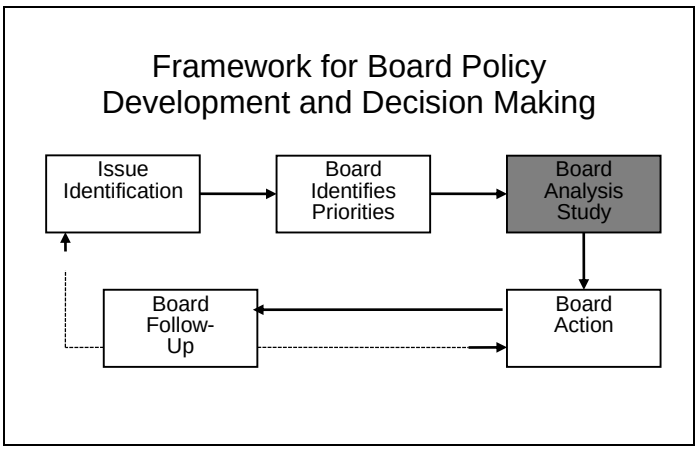
Iowa State Board of Education

Executive Summary

March 31, 2016



Agenda Item: Community College Program Outcomes Report

Iowa Goal: Individuals will pursue postsecondary education in order to drive economic success.

State Board Role/Authority: This report is presented for information only as the State Board provides leadership and advocacy for the education system in Iowa.

Presenters: Barbara Burrows, Chief
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Paula Nissen, Education Program Consultant
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Attachments: 1

Recommendation: It is recommended that the State Board hear and discuss this information.

Background: This is an annual report providing educational outcomes of students enrolled in community college certificate, diploma, and associate degree programs during fiscal years 2010 through 2014. Developed through linkages between state and national educational and employment administrative records, the report provides information about community college awards, time-to-degree, retention, migration, transfers to other postsecondary institutions, employment and wages, and career clusters.

Education Outcomes

Certificate, Diploma, and Associate Degree Programs

Iowa Community Colleges

Academic Year 2010 to Academic Year 2014

March 2016

Community Colleges

Prosperity through education

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This report was prepared through a partnership between the Iowa Department of Education's Division of Community Colleges, and the Iowa Workforce Development's Labor Market Information Division.

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IOWA WORKFORCE DEVELOPMENT

Preface

In 2015, the Iowa Department of Education's Division of Community Colleges worked with Iowa Workforce Development and Georgetown University's Center on Education and the Workforce to perform a study of the education or training needs of employers in Iowa compared to the current education level of Iowans.

The study revealed that, by 2025, about 68 percent of all jobs in Iowa will require some postsecondary training or education beyond high school. The subsequent report stated:

> *Since the 1980s, education or training beyond high school has become the new minimum threshold for Americans to earn a living wage and attain middle class status. In 1973, only 28 percent of U.S. jobs required education beyond a high school diploma; by 2025, almost two out of three jobs in the nation will require at least some postsecondary education or training. Iowa's economy reflects this national trend and demonstrates a steady increase in the demand for postsecondary education and training in the industries that form the mainstay of the national economy.*

In response to this report, Iowa Governor Terry Branstad set a goal which calls for 70 percent of Iowans in the workforce to have education or training beyond high school by 2025. This will provide more Iowans with expanded career opportunities, and employers with the skilled workers they need .

Iowa's community colleges are the state's largest postsecondary education sector, offering a wide range of education and training programs designed to meet state and regional economic needs. Due to their responsiveness and commitment to workforce training, these institutions are well positioned to prepare the skilled workers of the future. To track progress toward this goal, the Iowa Department of Education partnered with Iowa Workforce Development to link state and national education and workforce data sets to monitor the outcomes of students enrolled in Iowa's 15 community colleges.

This report provides information about community college awards, time-to-degree, retention, migration, transfer to four-year institutions, employment and wages, and career clusters. Five student cohorts were established for this report and will be tracked longitudinally to capture wage growth of those completing Iowa community college education and training programs.

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Iowa Community College Education Outcomes:
Certificate, Diploma, and Associate Degree Programs

The *Iowa Community College Education Outcomes: Certificate, Diploma, and Associate Degree Programs Report*, published annually, is an attempt to answer the elusive questions regarding the outcomes of students completing community college programs. This report, and other related resources, provides institutional data designed to inform community college administrators and policymakers as they engage in planning and program improvement.

Throughout this report, employment and earnings are analyzed to illustrate the important impact that the education and training provided by Iowa's community colleges has on employment and wages. 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 research for the purposes of this report.

Coinciding with the programs, five annualized cohorts of student award recipients were studied regarding their subsequent employment and wages (academic years [AY] 2010, 2011, 2012, 2013, and 2014). These cohorts will be studied longitudinally for a period of five years after graduation. The research is limited to five years because previous program outcomes research regarding two-year college education revealed that wages plateau within a five-year period.

Unit record tracking of student data is a 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 (IDOE) and Iowa Workforce Development (IWD) have overcome this hurdle by forming a partnership dedicated to evaluating and reporting education outcomes for community college programs as they relate to certificate, diploma, and associate degree awards.

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

Process and Methodology

In order to properly conduct the research for this report, data criteria was established based on less than or more than 22 credit hours for associate, diploma, and certificate awards. The 22 credit-hour threshold is the threshold between long-term and short-term programs within the Community College Management Information System (MIS) at the Iowa Department of Education (IDOE). All data were extracted from the MIS and grouped based on this threshold, and the credential's award date. This award date is referenced throughout this report as academic year (example: grouped September 1, 2013, to August 31, 2014, is AY 2014). Students who received awards in AY 2010, AY 2011, AY 2012, AY 2013, or AY 2014 are analyzed in this report.

Once the data were extracted from the MIS, they were sent by annual cohort to the National Student Clearinghouse (NSC) to identify the students who continued education after receiving their community college awards. 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-year or four-year, and private or public) and by transfer location, allowing for the study of graduate out-migration.

Before tracking the students into the workforce, those students with multiple awards were flagged as such, and then deduplicated, so that each student could be tracked based on his or her 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 awarded programs.

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), Associate of Arts (AA), Diploma, Certificate-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 Unemployment Insurance (UI) wage records* is conducted using SSN.

Once deduplicated, the data were then sent via secure file transfer to IWD in order 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. Quarterly wages are reported aggregating by the following dates:.

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 order to report annually, and attempt to match the academic year, the quarterly wages were aggregated October 1 (Quarter 4) to September 30 (Quarter 3), which are the dates that most closely align with Iowa's community colleges' academic year.

Furthermore, due to the confidentiality of the wage record data, IWD processed the records based on the research objectives and sent back aggregate data for IDOE analysts to interpret and use in this report. The data from the IDOE and IWD were thoroughly scrutinized to maintain confidentiality and abide by all rules, regulations, and restrictions for each of the data sources. Additionally, data sharing agreements have gone through rigorous legal review.

