Demand for Higher-Education Programs

March 27th, 2024

Agenda

Why a Program Evaluation System?

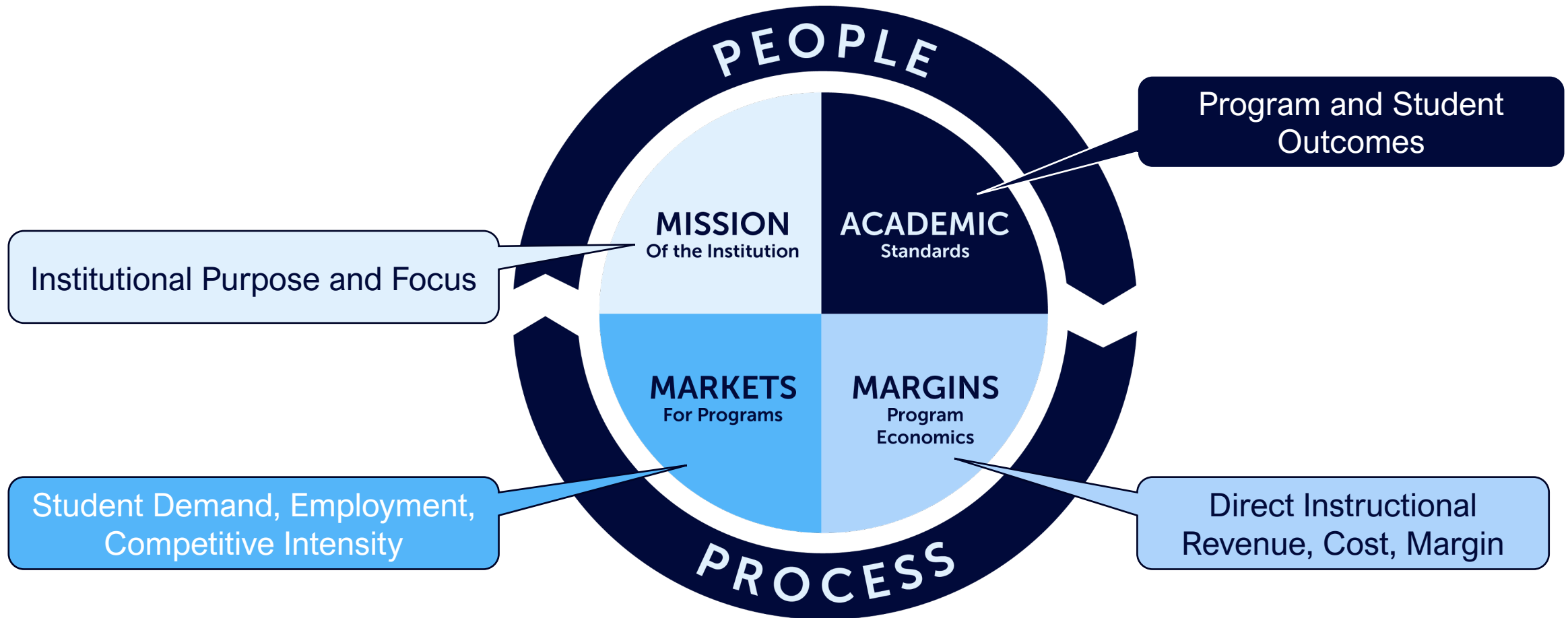**Student Demand**

- **Leading Indicators: Google**
- **Recent Trends: Enrollment**
- **Non-Degree Courses**

National Employment: Current Indicators

Local Matters: Illinois, Massachusetts, Washington

Summary

GRAY DI

An academic Program Evaluation System enables growth and sustainable financials.

Program and Student Outcomes

Institutional Purpose and Focus

PEOPLE

MISSION
Of the Institution

ACADEMIC
Standards

MARKETS
For Programs

MARGINS
Program Economics

PROCESS

Student Demand, Employment, Competitive Intensity

Direct Instructional Revenue, Cost, Margin

Agenda

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Summary

IPEDS, Enrollment, and Google Search: Past, Present, Future
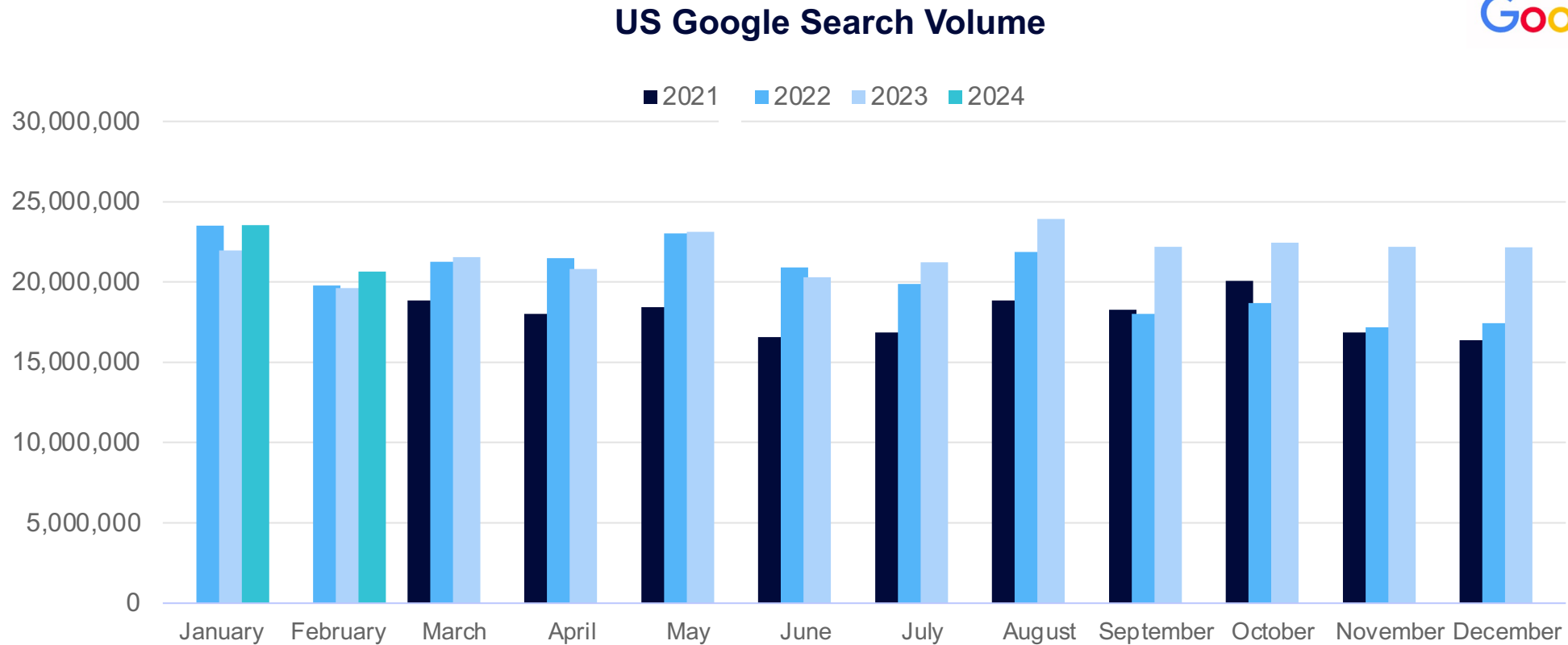
Insights on Student Demand

IPEDS

Enrollment

Google

Google Search Trends: Programs

Gray tracks searches for over 900 programs (90% of all US completions).

US Google Search Volume

Legend: ■ 2021 ■ 2022 ■ 2023 ■ 2024

Source: PES Keyword Search Dashboard

Google Search Trends: Programs

In February 2024, Google searches for academic programs grew 5% year-over-year.

US Google Search Volume
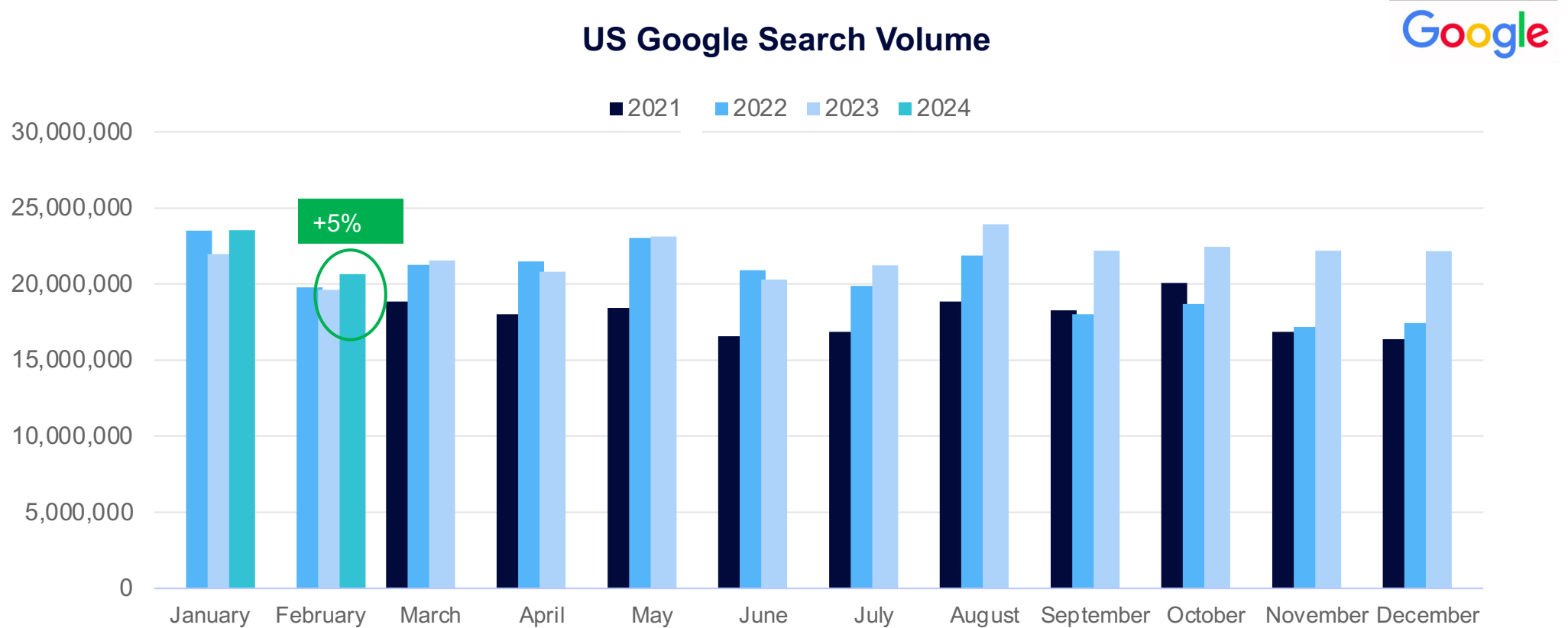
Source: PES Keyword Search Dashboard

Google Search Trends: Cost-per-Click

In February 2024, the average Google cost-per-click increased 1% year-over-year.

