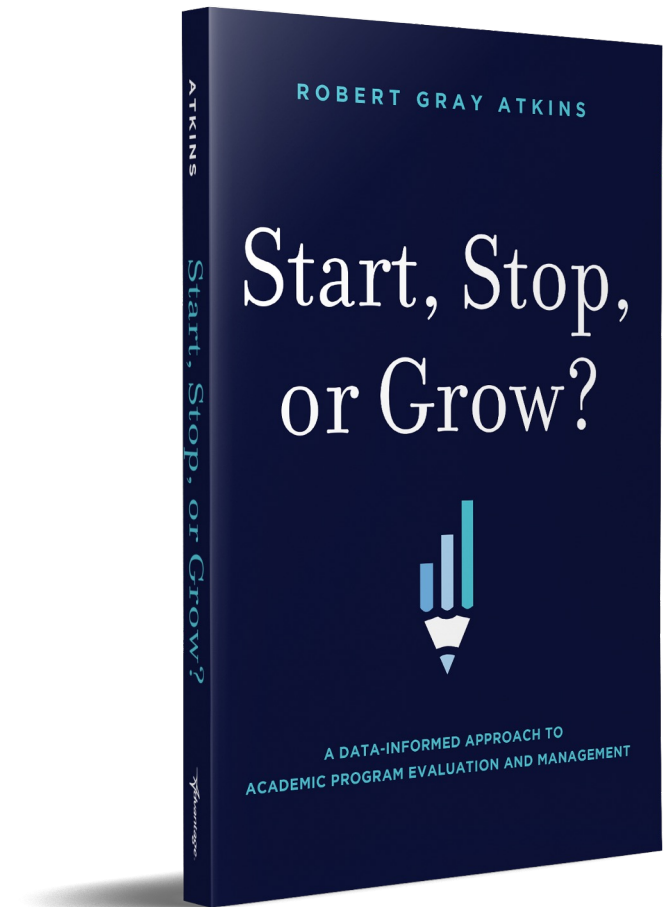**Demand for Higher Education Programs**

Results through March 2023

Today's Speakers

Robert Gray Atkins
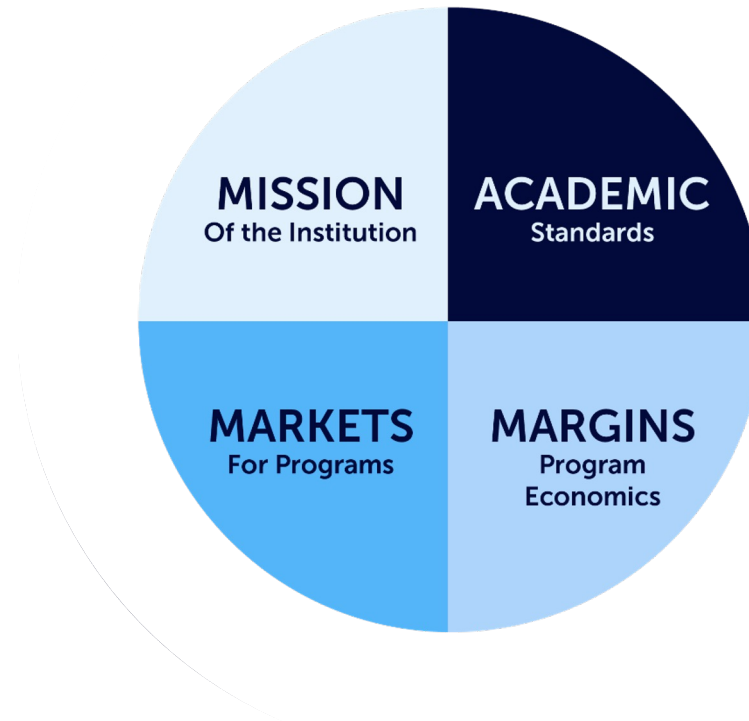**Founder and CEO**

Gray Associates

Jay Kahl, Ph.D.
Assistant Vice Provost
Assessment and Academic Excellence

Gray has developed a complete Program Evaluation System (PES).

We assemble the data in easy-to-use software.

Gray has developed a complete Program Evaluation System.

We facilitate an inclusive, data-informed evaluation process.

Agenda

Student Demand

      Traditional Programs

      Non-Degree Courses

Employment: Current Indicators

Program of the Month

Summary

GRAY ASSOCIATES

IPEDS, Enrollment, and Google Search: Past, Present, and Future

Insights on Student Demand

IPEDS   Enrollment   Google
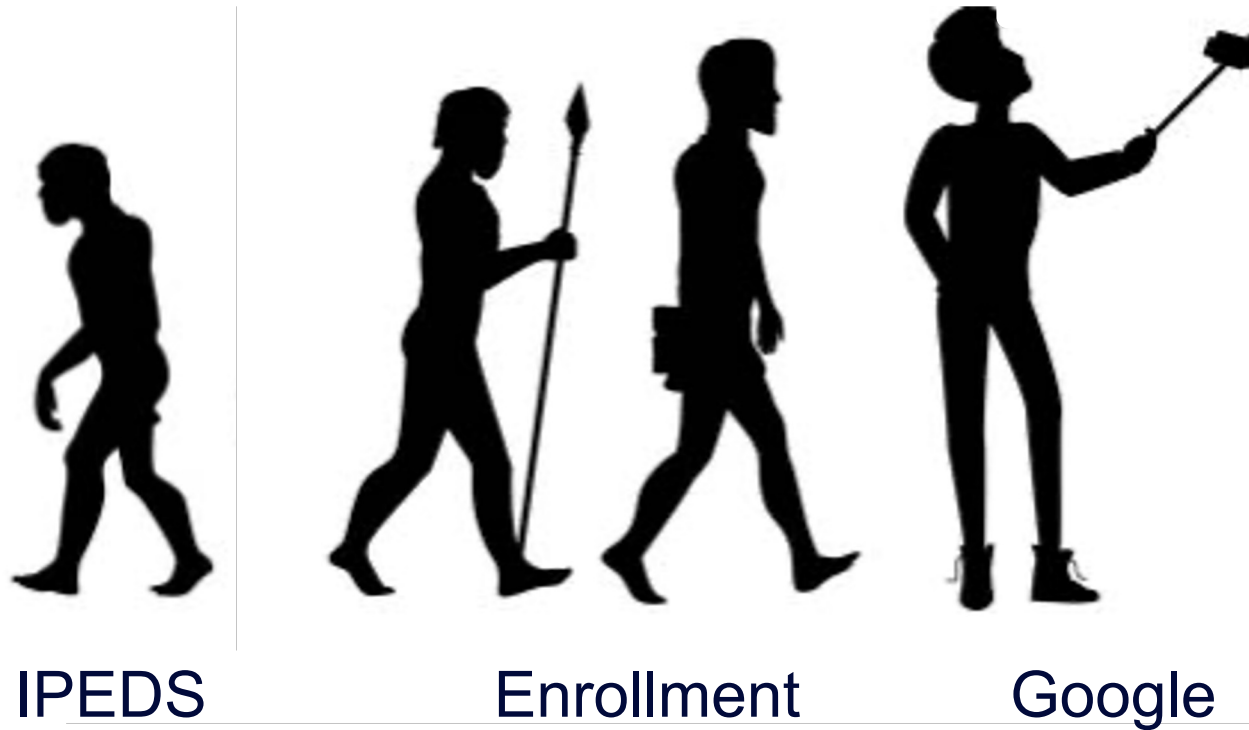
Google Search Trends: Programs

In March, Google searches for academic programs rose 6% year-over-year.*

US Google Search Volume

Legend: ■ 2021 ■ 2022 ■ 2023

+6% YoY (highlighted on March)

Source: PES Keyword Search Dashboard

7

GRAY ASSOCIATES

Google: US Highest Search Volume, Bachelor's and Above

In March, Registered Nursing had the highest search volume.