**The UI wage records do not cover those 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.*

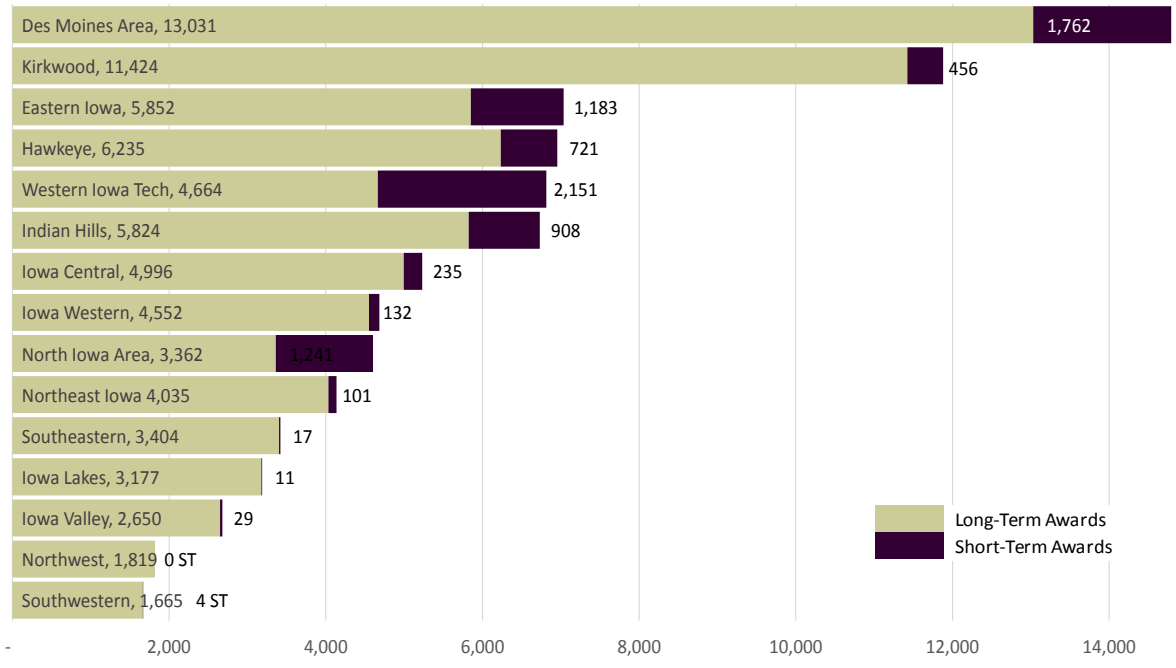
Statewide Total Awards

For this portion of the report, an aggregate analysis of 85,641 short– and long-term awards received by Iowa community college students from AY 2010 through AY 2014 was conducted. Though each college yielded a different number of total awards, in aggregate there were 59,138 associate degrees, 15,447 long-term diplomas, 2,105 long-term certificates, 159 short-term diplomas, and 8,792 short-term certificates awarded to graduates by the 15 Iowa community colleges during academic years 2010 to 2014 (see Figure 1). Transfer status (further education), employment, wages, and time-to-degree are analyzed by award type in addition to long- or short-term timeframes later in this report. When referencing total awards, duplicative records were used. However, 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 hierarchal 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/community-colleges.

Figure 1. AY 2010 to AY 2014 Total Long- and Short-Term Awards by Iowa Community College



Awards by Classification of Instructional Program

The purpose of the Classification of Instructional Program (CIP) is to provide a taxonomic scheme to enable the tracking, assessment, and reporting of fields of study and program completion. The CIP system was originally developed by the U.S. Department of Education's National Center for Education Statistics (NCES) in 1980.

The majority of data contained within this report is analyzed at the two-digit CIP level. Appendix A, and the accompanying on-line tables, contain detailed information for six-digit program-level data. Figure 2 lists the program descriptions at the two-digit CIP level and the number of awards earned by Iowa's community college students in each academic year from 2010 to 2014.

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

Figure 2. AY 2010 to AY 2014 Statewide Awards by Two-Digit CIP

2-Digit CIP Code	Description	AY2010	AY2011	AY2012	AY2013	AY2014	Total
24	Liberal Arts & Sciences, General Studies	5,449	5,964	6,473	6,295	6,090	30,271
51	Health Professions & Related	4,201	4,424	4,704	4,562	4,320	22,211
52	Business Management, Marketing & Related	1,430	1,599	1,700	1,732	1,536	7,997
47	Mechanics & Repairers, General	766	982	939	1,012	883	4,582
11	Computer and Information Sciences & Support Services	523	595	698	753	691	3,260
48	Precision Production Trades	388	530	548	553	619	2,638
01	Agriculture	452	543	544	578	515	2,632
15	Engineering Technologies & Engineering Related	361	412	504	527	489	2,293
46	Construction Trades	286	303	344	275	259	1,467
19	Family & Consumer Sciences/Human Sciences	317	311	280	294	253	1,455
43	Homeland Security, Law Enforcement, Firefighting & Related Protective Services	192	291	256	312	296	1,347
12	Personal & Culinary Services	173	198	217	236	251	1,075
50	Visual & Performing Arts	134	141	200	164	183	822
16	Foreign Languages, Literature & Linguistics	204	164	170	150	46	734
10	Communications Technologies/Technicians & Support Services	126	157	153	126	155	717
44	Human Services	73	88	127	91	98	477
30	Multi/Interdisciplinary Studies	65	105	85	59	64	378
03	Natural Resources & Conservation	69	78	88	68	74	377
22	Legal Professions & Studies	54	85	64	72	53	328
41	Science Technologies/Technicians	2	13	8	65	61	149
49	Transportation & Materials Moving	35	26	27	22	22	132
14	Engineering	21	16	22	13	11	83
26	Biological & Biomedical Sciences	5	7	12	8	25	57
11	Parks, Recreation, Leisure & Fitness Studies	7	18	6	13	9	53
34	Health Related Knowledge & Skills	5	10	2	6	11	34
09	Communication, Journalism & Related Programs	10	4	3	5	9	31
45	Social Sciences	7	12	8	1	0	28
13	Education	0	5	3	4	1	13
	Total	15,355	17,081	18,185	17,996	17,024	85,641

Associate Degrees by CIP—AY 2010 to AY 2014 Totals

During academic years 2010 through 2014, there were seven types of associate degrees awarded by Iowa community colleges, analyzed separately on the following pages. These award types are:

- Associate of Arts (AA)
- Associate of Applied Arts (AAA)
- Associate of General Studies (AGS)
- Associate of Science/Career Option (ASCO)
- Associate of Science (AS)
- Associate of Applied Science (AAS)
- Associate of Professional Studies (APS)

Figure 3 contains an aggregation of all associate degrees awarded in AY 2010 through AY 2014. Liberal arts and sciences accounts for over 50 percent of all such degrees awarded (51.4 percent in AY 2010, 50.4 percent in AY 2011, 51.3 percent in AY 2012, 51.9 percent in AY 2013, 50.9 percent in AY 2014).

