

INTERNATIONAL TALENT LOCAL IMPACT:

HOW INTERNATIONAL GRADUATES
POWER THE ECONOMY OF
GREATER PHILADELPHIA





PREFACE

Over the past two decades, Philadelphia has been a national leader in cultivating new, diverse, well-educated citizens to grow the region's civic life and economy. With over 50% of recent graduates choosing to stay in the region after graduation, there are now 181K+ more college graduates in Greater Philadelphia than in the early 2000s (Campus Philly, 2023). However, Generation Z (those born between 1997 and 2012) are fewer in numbers compared

to the Millennial generation. This has led to declining enrollments at many higher education institutions nationwide and will create significant labor shortages in our regional economy for the next decade. To address this challenge, our city and region must rely on a combination of strategies to boost talent attraction and retention, including maximizing the number of international graduates who choose to launch their careers in Greater Philadelphia.

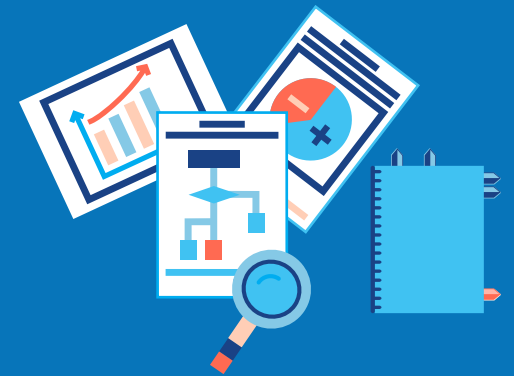


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ACKNOWLEDGEMENTS

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STUDY RATIONALE AND IMPORTANCE OF FINDINGS

At 15%, the City of Philadelphia has a larger share of foreign-born population compared to both Greater Philadelphia (10%) and the nation in total (14%).

Source: ACS

This study comes at a critical time as higher education institutions across the nation are facing an “enrollment cliff,” with the total number of 18-year-olds in the United States dramatically declining after 2025. This population shift will have an impact on the viability of colleges and universities, but also reduce the talent pipeline for employers. In Greater Philadelphia, growing the international student population and providing pathways for more international graduates to launch their careers in the region is one approach to addressing part of this multifaceted challenge.

International House Philadelphia and Campus Philly are two longstanding regional nonprofits with a history of collaboration. Both organizations share a common goal of increasing international student retention in the Greater Philadelphia region and amplifying the conversation on the importance of international graduates to our workforce and economy. A yearlong partnership between the organizations has resulted in this research study as well as an Employer Toolkit for hiring and retaining international talent. Both resources are imperative to understanding the talent challenges ahead and the opportunities our region has to capitalize on a growing pool of international graduates who have the ability to launch their careers in Greater Philadelphia.



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METHODOLOGY & DEFINING THE POPULATION

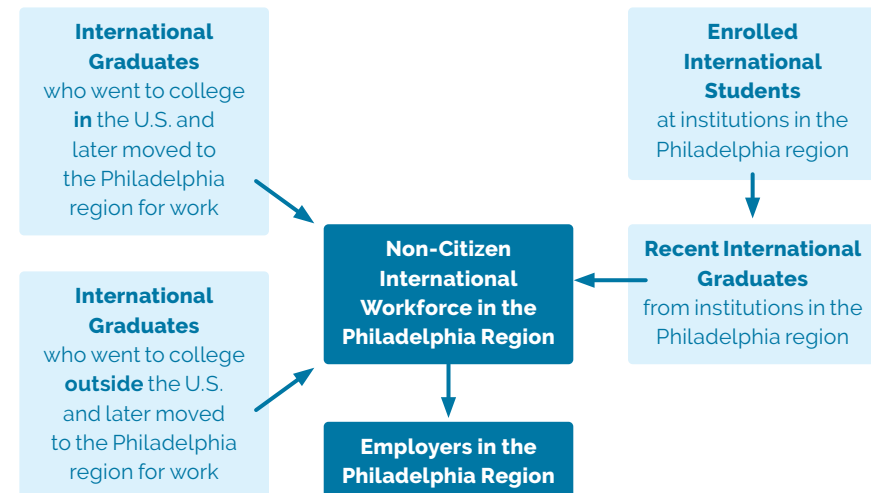
There is no publicly available source of data that defines the international graduate population in the exact manner sought in this analysis. To better understand the scale and impact of this population, the following data sources were utilized by Econsult Solutions, Inc. during the analysis performed for this study:

