

# IOWA COMMUNITY COLLEGES EDUCATION OUTCOMES

Certificate, Diploma and Associate Degree Programs

*Academic Year 2014 to Academic Year 2018*

*Issued*  
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**2020**



**COMMUNITY COLLEGES &  
WORKFORCE PREPARATION**  
*PROSPERITY THROUGH EDUCATION*



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## **Iowa Community Colleges Employment Outcomes: Certificate, Diploma, and Associate Degree Programs**

A statewide overview of education and employment outcomes of individuals enrolled in community college credit programs.

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## Letter from the Director

Dear Education Stakeholders,

One of the critical functions of the Iowa Department of Education is to provide and interpret educational data. We do this to support accountability, transparency and the ongoing improvement of our educational institutions. Staff in the Division of Community Colleges and Workforce Preparation continue to refine and improve the methods in which we collect, analyze and report data to ensure that it is both meaningful and easily understood. We trust the reader will find that to be the case in this annual *Education Outcomes: Certificate, Diploma and Associate Degree Programs for Iowa's Community Colleges Report*.



Iowa's community college system is the state's largest postsecondary education sector, offering a variety of education and training programs designed to meet state and regional economic needs. This report provides information about community college awards, time-to-degree, retention, migration, transfer to four-year institutions, employment and wages and career clusters. This information can assist community colleges with program development and improvement, particularly with career and technical education (CTE) programs.

As part of the Future Ready Iowa Initiative, the Iowa Department of Education (Department) partners with Iowa Workforce Development (IWD) to link state and national education and workforce data to monitor the outcomes of students enrolled in Iowa's 15 community colleges. Additional interactive charts that compare outcomes by state and program are available on the Department's website at: <https://www.educateiowa.gov/iowa-community-college-program-outcomes>.

Thank you for taking the time to review this report and I look forward to working with you on other statewide collaborative efforts to provide quality education and training programs designed to equip Iowans with the skills and knowledge to meet their career and educational goals. Only through the success of our students will Iowa's workforce be ready for future jobs and economic prosperity.

Sincerely,

A handwritten signature in black ink that reads "Ann Lebo". The signature is fluid and cursive, written in a professional style.

Ann Lebo, Director  
Iowa Department of Education

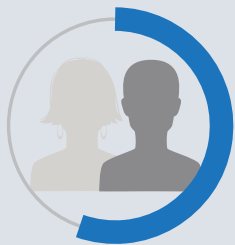
# Education Outcomes Iowa Community Colleges

Certificate, Diploma and Associate Degree Programs  
Academic Year 2017/2018

Iowa's Community Colleges provide a wide array of educational options to students through community college certificate, diploma and associate degree programs. These programs are designed to meet state and regional economic needs of both the workforce and businesses. Annually, student cohorts are established for research into education outcomes where students are followed into further education, training or employment. These outcomes inform students about wages and employment options, businesses with skilled worker supply and educators in program development and improvement.

## Student Demographics

The majority of credit students are female, under age 25 and not racially diverse.



**55.4%** of credit students were female.



**72.6%** of credit students were younger than 25 years of age.



**18.9%** of credit students who reported their race/ethnicity were of a racial or ethnic minority group.

## Continuing Education

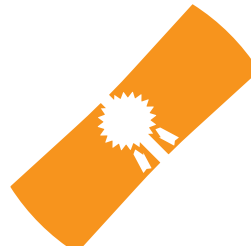
Credit programs often lead to enrollment in further education and/or transfer.



**49.4%** of students who completed their program in AY 2018 enrolled in further education.



**83.3%** of students who continued their education did so at an Iowa college or university.



**93.7%** of AY 2017-2018 students did not have a previous degree.

## Top 10 Credit Programs

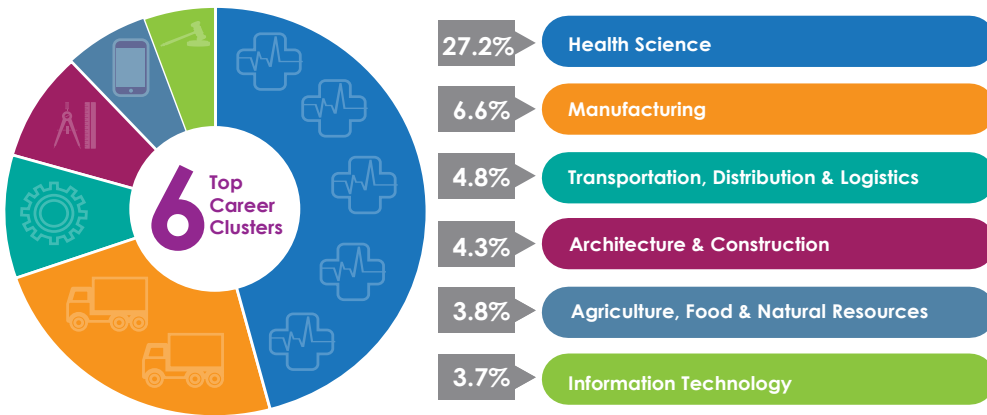


Liberal Arts & Sciences and programs in health care professions comprise the highest number of completions in AY2017-2018.



## Top Career Clusters

The National Career Clusters Framework organizes programs into 16 career clusters. Excluding college parallel/liberal arts (36.2%), the top career clusters by completion were health science and manufacturing.

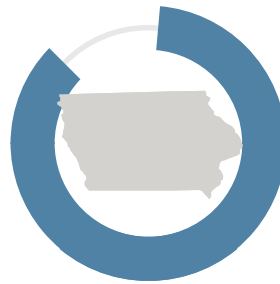


## Employment

The majority of students in community college credit programs stay in Iowa and are employed the first year following completion of their programs.



**91.0%** of credit students were employed in the first year following exit from their programs.

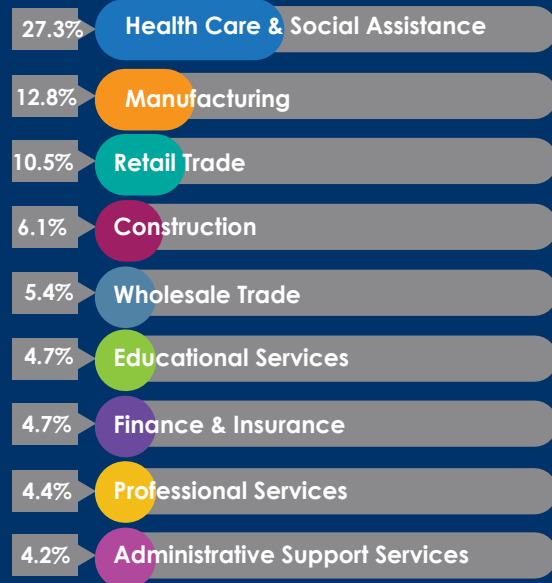


**83.5%** of credit students were employed in the state of Iowa.

## Top Industries for Employment



Of the credits students who completed in AY 2017-2018 and employed the year following program exit (2019), over one-fourth were employed in health care and social assistance.



Read the full report [https://educateiowa.gov/iowa-community-college-program-outcomes#Iowa\\_Community\\_College\\_Program\\_Outcomes\\_Interactive\\_Charts](https://educateiowa.gov/iowa-community-college-program-outcomes#Iowa_Community_College_Program_Outcomes_Interactive_Charts)

## Earnings

Earnings in the first year following program completion vary based on a variety of factors, including the duration of training, type of award and employer demand. The following examples provide median annual wages by type of award; however, wages vary based on program.

Short-term Certificate	Long-term Certificate/Diploma	Associate Degree
\$25,250	\$31,397	\$33,183



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## Introduction

*The Iowa Community Colleges Education Outcomes: Certificate, Diploma and Associate Degree Programs Report*, published annually, analyzes the outcomes of students completing community college programs. This report, and other related resources, provide institutional data designed to inform community college administrators and policymakers as they engage in planning and program improvement.

Throughout this report, employment and wages are analyzed to illustrate the significant impact that the education and training provided by Iowa's community colleges have on the economy. Program and award levels are analyzed separately in order to assess the benefits of each. Research parameters were set to distinguish between programs consisting of 22 credit hours or more, (considered "long-term" awards), and those consisting of less than 22 credit hours (considered "short-term" awards). These parameters, which are applied by credit-hour definition, ensure a uniform approach to the data analysis in this report.

Coinciding with the programs, five annualized cohorts of student award recipients were studied regarding their subsequent employment and wages (academic years [AY] 2014, 2015, 2016, 2017 and 2018). These cohorts will be studied longitudinally for five years after graduation. The research is limited to five years because previous program outcomes research regarding two-year college education revealed that wage growth slows within a five-year period.

Unit record tracking of student data is the preferred method of reporting education outcomes by program. However, the inability to access and link individual student records to employment and wages has been a challenge for most researchers because of confidentiality laws restricting the use of unit-level data. The Iowa Department of Education (Department) and Iowa Workforce Development (IWD) have overcome this hurdle by forming a partnership dedicated to evaluating and reporting education outcomes (i.e., employment and wages) for community college programs.

In Iowa, as in many states throughout the nation, education and employer records are held in two different agencies of state government - the Department and IWD, respectively. This interagency partnership has allowed for data-sharing agreements with clearly stated research objectives that adhere to all Unemployment Insurance (UI) and Family Educational Rights and Privacy Act (FERPA) regulations and rules. Furthermore, access is limited to staff members who have signed confidentiality agreements regarding reporting and use of student records.

### CREDIT-BEARING PROGRAMS

Credit programs offered by Iowa's 15 community colleges lead to a certificate, diploma, or associate degree and are designed to prepare students for immediate employment in occupations requiring less than a four-year degree or to transfer and satisfy credits toward a bachelor's degree at a four-year institution.



### DATA ANALYSIS

Program and award levels were analyzed separately to assess the benefits of each. To ensure a uniform approach to research, parameters were set to distinguish between programs consisting of 22 credit hours or more (considered "long-term" awards), and those consisting of less than 22 credit hours (considered "short-term" awards).

### AGENCY PARTNERSHIP

The Iowa Department of Education and Iowa Workforce Development partnered to evaluate and report education, employment, and wage outcomes for individuals in certificate, diploma, and associate degree programs. Research objectives are clearly stated in data-sharing agreements and limited staff have access to the data. In addition, staff from both agencies signed confidentiality agreements pertaining to the reporting and use of student records.

## Overview of Research

To properly conduct the research for this report, data criteria were established based on less than 22 credit hours (“short-term”) or 22 or more credit hours (“long-term”) for associate, diploma and certificate awards. All data were extracted from the Department’s Community College Management Information System (MIS) and grouped based on this threshold, along with each credential’s award date. The award date is referenced throughout this report as academic year (i.e., September 1, 2017, to August 31, 2018 is AY 2018). Students who received awards in AY 2014, 2015, 2016, 2017 or 2018 were analyzed.

Once extracted from the MIS, data were sent by annual cohort to the National Student Clearinghouse (NSC) to identify which students continued their education after receiving a community college award. These individuals may have transferred from one community college to another, continued their education at their current location or transferred to a four-year institution. Transfer students were analyzed by college type (two- or four-year, and private or public) and by transfer location, allowing for the study of graduate out-migration (leaving Iowa).

Students with multiple awards were flagged before tracking them into the workforce, and then unduplicated, so that they could be tracked based on their highest award level. An exception was made for students who received more than one award at the same level for the completion of different programs. Such students were tracked based on all awards received.

Deduplication was conducted in the following hierarchal order: associate degree [Associate of Applied Science (AAS), Associate of Applied Arts (AAA), Associate of Professional Studies (APS), Associate of Science/Career Option (ASCO), Associate of Science (AS) and Associate of

Arts (AA)], diploma, certificate, and short-term award (both diploma and certificate). Additionally, students without Social Security Numbers (SSN) were excluded from the workforce analysis due to matching restrictions. Matching to UI wage records\* was conducted using SSNs.

The data were then sent via secure file transfer to IWD to match the education records to the UI wage records. This match provided employment, wage and industry data by quarter for each award type and cohort using the following timeframes:

Quarter 1: January 1 to March 31

Quarter 2: April 1 to June 30

Quarter 3: July 1 to September 30

Quarter 4: October 1 to December 31

In an attempt to match the academic year for annual reporting, the quarterly wages were aggregated from October 1 (Quarter 4) to September 30 (Quarter 3), which are the dates that most closely align with the community colleges’ academic year.

Due to the confidentiality of the wage record data, IWD processed the records and returned aggregate data for the Department to analyze and use in this report. Data was thoroughly scrutinized and all rules, regulations and restrictions for each of the data sources were strictly followed. Additionally, data-sharing agreements went through a comprehensive legal review.

\* *The UI wage records do not cover employers exempt from paying UI tax, such as federal employees, members of the armed forces, the self-employed, proprietors, unpaid family workers, church employees, railroad workers covered by the railroad unemployment insurance system and students employed in a college or university as a part of a financial aid package.*

## Credit Program Statewide Total Awards

For this portion of the report, an aggregate analysis was conducted on 76,335 short- and long-term credit awards received by Iowa community college students from AY 2014 through AY 2018. Though each college yielded a different number of total awards, in aggregate there were 54,383 associate degrees, 12,154 long-term diplomas, 1,912 long-term certificates, 32 short-term diplomas and 7,854 short-term certificates awarded to graduates by the 15 Iowa community colleges during academic years 2014 to 2018 (see Figure 1).

Transfer status (further education), employment, wages and time-to-degree are reported by award type in addition to short- or long-term timeframes later in this report. If a student received more than one award, the highest award level was used for the analysis of employment and wage data (deduplication was conducted in the following

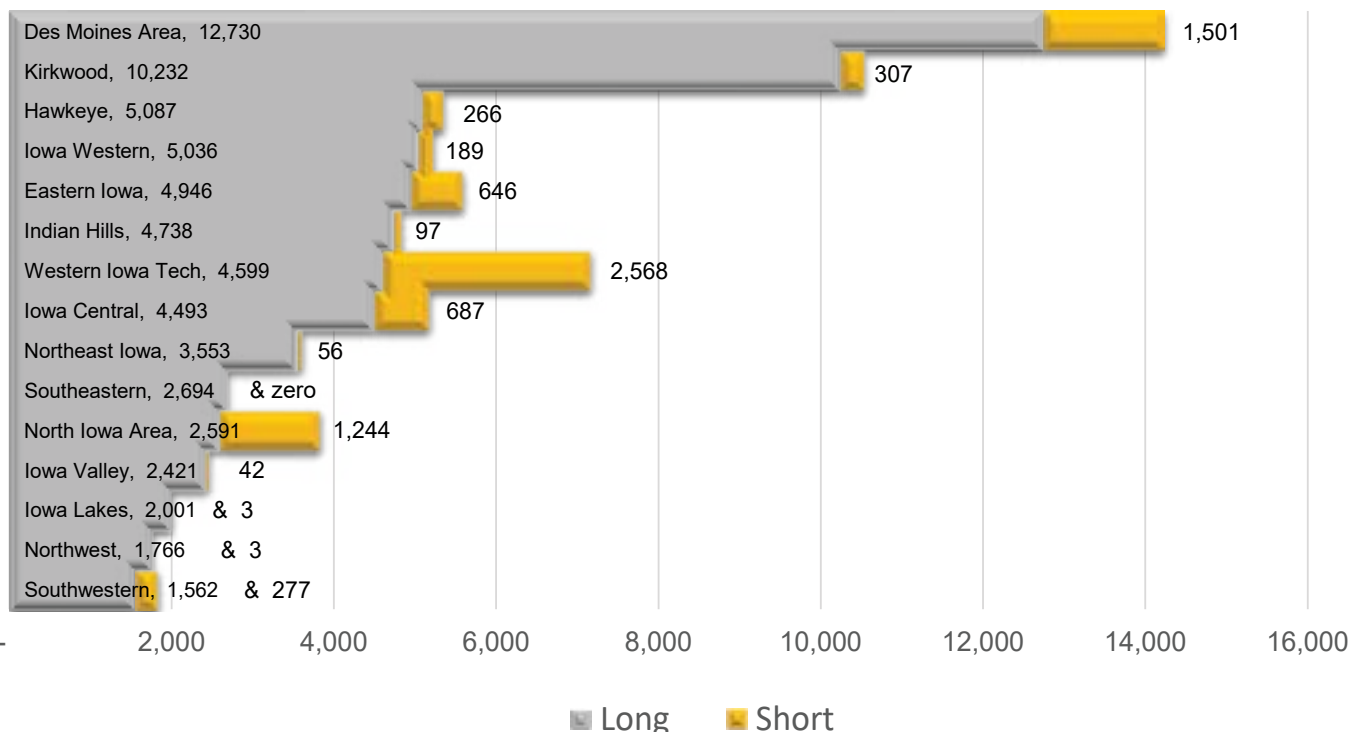
hierarchical order: AAS- AAA-APS-ASCO-AS-AA-diploma-certificate-short- term award). This information can be used to study the impact of each award type and its correlation to the workforce and further education.

