



Demand for Higher-Education Programs

January 25, 2024

Agenda

What is a Program Evaluation System?

Student Demand

- Future Trends: Google
- Recent Trends: Enrollment
- International Student Demand
- Non-Degree Courses

Employment: Current Indicators

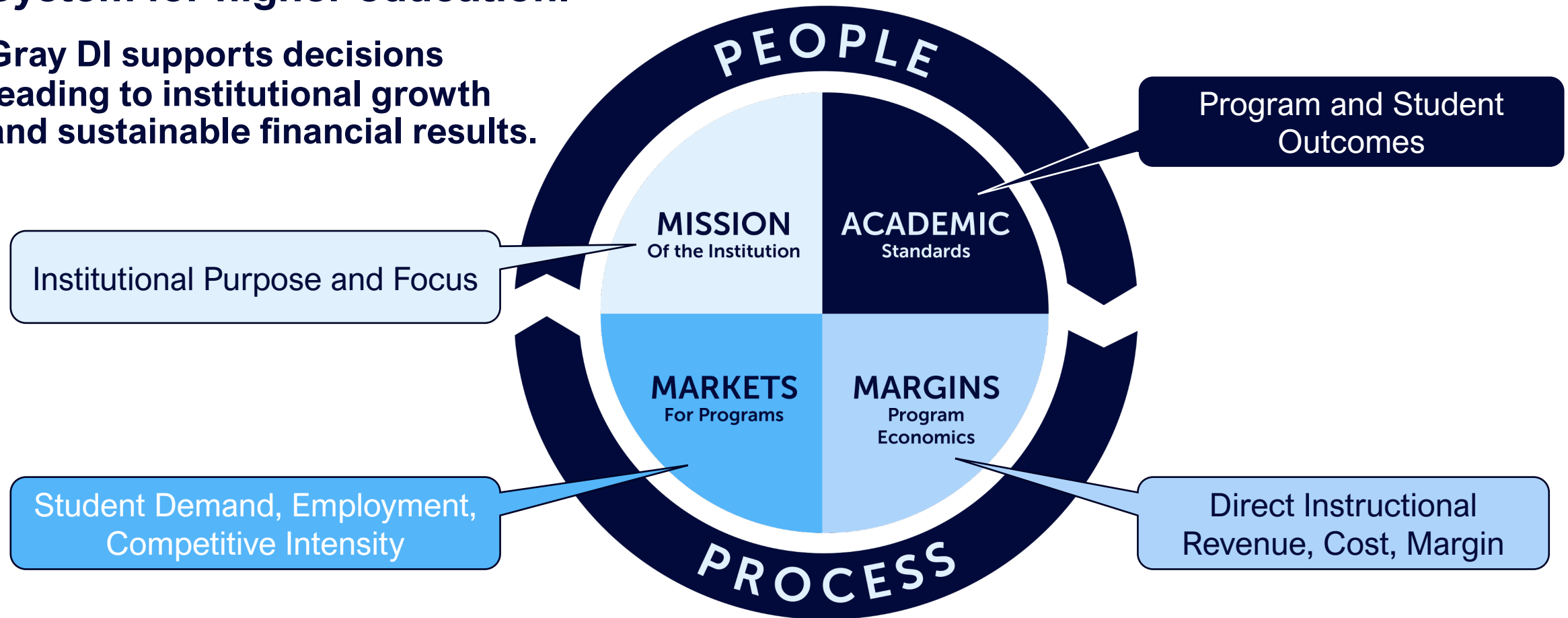
Program of the Month

Summary



Gray Decision Intelligence provides the only complete Program Evaluation System for higher education.

Gray DI supports decisions leading to institutional growth and sustainable financial results.



Agenda

What is a Program Evaluation System?

Student Demand

- Future Trends: Google
- Recent Trends: Enrollment
- International Student Demand
- Non-Degree Courses

Employment: Current Indicators

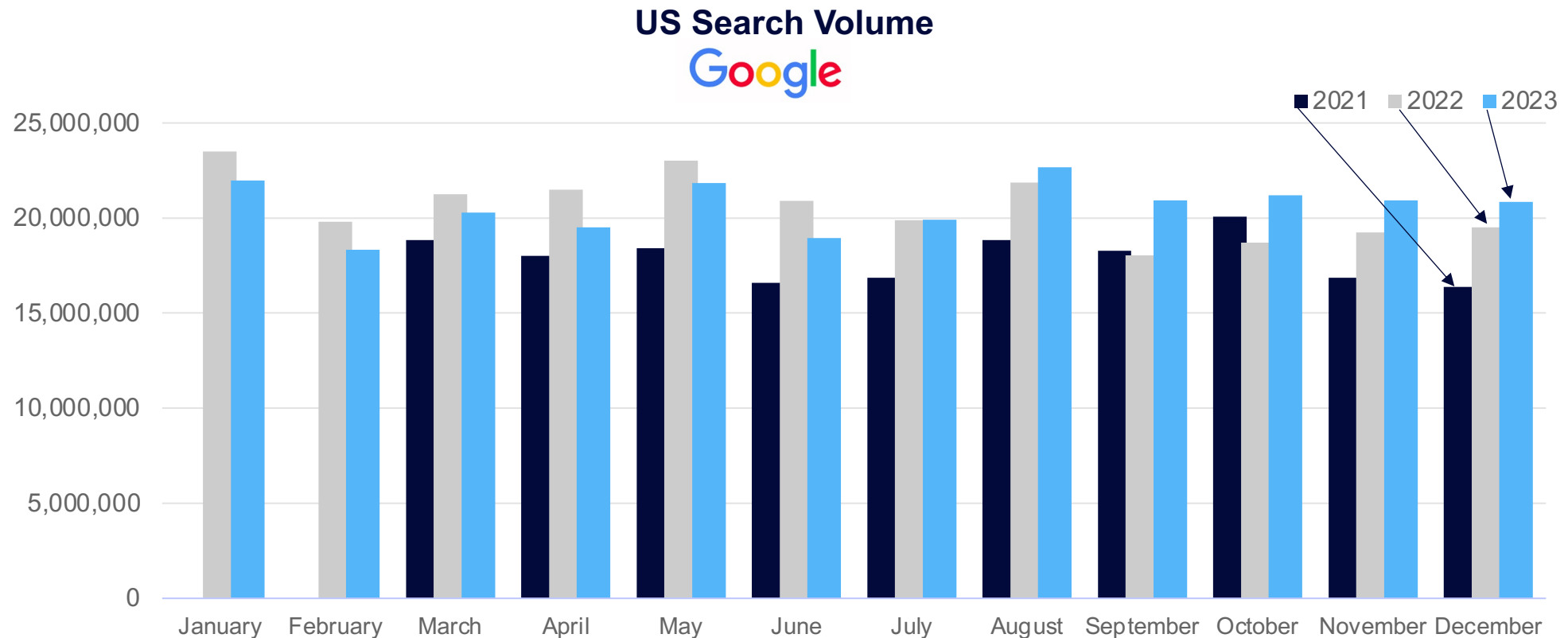
Program of the Month

Summary



Google Search Trends

Gray tracks searches from March 2021 to the present for 900+ programs (90% of completions).