- ▶ American Community Survey (ACS)
- ▶ IPUMS USA
- ▶ Integrated Postsecondary Data System (IPEDS)
- ▶ U.S. Citizenship and Immigration Services
- ▶ Open Doors
- ▶ Lightcast
- ▶ SEVIS

DEFINING THE POPULATION

To ensure this study considers the full impact of international graduates in Greater Philadelphia, the population examined in this study includes those who graduated from local institutions as well as those who moved to the region after graduating from other national or international institutions.

FIG 1: COMPOSITION OF THE NON-CITIZEN INTERNATIONAL WORKFORCE IN GREATER PHILADELPHIA



Source: Econsult Solutions, Inc.

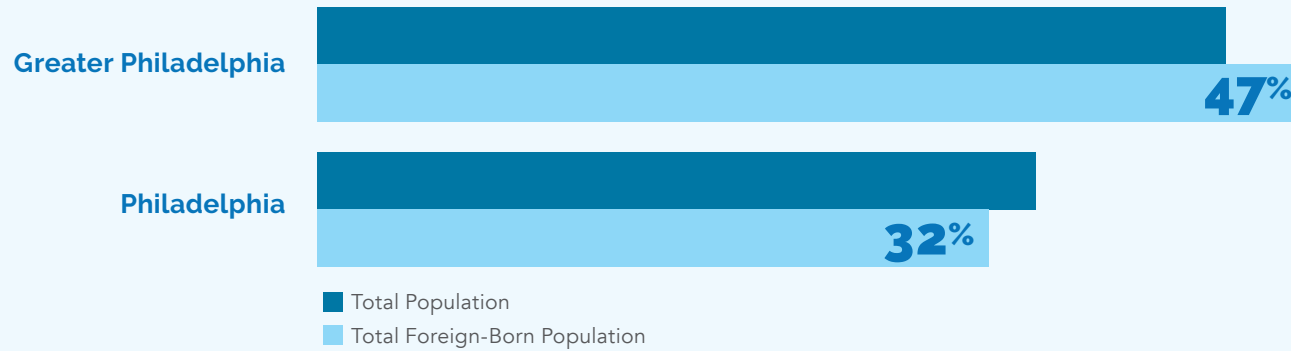


FAST FACTS:

GREATER PHILADELPHIA'S INTERNATIONAL TALENT



% OF THE POPULATION AGED 25+ WITH AT LEAST A BACHELOR'S DEGREE



TOP 6 DEGREE FIELDS OF INTERNATIONAL GRADUATES FROM PHILADELPHIA-BASED INSTITUTIONS

Business, Management, & Marketing
23%

Computer & Information Sciences
16%

Engineering
12%

Health Professions
6%

Biological & Biomedical Sciences
4%

Social Sciences
4%

Source: IPEDS (2022)

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POPULATION OF FOREIGN-BORN TALENT

54,869

Foreign-Born Students aged 16+ in Greater Philadelphia, 2022

Source: ACS

438,151

International Graduate Workforce in Greater Philadelphia, 2022

Source: ACS



ECONOMIC IMPLICATIONS

\$5.7 Billion

in **economic output** is generated by international graduates in the workforce.

Source: Econsult Solutions, Inc. modeled using IMPLAN (2024)

\$328 Million

in **annual tax revenue** generated by international graduates in the workforce.