Reports specific to each community college will be distributed to the respective college stakeholders for use in program development and strategic planning. These reports are not included in this statewide report.

This comprehensive report and detailed spreadsheets for each academic year can be found at:

<https://www.educateiowa.gov/iowa-community-college-program-outcomes>.

**FIGURE 1. AY 2014 TO AY 2018 TOTAL SHORT- AND LONG-TERM AWARDS**



## Credit Program Student Demographics

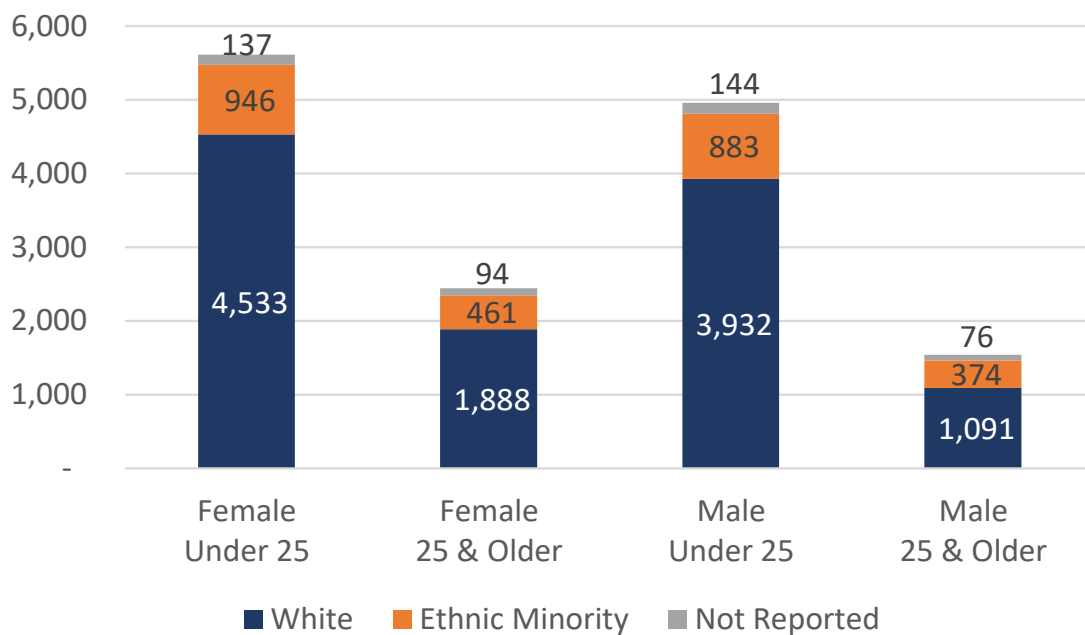
In AY 2017, demographics were added to the dataset in order to study students by gender, race/ethnicity and age. Gender was defined as either male or female. Age groups were aggregated by those under 25 years of age and those age 25 years and older. Race/ethnicity was grouped into two categories: white and racial/ethnic minority.

There were a total of 8,059 females, 6,500 males and zero students with unknown gender. The majority of students in AY 2018 were under the age of 25 (10,575) and white (8,465). However,

there was a greater percentage of ethnic minority male students who were 25 years of age and older (25.5 percent), compared to those under 25 (18.3 percent). Ethnic minority female students also represented a greater percentage of those 25 years of age or older (19.6 compared to 17.3 percent).

Figure 2 below visually illustrates the Iowa community college student completer population demographics in AY 2018.

**FIGURE 2. AY 2018 STUDENT DEMOGRAPHICS FOR COMPLETERS**



## Awards and Programs by Gender

More female than male community college students received awards in AY 2018 (55.4 percent of all awards). The female students also represented higher percentages of those who earned associate degrees (55.3 percent), diplomas (57.9 percent) and certificates (52.4 percent). However, if each 2-digit CIP is analyzed separately, there is a deviation from this continuum, shown in the figure below.

Long-held views about the particular strengths, weaknesses and responsibilities of each gender have affected how people look for a job, train for a job and ultimately gain employment in a particular job. Though it is not something that holds true for every person, gender division still applies by occupation. Historically, females have held jobs in health care, administrative and human services related occupations, whereas males have been more apt to attain employment in occupations relating to engineering, manufacturing, construction and transportation.

Figure 3 illustrates the percentage of males and females for the top programs completed in AY 2018. Females dominated the training completion in health professions, business management and family and consumer sciences/human services. Males far outnumbered females in mechanic and repair training, precision trades, computer technology, engineering, construction and transportation. All program completions by gender can also be found on the credit program outcomes interactive dashboard at: <https://educateiowa.gov/iowa-community-college-program-outcomes-interactive-charts>.

*Note: Wages by gender are addressed in latter portions of this report.*

**FIGURE 3. TOP 15 PROGRAMS COMPLETED IN AY 2018 BY GENDER BY NUMBER OF AWARDS**



## Awards and Programs by Age

As mentioned earlier in this report, students were separated into two age categories: those under the age of 25 and 25 years of age and older. An analysis was conducted to see if there was a difference between the younger group and older group when it came to programs of study. Liberal arts and sciences were the most popular among the younger group (40.7 percent), whereas the older group predominately completed programs in health professions (37.0 percent). Interestingly, the second largest percentages for each group were in the same two categories. Table 1 shows that close to one-fourth of students age 25 and older completed liberal arts and sciences programs (24.3 percent), while close to one-fourth of students under the age of 25 completed health professions programs (23.5 percent).

Another intriguing fact is that there were little differences in the percentages of younger to older students by program type. There was a slight variance between completed programs but, generally, the percentages reflected interest in mechanics and repair, precision production, business management, agriculture, computer sciences and engineering technologies.

Detailed program completion by age group information can be explored using the link provided in Appendix A to the detailed data tables.

**TABLE 1. PROGRAMS BY TWO-DIGIT CIP BY AGE, AY 2018**

Classification of Instructional Program (CIP)	Percent of Students Under Age 25	Percent of Students Age 25 and Over
Liberal Arts and Sciences, General Studies	40.7%	24.3%
Health Professions and Related	23.5%	37.0%
Mechanics and Repairers, General	6.3%	4.5%
Business Management, Marketing and Related	3.8%	9.5%
Precision Production Trades	4.5%	1.9%
Computer and Information Sciences and Support Services	3.1%	5.3%
Agriculture	4.2%	1.1%
Engineering Technologies and Engineering Related	2.7%	4.6%
Construction Trades	2.6%	1.0%
Homeland Security, Law Enforcement, Firefighting and Related Protective Services	1.7%	2.1%
Personal and Culinary Services	1.4%	2.2%
Family and Consumer Sciences/Human Sciences	1.4%	1.4%
Communications Technologies/Technicians and Support Services	1.2%	0.5%
Visual and Performing Arts	1.1%	0.6%
Transportation and Materials Moving	0.3%	1.3%

## Programs by Race/Ethnicity

Throughout this report, race/ethnic groups are defined as white or racial/ethnic minority, aggregating all students who self-identified with a race or ethnicity other than white into one category. Over 2,600 students (18.9 percent) were in the racial/ethnic minority group, and the remaining 11,444 students were white (81.1 percent). The 451 students who did not report race/ethnicity were excluded from the analysis in Table 2.

Students in the racial/ethnic minority group predominately completed coursework in similar programs as white students (Table 2). Both groups of students had the highest percentages in liberal arts and sciences, health professions, mechanics and repairers and business management. However, there was a higher percentage of minority students who completed computer and information sciences training as compared to white students.

**TABLE 2. PROGRAMS BY TWO-DIGIT CIP BY RACE/ETHNICITY, AY 2018**

Classification of Instructional Program (CIP)	White		Racial/Ethnic Minority	
	Number	Percent	Number	Percent
Liberal Arts and Sciences, General Studies	4,034	35.2%	1,098	41.2%
Health Professions and Related	3,139	27.4%	694	26.1%
Mechanics and Repairers, General	685	6.0%	137	5.1%
Business Management, Marketing and Related	612	5.3%	143	5.4%
Precision Production Trades	448	3.9%	72	2.7%
Computer and Information Sciences and Support Services	402	3.5%	103	3.9%
Agriculture	456	4.0%	20	0.8%
Engineering Technologies and Engineering Related	377	3.3%	82	3.1%
Construction Trades	258	2.3%	48	1.8%
Homeland Security, Law Enforcement, Firefighting and Related Protective Services	184	1.6%	69	2.6%
Personal and Culinary Services	168	1.5%	52	2.0%
Family and Consumer Sciences/Human Sciences	168	1.5%	32	1.2%
Communications Technologies/Technicians and Support Services	113	1.0%	24	0.9%
Visual and Performing Arts	108	0.9%	26	1.0%
Transportation and Materials Moving	67	0.6%	19	0.7%
Human Services	41	0.4%	20	0.8%
Natural Resources and Conservation	54	0.5%	3	0.1%
Legal Professions and Studies	33	0.3%	6	0.2%
Education	24	0.2%	2	0.1%
Communication, Journalism and Related Programs	16	0.1%	5	0.2%
Multi/Interdisciplinary Studies	15	0.1%	4	0.2%
Foreign Languages, Literatures and Linguistics	15	0.1%	2	0.1%
Parks, Recreation, Leisure and Fitness Studies	14	0.1%	1	0.0%
Science Technologies/Technicians	6	0.1%	-	0.0%
Biological and Biomedical Sciences	3	0.0%	2	0.1%
Social Sciences	3	0.0%	-	0.0%
Engineering	1	0.0%	-	0.0%
<b>Total</b>	<b>11,444</b>	<b>100.0%</b>	<b>2,664</b>	<b>100.0%</b>

## Awards by Classification of Instructional Program

The Classification of Instructional Program (CIP) provides a taxonomic scheme that enables the tracking, assessment and reporting of fields of study and program completion. The CIP system was established by the U.S. Department of Education's National Center for Education Statistics (NCES) in 1980.

The data contained within this report are analyzed at the two- or six-digit CIP levels. Appendix A, the accompanying online tables and online dashboard, contain detailed information for six-digit, program-level data. Table 3 lists the

program descriptions at the two- digit CIP level and the corresponding number of awards earned by Iowa's community college students in each academic year from 2013 to 2017.

The majority of awards were earned in liberal arts and sciences, health professions, business management and marketing and mechanics and repairers programs as seen in previous years. It is important to note that not all community colleges offer the same number of programs within these CIP categories.

**TABLE 3. AY 2014 TO AY 2018 STATEWIDE AWARDS BY TWO-DIGIT CIP**

CIP	Description	AY2014	AY2015	AY2016	AY2017	AY2018	Total
24	Liberal Arts & Sciences, General Studies	5,720	5,553	6,004	5,448	5,274	27,999
51	Health Professions & Related	4,097	4,332	4,460	4,260	3,959	21,108
52	Business Management, Marketing & Related	1,069	970	853	851	785	4,528
47	Mechanics & Repairers, General	730	782	890	937	843	4,182
48	Precision Production Trades	457	664	643	581	553	2,898
01	Agriculture	457	539	536	586	484	2,602
15	Engineering Technologies & Engineering Related	504	422	429	432	470	2,257
11	Computer and Information Sciences & Support Services	393	358	457	510	535	2,253
46	Construction Trades	197	302	304	320	313	1,436
43	Homeland Security, Law Enforcement, Firefighting & Related Protective Services	229	283	253	203	261	1,229
12	Personal & Culinary Services	221	213	290	243	233	1,200
19	Family & Consumer Sciences/Human Sciences	213	157	231	233	202	1,036
50	Visual & Performing Arts	162	143	166	159	137	767
10	Communications Technologies/Technicians & Support Services	140	155	136	154	142	727
49	Transportation & Materials Moving	44	96	97	107	89	433
44	Human Services	91	60	64	65	63	343
03	Natural Resources & Conservation	65	58	42	62	59	286
22	Legal Professions & Studies	50	42	40	71	40	243
13	Education	52	54	54	43	28	231
30	Multi/Interdisciplinary Studies	64	44	35	24	20	187
16	Foreign Languages, Literature & Linguistics	22	16	25	23	17	103
09	Communication, Journalism & Related Programs	8	12	18	26	21	85
31	Parks, Recreation, Leisure & Fitness Studies	17	14	17	20	15	83
41	Science Technologies/Technicians	11	13	8	6	6	44
26	Biological & Biomedical Sciences	6	6	11	5	6	34
14	Engineering	11	5	7	2	1	26
45	Social Sciences	1	3	3	4	3	14
34	Health related Knowledge & Skills	-	1	-	-	-	1
<b>Total</b>		<b>15,031</b>	<b>15,297</b>	<b>16,073</b>	<b>15,375</b>	<b>14,559</b>	<b>76,335</b>



## Associate Degrees by CIP—AY 2014 to AY 2018 Totals

During academic years 2014 through 2018, there were seven types of associate degrees awarded by Iowa community colleges, analyzed separately using the online interactive dashboard and accompanying tables. These award types are:

- » Associate of Arts (AA)
- » Associate of Science (AS)
- » Associate of Applied Arts (AAA)
- » Associate of Applied Science (AAS)
- » Associate of General Studies (AGS)
- » Associate of Professional Studies (APS)

- » Associate of Science/Career Option (ASCO)

Table 4 contains an aggregation of all associate degrees awarded in AY 2014 through AY 2018. Liberal arts and science degrees consistently account for slightly more than 50 percent of all such degrees awarded with the exception of AY 2014 (49.7 percent in AY 2014, 50.9 percent in AY 2015, 53.6 percent in AY 2016, 51.3 percent in AY 2017 and 52.0 percent in AY 2018).

**TABLE 4. AY 2014 TO AY 2018 ASSOCIATE DEGREES BY TWO-DIGIT CIP**

CIP	Description	AY2014	AY2015	AY2016	AY2017	AY2018	Total
24	Liberal Arts & Sciences, General Studies	5,720	5,553	6,004	5,448	5,274	27,999
51	Health Professions & Related	2,144	2,031	1,954	1,840	1,860	9,829
52	Business Management, Marketing & Related	752	605	567	586	465	2,975
47	Mechanics & Repairers, General	554	496	554	562	500	2,666
01	Agriculture	412	476	464	515	414	2,281
15	Engineering Technologies & Engineering Related	418	339	296	283	312	1,648
11	Computer & Information Sciences & Support Services	340	298	308	337	308	1,591
43	Homeland Security, Law Enforcement, Firefighting & Related Protective Services	210	269	197	149	160	985
12	Personal & Culinary Services	131	105	148	135	126	645
10	Communications Technologies/Technicians & Support Services	133	131	118	135	121	638
48	Precision Production Trades	111	107	121	126	116	581
50	Visual & Performing Arts	113	105	84	87	87	476
19	Family & Consumer Sciences/Human Sciences	92	80	89	95	80	436
46	Construction Trades	77	78	78	76	82	391
44	Humans Services	85	56	56	60	61	318
03	Natural Resources & Conservation	48	40	33	33	46	200
30	Multi/Interdisciplinary Studies	64	44	35	24	20	187
22	Legal Professions & Studies	33	35	25	52	29	174
09	Communication, Journalism & Related Programs	5	12	18	26	20	81
16	Foreign Languages, Literatures & Linguistics	22	16	19	14	8	79
49	Transportation & Materials Moving	10	4	3	11	25	53
31	Parks, Recreation, Leisure & Fitness Studies	9	4	10	12	10	45
41	Science Technologies/Technicians	11	13	8	6	6	44
14	Engineering	10	5	7	2	1	25
26	Biological & Biomedical Sciences	4	6	7	1	3	21
45	Social Sciences	1	3	3	4	3	14
34	Health related Knowledge & Skills	-	1	-	-	-	1
13	Education	-	-	-	-	-	-
<b>Total</b>		<b>11,509</b>	<b>10,912</b>	<b>11,206</b>	<b>10,619</b>	<b>10,137</b>	<b>54,383</b>

## Career and Technical Education (CTE) Diplomas by CIP

In Iowa, diploma programs are designed to provide students with technical training and skill development leading to entry-level employment.

