INDIANA COMMISSION *for*
HIGHER EDUCATION

Certificates in Indiana

February 2017

CAREER CREDENTIALS 101

MASTERS & DOCTORAL DEGREES*

BACHELOR'S DEGREES*
(Approximately 120 credits)

ASSOCIATE DEGREES*
(Approximately 60 credits)

CREDIT BEARING CERTIFICATES*
(Approximately 18-35 credits, transferrable, financial aid-eligible)

NON-CREDIT BEARING CERTIFICATES**
(Non-transferrable, not financial aid-eligible)

INDUSTRY-RECOGNIZED CERTIFICATIONS
(Examples: Microsoft Office Certifications, Automotive Service Excellence Certifications)

PROVIDERS

- Four-year colleges & universities
- Two-year colleges
- Career & technical providers (state-approved)
- Employers & third-party providers

NOTES: Credential levels depicted in above diagram do not represent scale of total quantity produced.

*Regulated by Indiana Commission for Higher Education   **Regulated by Indiana Department of Workforce Development

What is a Certificate?

Certificates are educational and/or workplace credentials that can be divided into the two broad categories of "credit bearing" and "non-credit bearing" briefly described below. This report focuses on credit-bearing certificates.

Credit Bearing Certificates, sometimes referred to as educational certificates, are formal credentials issued by two- and four-year colleges and universities representing the satisfactory completion of an organized program of study at the postsecondary level. Certificate programs commonly have a career or occupational focus with an emphasis on specialized skills and knowledge, and are awarded at both the undergraduate (sub-baccalaureate) and graduate (post-baccalaureate) levels.

Certificate programs vary in length, although at the undergraduate level they typically fall under one of two categories which correspond to categories used by the federal government to collect data:

- *Short-term certificate*: program of less than one academic year or designed for completion in fewer than 30 semester credit hours by a student enrolled full time, or
- *Longer-term certificate*: program of at least one but less than two academic years or designed for completion in at least 30 but fewer than 60 semester credit hours by a student enrolled full time. In Indiana, longer-term certificates also are referred to as "technical certificates".

Non-Credit Bearing Certificates encompass a broad variety of awards typically granted by organizations or agencies outside of higher education for an individual's participation in and/or completion of an identified set of criteria, often related to specific workforce training needs. As the category suggests, non-credit bearing certificates do not count toward a formal educational credential or degree. One example is the Indiana Governor's Work Ethic Certificate Program, also referred to as the Work Ethic Certificate[1], which is an employer- and community-based award that encourages students to meet benchmarks that will assist them in their college or career goals.

Certifications and Licenses are industry-recognized credentials awarded by a certification or licensing body. Certifications and licenses are time-limited credentials that must be renewed periodically, unlike credit-bearing certificates and degrees that are awarded for life. Certifications cover a range of industries and occupations, although they are especially prevalent in health, advanced manufacturing and information technology fields. Common examples of licenses include those required for nursing, teaching, and accounting professions. U.S. Census data suggest nearly 20% of the national population 18 or older with some college but no degree have an industry-recognized certification or license.[2]

- Preparation for a certification or license varies, and often is tied to formal classroom study. For example, at Ivy Tech, Indiana's largest two-year public college, 45% of certificate or associate programs have industry-recognized certifications embedded within the program curriculum, allowing students to potentially earn both an educational credential and an industry certification.

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[1] see http://in.gov/dwd/workethic.htm

[2] Ewert, S. & Kominski, R. (2014). Measuring alternative educational credentials: 2012. *Household Economic Studies,* pp.70-138. U.S. Census Bureau. Retrieved from http://www.census.gov/prod/2014pubs/p70-138.pdf

About the Data

Unless otherwise noted, certificate data presented in this report reference short- and longer-term academic credit-bearing certificate programs at the undergraduate level (see description above) offered at Indiana public colleges and universities. Degree and demographic breakouts are limited to Indiana resident students enrolled at an Indiana public postsecondary institution. Sources: Indiana Commission for Higher Education and the U.S. Department of Education Institute of Education Sciences, National Center for Education Statistics

KEY TAKEAWAYS

Certificates by the Numbers

At Indiana public institutions...

- 240 programs awarded certificates in FY 2016
  - Of those, 107 (45%) offered at Ivy Tech; 40 (17%) at IUPUI, and 20 (8%) at Vincennes

- Almost 12,000 certificates conferred
  - 91% conferred by two-year institutions

- About 10,000 Hoosiers earned certificates
  - Over 60% also earn an associate or bachelor's in the same or following fiscal year

- 55% of certificates awarded in business and health fields

Certificates are a growing part of higher education offerings, typically designed to lead to immediate workforce opportunities or a higher educational credential.

Certificate production is increasing in Indiana, with most certificates awarded by Indiana public colleges and universities. Since 2012, total certificate production in Indiana has increased by 32% (12,910 to 17,046), with a majority (74%) produced by the public institutions, particularly two-year colleges.

Over half of all certificates are awarded in business and health-related areas. Certificates also are typically awarded alongside another credential. Nearly two-thirds of students completing a certificate also earn an associate or bachelor's degree in the same or following fiscal year. In addition, approximately a quarter of certificate earners complete multiple certificates within the same year.

Certificate earners tend to be adults and low-income students, similar to associate degree earners. Some differences exist, as minority students account for a slightly larger share of certificate earners than associate degree earners, while certificate earners are more likely to be living at or below the poverty level while going to school than associate degree earners, according to available data.

Certificates offer a viable postsecondary option for many students, and may be positively associated with first-year performance and persistence into higher-level degree programs, particularly for minority and low-income students. The latest data, for example, show over one-third of initial associate degree seekers end up completing a certificate instead within a two-year timeframe. Additionally, data suggest Black and Hispanic certificate earners have the highest persistence rate into further postsecondary education among all race/ethnicity groups, with 72% of Black students and 68% of Hispanic students enrolling in a higher degree program within three years compared to 66% of White certificate earners.

INTRODUCTION

Certificates are an increasingly prominent fixture in higher education, viewed as a means for developing pathways to a college degree (e.g., associate or bachelor's), as well as boosting state educational attainment rates and enhancing education-workforce alignment. Since 2012, certificate production in Indiana has increased by 32% (12,910 to 17,046), with 74% of certificates coming from the public colleges and universities (*see Figure 1*). According to the latest data, longer-term certificates (of at least one but less than two academic years in program length) account for almost 75% of the state's total certificate production.

Figure 1: Total undergraduate certificate production in Indiana by postsecondary sector, 2012-2015[3]
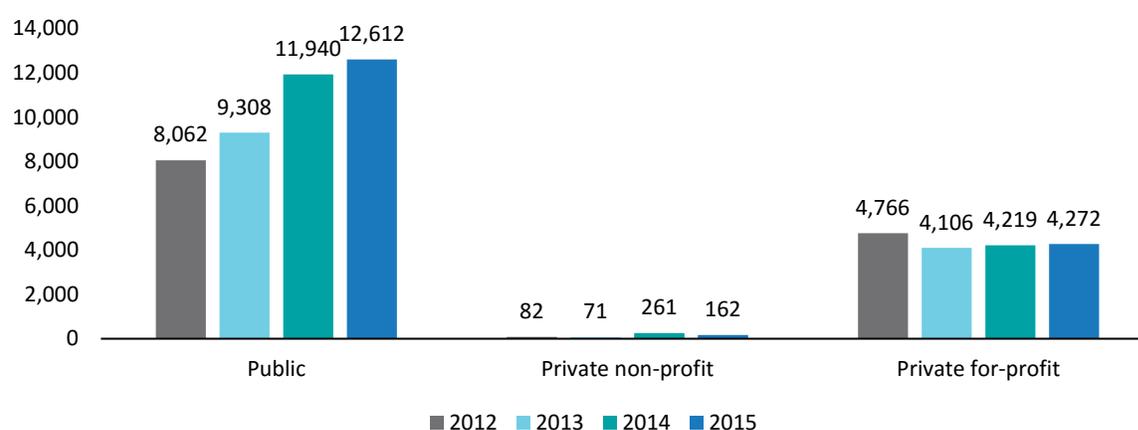
Indiana's certificate production relative to its working-age population (age 25-64) is on par with the national average, contributing a moderate five percentage point increase to the estimated total state educational attainment rate.[4] Indeed, certificates undoubtedly will play a crucial role in helping Indiana achieve its 60 percent attainment goal by 2025 (see Appendix A). The value Indiana places on certificates also is reflected in the state's postsecondary performance funding formula, which allocates dollars for longer-term and certain short-term certificates awarded by the two-year public colleges. Statewide efforts are also underway to identify opportunities to better align certificate programs to regional workforce needs. This report provides a closer look at available Indiana public postsecondary institution data, addressing the following questions:

- How many and what kinds of certificates are awarded?
- What types of students are earning short- and longer-term certificates?
- What are some key outcomes for certificate earners?
- How might Indiana's definition of "high value" or "quality" credentials be refined?

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[3] National Center for Education Statistics, IPEDS. Counts include resident and non-resident completers.
[4] Counting the estimated 5% of working-age residents who have earned high labor market value postsecondary certificates, Indiana ranks 40th in the U.S. with a total educational attainment rate of 40.9%. See Lumina Foundation (2016). A stronger nation. Retrieved from http://strongernation.luminafoundation.org/report/2016/

CERTIFICATES AWARDED
Certificate Production Increasing

Across 240 programs[5], Indiana public institutions awarded almost 12,000 certificates to Hoosier students in fiscal year (FY) 2016, over double the number conferred five years ago.[6] In contrast, associate degree production increased by only about 4% (from 10,652 to 11,057) and bachelor's production increased by about 12% (from 21,327 to 23,855) during the same period. Over two-thirds of the certificates produced were longer-term, but short-term certificate production grew the fastest over five years. Figures 2 and 3 illustrate the growth of certificate production in terms of credentials conferred and as a share of total Hoosier undergraduate credential production.