Source: Econsult Solutions, Inc. modeled using IMPLAN (2024)

INTERNATIONAL STUDENTS

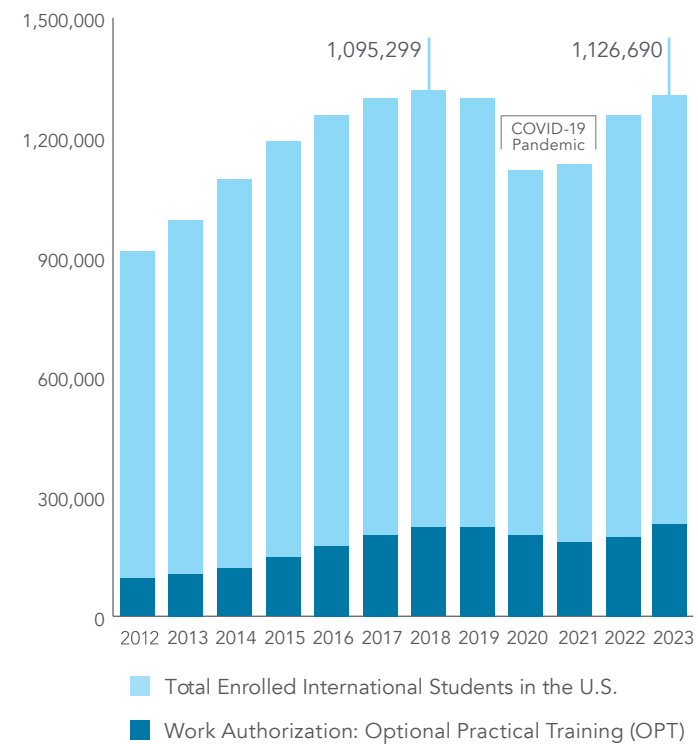
NATIONAL ENROLLMENT TRENDS

The U.S. remains the most popular study destination worldwide for international students (IIE Outlook 2030). In the academic year starting in fall 2023, approximately **884K** international students were enrolled at colleges and universities across the USA and nearly **243K** were in the workforce utilizing F-1 visa work authorization (“OPT”) post-graduation.

GROWTH PROJECTIONS

International student enrollment in the U.S. has **doubled** since the millennium, and is projected to **increase significantly** in the next half decade.

FIG 2: INTERNATIONAL STUDENT ENROLLMENT ACROSS THE U.S. 2012-2023



Source: [Open Doors](#)

GREATER PHILADELPHIA GRADUATION TRENDS

In 2022, just under 23,000 foreign-born students were enrolled across Greater Philadelphia, and the number graduating from local colleges has increased 35% over the past decade. International students accounted for approximately four percent of all bachelor’s degrees and twelve percent of advanced degree completions, a higher overall completion rate for this population than the national average.

Philadelphia’s international graduates are strongly represented in fields critical to the regional innovation economy, earning an outsized share of all degree completions in Computer and Information Sciences (24%), Mathematics and Statistics (24%), Engineering (18%) and Physical Sciences (17%).

8% of all degrees awarded are earned by international students in the Philadelphia MSA
 (compared to the national average of **6%**)
 Source: IPEDS