US Google Cost-per-Click
February 2022 – 2024

Legend: 2022 | 2023 | 2024

Google
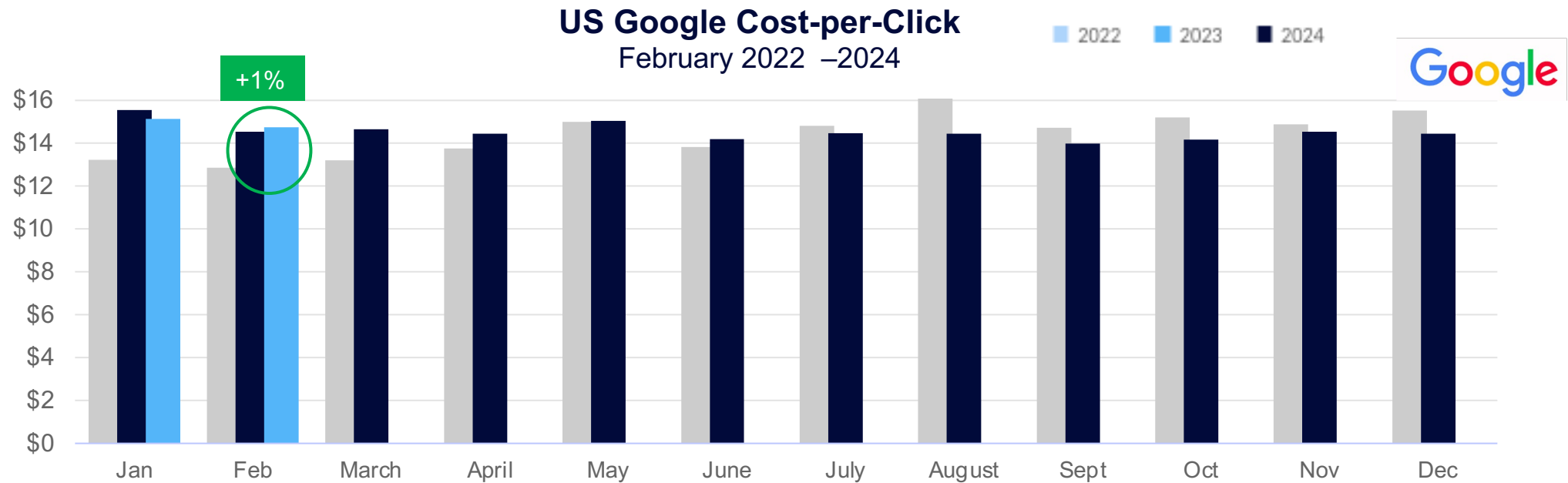
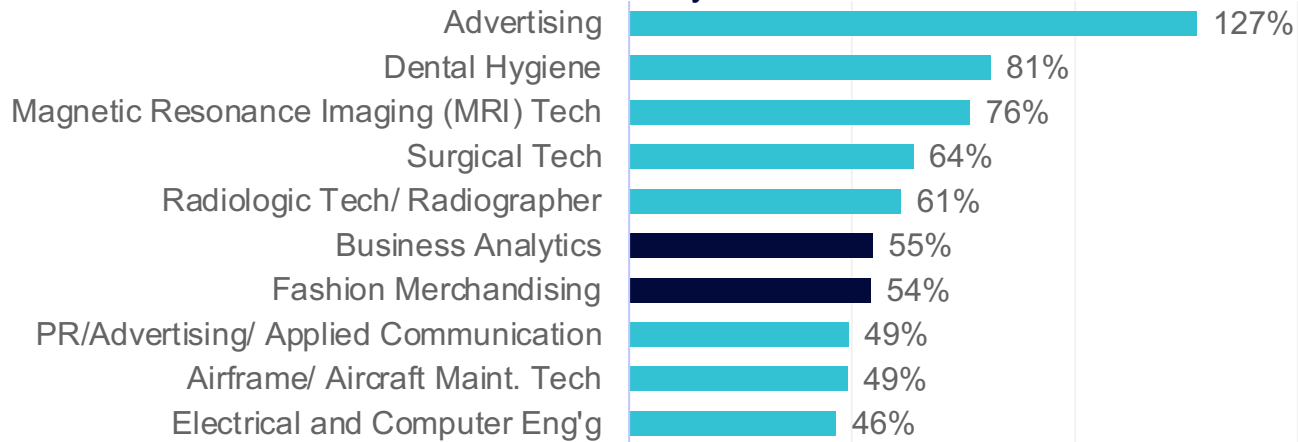|	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec
2022	$13.22	$12.86	$13.21	$13.75	$15.00	$13.82	$14.81	$16.09	$14.73	$15.22	$14.89	$15.53
2023	$15.55	$14.53	$14.66	$14.46	$15.04	$14.18	$14.47	$14.44	$14.00	$14.16	$14.54	$14.45
2024	$15.13	$14.74										

Source: PES Keyword Search Dashboard

Google searches are volatile.

The fastest-growing keyword searches for programs change month to month.

- Look for trends over time. Demand can change quickly.

- Comparing February 2024 and September 2023 (trailing six months), only two programs overlap.

US Fastest-Growing Programs
February 2024 YoY

Program	%
Advertising	127%
Dental Hygiene	81%
Magnetic Resonance Imaging (MRI) Tech	76%
Surgical Tech	64%
Radiologic Tech/ Radiographer	61%
Business Analytics	55%
Fashion Merchandising	54%
PR/Advertising/ Applied Communication	49%
Airframe/ Aircraft Maint. Tech	49%
Electrical and Computer Eng'g	46%

*Minimum 10,000 searches February 2023

Overlap

US Fastest-Growing Programs
September 2023 YoY

Program	%
Physics, General	227%
Fashion Merchandising	198%
Business Analytics	151%
Artificial Intelligence	132%
Digital Marketing	112%
Counseling Psychology	92%
Bioinformatics	86%
Information Technology	72%
Radiologic Tech/ Radiographer	70%
Digital Communic. & Media/ Multimedia	68%
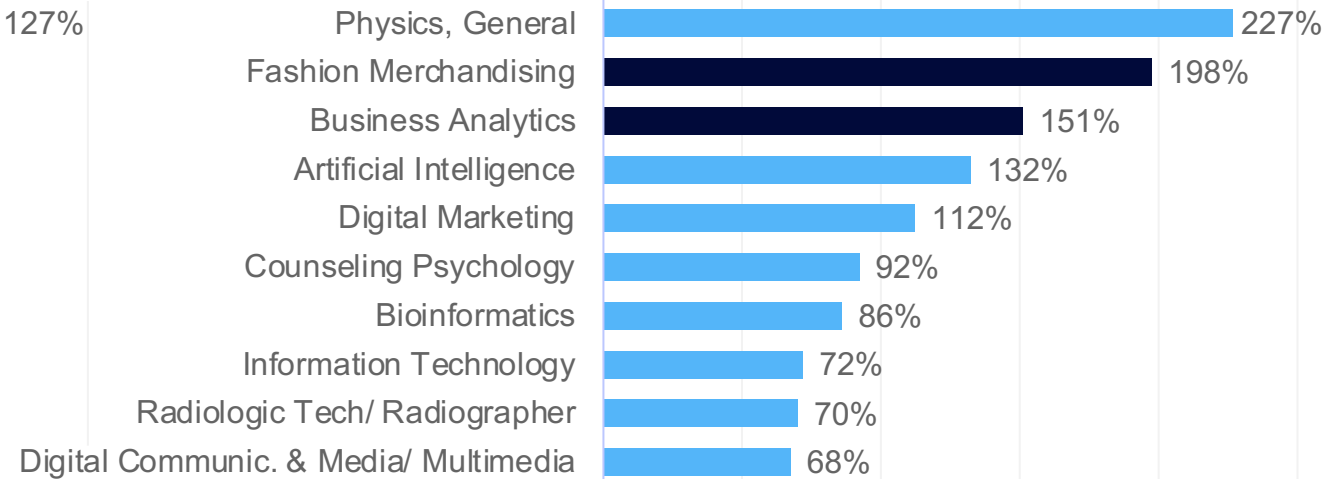
*Minimum 10,000 searches September 2023

Agenda

Why a Program Evaluation System?

Student Demand

- Leading Indicators: Google
- **Recent Trends: Enrollment**
- Non-Degree Courses

National Employment: Current Indicators

Local Matters: Illinois, Massachusetts, Washington

Summary

Fall Total Student Enrollment

In Fall 2023, US total enrollment rose 12% for certificates and nearly 4% for associate degrees.

- Associate programs have finally stopped declining.

Total Fall Enrollment -
Certificate 2018 - 2023

Year	Enrollment	Change
2018	873,280	
2019	860,327	-1%
2020	798,997	-7%
2021	822,098	+3%
2022	842,889	+3%
2023	940,989	+12%

Total Fall Enrollment -
Associate 2018 - 2023

Year	Enrollment	Change
2018	5,460,288	
2019	5,354,278	-1.9%
2020	4,952,162	-7.5%
2021	4,565,380	-8%
2022	4,433,006	-3%
2023	4,596,738	+3.7%

Source: PES Student Enrollment Dashboard
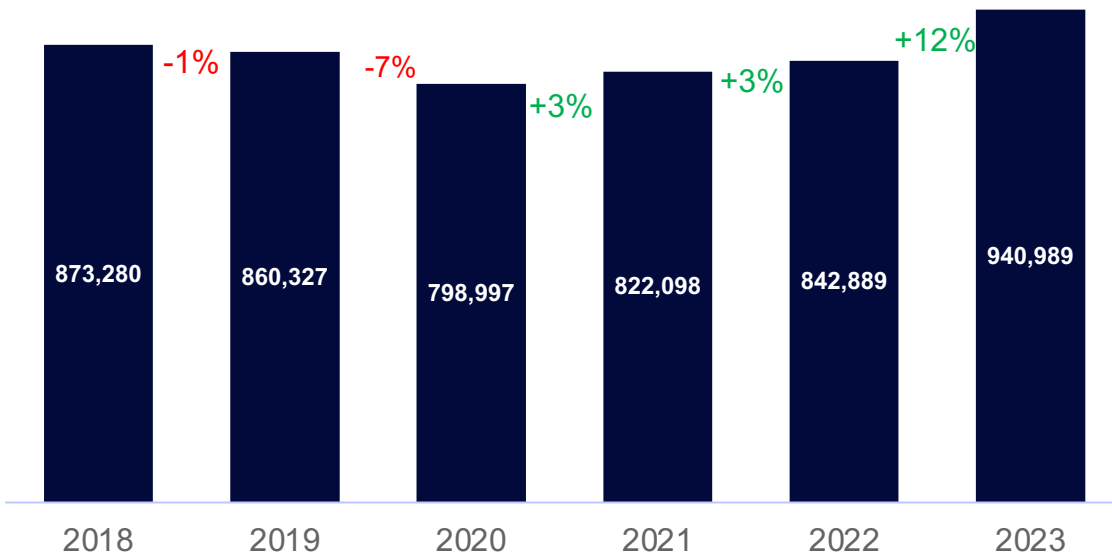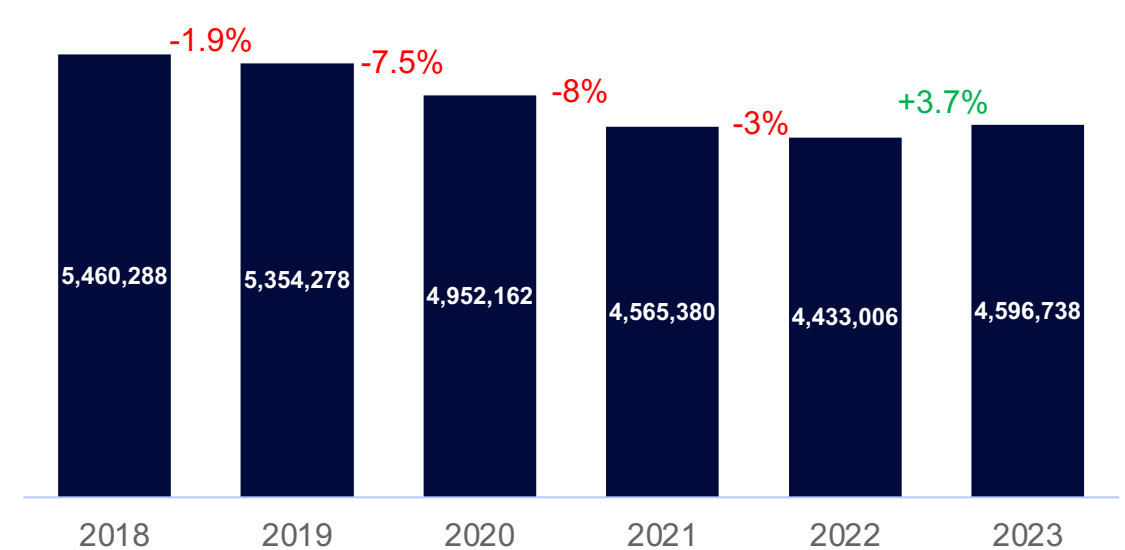
Certificate: US Fall 2023 Fastest-Growing Total Enrollment (five-year CAGR)

From Fall 2018 to Fall 2023, Cyber Security grew an average of 19% annually.

US Fastest-Growing Total Enrollment*
Certificate Programs
Fall 2018-2023 CAGR

Program	CAGR
Cyber Security/ Info. Assurance	19%
Information Technology	16%
Autobody/ Collision and Repair Tech	16%
Computer and Info. Sciences, Gen'l	12%
Health Info./Medical Records Tech	11%
Radiologic Tech/ Radiographer	10%
Engineering, General	8%
Real Estate (Assoc. and below)	8%
Medical Billing and Coding	7%
Commercial Truck and Bus Driver	6%

Category	Count
Healthcare	3
STEM	4
CTE	3

Source: PES Program Enrollment Dashboard
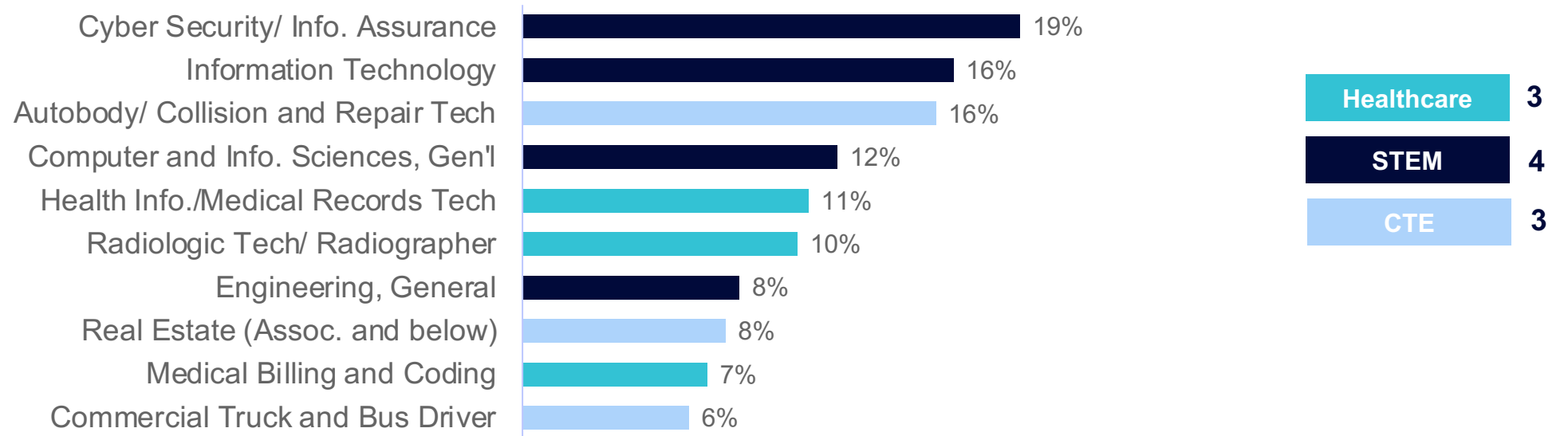
*Minimum enrollment Fall 2018: 2,000