Figure 2: Number of Resident Undergraduate Credentials Conferred at Indiana Publics (FY 2011-FY 2016)
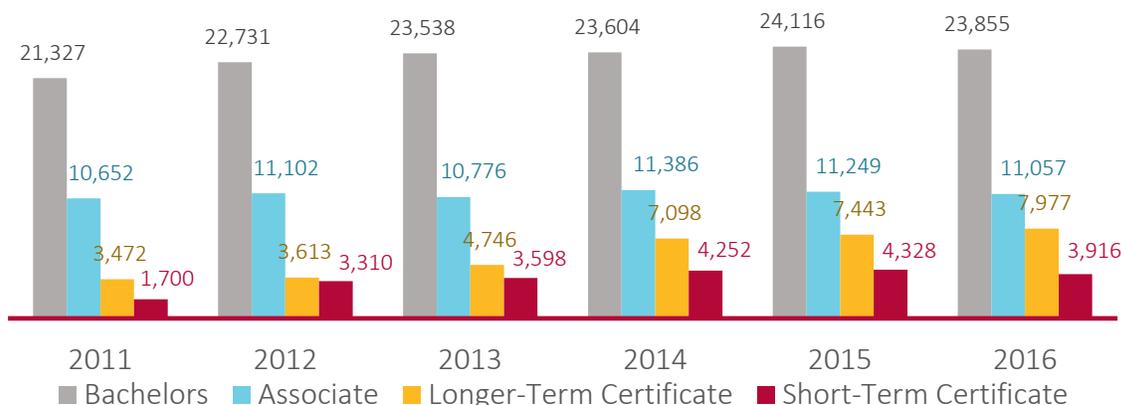

*Figure 3: Share of Total Resident Undergraduate Credential Production at Indiana Publics (FY 2011-FY 2016)*

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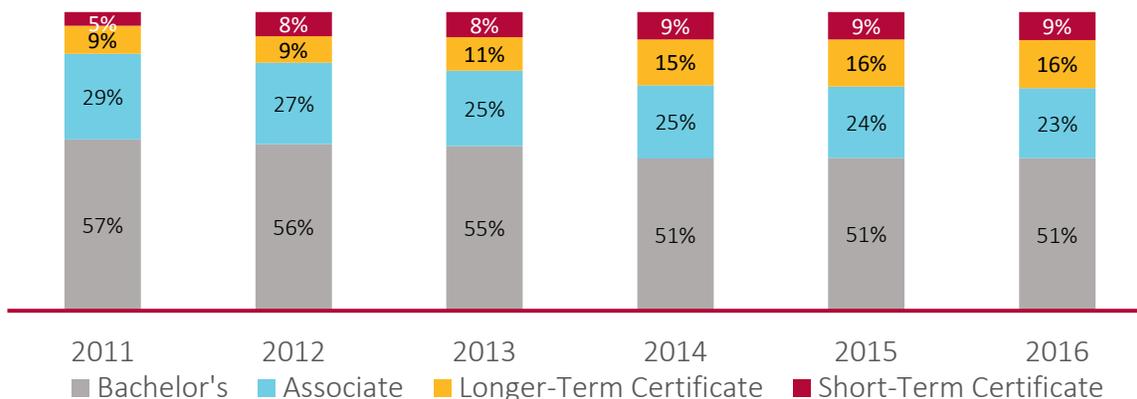
[5] Limited to programs in which certificates were awarded in FY 2016. Of all programs offered by any institution, 45% were at Ivy Tech. For a count of programs offered by institution, see Appendix G.
[6] Only 826 non-resident students earned certificates at Indiana public institutions in FY 2016.

Certificates Often Earned Alongside Another Credential…

Certificates typically are designed to serve as stepping stones to immediate workforce opportunities or a higher educational credential, and the data correspondingly show such certificate-earning patterns in Indiana. For example, of the 9,921 Hoosiers who earned a certificate from an Indiana public institution in FY 2015, about 55% were earned alongside an associate, 8% were awarded alongside a bachelor's, and about 8% of certificate earners already held an associate or bachelor's degree (see Figure 4).[7]

Figure 4: Percentage of Certificate Earners (FY 2015) Awarded a Higher-Level Credential in the Same or Following Fiscal Year
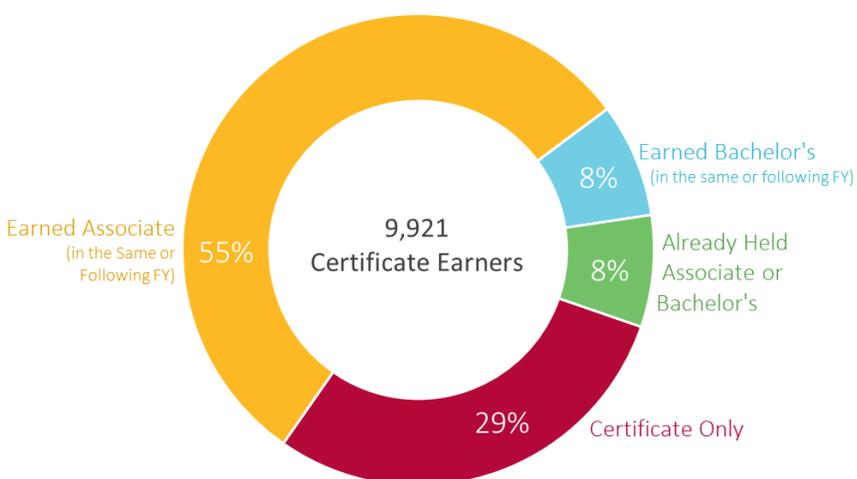
STACKABLE CREDENTIALS

"Stackable" certificate programs are those that are purposefully designed to fit within and count toward an associate or bachelor's degree in the same program of study at the same institution. Depending on institutional policies and practices, as well as individual student circumstances, stackable credentials may be awarded at the same time (e.g., upon completion of highest credential) or over a period of time, as the student completes each credential. Such variations complicate efforts to identify true stackable credential trends across fiscal years. For purposes of this report, CHE focuses on whether a student completes more than one credential within two years, regardless of the program nature.

…And Two-Year Institutions Produce Majority of Certificates

Not surprisingly, Indiana's public two-year institutions are the primary source of certificates earned by Hoosiers. The vast majority (91%) of certificates awarded in FY 2016 were conferred by two-year institutions, with most of those awarded alongside another certificate or an associate degree.

- Nearly a quarter of certificate earners at two-year institutions earn multiple certificates within the same year; the latest data show that about 14% of short-term certificate earners were awarded more than one short-term certificate in the same fiscal year, and about 7% of longer-term certificate earners were awarded more than one longer-term certificate (see Figure 5).
- Additionally, nearly half (45.9%) of certificate earners were awarded an associate degree within the same fiscal year. The percentage of certificate

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[7] The analysis does not capture degrees awarded by non-Indiana public institutions, degrees awarded prior to FY 2000 or certificates awarded prior to FY 2011.

earners who pair a certificate with an associate increased by about 14 percentage points between FY 2011 and FY 2016 (see Figure 6).
* The percentage of certificate earners completing both a short- and longer-term certificate within the same fiscal year has remained relatively constant at about 11% (see Figure 6).

Figure 5: Percentage of Certificate Earners Awarded Multiple Same-Level Certificates in the Same Fiscal Year (FY 2011-FY 2016)
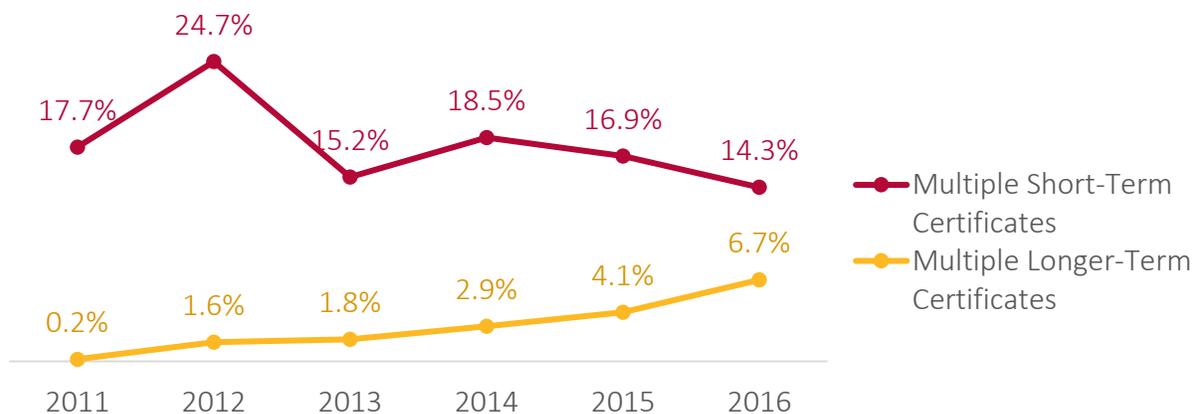

Figure 6: Percentage of Certificate Earners Awarded a Higher-Level Credential in the Same Fiscal Year[8] (FY 2011-FY 2016)

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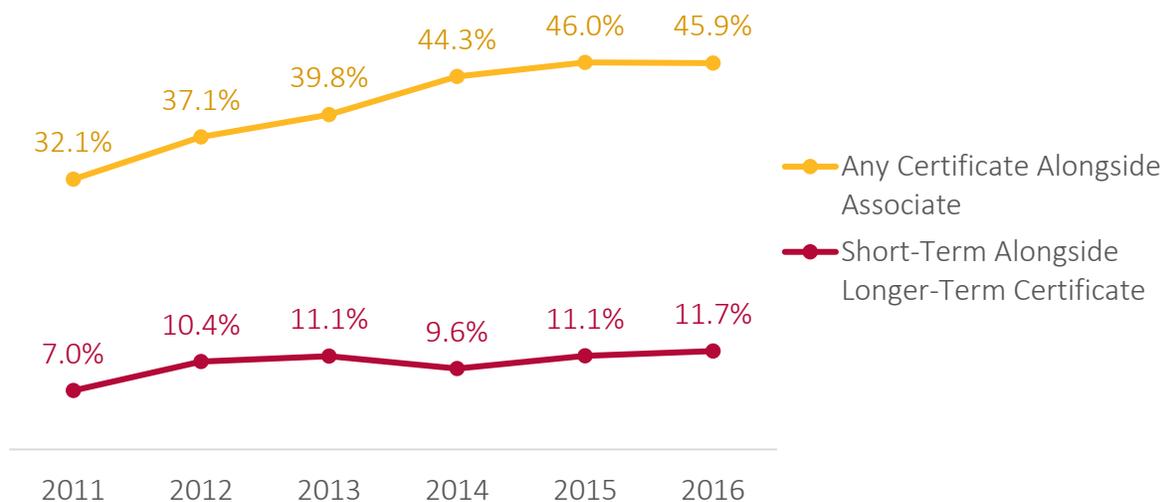
[8] Students who earned all three credentials (associate degree, longer-term certificate and short-term certificate) in the same fiscal year are counted in both categories depicted in Figure 6.

Most Certificates Awarded in Business and Health Areas

Certificates earned at Indiana publics are concentrated in two broad program areas, with over half of the certificates conferred between FY 2011 and FY 2016 being awarded in business/communications or health-related programs. Trades and STEM areas were the next most popular, while only about 5% of certificates were conferred in education and social sciences (see Figure 7).