Figure 3. AY 2010 to AY 2014 Associate Degrees by Two-Digit CIP

2-Digit CIP Code	Description	AY2010	AY2011	AY2012	AY2013	AY2014	Total Associate Degrees
24	Liberal Arts and Sciences, General Studies	5,449	5,964	6,473	6,295	6,090	30,271
51	Health Professions and Related	1,844	2,016	2,143	2,079	2,153	10,235
52	Business Management, Marketing and Related	823	899	922	872	785	4,301
47	Mechanics and Repairers, General	408	597	599	577	555	2,736
01	Agriculture	341	401	421	434	413	2,010
15	Engineering Technologies and Engineering Related	322	353	381	352	419	1,827
11	Computer and Information Sciences and Support Services	243	303	347	347	344	1,584
43	Homeland Security, Law Enforcement, Firefighting and Related Protective Services	276	291	331	236	233	1,367
12	Personal and Culinary Services	124	134	145	154	132	689
10	Communications Technologies/Technicians and Support Servies	116	140	112	110	136	614
50	Visual and Performing Arts	108	110	118	93	113	542
48	Precision Production Trades	112	112	93	86	111	514
19	Family and Consumer Sciences/Human Sciences	81	94	115	127	92	509
44	Humans Services	66	76	103	82	89	416
46	Construction Trades	94	85	85	68	78	410
30	Multi/Interdisciplinary Studies	64	72	79	58	64	337
03	Natural Resources and Conservation	40	42	46	42	48	218
22	Legal Professions and Studies	34	54	39	44	33	204
16	Foreign Languages, Literatures and Linguistics	9	12	25	18	22	86
14	Engineering	16	15	21	13	10	75
26	Biological and Biomedical Sciences	7	18	5	12	4	46
31	Parks, Recreation, Leisure and Fitness Studies	5	7	12	8	9	41
49	Transporation and Materials Moving	4	8	5	10	10	37
41	Science Technologies/Technicians	5	10	2	6	11	34
09	Communication, Journalism and Related Programs	8	2	1	3	5	19
45	Social Sciences	-	5	3	4	1	13
34	Health Related Knowledge and Skills	-	2	-	1	-	3
13	Education	-	-	-	-	-	-
	Total	10,599	11,822	12,626	12,131	11,960	59,138

Associate Degrees by CIP—AY 2010

Figure 5 below illustrates the number of associate degrees by award type for AY 2010, listed in descending order of total awards. Associate of Arts (AA) and Associate of Applied Science (AAS) degrees accounted for 86.7 percent of associate degrees earned in Iowa's community colleges in AY 2010, as illustrated in Figure 4.

The AAS and Associate of Science/Career Option (ASCO) degrees are awarded in a wide variety of career-oriented programs. The Associate of Arts (AA), Associate of Sciences (AS), and Associate of General Studies (AGS) degree programs are designed to prepare students for further education.

Figure 4. Percent of Associate Degrees, AY 2010

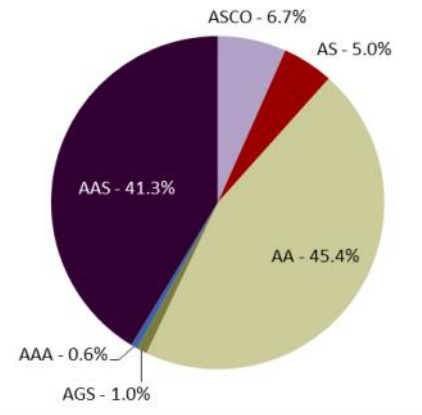


Figure 5. AY 2010 Associate Degrees by Two-Digit CIP

2-Digit CIP Code	2-Digit CIP Code Description	ASCO	AS	AA	AGS	AAA	AAS	Total
24	Liberal Arts & Sciences, General Studies	-	526	4,815	107	-	1	5,449
51	Health Professions & Related	18	-	-	-	-	1,826	1,844
52	Business Management, Marketing & Related	299	-	-	-	-	524	823
47	Mechanics & Repairers, General	-	-	-	-	-	408	408
1	Agriculture	13	-	-	-	-	328	341
15	Engineering Technologies & Engineering Related	1	-	-	-	-	321	322
43	Homeland Security, Law Enforcement, Firefighting & Related Protective Services	156	-	-	-	-	120	276
11	Computer and Information Sciences & Support Services	36	-	-	-	-	207	243
12	Personal & Culinary Services	1	-	-	-	-	123	124
10	Communications Technologies/Technicians & Support Services	9	-	-	-	16	91	116
48	Precision Production Trades	-	-	-	-	-	112	112
50	Visual & Performing Arts	4	-	-	-	51	53	108
46	Construction Trades	-	-	-	-	-	94	94
19	Family and Consumer Sciences/Human Sciences	36	-	-	-	-	45	81
44	Human Services	58	-	-	-	-	8	66
30	Multi/Interdisciplinary Studies	-	-	-	-	-	64	64
3	Natural Resources & Conservation	16	-	-	-	-	24	40
22	Legal Professions & Studies	33	-	-	-	-	1	34
14	Engineering	-	-	-	-	-	16	16
16	Foreign Languages, Literature & Linguistics	3	-	-	-	-	6	9
9	Communication, Journalism & Related Programs	8	-	-	-	-	-	8
26	Biological & Biomedical Sciences	3	-	-	-	-	4	7
31	Parks, Recreation, Leisure & Fitness Studies	5	-	-	-	-	-	5
41	Science Technologies/Technicians	4	-	-	-	-	1	5
49	Transportation & Materials Moving	2	-	-	-	-	2	4
13	Education	-	-	-	-	-	-	-
34	Health Related Knowledge & Skills	-	-	-	-	-	-	-
45	Social Sciences	-	-	-	-	-	-	-
Total		**705**	**526**	**4,815**	**107**	**67**	**4,379**	**10,599**

Associate Degrees by CIP—AY 2011

As illustrated in figures 6 and 7, AY 2011 had a similar distribution to AY 2010; however, there was an increase of 1,223 associate degrees. The largest percentage increase was in the Associate of General Studies (AGS) degree, followed by the Associate of Science (AS).

Notably, the number of degrees awarded of each type increased with the exception of Associate of Applied Arts (AAA), which remained virtually the same as the previous year.

