good fit for the market.

The example below shows the top-scoring associate programs in New York State. The report ranks programs by overall market score (top-to-bottom). The bar colors represent the scores the program received on each individual component. This allows you to see, at a glance, how each demand category contributes to the overall market score for the program.

A unique feature of PES is the availability of data on student demand. Many program assessments focus on labor market statistics to ensure program graduates can find jobs. While vitally important, PES also tracks student demand to ensure there is enough interest among prospective students to fill seats.

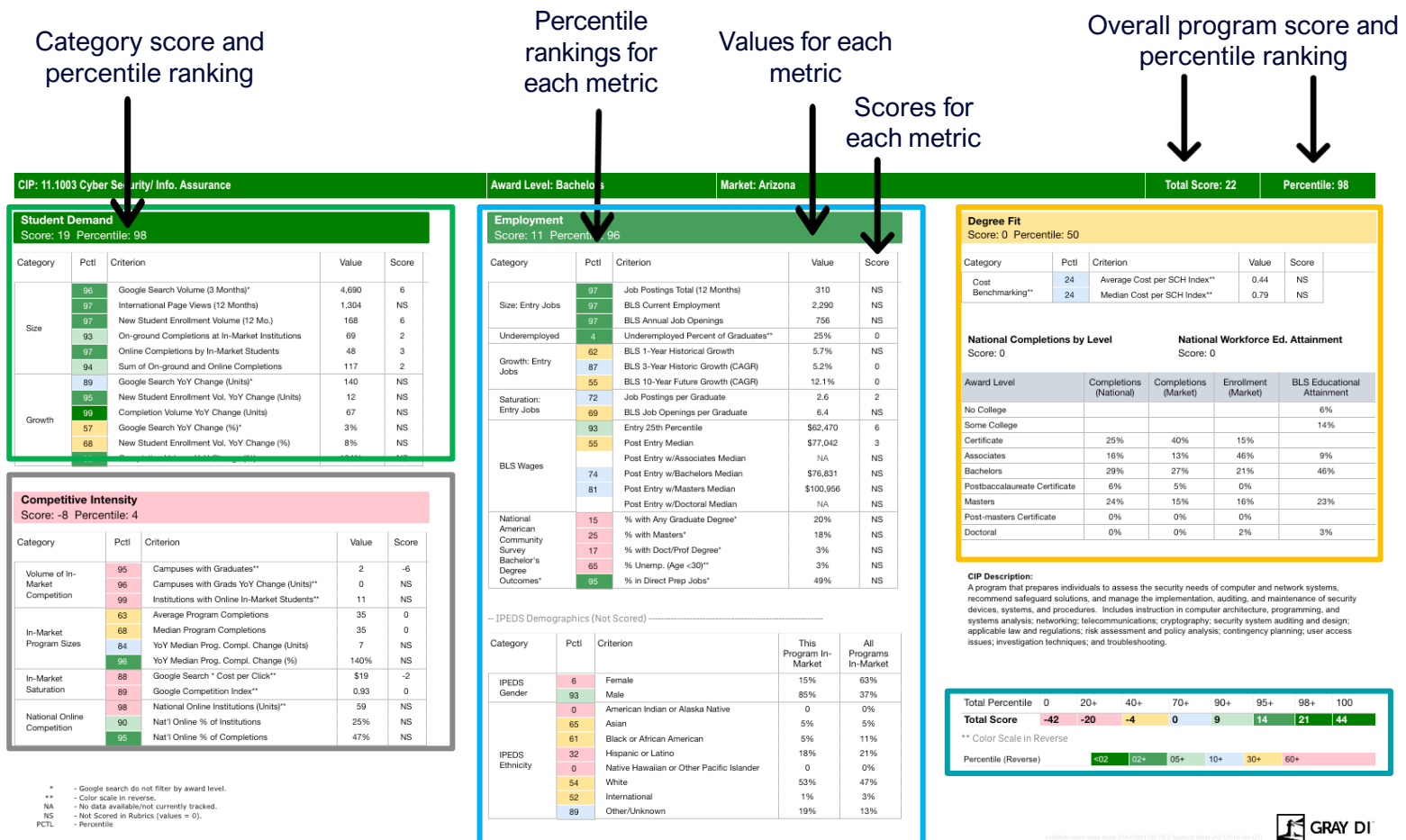


The ranking is a starting point for program decisions. PES also provides a Program Scorecard with data and your scores on over 50 metrics for each program in a single view. Below is an illustrative Program Scorecard for bachelor's-level Cybersecurity programs in the Arizona market.