- Longer-term certificates accounted for a majority of certificates conferred in all program areas except trades, where about half of certificates were short-term, and in social sciences where almost all were short-term.
- At a more granular program level, the data show that top certificate and associate fields of study tend to be similar, although short-term certificates have fewer popular fields in common with higher-level credentials (see Figure 8).[9]
- For lists of the top 10 program majors by credential type, see Appendix D.

STATEWIDE TRANSFER GENERAL EDUCATION CORE CERTIFICATE

Since 2012, the Statewide Transfer General Education Core (STGEC) has enabled students who satisfactorily complete an approved program of general education in any public institution to transfer that coursework to any other state educational institution as a block of 30 credit hours towards the general education core requirements. At Indiana's two-year institutions, the STGEC is awarded as a certificate in the Arts and Humanities area of study.

In FY 2016, close to 2,000 STGEC certificates were awarded to Hoosier students. These certificates are excluded from the program area analysis presented in this report.

Figure 7: Percentage of Certificates Awarded by Program Area (FY 2011- FY 2016)

■ Short-Term Certificate ■ Longer-Term Certificate

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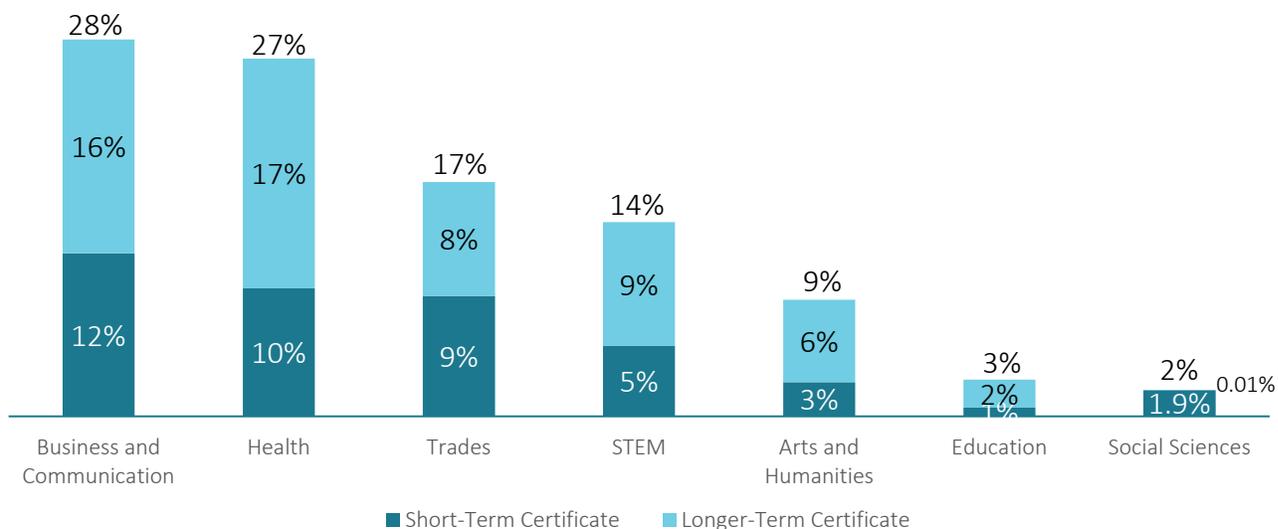
[9] Refers to programs with the same two-digit CIP (Classification of Instructional Programs) code

Figure 8: Percentage of Credential Earners by Top Five Program Fields (FY 2011-FY 2016)
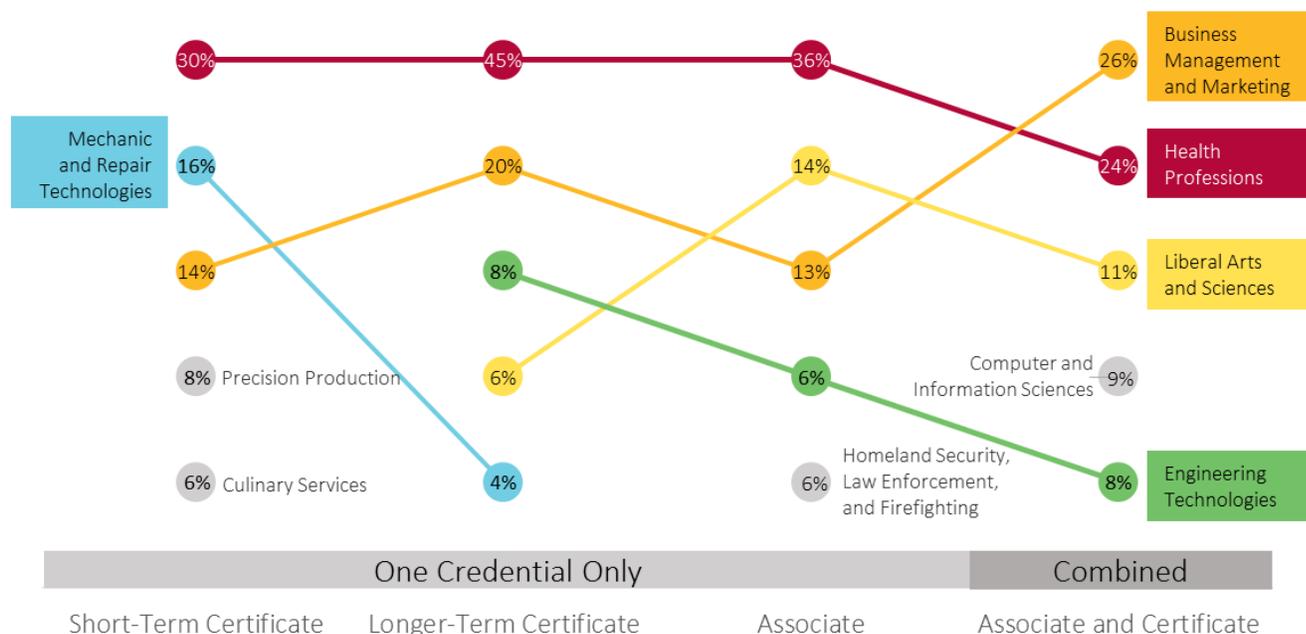
STUDENT CHARACTERISTICS

Certificate and Associate Degree Earners Similar

Certificate earners tend to be older and have lower levels of income, similar to associate degree earners. Nonetheless, data suggest some differences among these postsecondary credential populations:

- Certificate earners are slightly more diverse than associate earners, with minority students accounting for a larger share of certificate earners than associate earners.
- Longer-term certificate and associate degree earners are slightly more likely to be adults (25 or older) than short-term certificate earners.
- About 60% of associate and certificate earners applied for financial aid in the year the credential was awarded. Of those who applied, certificate earners tended to have lower incomes, and accounting for household size, were also more likely to be living at or below the poverty level than associate degree earners.[10]

Figures 9-11 show the demographic characteristics of associate and certificate earners (race/ethnicity, age, gender, and adjusted gross income (AGI)).[11]

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[10] Percentages may be conservative in that students with longer times to completion may have exhausted financial aid eligibility before graduating. The analysis does not take into account financial aid received in years prior to earning a credential.

[11] The data also indicate similar percentages of male and female students earn certificates, although male students are more likely to earn short-term certificates as their only credential.

Figure 9: Associate and Certificate Earners by Race/Ethnicity Group (FY 2011-FY 2016)
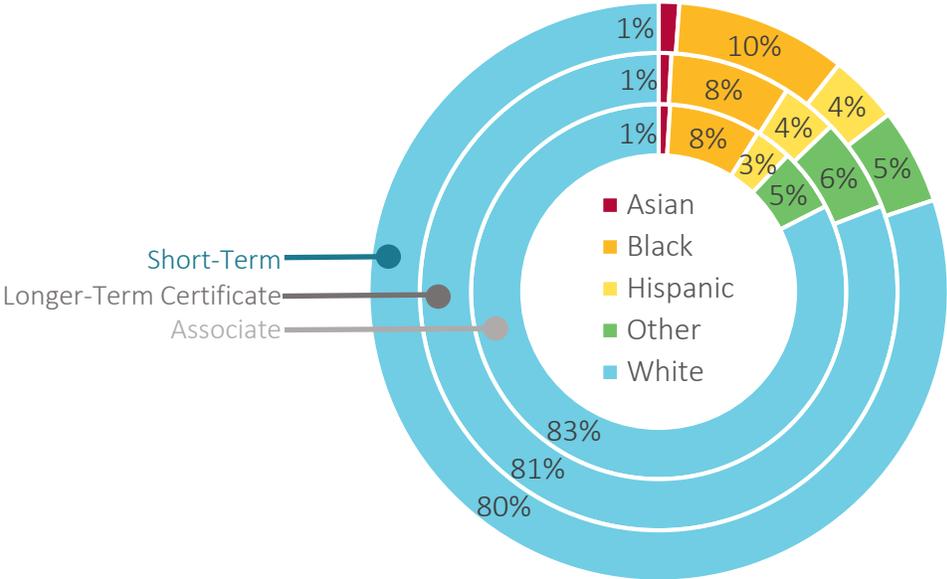
Figure 10: Associate and Certificate Earners by Age Group (FY 2011-FY 2016)
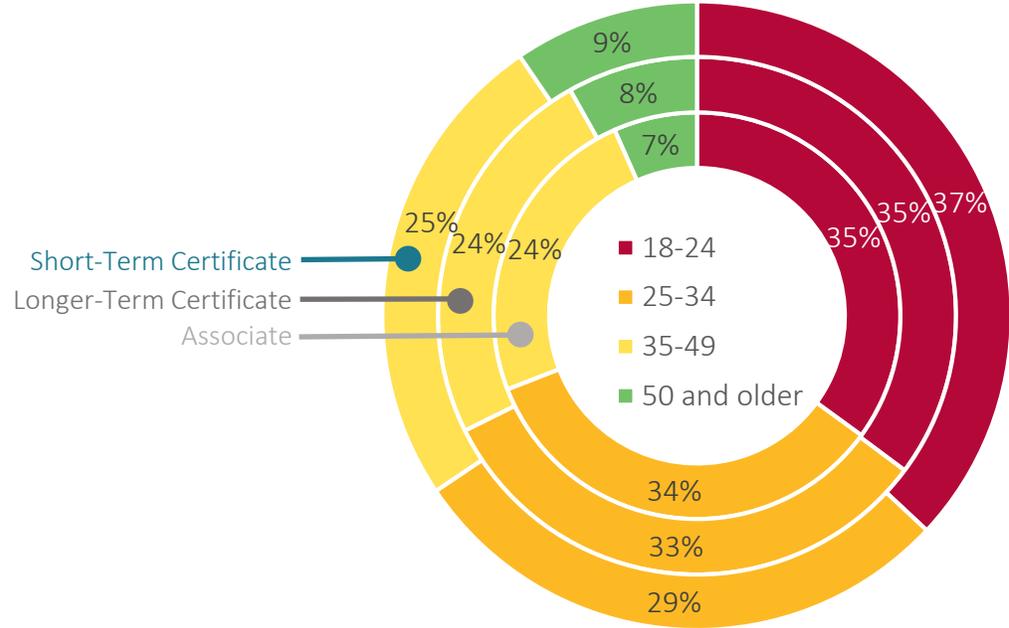
Figure 11: Associate and Certificate Earner Financial Aid Applicants by AGI (FY 2011-FY 2015)
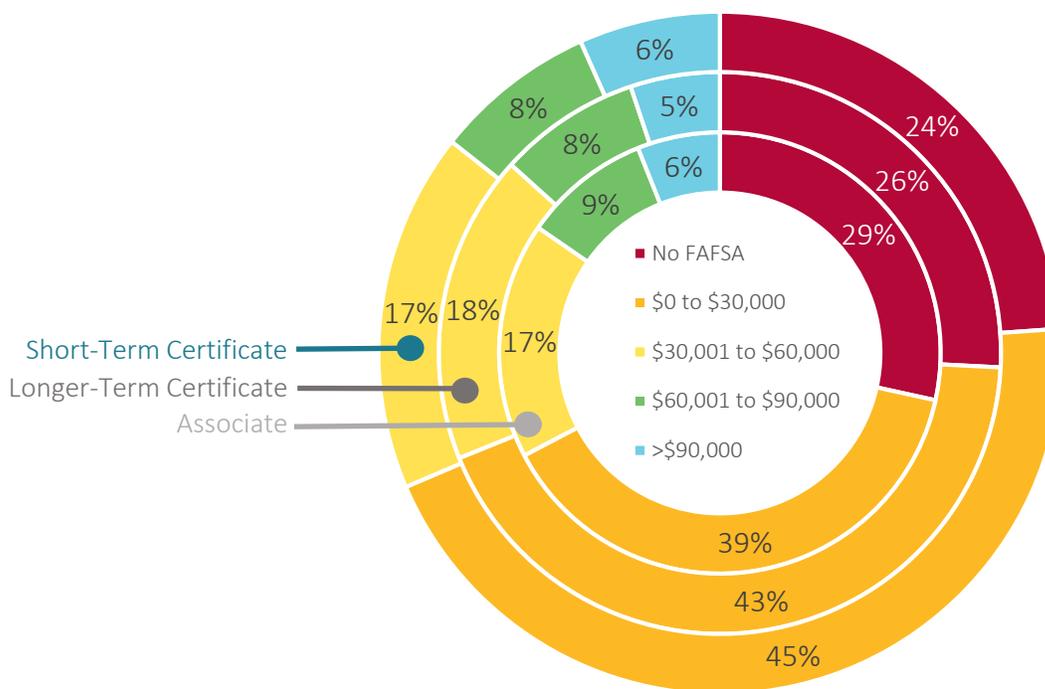
KEY CERTIFICATE OUTCOMES