Google

Programs with the Highest Volume of Keyword Searches
March 2023

Program	Volume
Registered Nursing	600,739
Business Admin. and Mgmt, General	563,527
Cyber Security/ Info. Assurance	304,690
Computer Science	271,662
Law	214,890
Data Analytics and/or Data Science	194,971
Marketing/ Marketing Mgmt, General	179,012
Psychology, General	177,342
Social Work	169,434
Crim. Justice & Corrections, Gen'l	164,943
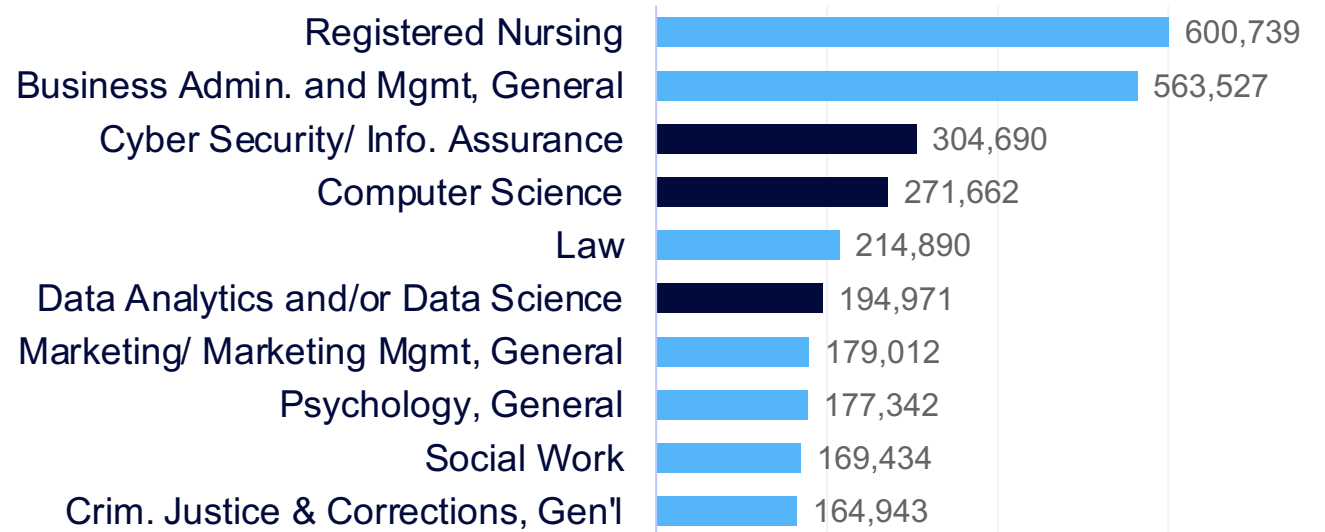
Data &Tech	3
Other	7

*Excludes associate and certificate non-transfer programs.
Source: PES Keyword Search Dashboard

Google: US Fastest-Growing Programs

In March, searches for Digital Marketing programs rose 96%.

Google

**Fastest Growth in Google Searches
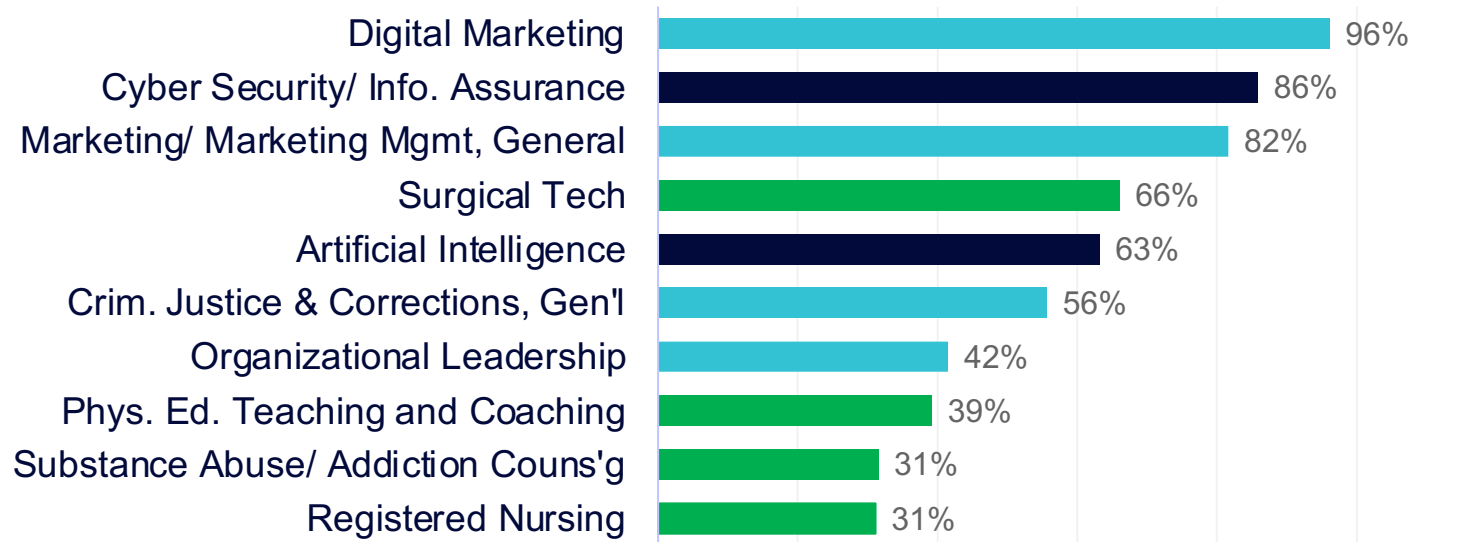YoY Growth***
March 2023

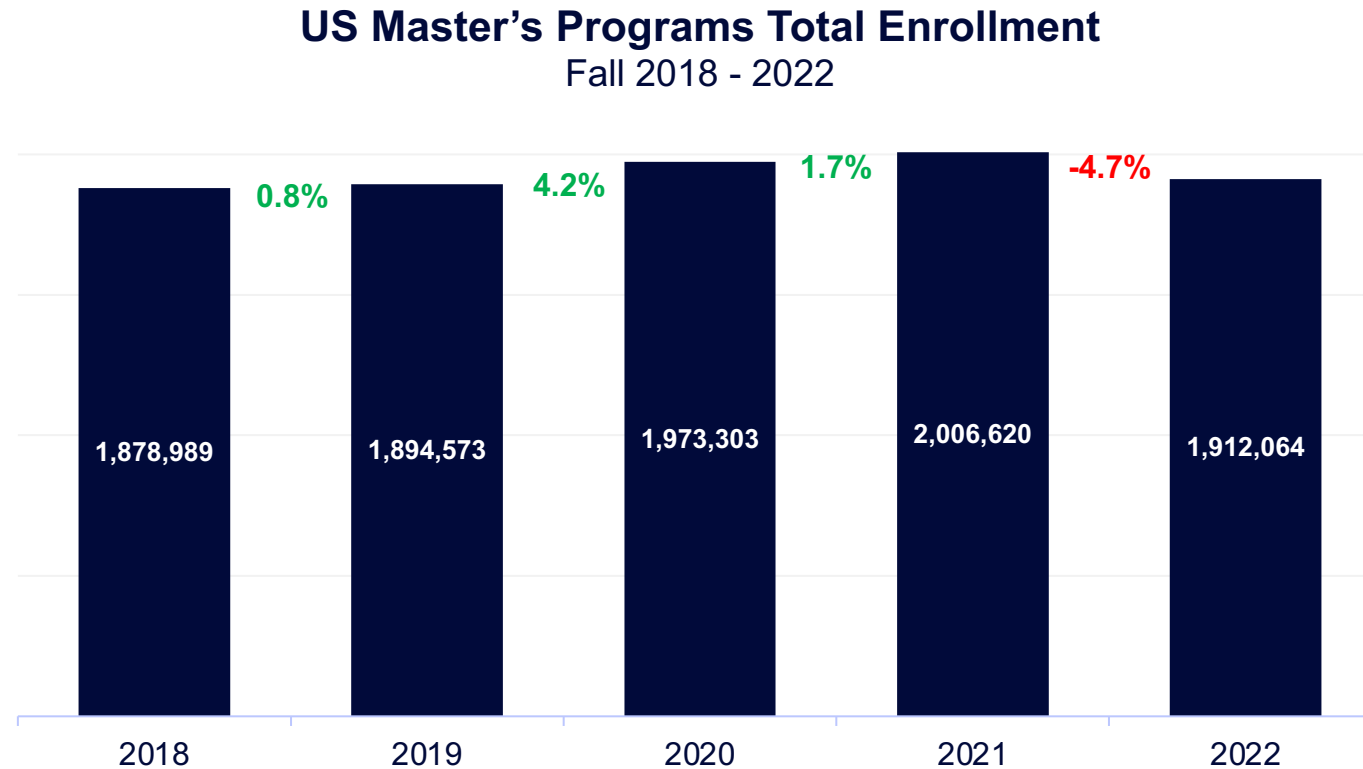| Program	Growth
Digital Marketing	96%
Cyber Security/ Info. Assurance	86%
Marketing/ Marketing Mgmt, General	82%
Surgical Tech	66%
Artificial Intelligence	63%
Crim. Justice & Corrections, Gen'l	56%
Organizational Leadership	42%
Phys. Ed. Teaching and Coaching	39%
Substance Abuse/ Addiction Couns'g	31%
Registered Nursing	31%

Category	Count
Data &Tech	2
Health	4
Other	4

*Minimum 10,000 searches March 2022

*Excludes associate and certificate non-transfer programs.
Source: PES Keyword Search Dashboard

GRAY ASSOCIATES

After three years of growth, Master's total enrollment fell 4.7% in Fall 2022.