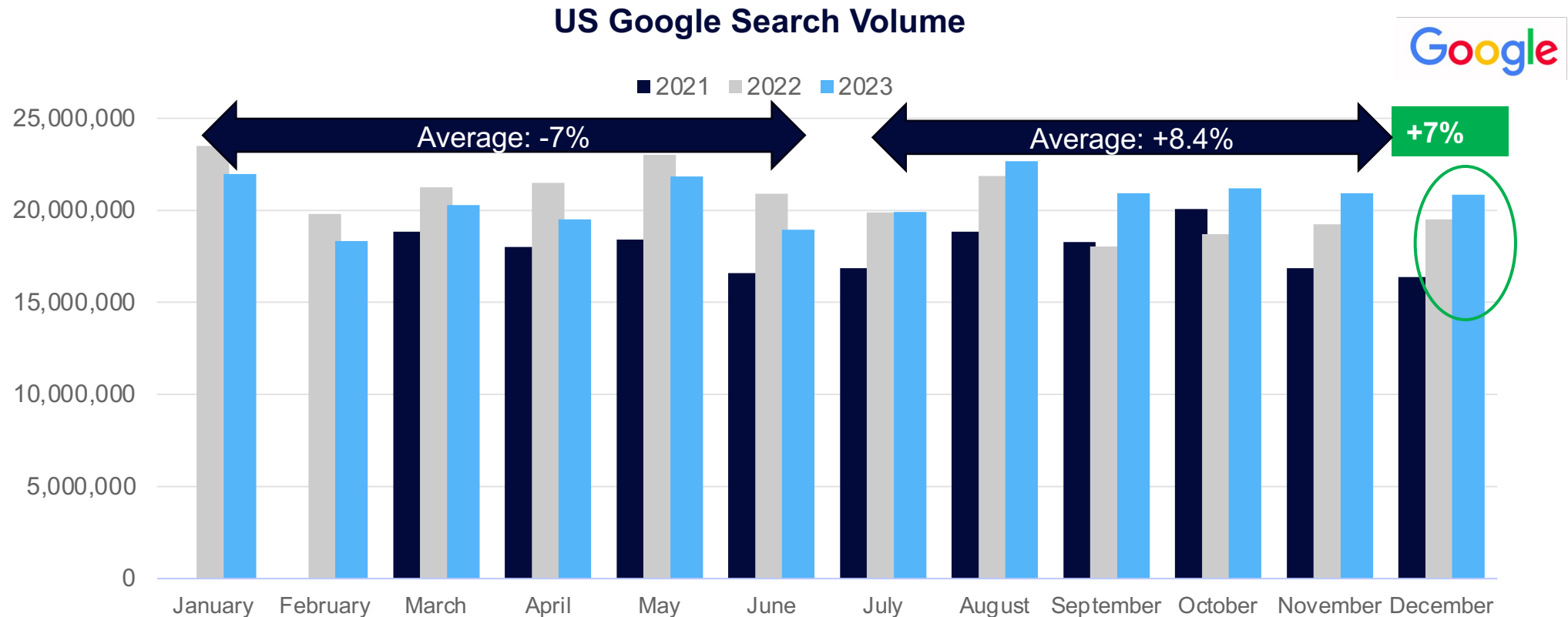


Source: PES Keyword Search Dashboard

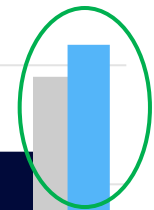


Google Search Trends

In December, Google searches for academic programs grew 7% year-over-year.



+7%



Source: PES Keyword Search Dashboard



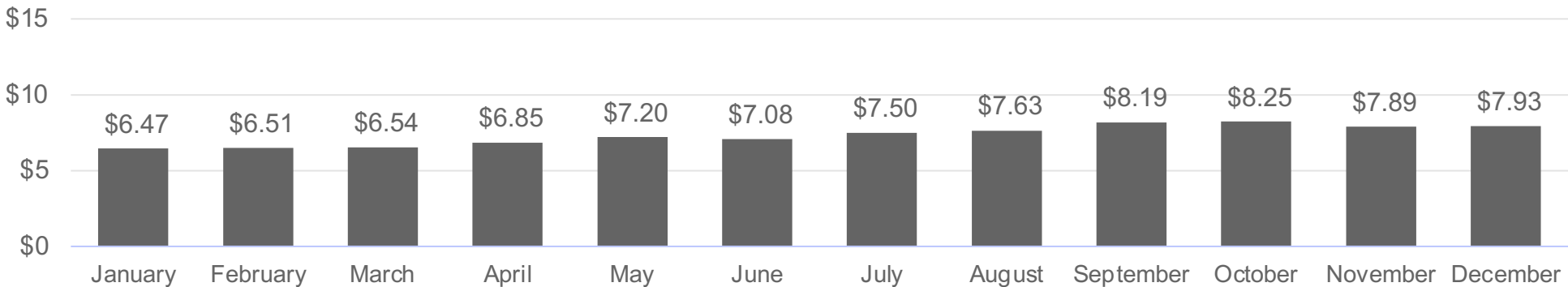
Google Search Trends: Cost-per-Click

In December 2023, the average Google cost-per-click increased by 9% year-over-year.



US Google Cost-per-Click
All Award Levels

■ 2022



2022	\$6.47	\$6.51	\$6.54	\$6.85	\$7.20	\$7.08	\$7.50	\$7.63	\$8.19	\$8.25	\$7.89	\$7.93
2023	\$8.07	\$8.05	\$8.16	\$8.03	\$8.27	\$8.18	\$8.19	\$8.37	\$8.14	\$8.14	\$8.14	\$8.63

Source: PES Keyword Search Dashboard



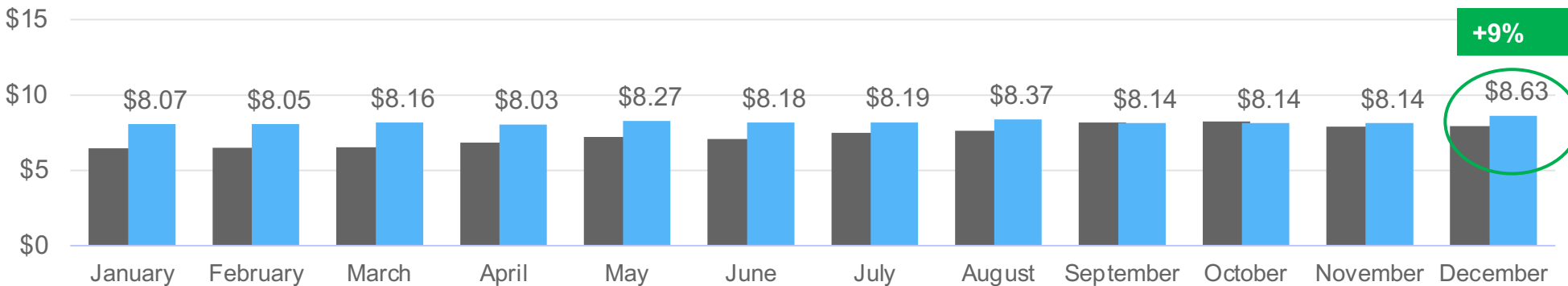
Google Search Trends: Cost-per-Click

In December 2023, the average Google cost-per-click increased by 9% year-over-year.



US Google Cost-per-Click
All Award Levels

■ 2022 ■ 2023



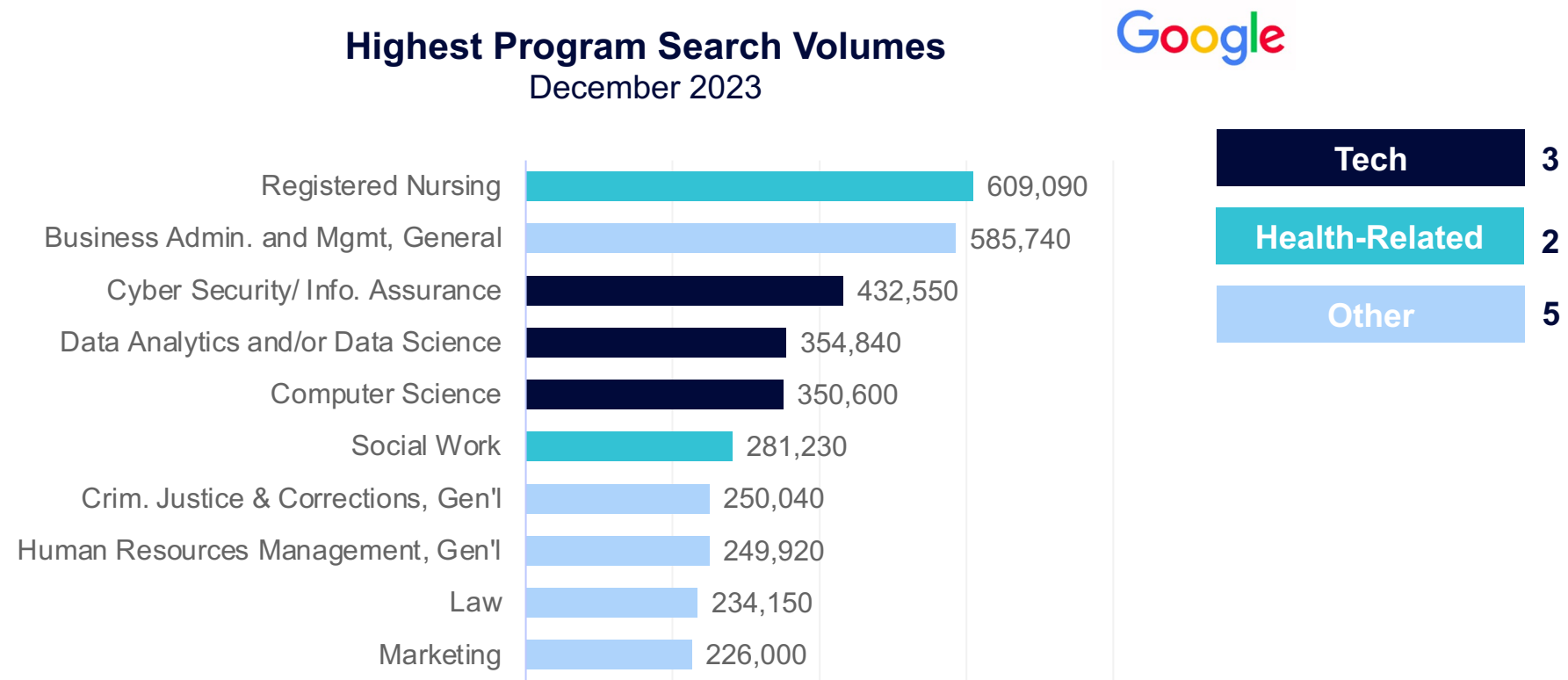
2022	\$6.47	\$6.51	\$6.54	\$6.85	\$7.20	\$7.08	\$7.50	\$7.63	\$8.19	\$8.25	\$7.89	\$7.93
2023	\$8.07	\$8.05	\$8.16	\$8.03	\$8.27	\$8.18	\$8.19	\$8.37	\$8.14	\$8.14	\$8.14	\$8.63