Figure 6. Percent of Associate Degrees, AY 2011

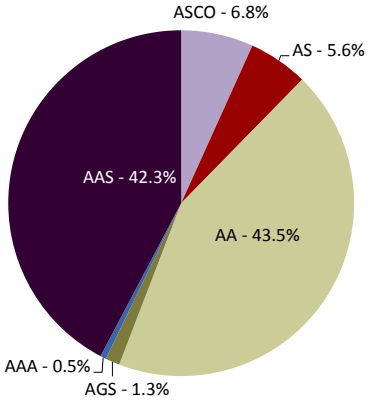


Figure 7. AY 2011 Associate Degrees by Two-Digit CIP

2-Digit CIP Code	2-Digit CIP Code Description	ASCO	AS	AA	AGS	AAA	AAS	Total
24	Liberal Arts & Sciences, General Studies	-	659	5,143	158	-	4	5,964
51	Health Professions & Related	28	-	-	-	-	1,988	2,016
52	Business Management, Marketing & Related	360	-	-	-	-	539	899
47	Mechanics & Repairers, General	-	-	-	-	-	597	597
01	Agriculture	10	-	-	-	-	391	401
15	Engineering Technologies & Engineering Related	-	-	-	-	-	353	353
11	Computer and Information Sciences & Support Services	36	-	-	-	-	267	303
43	Homeland Security, Law Enforcement, Firefighting & Related Protective Services	149	-	-	-	-	142	291
10	Communications Technologies/Technicians & Support Services	14	-	-	-	21	105	140
12	Personal & Culinary Services	-	-	-	-	-	134	134
48	Precision Production Trades	-	-	-	-	-	112	112
50	Visual & Performing Arts	8	-	-	-	44	58	110
19	Family and Consumer Sciences/Human Sciences	32	-	-	-	-	62	94
46	Construction Trades	-	-	-	-	-	85	85
44	Human Services	68	-	-	-	-	8	76
30	Multi/Interdisciplinary Studies	-	-	-	-	-	72	72
22	Legal Professions & Studies	43	-	-	-	-	11	54
03	Natural Resources & Conservation	17	-	-	-	-	25	42
26	Biological & Biomedical Sciences	12	-	-	-	-	6	18
14	Engineering	-	-	-	-	-	15	15
16	Foreign Languages, Literature & Linguistics	2	-	-	-	-	10	12
41	Science Technologies/Technicians	6	-	-	-	-	4	10
49	Transportation & Materials Moving	5	-	-	-	-	3	8
31	Parks, Recreation, Leisure & Fitness Studies	7	-	-	-	-	-	7
45	Social Sciences	-	-	-	-	-	5	5
09	Communication, Journalism & Related Programs	2	-	-	-	-	-	2
34	Health Related Knowledge & Skills	-	-	-	-	-	2	2
13	Education	-	-	-	-	-	-	-
Total		**799**	**659**	**5,143**	**158**	**65**	**4,998**	**11,822**

Associate Degrees by CIP—AY 2012

Associate degrees awarded by Iowa's community colleges increased by 6.8 percent (Figure 8) in AY 2012, totaling 12,626 as compared to 11,822 in AY 2011.

The largest increase in AY 2012 was in the number of Associate of General Studies (AGS) degrees awarded, increasing from 158 awards to 487 (Figure 9).

In AY 2012, awards in liberal arts and sciences, and health professions increased by 636 (8.0 percent), accounting for the majority of the total 804 additional degrees awarded during the year.

Figure 8. Percent of Associate Degrees, AY 2012

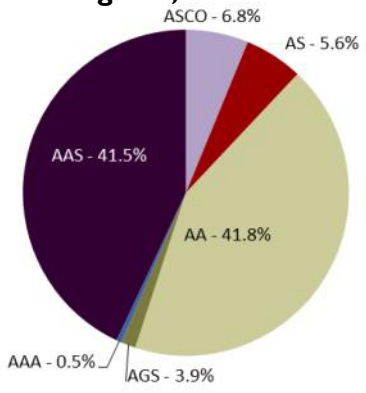


Figure 9. AY 2012 Associate Degrees by Two-Digit CIP

2-Digit CIP Code	2-Digit CIP Code Description	ASCO	AS	AA	AGS	AAA	AAS	Total
24	Liberal Arts & Sciences, General Studies	-	704	5,282	487	-	-	6,473
51	Health Professions & Related	45	-	-	-	-	2,098	2,143
52	Business Management, Marketing & Related	314	-	-	-	-	608	922
47	Mechanics & Repairers, General	-	-	-	-	-	599	599
1	Agriculture	11	-	-	-	-	410	421
15	Engineering Technologies & Engineering Related	1	-	-	-	-	380	381
11	Computer and Information Sciences & Support Services	50	-	-	-	-	297	347
43	Homeland Security, Law Enforcement, Firefighting & Related Protective Services	201	-	-	-	-	130	331
12	Personal & Culinary Services	-	-	-	-	-	145	145
50	Visual & Performing Arts	11	-	-	-	44	63	118
19	Family and Consumer Sciences/Human Sciences	46	-	-	-	-	69	115
10	Communications Technologies/Technicians & Support Services	14	-	-	-	20	78	112
44	Human Services	96	-	-	-	-	7	103
48	Precision Production Trades	-	-	-	-	-	93	93
46	Construction Trades	-	-	-	-	-	85	85
30	Multi/Interdisciplinary Studies	-	-	-	-	-	79	79
3	Natural Resources & Conservation	16	-	-	-	-	30	46
22	Legal Professions & Studies	30	-	-	-	-	9	39
16	Foreign Languages, Literature & Linguistics	3	-	-	-	-	22	25
14	Engineering	-	-	-	-	-	21	21
31	Parks, Recreation, Leisure & Fitness Studies	12	-	-	-	-	-	12
26	Biological & Biomedical Sciences	2	-	-	-	-	3	5
49	Transportation & Materials Moving	2	-	-	-	-	3	5
45	Social Sciences	-	-	-	-	-	3	3
41	Science Technologies/Technicians	-	-	-	-	-	2	2
9	Communication, Journalism & Related Programs	1	-	-	-	-	-	1
13	Education	-	-	-	-	-	-	-
34	Health Related Knowledge & Skills	-	-	-	-	-	-	-
Total		**855**	**704**	**5,282**	**487**	**64**	**5,234**	**12,626**

Associate Degrees by CIP—AY 2013

In AY 2013, the number of associate degrees awarded by Iowa's community colleges decreased from 12,626 to 12,131, representing a 3.9 percent decrease.

The majority of the decrease in awards occurred in the areas of liberal arts and sciences (178), and homeland security, law enforcement, firefighting, and related projective services (95) (Figure 11).

Figure 10 illustrates a shift in award type distribution, with AA awards increasing by 2.1 percent and ASCO awards decreasing by 1.1 percent.