Associate: US Fall 2023 Fastest-Growing Total Enrollment (five-year CAGR)

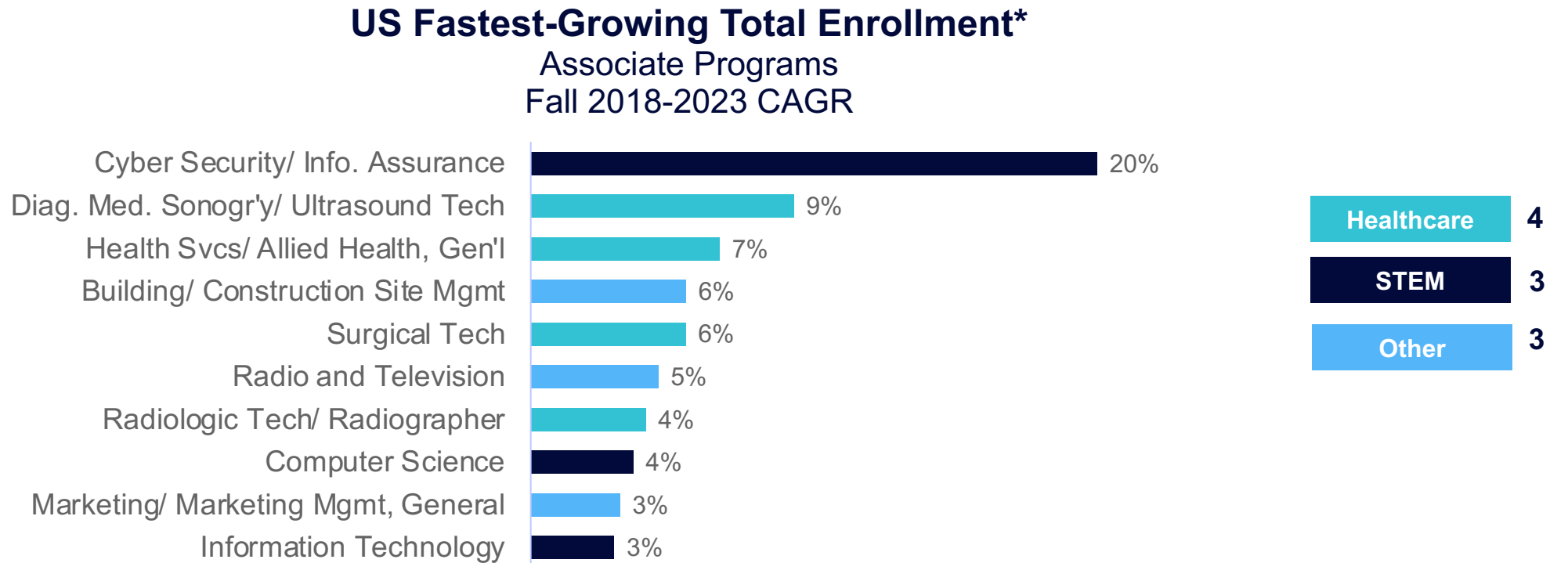## From Fall 2018 to Fall 2023, Cyber Security grew an average of 20% annually.

US Fastest-Growing Total Enrollment*
Associate Programs
Fall 2018-2023 CAGR

Program	CAGR
Cyber Security/ Info. Assurance	20%
Diag. Med. Sonogr'y/ Ultrasound Tech	9%
Health Svcs/ Allied Health, Gen'l	7%
Building/ Construction Site Mgmt	6%
Surgical Tech	6%
Radio and Television	5%
Radiologic Tech/ Radiographer	4%
Computer Science	4%
Marketing/ Marketing Mgmt, General	3%
Information Technology	3%

Healthcare	4
STEM	3
Other	3

Source: PES Program Enrollment Dashboard

*Minimum enrollment Fall 2018: 5,000

Agenda

Why a Program Evaluation System?

Student Demand

- **Leading Indicators: Google**
- **Recent Trends: Enrollment**
- **Non-Degree Courses**

National Employment: Current Indicators

Local Matters: Illinois, Massachusetts, Washington

Summary

Non-Degree Demand: Coursera

From February 2022 to 2024, Foundations: Data, Data, Everywhere added over 1.6 million learners.

Largest-Growing Courses by Unit Change
February 2022 to 2024

Course	Value
Foundations: Data, Data, Everywhere	1,690,032
The Science of Well-Being	834,706
Foundations of User Experience (UX) Design	764,774
Technical Support Fundamentals	700,726
Learning How to Learn: Powerful mental tools	575,713
Crash Course on Python	511,831
Introduction to Psychology	493,950
Project Initiation: Starting a Successful Project	470,502
AI For Everyone	457,100
Data Analysis with R Programming	403,808

Data and Tech	6
Other	4

Source: PES Non-Degree Dashboard, Coursera

Agenda

Why a Program Evaluation System?

Student Demand

- **Leading Indicators: Google**

- **Recent Trends: Enrollment**

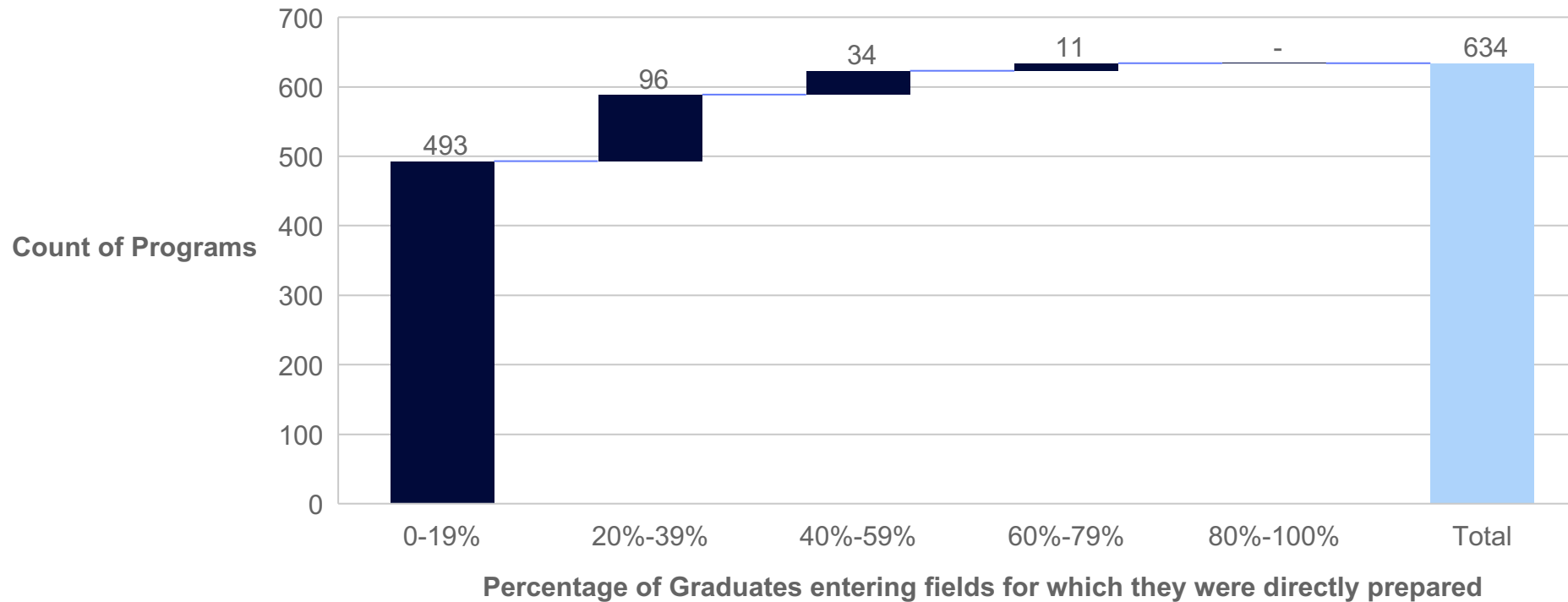- **Non-Degree Courses**

National Employment: Current Indicators

Local Matters: Illinois, Massachusetts, Washington

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?

Count of Programs

Percentage of Graduates entering fields for which they were directly prepared

Data labels: 493, 96, 34, 11, -, 634
X-axis: 0-19%, 20%-39%, 40%-59%, 60%-79%, 80%-100%, Total

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.

Criminal Justice majors align with 10 occupations in a traditional direct prep construct.

- Gray DI data on over 72,000 Associate in Criminal Justice program graduates identifies 773 occupations.
- Criminal Justice graduates work in 147 industries and 88,752 companies.

Myth

NCES
Architectural and Civil Drafters
Correctional Officers and Jailers
Criminal Justice and Law Enforcement Teachers, Postsecondary
Detectives and Criminal Investigators
First-Line Supervisors of Correctional Officers
First-Line Supervisors of Police and Detectives
Forensic Science Technicians
Life, Physical, and Social Science Technicians, All Other
Managers, All Other
Police and Sheriff's Patrol Officers

Reality

Highest Volume of Occupations
Five Years Post-Entry
Associate in Criminal Justice

| Occupation	Value
General and Operations Managers	406
Managers, Other	386
Police and Sheriff's Patrol Officers	292
Sales Managers	286
Chief Executives	249
Project Mgmt /Business Ops Specialists	221
Administrative Services Managers	194
Computer Occupations, All Other	156
Human Resources Specialists	151
Executive Administrative Assistants	141

US Job Postings Trends

In February 2024, after over a year of decline, job postings grew 7% year-over-year.
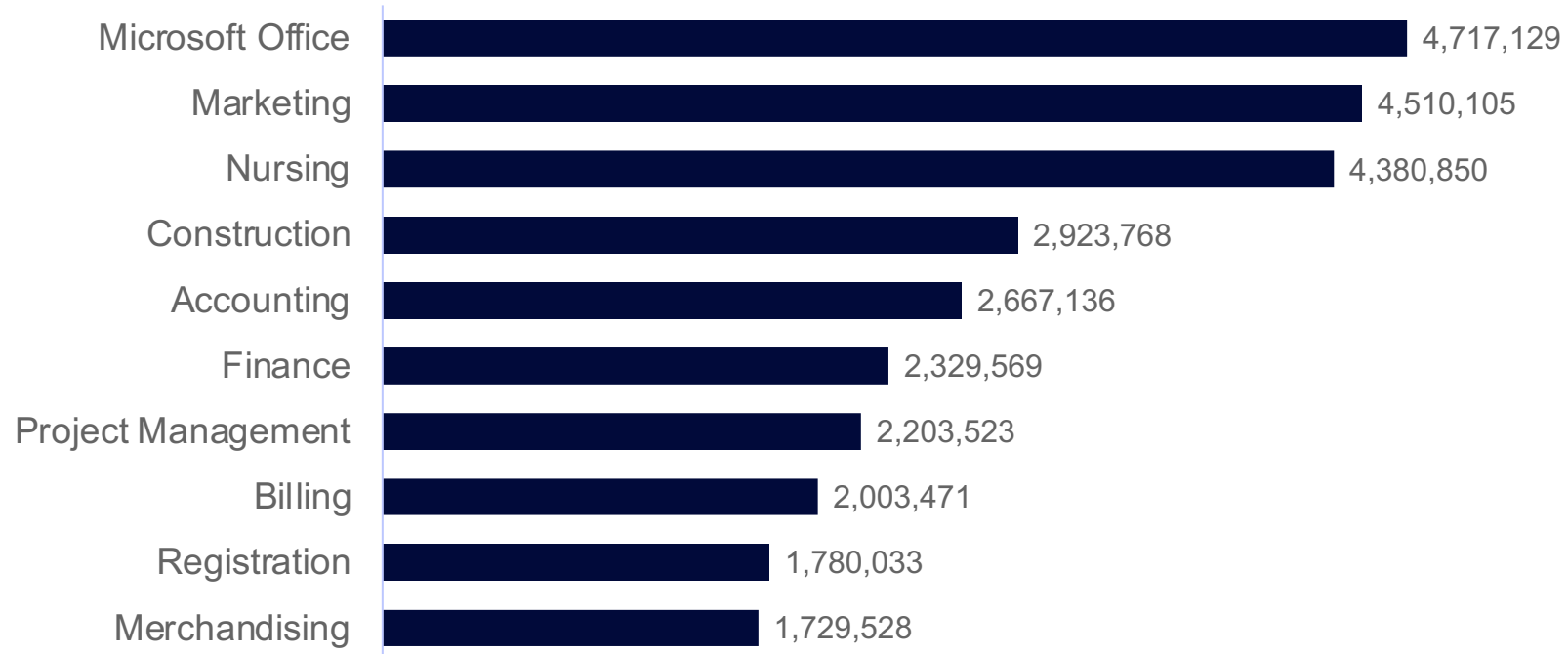
US Job Postings 2022 - 2024