Source: PES Keyword Search Dashboard



Google: Program Keywords

In December, Registered Nursing had the highest search volume.



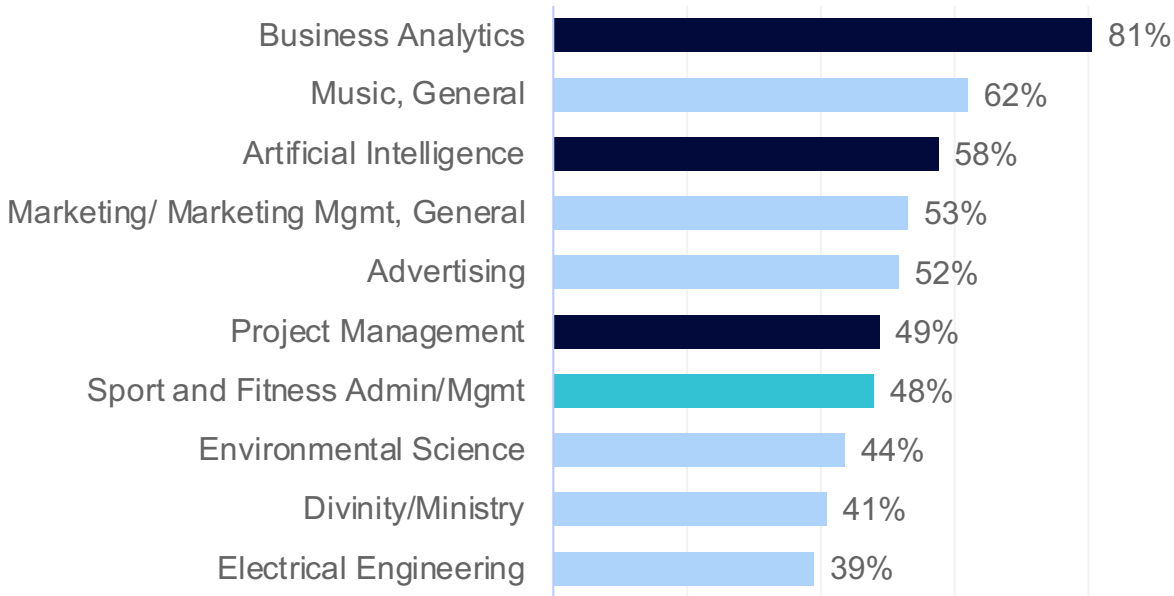
Source: PES Keyword Search Dashboard



Google: US Fastest-Growing Programs

In December, searches for Business Analytics programs increased by 81%.

!0 Fastest-Growing Program Search Volumes
December 2023



Tech	3
Health-Related	1
Other	6

*Minimum 10,000 searches December 2022

Agenda

What is a Program Evaluation System?

Student Demand

- Future Trends: Google
- Recent Trends: Enrollment
- International Student Demand
- Non-Degree Courses

Employment: Current Indicators

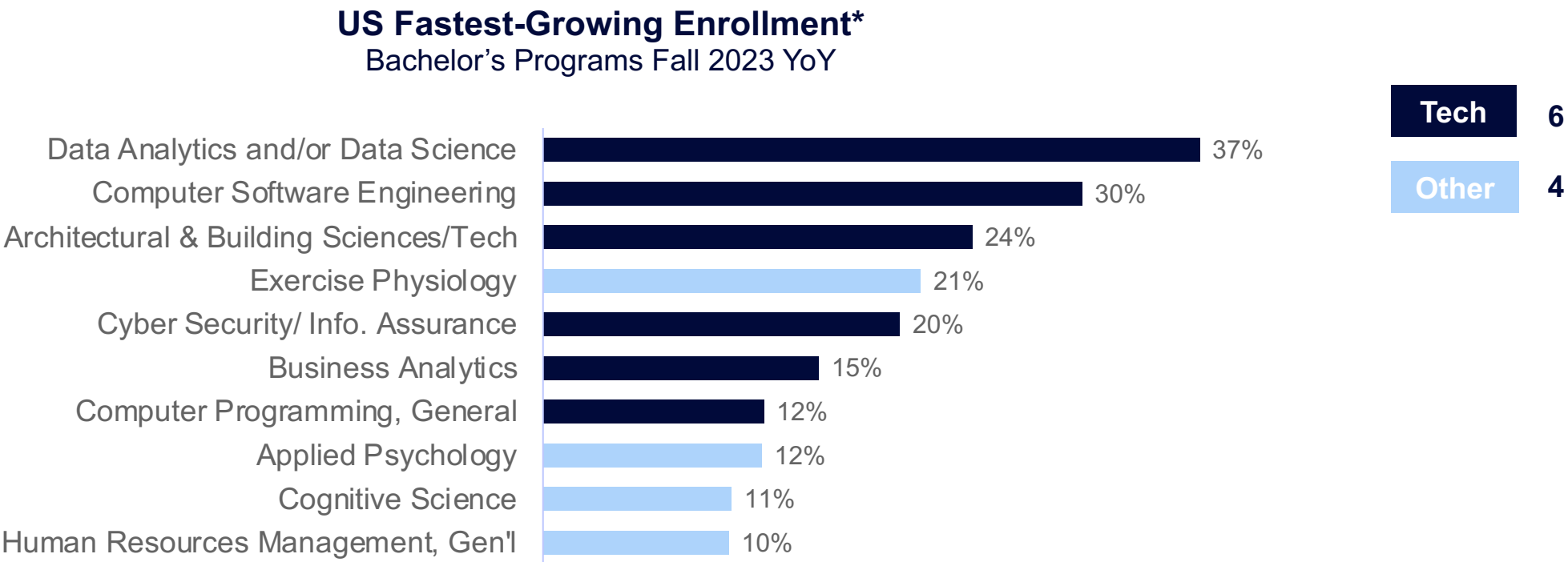
Program of the Month

Summary



Bachelor's: Fall 2023 Fastest-Growing Enrollment

In Fall 2023, Data Analytics/Data Science grew 37% year-over-year.