Figure 10. Percent of Associate Degrees, AY 2013

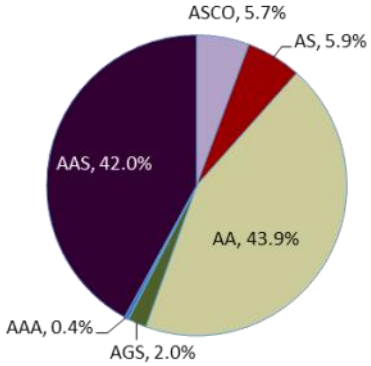


Figure 11. AY 2013 Associate Degrees by Two-Digit CIP

2-Digit CIP Code	2-Digit CIP Code Description	ASCO	AS	AA	AGS	AAA	AAS	Total
24	Liberal Arts & Sciences, General Studies	-	720	5,329	246	-	-	6,295
51	Health Professions & Related	35	-	-	-	-	2,044	2,079
52	Business Management, Marketing & Related	252	-	-	-	-	620	872
47	Mechanics & Repairers, General	-	-	-	-	-	577	577
1	Agriculture	10	-	-	-	1	423	434
15	Engineering Technologies & Engineering Related	1	-	-	-	-	351	352
11	Computer and Information Sciences & Support Services	45	-	-	-	3	299	347
43	Homeland Security, Law Enforcement, Firefighting & Related Protective Services	129	-	-	-	-	107	236
12	Personal & Culinary Services	-	-	-	-	-	154	154
19	Family and Consumer Sciences/Human Sciences	48	-	-	-	-	79	127
10	Communications Technologies/Technicians & Support Services	4	-	-	-	10	96	110
50	Visual & Performing Arts	9	-	-	-	37	47	93
48	Precision Production Trades	-	-	-	-	-	86	86
44	Human Services	76	-	-	-	-	6	82
46	Construction Trades	1	-	-	-	2	65	68
30	Multi/Interdisciplinary Studies	-	-	-	-	-	58	58
22	Legal Professions & Studies	33	-	-	-	-	11	44
3	Natural Resources & Conservation	14	-	-	-	-	28	42
16	Foreign Languages, Literature & Linguistics	2	-	-	-	-	16	18
14	Engineering	3	-	-	-	-	10	13
26	Biological & Biomedical Sciences	10	-	-	-	-	2	12
49	Transportation & Materials Moving	4	-	-	-	-	6	10
31	Parks, Recreation, Leisure & Fitness Studies	8	-	-	-	-	-	8
41	Science Technologies/Technicians	-	-	-	-	-	6	6
45	Social Sciences	-	-	-	-	-	4	4
9	Communication, Journalism & Related Programs	3	-	-	-	-	-	3
34	Health Related Knowledge & Skills	-	-	-	-	-	1	1
13	Education	-	-	-	-	-	-	-
Total		**687**	**720**	**5,329**	**246**	**53**	**5,096**	**12,131**

Associate Degrees by CIP—AY 2014

In AY 2014, the number of associate degrees awarded by Iowa community colleges continued to decline, but as a slower pace. This year saw a decrease of 171 awards as compared to the 495 decrease in AY 2013.

The majority of the decrease in awards occurred in the areas of liberal arts and sciences (205), and business management (87). Helping to balance out this decrease was a relatively large increase in awards in health professions (74), and engineering technologies and related studies (67) (Figure 13).

Figure 12 illustrates a slight shift in award type distribution, with AA awards reducing by 0.6 percent and AAS awards increasing by 1.2 percent. Additionally, AY 2014 was the first year that APS awards were reported, so minimal data was available.

Figure 12. Percent of Associate Degrees, AY 2014

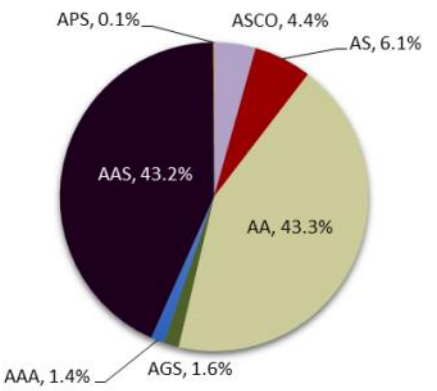


Figure 13. AY 2014 Associate Degrees by Two-Digit CIP

2-Digit CIP Code	2-Digit CIP Code Description	ASCO	AS	AA	AGS	AAA	AAS	APS	Total
24	Liberal Arts & Sciences, General Studies	-	726	5,177	187	-	-	-	6,090
51	Health Professions & Related	18	-	-	-	54	2,077	4	2,153
52	Business Management, Marketing & Related	206	-	-	-	19	560	-	785
47	Mechanics & Repairers, General	-	-	-	-	9	546	-	555
15	Engineering Technologies & Engineering Related	-	-	-	-	-	419	-	419
1	Agriculture	-	-	-	-	7	406	-	413
11	Computer and Information Sciences & Support	20	-	-	-	5	319	-	344
43	Homeland Security, Law Enforcement, Firefighting & Related Protective Services	115	-	-	-	-	118	-	233
10	Communications Technologies/Technicians & Support Services	6	-	-	-	22	108	-	136
12	Personal & Culinary Services	-	-	-	-	-	132	-	132
50	Visual & Performing Arts	5	-	-	-	43	65	-	113
48	Precision Production Trades	-	-	-	-	2	109	-	111
19	Family and Consumer Sciences/Human Sciences	19	-	-	-	-	73	-	92
44	Human Services	79	-	-	-	-	4	6	89
46	Construction Trades	-	-	-	-	8	70	-	78
30	Multi/Interdisciplinary Studies	-	-	-	-	-	64	-	64
3	Natural Resources & Conservation	9	-	-	-	-	39	-	48
22	Legal Professions & Studies	24	-	-	-	-	9	-	33
16	Foreign Languages, Literature & Linguistics	4	-	-	-	-	18	-	22
41	Science Technologies/Technicians	-	-	-	-	-	11	-	11
49	Transportation & Materials Moving	5	-	-	-	-	5	-	10
14	Engineering	-	-	-	-	-	10	-	10
31	Parks, Recreation, Leisure & Fitness Studies	7	-	-	-	-	2	-	9
9	Communication, Journalism & Related Programs	-	-	-	-	-	5	-	5
26	Biological & Biomedical Sciences	4	-	-	-	-	-	-	4
45	Social Sciences	-	-	-	-	-	1	-	1
13	Education	-	-	-	-	-	-	-	-
34	Health Related Knowledge & Skills	-	-	-	-	-	-	-	-
Total		**521**	**726**	**5,177**	**187**	**169**	**5,170**	**10**	**11,960**

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 Iowa community colleges offer long-term diploma programs covering many different areas of study, with the majority in healthcare, skilled trades, engineering, and computer-related fields (Figure 14).

Throughout the five-year study period, the distribution of diploma programs has remained relatively the same, with students earning a large number of awards.

Figure 14. AY 2010 to AY 2014 Diplomas by Two-Digit CIP

2-Digit CIP Code	Description	AY2010	AY2011	AY2012	AY2013	AY2014	Total Diploma
51	Health Professions & Related	1,815	1,872	1,664	1,706	1,320	8,377
52	Business Management, Marketing & Related	298	326	297	318	211	1,450
47	Mechanics & Repairers, General	282	298	257	266	156	1,259
48	Precision Production Trades	204	241	268	271	200	1,184
46	Construction Trades	218	224	194	208	157	1,001
19	Family and Consumer Sciences/Human Sciences	61	107	83	108	96	455
15	Engineering Technologies & Engineering Related	38	142	86	57	73	396
01	Agriculture	51	83	76	87	63	360
12	Personal & Culinary Services	45	50	61	74	82	312
11	Computer and Information Sciences & Support Services	63	52	68	51	39	273
50	Visual & Performing Arts	20	23	48	50	48	189
10	Communications Technologies/Technicians & Support Services	6	15	27	12	12	72
49	Transportation & Materials Moving	14	13	14	15	11	67
03	Natural Resources & Conservation	10	12	18	14	11	65
30	Multi/Interdisciplinary Studies	1	33	6	1	-	41
43	Homeland Security, Law Enforcement, Firefighting & Related Protective Services	7	6	7	12	5	37
13	Education	1	5	3	7	1	17
34	Health Related Knowledge & Skills	5	6	5	-	-	16
09	Communication, Journalism & Related Programs	2	2	2	2	4	12
22	Legal Professions & Studies	4	2	-	1	4	11
31	Parks, Recreation, Leisure & Fitness Studies	-	-	-	-	8	8
44	Human Services	1	3	-	-	-	4
14	Engineering	-	-	-	-	-	-
16	Foreign Languages, Literature & Linguistics	-	-	-	-	-	-
24	Liberal Arts & Sciences, General Studies	-	-	-	-	-	-
26	Biological & Biomedical Sciences	-	-	-	-	-	-
41	Science Technologies/Technicians	-	-	-	-	-	-
45	Social Sciences	-	-	-	-	-	-
Total		**3,146**	**3,515**	**3,184**	**3,260**	**2,501**	**15,606**

Certificates by CIP

Iowa community colleges design certificates to respond to business and industry workforce needs. These technical programs vary from 1 to 48 credits, classified as short-term (less than 22 credits) and long-term (22 credits or more).