All 15 of Iowa's community colleges offer long-term CTE diploma programs covering many different areas of study, with the majority in health care, skilled trades, engineering and computer-related fields. Since only one of Iowa's community colleges offered short-term diplomas during the five-year study period (a total 3 at Indian Hills), both long- and short-term diplomas were combined in Table

5. The majority of CTE diplomas were awarded in health professions followed by precision production trades and mechanics and repairers training. Health professions continue to surpass all other diploma programs, making up 48.2 percent of all diplomas awarded in AY 2018.

Throughout the five-year study period, the distribution of diplomas awarded has remained relatively the same throughout the five-year study period, the distribution of diplomas awarded has remained relatively the same.

**TABLE 5. AY 2014 TO AY 2018 LONG-TERM AND SHORT-TERM DIPLOMAS BY TWO-DIGIT CIP**

CIP	Description	AY2014	AY2015	AY2016	AY2017	AY2018	Total
51	Health Professions & Related	1,190	1,473	1,324	1,142	1,210	6,339
48	Precision Production Trades	186	335	319	294	263	1,397
47	Mechanics & Repairers, General	93	195	243	238	259	1,028
46	Construction Trades	116	187	195	206	194	898
52	Business Management, Marketing & Related	119	141	115	107	155	637
12	Personal & Culinary Services	67	84	113	75	89	428
15	Engineering Technologies & Engineering Related	39	50	57	78	85	309
19	Family and Consumer Sciences/Human Sciences	49	46	74	58	53	280
01	Agriculture	33	47	59	63	59	261
50	Visual & Performing Arts	40	25	53	40	38	196
11	Computer and Information Sciences & Support Services	29	14	44	29	62	178
10	Communications Technologies/Technicians & Support Services	6	21	15	18	19	79
49	Transportation & Materials Moving	9	18	10	8	-	45
43	Homeland Security, Law Enforcement, Firefighting & Related Protective Services	4	2	8	9	13	36
13	Education	1	5	7	2	2	17
31	Parks, Recreation, Leisure & Fitness Studies	7	3	3	-	3	16
03	Natural Resources & Conservation	7	4	3	1	-	15
44	Human Services	-	1	6	5	2	14
22	Legal Professions & Studies	4	-	1	1	3	9
09	Communication, Journalism & Related Programs	3	-	-	-	-	3
26	Biological & Biomedical Sciences	-	-	1	-	-	1
14	Engineering	-	-	-	-	-	-
16	Foreign Languages, Literature & Linguistics	-	-	-	-	-	-
24	Liberal Arts & Sciences, General Studies	-	-	-	-	-	-
30	Multi/Interdisciplinary Studies	-	-	-	-	-	-
34	Health related Knowledge & Skills	-	-	-	-	-	-
41	Science Technologies/Technicians	-	-	-	-	-	-
45	Social Sciences	-	-	-	-	-	-
<b>Total</b>		<b>2,002</b>	<b>2,651</b>	<b>2,650</b>	<b>2,374</b>	<b>2,509</b>	<b>12,186</b>

## Certificates by CIP

Iowa community colleges design certificates to respond to business and industry workforce needs. These technical programs, classified as short-term (less than 22 credits) and long-term (22 credits or more), vary from one to 48 credits.

There were a total of 9,766 certificates awarded over the five-year study period (7,854 short-term and 1,912 long-term). The largest portion of these were awarded in the health professions (4,940) (Table 6).

Iowa's community colleges also award noncredit certificates, which are analyzed in a separate report. These short-term career training opportunities, both credit and noncredit, have a significant impact on the skills workers need to be competitive in the workforce.

Noncredit CTE employment outcomes and data can be found at: <https://educateiowa.gov/documents/program-outcome/2018/09/noncredit-career-and-technical-education-program-employment> .

**TABLE 6. AY 2014 TO AY 2018 CERTIFICATES LONG- AND SHORT-TERM (LT AND ST) BY TWO-DIGIT CIP**

CIP	Description	AY2014	AY2015	AY2016	AY2017	AY2018	Total LT	Total ST	Total
51	Health Professions & Related	763	828	1,182	1,278	889	562	4,378	4,940
48	Precision Production Trades	160	222	203	161	174	297	623	920
52	Business Management, Marketing & Related	198	224	171	158	165	274	642	916
47	Mechanics & Repairers, General	83	91	93	137	84	195	293	488
11	Computer and Information Sciences & Support Services	24	46	105	144	165	211	273	484
49	Transportation & Materials Moving	25	74	84	88	64	-	335	335
19	Family and Consumer Sciences/Human Sciences	72	31	68	80	69	-	320	320
15	Engineering Technologies & Engineering Related	47	33	68	71	73	234	66	292
13	Education	51	49	47	41	26	-	214	214
43	Homeland Security, Law Enforcement, Firefighting & Related Protective Services	15	12	48	45	88	46	162	208
46	Construction Trades	4	37	31	38	37	-	147	147
12	Personal & Culinary Services	23	24	29	33	18	11	116	127
50	Visual & Performing Arts	9	13	29	32	12	-	95	95
03	Natural Resources & Conservation	10	14	6	28	13	-	71	71
01	Agriculture	12	16	13	8	11	12	48	60
22	Legal Professions & Studies	13	7	14	18	8	60	-	60
16	Foreign Languages, Literature & Linguistics	-	-	14	9	9	-	24	32
31	Parks, Recreation, Leisure & Fitness	1	7	4	8	2	-	22	22
26	Biological & Biomedical Sciences	2	-	3	4	3	10	2	12
44	Human Services	6	3	2	-	-	-	11	11
10	Communications Technologies/ Technicians & Support Services	1	3	3	1	2	-	10	10
09	Communication, Journalism & Related Programs	-	-	-	-	1	-	1	1
14	Engineering	1	-	-	-	-	-	1	1
24	Liberal Arts & Sciences, General Studies	-	-	-	-	-	-	-	-
30	Multi/Interdisciplinary Studies	-	-	-	-	-	-	-	-
34	Health related Knowledge & Skills	-	-	-	-	-	-	-	-
41	Science Technologies/Technicians	-	-	-	-	-	-	-	-
45	Social Sciences	-	-	-	-	-	-	-	-
<b>Total</b>		<b>1,520</b>	<b>1,734</b>	<b>2,217</b>	<b>2,382</b>	<b>1,913</b>	<b>1,912</b>	<b>7,854</b>	<b>9,766</b>

## Time-to-Degree

To measure the amount of time it took students to earn their awards (i.e., time-to-degree), enrollment data were extracted from the MIS for the six years prior to completion for students who received awards between AY 2014 and AY 2018.

For example, data for AY 2014 graduates were extracted from AY 2014, 2013, 2012, 2011, 2010 and 2009 to determine if they were enrolled in their degree programs during these prior years.

There is a variance in completion time when looking at associate degrees independently. Table 7 shows that three-fourths (77.0 percent) of students who received an associate of applied

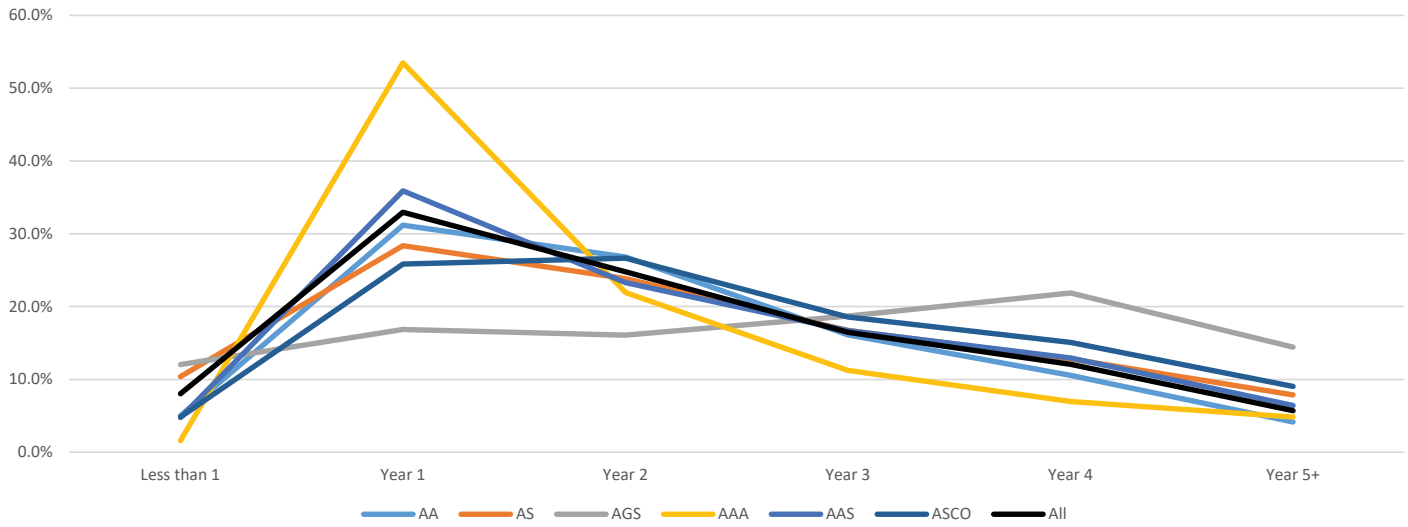
arts (AAA) degree received their award by the end of year two. In comparison, just over two-fifths (45.0 percent) of students finished their AGS degree within the same period of time.

Figure 4, on the following page, illustrates the distribution of time-to-degree in aggregate for associate degrees earned by students. Table 7 illustrates the percentage of cohort graduates by the number of years they took to complete their programs. Figure 5, on the following page, displays the time-to-degree in cumulative format, illustrating the total percentage of students who completed degrees in one to four years.

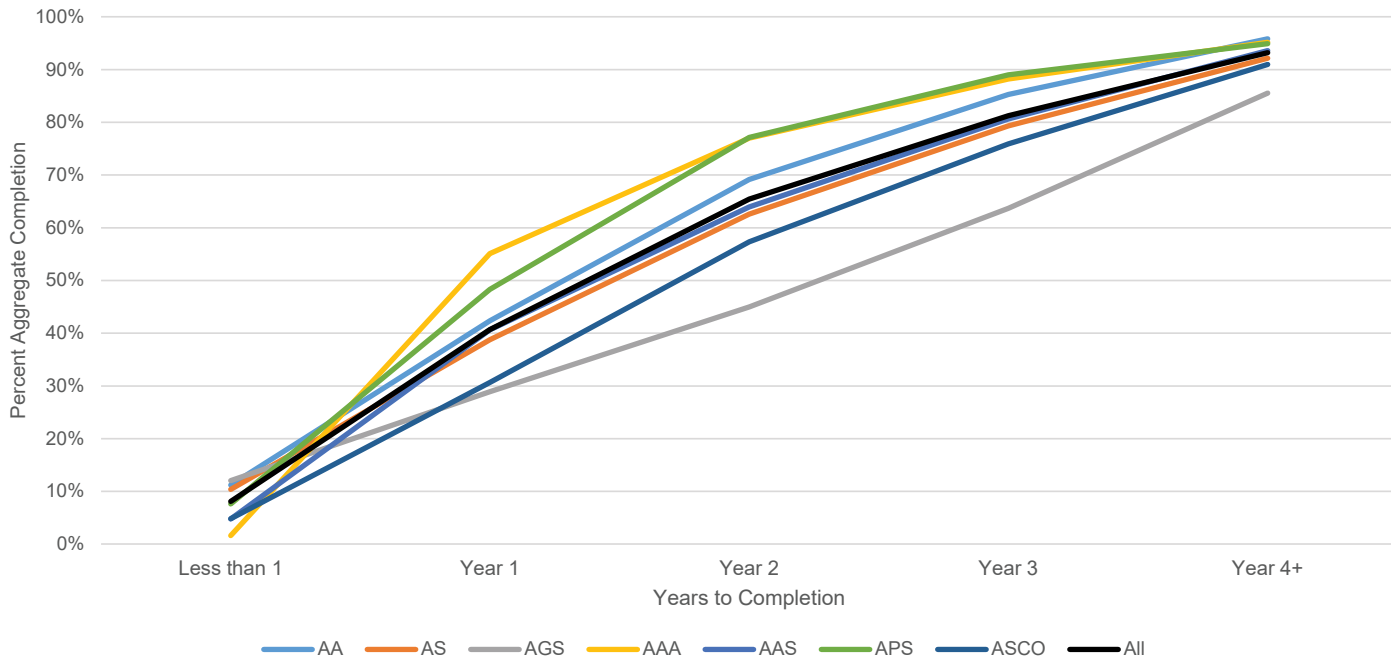
**TABLE 7. AY 2014 TO AY 2018 TIME-TO-DEGREE FOR ASSOCIATE DEGREES BY PERCENT**

Years	AA	AS	AGS	AAA	AAS	APS	ASCO	All
Less than 1	5.0%	10.4%	12.1%	1.6%	4.7%	7.6%	4.8%	8.0%
Year 1	31.2%	28.4%	16.8%	53.5%	35.9%	40.7%	25.8%	33.0%
Year 2	26.8%	23.8%	16.1%	21.9%	23.3%	28.8%	26.7%	24.8%
Year 3	16.1%	16.7%	18.7%	11.2%	16.7%	11.9%	18.6%	16.5%
Year 4	10.6%	12.8%	21.9%	7.0%	13.0%	5.9%	15.1%	12.1%
Year 5+	4.2%	7.9%	14.4%	4.8%	6.4%	5.1%	9.0%	5.7%

**FIGURE 4. TIME-TO-DEGREE FOR ASSOCIATE DEGREES EARNED, AY 2014 TO AY 2018**



**FIGURE 5. CUMULATIVE TIME-TO-DEGREE FOR ASSOCIATE DEGREES, AY 2014 TO AY 2018**

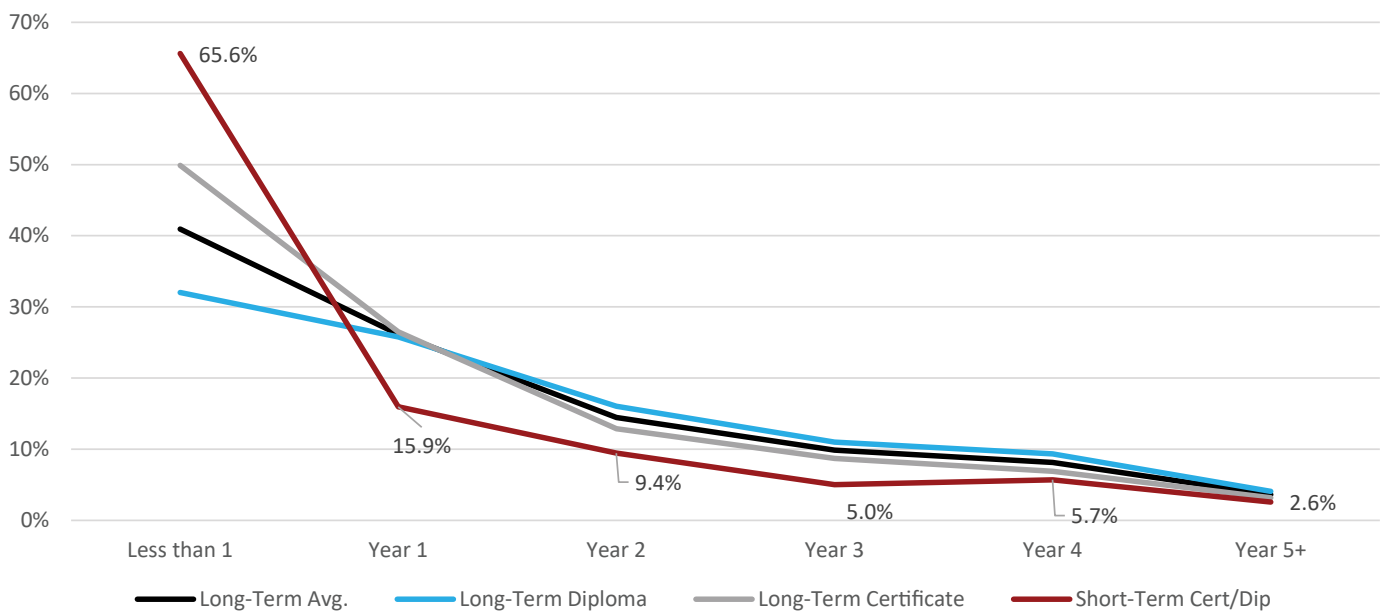


**Note:** Annual cohorts include students who entered an Iowa community college, in any term, within an academic year (9/1-8/31).