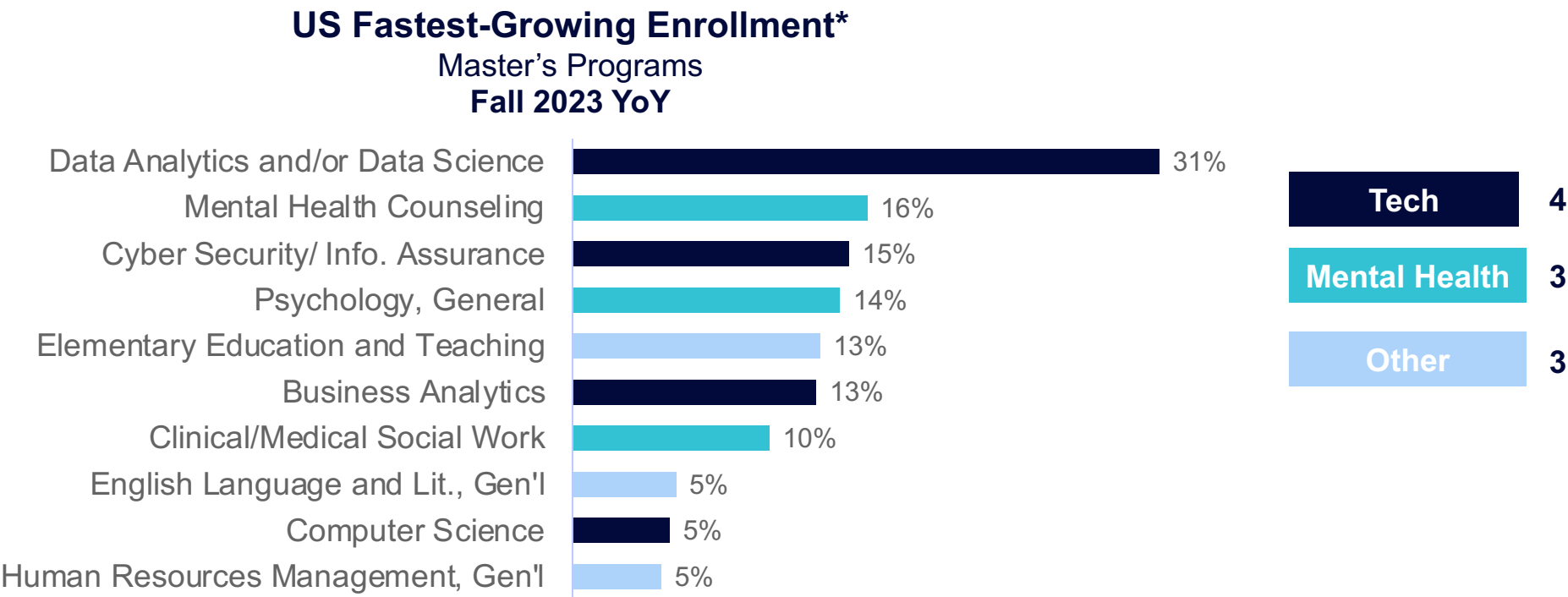


Source: PES Program Enrollment Dashboard

*Minimum enrollment Fall 2022: 5,000

Master's: Fall 2023 Fastest-Growing Enrollment

In Fall 2023, Data Analytics/Science was also the fastest-growing master's program at 31%.



Source: PES Program Enrollment Dashboard

*Minimum enrollment Fall 2022: 5,000

Agenda

What is a Program Evaluation System?

Student Demand

- Future Trends: Google
- Recent Trends: Enrollment
- International Student Demand
- Non-Degree Courses

Employment: Current Indicators

Program of the Month

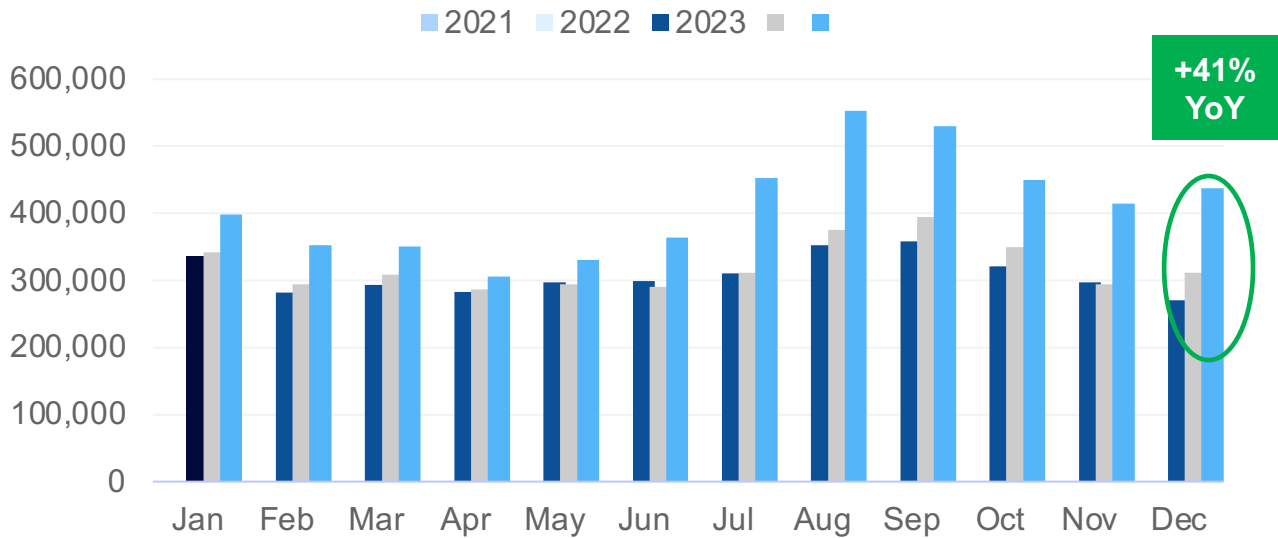
Summary



International Student Demand: Bachelor's and Above

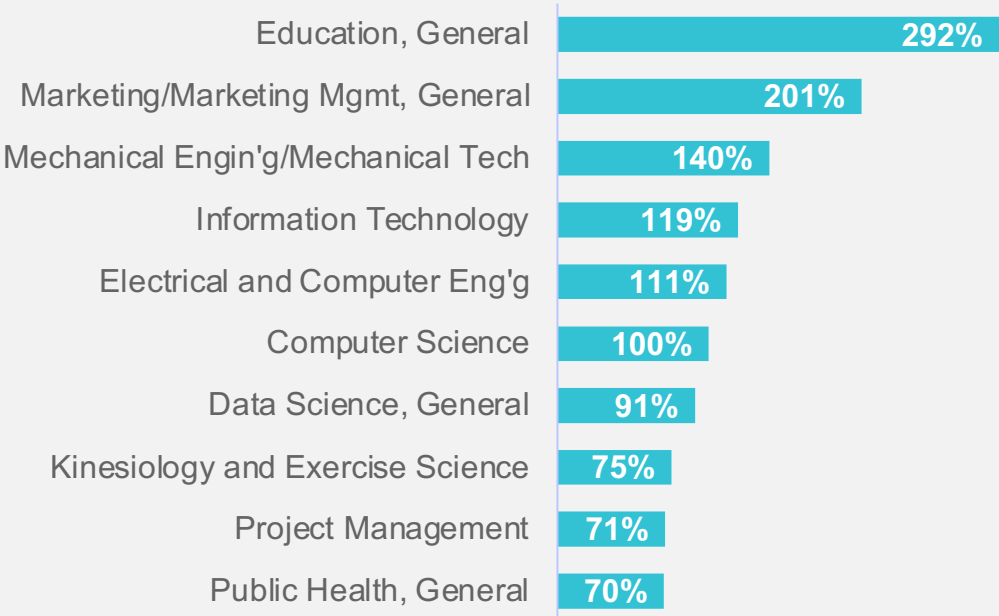
In December, international student interest in US bachelor's and above programs increased 41% YoY.