US Master's Programs Total Enrollment
Fall 2018 - 2022

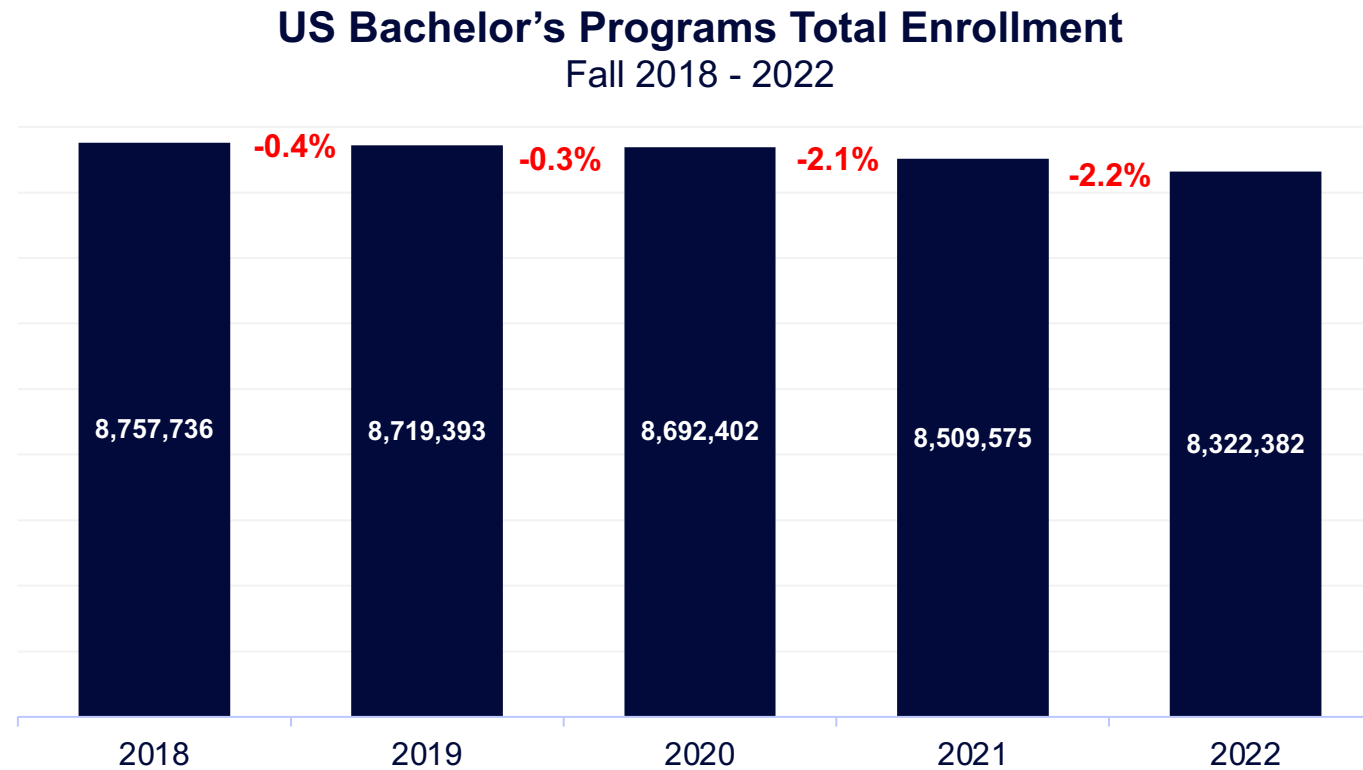|	2018	2019	2020	2021	2022
Enrollment	1,878,989	1,894,573	1,973,303	2,006,620	1,912,064
Change		0.8%	4.2%	1.7%	-4.7%

Source: Gray Analysis of National Student Clearinghouse

Master's total enrollment in Data Analytics/Science grew 57% YoY.

Fastest-Growing Total Enrollment*
Master's Programs
Fall 2022 YoY

Data Analytics and/or Data Science	57%
IT Project Mgmt	38%
Special Ed - Secondary	35%
Construction Engineering	31%
Artificial Intelligence	30%
Special Education - Elementary	28%
Psychiatric/Mental Health Nurse/Nursing	25%
Mechatronics/ Robotics/ Automation Eng'g	25%
Electrical and Computer Eng'g	24%
Computer Science	21%

Data &Tech	5
Education	2
Other	3

*Minimum 1,000 enrollees in Fall 2021
Excludes CIP codes ending in 99

Source: Gray Analysis of National Student Clearinghouse

The decline in Fall bachelor's enrollment accelerated to 2.2% in 2022.

US Bachelor's Programs Total Enrollment
Fall 2018 - 2022

Year	Enrollment	Change
2018	8,757,736	
2019	8,719,393	-0.4%
2020	8,692,402	-0.3%
2021	8,509,575	-2.1%
2022	8,322,382	-2.2%

Source: Gray Analysis of National Student Clearinghouse

Bachelor's enrollment in Data Analytics is exploding.

Fastest-Growing Total Enrollment*
Bachelor's Programs
Fall 2022 YoY

Program	%
Data Analytics and/or Data Science	34%
Cyber Security/ Info. Assurance	28%
Business Analytics	25%
Computer Programming, General	18%
Applied Psychology	15%
Digital Arts	13%
Sustainability Studies	13%
Exercise Physiology	10%
Econometrics and Quantitative Economics	10%
Architectural & Building Sciences/Tech	9%

Data &Tech 4

Other 6

*Minimum 5,000 enrollees in Fall 2021
Excludes CIP codes ending in 99

Source: Gray Analysis of National Student Clearinghouse

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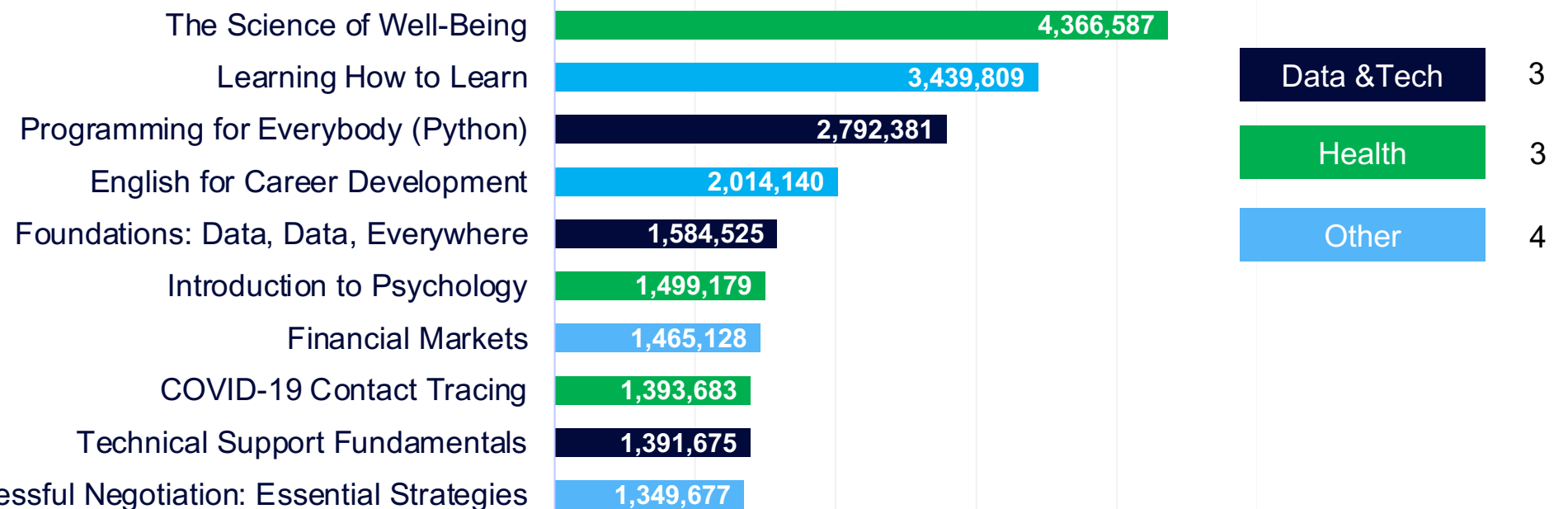
Coursera: Highest Cumulative Course Enrollment

In March, The Science of Well-Being had the highest cumulative course enrollment once again.