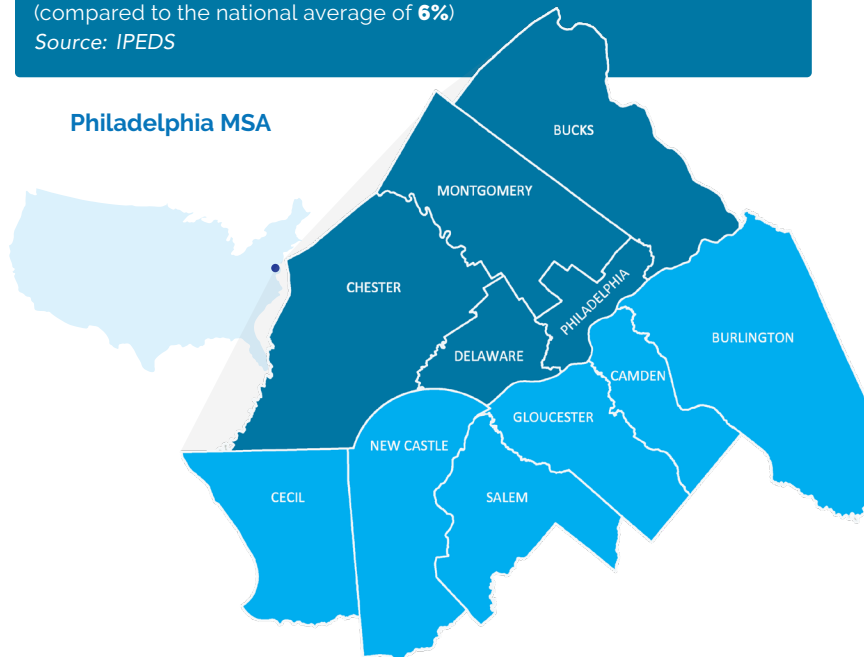


FIG 3: SHARE OF DEGREES COMPLETED BY INTERNATIONAL STUDENTS IN GREATER PHILADELPHIA 2022

Degree Field	All Graduates	Total International Graduates	Intl Graduate Share
Computer and Information Sciences	3491	829	24%
Mathematics and Statistics	720	170	24%
Engineering	3381	610	18%
Physical Sciences	841	144	17%
Business, Management, Marketing	13268	1173	9%
Not Reported and Other	23977	1407	6%
Social Sciences	2861	211	7%
Biological and Biomedical Sciences	3399	200	6%
Visual and Performing Arts	2356	143	6%
Health Professions and Related	14224	299	2%
Total	68518	5186	8%

Source: IPEDS



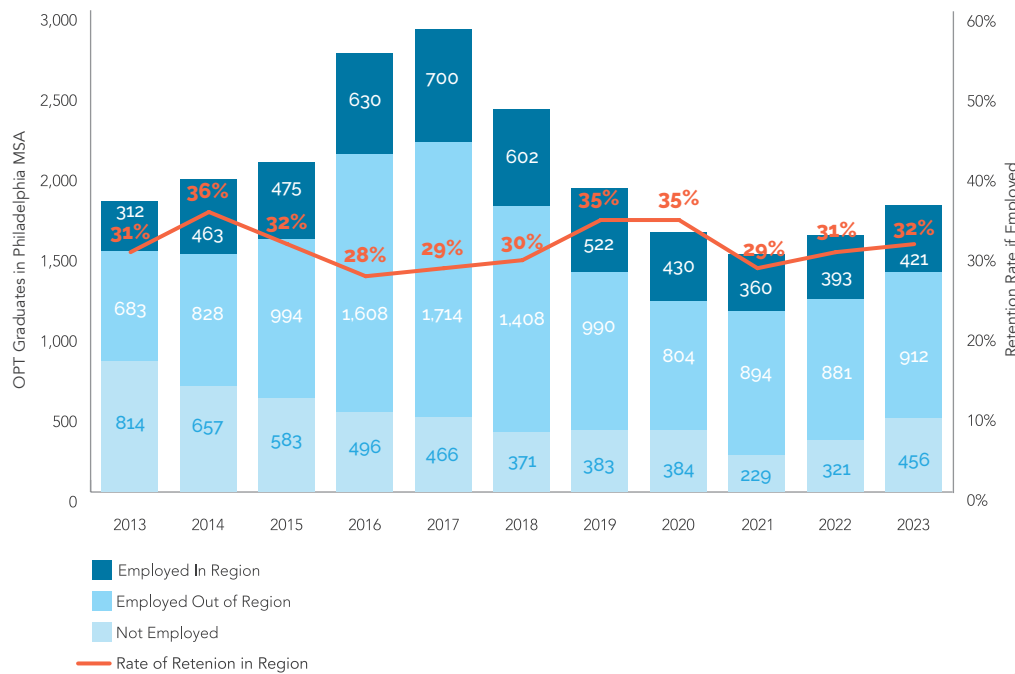
TRANSITION TO THE WORKFORCE – F-1 VISA WORK AUTHORIZATION (OPT)

On a national level, the number of international students retained in the U.S. workforce post-graduation (utilizing OPT work authorization) hovers consistently at around 20% of F-1 visa holders. Although there was a slight decline during the pandemic, the number using this authorization has since rebounded to a near-record high.

The picture on a local level is strikingly different: data from the past decade shows that the number of international graduates from Philadelphia-area colleges and universities starting employment in the U.S. peaked in 2016, then fell by half across the next four years. While it has trended up since 2020, the increase has only been incremental.