International Page Views



The fastest-growing program year-over-year was Education.*

10 Fastest-Growing Programs
December 2023 YoY



Source: PES International Student Demand Dashboard (excludes China)

*Minimum Page Views December 2022: 2,000

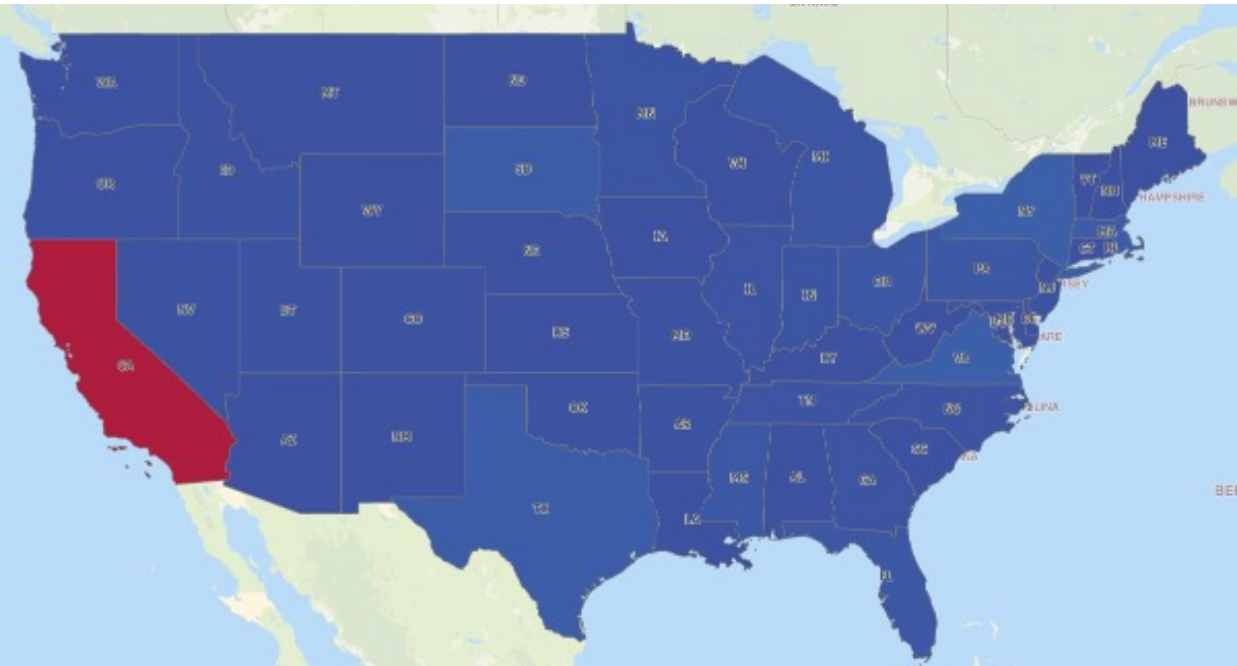
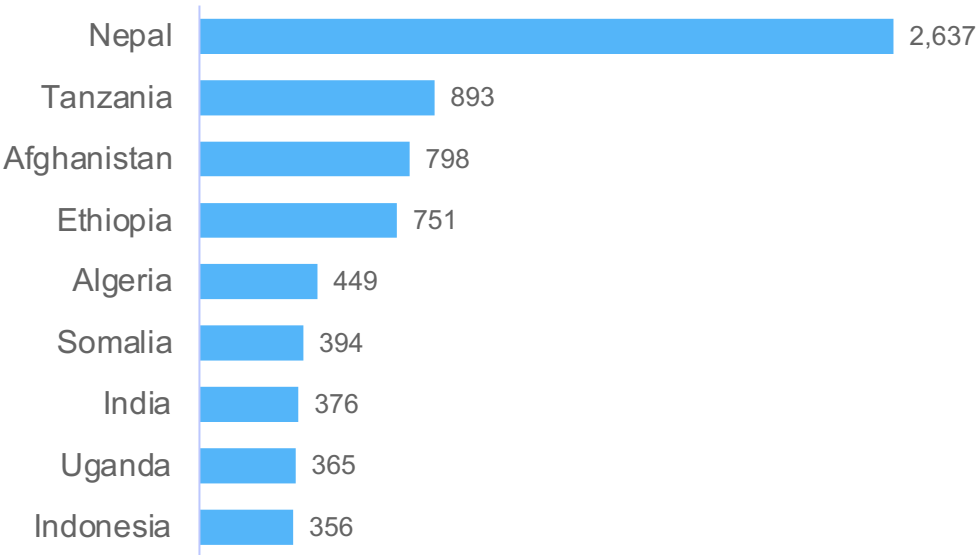


International Page Views

Nepal led in page views for Education.

Most of the interest was in CA programs.

International Page Views by Originating Country
Education, December 2023



Source: PES International Student Demand Dashboard (excludes China)

Agenda

What is a Program Evaluation System?

Student Demand

- Future Trends: Google
- Recent Trends: Enrollment
- International Student Demand
- Non-Degree Courses

Employment: Current Indicators

Program of the Month

Summary



There is a large volume of student demand outside Title IV programs.

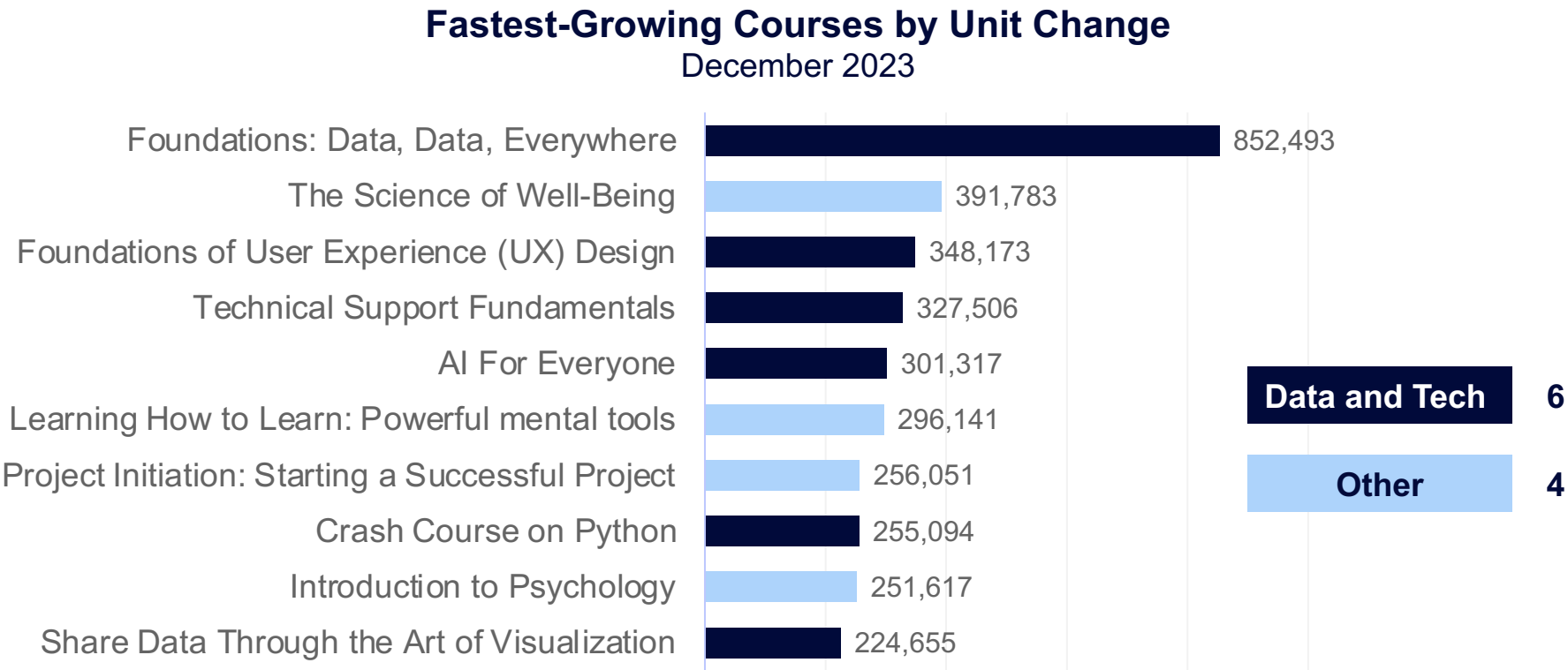
Coursera alone has enrolled over 125 million students.





Non-Degree Demand: Coursera

Since December 2022, Coursera added more than 18.5 million learners.



Source: PES Non-Degree Dashboard, Coursera

Agenda

What is a Program Evaluation System?