■ 2022　■ 2023　■ 2024

+7%

Source: PES Job Postings Dashboard

GRAY DI™
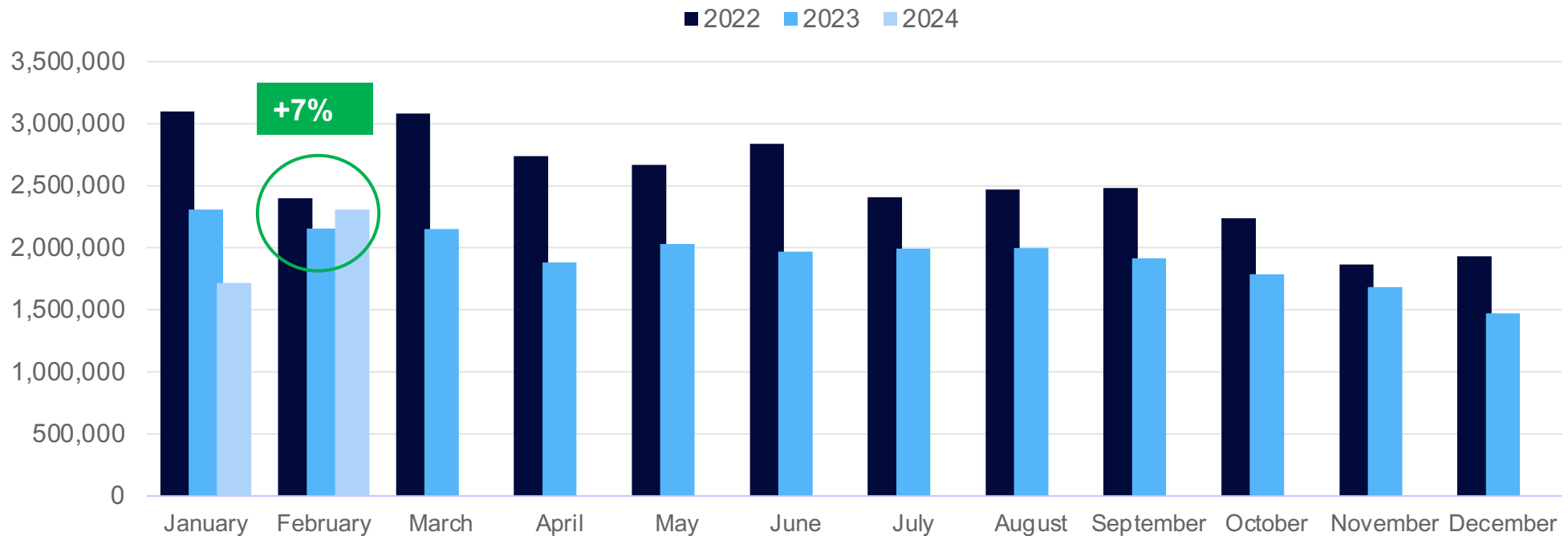
Which skills are most frequently listed in job postings?

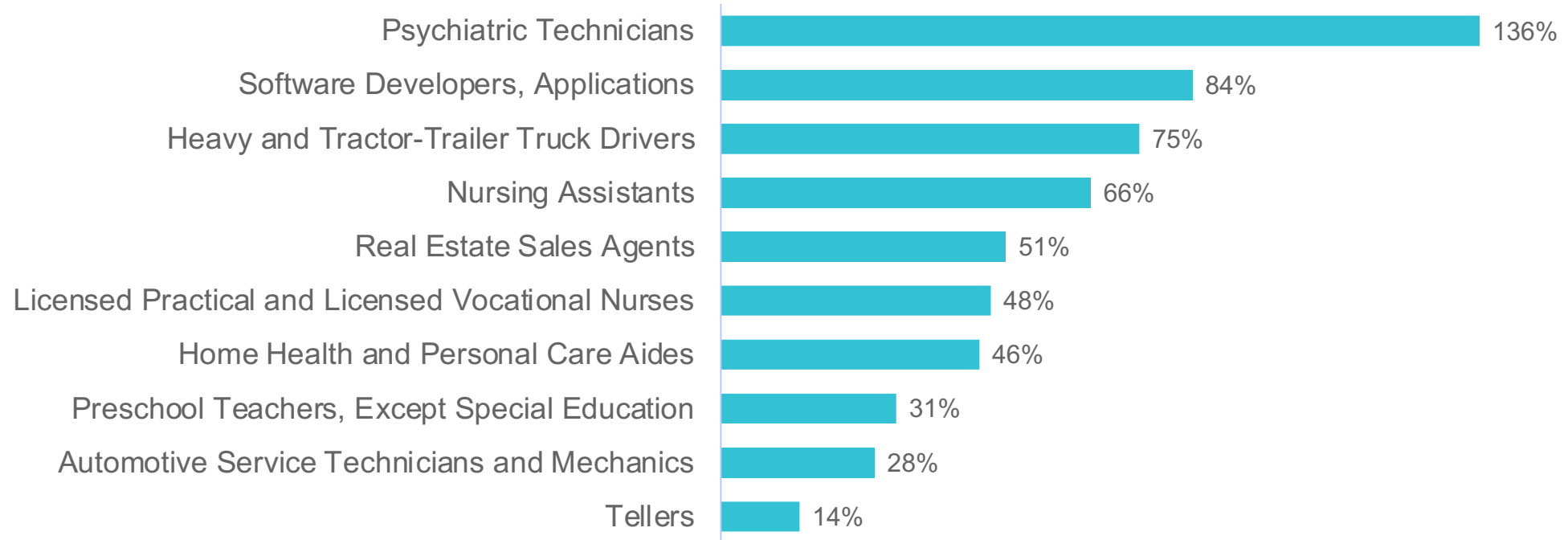**Skills with the Highest Number of Job Postings***
February 2024

Skill	Number
Microsoft Office	4,717,129
Marketing	4,510,105
Nursing	4,380,850
Construction	2,923,768
Accounting	2,667,136
Finance	2,329,569
Project Management	2,203,523
Billing	2,003,471
Registration	1,780,033
Merchandising	1,729,528

*Excludes unskilled labor

Source: PES Job Postings Dashboard

Which occupations have growing demand?

US Fastest-Growing Occupations*
February 2024 YoY

Occupation	Growth
Psychiatric Technicians	136%
Software Developers, Applications	84%
Heavy and Tractor-Trailer Truck Drivers	75%
Nursing Assistants	66%
Real Estate Sales Agents	51%
Licensed Practical and Licensed Vocational Nurses	48%
Home Health and Personal Care Aides	46%
Preschool Teachers, Except Special Education	31%
Automotive Service Technicians and Mechanics	28%
Tellers	14%

*Minimum 5,000 jobs February 2024
Excludes unskilled labor

Source: PES Job Postings Dashboard
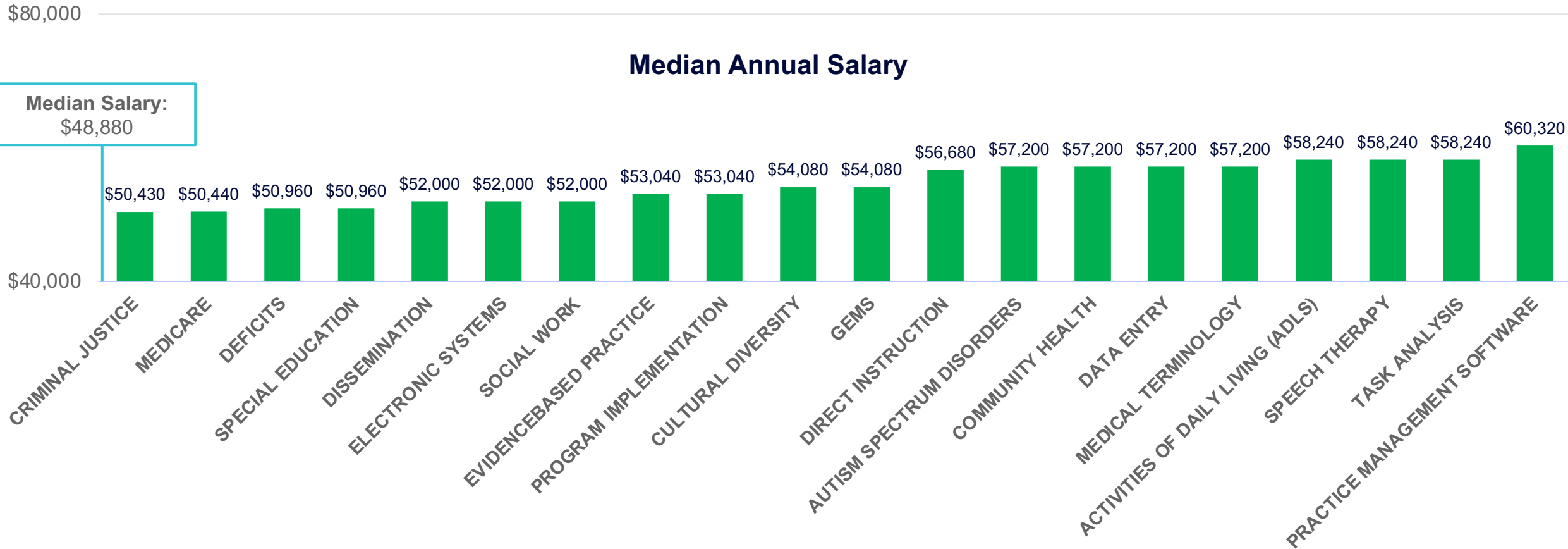
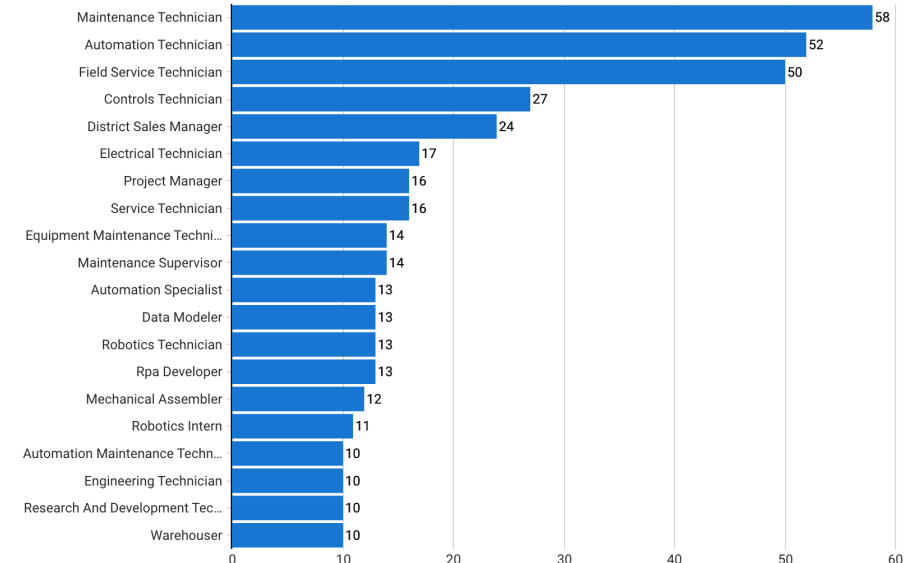# How do I validate a need I heard from an industry partner?

In some cases, you may need to evaluate niche or emerging areas; using job posting description searches can help.

- Up 87% year-over-year, there seems to be a sustained need for jobs that contain **robotics** and **automation** in the description in Texas.