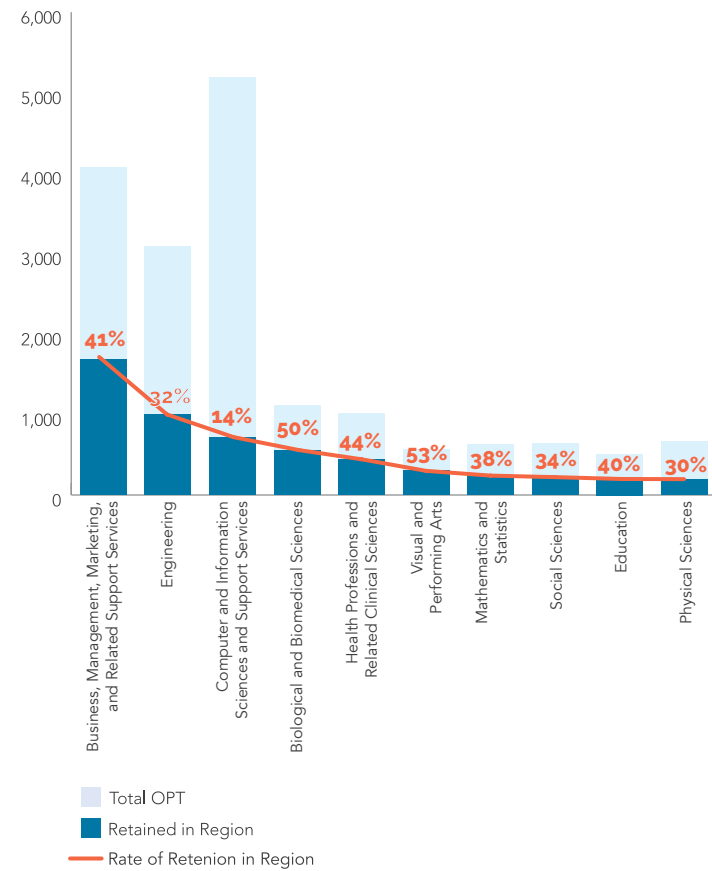
Only about a third of those who find employment post-graduation remain in our region each year, indicating that a more concerted effort is needed to retain this talent pool.