- Introduction to Psychology is a new entrant into the top 10.

Highest Cumulative Course Enrollment Volume
March 2023

Course	Enrollment
The Science of Well-Being	4,366,587
Learning How to Learn	3,439,809
Programming for Everybody (Python)	2,792,381
English for Career Development	2,014,140
Foundations: Data, Data, Everywhere	1,584,525
Introduction to Psychology	1,499,179
Financial Markets	1,465,128
COVID-19 Contact Tracing	1,393,683
Technical Support Fundamentals	1,391,675
Successful Negotiation: Essential Strategies	1,349,677

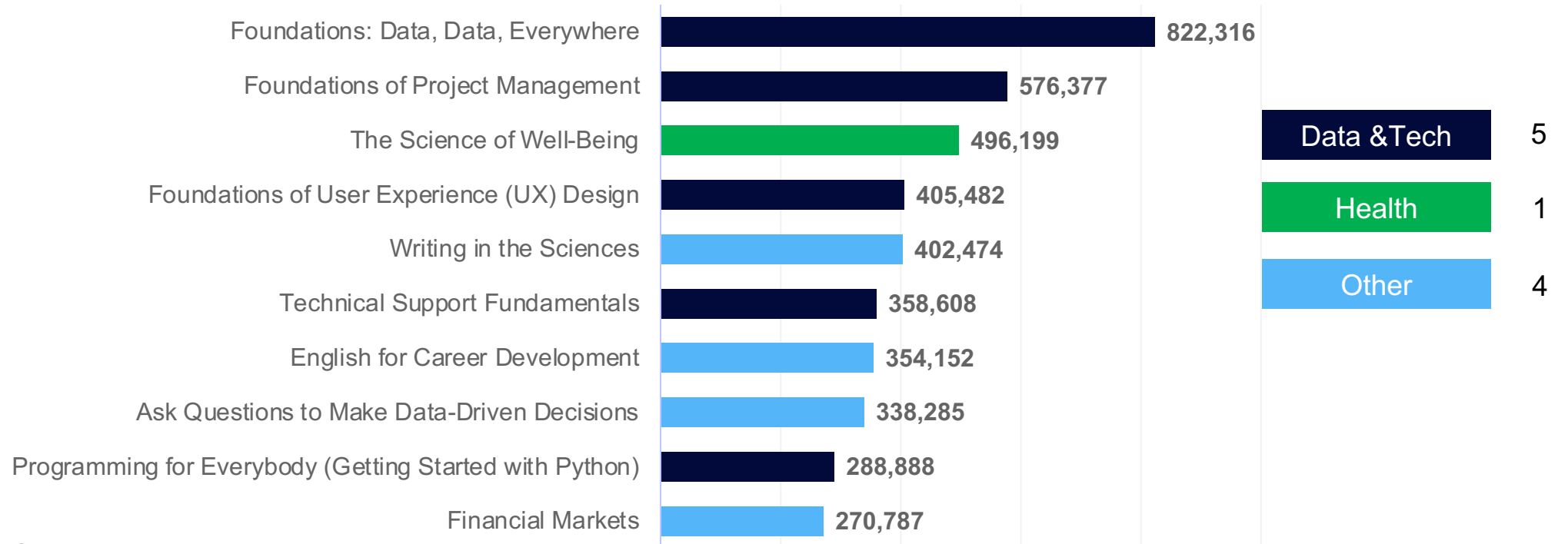| Category	Count
Data &Tech	3
Health	3
Other	4

Source: PES Non-Degree Demand: Coursera

Coursera: Largest-Growing Courses

In March, Foundations: Data, Data, Everywhere added the most students year-over-year.

Highest Year-Over-Year Unit Change in Cumulative Enrollment
March 2023

Course	Enrollment
Foundations: Data, Data, Everywhere	822,316
Foundations of Project Management	576,377
The Science of Well-Being	496,199
Foundations of User Experience (UX) Design	405,482
Writing in the Sciences	402,474
Technical Support Fundamentals	358,608
English for Career Development	354,152
Ask Questions to Make Data-Driven Decisions	338,285
Programming for Everybody (Getting Started with Python)	288,888
Financial Markets	270,787

Category	Count
Data &Tech	5
Health	1
Other	4

Source: PES Non-Degree Demand: Coursera

Agenda

In March, job postings for bachelor and above degree-holders fell 31% YoY.

US Job Postings by Month
Bachelor and Graduate Degrees

■ 2022 ■ 2023

Source: PES Job Postings Dashboard
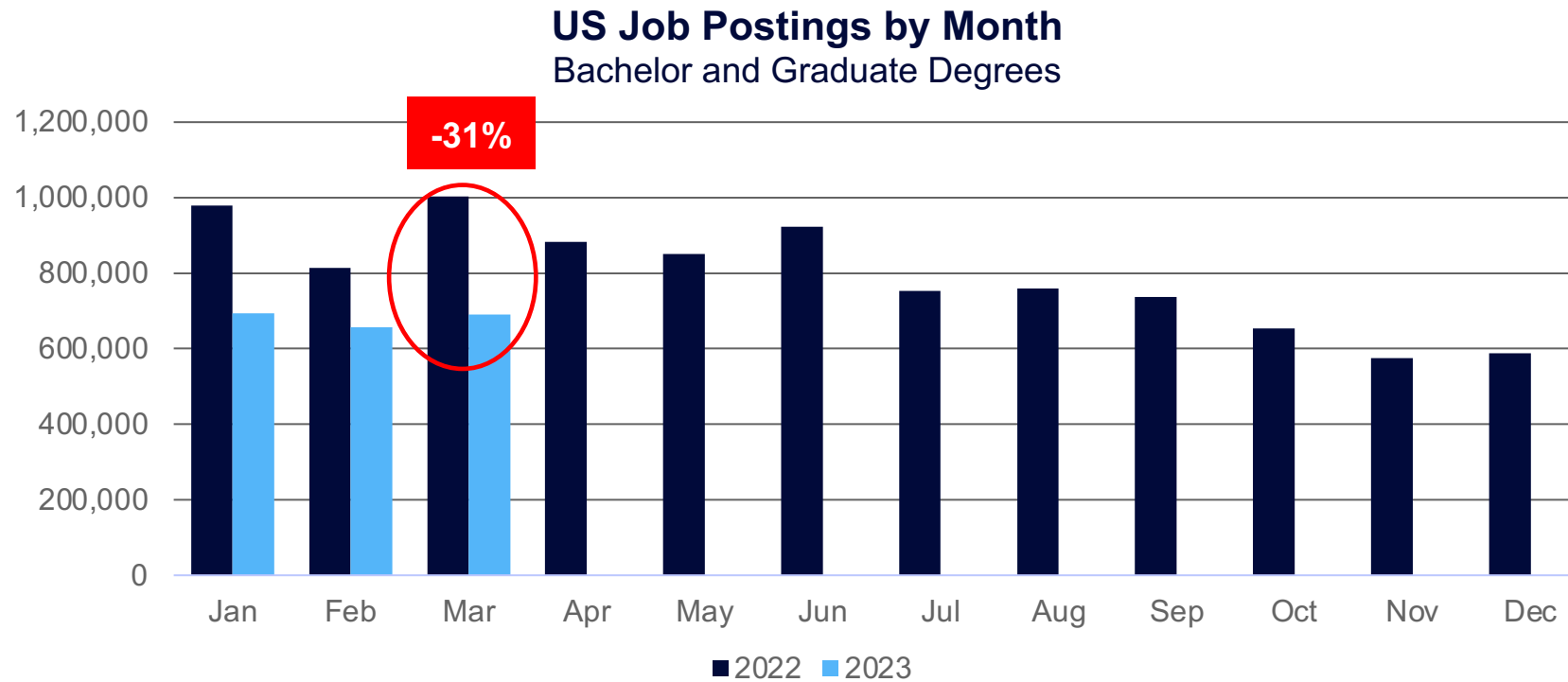
In March, General and Operations Managers had the highest number of job postings.