Student Demand

- Future Trends: Google
- Recent Trends: Enrollment
- International Student Demand
- Non-Degree Courses

Employment: Current Indicators

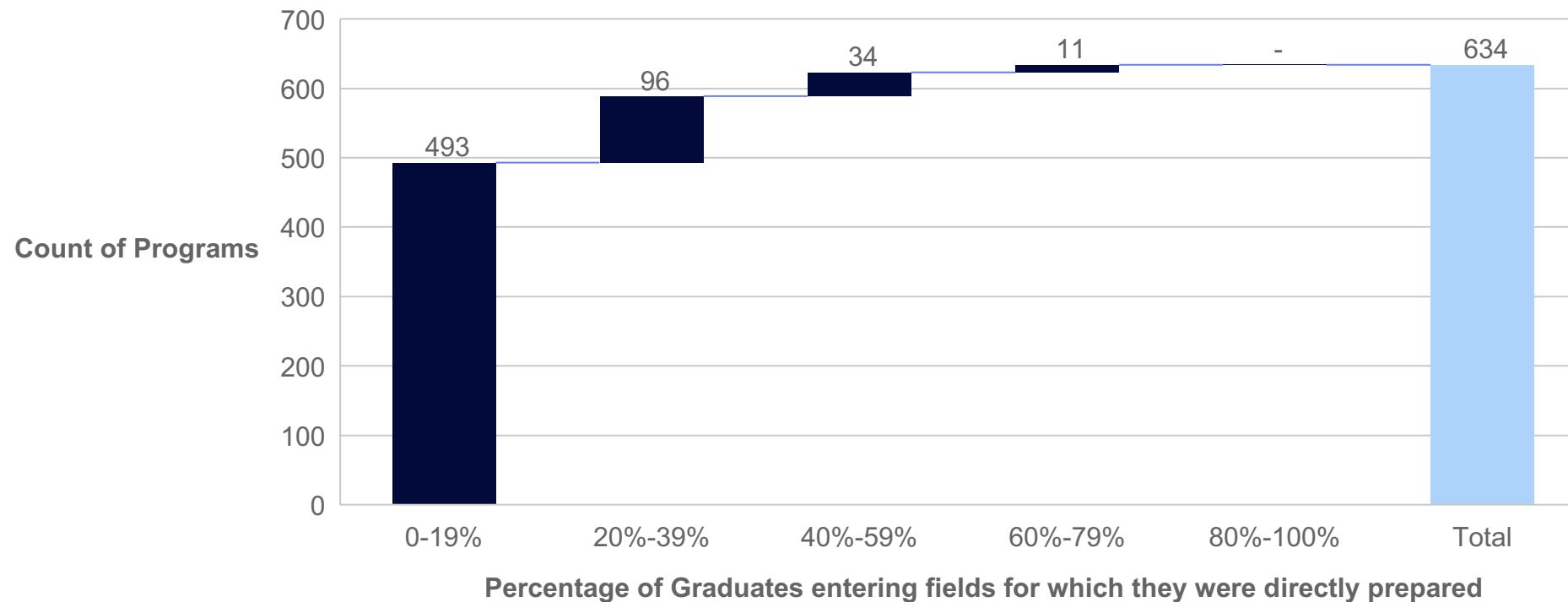
Program of the Month

Summary



77% of programs place less than 20% of graduates in direct prep jobs.

Do Graduates Go into Fields for Which They Are Directly Prepared?



Sources: IES NCES: "CIP SOC Crosswalk", July 2021 <https://nces.ed.gov/ipeds/cipcode/post3.aspx?y=56>,
US Census, American Community Survey, Gray Analysis. Bachelor degree programs with over 100 completions.



Commonly available data sources only count direct prep jobs.

In a traditional construct, Biological/Physical Sciences majors enter three occupations.

- Gray DI data on 14,432 graduates of Bachelor’s in Bio/Phys Sciences programs identifies 662 occupations.*

Myth

NCES
Natural Science Managers
Postsecondary Teachers, All Other
Secondary School Teachers, Exc. Special and Career/Technical Education

Reality (entry-level jobs)

Highest Volume of Occupations
Bachelor’s in Biological/Physical Sciences



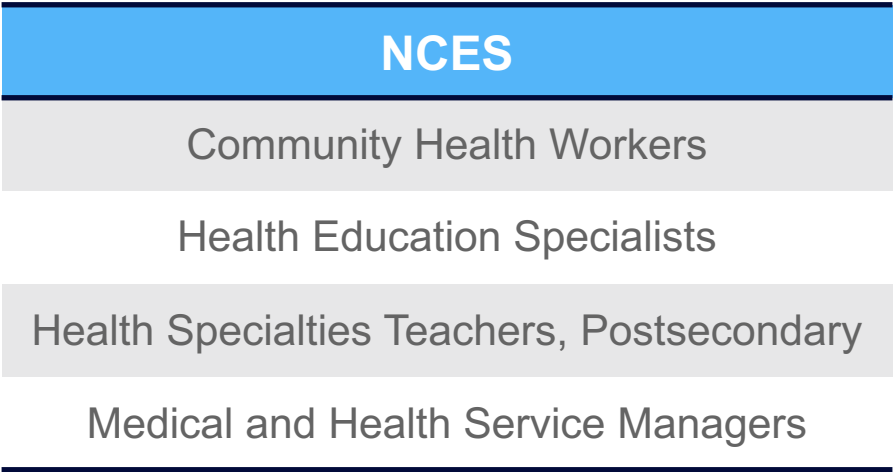
Source: Gray DI’s analysis of People Profile Data

* Chief Executives include small business owners.



Even more direct prep program grads don't have clear career paths.
According to NCES, Public Health graduates can go into four occupations.
According to Gray DI's sample of 172,587 profiles, they go into 766 occupations.

Myth



Reality (entry-level jobs)



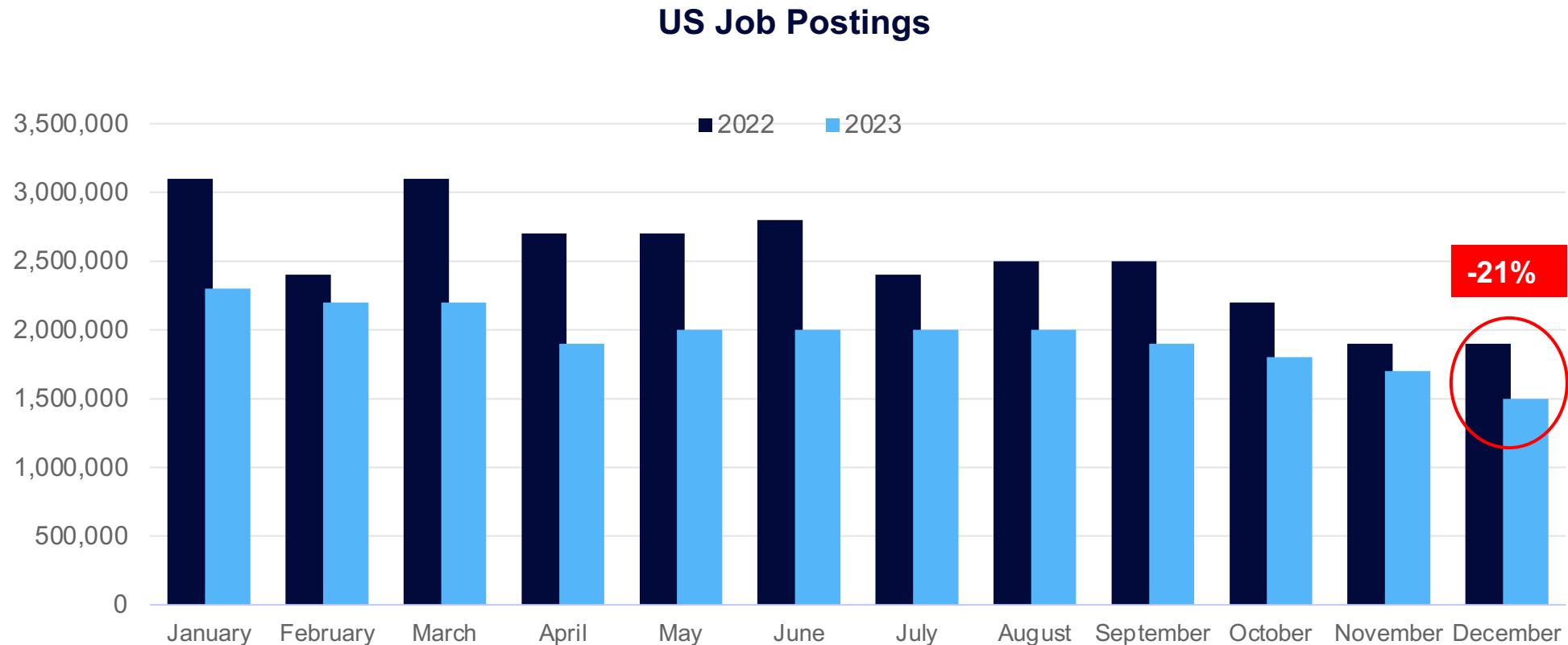
Source: Gray DI's analysis of People Profile Data

* Chief Executives include small business owners.