FIG 4: RETENTION RATE OF PHILADELPHIA MSA GRADUATES ON OPT 2013-2023



Source: ICE FOIA Library

FIG 5: OPT PARTICIPANT RETENTION FOR TOP 10 FIELDS OF STUDY IN THE PHILADELPHIA MSA 2002-2023



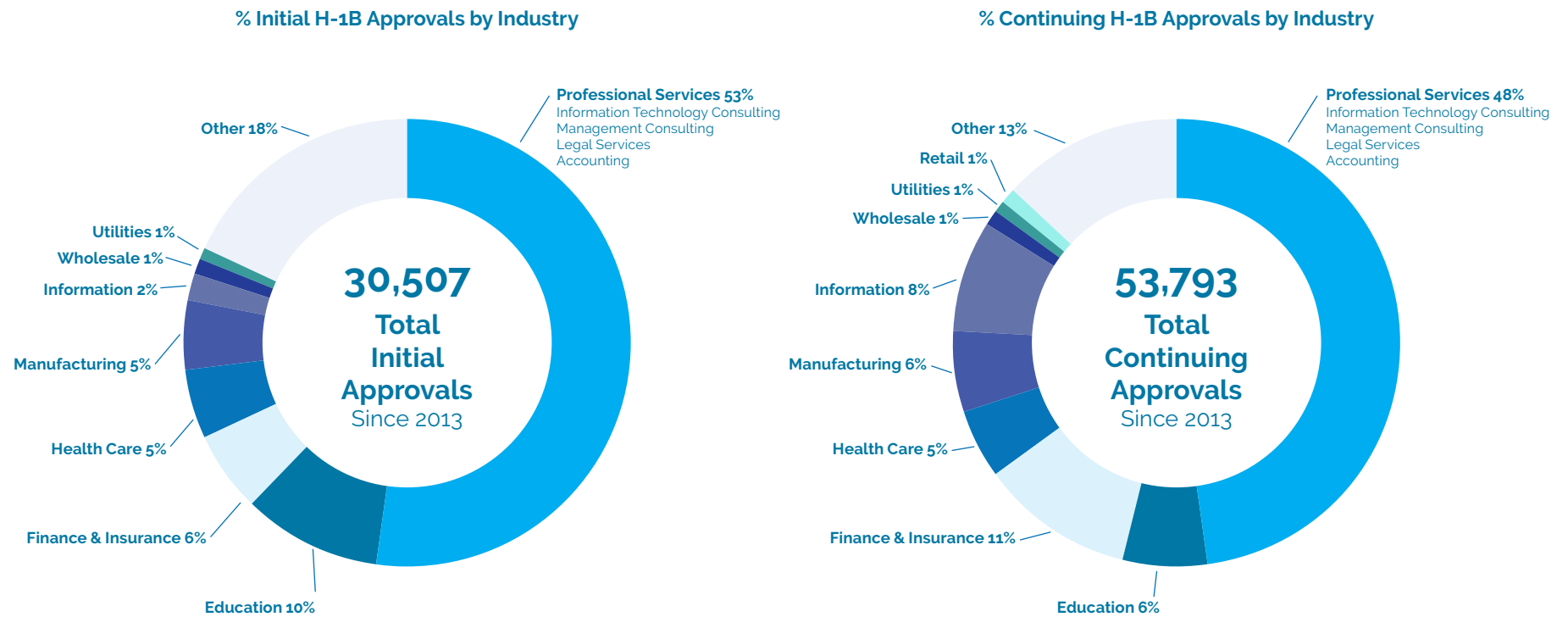
Source: ICE FOIA Library



GROWTH OF THE INTERNATIONAL WORKFORCE - H1B VISA TRENDS

H-1B visas provide a pathway to permanent residence for international graduates. Over 50 percent of initial approvals for H-1B visas from 2013 to 2023 were in the Professional Services Industry, highlighting the significant reliance of this sector on foreign talent to fulfill specialized roles in our region. This industry encompasses a broad spectrum of professions, including information technology consulting, management consulting, legal services, and accounting.

FIG 6: INITIAL AND CONTINUING H-1B APPROVALS BY INDUSTRY IN THE PHILADELPHIA MSA 2013-2023



Source: U.S. Citizenship and Immigration Services

ECONOMIC IMPLICATIONS

According to NAFSA, international students studying in Pennsylvania contributed \$2 billion to the state's economy through spending on tuition and services in the 2022-2023 academic year, supporting nearly 22,000 jobs.

The economic contributions of international graduates in the workforce are also significant. In the Philadelphia MSA in 2022, the annual earnings of approximately 68,000 international graduates generated \$5.7Bn in economic output, supporting approximately 26,300 jobs across the region.

In addition to this spending-driven economic impact, international graduates increase state and local tax bases considerably. In the City of Philadelphia alone, annual tax revenue from international graduates is estimated at \$48 million. Across the Commonwealth (which represents a separate and distinct entity for tax revenue purposes), tax revenue from this population is estimated at \$165 million.

FIG 4: ANNUAL ECONOMIC IMPACT FROM EARNINGS OF INTERNATIONAL GRADUATES

Impact Type	City of Philadelphia	Rest of Region	Philadelphia MSA Total
Direct Earnings (\$B)	\$1.3	\$4.0	\$5.3
Total Economic Output (\$B)	\$1.3	\$4.4	\$5.7
Employment Supported	6,100	20,200	26,300

Source: Econsult Solutions, Inc. modeled using IMPLAN (2024)

FIG 5: ANNUAL TAX REVENUE IMPACT FROM INTERNATIONAL GRADUATE RETENTION

Jurisdiction	Annual Tax Revenue (\$M)	Wage/Income Tax (\$M)	Sales Tax (\$M)	Business Taxes (\$M)
City of Philadelphia	\$47.6	\$40.6	\$1.9	\$5.1
Commonwealth of Pennsylvania	\$165.3	\$117.4	\$35.1	\$12.8
State of New Jersey	\$94.5	\$69.6	\$17.5	\$7.5
State of Delaware	\$20.6	\$20.6		
Total	\$328.0	\$248.1	\$54.5	\$25.4

Source: Econsult Solutions, Inc. modeled using IMPLAN (2024)



INTERNATIONAL GRADUATES AS A DRIVER OF FUTURE REGIONAL GROWTH

The international graduate population represents a major source of talent that the region can access to help fill this gap and recruit the emerging talent needed for continued growth. The international graduate population has the skills and credentials to meet the needs of a portion of industry hiring in the Greater Philadelphia region. Analysis of key knowledge sectors poised for growth in Greater Philadelphia, coupled with data on annual job postings, highlight the industries that could most benefit from considering international talent.