Highest Number of Job Postings by Occupation
March 2023

Occupation	Postings
General and Operations Managers	92,900
Registered Nurses	61,763
Retail Salespersons	32,998
Human Resources Specialists	27,913
Computer User Support Specialists	27,613
Marketing Managers	25,520
Management Analysts	19,409
Sales Reps, Wholesale and Manufacturing	17,890
Financial Managers	16,241
Sales Managers	15,503

Legend:
- **Management**
- **Sales**
- **Other**

Source: PES Job Postings Dashboard

In March, job postings for Loan Officers grew 121% year-over-year.*

10 Fastest-Growing Occupations
By SOC Code, March 2023 YoY

Occupation	%
Loan Officers	121%
Human Resources Specialists	96%
Industrial Engineers	89%
Insurance Sales Agents	85%
Marketing Managers	83%
Market Research Analysts and Marketing Specialists	83%
Human Resources Assistants	80%
Computer and Information Systems Managers	79%
Retail Salespersons	76%
Management Analysts	67%

Management
Sales
Other

*Minimum 2,000 postings February 2023

Source: PES Job Postings Dashboard

Agenda

What is a Program Evaluation System?

GRAY ASSOCIATES
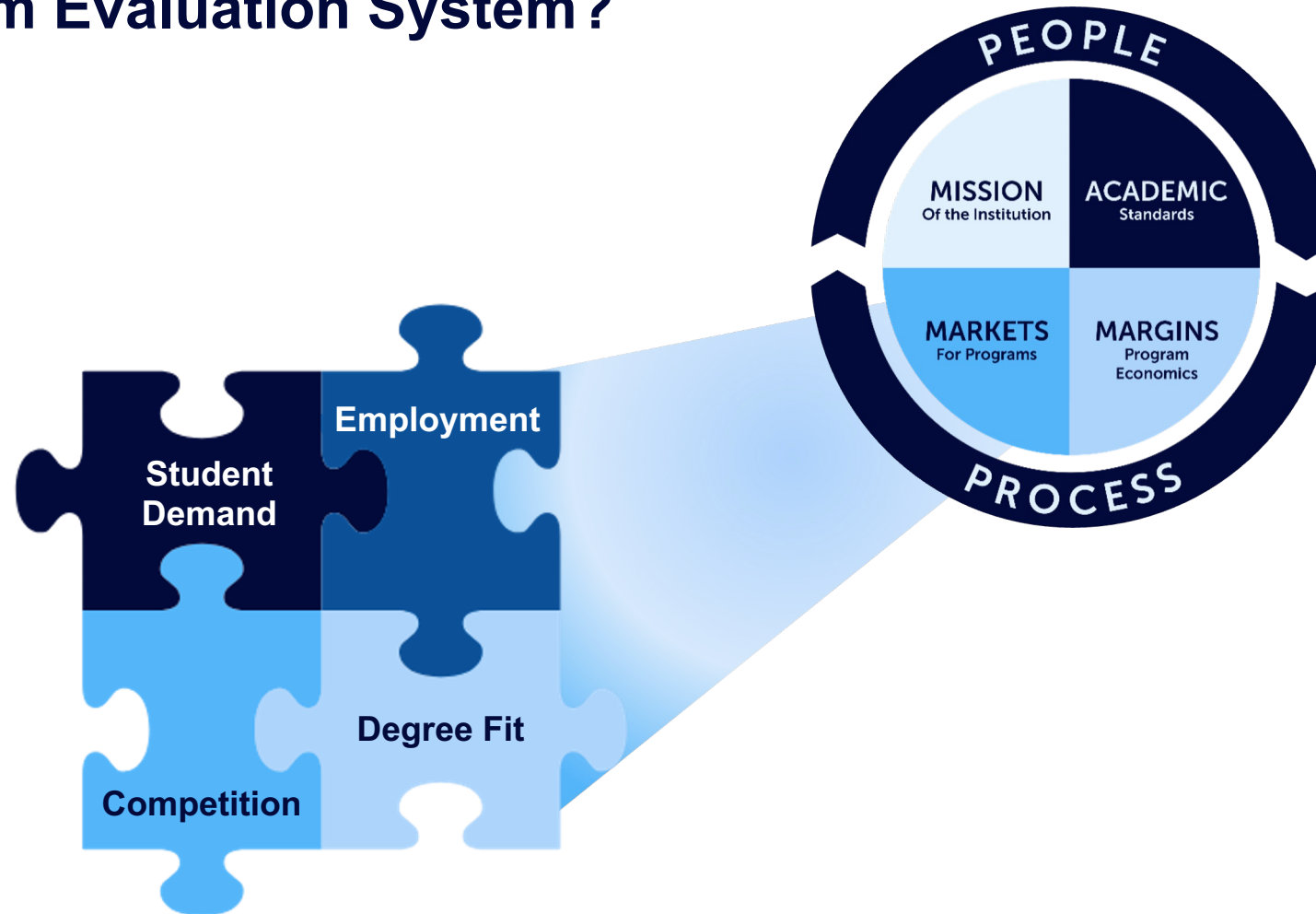
Program Markets: Program Rank

We score on Student Demand, Employment, Competitive Intensity, and Degree Fit.

- Let's focus on the Midwest market for a Bachelor's in Psychology.

Midwest Program Ranking
Bachelor's Programs

CIP	Total Percentile	Student Demand Percentile	Competitive Intensity Percentile	Employment Percentile	Degree Fit Percentile
52.1001 Human Resources Management, Gen'l	97	97	5	87	50
51.0201 Communication Science, Gen'l	97	96	91	50	50
52.0901 Hospitality Admin/Mgmt, General	97	95	26	83	50
26.0908 Exercise Physiology	97	94	97	66	50
52.1201 Management Info. Systems, General	97	94	15	92	50
52.0299 Business Admin/Mgmt/ Oper., Other	97	90	21	96	50
14.4701 Electrical and Computer Eng'g	97	88	35	95	50
26.0701 Zoology/Animal Biology	97	87	98	92	50
49.0104 Aviation/ Airway Mgmt and Operations	97	87	15	99	50
26.0203 Biophysics	97	84	50	96	50
14.0803 Structural Engineering	97	78	35	98	50
42.0101 Psychology, General	96	99	11	9	50
51.0701 Health Care Admin/Mgmt	96	99	1	66	50
43.0100 Crim. Justice & Corrections, Gen'l	96	99	0	71	50
51.0000 Health Svcs/ Allied Health, Gen'l	96	98	15	25	50
40.0801 Physics, General	96	98	11	50	50
52.0213 Organizational Leadership	96	98	0	83	50
26.0202 Biochemistry	96	96	5	87	50
26.1501 Neuroscience	96	96	5	83	50
27.0501 Statistics, General	96	95	8	87	50

Total Percentile	0	20+	40+	70+	90+	95+	98+	100
Total Score	-49	-16	-12	4	13	19	26	60

Source: Gray's PES Markets

Program Scorecard: Student Demand

A Bachelor's in Psychology scores in the 99th percentile for Student Demand.

- This is a very large program.
  - Google search volume is in the 98th percentile.
  - All other size metrics are in the 99th percentile.

Student Demand
Score: 34 Percentile: 99

Catego...	Pctl	Criterion	Value	Score
Size	98	Google Search Volume (3 Months)*	18,080	8
	99	International Page Views (12 Months)	3,037	NS
	99	New Student Enrollment Volume (12 Mo.)	4,418	4
	99	On-ground Completions at In-Market Institutions	6,474	12
	99	Online Completions by In-Market Students	917	4
	99	Sum of On-ground and Online Completions	7,391	3

Source: Gray's PES Markets

Student Demand: Growth Metrics

Growth metrics are mixed.

- Google searches fell 16% year-over-year.
- Growth in new student enrollment and completions is average.

Student Demand
Score: 34 Percentile: 99

Catego...	Pctl	Criterion	Value	Score
Size	98	Google Search Volume (3 Months)*	18,080	8
	99	International Page Views (12 Months)	3,037	NS
	99	New Student Enrollment Volume (12 Mo.)	4,418	4
	99	On-ground Completions at In-Market Institutions	6,474	12
	99	Online Completions by In-Market Students	917	4
	99	Sum of On-ground and Online Completions	7,391	3
Growth	0	Google Search YoY Change (Units)*	-3,340	-1
	99	New Student Enrollment Vol. YoY Change (Units)	130	1
	99	Completion Volume YoY Change (Units)	276	3
	22	Google Search YoY Change (%)*	-16%	0
	62	New Student Enrollment Vol. YoY Change (%)	3%	NS
	62	Completion Volume YoY Change (%)	4%	0

Source: Gray's PES Markets

Program Scorecard: Employment

In the Midwest, a Bachelor's in Psychology ranks in the 9th percentile for Employment.