Viable Postsecondary Option for Many

Because certificate programs generally are designed to be completed in less than one or two years, they can provide a relatively quick route to postsecondary credential completion. **The data show that certificates are indeed a viable postsecondary option for many first-time students, both in terms of overall credential attainment and time-to-degree:**[12]

- Approximately one-third (31%) of students initially enrolling in certificate programs earn a credential within six years, a success rate that is similar to and slightly outpaces that of initial associate degree seekers at 28% (see Figure 12).
- Certificate seekers are about half as likely as bachelor's seekers to earn a credential within 6 years (see Figure 12), a discrepancy that may be partly explained by student demographic differences. Similar to associate degree

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[12] Data include Indiana resident students enrolling as first-time, degree-seeking undergraduate students in the fall semester at full-time status. Three years of data are included: Fall 2007-2009 cohorts. Data for short-term certificate seekers are limited prior to 2011, so six-year completion rates for short-term certificate seekers are unavailable.

seekers, students initially pursuing certificates are much more likely to be adult and low-income students, two student groups who traditionally face unique challenges to completion.

- Among initial certificate seekers who graduate,[13] approximately 50% complete within two years (14% in one year and 36% in two years) compared to only 18% of initial associate degree seekers. The majority (53%) of bachelor's degree earners complete within the standard four-year timeframe (see Figure 13).

Figure 12: Six-Year Completion Rates by Initial Degree Level Pursued (Fall 2007-2009 Cohorts)

Initial Degree Level	Completion Rate
Longer-Term Certificate	31.3%
Associate	28.4%
Bachelor's	62.4%
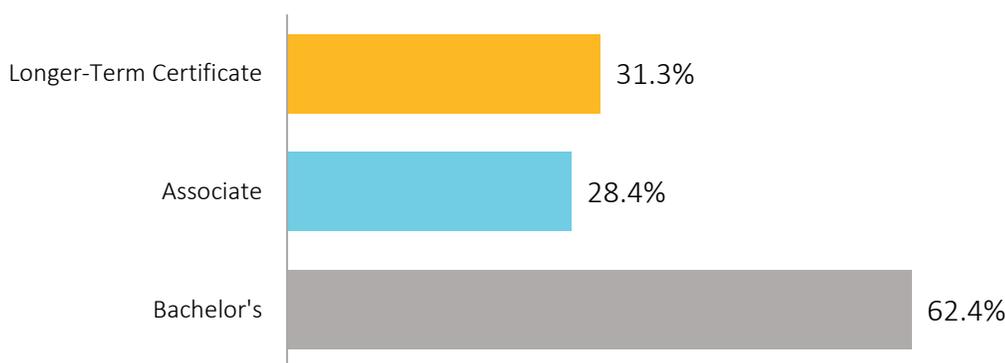
Figure 13: Time-to-Degree for Students Graduating Within Six Years (Fall 2007-2009 Cohorts)

Time to Degree	Longer-Term Certificate	Associate	Bachelor's
6 Years	4%	12%	11%
5 Years	8%	19%	34%
4 Years	13%	22%	53%
3 Years	25%	30%	1%
2 Years	36%	17%	
1 Year	14%	1%	1%

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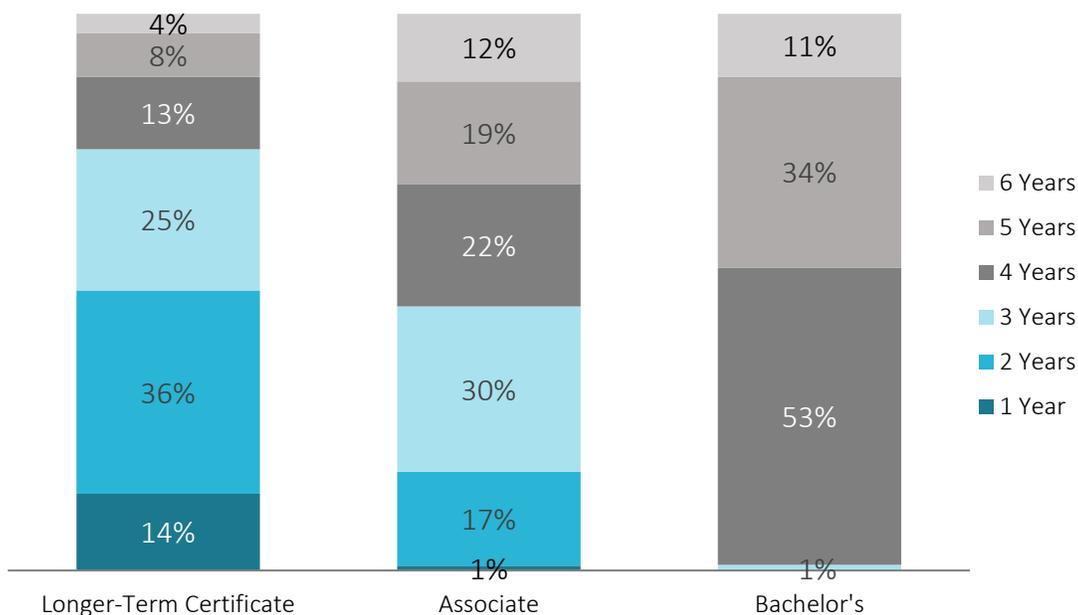
[13] Includes degree completions at a level same or higher than one initially pursued

Alternative Pathway to Completion

Examining college completion trends by a student's initial degree level only tells part of the completion story. Certificates offer alternative pathways to completion for students initially pursuing higher level credentials, and **data for initial associate degree seekers show that certificates do help push more students through the college completion pipeline in Indiana:**

- Over a period of six years, certificate completions added an additional 5.3 percentage points to the total completion rate for the cohort of initial associate degree seekers who entered college for the first time in fall 2009 (see Figure 14).[14]
- Similarly, when looking just at the completers of the same fall 2009 associate-seeking cohort, the data show that 20% ended up earning a certificate instead.
- More recent data show that certificates may play an even larger role in helping initial associate seekers earn a credential within two years when the associate degree may be just slightly out of reach. Among initial associate degree seekers in the fall 2013 cohort who completed a degree within two years at an Indiana public college, over one-third (36%) earned a certificate (see Figure 15).