The scorecard is broken into quadrants that correspond to the market demand categories: student demand (green box), competitive intensity (gray box), employment opportunities (blue box), and degree fit (gold box). Within each quadrant, the raw value for each criterion is shown in the Value column, and the score associated with that value is shown in the Score column. The Percentile column indicates how each category's value and score compare to all other programs in the market for that criterion. A percentile color key is included at the bottom of the scorecard (teal box).

For example, the scorecard below shows there were 168 new student enrollments at the bachelor's level for this program; this enrollment volume is in the 97th percentile for all programs in the market and, therefore, is shaded in green and receives a score of 6 for that metric.

Aggregated scores for each demand category are shown next to the category label and an Overall Score for the program is shown at the top of the scorecard with a color-coded box to indicate the program's percentile rank compared to all other programs in the market.



The Student Demand metrics included in PES (referenced on the sample scorecard on the previous page and shown in more detail below) quantify student interest in academic programs by location, degree level, and modality. PES includes several data sources to triangulate on total volume and trends in student demand. The most authoritative and complete source is IPEDS (Integrated Postsecondary Education Data System), which includes data on completions by program for all Title IV institutions. It tracks completion data by program and degree level, from certificates to post-docs, so you can tell roughly how big a program is, and whether it has been growing.

Unfortunately, IPEDS data is intrinsically old: people choose their major years before they graduate, so program completions reflect decisions made four years earlier, or more. To address this issue, Gray developed a data set using National Student Clearinghouse enrollment data, which we update with new enrollment volumes three times a year. We also track Google search volumes for over 15,000 program keywords for over 900 IPEDS CIP codes, which we update with new search volumes each month. International student demand captures the number of pages viewed by program, country of origin, and destination location for students around the world.

This data includes information on the student's location, degree level sought, program of interest, and whether they want to take it online or on-campus.

Unique to PES, we have also added estimates of online completions by in-market students, based on data from IPEDS, NC-SARA, and our proprietary brand database, to understand how many in-market students are completing the program online, including those that complete at out-of-market institutions. This can be an important indication of how many in-market students are “exporting” tuition revenues to out-of-market institutions and can help colleges and universities prioritize distance education efforts.

The system includes all current data for these metrics, as well as year-over-year changes, so you can see if demand is trending up or down in each category.

## Program Scorecard: Student Demand

Student Demand Score: 19 Percentile: 98				
Category	Pctl	Criterion	Value	Score
Size	96	Google Search Volume (3 Months)*	4,690	6
	97	International Page Views (12 Months)	1,304	NS
	97	New Student Enrollment Volume (12 Mo.)	168	6
	93	On-ground Completions at In-Market Institutions	69	2
	97	Online Completions by In-Market Students	48	3
	94	Sum of On-ground and Online Completions	117	2
Growth	89	Google Search YoY Change (Units)*	140	NS
	95	New Student Enrollment Vol. YoY Change (Units)	12	NS
	99	Completion Volume YoY Change (Units)	67	NS
	57	Google Search YoY Change (%)*	3%	NS
	68	New Student Enrollment Vol. YoY Change (%)	8%	NS
	95	Completion Volume YoY Change (%)	134%	NS

The Employment Opportunities data in the scorecard quantifies labor market data for all academic programs in a geographic market. Gray compiles data from several sources, including our proprietary job postings database, an enhanced CIP-SOC crosswalk based on ~70 million profiles in our Alumni Insights dashboard, Bureau of Labor Statistics employment and wage data, and American Community Survey (ACS). We also provide metrics on Job Postings and Job Openings per Graduate.

A sample of the Employment section of a program scorecard is shown below.