Direct Prep Jobs:

- Job postings and current employment size ranks in the 84th percentile and lower.

- Historical growth is negative.

- Very low job postings per graduate.

ACS Outcomes:

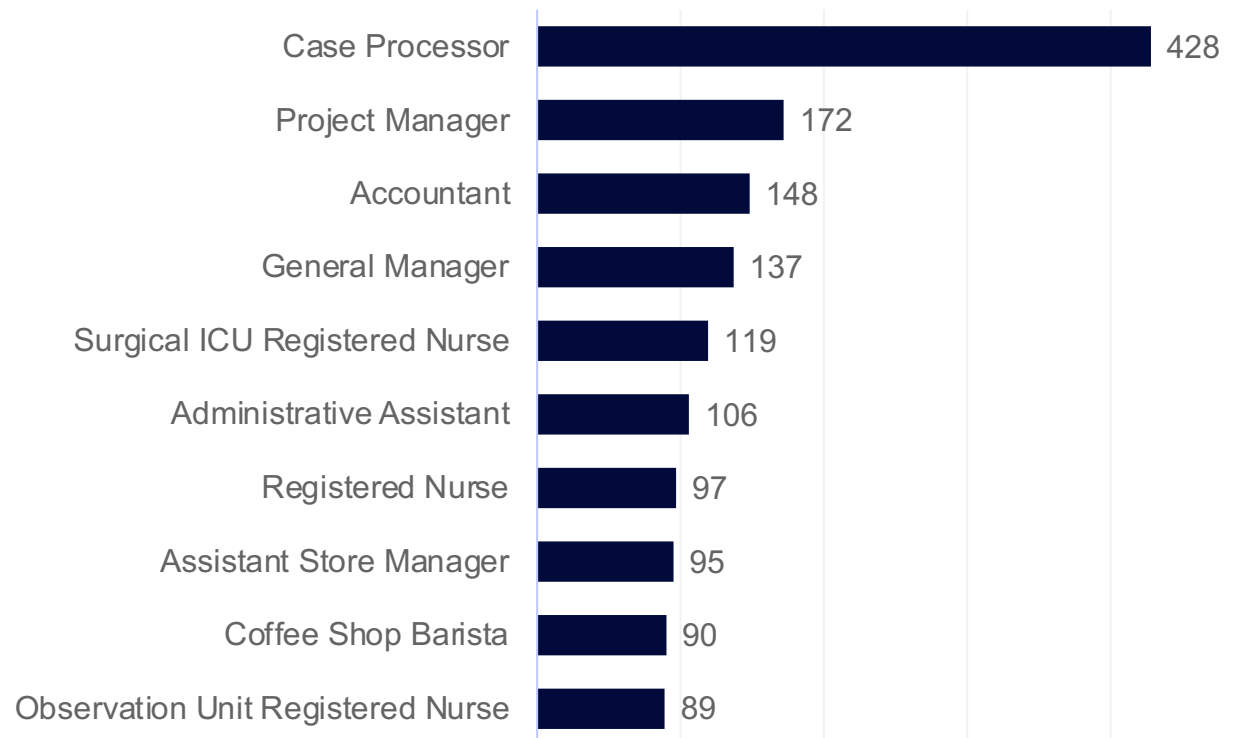- 99th percentile for job postings and BLS current employment.

Source: Gray's PES Markets

Employment*
Score: -10 Percentile: 9

Category	Pctl	Criterion	Value	Score
Size: Direct Prep	84	Job Postings Total (12 Months)*	2,521	1
	78	BLS Current Employment*	3,806	1
	78	BLS Annual Job Openings*	342	0
Size: ACS Bach. Outcomes	99	Job Postings Total (12 Months)*	27,430	NS
	99	BLS Current Employment*	132,642	NS
Growth (Direct Prep)	33	BLS 1-Year Historical Growth*	-1.5%	-1
	48	BLS 3-Year Historic Growth (CAGR)*	-0.4%	-1
	77	BLS 10-Year Future Growth (CAGR)*	1.0%	NS
Saturation (Direct Prep)	14	Job Postings per Graduate*	0.3	-1
	0	BLS Job Openings per Graduate*	0.0	-1
Wages (Direct Prep)	45	BLS 10th-Percentile Wages*	$39,512	NS
	54	BLS Mean Wages*	$65,385	NS
National American Community Survey Bachelor's Degree Outcomes	18	Wages (Age < 30)	$38,129	-5
	38	Wages (Age 30-60)	$80,906	0
	76	% with Any Graduate Degree	50%	NS
	83	% with Masters	35%	NS
	75	% with Doct/Prof Degree	15%	NS
	86	% Unemp. (Age <30)**	4%	-2
	73	% Unemp. (Age 30-60)**	2%	-1
	44	% in Direct Prep Jobs	5%	NS

Psychology: In March, Case Processors were in high demand in the Midwest.

Highest Job Postings Volume, Midwest
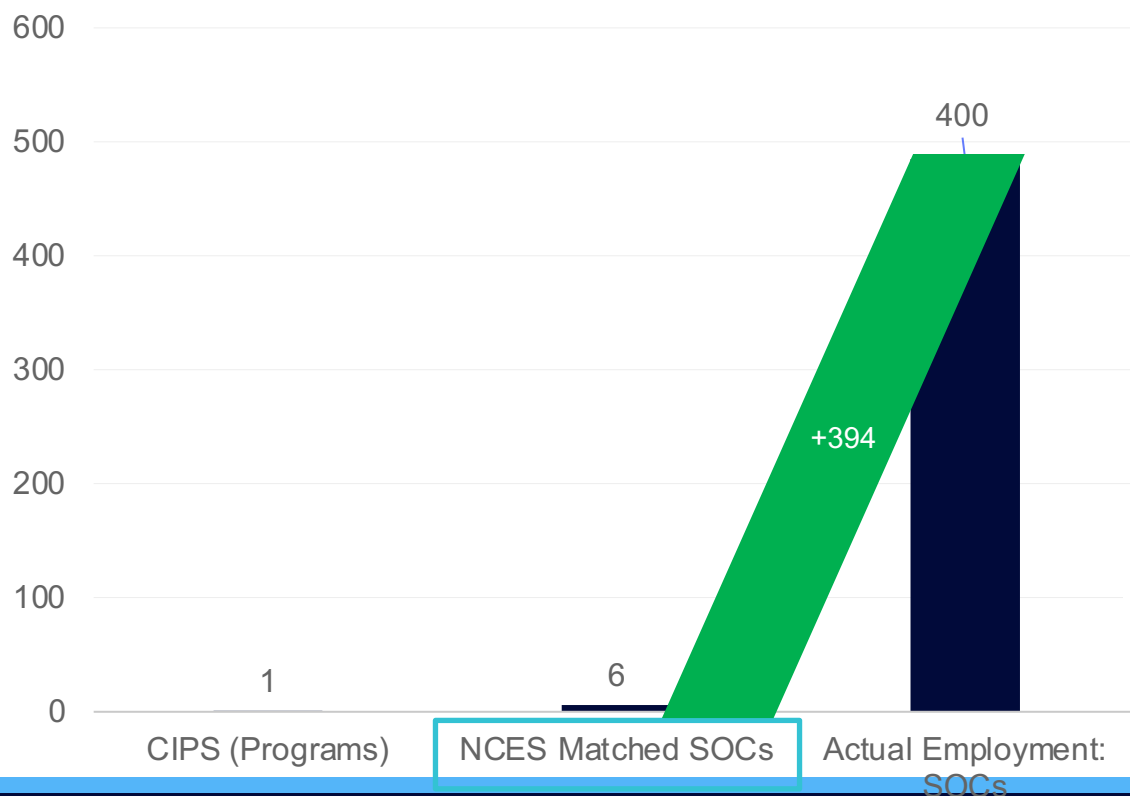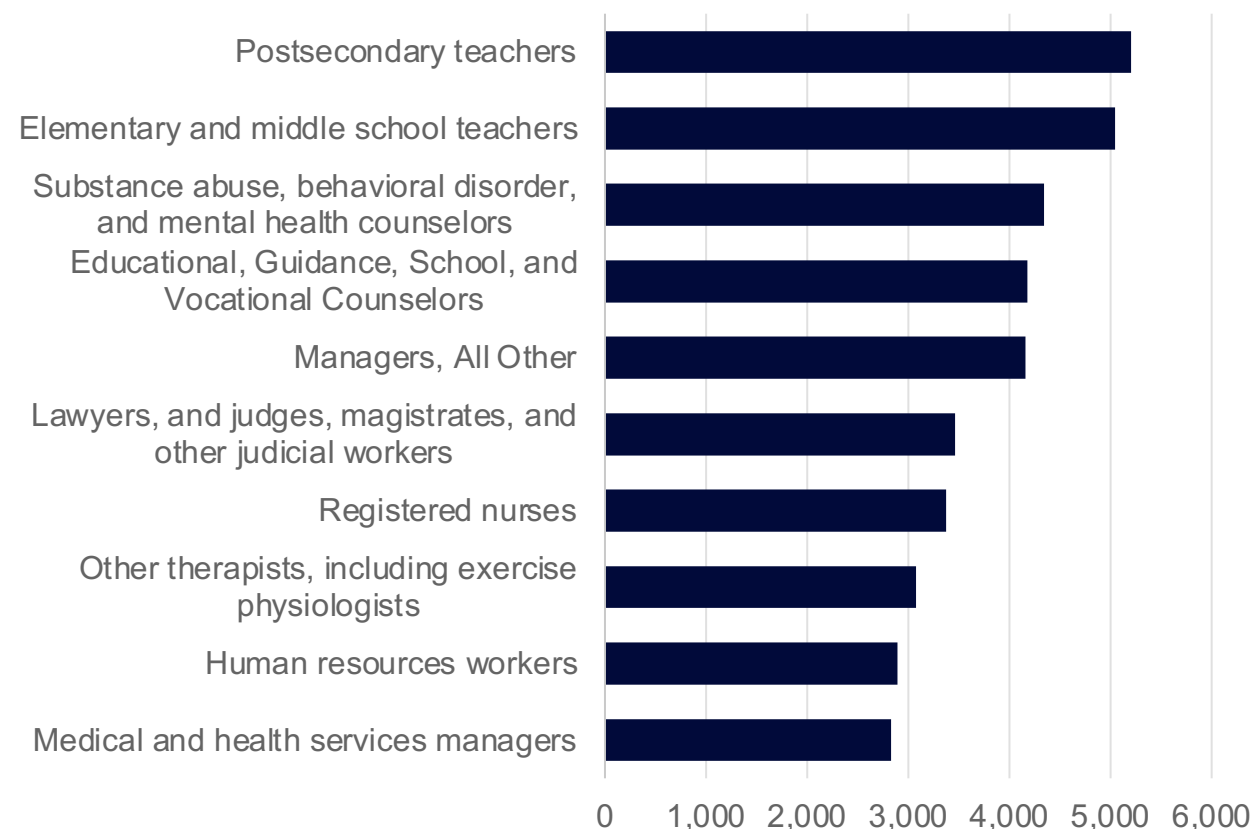Bachelor's in Psychology, March 2023