There were 2,105 long-term and 8,792 short-term certificates awarded over this study's five-year period. The vast majority of these were awarded in the health professions (3,214) (Figure 15).

Note: Not all of Iowa's 15 community colleges offer certificate programs.

Figure 15. AY 2010 to AY 2014 Certificates by Two-Digit CIP

2-Digit CIP Code	Description	AY2010	AY2011	AY2012	AY2013	AY2014	Total LT Certificate	Total ST Certificate
51	Health Professions & Related	542	536	897	777	847	385	3,214
52	Business Management, Marketing & Related	309	374	481	542	540	615	1,631
48	Precision Production Trades	207	242	337	396	380	439	1,123
49	Transportation & Materials Moving	186	143	151	125	25	-	630
47	Mechanics & Repairers, General	76	87	83	169	172	156	431
11	Computer and Information Sciences & Support Services	55	57	89	129	106	125	311
15	Engineering Technologies & Engineering Relate	28	35	81	144	127	156	259
19	Family and Consumer Sciences/Human Sciences	50	90	58	77	108	-	383
01	Agriculture	60	59	47	57	39	40	222
13	Education	1	8	5	58	60	-	132
22	Legal Professions & Studies	16	29	25	27	16	102	11
03	Natural Resources & Conservation	19	24	24	12	15	-	94
50	Visual & Performing Arts	6	8	34	21	22	-	91
12	Personal & Culinary Services	4	14	11	8	37	9	65
43	Homeland Security, Law Enforcement, Firefighting & Related Protective Services	3	6	6	27	21	38	25
44	Human Services	6	9	24	9	9	10	47
16	Foreign Languages, Literature & Linguistics	26	14	2	4	-	22	24
46	Construction Trades	5	2	1	18	18	-	44
10	Communications Technologies/Technicians & Support Services	4	2	14	4	7	8	23
34	Health Related Knowledge & Skills	2	4	3	-	-	-	9
14	Engineering	5	1	1	-	1	-	8
31	Parks, Recreation, Leisure & Fitness Studies	-	-	-	-	8	-	8
26	Biological & Biomedical Sciences	-	-	1	1	5	-	7
09	Communication, Journalism & Related Programs	-	-	-	-	-	-	-
24	Liberal Arts & Sciences, General Studies	-	-	-	-	-	-	-
30	Multi/Interdisciplinary Studies	-	-	-	-	-	-	-
41	Science Technologies/Technicians	-	-	-	-	-	-	-
45	Social Sciences	-	-	-	-	-	-	-
Total		**1,610**	**1,744**	**2,375**	**2,605**	**2,563**	**2,105**	**8,792**

Short-Term Awards by CIP

Short-term, or preparatory, awards are credit programs designed to provide the specific skills and knowledge essential for successful entry into a specific or related occupation, requiring less than a baccalaureate degree, or further education.

Figure 16 shows the dramatic impact that short-term awards have on some of the occupational training conducted at Iowa's community colleges. For example, there were 3,214 short-term certificates awarded to students over the five-year study period related to health professions. More specifically, Nursing Assistant/Aide, Welding, and Commercial Vehicle/Truck/Bus Driver programs make up the majority of the short-term awards received by students.

Diplomas do not represent a large portion of the short-term awards received by students and have been decreasing over the five-year period. The first number in the table below represents certificates. If there is only one number, there were no short-term diplomas awarded for the corresponding CIP.

Figure 16. AY 2010 to AY 2014 Short-Term Awards by Two-Digit CIP

2-Digit CIP Code	Description	FY2010 Cert/Dip	FY2011 Cert/Dip	FY2012 Cert/Dip	FY2013 Cert/Dip	FY2014 Cert/Dip	Total Short-Term Certificates	Total Short-Term Diplomas
51	Health Professions & Related	510/9	479/2	706/7	720/4	825/4	3,214	26
52	Business Management, Marketing & Related	248	299	375	358	351	1,631	-
48	Precision Production Trades	145	179	233	296	270	1,123	-
49	Transportation & Materials Moving	186	143	151	125	25	630	-
47	Mechanics & Repairers, General	82/32	87/38	73/15	145/7	144/8	431	100
19	Family and Consumer Sciences/Human Sciences	50	90	58	77	108	383	-
11	Computer and Information Sciences & Support Services	49/9	46/8	81/16	92	76	311	33
15	Engineering Technologies & Engineering Related	21	18	48	87	85	259	-
01	Agriculture	49	50	40	48	35	222	-
13	Education	1	8	5	58	60	132	-
03	Natural Resources & Conservation	19	24	24	12	15	94	-
50	Visual & Performing Arts	6	8	34	21	22	91	-
12	Personal & Culinary Services	2	7	11	8	37	65	-
44	Human Services	5	6	18	9	9	47	-
46	Construction Trades	5	2	1	18	18	44	-
43	Homeland Security, Law Enforcement, Firefighting & Related Protective Services	1	1	3	15	5	25	-
16	Foreign Languages, Literature & Linguistics	13	7	-	4	-	24	-
10	Communications Technologies/Technicians & Support Services	2	1	9	4	7	23	-
22	Legal Professions & Studies	0	11	-	-	-	11	-
34	Health Related Knowledge & Skills	2	4	3	-	-	9	-
14	Engineering	5	1	1	-	1	8	-
31	Parks, Recreation, Leisure & Fitness Studies	-	-	-	-	8	8	-
26	Biological & Biomedical Sciences	-	-	1	1	5	7	-
09	Communication, Journalism & Related Programs	-	-	-	-	-	-	-
24	Liberal Arts & Sciences, General Studies						-	-
30	Multi/Interdisciplinary Studies	-	-	-	-	-	-	-
41	Science Technologies/Technicians	-	-	-	-	-	-	-
45	Social Sciences	-	-	-	-	-	-	-
Total		**1,401/50**	**1,471/48**	**1,875/38**	**2,098/11**	**2,106/12**	**8,792**	**159**

Time-to-Degree

In order to measure the amount of time students took to earn their degrees (i.e., time-to-degree), data were extracted from the MIS for the six years prior to completion for students who received awards between AY 2010 and AY 2014. (For AY 2012 graduates, data were extracted from AY 2011, 2010, 2009, 2008, 2007, and 2006 to determine if students were enrolled in their degree programs).

Figures 17 and 18 illustrate the distribution of time-to-degree in aggregate for associate degrees earned by students in the five cohorts. Figure 17 illustrates the percentage of cohort graduates, by the number of years they took to complete their programs. Figure 18 displays the time-to-degree in cumulative format, illustrating the total percentage of students who completed degrees in one to four years. Though there is a variance in completion time when looking at associate degrees independently, 41.5 percent of aggregate associate degrees are earned within a two-year period of time (Figure 19).