In Figure 6, certificates and diplomas were divided into three groups, long-term (LT) diplomas, LT certificates and an aggregation of both short-term (ST) diplomas and certificates. A diploma requires at least 15 semester credits, of which three credits must be general education, while a certificate can range from 1 to 48 credits, with no general education requirement. Long-term diploma and certificate programs consist of 22 or more credits, while short-term programs consist of less than 22 credits.

Figure 6 illustrates why the LT and ST awards must be reported separately. Due to the acquisition of fewer credits, most (65.6 percent) ST diplomas and certificates were completed in less than one year, with another 15.9 percent completed by the end of year one (total 81.5 percent). In contrast, the majority of long-term certificates and diplomas were completed by year two (89.3 percent for certificates and 73.8 percent for diplomas).

**FIGURE 6. TIME-TO-DEGREE FOR DIPLOMA AND CERTIFICATE AWARDS, AY 2014 TO AY 2018**



## Joint Enrollment

Each year, tens-of-thousands of Iowa high school students collectively jointly enroll in college credit coursework through Iowa's 15 community colleges, three public universities and numerous private postsecondary institutions.

The Department defines joint enrollment as a high school student enrolled in a postsecondary course. Students may jointly enroll through contracted courses offered at the high school (concurrent enrollment) or at the college (postsecondary enrollment options). They may also enroll in noncontracted courses as a tuition-paying student.

Since this section focuses on program completion, the students represented include only those who were jointly enrolled while in high school, continued

their education at one of Iowa's community colleges and completed a degree, diploma or certificate during academic years 2014 to 2018.

Over the five-year study period, a total of 18,673 students earned an average of 15.1 college credits during high school (Table 8). Of the AY 2018 completers, 38.8 percent earned an associate of arts (AA) degree and 22.7 percent earned an associate of applied science (AAS) degree in career and technical (CTE) programs. Another 33.2 percent earned diplomas and certificates (Table 9).

Other reports produced by the Department specific to joint enrollment can be found at: <https://www.educateiowa.gov/document-type/joint-enrollment>.

**TABLE 8. COMMUNITY COLLEGE AWARDS EARNED BY JOINT ENROLLMENT (JE) STUDENTS BY ACADEMIC YEAR**

	AY2014	AY2015	AY2016	AY2017	AY2018	Total/Average
Number of Students	3,265	3,431	3,753	3,916	4,308	18,673
Average Number of JE Years	1.4	1.4	1.4	1.4	1.7	1.5
Average Number of JE Credits	13.4	13.9	14.7	15.7	18.0	15.1

**Note:** The average number of JE years was calculated by counting students as jointly enrolled if they appeared in the MIS any time during that academic year and were enrolled in a course through an Iowa community college.

**TABLE 9. AY 2018 JOINTLY-ENROLLED STUDENTS BY LONG- AND SHORT-TERM AWARD TYPES**

Award Type	Number of Students		Percent
	Long-Term	Short-Term	
AA	1,671	-	38.8%
AS	184	-	4.3%
AGS	37	-	0.9%
AAA	6	-	0.1%
AAS	976	-	22.7%
APS	3	-	0.1%
ASCO	-	-	0.0%
Diploma	629	2	14.6%
Certificate	119	681	18.6%
Total	3,625	683	100%

## Cohort Groups Defined

To study the various tracks community college students take after graduation, each cohort was split into three groups: 1) those who continued their education in Iowa, 2) those who continued out-of-state and 3) those who did not continue their education. Figure 7 represents the five cohorts of graduates, delineated into these three groups by colored sections of each bar.

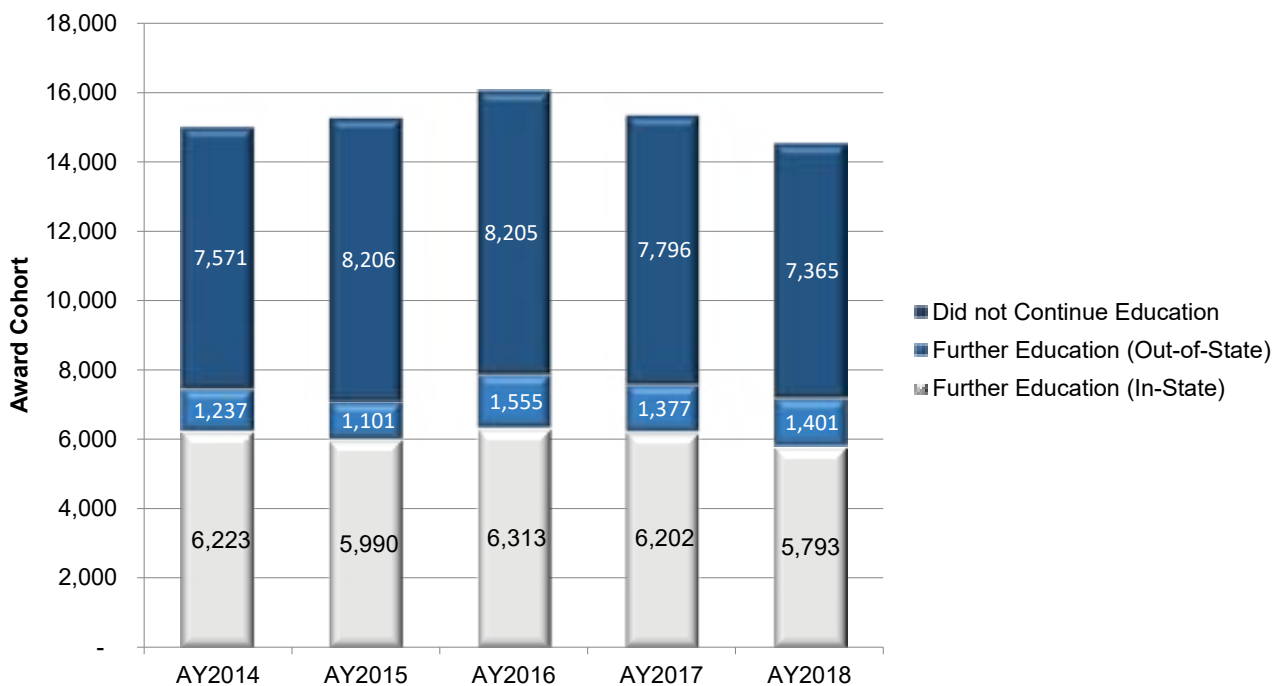
The majority of each cohort's graduates who continued their education did so within the state of Iowa, while a small portion transferred out-of-state. The remainder did not continue their education and were analyzed regarding in- and out-of-state employment as reported later in this report.

In order to identify these three groups within each student cohort, MIS data (individual student records) were matched with the National Student Clearinghouse (NSC) database to identify the student participation in two- or four-year, in- or out-of-state and public or private institutions during

the year following the completion of a community college program. If a graduate was matched (i.e., found) within the NSC database, he or she was placed into the "Pursuing Further Education" cohort for further analysis. If a graduate was not matched within the NSC database, he or she was placed into the "Workforce" cohort. Since all of the student records had to contain a SSN in order to be used for the workforce cohort, the number of students will vary from previous portions of the report due to insufficient data. Furthermore, each of those who entered the workforce the year following his or her award was re-matched to the NSC database to ascertain whether he or she entered a postsecondary institution in subsequent years.

As illustrated in Figure 7, of the 14,559 students (unduplicated count) who received an award in AY 2018, 5,793 of the 7,194 who continued their education the year following their award (80.5 percent) did so in Iowa, while 1,401 left Iowa to continue their education.

**FIGURE 7. STATUS OF GRADUATES FIRST YEAR AFTER AWARD**





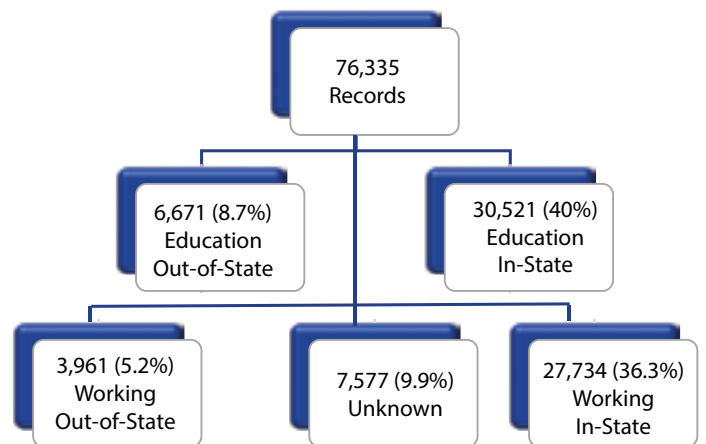
## Retention and Migration

The vast majority of Iowa community college graduates remained in Iowa after completing their programs (83.3 percent) (see Figure 8). Half (49.4 percent) continued their education following completion of a community college award, with most students remaining in Iowa (40.8 percent). Of those students who continued their education at an institution outside of Iowa, most enrolled in one of Iowa's contiguous states, such as Nebraska (1,448) and Illinois (1,017). For those who ventured farther away, the highest concentrations enrolled at institutions in Utah (262), Arizona (240) or Texas (213) within one year after graduation. Students who were neither found in further education nor employment were labeled as "unknown" for this report.

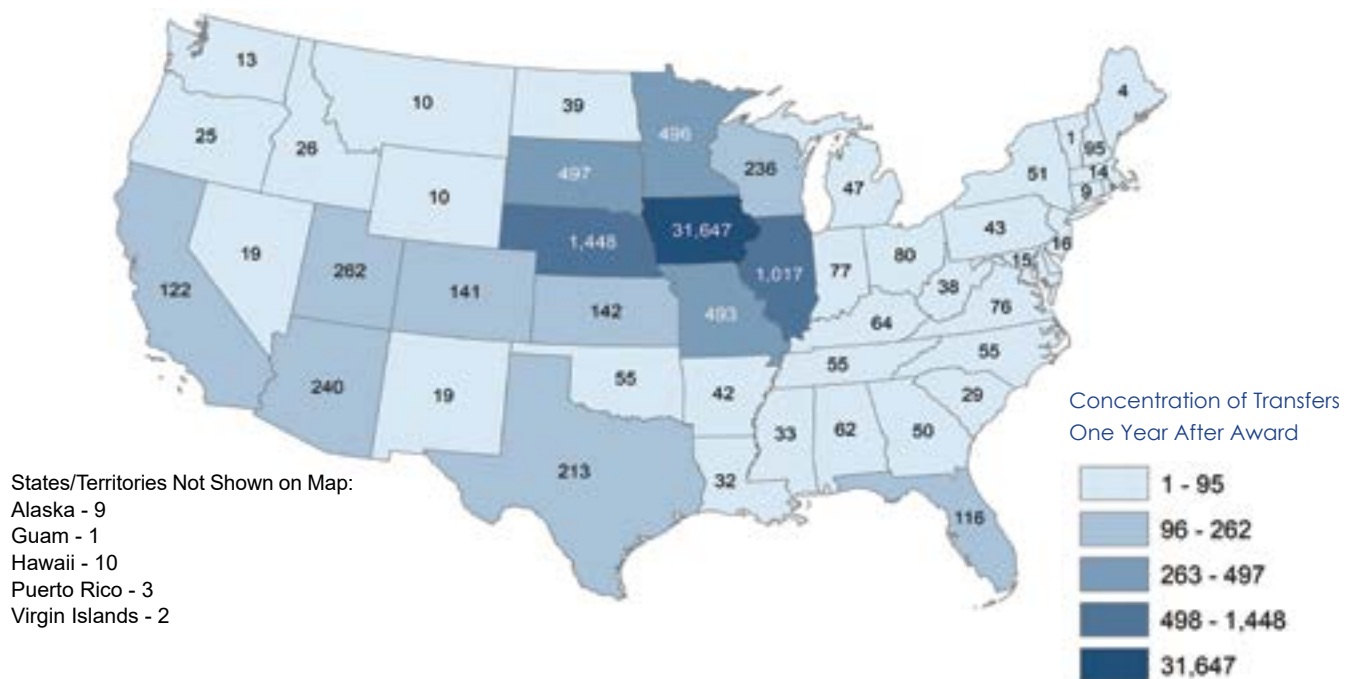
Figure 9 represents aggregate numbers by state for those who continued their education either in- or out-of-state one year after their award (AY 2014 to AY 2018). If students were enrolled in different colleges at the same time, the college with the most recent attendance date within that year was used.

When looking at migration patterns, whether it be students who transferred to an out-of-state college or sought employment outside of Iowa, percentages were relatively small (8.6 percent and 7.5 percent respectively). Each of these groups is studied in more detail in the subsequent sections of this report.

**FIGURE 8. AY 2014 TO AY 2018 RETENTION AND MIGRATION, FIRST YEAR FOLLOWING AWARD**



**FIGURE 9. AY 2014 TO AY 2018 COHORTS EDUCATIONAL MIGRATION, FIRST YEAR FOLLOWING AWARD**



## Pursuing Further Education Cohort

Using the NSC database, the Department was able to identify Iowa community college graduates who transferred to other postsecondary institutions. Table 10 illustrates the distribution of these graduates based on their transfer institution types (transferred the first year after their graduation).

Using the AY 2018 cohort as an example, 5,497 students continued their education at an in-state institution the academic year following graduation, whereas, 1,323 students continued

their education at an out-of-state institution. Of those who continued their education in-state, 39.5 percent enrolled at a two-year public college and 27.7 percent transferred to an in-state, four-year public college.

The number of students who continued their education out-of-state dropped slightly when comparing the 2017 cohort (1,377) to the 2018 cohort (1,323) though the number of students still remains over a thousand each year.