Job Postings by Month and Year

Job Postings	Year			
Month	2022	2023	2024	Total
January	135	97	62	294
February	161	71	133	365
March	159	75		234
April	146	69		215
May	150	67		217
June	207	62		269
July	141	53		194
August	116	73		189
September	88	79		167
October	75	64		139
November	68	58		126
December	60	52		112
Total	1,506	820	195	2,521

Job Titles with the Highest Number of Postings

Job Title	Count
Maintenance Technician	58
Automation Technician	52
Field Service Technician	50
Controls Technician	27
District Sales Manager	24
Electrical Technician	17
Project Manager	16
Service Technician	16
Equipment Maintenance Techni...	14
Maintenance Supervisor	14
Automation Specialist	13
Data Modeler	13
Robotics Technician	13
Rpa Developer	13
Mechanical Assembler	12
Robotics Intern	11
Automation Maintenance Techn...	10
Engineering Technician	10
Research And Development Tec...	10
Warehouser	10

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Student Demand

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- Non-Degree Courses

National Employment: Current Indicators
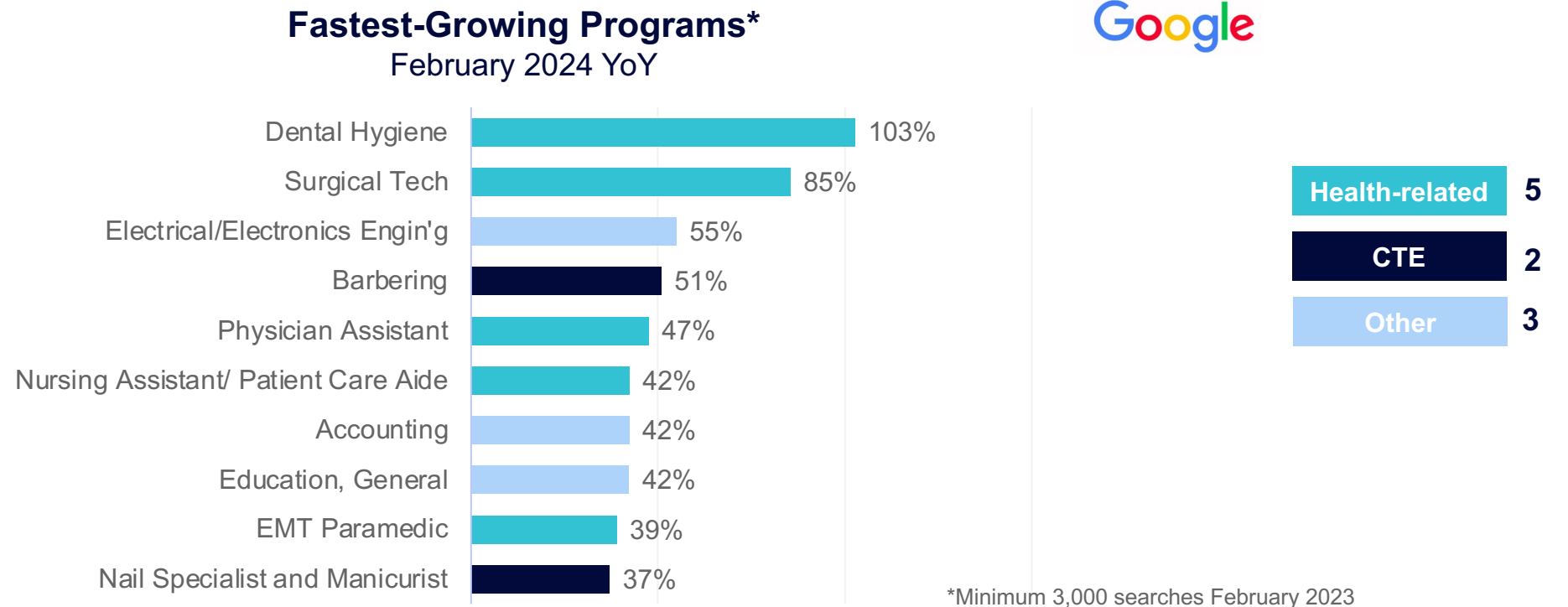
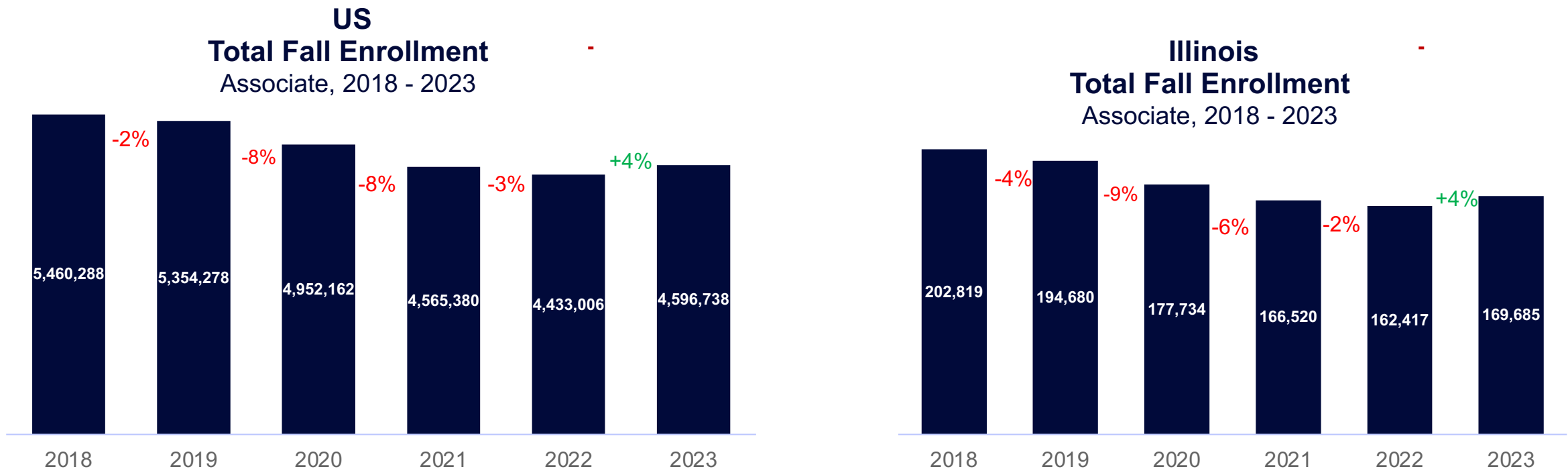**Local Matters: Illinois, Massachusetts, Washington**

Summary

Illinois

Google: Illinois Fastest-Growing Programs

In February, searches for Dental Hygiene increased 103% year-over-year.

Fastest-Growing Programs*
February 2024 YoY

Google

Program	%
Dental Hygiene	103%
Surgical Tech	85%
Electrical/Electronics Engin'g	55%
Barbering	51%
Physician Assistant	47%
Nursing Assistant/ Patient Care Aide	42%
Accounting	42%
Education, General	42%
EMT Paramedic	39%
Nail Specialist and Manicurist	37%

Health-related	5
CTE	2
Other	3

*Minimum 3,000 searches February 2023

Source: PES Keyword Search Dashboard

State, county, and city data usually differ from national data.

However, in both the US and Illinois, associate fall enrollment grew 4%.

US
Total Fall Enrollment
Associate, 2018 - 2023

- -2%
- -8%
- -8%
- -3%
- +4%

Year	Enrollment
2018	5,460,288
2019	5,354,278
2020	4,952,162
2021	4,565,380
2022	4,433,006
2023	4,596,738

Illinois
Total Fall Enrollment
Associate, 2018 - 2023

- -4%
- -9%
- -6%
- -2%
- +4%

Year	Enrollment
2018	202,819
2019	194,680
2020	177,734
2021	166,520
2022	162,417
2023	169,685

Illinois: Five-Year Average Annual Fall Enrollment Growth

Four of the fastest-growing programs in Il overlapped with the national 10.

**Illinois
Fastest-Growing Total Enrollment***
Associate
Fall 2023 5-year CAGR
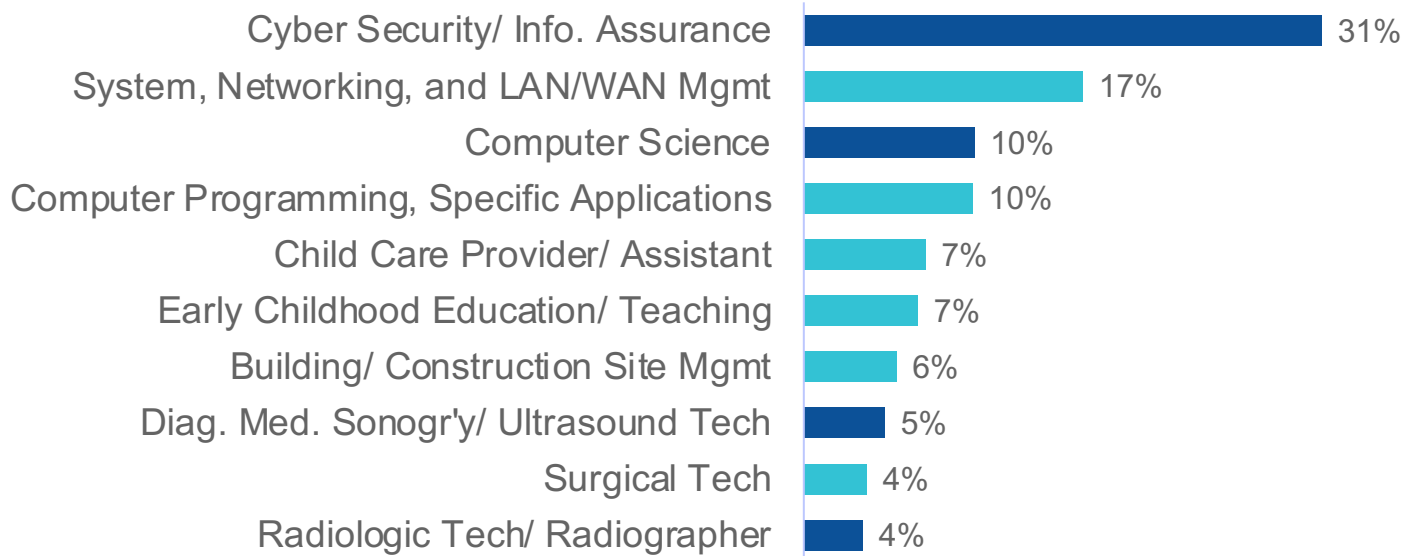
Program	CAGR
Cyber Security/ Info. Assurance	31%
System, Networking, and LAN/WAN Mgmt	17%
Computer Science	10%
Computer Programming, Specific Applications	10%
Child Care Provider/ Assistant	7%
Early Childhood Education/ Teaching	7%
Building/ Construction Site Mgmt	6%
Diag. Med. Sonogr'y/ Ultrasound Tech	5%
Surgical Tech	4%
Radiologic Tech/ Radiographer	4%

Overlap

**National
10 Fastest-Growing**

- Cyber Security/ Info. Assurance
- Diag. Med. Sonogr'y/ Ultrasound Tech
- Health Svcs/ Allied Health, Gen'l
- Radiologic Tech/ Radiographer
- Computer Science
- Information Technology
- Electrician
- Psychology, General
- Kinesiology and Exercise Science
- Art/Art Studies, General

Source: PES Program Enrollment Dashboard

*Minimum enrollment prior year: 300

Illinois Job Postings Trends

In February, Illinois job postings rose 3% across all degree levels.

Ill Job Postings 2022 - 2024

■ 2022 ■ 2023 ■ 2024

Source: PES Job Postings Dashboard
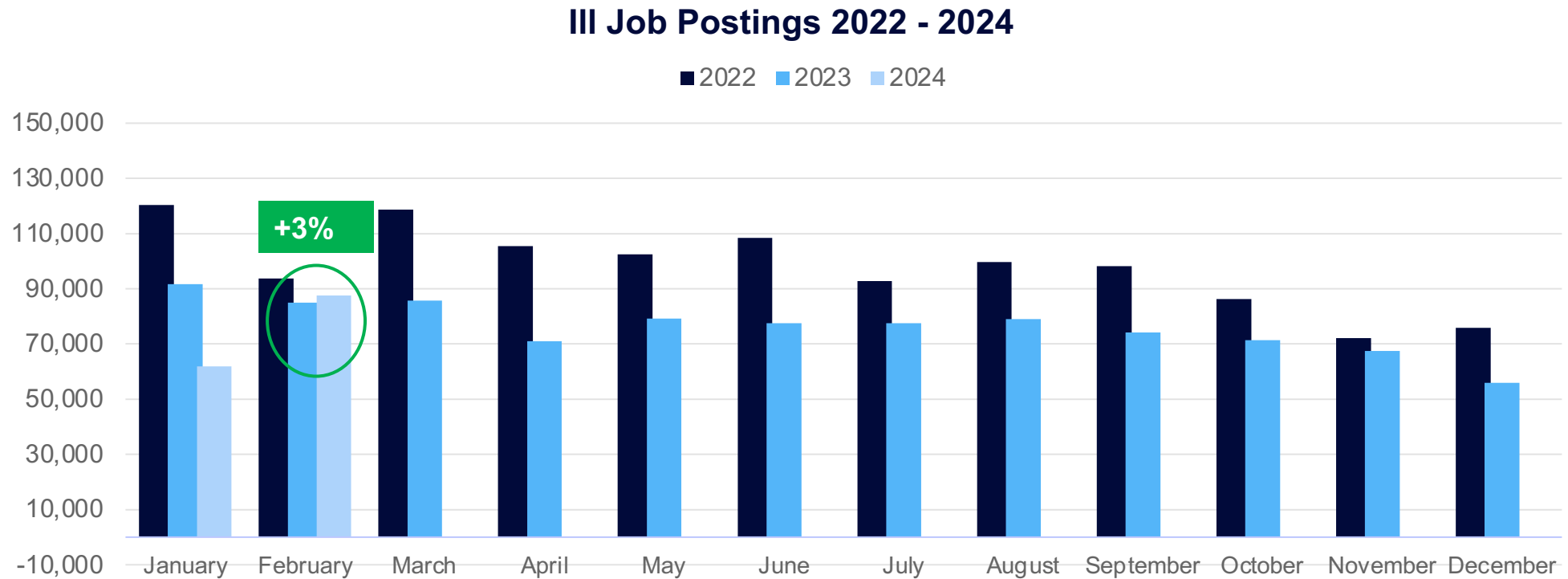
Illinois Job trends