Figure 17. Time-to-Degree for Associate Degrees Earned, AY 2010 to AY 2014

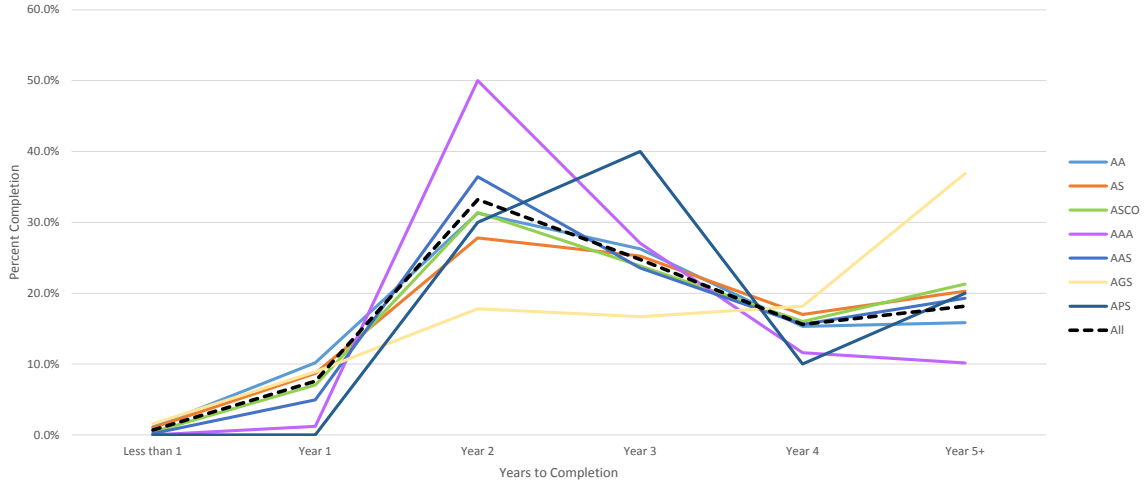
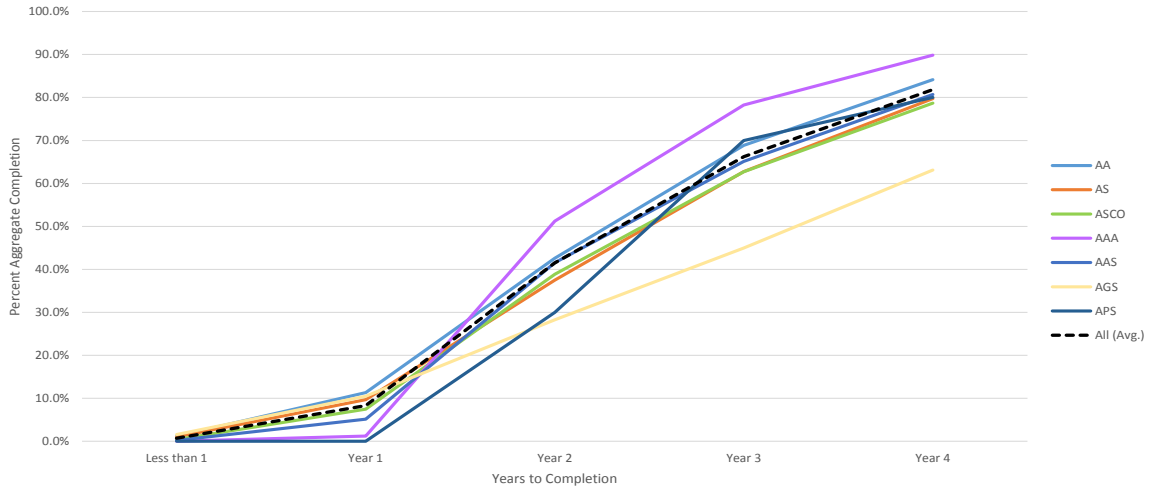


Figure 18. Time-to-Degree for Associate Degrees, AY 2010 to AY 2014, Cumulative



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

Figure 19. AY 2010 to AY 2014 Time-to-Degree for Associate Degrees by Percent

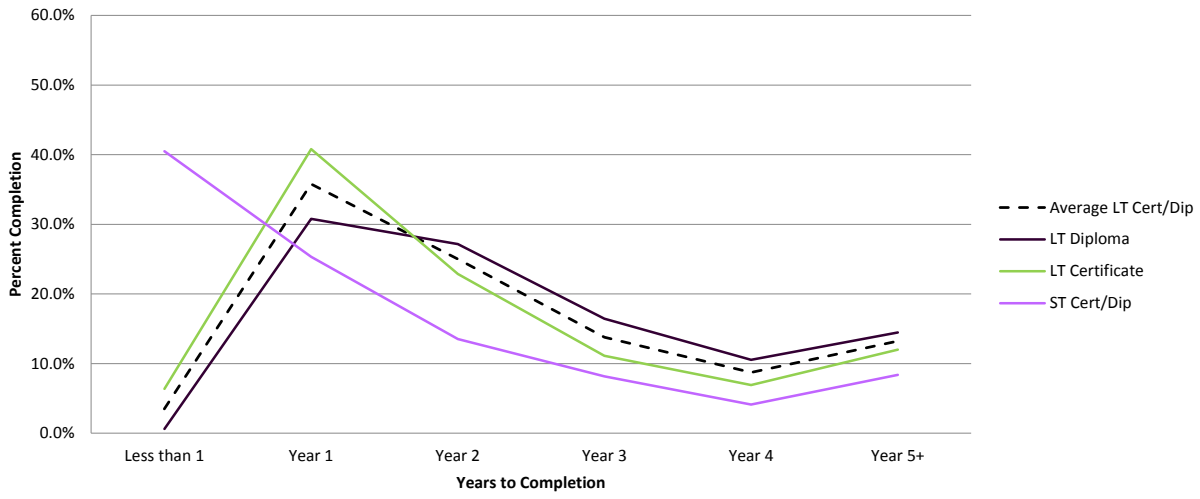
Years	AA	AS	ASCO	AAA	AAS	AGS	APS	All
Less than 1	1.1%	1.2%	0.4%	0.0%	0.2%	1.6%	0.0%	0.7%
Year 1	10.2%	9.2%	6.9%	1.2%	4.9%	8.9%	0.0%	7.6%
Year 2	31.3%	25.5%	32.0%	50.0%	36.4%	17.8%	30.0%	33.2%
Year 3	26.2%	25.5%	24.2%	27.1%	23.5%	16.7%	40.0%	24.7%
Year 4	15.3%	17.4%	16.2%	11.6%	15.6%	18.2%	10.0%	15.6%
Year 5+	15.8%	21.1%	20.3%	10.1%	19.3%	36.9%	20.0%	18.2%

There are differences in diplomas and certificates at Iowa community colleges. A diploma requires at least 15 semester credits, of which three credits must be general education. A certificate can range from 1 to 48 credits, with no general education requirement.

In Figure 20, 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. Recall that long-term diplomas and certificates are those that consist of 22 or more credits and short-term programs consist of less than 22 credits.