**TABLE 10. AY 2014 TO AY 2018 FURTHER EDUCATION, FIRST YEAR FOLLOWING AWARD**

Year Following Community College Award	Characteristics of Institution		Continued Education In-State		Continued Education Out-of-State	
	2-Year	4-Year	Number	Percent	Number	Percent
<b>2014 Cohort</b>						
2015	2-Year	Private	10	0.1%	4	0.1%
		Public	3,151	42.2%	94	1.3%
	4-Year	Private	1,331	17.8%	471	6.3%
		Public	1,731	23.2%	668	9.0%
Total			6,223	83.4%	1,237	16.6%
<b>2015 Cohort</b>						
2016	2-Year	Private	0	0.0%	1	0.0%
		Public	3,031	42.7%	104	1.5%
	4-Year	Private	1,218	17.2%	424	6.0%
		Public	1,741	24.6%	572	8.1%
Total			5,990	84.5%	1,101	15.5%
<b>2016 Cohort</b>						
2017	2-Year	Private	0	0.0%	2	0.0%
		Public	2,914	37.0%	103	1.3%
	4-Year	Private	1,144	14.5%	488	6.2%
		Public	2,255	28.7%	962	12.2%
Total			6,313	80.2%	1,555	19.8%
<b>2017 Cohort</b>						
2018	2-Year	Private	0	0.0%	0	0.0%
		Public	2,996	39.5%	117	1.5%
	4-Year	Private	985	13.0%	440	5.8%
		Public	2,221	29.3%	820	10.8%
Total			6,202	81.8%	1,377	18.2%
<b>2018 Cohort</b>						
2019	2-Year	Private	0	0.0%	3	0.0%
		Public	2,692	39.5%	72	1.1%
	4-Year	Private	915	13.4%	441	6.5%
		Public	1,890	27.7%	807	11.8%
Total			5,497	80.6%	1,323	19.4%

## Workforce Cohort

The following sections of this report analyze the annual employment and wage trends of the graduates who did not continue their education. Students with previous degrees prior to the academic year, and those who received multiple awards within the same academic year, were also identified. Previous degrees and multiple awards may play a part in not only employability, but also in higher wages, though further research will be needed to validate this theory.

Both in- and out-of-state employment data were gathered using the Iowa or Nebraska Unemployment Insurance (UI) database and the State Wage Interchange System (SWIS). Out-of-state employment was measured using the Nebraska UI or SWIS. The number of unmatched records included graduates employed by an employer that does not pay UI tax or who were unemployed for the described periods of time.

Due to the availability of five years of wage data for the AY 2014 cohort, it is used as an example in Table 11. This table illustrates the aggregate employment and wages for the AY 2014 cohort in the first five years of data available after graduation.

The data show that, in AY 2015 (October 1, 2014 to September 30, 2015), 91.0 percent of those who did not continue their education were employed the year following program completion. Additionally, 9.9

percent had earned a previous degree and 12.0 percent had earned more than one award. In order to compare wages from 2015 to current wages (2019), a cost of living adjustment was applied and documented in the Adjusted Median Wage column in Figures 11 and 12 (a detailed explanation is contained in the Employment and Wage Record Methodology section). This adjustment was used to standardize wages in order to determine whether “real” wages increased over the study period.

Table 12 shows employment and wage data from the first year following award for each of the most recent five cohorts. The adjusted median wage increased from \$30,516 for the AY 2014 cohort to \$32,093 for the AY 2018 cohort, which represents a 5.1 percent increase.

**TABLE 11. FIVE-YEAR EMPLOYMENT AND WAGE TRENDS FOR AY 2014 COHORT**

Year of Employment <sup>1</sup>	% Matched to Employment	Adjusted Median Wages	% with Previous Degree <sup>2</sup>	% Earning More than One Award
2015	91.0%	\$30,351	9.9%	12.0%
2016	88.6%	\$35,723	9.9%	12.3%
2017	86.2%	\$37,551	9.9%	12.5%
2018	84.2%	\$39,315	9.9%	12.7%
2019	82.7%	\$41,598	10.0%	12.7%

1. Ex. 2019 defined as October 1, 2018, through September 30, 2019,
2. Percentage calculated of those matching employment in that year.

**TABLE 12. EMPLOYMENT AND WAGES BY COHORT, FIRST YEAR FOLLOWING AWARD**

Cohort Year	Year of Employment	% Matched to Employment	Adjusted Median Wages	% with Previous Degree	% Earning More than One Award
2014	2015	91.9%	\$30,516	9.8%	12.2%
2015	2016	91.9%	\$31,458	6.1%	13.7%
2016	2017	91.6%	\$31,705	5.8%	12.6%
2017	2018	91.6%	\$32,159	5.9%	14.7%
2018	2019	90.2%	\$32,093	6.8%	13.3%

## Employment and Wages by State

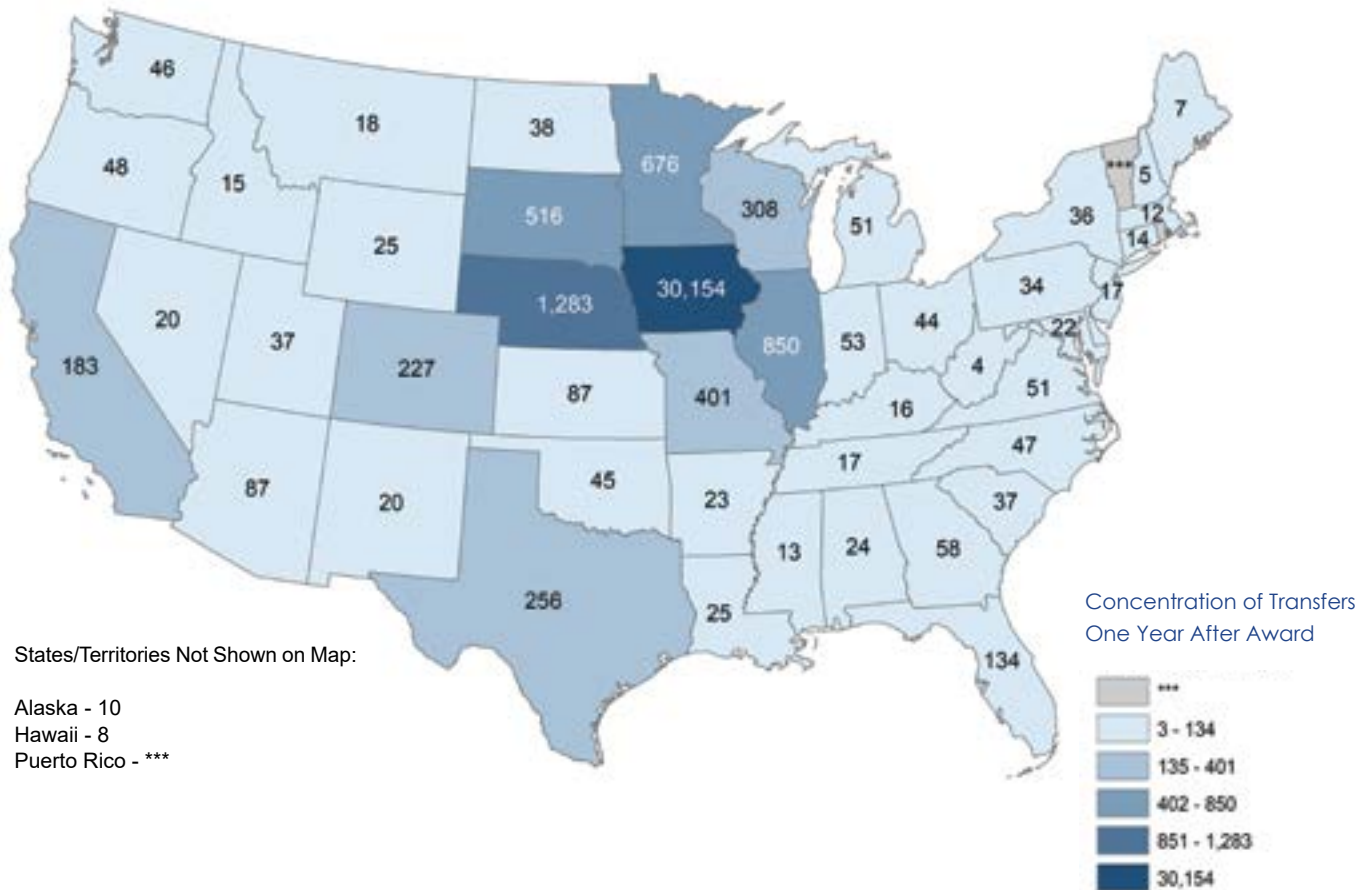
The Nebraska UI and SWIS were used to identify individuals who were employed out-of-state the year following graduation based on primary employment. Though the records do not identify hours worked (i.e., full- or part-time), overtime or occupation, they do identify the number of graduates working in other states.

Figure 10 illustrates that the majority (83.5 percent) of those who received an award in AY 2014 through AY 2018, and who matched to employment data in the fourth quarter following the award, remained in Iowa.

Similar to those who continued their education, most graduates who were employed outside of Iowa were employed in bordering states (3,974). The states that account for the most employment in the fourth quarter following award (other than Iowa) were Nebraska (1,293 matched employment), Illinois (848), Minnesota (676), South Dakota (480) and Missouri (390).

Detailed employment and wage information relating to all cohorts can be found using the link provided in Appendix A.

**FIGURE 10. PRIMARY EMPLOYMENT BY STATE, FIRST YEAR FOLLOWING AWARD, AY 2014 TO AY 2018 COHORTS**



\*\*\* Suppressed due to small cell size.

## Employment and Wages by Award Type

Tables 13 and 14 reflect the employment and wages, in aggregate, for those in the AY 2018 cohort who were employed in the year following graduation (2019). For example, of the 3,730 AA graduates who did not continue their education the year after graduation, 93.5 percent matched employment records within that year and earned an annual median wage of \$38,476 (see AA row in Table 13). Though the percentage of AA graduates who matched employment within one year of graduation is among the highest of the award categories listed, all types exceeded an 80 percent employment match with the exception of APS degree recipients.

In aggregate, Table 14 shows that all AY 2018 associate degree recipients had a 90.4 percent employment match in the first year after graduation. Long-term diploma and certificate recipients also had a 90.4 percent employment match, while short-term diploma and certificate recipients had a 87.6 percent employment match. Though the AA degree graduates had a significantly higher median wage when analyzed separately (Table 13), the data (Table 14) show that the associate degree median wage was \$1,786 higher overall than the median wage for long-term certificate/diploma graduates in the first year after graduation.

**TABLE 13. AY 2018 COHORT, 2019 EMPLOYMENT AND WAGES BY AWARD TYPE**

Award Type	Year of Employment <sup>1</sup>	Number in Cohort (not Enrolled)	Matched to Employment		Adjusted Median Wage	Percent with Previous Degree	Percent Earning More than One Award
			#	%			
AA	2019	1,342	1,161	86.5%	\$25,117	4.0%	4.7%
AS	2019	488	391	80.1%	\$13,083	2.3%	2.3%
ASCO	2019	15	9	60.0%	\$27,813	0.0%	0.0%
APS	2019	76	63	82.9%	\$28,682	3.2%	22.2%
AGS	2019	37	34	91.9%	\$23,749	8.8%	0.0%
AAA	2019	3,730	3,486	93.5%	\$38,476	8.3%	20.3%
AAS	2019	1,083	982	90.7%	\$30,514	5.1%	10.6%
Diploma (>= 22 cr.)	2019	163	144	88.3%	\$36,838	23.6%	0.7%
Certificate (>= 22 cr.)	2019	572	501	87.6%	\$25,250	5.4%	2.4%
Cert./Dipl. (< 22 cr.)	2018	666	600	90.1%	\$27,435	5.3%	1.7%

**TABLE 14. AY 2018 COHORT, 2019 EMPLOYMENT AND WAGES BY AWARD TYPE AGGREGATE**

Award Type	Year of Employment <sup>1</sup>	Number in Cohort (not Enrolled)	Matched to Employment		Adjusted Median Wage	Percent with Previous Degree	Percent Earning More than One Award
			#	%			
Certificate/Diploma (< 22 cr.)	2019	572	501	87.6%	\$25,250	5.4%	2.4%
Certificate/Diploma (>= 22 cr.)	2019	1,246	1,126	90.4%	\$31,397	7.5%	9.3%
Associate	2019	5,688	5,144	90.4%	\$33,183	6.8%	15.2%

1. 2019 wages defined as October 1, 2018 through September 30, 2019.

## Employment and Wages by Gender

For the AY 2018 students in this portion of the study (N=7,506), there were more females than males who did not continue their education following completion of their award. In the AY 2018 cohort, 55.7 percent were female (Figure 11). Furthermore, the distribution of awards and programs by gender varied significantly, but that information was not examined for this report (see Appendix A for a link to employment data by career cluster and gender).

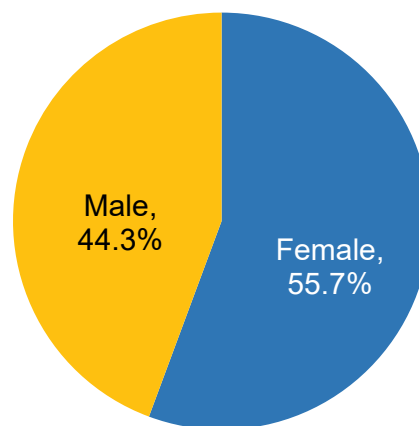
Table 15 provides the employment and wages of AY 2018 award recipients who entered the workforce in the first year after graduation (i.e., did not continue their education). Females matched employment at a higher rate (91.4 percent) than males (88.9 percent), but their adjusted median wage was lower than that of males, \$29,938 to \$35,041, respectively.

In order to do an analysis of the gender wage gap among recent Iowa community college graduates, other factors would need to be controlled, such as program and award type. Similarly, factors such as age, race/ethnicity and previous education would need to be considered.

Overall, 8.1 percent of female awardees who matched employment had an associate degree or higher prior to receiving the award, while only 5.4 percent of males had previously earned degrees.

Interestingly, a higher percent of males than females in this cohort had earned more than one award (15.6 percent compared to 11.3 percent).

**FIGURE 11. PERCENT OF AWARDS BY GENDER, AY 2018 COHORT**



**TABLE 15. EMPLOYMENT AND WAGES BY GENDER, FIRST YEAR FOLLOWING AWARD  
AY 2018 COHORT**

Gender	Year of Employment <sup>1</sup>	Number in Cohort	Number in Cohort (not Enrolled)	Matched to Employment		Adjusted Median Wage	Percent with Previous Degree	Percent Earning More than One Award
				#	%			
Female	2019	7,878	3,955	3,615	91.4%	\$29,938	8.1%	11.3%
Male	2019	6,275	3,551	3,156	88.9%	\$35,041	5.4%	15.6%

1. AY 2018 wages defined as October 1, 2017 through September 30, 2018.

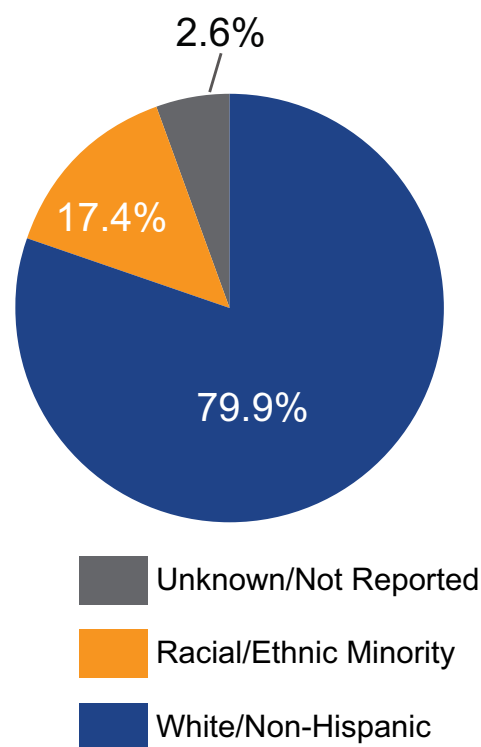
## Employment and Wages by Race/Ethnicity

Of the 7,467 award recipients in the AY 2018 cohort who did not continue their education, 17.4 percent were of a minority racial/ethnic group, 79.9 percent were white/non-Hispanic and 2.6 percent did not report race or ethnicity (Figure 12).