Job Title	Postings
Case Processor	428
Project Manager	172
Accountant	148
General Manager	137
Surgical ICU Registered Nurse	119
Administrative Assistant	106
Registered Nurse	97
Assistant Store Manager	95
Coffee Shop Barista	90
Observation Unit Registered Nurse	89

Source: PES Job Postings Dashboard

GRAY ASSOCIATES

ACS Outcomes: In the Midwest, Psychology majors go into 400 SOCS and earn $56,389 mid-career on average.

Count of Programs and Occupations
CIP 42.0101, Psychology, General

Top Occupations, Psychology Majors, Ages 30-60

- Postsecondary teachers
- Elementary and middle school teachers
- Substance abuse, behavioral disorder, and mental health counselors
- Educational, Guidance, School, and Vocational Counselors
- Managers, All Other
- Lawyers, and judges, magistrates, and other judicial workers
- Registered nurses
- Other therapists, including exercise physiologists
- Human resources workers
- Medical and health services managers

Program Scorecard: Competitive Intensity

Psychology is in the 11th percentile for Competitive Intensity.

- There are 146 campuses graduating psychology students in the Midwest.

- Midwestern students complete the program at 79 national online institutions.

- Median program size is healthy but dropped 17% year-over-year.

- Marketing costs are high.

Competitive Intensity
Score: -3 Percentile: 11

Category	Pctl	Criterion	Value	Score
Volume of In-Market Competition	99	Campuses with Graduates**	146	-4
	3	Campuses with Grads YoY Change (Units)**	-2	2
	99	Institutions with Online In-Market Student	79	NS
In-Market Program Sizes	95	Average Program Completions	44	4
	87	Median Program Completions	21	0
	15	YoY Median Prog. Compl. Change (Units)	-4	-1
	42	YoY Median Prog. Compl. Change (%)	-17%	-1
In-Market Saturation	98	Google Search * Cost per Click**	$28	-3
	85	Google Competition Index**	0.52	0
National Online Competition	99	National Online Institutions (Units)**	277	NS
	84	Nat'l Online % of Institutions	19%	NS
	77	Nat'l Online % of Completions	11%	NS

Source: Gray's PES Markets

Program Scorecard: Degree Fit

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

▪ 91% of completions are at the bachelor's level in the Midwest.

▪ However, only 19% of the national workforce hold a bachelor's degree.

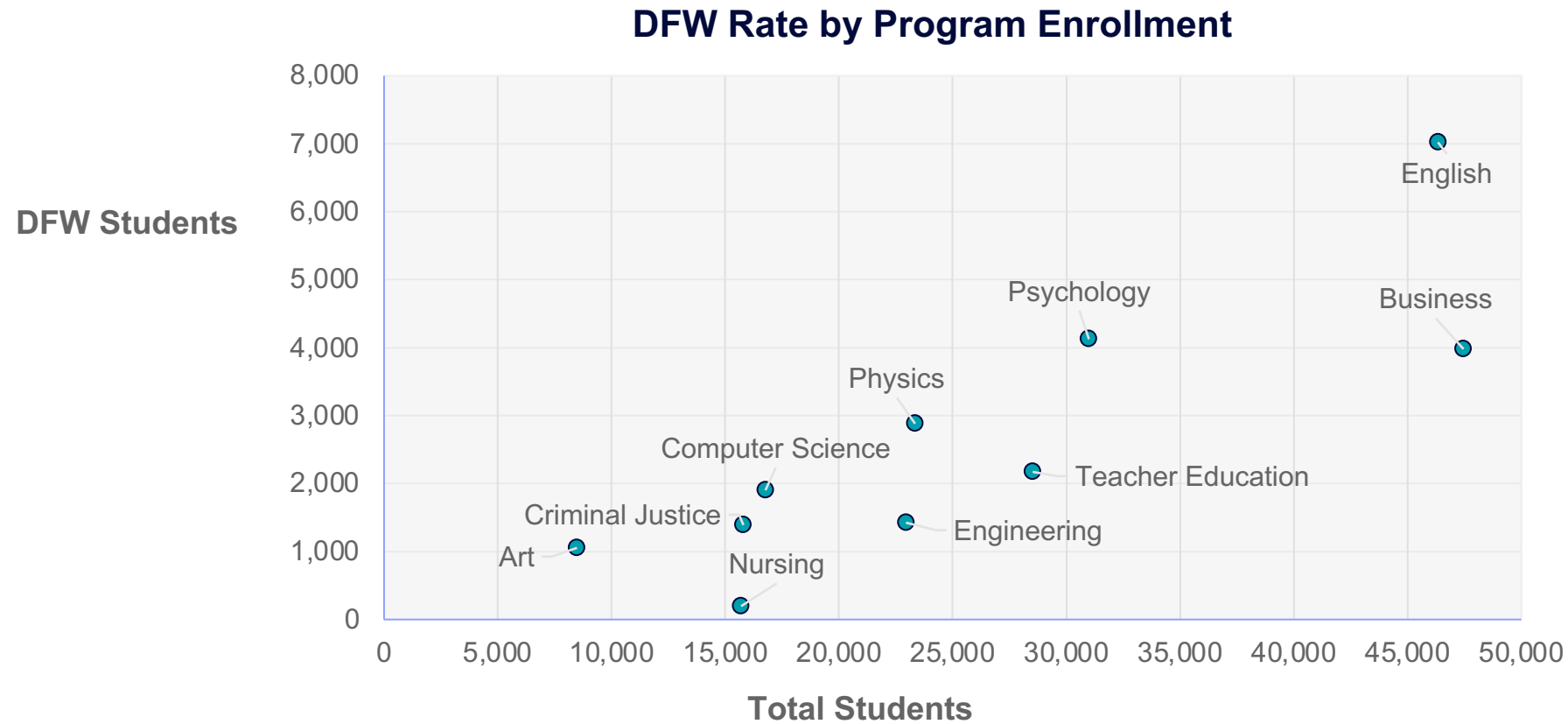▪ Master's degrees are the most common in the workforce.