## Program Scorecard: Employment Opportunities

### Employment

Score: 11 Percentile: 96

Category	Pctl	Criterion	Value	Score
Size: Entry Jobs	97	Job Postings Total (12 Months)	310	NS
	97	BLS Current Employment	2,290	NS
	97	BLS Annual Job Openings	756	NS
Underemployed	4	Underemployed Percent of Graduates**	25%	0
Growth: Entry Jobs	62	BLS 1-Year Historical Growth	5.7%	NS
	87	BLS 3-Year Historic Growth (CAGR)	5.2%	0
	55	BLS 10-Year Future Growth (CAGR)	12.1%	0
Saturation: Entry Jobs	72	Job Postings per Graduate	2.6	2
	69	BLS Job Openings per Graduate	6.4	NS
BLS Wages	93	Entry 25th Percentile	\$62,470	6
	55	Post Entry Median	\$77,042	3
		Post Entry w/Associates Median	NA	NS
	74	Post Entry w/Bachelors Median	\$76,831	NS
	81	Post Entry w/Masters Median	\$100,956	NS
		Post Entry w/Doctoral Median	NA	NS
National American Community Survey Bachelor's Degree Outcomes*	15	% with Any Graduate Degree*	20%	NS
	25	% with Masters*	18%	NS
	17	% with Doct/Prof Degree*	3%	NS
	65	% Unemp. (Age <30)**	3%	NS
	95	% in Direct Prep Jobs*	49%	NS

-- IPEDS Demographics (Not Scored) -----

Category	Pctl	Criterion	This Program In-Market	All Programs In-Market
IPEDS Gender	6	Female	15%	63%
	93	Male	85%	37%
IPEDS Ethnicity	0	American Indian or Alaska Native	0	0%
	65	Asian	5%	5%
	61	Black or African American	5%	11%
	32	Hispanic or Latino	18%	21%
	0	Native Hawaiian or Other Pacific Islander	0	0%
	54	White	53%	47%
	52	International	1%	3%
	89	Other/Unknown	19%	13%



PES includes job posting data in the Employment quadrant of the program scorecard. This data includes:

- Count of annual job postings
- Job postings per graduate
- Job openings per graduate
- BLS Wages (early- and mid-career wages, wages by educational attainment)

Unlike BLS, this data is current (to the most recent quarter) and tracks actual postings, rather than survey data. The example below shows past year job postings in the US, by program. Data is customized for each institution to pull job postings by geographic market, award level, and program.