Table 16 provides the employment and wages of the AY 2018 award recipients who entered the workforce in the first year after graduation (i.e., did not continue their education). Racial/ethnic minority graduates matched employment at a lower rate (85.7 percent) than white/non-Hispanics (91.3 percent), and their adjusted median wage was also lower than that of white/non-Hispanics (\$28,934 and \$32,818 respectively).

Similar to the gender wage gap, in order to do a thorough analysis of the racial/ethnic wage gap among recent Iowa community college graduates, other factors would need to be controlled, such as program and award type. Similarly, factors such as age, gender and previous education would need to be considered.

**FIGURE 12. PERCENT OF AWARDS BY RACE/ETHNICITY, AY 2018 COHORT**



**TABLE 16. EMPLOYMENT AND WAGES BY RACE/ETHNICITY, FIRST YEAR FOLLOWING AWARD, AY 2018 COHORT**

Race/Ethnicity	Year of Employment <sup>1</sup>	Number in Cohort	Number in Cohort (not Enrolled)	Matched to Employment		Adjusted Median Wage	Percent with Previous Degree	Percent Earning More than One Award
				#	%			
Racial/Ethnic Minority	2019	2,447	1,206	1,033	85.7%	\$28,934	6.0%	14.6%
White/Non-Hispanic	2019	11,210	6,048	5,519	91.3%	\$32,818	6.9%	13.0%
Unknown/Not Reported	2019	369	213	185	86.9%	\$31,773	9.7%	14.6%

1. 2019 wages defined as October 1, 2018 through September 30, 2019.

## Employment and Wages by Industry Sector

Figure 13 shows the employment and median wages by industry sector for the AY 2018 cohort in the first year after award completion. The industry sectors are from the North American Industry Classification System (NAICS) code included in the Iowa and Nebraska UI, SWIS wage data were excluded due to restrictions of use. The bars represent the percentage of the cohort that matched employment records, and the dots represent the 2019 median annual wage.

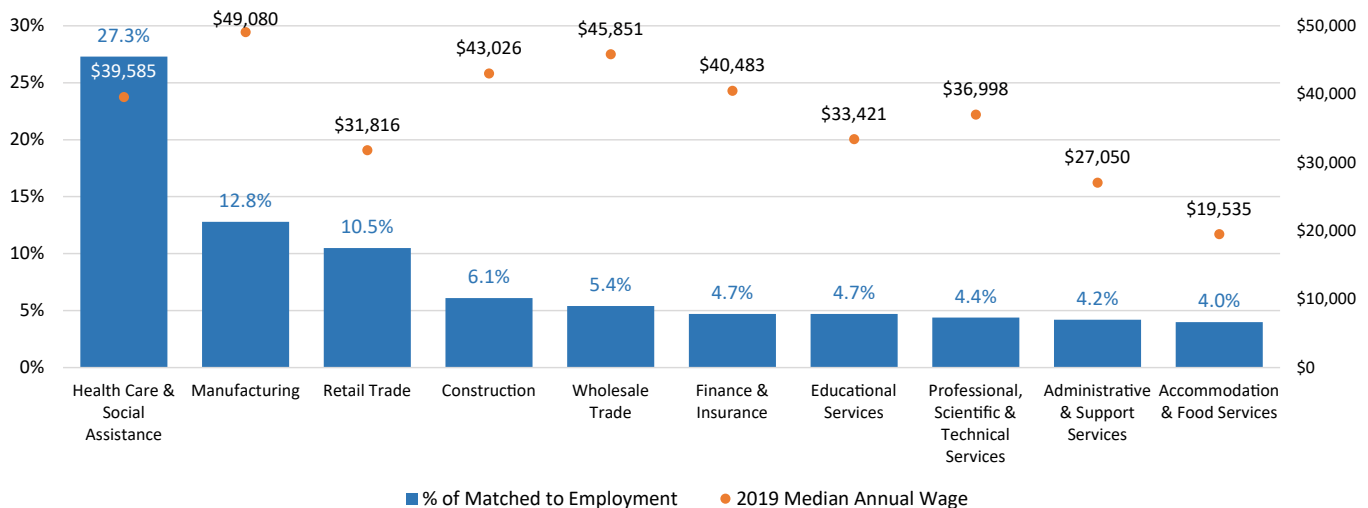
Industry sectors are defined by the type of business that an employer engages in, not the occupation of an employee (defined by the day-to-day tasks the employee performs). As an example, a person who received a degree in health science could be a pharmaceutical technician working in the pharmacy of a large retail store. While they are doing work related to the health care field and specific to their training, they are reported to be employed in the retail trade sector.

Figure 13 also illustrates that employers in the health care and social assistance industry sector employ more than twice the number of AY 2018

Iowa community college graduates (27.3 percent) than the next largest industry sector (manufacturing at 12.8 percent). The next largest industry sector, by employment, is retail trade (10.5 percent), with the remaining sectors accounting for less than seven percent each. As expected, these proportions tend to change over time. For example, the order of the five largest industry sectors of employment for AY 2013 graduates in 2018 (i.e., five years after award completion) is slightly different, with health care and social assistance still being the largest, followed by retail trade and then manufacturing. Complete industry data for all cohorts and all years can be found by accessing the link in Appendix A.

Among the industry sectors employing 250 or more AY 2018 graduates, those with the highest adjusted median wages in the year after award were utilities (\$79,647), mining (\$59,565), manufacturing (\$48,080), public administration (\$48,161), wholesale trade (\$45,851) and management of companies (\$44,252). However, it is essential to note that wages vary widely depending on the type of program the graduates completed and jobs offered in the industry.

**FIGURE 13. MEDIAN WAGES BY INDUSTRY, FIRST YEAR FOLLOWING AWARD, AY 2018 COHORT (TOP TEN INDUSTRIES BY EMPLOYMENT)**





## Employment and Wages by Award Type and Industry

Table 17 shows the employment and median wages by industry sector for the AY 2018 cohort in the first year after graduation by award type. While only the top three industry sectors by employment are shown per award type, the complete data for all cohorts and all years can be found by accessing the link in Appendix A.

As illustrated below, wages vary substantially within the same industry sector across award types, and vice versa.

For instance, the median wage for Associate of Arts (AA) recipients employed in the health care and social assistance industry sector is \$24,349 as compared to \$30,527 for those with Associate of General Studies (AGS) degrees in the same industry. However, as noted on the previous page, wage levels vary widely by program and occupations within industry sectors.

**TABLE 17. AY 2018 COHORT, 2019 INDUSTRY MEDIAN WAGES BY AWARD TYPE**

Award Type	Year of Employment <sup>1</sup>	Industry Sector of Employment	Matched to Employment		Adjusted Median Wage
			#	%	
AA	2019	Retail Trade	227	21.3%	\$20,888
AA	2019	Health Care & Social Assistance	154	14.5%	\$24,349
AA	2019	Accommodation & Food Services	110	10.3%	\$16,820
AS	2019	Health Care & Social Assistance	72	19.1%	\$18,464
AS	2019	Accommodation & Food Services	51	13.6%	\$9,281
AS	2019	Manufacturing	38	10.1%	\$20,910
AGS	2019	Health Care & Social Assistance	14	23.7%	\$30,527
AGS	2019	Accommodation & Food Services	8	13.6%	\$20,116
AGS	2019	Finance & Insurance	8	13.6%	\$38,080
AAA	2019	Retail Trade	6	18.2%	\$22,511
AAA	2019	Accommodation & Food Services	3	9.1%	\$12,675
AAA	2019	Information	3	9.1%	\$24,240
AAS	2019	Health Care & Social Assistance	1,097	35.0%	\$44,935
AAS	2019	Manufacturing	338	10.8%	\$44,553
AAS	2019	Retail Trade	280	8.9%	\$27,563
Diploma (>= 22 cr.)	2019	Health Care & Social Assistance	277	31.0%	\$30,608
Diploma (>= 22 cr.)	2019	Construction	124	13.9%	\$32,276
Diploma (>= 22 cr.)	2019	Manufacturing	119	13.3%	\$37,727
Certificate (>= 22 cr.)	2019	Manufacturing	24	19.4%	\$60,276
Certificate (>= 22 cr.)	2019	Health Care & Social Assistance	23	18.5%	\$35,761
Certificate (>= 22 cr.)	2019	Professional, Scientific & Technical Services	11	8.9%	\$37,231
Cert./Dipl. (< 22 cr.)	2019	Health Care & Social Assistance	143	31.2%	\$25,643
Cert./Dipl. (< 22 cr.)	2019	Retail Trade	55	12.0%	\$21,673
Cert./Dipl. (< 22 cr.)	2019	Manufacturing	52	11.4%	\$35,717

## Employment and Wages by CIP

When analyzing wage and employment data, it is important to note the restrictions and limitations of the Iowa and Nebraska UI data (SWIS excluded due to limitations for this analysis), as explained in the Process and Methodology section of this report. Two important factors that impact the data are: (1) the wage data only represent employees of companies that pay UI tax; and (2) the number of hours worked are not reported within the data, making it impossible to identify part- versus full-time employment. The primary reason for utilizing the median annual wage for analysis is that it mitigates the effects of outliers to provide a more accurate representation of the typical employee's wages.

Using the AY 2018 cohort of students who did not continue their education in the year following their graduation, recipients were matched to Iowa and Nebraska UI data to determine if they obtained employment within the first year after receiving their award. Figure 14 illustrates the data for those graduates who earned an Associate of Applied Science (AAS) by CIP code. For example, 98.2 percent of students who received an AAS in the registered nurse program (CIP 513801), and who did not continue their education, matched employment and earned a median annual wage of \$51,328 in 2019; while 95.3 percent of those in the automobile/automotive mechanics technology/ technician AAS program (CIP 470604) were matched to employment and earned a median annual wage of \$35,377.

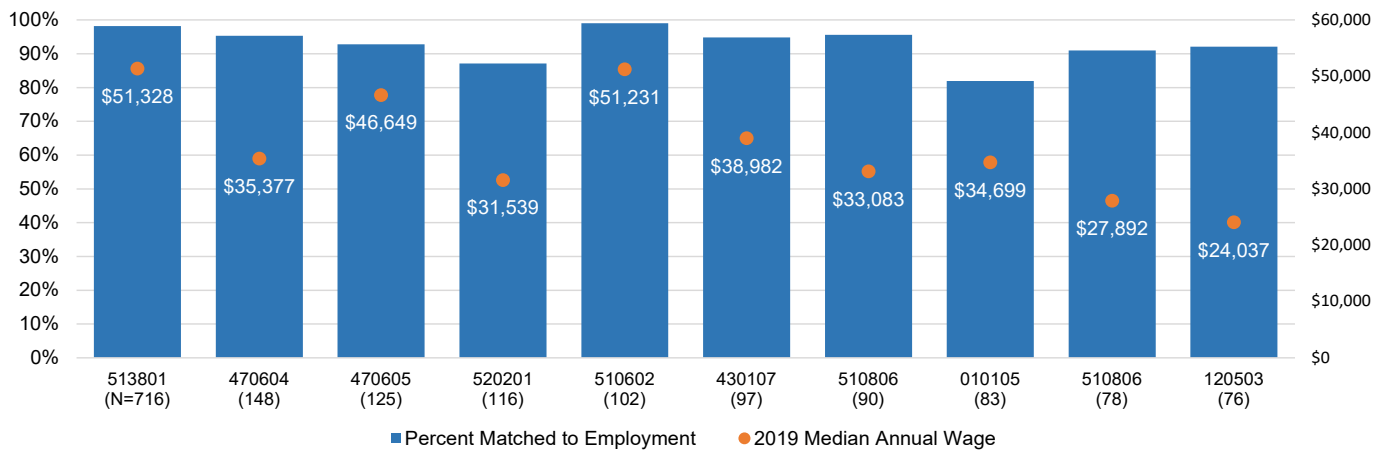
The programs with the most graduates not continuing their education in the first year after award are shown in Figures 14 to 16, while data for all other programs can be found by accessing the link found in Appendix A.

Figures 15 and 16 show the AY 2018 cohort outcomes for the largest certificate and diploma programs grouped by 22 or more credits or less than 22 program credits. Figure 15 illustrates the data for those graduates who earned a certificate or diploma requiring 22 or more credits by CIP code. For example, 98.0 percent of students who received a diploma in the lineworker program (CIP 460303), and who did not continue their education, matched employment and earned a median annual wage of \$54,596 in 2019.

Figure 16 illustrates the data for those graduates who earned a certificate or diploma requiring less than 22 credits by CIP code. For example, all (100 percent) of students who received a certificate or diploma in the dental assistant program (CIP 510601), and who did not continue their education, matched employment and earned a median annual wage of \$31,706 in 2019.

Appendix A contains data for other programs not shown here.

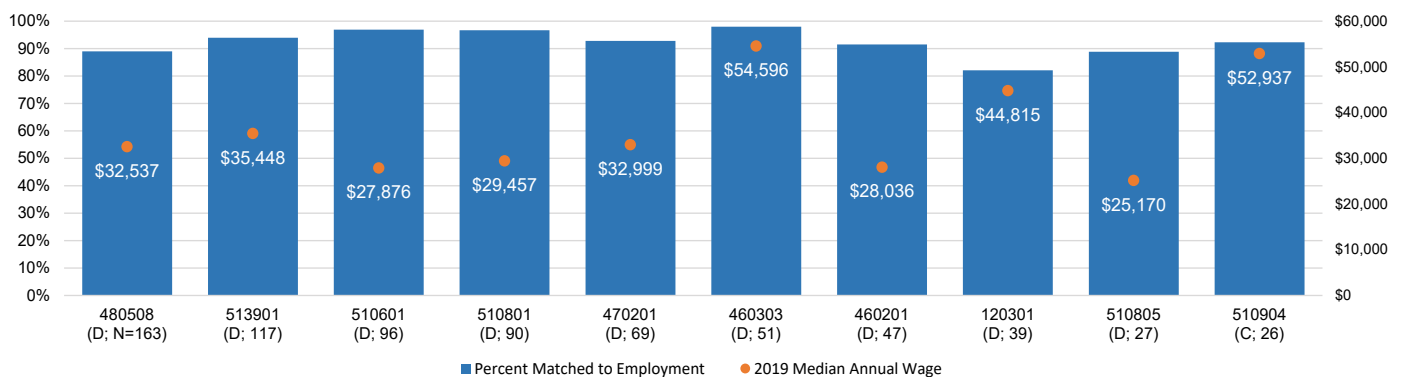
**FIGURE 14. EMPLOYMENT AND WAGES BY ASSOCIATE OF APPLIED SCIENCE (AAS) DEGREE, AY 2018 COHORT, FIRST YEAR FOLLOWING AWARD**



**Program Legend:**

- 513801: Registered Nursing/Registered Nurse
  - 470604: Automobile/Automotive Mechanics Technology
  - 470605: Diesel Mechanics Technology/Technician
  - 520201: Business Administration and Management, General
  - 510602: Dental Hygiene/Hygienist
  - 430107: Criminal Justice/Police Science
  - 510806: Physical Therapy Technician/Assistant
  - 010105: Agricultural/Farm Supplies Retailing and Wholesaling
  - 510808: Veterinary/Animal Health Technology
  - 120503: Culinary Arts/Chef Training
- See Appendix A for other CIP codes not represented above.