US Job Postings Trends

In December, job postings dropped 21% year-over-year.



Source: PES Job Postings Dashboard

Agenda

What is a Program Evaluation System?

Student Demand

- Past Indicators: 2022 IPEDS Completions
- Recent Trends: Enrollment
- Future Trends: Google
- International Student Demand
- Non-Degree Courses

Employment: Current Indicators

Program of the Month

Summary



US Bachelor's Program Ranking

Program	Overall Score	Student Demand	Competitive Intensity	Jobs	Degree Fit
43.0100 Crim. Justice & Corrections, Gen'l	95	99	4	4	50
54.0101 History, General	95	98	0	86	50
09.0702 Digital Communic. & Media/ Multimedia	95	96	15	90	50
26.0202 Biochemistry	95	96	4	95	50
52.1101 International Business/ Trade	95	95	4	95	50
44.0501 Public Policy Analysis, General	95	92	50	95	50
09.0903 Advertising	95	89	95	90	50
26.0901 Physiology, General	95	87	98	83	50
29.0201 Intelligence, General	95	87	95	93	50
27.0301 Applied Mathematics, General	95	87	15	98	50
11.0104 Informatics	95	85	50	97	50
11.1002 System, Networking, and LAN/WAN Mgmt	95	83	88	96	50
14.0401 Architectural Engineering	95	83	54	97	50
19.0401 Family Resource Mgmt Studies, Gen'l	95	79	99	83	50
14.4201 Mechatronics/ Robotics/ Automation Eng'g	95	77	31	99	50
19.0201 Business/Family/ Consumer Sci/ Human Sci	95	50	100	83	50
15.0703 Industrial Safety Tech	95	50	98	96	50

Total Percentile	0	20+	40+	70+	90+	95+	98+	100
Total Score	-62	-31	-19	-2	10	18	27	68



US Bachelor's Program Ranking

Program	Overall Score	Student Demand	Competitive Intensity	Jobs	Degree Fit
43.0100 Crim. Justice & Corrections, Gen'l	95	99	4	4	50
54.0101 History, General	95	98	0	86	50
09.0702 Digital Communic. & Media/ Multimedia	95	96	15	90	50
26.0202 Biochemistry	95	96	4	95	50
52.1101 International Business/ Trade	95	95	4	95	50
44.0501 Public Policy Analysis, General	95	92	50	95	50
09.0903 Advertising	95	89	95	90	50
26.0901 Physiology, General	95	87	98	83	50
29.0201 Intelligence, General	95	87	95	93	50
27.0301 Applied Mathematics, General	95	87	15	98	50
11.0104 Informatics	95	85	50	97	50
11.1002 System, Networking, and LAN/WAN Mgmt	95	83	88	96	50
14.0401 Architectural Engineering	95	83	54	97	50
19.0401 Family Resource Mgmt Studies, Gen'l	95	79	99	83	50
14.4201 Mechatronics/ Robotics/ Automation Eng'g	95	77	31	99	50
19.0201 Business/Family/ Consumer Sci/ Human Sci	95	50	100	83	50
15.0703 Industrial Safety Tech	95	50	98	96	50

Total Percentile	0	20+	40+	70+	90+	95+	98+	100
Total Score	-62	-31	-19	-2	10	18	27	68



Student Demand

Mechatronics scores in the 77th percentile for Student Demand.

- Google search volume is in the 75th percentile.
- International Page Views is strong.
- New student enrollment is in the 80th percentile.
- Completions are in the 77th percentile.

Student Demand

Score: 2 Percentile: 77

Category	Pctl	Criterion	Value	Score
Size	75	Google Search Volume (3 Months)*	28,870	0
	94	International Page Views (12 Months)	527	NS
	80	New Student Enrollment Volume (12 Mo.)	589	2
	78	On-ground Completions at In-Market Institutions	479	0
	0	Online Completions by In-Market Students	0	0
	77	Sum of On-ground and Online Completions	479	0



Student Demand

Growth metrics are fair.

- Completion volumes grew 4% year-over-year.
- New student enrollment grew 6%.
- Google search growth is in the 33rd percentile, falling 8% year-over-year.

Student Demand

Score: 2 Percentile: 77

Category	Pctl	Criterion	Value	Score
Size	75	Google Search Volume (3 Months)*	28,870	0
	94	International Page Views (12 Months)	527	NS
	80	New Student Enrollment Volume (12 Mo.)	589	2
	78	On-ground Completions at In-Market Institutions	479	0
	0	Online Completions by In-Market Students	0	0
	77	Sum of On-ground and Online Completions	479	0
Growth	12	Google Search YoY Change (Units)*	-2,352	NS
	85	New Student Enrollment Vol. YoY Change (Units)	31	NS
	82	Completion Volume YoY Change (Units)	20	NS
	33	Google Search YoY Change (%)*	-8%	NS
	66	New Student Enrollment Vol. YoY Change (%)	6%	NS
	60	Completion Volume YoY Change (%)	4%	NS





Employment

Mechatronics scores in the 99th percentile.

- Entry-level job volume metrics are healthy: 81st to 84th percentiles.
- Underemployment rate is on the lower side.
 - In this case, a lower rank is stronger.
- BLS historical growth:
 - 3-year: 2.5%
 - YoY: -1%
- Job postings per graduate are high.
- Wages are favorable.

Employment

Score: 18 Percentile: 99

Category	Pctl	Criterion	Value	Score
Size: Entry Jobs	84	Job Postings Total (12 Months)	2,423	NS
	83	BLS Current Employment	4,721	NS
	81	BLS Annual Job Openings	380	NS
Underemployed	14	Underemployed Percent of Graduates**	33%	0
Growth: Entry Jobs	77	BLS 1-Year Historical Growth	-0.8%	NS
	87	BLS 3-Year Historic Growth (CAGR)	2.5%	0
	15	BLS 10-Year Future Growth (CAGR)	1.1%	-1
Saturation: Entry Jobs	98	Job Postings per Graduate	5.1	4
	85	BLS Job Openings per Graduate	0.8	NS
Weighted Avg BLS Wages	96	Entry 25th Percentile	\$63,602	9
	83	Post Entry Median	\$89,991	6
		Post Entry w/Associates Median	NA	NS
	83	Post Entry w/Bachelors Median	\$84,071	NS
	86	Post Entry w/Masters Median	\$108,190	NS
		Post Entry w/Doctoral Median	NA	NS
National American Community Survey Bachelor's Degree Outcomes*	39	% with Any Graduate Degree*	31%	NS
	48	% with Masters*	25%	NS
	41	% with Doct/Prof Degree*	6%	NS
	30	% Unemp. (Age <30)**	2%	NS
	68	% in Direct Prep Jobs*	14%	NS



Competitive Intensity

Mechatronics scores in the 31st percentile.

- 21 college campuses have graduated students in this program.
 - That is four more campuses than last year.
- Median program completions are modest but growing slightly.
- Marketing costs are high.
- This program is offered exclusively on-campus.

Competitive Intensity

Score: -3 Percentile: 31

Category	Pctl	Criterion	Value	Score
Volume of In-Market Competition	72	Campuses with Graduates**	21	-2
	94	Campuses with Grads YoY Change (Units)**	4	NS
	77	Institutions with Online In-Market Students**	1	NS
In-Market Program Sizes	73	Average Program Completions	23	0
	65	Median Program Completions	11	0
	79	YoY Median Prog. Compl. Change (Units)	1	NS
	70	YoY Median Prog. Compl. Change (%)	6%	NS
In-Market Saturation	75	Google Search * Cost per Click**	\$8	-1
	82	Google Competition Index**	0.53	0
National Online Competition	0	National Online Institutions (Units)**	0	NS
	0	Nat'l Online % of Institutions	0	NS
	0	Nat'l Online % of Completions	0	NS



Degree Fit

A bachelor's degree is an appropriate award level for this program.

- 50% of the national workforce have a bachelor's degree.
 - 23% have a master's.
- 38% of completions are at the bachelor's level.
 - 37% are at the master's level.