## Job Postings and Wages by Program – Arizona

CIP	Size Entry: Job Postings Total (12 months)	Saturation Entry Jobs: Job Postings per	Saturation Entry Jobs: BLS Job Openings per	BLS Wages Entry Jobs: BLS 25th-Percentile Wages	BLS Wages Post-entry: BLS Median Wages	BLS Wages Post-entry: BLS Median Wages w/Bachelors	BLS Wages Post-entry: BLS Median Wages w/Masters	BLS Wages Post-entry: BLS Median Wages w/Doctoral
51.3801 Registered Nursing	13,743	3.2	0.9	\$70,797	\$81,822	\$77,110	\$95,549	\$103,682
52.0201 Business Admin. and Mgmt, General	6,632	3.3	9.2	\$50,505	\$80,641	\$76,815	\$100,591	\$103,771
42.0101 Psychology, General	3,277	1.7	3.9	\$43,922	\$74,876	\$68,651	\$83,173	\$100,484
11.0701 Computer Science	2,689	2.3	19.5	\$68,931	\$96,440	\$91,471	\$114,036	\$118,462
52.1401 Marketing/ Marketing Mgmt, General	2,011	2.7	5.5	\$48,282	\$77,460	\$74,672	\$96,605	\$101,887
52.0301 Accounting	1,907	2.8	7.7	\$56,757	\$90,932	\$85,448	\$112,580	\$109,477
52.0801 Finance, General	1,831	2.3	12.5	\$52,957	\$87,520	\$80,901	\$109,365	\$106,310
13.1202 Elementary Education and Teaching	1,704	1.6	1.3	\$43,101	\$60,770	\$56,531	\$71,037	\$94,114
26.0101 Biology/ Biological Sciences, Gen'l	1,413	0.9	2.4	\$44,643	\$80,644	\$73,407	\$88,791	\$95,893
09.0101 Speech Communication and Rhetoric	1,383	1.4	3.4	\$47,762	-	-	-	-
45.1001 Political Science and Gov't, Gen'l	1,201	1.7	5.0	\$47,567	\$83,136	\$74,016	\$92,698	\$100,617
43.0100 Crim. Justice & Corrections, Gen'l	1,031	1.4	4.8	\$45,336	\$72,371	\$68,631	\$85,411	\$99,832
45.1101 Sociology	985	3.8	8.8	\$44,401	\$72,873	\$67,970	\$83,633	\$99,716
23.0101 English Language and Lit., Gen'l	928	2.1	4.7	\$44,304	\$74,034	\$67,825	\$81,768	\$97,875
45.0601 Economics, General	854	2.1	10.2	\$52,746	\$88,341	\$79,897	\$105,121	\$103,138
31.0505 Kinesiology and Exercise Science	837	2.1	5.2	\$43,430	\$72,416	\$67,568	\$86,178	\$100,495
24.0101 Liberal Arts/Sciences/ Studies	827	1.2	2.5	\$44,742	\$71,928	\$67,578	\$83,741	\$98,303
30.9999 Multi-/Interdisc. Studies, Other	798	1.7	3.4	\$44,742	-	-	-	-
11.0103 Information Technology	747	4.4	15.9	\$62,518	\$89,086	\$85,838	\$110,046	\$112,622
54.0101 History, General	746	2.5	5.9	\$44,954	\$77,955	\$70,377	\$86,474	\$99,539
14.1901 Mechanical Engineering	718	1.1	4.2	\$64,917	\$94,327	\$87,715	\$108,463	\$111,821
13.1210 Early Childhood Education/ Teaching	670	3.1	2.9	\$41,448	\$60,934	\$56,785	\$69,483	\$94,527
27.0101 Mathematics, General	636	2.3	11.2	\$55,777	\$87,814	\$80,667	\$98,936	\$108,875
31.0504 Sport and Fitness Admin/Mgmt	607	7.4	15.6	\$44,264	\$72,803	\$68,665	\$87,851	\$98,948
44.0701 Social Work	523	1.1	1.8	\$41,835	\$67,730	\$61,804	\$76,678	\$98,188



The scorecard includes several sources of data on competitors. PES tracks completions in all markets and average and median program size. Additionally, we have developed metrics to assess market saturation and competitive intensity using data from IPEDS, Google, and the Census. For example, PES tracks completions per capita for over 300 markets, to compare and gauge local market saturation.

PES also tracks national online completions for the program, including the number of institutions nationally that offer the program online and the number of institutions with in-market graduates.

## Program Scorecard: Competitive Intensity

Competitive Intensity				
Score: -8 Percentile: 4				
Category	Pctl	Criterion	Value	Score
Volume of In-Market Competition	95	Campuses with Graduates**	2	-6
	96	Campuses with Grads YoY Change (Units)**	0	NS
	99	Institutions with Online In-Market Students**	11	NS
In-Market Program Sizes	63	Average Program Completions	35	0
	68	Median Program Completions	35	0
	84	YoY Median Prog. Compl. Change (Units)	7	NS
	96	YoY Median Prog. Compl. Change (%)	140%	NS
In-Market Saturation	88	Google Search * Cost per Click**	\$19	-2
	89	Google Competition Index**	0.93	0
National Online Competition	98	National Online Institutions (Units)**	59	NS
	90	Nat'l Online % of Institutions	25%	NS
	95	Nat'l Online % of Completions	47%	NS

For each program and market, the system produces a Report on Competition. The report provides the name, degree level, and number of completions for every competitor for the last five years (including online). Institutional and demographic data is also available, such as sector, tuition rates, selectivity metrics, graduation rates, student body composition by ethnicity, gender, and age, and school rankings.