Key Knowledge Sectors poised for growth in the Philadelphia MSA:

- ▶ Educational Services
- ▶ Health Care and Social Assistance
- ▶ Finance and Insurance
- ▶ Professional, Scientific, and Technical Services

Source: Bureau of Economic Analysis (2024)

The international graduate population has the skills and credentials to meet the needs of a portion of industry hiring in the Greater Philadelphia region.

FIG 6: AVERAGE ANNUAL JOB POSTINGS REQUIRING A BACHELOR'S DEGREE IN PHILADELPHIA MSA BY EMPLOYER INDUSTRY CATEGORY 2022-2023

Rank	Industry	Annual Postings	Share of Total	No. of Employers
1	Colleges and Universities	5,758	17%	41
2	Computer Systems Design Services	1,557	5%	258
3	Pharmaceutical and Medicine Manufacturing	1,493	4%	34
4	Depository Credit Intermediation	1,426	4%	37
5	Mgmt., Scientific, and Technical Consulting Services	1,338	4%	243
6	General Medical and Surgical Hospitals	1,087	3%	34
7	Elementary and Secondary Schools	935	3%	105
8	Architectural and Engineering Services	932	3%	138
9	Insurance Carriers	831	2%	33
Total		34,506		923

Source: Lightcast (2024)

FIG 7: INTERNATIONAL GRADUATE COMPLETIONS BY MAJOR IN PHILADELPHIA MSA, AREA SCHOOLS AND NATIONAL AVERAGE 2022

Degree Field	International Graduates	Philadelphia MSA Average	National Average	Net Difference
Other	1,407	27%	19%	8%
Business, Management, Marketing	1,173	23%	15%	6%
Computer and Information Sciences	829	16%	19%	(3%)
Engineering	610	12%	19%	(7%)
Health Professions, Related Programs	299	6%	3%	3%
Social Sciences	211	4%	8%	(4%)
Biological and Biomedical Sciences	200	4%	5%	(1%)
Mathematics and Statistics	170	3%	4%	(1%)
Physical Sciences	144	3%	3%	0%
Visual and Performing Arts	143	3%	5%	(2%)
Total	5,186			

Source: IPEDS (2024), Open Doors (2024)

CONCLUSION

Greater Philadelphia is home to a large and well-educated foreign-born population that contributes substantially to our regional economy. Our region's colleges and universities produce more international graduates every year than the national average, and trends suggest that the number of students from overseas who choose to study in our region will continue to increase in the years ahead.

Against a backdrop of looming postsecondary enrollment challenges and the broader demographic decline in our region, international students and graduates represent both a lifeline for our colleges and universities and an indispensable talent pool that employers cannot afford to overlook.

LESSONS LEARNED

- ▶ International students are overrepresented in the academic fields vital to our innovation economy.
- ▶ There are ample sector-specific opportunities in the workforce for international graduates in these fields.
- ▶ A greater effort is needed to build pipelines for international graduates into employment in Greater Philadelphia.

RECOMMENDED PRIORITIES FOR FURTHER RESEARCH

- ▶ A retention analysis of international graduates that identifies barriers to attracting, hiring, and retaining international talent.
- ▶ A labor force analysis that performs a deep dive on trends and forecasts for in-demand fields to understand potential labor shortages in the region in the coming years.
- ▶ A labor force analysis that explores the extent to which the skills and experience of our region's existing foreign-born population are being underutilized.

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Is your organization interested in hiring international talent? Consult the **Employer Toolkit** created in partnership by International House Philadelphia and Campus Philly.

Produced by:



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International House Philadelphia

IHP works to make Philadelphia a hub for global education that attracts, supports, and retains international students and scholars.

Contact: info@ihphilly.org

Website: www.ihphilly.org

 @ihousephilly



Campus Philly

Campus Philly fuels regional economic growth by empowering diverse college students and recent graduates to explore, live, and work in Greater Philadelphia.

Contact: info@campusphilly.org

Website: www.campusphilly.org

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