Award Level	Completions (National)	Completions (Market)	Enrollment (Market)
Certificate	0%	1%	0%
Associates	13%	3%	15%
Bachelors	81%	91%	71%
Postbaccalaureate Certificate	0%	0%	0%
Masters	4%	4%	9%
Post-masters Certificate	0%	0%	1%
Doctoral	1%	1%	4%
Unknown	0%	0%	0%

Degree Fit:
Score: 0 Percentile: 50

National Workforce Ed. Attainment
Score: 0

Award Level	BLS Educational Attainment
No College	6%
Some College	9%
Associates	5%
Bachelors	19%
Masters	34%
Doctoral	26%

Source: Gray's PES Markets

13% of Psychology students Drop, Fail, or Withdraw vs. an 11% average.

DFW Rate by Program Enrollment

DFW Students (y-axis): 0, 1,000, 2,000, 3,000, 4,000, 5,000, 6,000, 7,000, 8,000

Total Students (x-axis): 0, 5,000, 10,000, 15,000, 20,000, 25,000, 30,000, 35,000, 40,000, 45,000, 50,000

Data points:
- English
- Business
- Psychology
- Physics
- Computer Science
- Teacher Education
- Criminal Justice
- Engineering
- Art
- Nursing

US demographics: Psychology

In 2021, women were 80% of completions.

- 50% of 2021 completions were by white students.
- 22% were by Hispanic or Latino students.

US 2021 Completions by Demographic Group

Bar chart values: Female 80%, Male 20%, White 50%, Hispanic or Latino 22%, Black or African American 12%, Two or more races 9%, International 8%, Asian 6%, All Others 3%
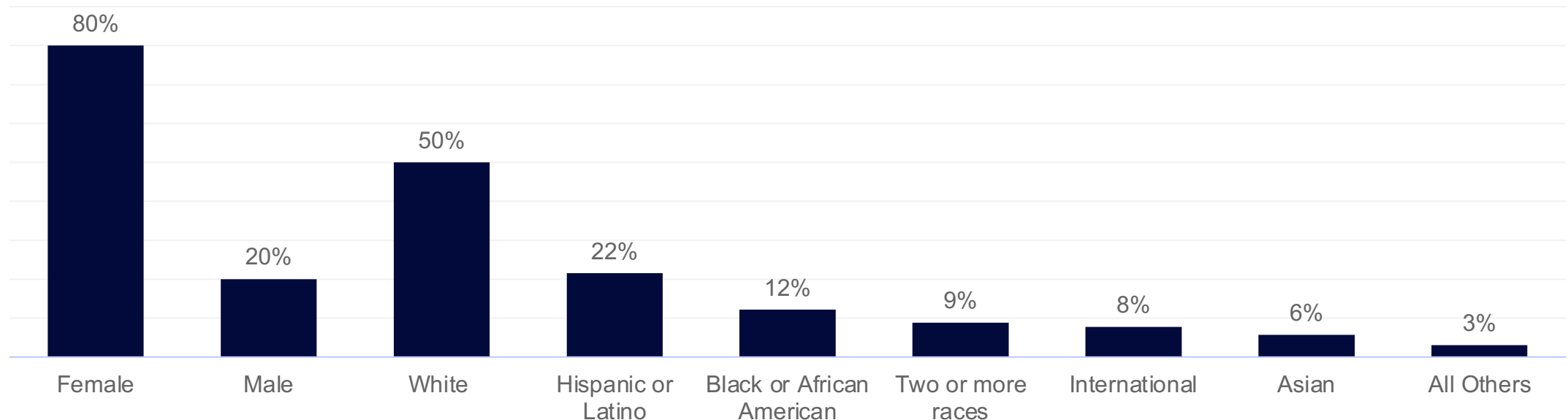
Source: Gray's PES Markets

CIP: 42.0101 Psychology, General | Market: Upper Midwest | Total Score: 21 → Percentile: 96

Student Demand
Score: 34 Percentile: 99

Catego...	Pctl	Criterion	Value	Score
Size	98	Google Search Volume (3 Months)*	18,080	8
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Competitive Intensity
Score: -3 Percentile: 11

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	83	% with Masters	35%	NS
	75	% with Doct/Prof Degree	15%	NS
	86	% Unemp. (Age <30)**	4%	-2
	73	% Unemp. (Age 30-60)**	2%	-1
	44	% in Direct Prep Jobs	5%	NS

CIP Description:
A general program that focuses on the scientific study of individual and collective behavior, the physical and environmental bases of behavior, and the analysis and treatment of behavior problems and disorders. Includes instruction in the principles of the various subfields of psychology, research methods, and psychological assessment and testing methods.

Degree Fit:
Score: 0 Percentile: 50

Category	Pctl	Criterion	Value	Score
NHEBI	0	Cost Index**	45%	NS
Natl 2 Year	98	Student: Faculty Index	1.61	NS

National Completions by Level
Score: 0

Award Level	Completions (National)	Completions (Market)	Enrollment (Market)
Certificate	0%	1%	0%
Associates	13%	3%	15%
Bachelors	81%	91%	71%
Postbaccalaureate Certificate	0%	0%	0%
Masters	4%	4%	9%
Post-masters Certificate	0%	0%	1%
Doctoral	1%	1%	4%
Unknown	0%	0%	0%

National Workforce Ed. Attainment
Score: 0

Award Level	BLS Educational Attainment
No College	6%
Some College	9%
Associates	5%
Bachelors	19%
Masters	34%
Doctoral	26%

* - Google search, employment data and Jobs Per Grad Ratio do not filter by award level.
** - Color scale in reverse.
NA - No data available/not currently tracked.
NS - Not Scored in Rubrics (values = 0).
2-Yr - Associates & certificate programs only.
PCTL - Percentile

Total Percentile	0	20+	40+	70+	90+	95+	98+	100
Total Score	-49	-16	-12	4	13	19	26	60

** Color Scale in Reverse

Percentile (Reverse)	<02	02+	05+	10+	30+	60+

Augustana New Program Feasibility and Program Review

- Moved to PES approximately three years ago (competitor had limited functionality)
  - AU has a decentralized IR department, soon to be reimagined.
  - Deans and Division Chair have access but expressed reluctance in usage.

- When dealing with new program feasibility, a deeper dive is typically required through a partnership with Gray (Fintech versus Neuroscience for example).

- Program Review offers time to reflect on the scorecard. Department Chairs/Program Directors often see this data for the first time and then connect with faculty. They receive National, Upper Midwest, and South Dakota market data as a baseline and then other reports (skills and or competitors information) upon request.

- Data largely creates a conversation about where nuances exist and where the department is headed (5-year plan versus annual assessment reports).

Agenda

GRAY ASSOCIATES

Summary

- Fall 2022 master's total enrollment in Data Analytics/Data Science leapt up 57% YoY.
  - Bachelor's enrollment in Data Science grew 34% – the fastest of any program at the Bachelor's level.

- In February, US Google searches for academic programs increased 6% year-over-year.
  - Digital Marketing had the fastest-growth in searches.

- Total job posting volume fell 31% year-over-year.
  - Job postings for loan officers increased 121% year-over-year.

- Demand for a Bachelor's in Psychology in the Midwest is high.
  - New student enrollment is in the 99th percentile and grew 3% year-over-year.
  - Google searches are high but decreased 16% year-over-year.
  - Generalist job posting volume reached the 99th percentile.

- Augustana is tripling-down on PES usage, partially as a response to changing market conditions, and also as we enjoy a larger national presence. Early indications suggest student demand (and enrollment) for FA23 are similar to those of FA22, with some notable exceptions.

Upcoming Webinars

Topic	Date
Demand Trends Webcast: Community Colleges	*Wednesday* May 24th at 2 PM ET
Demand Trends Webcast: Bachelor's and Above	*Thursday* May 25th at 2 PM ET

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