Figure 14: Completion Rates of Initial Associate-Seekers by Degree Earned

Within 2 Years (2013 Cohort)   *Within 6 Years (2009 Cohort)*
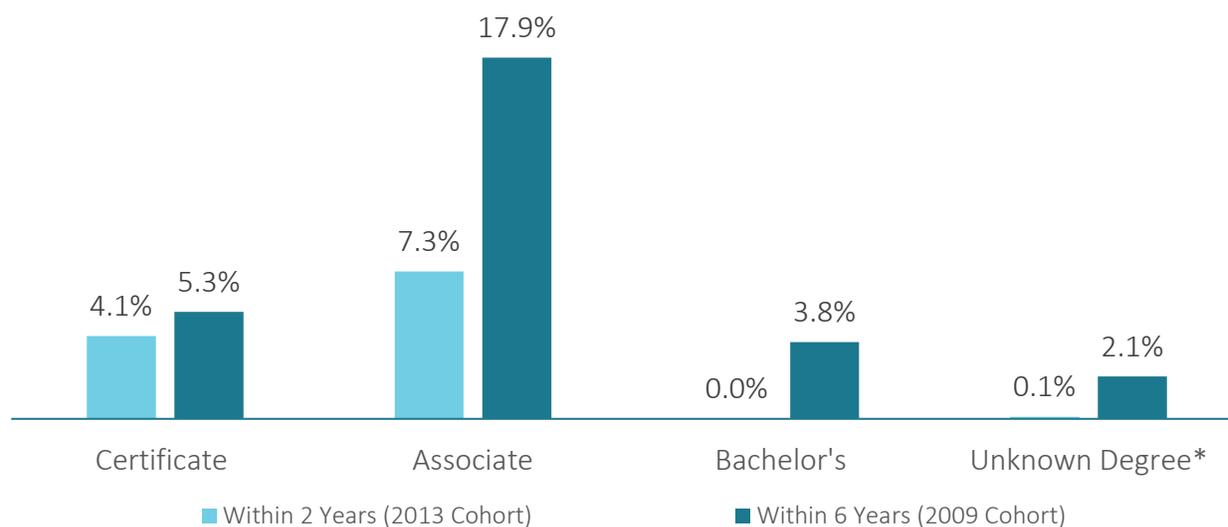
*Degree level is unknown for students who completed at non-public Indiana institutions

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[14] Indiana residents who started as full-time students at an Indiana public institution

Figure 15: Percentage of Initial Associate Degree Seekers by Highest Credential Earned at an Indiana Public College

Fall 2013 Cohort: Completion Within 2 Years
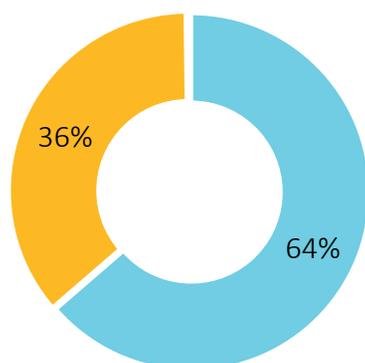
Fall 2009 Cohort: Completion Within 6 Years

■ Associate ■ Certificate
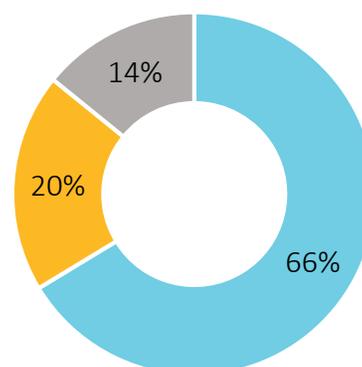
■ Associate ■ Certificate ■ Bachelor's

Stepping Stone to Higher Postsecondary Attainment

In addition to serving as an alternative completion pathway, certificates can be a crucial part of a credential ladder that encourages students to pursue higher levels of postsecondary education. **Data[15] suggest that many students, especially minority and low-income students, are using a certificate as a means to a higher college degree**:

- Among the 10,789 students whose first postsecondary credential was a certificate between FY 2011 through FY 2013, a majority (7,199 or 67%) continued their education in an associate or bachelor's degree program within three years of earning their certificate. Most (59%) pursued an associate degree with 14% pursuing a bachelor's degree. Approximately 6% of students enrolled in both an associate and bachelor's degree program within three years of obtaining their certificate.
- Approximately 40% of certificate earners complete an associate degree within three years of earning their certificate (see Figure 16). Six-year completion outcomes cannot yet be determined because of limited certificate data prior to 2011.[16]

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[15] Data include Indiana resident students whose first postsecondary credential at an Indiana public college was a short-term or longer-term certificate between 2011 and 2013. Successful enrollment into an associate or bachelor's degree program include enrollments at an Indiana public college within three years of the certificate conferred date.

[16] Short-term certificates were not formally tracked by the Indiana Commission for Higher Education until 2011.

By Race/Ethnicity…

Black and Hispanic certificate earners have the highest persistence rate into further postsecondary education among all race/ethnicity groups, with 72% of Black students and 68% of Hispanic students enrolling in a higher degree program within three years. Across all race/ethnicity groups, associate degree enrollment is the most popular, but nearly a quarter (24%) of Asian students enroll in bachelor's degree programs within the three-year timeframe.

- The associate degree completion rates hover around 40% across all race/ethnicity groups, with Asian and Hispanic students slightly leading the way at 42%. Notably, while Black students had the highest associate degree enrollment rate (66%), they also have the lowest associate degree completion rate (38%) (see Figure 16).

Figure 16: Percentage of First-time Certificate Earners (FY 2011-FY 2013) Enrolling in Associate or Bachelor's Degree Program/Completing an Associate Degree within Three Years of Earning Certificate, by Race/Ethnicity
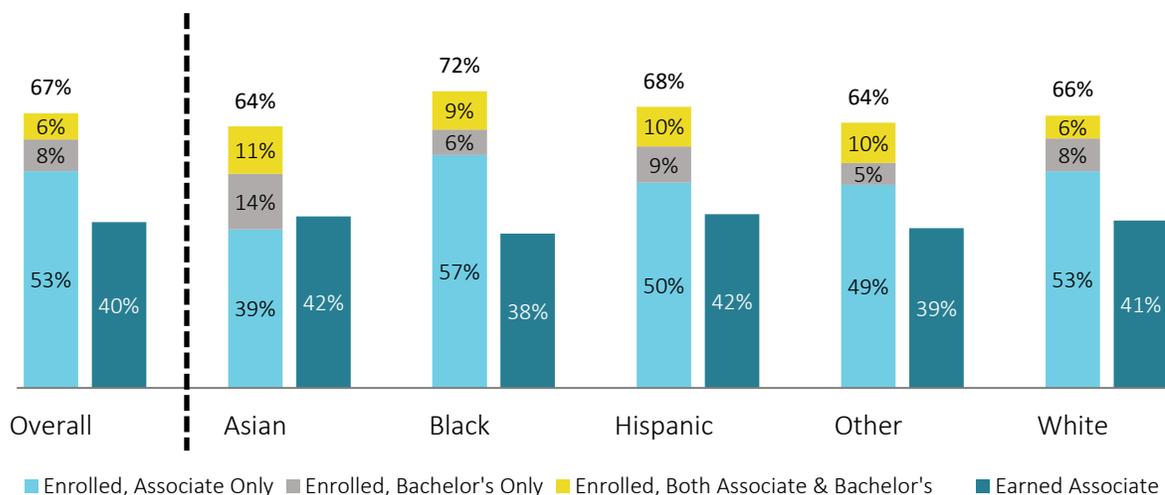
By Socioeconomic Status…

Pell Grant recipients—those with a demonstrated financial need—are the most likely of any student group examined to continue in postsecondary education after obtaining a certificate, with an enrollment rate of 74%, seven percentage points above the average. The overwhelming majority (68%) of Pell Grant recipients pursue an associate degree, while 12% enroll in a bachelor's degree program. Non-Pell Grant recipients have a slightly higher bachelor's degree enrollment rate of 16% (see Figure 17).

- Pell Grant recipients who earned a certificate have a higher associate degree completion rate (45%) compared to non-Pell Grant recipients (34%).

Figure 17: Percentage of First-time Certificate Earners (FY 2011-FY 2013) Enrolling in Associate or Bachelor's Degree Program/Completing an Associate Degree within Three Years of Earning Certificate, by Socioeconomic Status
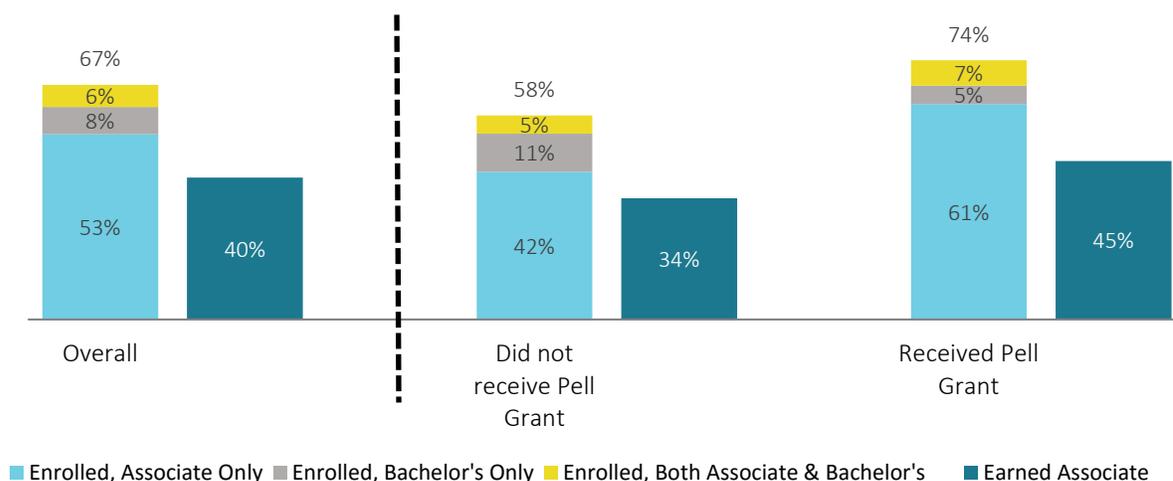
By Age Group…

Younger students are more likely than older students to continue on in an associate or bachelor's degree program after obtaining a certificate. Over 70% of students age 24 or younger at the time of receiving their certificate enroll in postsecondary education within three years, compared to 53% of those who were 50 or older.

- According to the data, the "24 or younger" certificate earner group has one of the lowest associate degree completion rates (37%), but this group also is the most likely to pursue a bachelor's degree of any student group examined, with a bachelor's degree enrollment rate of 24% (see Figure 18). This analysis does not yet capture bachelor's degree completion.

Figure 18: Percentage of First-time Certificate Earners (FY 2011-FY 2013) Enrolling in Associate or Bachelor's Degree Program/Completing an Associate Degree within Three Years of Earning Certificate, _by Age Group_


Possible Foundation for Future Academic Success

Not only do certificates provide a potential stepping stone to higher levels of postsecondary attainment, **data suggest that certificate completion prior to associate and bachelor's degree enrollment may be positively associated with first year performance outcomes**. It is important to note that prior certificate attainment is relatively rare among first-time associate and bachelor's degree seekers[17] yet analysis of three years of cohort data[18] indicates that more often than not, students who earned a certificate prior to enrolling in an associate or bachelor's degree program tended to earn more credits and were more likely to persist to their sophomore year. For example, on average, prior certificate attainment translated to a moderate three percentage point increase to persistence (see Figures 19 and 20).

- **The gains to first year performance are even larger for low-income and minority[19] students with prior certificate attainment**, with increases of approximately two credit hours to first-year credits earned (Pell Grant recipients as well as both Black and Hispanic students) and increases up to 15

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[17] Among the roughly 146,000 students whose first enrollment at the associate and bachelor's degree level was in the fall of FY2014 through FY2016, only about 1,900 students earned a certificate prior to starting their degree studies. Regarding Figures 19-21, with the exception of the "Earned Certificate" category for Asian students, all "Earned Certificate" statistics for Credit Earned outcomes include at least 30 students with an average grouping sample size of 553. With the exception of the "Earned Certificate" category for Asian students, all "Earned Certificate" statistics for Persistence outcomes include at least 30 students with an average grouping sample size of 293.