In February, Psychiatric Technicians grew 200% year-over-year.
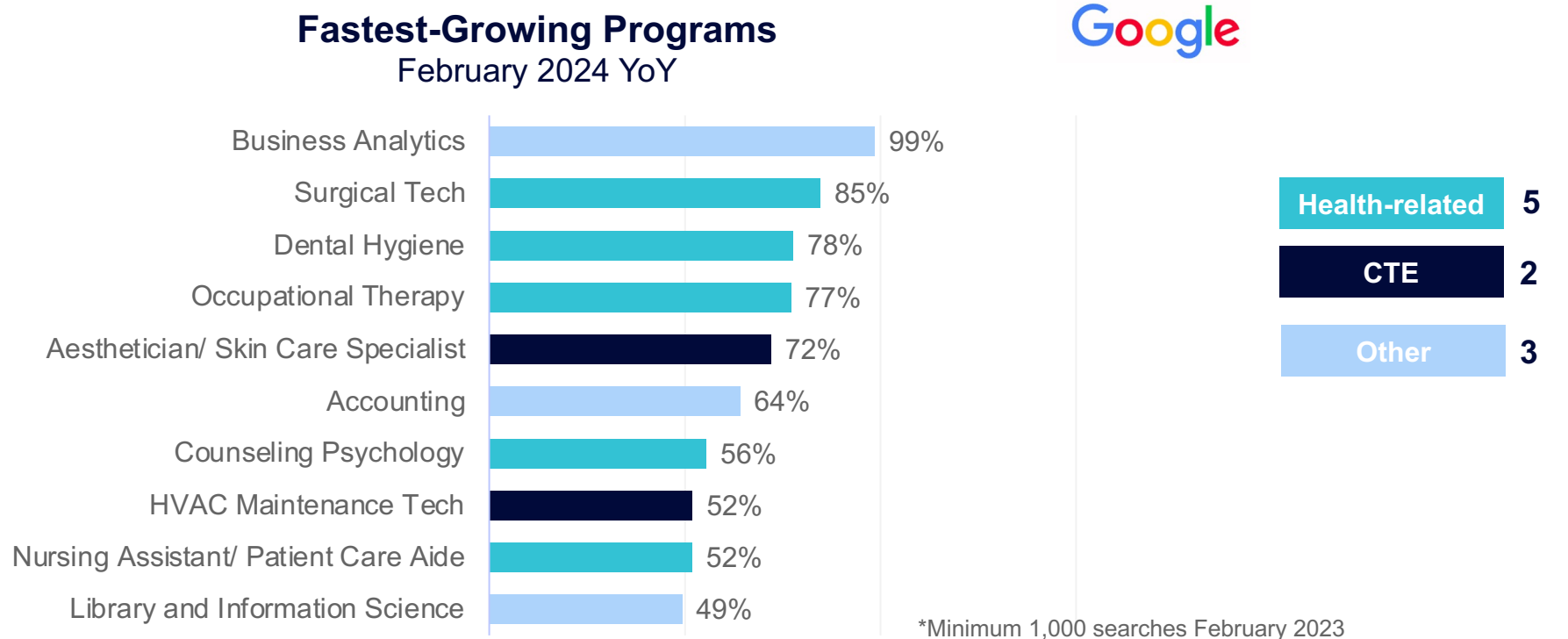
Ill Fastest-Growing Occupations*
February 2024 YoY

Occupation	YoY Growth
Psychiatric Technicians	200%
Heavy and Tractor-Trailer Truck Drivers	98%
Software Developers, Applications	86%
Licensed Practical Nurses	71%
Nursing Assistants	71%
Preschool Teachers, Except Special Education	45%
Home Health and Personal Care Aides	44%
Radiologic Technologists and Technicians	24%
Automotive Service Technicians and Mechanics	23%
Pharmacy Technicians	22%

*Minimum 200 jobs February 2024
Excludes unskilled labor

Source: PES Job Postings Dashboard
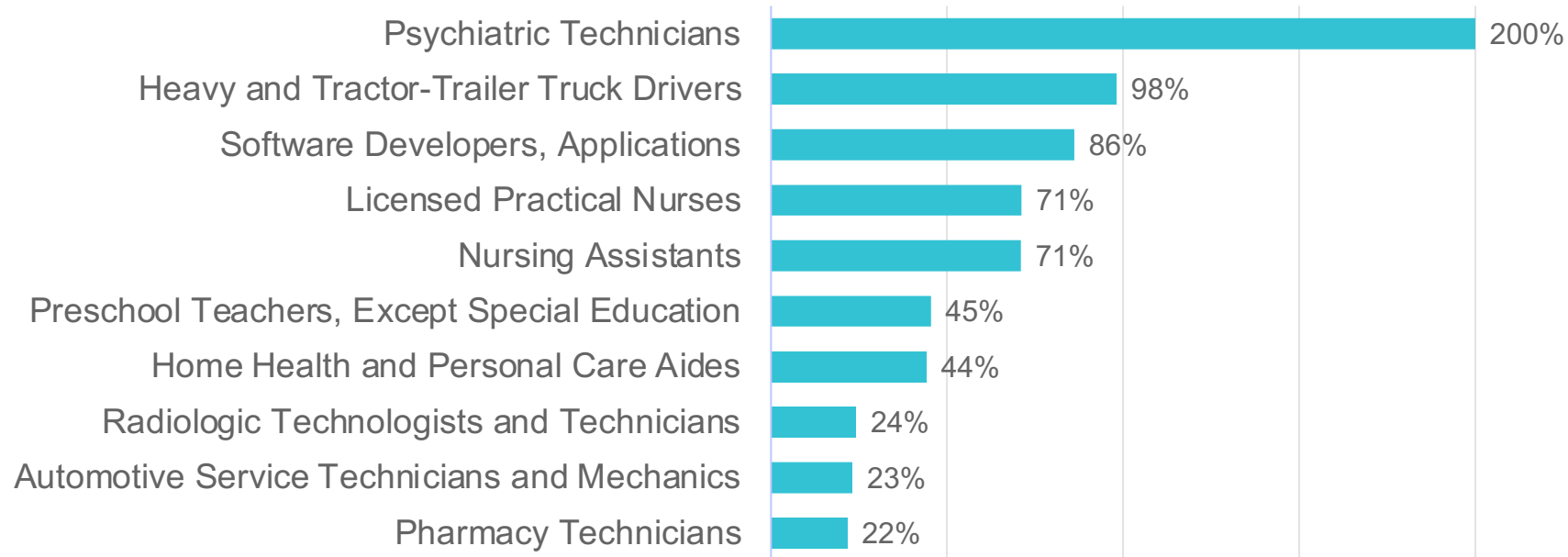
Massachusetts

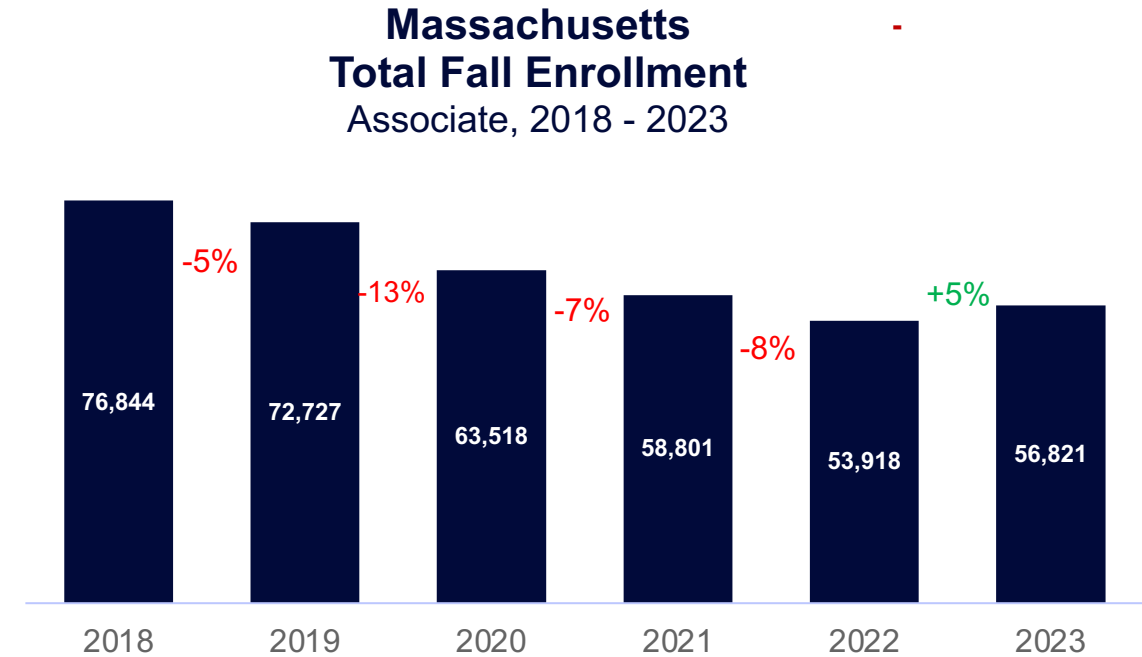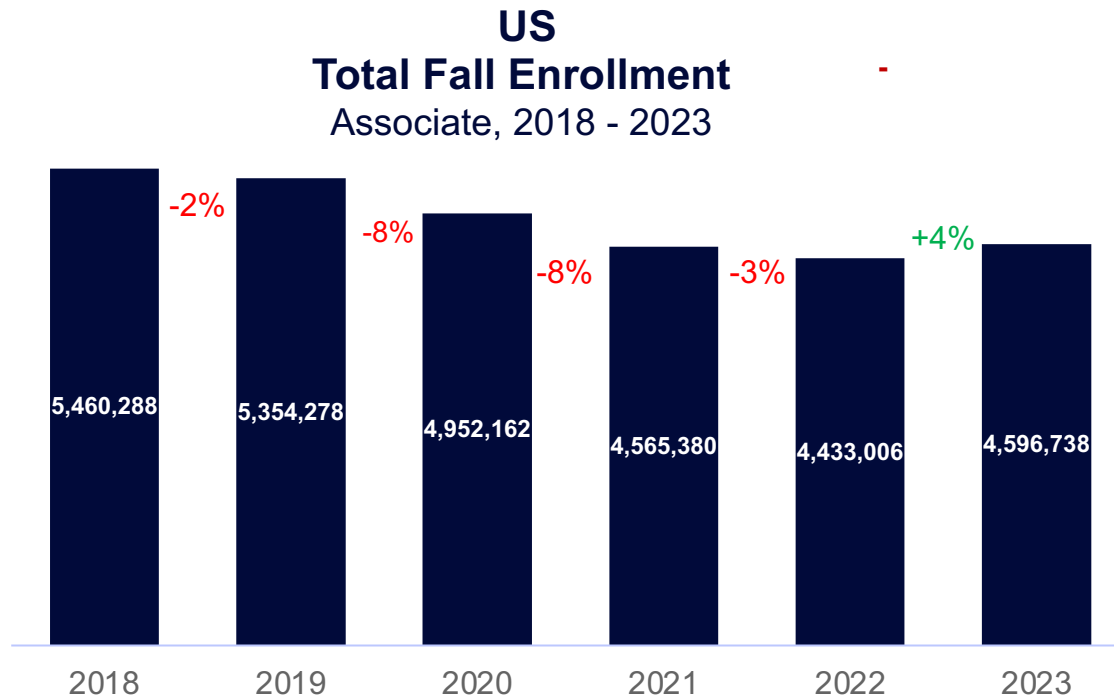## Google: Massachusetts' Fastest-Growing Programs

In February, searches for Business Analytics increased 99% year-over-year.

Fastest-Growing Programs
February 2024 YoY

Program	YoY
Business Analytics	99%
Surgical Tech	85%
Dental Hygiene	78%
Occupational Therapy	77%
Aesthetician/ Skin Care Specialist	72%
Accounting	64%
Counseling Psychology	56%
HVAC Maintenance Tech	52%
Nursing Assistant/ Patient Care Aide	52%
Library and Information Science	49%

Category	Count
Health-related	5
CTE	2
Other	3

*Minimum 1,000 searches February 2023

Source: PES Keyword Search Dashboard

State, county, and city data usually differ from national data.

Massachusetts fall total enrollment fluctuated more than in the US.

US
Total Fall Enrollment
Associate, 2018 - 2023

- 2018: 5,460,288
- -2%
- 2019: 5,354,278
- -8%
- 2020: 4,952,162
- -8%
- 2021: 4,565,380
- -3%
- 2022: 4,433,006
- +4%
- 2023: 4,596,738

Massachusetts
Total Fall Enrollment
Associate, 2018 - 2023

- 2018: 76,844
- -5%
- 2019: 72,727
- -13%
- 2020: 63,518
- -7%
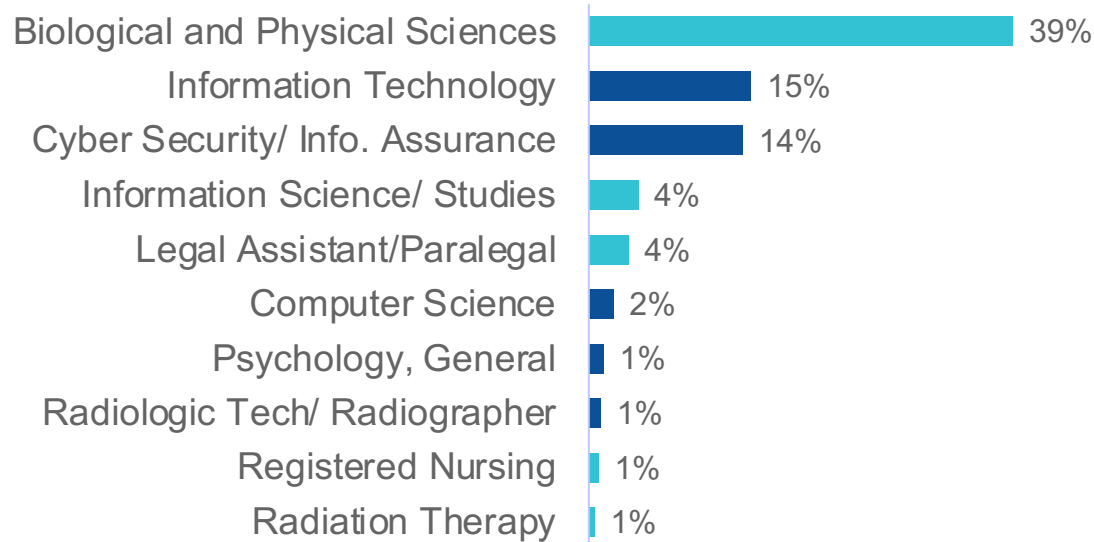- 2021: 58,801
- -8%
- 2022: 53,918
- +5%
- 2023: 56,821

Source: PES Student Enrollment Dashboard

Massachusetts: Five-Year Average Annual Fall Enrollment Growth

Half of the fastest-growing programs in Massachusetts overlapped with the national 10.