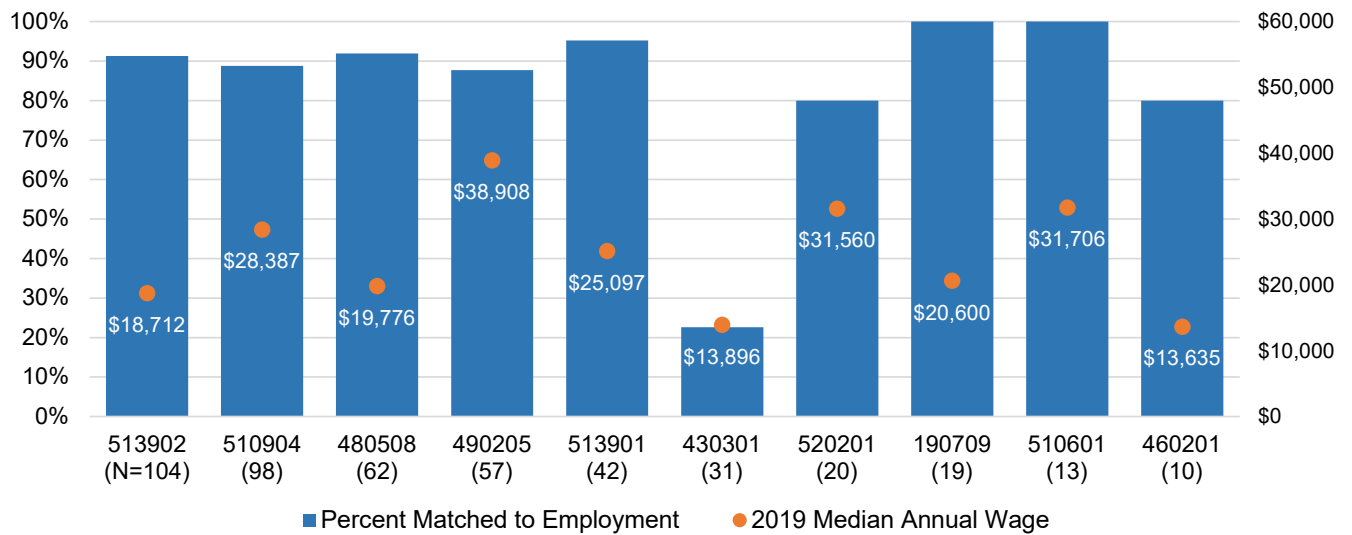
**FIGURE 15. EMPLOYMENT, AND WAGES BY CERTIFICATE (C)/DIPLOMA (D) PROGRAM (22 OR MORE CREDITS), AY 2018 COHORT, FIRST YEAR FOLLOWING AWARD**



**Certificate (C)/Diploma (D) (22 or m=More Credits) Program Legend:**

- 480508: Welding Technology/Welder
- 513901: Licensed Practical/Vocational Nurse Training
- 510601: Dental Assisting/Assistant
- 510801: Medical/Clinical Assistant
- 470201: HVAC/R Maintenance Technology/Technician
- 460303: Lineworker
- 460201: Carpentry/Carpenter
- 120301: Funeral Service and Mortuary Science, General
- 510805: Pharmacy Technician/Assistant
- 510904: Emergency Medical Technology/Technician (EMT Paramedic)

**FIGURE 16. EMPLOYMENT AND WAGES BY CERTIFICATE/DIPLOMA PROGRAM (LESS THAN 22 CREDITS),  
AY 2018 COHORT, FIRST YEAR FOLLOWING AWARD**



**Certificate/Diploma (Less than 22 Credits) Program Legend:**

- |   |                                       |
|---|---------------------------------------|
| 513902: Nursing Assistant/Aide and Patient Care Assistant/Aide  | 430301: Homeland Security             |
| 510904: Emergency Medical Technology/Technician (EMT Paramedic) | 520201: Business Administration       |
| 480508: Welding Technology/Welder                               | 190709: Child Care Provider/Assistant |
| 490205: Truck/Bus Driver/Commercial Vehicle Operator/Instructor | 510601: Dental Assisting/Assistant    |
| 513901: Licensed Practical/Vocational Nurse Training            | 460201: Carpentry/Carpenter           |

## Career Clusters

Career and technical education (CTE) in Iowa consists of educational programs offering courses designed to prepare individuals for immediate employment in current or emerging occupations. These programs consist of competency-based, applied learning opportunities that contribute to a student's academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability and occupational-specific skills.

CTE programs at the community college level can be presented as a part of the national career cluster framework. Each career cluster represents a distinct grouping of occupations and industries based on the knowledge and skills required. The following 16 career clusters and related career pathways provide an important organizing tool for schools to develop more effective programs of study and curriculum.

**Agriculture, Food and Natural Resources**  
Producing, processing, marketing, distribution, financing and development of agricultural commodities and resources.

**Architecture and Construction**  
Designing, planning, managing, building, and maintaining the built environment.

**Arts, A/V Technology and Communications**  
Designing, producing, exhibiting, performing, writing and publishing multimedia content.

**Business, Management, and Administration**  
Planning, organizing, directing and evaluating business functions essential to efficient and productive business operations.

**Education and Training**  
Planning, managing and providing education, training, and related learning support services.

**Finance**  
Planning and related services for financial and investment planning, banking, insurance and business financial management.

**Government and Public Administration**  
Planning and executing government functions at the local, state, and federal levels.

**Health Science**  
Planning, managing and providing therapeutic and diagnostic services, health informatics and biotechnology research and development.

**Hospitality and Tourism**  
Preparing individuals for employment related to restaurant and food/beverage services, lodging, travel and tourism, recreation, amusement and attractions.

**Human Services**  
Preparing individuals for employment that relates to families and human needs such as counseling and mental health services, family and community services, personal care, and consumer services.

**Information Technology (IT)**  
Building linkages in IT occupations for entry level, technical and professional careers related to the design, development, support and management of hardware, software, multimedia and systems integration services.

**Law, Public Safety, Corrections and Security**  
Planning, managing and providing legal, public safety, protective services, and homeland security.

**Marketing**  
Planning, managing and performing marketing activities to reach organizational objectives such as brand management, professional sales, merchandising, marketing, communications and market research.

**Manufacturing**  
Planning, managing and performing the processing of materials into intermediate or final products and related professional and technical support activities.

**Science, Technology, Engineering and Mathematics (STEM)**  
Planning, managing and providing scientific research and professional and technical services, including laboratory and testing, and research and development services. Please note that most STEM occupations are embedded in other career clusters.

**Transportation, Distribution and Logistics**  
Planning, managing and moving people, materials and goods by road, pipeline, air, rail and water, and related professional and technical support services such as transportation infrastructure planning, management, logistics services, mobile equipment and facility maintenance.

## Awards by Career Cluster

Career clusters represent groupings of occupational programs designed to prepare students for success in their areas of interest by concentrating on developing particular skill sets that will help them attain meaningful employment. However, when researching career clusters, it is important to note that each cluster represents multiple industries and a variety of occupations.

Table 18 illustrates the number of awards earned by Iowa community college students by career cluster from AY 2014 to AY 2018. The list also includes awards earned by students in the college parallel/liberal arts (AA and AS degrees) programs. Although some of these AA and AS degree programs focus somewhat on specific fields, such as criminal justice or business, the courses are not focused on direct employment skill development like the courses in Career and Technical Education (CTE) programs.

College parallel/liberal arts and the health science career cluster account for the majority of awards earned at Iowa's community colleges. As previously discussed, most students in college parallel/liberal arts programs transfer to continue their education; therefore, this category was separated from the CTE clusters for this analysis. Since most of the CTE career cluster graduates move directly into the workforce, they are the focus of the employment and wage research conducted for this report.

**Note:** Only 15 of the 16 career clusters are listed in Figures and Tables due to insufficient data for the Government and Public Administration career cluster.

**TABLE 18. AWARDS BY CAREER CLUSTER, AY 2014 - AY 2018**

Cluster Name	2014 Awards	2015 Awards	2016 Awards	2017 Awards	2018 Awards	Total Awards
College Parallel/Liberal Arts	5,720	5,554	6,004	5,448	5,274	28,000
Health Science Cluster	4,089	4,329	4,458	4,259	3,960	21,095
Manufacturing Career Cluster	880	1,026	1,012	929	960	4,807
Transportation, Distribution, & Logistics Cluster	599	681	773	815	693	3,561
Agriculture, Food & Natural Resource Cluster	535	624	598	674	553	2,984
Architecture & Construction Cluster	517	573	565	609	625	2,889
Business, Management & Administration Cluster	616	548	471	477	395	2,507
Information Technology Cluster	393	358	457	510	535	2,253
Human Service Cluster	367	273	360	343	322	1,665
Arts, Audio/Video Technology & Communications Cluster	282	292	321	340	291	1,526
Law, Public Safety, Corrections & Security Cluster	279	325	293	274	301	1,472
Hospitality & Tourism Cluster	223	197	262	232	206	1,120
Finance Cluster	236	229	222	202	208	1,097
Marketing Sales & Service Cluster	120	124	95	91	98	528
Science, Technology, Engineering & Mathematics Cluster	84	81	96	89	81	431
Education & Training Cluster	91	83	86	83	57	400
<b>Total</b>	<b>15,031</b>	<b>15,297</b>	<b>16,073</b>	<b>15,375</b>	<b>14,559</b>	<b>76,335</b>

## Employment by Career Cluster

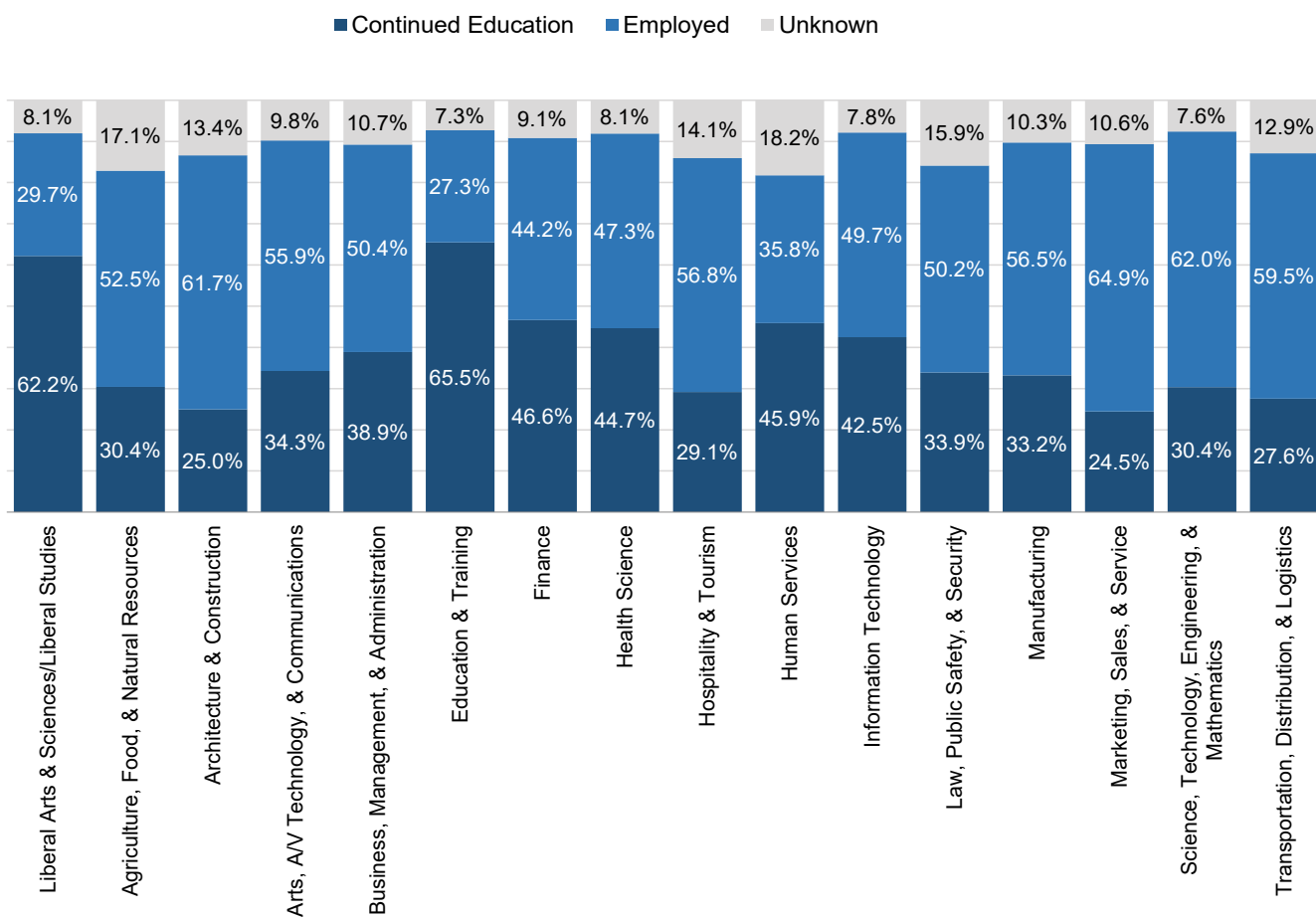
By analyzing and charting each career cluster based on the percentage of students who continued their education versus those who became employed, it is evident which clusters are targeted toward direct employment.

Analyzing the AY 2018 cohort, Figure 17 illustrates that within the first year following award completion, 47.3 percent of the health science graduates became employed, 44.7 percent continued their education and a small percentage of completers (8.1 percent) could not be found in either the NSC or the UI wage records. These award completers are denoted as “Unknown” in Figure 17.

In contrast, the liberal arts and sciences cluster, which is designed for transfer to a four-year institution, had the one of the highest rates of graduates continuing their education (65.5 percent). Naturally, this is accompanied by a lower rate of graduates entering employment after graduation (29.7 percent).

Similar data were analyzed for other cohorts and is available by accessing the link found in Appendix A.

**FIGURE 17. ENROLLMENT AND EMPLOYMENT STATUS BY CAREER CLUSTER, AY 2018 COHORT, FIRST YEAR FOLLOWING AWARD**



## Transition into the Workforce

In the previous sections, career clusters and primary industry sectors of employment were analyzed independently. However, the cross-tabulation of these two variables enables the tracking of completers within each career cluster to the industry sectors in which they secure employment.

Figure 18 provides a visualization used to relate these two variables. The Circos software, which uses polar coordinate mapping to illustrate data relationships, maps the career clusters to the primary industry of employment for each graduate in this study.

The colored bars on the left side of the circle represent career clusters, including college parallel/liberal arts, in which students earned awards. Each colored bar corresponds to one of the 17 career clusters listed on the left. The gray bars on the right side represent the industry sectors in which the graduates became employed. Each gray bar corresponds to one of the 20 aggregate industry sectors listed on the right.

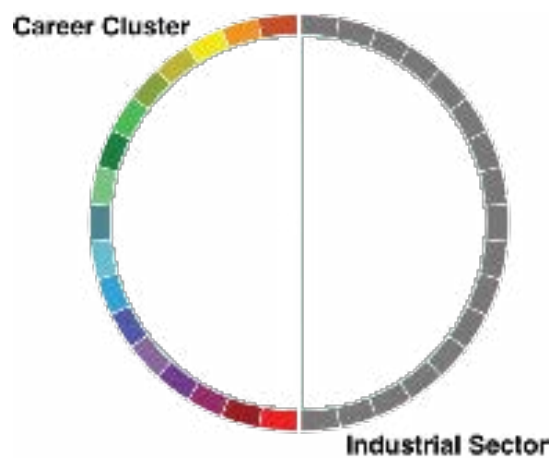
Figure 19 shows the relationship between career clusters and industry sectors for AY 2013 through AY 2017 cohorts via hundreds of ribbons connecting the career cluster graduates (left bars) to their industry sector of employment (right bars). The width of the bars on both sides illustrate the size of the overall number of graduates in each cluster and those employed within each sector. It is important to note that bars/ribbons representing data that were suppressed due to low numbers were removed from Figure 19, resulting in fewer colored and gray bars.

It is important to note that the data show the industry sectors in which completers are primarily employed, not their actual occupations. For instance, health science graduates may be pharmaceutical technicians employed by a pharmacy at a large retail store. While they are doing work related to the health care field, they are reported as employed in the retail trade sector. This distinction between occupation and industry sector is worthwhile to note when analyzing the flow from education to industry as illustrated in Figures 19 and 20 on the following pages.