[18] Data include Indiana resident students whose first enrollment at the associate and bachelor's degree level was in the fall of FY 2014 through FY 2016. Prior certificate attainment include certificates conferred to the student prior to August 1st of the fiscal year of the student's first associate or bachelor's degree enrollment.

[19] For purposes of minority achievement gap measures, CHE focuses on Black and Hispanic student populations.

percentage points to persistence (Black students). In some cases, certificate attainment helped to close achievement gaps in first-year performance at the associate and bachelor's degree levels; for example, Hispanic students who earned certificates prior to enrolling in an associate or bachelor's degree program were more likely than White students to earn more credits and to persist to their sophomore year (see Figures 19-20).

- Enrollment intensity tended to be similar for certificate earners and non-certificate earners, with an average of 22.86 credits attempted by certificate earners vs. 24.01 by non-certificate earners during their first year as an associate or bachelor's degree seeker (see Figure 21).

Figure 19: Average Number of First Year Credits Earned by Associate and Bachelor's Degree Seekers, by Prior Certificate Status (FY 2014-FY 2016)
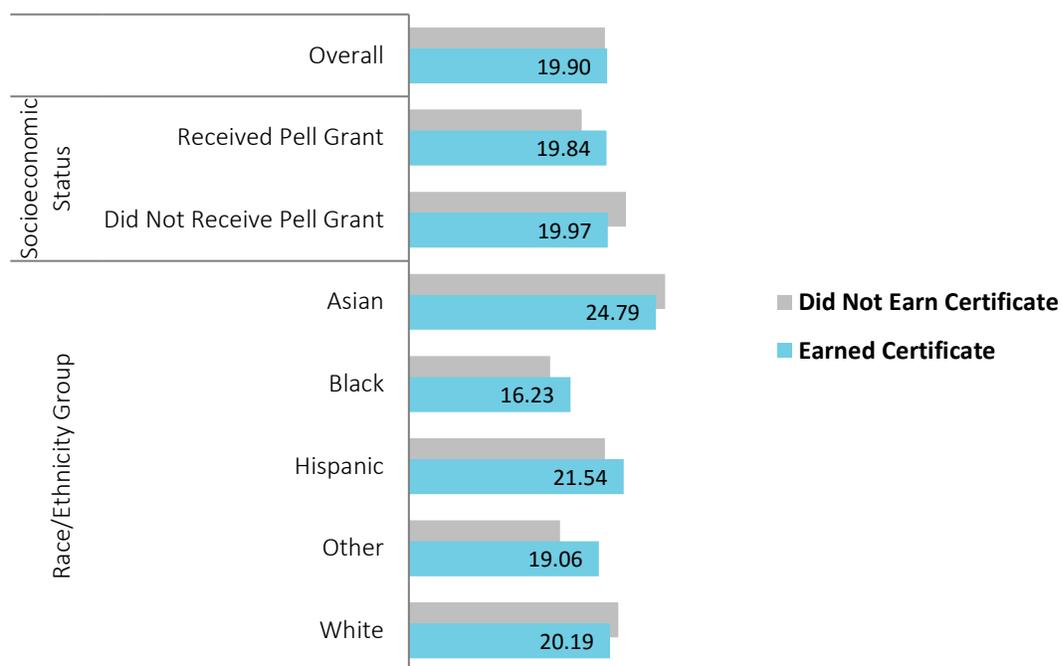
Figure 20: Second Year Persistence of Associate and Bachelor's Degree Seekers, by Prior Certificate Status (FY 2014-FY 2015)

Overall — 70.8%
Received Pell Grant — 72.9%
Did Not Receive Pell Grant — 67.8%
Asian — 69.2%
Black — 64.3%
Hispanic — 80.4%
Other — 78.6%
White — 70.5%

Did Not Earn Certificate
Earned Certificate
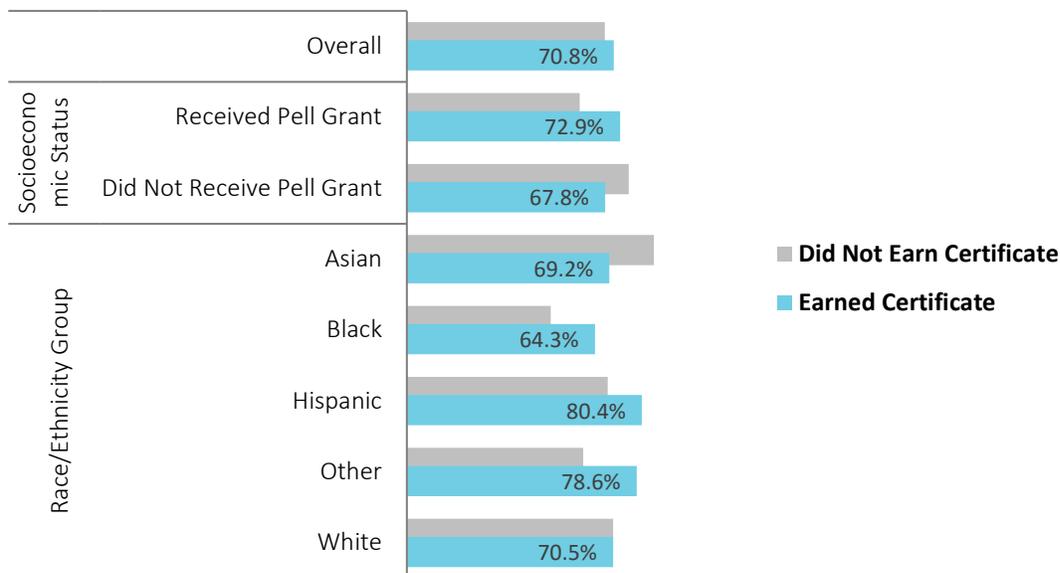
Figure 21: Average Number of First Year Credits Attempted by Associate and Bachelor's Degree Seekers, by Prior Certificate Status (FY 2014-FY 2016)

Overall — 22.86
Received Pell Grant — 23.39
Did Not Receive Pell Grant — 22.13
Asian — 27.42
Black — 20.65
Hispanic — 25.00
Other — 22.77
White — 22.91

Did Not Earn Certificate
Earned Certificate
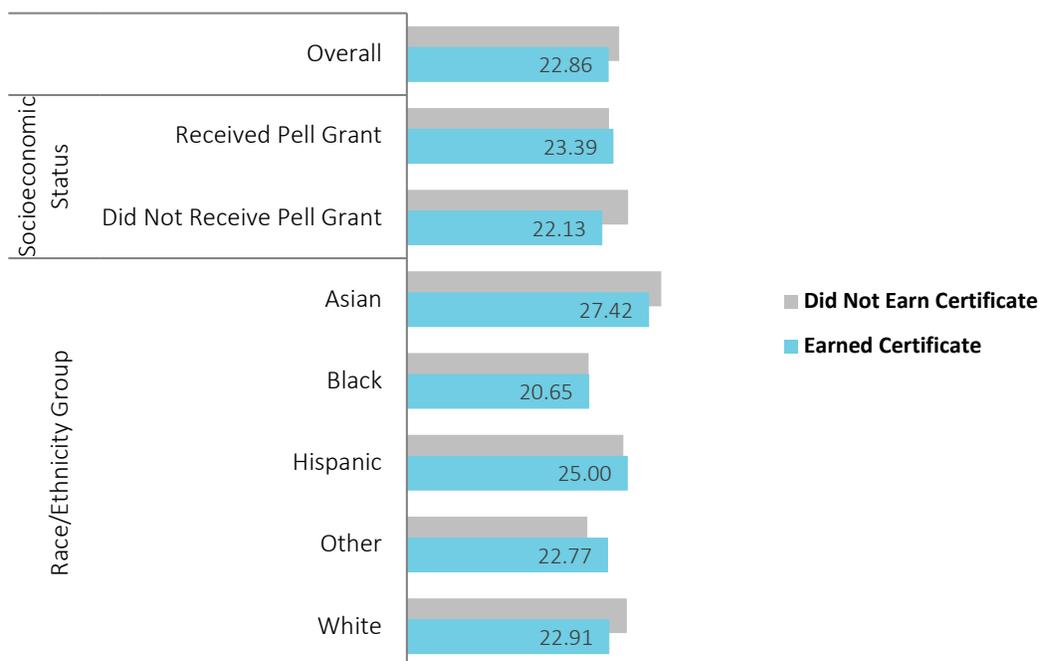
Return on Investment Potentially Significant

Another key outcome for certificates is the labor market return related with the completion of a certificate program. National **data suggest certificates provide a significant wage boost for people with limited educational attainment**—with a median earnings premium of 17% for those with only a high school diploma and 3% for those with some college but no degree.[20] This earnings premium for certificates diminishes upon completion of an associate or bachelor's degree, as those with higher levels of educational attainment generally already have higher earning potential, whether it be at Year 1, 5, or 10 after graduation. For example, in Indiana first-year wages for associate degree completers are approximately 16 percent higher than certificate earners ($32,351 for associate degree earners compared to $27,875 for longer-term certificate earners).[21]

- In addition to the level of degree attainment, it is important to remember that factors such as the student's age at the time a credential was completed may contribute to differences in earning potential. Older students, for example, may already have significant work-related experience that helps boost their wages. The average age for Hoosier certificate and associate degree earners is six years older than those who complete a bachelor's degree (32 vs. 26 years).
- Conversely, multi-state research[22] suggests many adults use certificate programs to switch to a new industry of employment, which may at least temporarily limit the extent of wage increases as a result of certificate attainment.

MEASURING "QUALITY"

Promoting quality credentials that deliver the learning outcomes students need and employers expect undergirds Indiana's efforts toward achieving its big 60% educational attainment goal.[23] Calls to develop new national standards and information platforms on certificates and other types of workforce credentials also focus on the need for transparency regarding the quality and value of such credentials.[24] Although *quality* or *high value* can be subjective terms—incorporating a range of economic and social benefits for both the individual and the state resulting from greater educational attainment—a few key metrics specific to student achievement are useful to consider as the spotlight on certificate-level postsecondary credentials expands. Variations on the following metrics already appear in Commission reports, and will be further developed as data are available:

- **Completion Pathway**: the number of completers, the length of time to complete a certificate program, *as well as* the extent to which certificates

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[20] Ewert, S. & Kominski, R. (2014). Measuring alternative educational credentials: 2012. *Household Economic Studies,* pp.70-138. U.S. Census Bureau. Retrieved from http://www.census.gov/prod/2014pubs/p70-138.pdf

[21] See CHE's Return on Investment Reports, http://www.in.gov/che/3019.htm

[22] Xu, D. & Trimble, M. (2016). What about certificates? Evidence on the labor market returns to nondegree community college awards in two states. *Educational Evaluation and Policy Analysis. 38*(2), pp. 272-292. DOI:10.3102/0162373715617827

[23] See CHE's strategic plan Reaching Higher, Delivering Value, http://www.in.gov/che/3142.htm

[24] Lumina Foundation (2016). A stronger nation. Retrieved from http://strongernation.luminafoundation.org/report/2016/

serve as a viable alternative to completing a postsecondary credential different from the one originally sought.