Massachusetts Fastest-Growing Total Enrollment*
Associate
Fall 2023 5-year CAGR

Program	CAGR
Biological and Physical Sciences	39%
Information Technology	15%
Cyber Security/ Info. Assurance	14%
Information Science/ Studies	4%
Legal Assistant/Paralegal	4%
Computer Science	2%
Psychology, General	1%
Radiologic Tech/ Radiographer	1%
Registered Nursing	1%
Radiation Therapy	1%

Overlap

National 10 Fastest-Growing

- Cyber Security/ Info. Assurance
- Diag. Med. Sonogr'y/ Ultrasound Tech
- Health Svcs/ Allied Health, Gen'l
- Radiologic Tech/ Radiographer
- Computer Science
- Information Technology
- Electrician
- Psychology, General
- Kinesiology and Exercise Science
- Art/Art Studies, General

Source: PES Program Enrollment Dashboard

*Minimum enrollment prior year: 200

Massachusetts Job Postings Trends

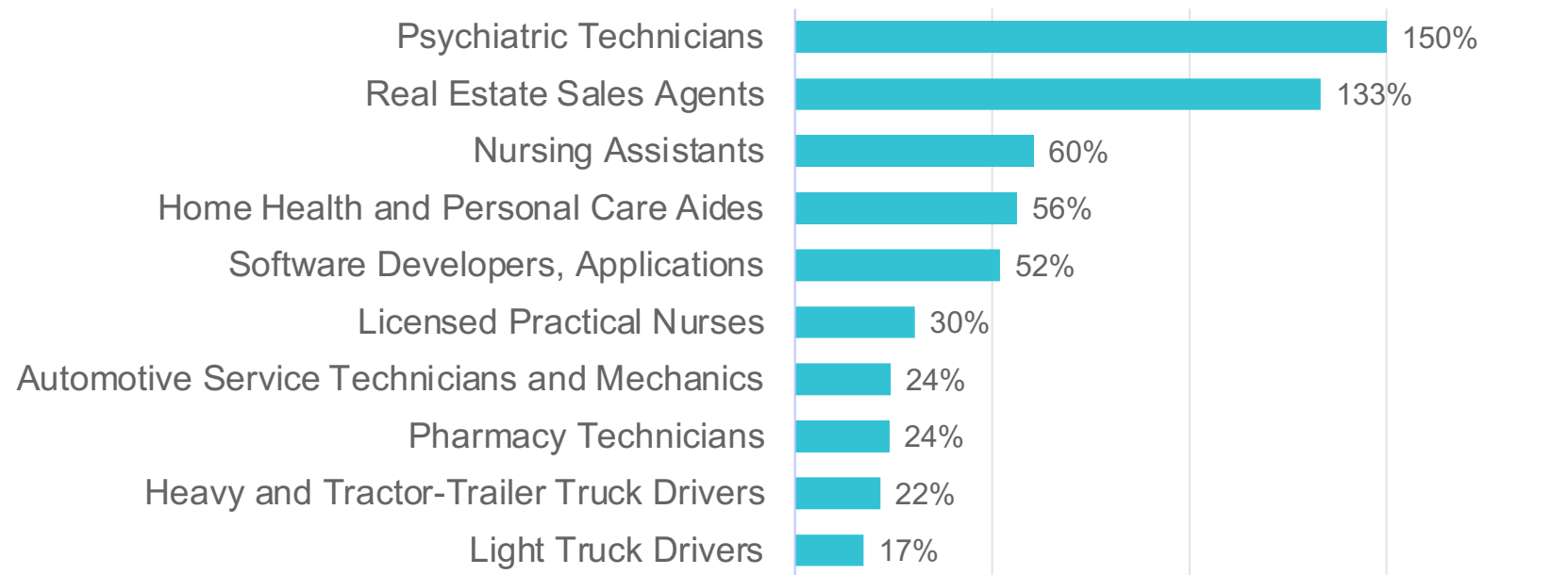## In February 2024, Massachusetts job postings rose 7% year-over-year across all degree levels.

.

Massachusetts Job Postings 2023 - 2024

■ 2022 ■ 2023 ■ 2024
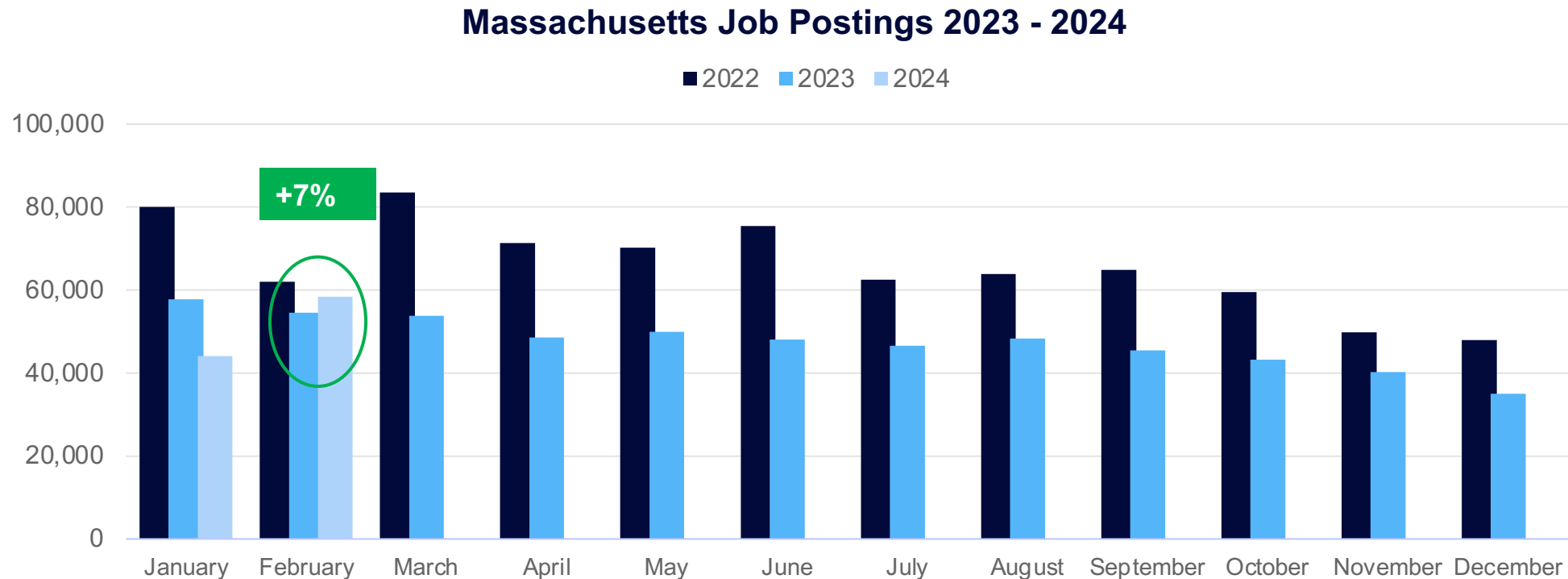
Jobs trends

In Massachusetts, Psychiatric Techs grew 150% year-over-year.

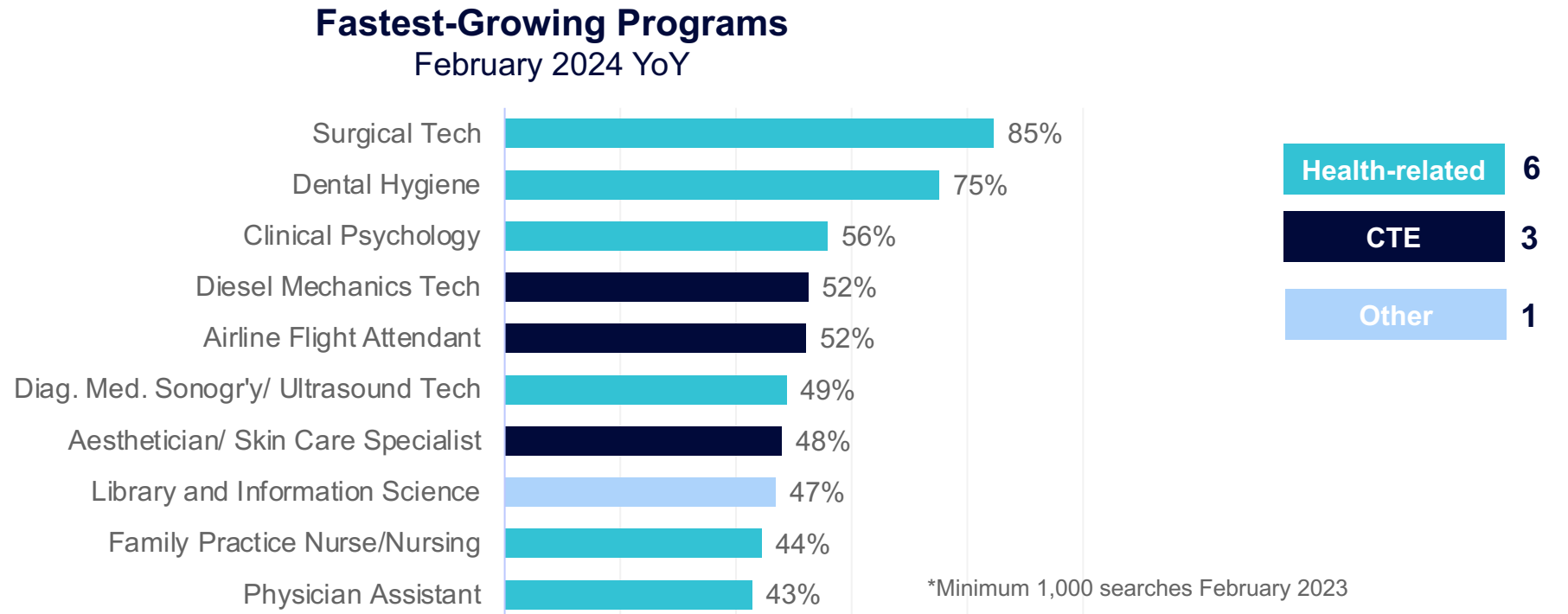**Massachusetts Fastest-Growing Occupations***
February 2024 YoY

Occupation	YoY Growth
Psychiatric Technicians	150%
Real Estate Sales Agents	133%
Nursing Assistants	60%
Home Health and Personal Care Aides	56%
Software Developers, Applications	52%
Licensed Practical Nurses	30%
Automotive Service Technicians and Mechanics	24%
Pharmacy Technicians	24%
Heavy and Tractor-Trailer Truck Drivers	22%
Light Truck Drivers	17%

*Minimum 200 jobs February 2024
Excludes unskilled labor

Source: PES Job Postings Dashboard

Washington

Google: Washington's Fastest-Growing Programs

In February, searches for Surgical Tech rose 85% year-over-year.

Fastest-Growing Programs
February 2024 YoY

Program	%
Surgical Tech	85%
Dental Hygiene	75%
Clinical Psychology	56%
Diesel Mechanics Tech	52%
Airline Flight Attendant	52%
Diag. Med. Sonogr'y/ Ultrasound Tech	49%
Aesthetician/ Skin Care Specialist	48%
Library and Information Science	47%
Family Practice Nurse/Nursing	44%
Physician Assistant	43%

Health-related	6
CTE	3
Other	1

*Minimum 1,000 searches February 2023

Source: PES Keyword Search Dashboard

State, county, and city data can differ from national data.

Washington has had high fluctuations in fall enrollment.