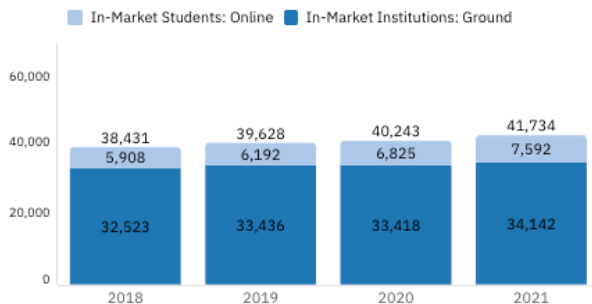
This report lets users quickly identify relevant competitors, whether they offer the program online, the size of each competitor's program, which institutions and programs are growing or declining, who has entered or exited the market, and how each institution compares on institutional and demographic metrics.

The example below shows a Report on Competition for bachelor's-level Cybersecurity programs in the Arizona market.

## Report on Competition

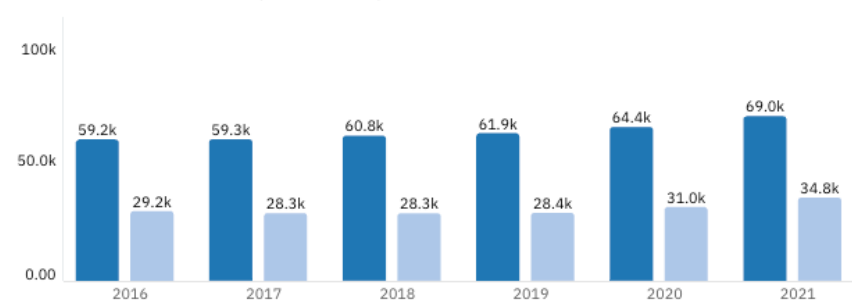
**Total Completions by In-Market Students**

Current Year and Previous Year



**Total Completions by In-Market Institutions**

Distance Education Completions Completions



Instructions: Campus, Institution, and Sector will clear when you return to Scorecard; Dimensions and Metrics will clear when a new Scoring Rubric Bookmark is created.

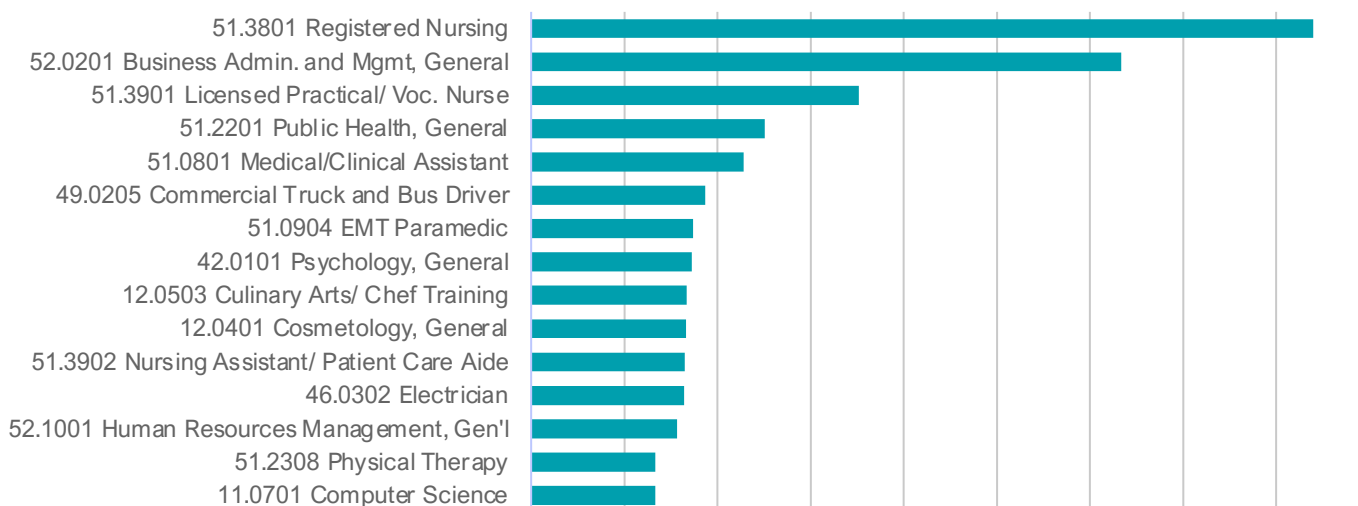
Campus	2016 Completions	2017 Completions	2018 Completions	2019 Completions	2020 Completions	2021 Completions	2021 On-Ground Completions	2021 Online Completions	2021 Online Completions by In-Market Students
Arizona State University Campus Immersion	13,058	13,399	14,221	14,633	14,694	14,829	14,829	0	0
Grand Canyon University	10,267	10,283	11,162	11,319	12,370	13,529	4,326	9,203	1,599
University of Phoenix-Arizona	16,242	14,254	12,943	12,453	12,289	12,925	88	12,837	609
University of Arizona	7,368	7,346	7,645	8,231	7,871	8,117	7,538	579	296
Arizona State University Digital Immersion	2,239	3,085	3,993	4,737	5,639	7,277	238	7,039	1,537
Northern Arizona University	5,280	6,095	6,189	6,248	6,403	6,331	5,325	1,006	788
American InterContinental University	1,402	1,328	1,188	1,247	1,541	2,085	0	2,085	41
Aspen University	50	170	426	763	1,230	1,555	42	1,513	204
Embry-Riddle Aeronautical University-Prescott	362	437	430	466	598	614	614	0	0
Pima Medical Institute-Tucson	330	297	337	332	285	279	28	251	53
Brookline College-Phoenix	216	187	136	146	168	212	201	11	10