**FIGURE 18. CIRCOS VISUALIZATIONS**

### Career Cluster

- College Parallel/Liberal Arts
- Agriculture, Food & Natural Resource
- Architecture & Construction
- Arts, Audio/Video Technology & Communications
- Business, Management & Administration
- Education & Training
- Finance
- Government & Public Administration
- Health Science
- Hospitality & Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections & Security
- Manufacturing Career
- Marketing Sales & Service
- Science, Technology, Engineering & Mathematics
- Transportation, Distribution & Logistics



### Industry Cluster

- Accommodation & Food Services
- Admin. Support, Waste Mgmt. & Remediation
- Agriculture, Forestry, Fishing & Hunting
- Arts, Entertainment & Recreation
- Construction
- Educational Services
- Finance & Insurance
- Health Care & Social Assistance
- Information Technology
- Management of Companies & Enterprises
- Manufacturing
- Mining
- Other Services
- Professional, Scientific & Tech. Services
- Public Administration
- Real Estate, Rental & Leasing
- Retail Trade
- Transportation & Warehousing
- Utilities
- Wholesale Trade

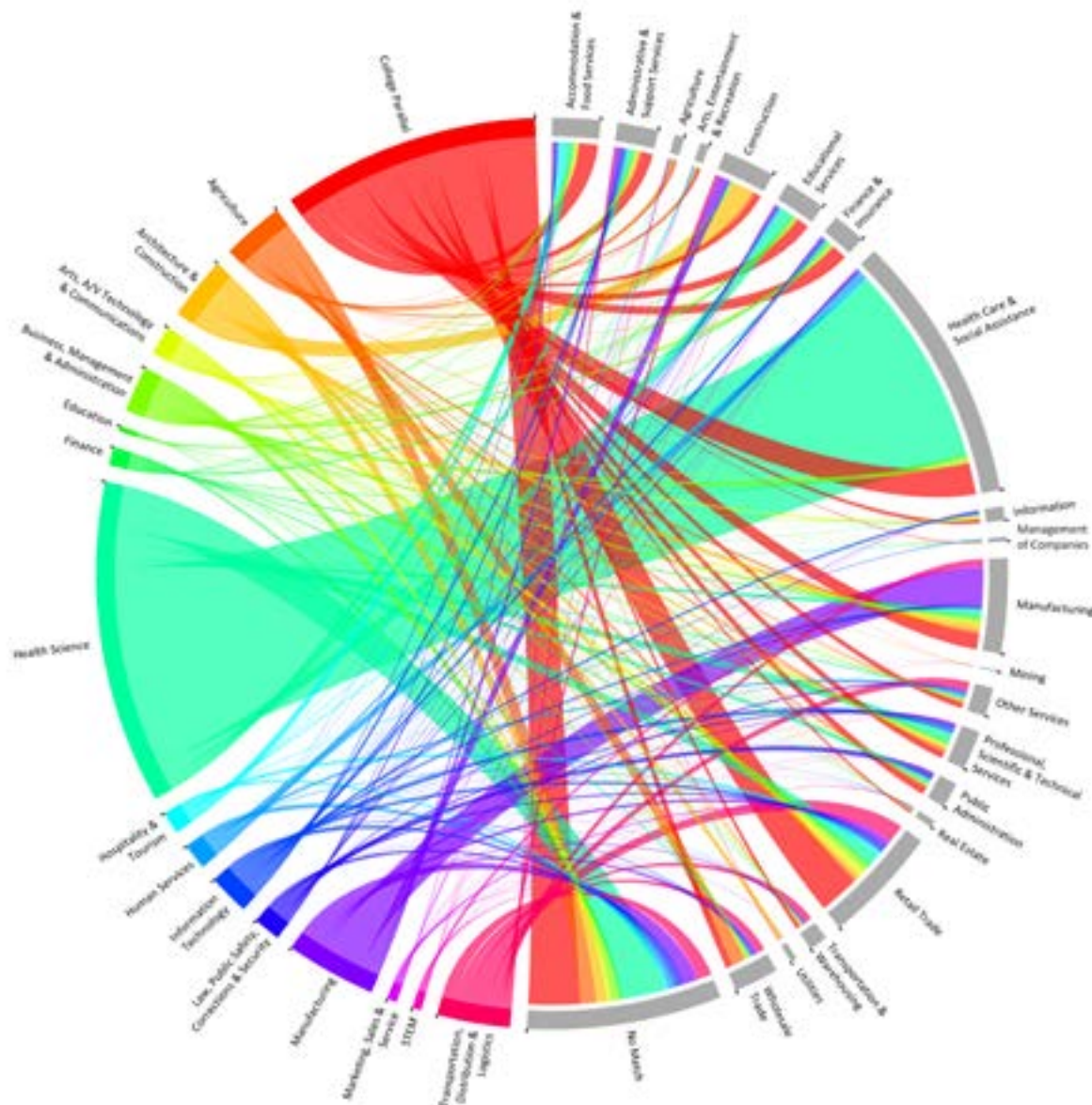


## Cluster to Industry

As previously mentioned, students who chose the college parallel/liberal arts program of study and the health science career cluster represent the largest portion of AY 2014 to AY 2018 graduates, which explains why the red (top left) and green (mid left) sectors cover the most area in Figure 19. All graduates who did not continue their education within one year of graduation are graphically represented in this figure, with the “No Match” (mid-bottom) section corresponding to those

graduates who did not match UI wage records. This diagram illustrates that the majority of health science completers obtained employment within the health care and social assistance industry; however, this career cluster provided workers in nearly every industry. The college parallel completers were largely disbursed as well, with their largest industry sectors of employment being retail trade, health care and social assistance.

FIGURE 19. CLUSTER TO INDUSTRY MAPPING FOR AY 2014 TO AY 2018 COMMUNITY COLLEGE GRADUATES

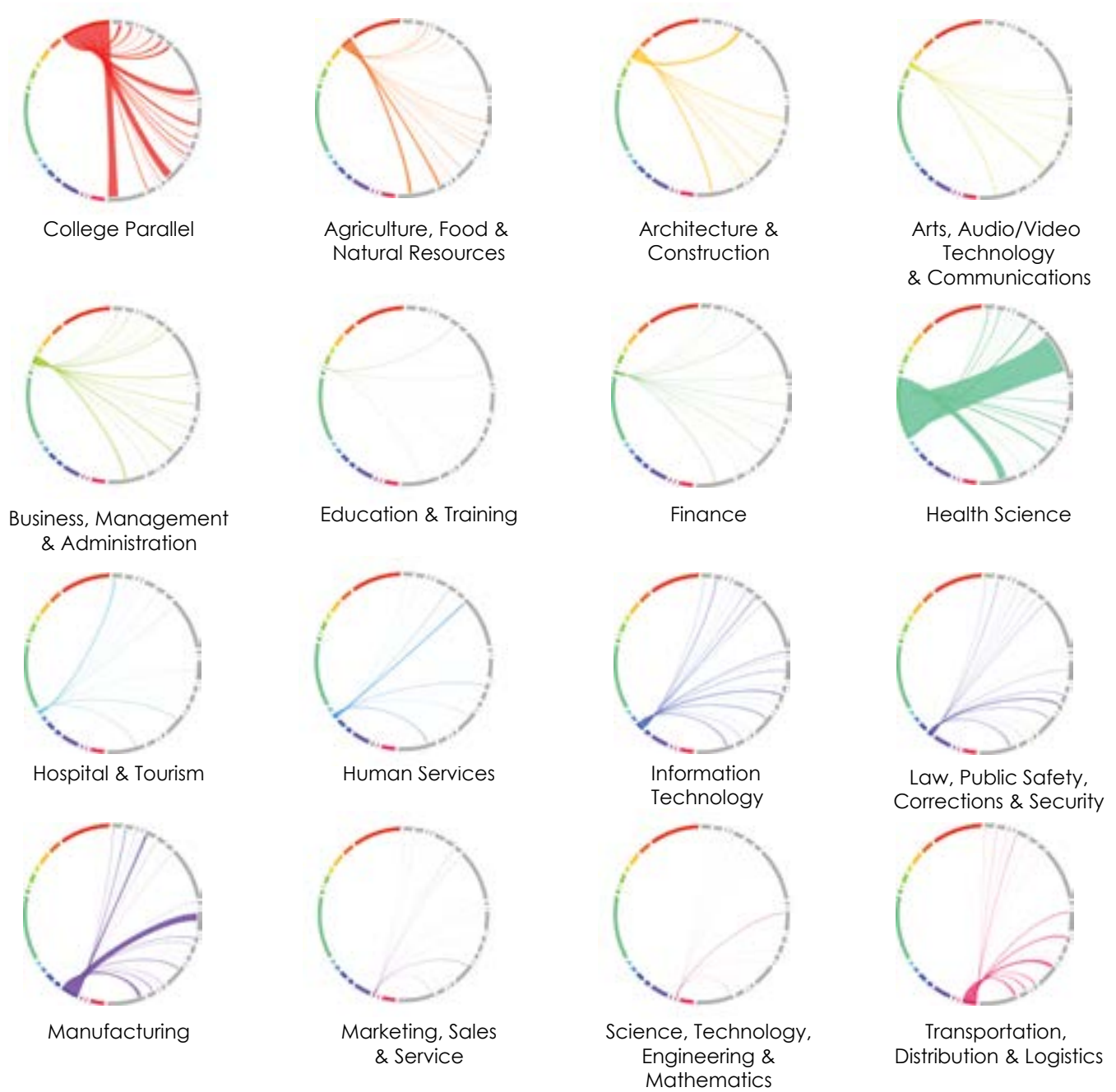


**Note:** Ribbons representing cells that are suppressed in the data are not shown in this visualization.

The circular graphics in Figure 20 illustrate each award category (i.e., career clusters and college parallel program) on the left side of the circle aligning with the industry in which each graduate gained employment.

This is simply Figure 19 separated into 16 individual graphics for each career cluster to make it easier to distinguish industry patterns within a cluster.

**FIGURE 20. INDUSTRY MAPPING BY CLUSTER, AY 2014 TO AY 2018, COMMUNITY COLLEGE GRADUATES**



**Note:** Ribbons representing cells that are suppressed in the data are not shown in this visualization.

## Employment and Wage Record Methodology

- » All wages for this report originate either from the Iowa or Nebraska Unemployment Insurance (UI) wage databases or the State Wage Interchange System (SWIS) network of state UI wage databases.
- » Both the actual wage earned (“Unadjusted Median Wage”) and the wage adjusted for inflation (“Adjusted Median Wage”) are included in all wage-related tables. Wages are adjusted for inflation to the academic year 2018 (October 2017 - September 2018) levels (CPI-u = 249.7485) in order to make longitudinal comparisons more legitimate using the Consumer Price Index (CPI-u) as calculated by the U.S. Bureau of Labor Statistics. The formula used for adjusting wages is as follows:

$$W_{adj} = \frac{CPI_t}{CPI_{base}} = W_t$$

where CPI<sub>base</sub> is the CPI value of the base time period (AY 2018), CPI<sub>t</sub> is the CPI value of the time period being adjusted from and W<sub>t</sub> is the wage of the time period being adjusted. Wages are adjusted after they have been aggregated by academic year (using academic year average CPI values).

- » The aggregate wages reported throughout this report do not include those graduates who did not match with a record in the UI wage database (i.e., the median wages only include those who had wages covered by employer UI tax during that year).
- » All wage estimates in the report include ALL wages in the UI wage database for that person in that year. Each individual is associated with just one industry sector and state in each year, and that assignment

is based on the industry sector/ state of the employer they earned the most wages within that year. So, for example, if Lincoln earned \$20,000 in the manufacturing industry sector and \$8,000 in the retail trade industry sector in 2018, Lincoln would be included in the overall employment and wages table with a gross wage of \$28,000. In the employment and wages by industry sector table, he would be included under the manufacturing industry sector with a gross wage of \$28,000 (he would not be counted in retail trade, but the wages he earned in that sector would still be counted).

- » Median wages are used in this report rather than average wages to mitigate the effect of outliers. Wage distributions are typically right- skewed, so the median is a better measure of center than the mean which is pulled in the direction of the skew (and is more affected by outliers, particularly with small sample sizes)
- » To protect individual identities, small sample size cells were suppressed using the following rules:
  1. Suppress data within the cell if number of employed in the cell is less than three.
  2. If the sum of employed individuals across all suppressed subgroups is less than three, suppress the next smallest subgroup (to ensure the number of suppressed individuals is three or higher).

## References

Institute of Educational Sciences, National Center for Education Statistics, *Classification of Instructional Programs*. Retrieved from <http://nces.ed.gov/>.

Krzywinski, M. I., Schein, J.E., Birol, I., Connors, J., Gascoyne, R., Horsman, D., Jones, S.J., and Marra, M.A. (2009). *Circos: an Information Aesthetic for Comparative Genomics*. Retrieved from <http://www.circos.ca/>.

## Appendix A

Below is a list of the detailed data tables for this report. There is one Excel spreadsheet that contains data for each cohort (AY 2014, AY 2015, AY 2016, AY 2017 and AY 2018) as well as all five combined. It contains statewide data as well as data broken out by each community college. It can be accessed at: <https://www.educateiowa.gov/iowa-community-college-program-outcomes>.

Table 1a: Overall Employment and Wages (Iowa\_Nebraska)

Table 1b: Overall Employment and Wages (Including SWIS)

Table 2: Overall Employment and Wages by State of Employment

Table 3: Overall Employment and Wages by Industry Sector of Employment

Table 4a: Employment and Wages by Gender (Iowa\_Nebraska)

Table 4b: Employment and Wages by Gender (Including SWIS)

Table 5: Employment and Wages by Gender by State of Employment

Table 6: Employment and Wages by Gender by Industry Sector of Employment

Table 7a: Employment and Wages by Gender by Age (Iowa\_Nebraska)

Table 7b: Employment and Wages by Gender by Age (Including SWIS)

Table 8a: Employment and Wages by Age (Iowa\_Nebraska)

Table 8b: Employment and Wages by Age (Including SWIS)

Table 9: Employment and Wages by Age by State of Employment

Table 10: Employment and Wages by Age by Industry Sector of Employment

Table 11a: Employment and Wages by Race/Ethnicity (Iowa\_Nebraska)

Table 11b: Employment and Wages by Race/Ethnicity (Including SWIS)

Table 12: Employment and Wages by Race/Ethnicity by State of Employment

Table 13: Employment and Wages by Race/Ethnicity by Industry Sector of Employment

Table 14a: Employment and Wages by Race/Ethnicity by Age (Iowa\_Nebraska)

Table 14b: Employment and Wages by Race/Ethnicity by Age (Including SWIS)

Table 15a: Employment and Wages by Award Type (Aggregated) (Iowa\_Nebraska)

Table 15b: Employment and Wages by Award Type (Aggregated) (Including SWIS)

Table 16: Employment and Wages by Award Type (Aggregated) by State of Employment

Table 17: Employment and Wages by Award Type (Aggregated) by Industry Sector of Employment

Table 18a: Employment and Wages by Award Type (Iowa\_Nebraska)

Table 18b: Employment and Wages by Award Type (Including SWIS)

Table 19: Employment and Wages by Award Type by State of Employment

Table 20: Employment and Wages by Award Type by Industry Sector of Employment

Table 21: Employment and Wages by Program (CIP) by Award Type

Table 21: Employment and Wages by Program (CIP) by Award Type

Table 22: Employment and Wages by Program (CIP) by Award Type by State of Employment

Table 23: Employment and Wages by Program (CIP) by Award Type by Industry Sector of Employment



The Division of Community Colleges and Workforce Preparation within the Iowa Department of Education administers a variety of diverse programs that enhance Iowa's educational system and help to prepare a skilled and knowledgeable workforce. Divided between two bureaus — the Bureau of Community Colleges and the Bureau of Career and Technical Education — the Division is committed to providing and supporting opportunities for lifelong learning. In addition to working with Iowa's 15 public community colleges on state accreditation, program approval, equity review, and data reporting, guidance is also provided in the areas of career and technical education, workforce training and economic development, adult education and literacy, military education, the state mandated OWI education program, the GAP Tuition and PACE programs, Senior Year Plus, the National Crosswalk Service Center, and the Statewide Intermediary Network program.