- **Achievement Gap**: the extent to which certificates help close gaps in educational attainment, specifically by income, race/ethnicity, and age groups.
- **Persistence to Higher Postsecondary Degree:** the number of students who enroll in and complete a certificate program and then go on to complete an associate or bachelor's degree within six years.
- **Labor Market Outcome (Employment and Wages):** the number of completers employed and the minimum, median, and maximum wages earned by certificate-only holders within 1, 5, and 10 years after completion, *as well as* pre- and post-certificate earnings. Noneconomic occupational returns—such as employment in professions with high social utility but traditionally low wages, often found, for example, in human service, public safety, and environmental occupations[25]—also may be an area of consideration.

CONCLUSION

Credit-bearing certificates are an increasingly common postsecondary credential option for Hoosiers, helping to boost state educational attainment rates, provide completion pathways for students who otherwise may not achieve a degree, and contribute to greater education-workforce alignment and potential labor market benefits for individual students. Certificate attainment appears to benefit minority and low-income students, in particular, although data also suggest certificate and associate degree earner populations are quite similar in Indiana, and that most certificate earners complete more than one certificate and/or a higher-level degree.

As more data become available, the Commission is committed to further examining certificate trends by various workforce demand and quality measures. More in-depth analyses on the relationship of certificate attainment to postsecondary outcomes are anticipated, as well.

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[25] Whitfield, C., Perry, B., & Kelly, P. (2016). A social utility index: Developing a method to measure noneconomic occupational returns for college graduates. *Change: The Magazine of Higher Learning, 48*(2), pp. 54-58. DOI:10.1080/00091383.2016.1167567

APPENDIX A: Indiana's Educational Attainment Projections with Certificate "Bump"
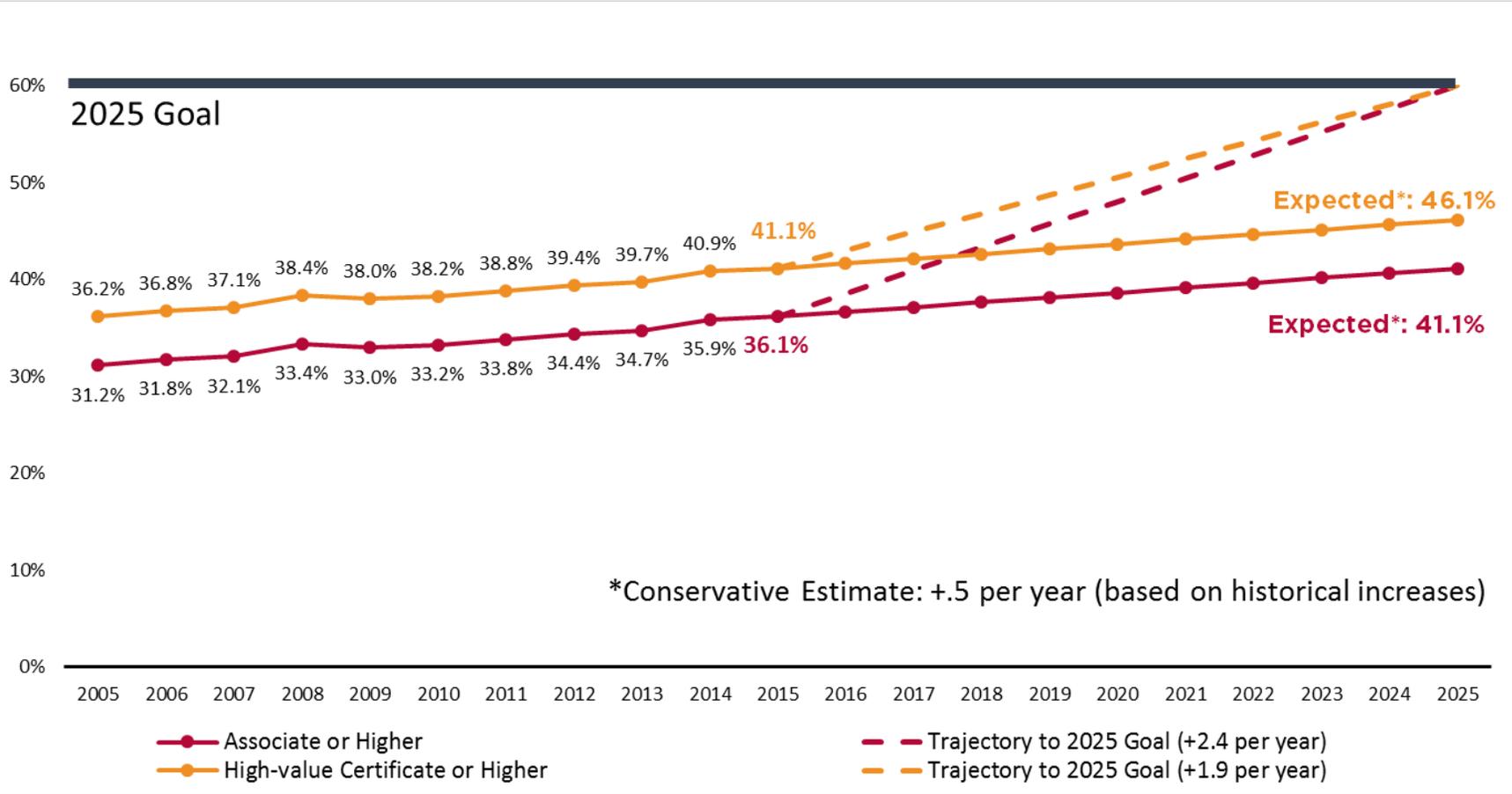
Source: CHE analysis of data from U.S. Census, American Community Survey (2005-2015); Lumina Foundation (2016), A Stronger Nation

Appendix B: Certificates Awarded to Indiana Residents (FY 2013-FY 2016)

	2013	2014	2015	2016	3 Yr % Change	2013	2014	2015	2016	3 Yr % Change
	Short-Term Certificate					Longer-Term Certificate				
Ball State University	2	8	3	5	150%	-	-	-	-	-
Indiana State University	13	15	27	22	69%	-	-	-	-	-
IU Bloomington	8	1	8	3	-63%	101	105	101	68	-33%
IU East	-	-	1	6	-	12	9	15	30	150%
IU Kokomo	12	27	5	4	-67%	1	7	5	5	400%
IU Northwest	-	-	-	-	-	37	26	13	15	-59%
IUPUI	327	372	395	460	41%	89	54	62	39	-56%
IU South Bend	27	21	14	13	-52%	10	9	10	2	-80%
IU Southeast	25	25	40	31	24%	8	9	1	-	-100%
Purdue Calumet	23	22	29	51	122%	22	9	9	9	-59%
Purdue North Central	29	16	3	17	-41%	-	-	-	-	-
Purdue Polytechnic	21	13	12	17	-19%	-	-	-	-	-
Purdue West Lafayette	223	211	234	231	4%	-	-	-	-	-
IPFW	42	62	61	68	62%	40	37	22	16	-60%
USI	-	-	-	7	-	19	21	10	7	-63%
Vincennes University	57	90	405	25	-56%	73	231	49	834	1042%
Ivy Tech System	2,789	3,369	3,091	2,956	6%	4,334	6,581	7,146	6,952	60%
Bloomington	177	186	179	143	-19%	148	361	438	336	127%
Central Indiana	478	481	407	323	-32%	535	517	583	559	4%
Columbus	246	191	126	120	-51%	280	425	386	423	51%
East Central	316	280	293	117	-63%	425	762	518	432	2%
Kokomo	154	170	174	179	16%	222	374	489	398	79%
Lafayette	198	236	171	132	-33%	396	398	586	520	31%
Northcentral	87	249	501	508	484%	260	895	920	799	207%
Northeast	265	454	227	231	-13%	378	444	347	382	1%
Northwest	295	292	423	574	95%	472	867	1,059	1,095	132%
Richmond	162	208	165	91	-44%	185	248	262	122	-34%
South Central	101	147	83	90	-11%	287	385	368	309	8%
Southeast	143	136	96	126	-12%	154	211	277	445	189%
Southwest	116	268	181	219	89%	414	372	464	713	72%
Wabash Valley	51	71	65	103	102%	178	322	449	419	135%
4 Year Public Total	752	793	832	935	24%	339	286	248	191	-44%
2 Year Public Total	2,846	3,459	3,496	2,981	5%	4,407	6,812	7,195	7,786	77%
All Public Total	3,598	4,252	4,328	3,916	9%	4,746	7,098	7,443	7,977	68%

Appendix C: Degrees Awarded to Indiana Residents (FY 2013-FY 2016)