Degree Fit

Score: 0 Percentile: 50

Category	Pctl	Criterion	Value	Score
Cost Benchmarking**		Average Cost per SCH Index**	NA	NS
		Median Cost per SCH Index**	NA	NS

National Completions by Level

Score: 0

National Workforce Ed. Attainment

Score: 0

Award Level	Completions (National)	Completions (Market)	Enrollment (Market)	BLS Educational Attainment
No College				6%
Some College				8%
Certificate	8%	8%	5%	
Associates	8%	8%	9%	7%
Bachelors	38%	38%	29%	50%
Postbaccalaureate Certificate	5%	5%	0%	
Masters	37%	37%	48%	23%
Post-masters Certificate	0%	0%	3%	
Doctoral	4%	4%	6%	6%



Benchmarking Programs: Cost per Student Credit Hour



Cost by Course Subject Summary

Course Subject	Cost/SCH Client	Median Cost/SCH Sample	Percent Difference
Business Administration	\$119	\$148	-20%
Education	\$118	\$176	-33%
Engineering Technology	\$211	\$215	-2%
Marketing	\$172	\$165	4%
Philosophy	\$76	\$151	-50%

Source: PES Economics and Outcomes



Demographics

Mechatronics is 81% male.

- 61% of all students are White.
- 10% are Hispanic or Latino.
- 9% are Asian.
- 8% are international.
- 5% are Black or African American.

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

Category	Pctl	Criterion	This Program In-Market	All Programs In-Market
IPEDS Gender	12	Female	20%	58%
	87	Male	81%	42%
IPEDS Ethnicity	0	American Indian or Alaska Native	0	0%
	74	Asian	9%	8%
	49	Black or African American	5%	9%
	42	Hispanic or Latino	10%	16%
	81	Native Hawaiian or Other Pacific Islander	0%	0%
	51	White	61%	54%
	80	International	8%	5%
	69	Other/Unknown	8%	7%

CIP: 14.4201 Mechatronics/ Robotics/ Automation Eng'g	Award Level: Bachelors	Market: National	Total Score: 17	Percentile: 95
---	------------------------	------------------	-----------------	----------------

Student Demand

Score: 2 Percentile: 77

Category	Pctl	Criterion	Value	Score
Size	75	Google Search Volume (3 Months)*	28,870	0
	94	International Page Views (12 Months)	527	NS
	80	New Student Enrollment Volume (12 Mo.)	589	2
	78	On-ground Completions at In-Market Institutions	479	0
	0	Online Completions by In-Market Students	0	0
	77	Sum of On-ground and Online Completions	479	0
Growth	12	Google Search YoY Change (Units)*	-2,352	NS
	85	New Student Enrollment Vol. YoY Change (Units)	31	NS
	82	Completion Volume YoY Change (Units)	20	NS
	33	Google Search YoY Change (%)*	-8%	NS
	66	New Student Enrollment Vol. YoY Change (%)	6%	NS
	60	Completion Volume YoY Change (%)	4%	NS

Competitive Intensity

Score: -3 Percentile: 31

Category	Pctl	Criterion	Value	Score
Volume of In-Market Competition	72	Campuses with Graduates**	21	-2
	94	Campuses with Grads YoY Change (Units)**	4	NS
	77	Institutions with Online In-Market Students**	1	NS
In-Market Program Sizes	73	Average Program Completions	23	0
	65	Median Program Completions	11	0
	79	YoY Median Prog. Compl. Change (Units)	1	NS
In-Market Saturation	70	YoY Median Prog. Compl. Change (%)	6%	NS
	75	Google Search * Cost per Click**	\$8	-1
National Online Competition	82	Google Competition Index**	0.53	0
	0	National Online Institutions (Units)**	0	NS
	0	Nat'l Online % of Institutions	0	NS
	0	Nat'l Online % of Completions	0	NS

* - Google search do not filter by award level.
** - Color scale in reverse.
NA - No data available/not currently tracked.
NS - Not Scored in Rubrics (values = 0).
PCTL - Percentile

Employment

Score: 18 Percentile: 99

Category	Pctl	Criterion	Value	Score
Size: Entry Jobs	84	Job Postings Total (12 Months)	2,423	NS
	83	BLS Current Employment	4,721	NS
	81	BLS Annual Job Openings	380	NS
Underemployed	14	Underemployed Percent of Graduates**	33%	0
Growth: Entry Jobs	77	BLS 1-Year Historical Growth	-0.8%	NS
	87	BLS 3-Year Historic Growth (CAGR)	2.5%	0
	15	BLS 10-Year Future Growth (CAGR)	1.1%	-1
Saturation: Entry Jobs	98	Job Postings per Graduate	5.1	4
	85	BLS Job Openings per Graduate	0.8	NS
Weighted Avg BLS Wages	96	Entry 25th Percentile	\$63,602	9
	83	Post Entry Median	\$89,991	6
		Post Entry w/Associates Median	NA	NS
	83	Post Entry w/Bachelors Median	\$84,071	NS
	86	Post Entry w/Masters Median	\$108,190	NS
		Post Entry w/Doctoral Median	NA	NS
National American Community Survey Bachelor's Degree Outcomes*	39	% with Any Graduate Degree*	31%	NS
	48	% with Masters*	25%	NS
	41	% with Doct/Prof Degree*	6%	NS
	30	% Unemp. (Age <30)**	2%	NS
	68	% in Direct Prep Jobs*	14%	NS

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

Category	Pctl	Criterion	This Program In-Market	All Programs In-Market
IPEDS Gender	12	Female	20%	58%
	87	Male	81%	42%
IPEDS Ethnicity	0	American Indian or Alaska Native	0	0%
	74	Asian	9%	8%
	49	Black or African American	5%	9%
	42	Hispanic or Latino	10%	16%
	81	Native Hawaiian or Other Pacific Islander	0%	0%
	51	White	61%	54%
	80	International	8%	5%
	69	Other/Unknown	8%	7%

Degree Fit

Score: 0 Percentile: 50

Category	Pctl	Criterion	Value	Score
Cost Benchmarking**		Average Cost per SCH Index**	NA	NS
		Median Cost per SCH Index**	NA	NS

National Completions by Level

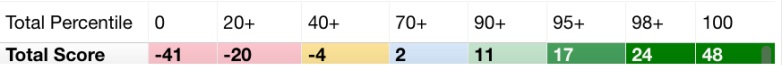
Score: 0

National Workforce Ed. Attainment

Score: 0

Award Level	Completions (National)	Completions (Market)	Enrollment (Market)	BLS Educational Attainment
No College				6%
Some College				8%
Certificate	8%	8%	5%	
Associates	8%	8%	9%	7%
Bachelors	38%	38%	29%	50%
Postbaccalaureate Certificate	5%	5%	0%	
Masters	37%	37%	48%	23%
Post-masters Certificate	0%	0%	3%	
Doctoral	4%	4%	6%	6%

CIP Description:
A program that prepares individuals to apply mathematical and scientific principles to the design, development and operational evaluation of computer controlled electro-mechanical systems and products with embedded electronics, sensors, and actuators; and which includes, but is not limited to, automata, robots and automation systems. Includes instruction in mechanical engineering, electronic and electrical engineering, computer and software engineering, and control engineering.



** Color Scale in Reverse



Agenda

What is a Program Evaluation System?

Student Demand

- Past Indicators: 2022 IPEDS Completions
- Recent Trends: Enrollment
- Future Trends: Google
- International Student Demand
- Non-Degree Courses

Employment: Current Indicators

Program of the Month

Summary



Summary

- In December, Google searches for academic programs rose 7% year-over-year.
 - Business Analytics grew by 81%.
 - Google cost-per-click rose 9%.
- Data Analytics and/or Data Science enrollment grew by 37% at the bachelor's level and 31% at the master's.
- In December, Education programs grew the most in international page views.
- Most traditional labor market sources rely on direct prep crosswalks.
 - Biological and Physical Sciences grads go into 662 occupations – not three.
- Mechatronics programs score in the 95th percentile overall.
 - Student demand is moderate, but employment opportunities are strong
 - Engineering Tech programs have close to median costs per student credit hour.



Upcoming webinars

Topic	Date
Demand Trends Webcast: Community Colleges	Wednesday February 28 th at 2 PM ET
Demand Trends Webcast: Bachelor's and Above	Thursday February 29 th at 2 PM ET

New format next month!

We will present national data as well as a “state of the month.”

The difference in data by state can be striking. It's important to know your specific market as well as your competitors'.





Grow Grow Grow: Growth Strategies in Higher Education

Listen on Spotify



Listen on Apple