US
Total Fall Enrollment
Associate, 2018 - 2023

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- 2021: 4,565,380 (-8%)
- 2022: 4,433,006 (-3%)
- 2023: 4,596,738 (+4%)

Washington
Total Fall Enrollment
Associate, 2018 - 2023

- 2018: 129,835
- 2019: 134,806 (+4%)
- 2020: 123,449 (-8%)
- 2021: 105,207 (-15%)
- 2022: 87,462 (-17%)
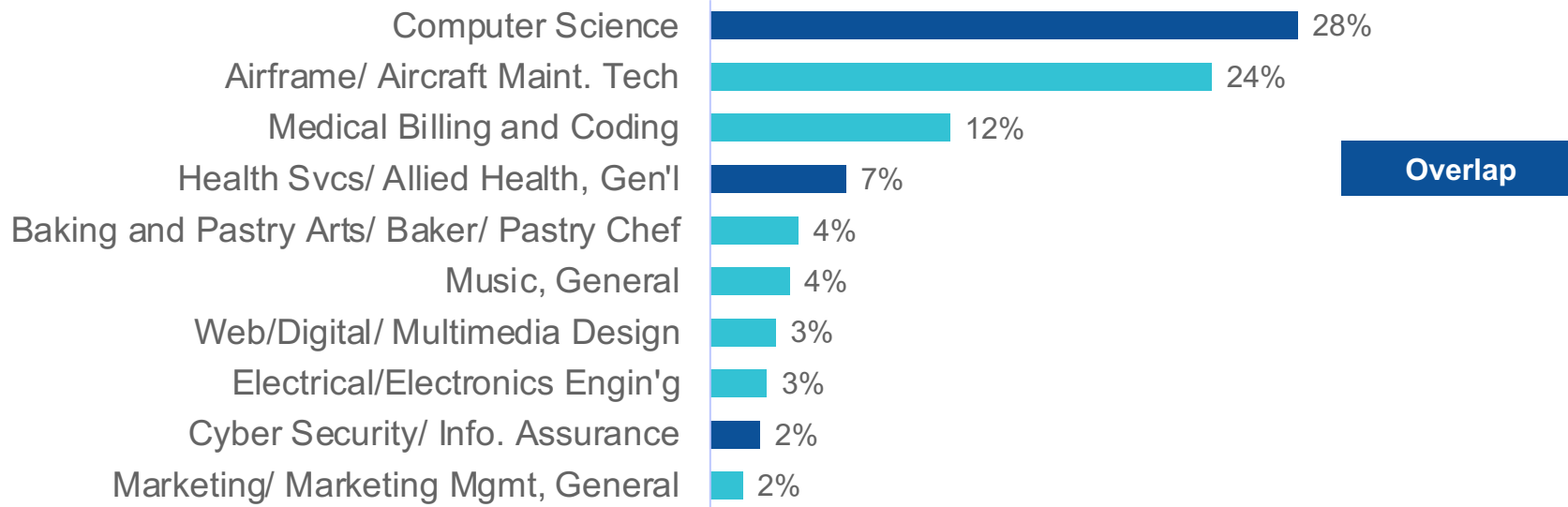- 2023: 93,071 (+6%)

Source: PES Student Enrollment Dashboard
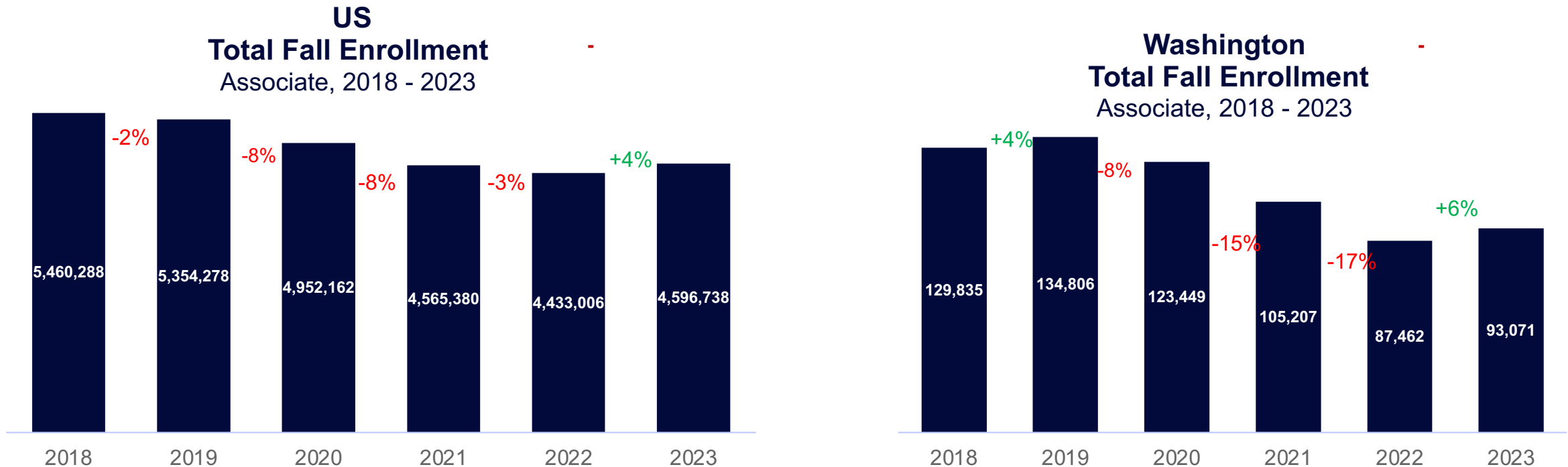
Washington: Five-Year Average Annual Fall Enrollment Growth

Three of the fastest-growing programs in Washington overlapped with the national 10.

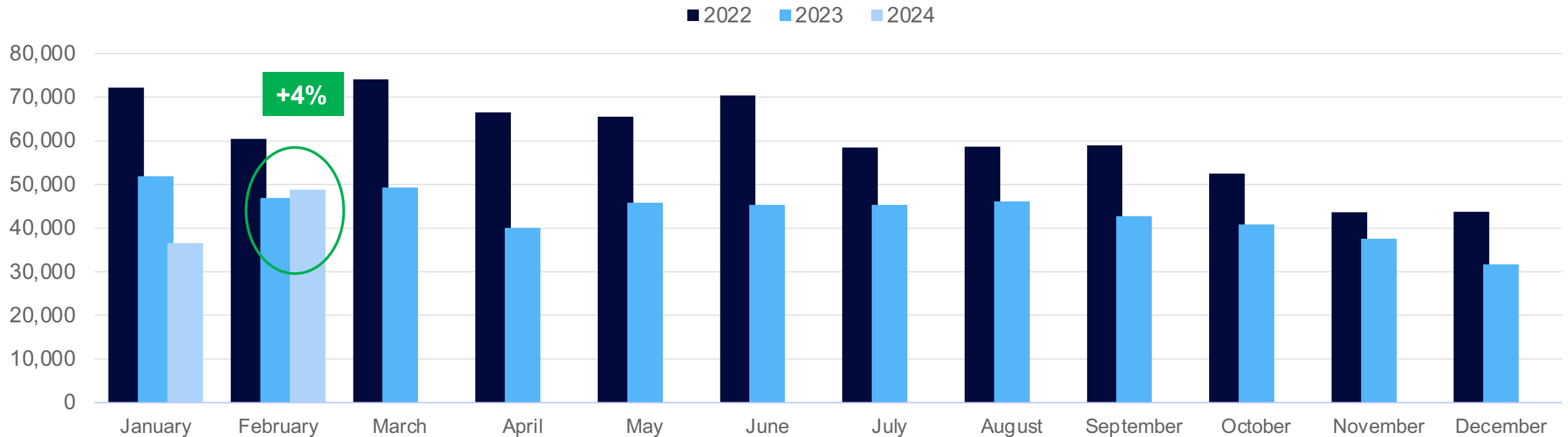**Washington Fastest-Growing Total Enrollment***
Associate
Fall 2023 5-year CAGR

Program	CAGR
Computer Science	28%
Airframe/ Aircraft Maint. Tech	24%
Medical Billing and Coding	12%
Health Svcs/ Allied Health, Gen'l	7%
Baking and Pastry Arts/ Baker/ Pastry Chef	4%
Music, General	4%
Web/Digital/ Multimedia Design	3%
Electrical/Electronics Engin'g	3%
Cyber Security/ Info. Assurance	2%
Marketing/ Marketing Mgmt, General	2%

Overlap

National 10 Fastest-Growing
Cyber Security/ Info. Assurance
Diag. Med. Sonogr'y/ Ultrasound Tech
Health Svcs/ Allied Health, Gen'l
Radiologic Tech/ Radiographer
Computer Science
Information Technology
Electrician
Psychology, General
Kinesiology and Exercise Science
Art/Art Studies, General

Source: PES Program Enrollment Dashboard

*Minimum enrollment prior year: 200

Washington Job Postings Trends

In February 2024, Washington job postings rose 4% year-over-year across all degree levels.

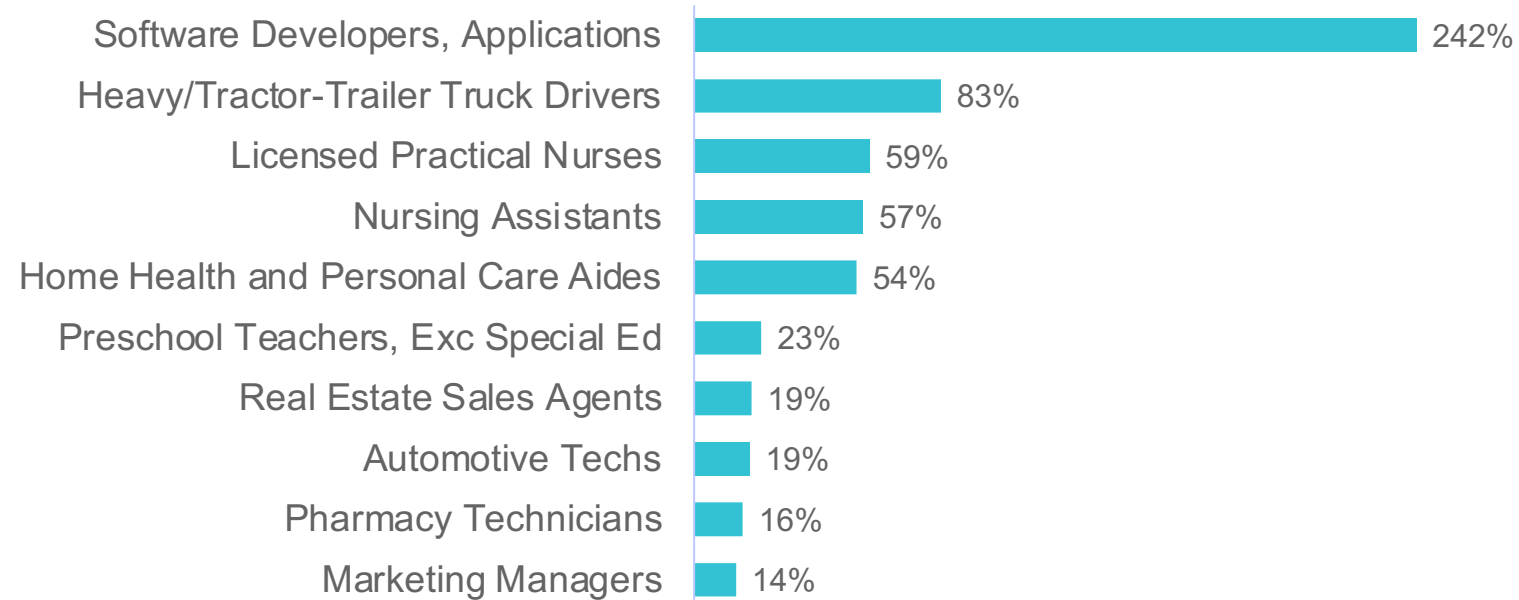### WA Job Postings 2023 - 2024

■ 2022 ■ 2023 ■ 2024

Source: PES Job Postings Dashboard

Washington Jobs trends

In February, Software Developers grew 242% year-over-year.

Washington Fastest-Growing Occupations*
February 2024 YoY

Occupation	Growth
Software Developers, Applications	242%
Heavy/Tractor-Trailer Truck Drivers	83%
Licensed Practical Nurses	59%
Nursing Assistants	57%
Home Health and Personal Care Aides	54%
Preschool Teachers, Exc Special Ed	23%
Real Estate Sales Agents	19%
Automotive Techs	19%
Pharmacy Technicians	16%
Marketing Managers	14%

Source: PES Job Postings Dashboard

*Minimum 200 jobs February 2024
Excludes unskilled labor

Agenda

Why a Program Evaluation System?

Student Demand

- **Leading Indicators: Google**
- **Recent Trends: Enrollment**
- **Non-Degree Courses**

National Employment: Current Indicators

Local Matters: Illinois, Massachusetts, Washington

Summary

Summary

- In February, Google searches for academic programs rose 5% year-over-year.
  - Advertising program searches grew by 127%.
  - Google cost-per-click rose 1%.

- Fall certificate enrollment is up 12% year-over-year.
  - Associate enrollment rose almost 4%.

- Cybersecurity enrollment grew 19% annually at the certificate level.
  - It grew 20% at the associate level.

- In February, after more than a year of decline, US job postings rose 7% year-over-year.

- Most traditional labor market sources rely on direct prep crosswalks.
  - Associate in Criminal Justice grads go into 733 occupations – not 10.
    - The fastest-growing national job posting was for Psychiatric Technicians.

- Academic program data can vary significantly by state.

Upcoming webinars

Topic	Date
Demand Trends Webcast: Community Colleges	Wednesday April 24rd at 2 PM ET
Demand Trends Webcast: Bachelor's and Above	Thursday April 25nd at 2 PM ET

Podcast

Listen on Spotify

Listen on Apple

The Book on Program Evaluation and Management

ROBERT GRAY ATKINS

Start, Stop, or Grow?

A DATA-INFORMED APPROACH TO ACADEMIC PROGRAM EVALUATION AND MANAGEMENT