	2013	2014	2015	2016	3 Yr % Change	2013	2014	2015	2016	3 Yr % Change
	Associate					Bachelors				
Ball State University	46	65	56	53	15%	2,995	3,148	3,184	3,017	1%
Indiana State University	9	6	-	-	-100%	1,173	1,213	1,364	1,408	20%
IU Bloomington	19	10	14	7	-63%	4,819	4,533	4,782	4,602	-5%
IU East	-	-	-	-	-	437	401	497	572	31%
IU Kokomo	29	12	13	12	-59%	393	465	555	516	31%
IU Northwest	122	113	73	65	-47%	498	524	519	588	18%
IUPUI	152	134	120	100	-34%	3,440	3,519	3,598	3,690	7%
IU South Bend	44	25	11	14	-68%	755	754	751	719	-5%
IU Southeast	68	56	43	25	-63%	574	573	592	553	
Purdue Calumet	56	65	1	1	-98%	904	1,097	979	1,030	14%
Purdue North Central	104	60	51	38	-63%	431	473	463	468	9%
Purdue Polytechnic	69	36	29	30	-57%	177	169	148	166	-6%
Purdue West Lafayette	17	31	26	24	41%	4,135	4,097	4,024	3,833	-7%
IPFW	312	260	226	189	-39%	1,276	1,260	1,271	1,265	-1%
USI	68	77	75	53	-22%	1,412	1,315	1,318	1,299	-8%
Vincennes University	987	933	932	1,322	34%	119	63	71	129	8%
Ivy Tech System	8,674	9,503	9,579	9,124	5%	-	-	-	-	-
Bloomington	499	498	512	502	1%	-	-	-	-	-
Central Indiana	1,600	1,741	1,876	1,677	5%	-	-	-	-	-
Columbus	369	443	363	415	12%	-	-	-	-	-
East Central	744	921	884	867	17%	-	-	-	-	-
Kokomo	481	468	470	434	-10%	-	-	-	-	-
Lafayette	639	733	688	628	-2%	-	-	-	-	-
Northcentral	588	654	654	634	8%	-	-	-	-	-
Northeast	833	861	812	850	2%	-	-	-	-	-
Northwest	688	899	937	916	33%	-	-	-	-	-
Richmond	275	322	340	230	-16%	-	-	-	-	-
South Central	489	538	452	537	10%	-	-	-	-	-
Southeast	287	306	280	325	13%	-	-	-	-	-
Southwest	641	572	727	569	-11%	-	-	-	-	-
Wabash Valley	541	547	584	540	0%	-	-	-	-	-
4 Year Public Total	1,115	950	738	611	-45%	23,419	23,541	24,045	23,726	1%
2 Year Public Total	9,661	10,436	10,511	10,446	8%	119	63	71	129	8%
All Public Total	10,776	11,386	11,249	11,057	3%	23,538	23,604	24,116	23,855	1%

Appendix D: Top Awarded Sub-baccalaureate Credentials (Residents, FY 2011-FY 2016)

Short-Term Certificate		
Program Name (Six Digit CIP)	Credentials	% of total
Accounting Technology/Technician and Bookkeeping	2,543	11.9%
Phlebotomy Technician/Phlebotomist	1,412	6.6%
Business Administration and Management, General	1,085	5.1%
Health Information/Medical Records Administration/Administrator	1,083	5.1%
Automobile/Automotive Mechanics Technology/Technician	909	4.2%
Computer/Information Technology Services Administration and Management	854	4.0%
HVAC and Refrigeration Maintenance Technology/Technician	762	3.6%
Medical Insurance Coding Specialist/Coder	690	3.2%
Liberal Arts and Sciences, General Studies and Humanities, Other	654	3.1%
Culinary Science/Culinology	652	3.0%
Longer-Term Certificate		
Business Administration and Management, General	4,442	14.4%
Medical/Clinical Assistant	2,930	9.5%
Licensed Practical/Vocational Nurse Training	2,649	8.6%
Liberal Arts and Sciences, General Studies and Humanities, Other	1,906	6.2%
Industrial Technology/Technician	1,688	5.5%
Accounting Technology/Technician and Bookkeeping	1,628	5.3%
Information Technology	1,148	3.7%
Executive Assistant/Executive Secretary	1,131	3.7%
Psychiatric/Mental Health Services Technician	1,112	3.6%
Medical/Health Management and Clinical Assistant/Specialist	1,102	3.6%
Associate		
Registered Nursing/Registered Nurse	7,866	11.9%
Business Administration and Management, General	5,845	8.8%
Liberal Arts and Sciences, General Studies and Humanities, Other	5,524	8.4%
Medical/Clinical Assistant	2,969	4.5%
Liberal Arts and Sciences/Liberal Studies	2,746	4.2%
Criminal Justice/Safety Studies	2,532	3.8%
Psychiatric/Mental Health Services Technician	2,438	3.7%
Accounting Technology/Technician and Bookkeeping	1,906	2.9%
Information Technology	1,700	2.6%
Medical/Health Management and Clinical Assistant/Specialist	1,681	2.5%

Appendix E: Certificate-Seeker* Enrollment (Residents, FY 2013-FY 2016)

	2013	2014	2015	2016	3 Yr % Change	2013	2014	2015	2016	3 Yr % Change
	Short-Term Certificate					Longer-Term Certificate				
Ball State University	-	-	1	-	-	-	-	-	-	-
Indiana State University	-	-	-	-	-	-	-	-	-	-
IU Bloomington	-	4	1	-	-	2	2	-	2	0%
IU East	2	1	4	1	-50%	1	2	4	5	400%
IU Kokomo	9	5	4	4	-56%	4	2	-	1	-75%
IU Northwest	-	-	-	-	-	34	22	14	20	-41%
IUPUI	115	142	165	152	32%	104	36	35	22	-79%
IU South Bend	21	11	11	11	-48%	-	1	3	-	-
IU Southeast	34	36	27	34	0%	10	2	1	-	-100%
Purdue Calumet	31	1	11	39	26%	5	-	2	2	-60%
Purdue North Central	4	4	3	5	25%	-	-	-	-	-
Purdue Polytechnic	2	13	38	89	4350%	-	-	-	-	-
Purdue West Lafayette	-	-	-	-	-	-	-	-	-	-
IPFW	8	9	10	8	0%	36	38	36	34	-6%
USI	-	-	-	-	-	2	-	1	-	-100%
Vincennes University	82	155	171	126	54%	58	64	74	73	26%
Ivy Tech System	2,355	2,366	2,354	1,731	-26%	3,755	4,370	4,270	3,923	4%
Bloomington	51	47	57	52	2%	120	113	119	118	-2%
Central Indiana	666	701	696	471	-29%	533	723	861	796	49%
Columbus	81	97	78	66	-19%	156	173	148	123	-21%
East Central	110	72	108	94	-15%	339	404	354	353	4%
Kokomo	91	114	90	44	-52%	266	290	273	203	-24%
Lafayette	108	126	98	81	-25%	187	264	281	238	27%
Northcentral	209	173	191	171	-18%	417	488	450	338	-19%
Northeast	274	233	238	190	-31%	500	449	463	566	13%
Northwest	272	291	304	195	-28%	421	530	550	495	18%
Richmond	59	52	58	36	-39%	100	141	108	86	-14%
South Central	99	77	74	83	-16%	142	148	151	126	-11%
Southeast	64	85	87	62	-3%	122	89	78	58	-52%
Southwest	151	194	187	133	-12%	251	270	220	219	-13%
Wabash Valley	120	104	88	53	-56%	201	288	214	204	1%
4 Year Public Total	222	216	256	319	44%	181	99	87	79	-56%
2 Year Public Total	2,361	2,444	2,448	1,792	-24%	3,713	4,327	4,236	3,906	5%
All Public Total	2,583	2,660	2,704	2,111	-18%	3,894	4,426	4,323	3,985	2%

*refers to the highest degree level sought within the fiscal year

Appendix F: Undergraduate Degree-Seeker* Enrollment (Residents, FY 2013-FY 2016)

	2013	2014	2015	2016	3 Yr % Change	2013	2014	2015	2016	3 Yr % Change
	Associate					Bachelors				
Ball State University	126	108	69	77	-39%	14,800	14,397	14,305	14,033	-5%
Indiana State University	1	-	-	-	-100%	8,474	8,598	8,980	9,076	7%
IU Bloomington	27	14	16	5	-81%	21,557	21,154	20,925	20,696	-4%
IU East	-	-	-	-	-	2,864	2,889	2,882	2,825	-1%
IU Kokomo	70	60	68	59	-16%	3,011	3,115	3,116	3,151	5%
IU Northwest	386	295	184	133	-66%	5,195	5,092	4,694	4,359	-16%
IUPUI	551	488	397	310	-44%	23,282	23,484	23,068	21,761	-7%
IU South Bend	108	87	117	67	-38%	6,257	5,904	5,653	5,412	-14%
IU Southeast	58	43	29	21	-64%	4,632	4,549	4,297	4,041	-13%
Purdue Calumet	49	26	7	2	-96%	6,584	6,605	6,635	6,370	-3%
Purdue North Central	122	92	87	57	-53%	3,593	3,609	3,560	3,278	-9%
Purdue Polytechnic	129	85	77	50	-61%	1,069	942	903	919	-14%
Purdue West Lafayette	88	79	64	62	-30%	17,863	17,245	16,625	16,302	-9%
IPFW	1,252	1,101	929	325	-74%	8,515	8,007	7,678	7,713	-9%
USI	190	188	169	128	-33%	8,632	7,919	6,936	6,724	-22%
Vincennes University	5,461	7,550	7,547	6,491	19%	393	464	499	580	48%
Ivy Tech System	110,274	98,375	89,790	79,898	-28%	-	-	-	-	-
Bloomington	6,021	5,461	5,131	4,709	-22%	-	-	-	-	-
Central Indiana	25,675	23,770	22,617	20,199	-21%	-	-	-	-	-
Columbus	4,398	4,068	2,924	2,556	-42%	-	-	-	-	-
East Central	8,708	7,862	7,157	6,193	-29%	-	-	-	-	-
Kokomo	5,171	4,105	3,555	2,999	-42%	-	-	-	-	-
Lafayette	6,824	6,011	5,282	4,729	-31%	-	-	-	-	-
Northcentral	8,813	7,469	6,514	5,727	-35%	-	-	-	-	-
Northeast	10,668	9,206	8,483	7,543	-29%	-	-	-	-	-
Northwest	11,778	10,717	10,041	9,309	-21%	-	-	-	-	-
Richmond	3,259	2,671	2,398	2,014	-38%	-	-	-	-	-
South Central	4,718	4,149	3,780	3,498	-26%	-	-	-	-	-
Southeast	2,802	2,622	2,352	2,063	-26%	-	-	-	-	-
Southwest	6,219	5,617	5,576	4,894	-21%	-	-	-	-	-
Wabash Valley	5,220	4,647	3,980	3,465	-34%	-	-	-	-	-
4 Year Public Total	2,993	2,535	2,106	1,233	-59%	132,892	130,338	127,347	124,729	-6%
2 Year Public Total	110,297	100,842	92,313	82,683	-25%	393	460	498	580	48%
All Public Total	113,290	103,377	94,419	83,916	-26%	133,285	130,798	127,845	125,309	-6%

*refers to the highest degree level sought within the fiscal year

Appendix G: Sub-baccalaureate Certificate Programs Offered* (FY 2016)

Institution	Programs	% of Total
Ivy Tech System	107	45%
IUPUI	40	17%
Vincennes University	20	8%
IPFW	17	7%
Purdue Calumet	9	4%
Indiana State University	7	3%
IU Bloomington	6	3%
IU East	5	2%
Purdue West Lafayette	5	2%
IU Kokomo	4	2%
IU Southeast	4	2%
Purdue North Central	4	2%
Ball State University	3	1%
IU South Bend	3	1%
IU Northwest	2	1%
Purdue Polytechnic	2	1%
USI	2	1%
TOTAL	**240**	

*limited to programs in which credentials were conferred in FY 2016