Clients often like to identify programs that score well on one dimension; for example, they may want to see which programs have the most job postings per graduate or the largest Google search volumes. These reports are easy to generate using our custom reporting system (see examples below). These one-dimensional lists are often a good starting point for further discussion of programmatic opportunities.

## Top 15 Programs By Job Postings Per Graduate



## Top 15 Programs By Job Postings Per Graduate



**Drill down to keyword details**

The Multi-Market Scorecard allows you to score every IPEDS program in each of your current and potential markets. The results are color-coded, as shown below; for example, dark green indicates a market that scores above the 98th percentile (compared to all other programs in the specified market).

This chart displays the scores in each cell, which we often replace with the client's enrollment. This allows users to quickly identify high-volume programs in attractive markets (high enrollment numbers in dark green cells) and poor performers in weak markets (lower enrollment numbers in blue cells).

## Multi-Market Scorecard

Percentile Key

<40	40+	70+	90+	95+	98+
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### Program x Market Matrix

CIP	Q	Arizona	California	Hawaii	National	Nevada	Utah
45.0601 Economics, General		35	24	25	31	20	26
14.0903 Computer Software Engineering		24	25	33	29	24	25
42.0101 Psychology, General		22	28	23	27	26	29
14.0701 Chemical Engineering		27	22	14	37	20	33
11.1003 Cyber Security/ Info. Assurance		22	24	26	24	28	22
09.0101 Speech Communication and Rhetoric		21	28	22	26	20	24
40.0801 Physics, General		26	24	20	22	20	28
11.0401 Information Science/ Studies		20	19	20	30	20	30
45.1001 Political Science and Gov't, Gen'l		29	22	18	24	25	20
27.0101 Mathematics, General		27	25	22	24	17	23
30.7102 Business Analytics		18	26	25	27	21	16
49.0101 Aviation/Aero Science/Tech, Gen'l		31	24	2	38	26	11
51.2201 Public Health, General		24	26	17	25	23	16
52.2001 Construction Management		18	20	20	20	27	20
51.2010 Pharmaceutical Sciences		15	24	23	31	16	14
51.0910 Diag. Med. Sonogr'y/ Ultrasound Tech		20	21	22	15	26	19

One of the most valuable features of PES is the ability to pull custom data and reports from the comprehensive database underlying the system. Users can use filters to select data by program code, program title, campus or geographic market, or a larger program grouping such as 2-digit or 4-digit CIP code. The example below shows data for healthcare programs (CIP 51) in Arizona.

For the selected programs, users can then select the types of data to include in the table. The categories include the four categories used for program scoring, and the user can select any combination of data elements within each category. The example shows selected data elements: Google search volume and YoY change; job postings total for one year, job postings per graduate, 25th percentile and median wages, in-market campuses with graduates, median program sizes, and online competition.

As with all data tables in PES, users can also download data directly to an Excel file for further review and analysis.

## Custom Data Table

CIP	Google Search Volume (3 Months)	Google Search YoY Change (%)	Size Entry: Job Postings Total (12 months)	Saturation Entry Jobs: Job Postings per	BLS Wages Entry Jobs: BLS 25th Percentile Wages	BLS Wages Post-entry: BLS Median Wages	IPEDS Institutions: Campuses with Graduates	Program Size: 2021 Median Completions/Insti...	Online Competition (National): % of Institutions	Online Competition (National): % of Completions
51.3801 Registered Nursing	41,977	111%	23,962	3.4	\$70,653	\$86,321	33	76	27%	25%
51.0801 Medical/Clinical Assistant	11,410	33%	3,000	1.7	\$36,952	\$52,163	23	52	3%	2%
51.0904 EMT Paramedic	8,681	38%	355	0.3	\$36,803	\$56,939	18	31	5%	2%
51.3902 Nursing Assistant/ Patient Care Aide	8,235	16%	1,925	1.9	\$34,982	-	16	67	2%	1%
51.0713 Medical Billing and Coding	4,340	-6%	544	1.2	\$38,387	\$45,689	15	22	16%	42%
51.0601 Dental Assisting	1,663	-64%	844	1.3	\$37,265	-	15	32	2%	1%
51.0805 Pharmacy Technician/ Assistant	5,710	15%	976	4.1	\$36,875	\$58,994	14	13	4%	9%
51.3901 Licensed Practical/ Voc. Nurse	17,598	35%	1,808	5.4	\$56,483	-	12	10	2%	1%
51.1009 Phlebotomy Tech/ Phlebotomist	6,100	22%	197	0.4	\$36,405	-	12	40	1%	1%
51.3501 Massage Therapy	4,110	18%	4	0.0	\$42,906	-	9	14	0%	0%
51.0701 Health Care Admin/Mgmt	3,948	29%	1,017	1.6	\$54,588	\$88,622	9	9	45%	58%
51.0806 Physical Therapy Technician/ Assistant	1,620	-10%	352	2.1	\$45,388	\$56,037	7	19	5%	2%
51.0710 Medical Office Assistant	52	200%	334	2.1	\$37,143	-	7	8	10%	26%
51.0911 Radiologic Tech/ Radiographer	1,970	-35%	731	4.8	\$59,762	\$75,402	6	21	7%	6%
51.0909 Surgical Tech	930	-4%	711	5.3	\$45,618	\$55,169	6	22	2%	2%
51.0602 Dental Hygiene	810	-44%	195	1.0	\$75,442	\$87,463	6	25	13%	6%
51.0001 Health and Wellness, General	260	-13%	191	1.1	\$46,687	-	6	6	17%	26%
51.2201 Public Health, General	12,540	-26%	730	1.0	\$51,103	\$80,372	5	19	31%	26%
51.0716 Medical Admin Assistant/ Secretary	310	3%	615	4.8	\$38,451	-	5	14	12%	48%
51.0705 Medical Office Mgmt/Admin	300	-21%	470	3.7	\$38,494	\$50,930	5	4	27%	47%
51.3818 Nursing Practice	3,430	-10%	251	1.0	\$74,332	-	4	33	49%	49%
51.1004 Clinical/Medical Laboratory Technician	2,058	3%	113	1.9	\$39,212	\$61,670	4	13	4%	9%
51.1508 Mental Health Counseling	930	9%	2	0.0	\$39,878	-	4	18	16%	38%
51.0201 Communication Science, Gen'l	343	17%	381	1.5	\$57,845	\$79,022	4	65	10%	6%
51.0707 Health Info./Medical Records Tech	260	-66%	293	2.0	\$43,753	\$52,038	4	5	27%	48%