Figure 20 illustrates why the short-term and long-term must be reported separately. Because of fewer credits, 40.5 percent of short-term diplomas and certificates were completed in less than one year, with another 25.3 percent completed by the end of year one (total 65.8 percent). In contrast, the majority of long-term certificates and diplomas were completed by year two (70.0 percent certificates and 58.6 percent diplomas).

Figure 20. Time-to-Degree for Diploma and Certificate Awards, AY 2010 to AY 2014



Joint Enrollment

Each year, tens of thousands of Iowa high school students jointly enroll in college credit coursework through Iowa's 15 community colleges, three public universities, or numerous private postsecondary institutions. The Division of Community Colleges defines joint enrollment as a high school student enrolling in a community college course.

Students may jointly enroll through contracted courses offered at the high school (concurrent enrollment), at the college (postsecondary enrollment options), or in non-contracted courses as a tuition-paying students.

The students represented in this report are only those who were jointly enrolled in high school and continued their education at one of Iowa's community colleges, completing a degree, diploma, or certificate during academic years 2010 to 2014.

Over the five-year study period, there were a total of 14,536 students who had earned an average of 13.9 credits during high school and went on to complete awards at an Iowa community college (Figures 21 and 22). Of these completers, 44.5 percent earned the Associate of Arts (AA) degree at an Iowa community college following high school graduation.

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

Figure 21. AY 2010 to AY 2014 Community College Joint Enrollment

	AY2010	AY2011	AY2012	AY2013	AY2014	Total/ Average
Number of Jointly Enrolled Students	2,303	2,848	2,986	3,134	3,265	14,536
Average Number of JE Years	1.4	1.4	1.4	1.4	1.4	1.4
Average Number of JE Credits	15.0	14.2	13.7	13.1	13.4	13.9

Note: the average number of JE years was calculated by counting the student 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.

Figure 22. Jointly-Enrolled Students by Long-/Short-Term and Award Type

Award Type	Number of Students		Percent
	Short Term	Long Term	
AA	-	6,416	44.5%
AS	-	565	4.6%
AGS	-	131	0.9%
AAA	-	54	0.4%
AAS	-	3,420	23.5%
APS	-	2	0.0%
ASCO	-	401	1.8%
Diploma	6	1,987	13.7%
Certificate	1,325	229	10.7%
Total	**1,331**	**13,205**	**100%**

Cohort Groups Defined

To accurately study community college graduates, each cohort was split into three different groups - those who continued their education in Iowa, those who continued out-of-state, and those who did not continue their education. Figure 23 represents the five cohorts of graduates (each bar), delineated into these three groups (colored sections of each bar).

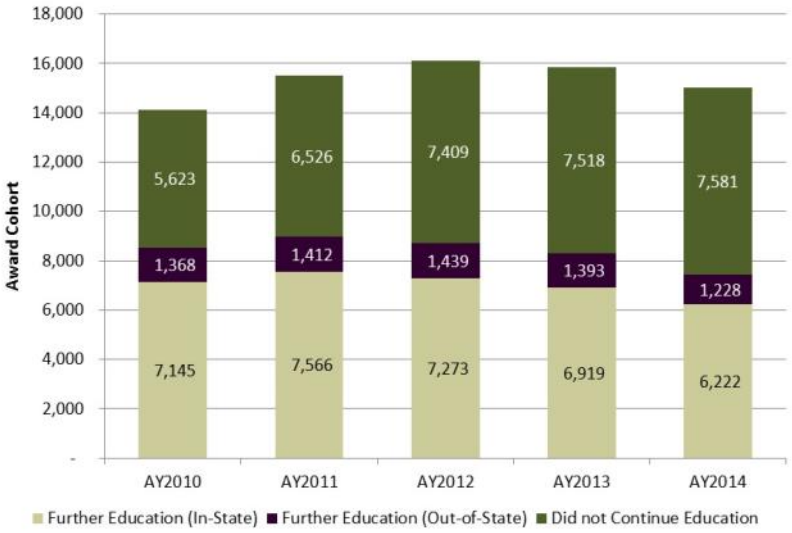
The majority of each cohort's graduates continued their education within the state of Iowa, while a small portion transferred out-of-state. The remainder did not continue their education, and will be analyzed regarding in- and out-of-state employment later in this report. The purpose of analyzing these groups separately is to study the impact that continuing education has on the state of Iowa versus immediately entering the workforce.

In order to identify these three groups within each student cohort, MIS data (individual student records including program of study, credits received, and award type) were matched with the National Student Clearinghouse (NSC) database to identify the students' participation in two– or four-year, in– or out-of-state, and public or private institutions for the year following completion of their community college awards. If graduates were matched (i.e., found) within the NSC database, they were placed into the "Pursuing Further Education" cohort for further analysis. If they were not matched within the NSC database, they were placed into the "Workforce" cohort. 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 23, of the 14,136 awards in AY 2010, 5,623 recipients went on to further their education within Iowa and 1,368 left Iowa to continue their education in the year following their initial awards. The numbers for both in– and out-of-state increased slightly for the AY 2011 and AY 2012 cohorts, but decreased for the AY 2013 and AY 2014 cohorts.

The AY 2014 cohort experienced a drop in awards overall, however the percentage of students in each category remained very similar to the years prior.

Figure 23. Status of Graduates First Year After Award



Retention and Migration

The vast majority of Iowa community college graduates remain in Iowa within the first year after completing their programs (81.8 percent) (see Figure 24). Just under half (49.5 percent) continued their education in the year following completion, with most students remaining in Iowa (42.2 percent). However, a small percentage of graduates transferred to a college or sought employment outside of Iowa (7.3 percent and 5.6 percent respectively). Each of these groups will be studied in more detail in the following sections of this report.

Of those students who continued their education at institutions outside of Iowa, most enrolled in one of Iowa's contiguous states such as Nebraska and Illinois. For those who did venture further away, higher concentrations of graduates have enrolled at institutions in Arizona (272), California (164), or Texas (160) within one year following their award.

Figure 25 represents aggregate numbers for those who continued their education either in- or out-of-state one year after their award (AY 2010 to AY 2014).

Figure 24. AY 2010 to AY 2014 Retention and Transfers, First Year Following Award

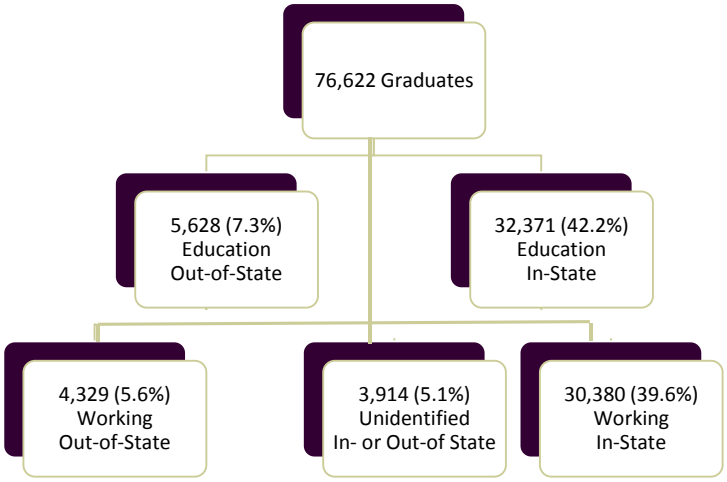
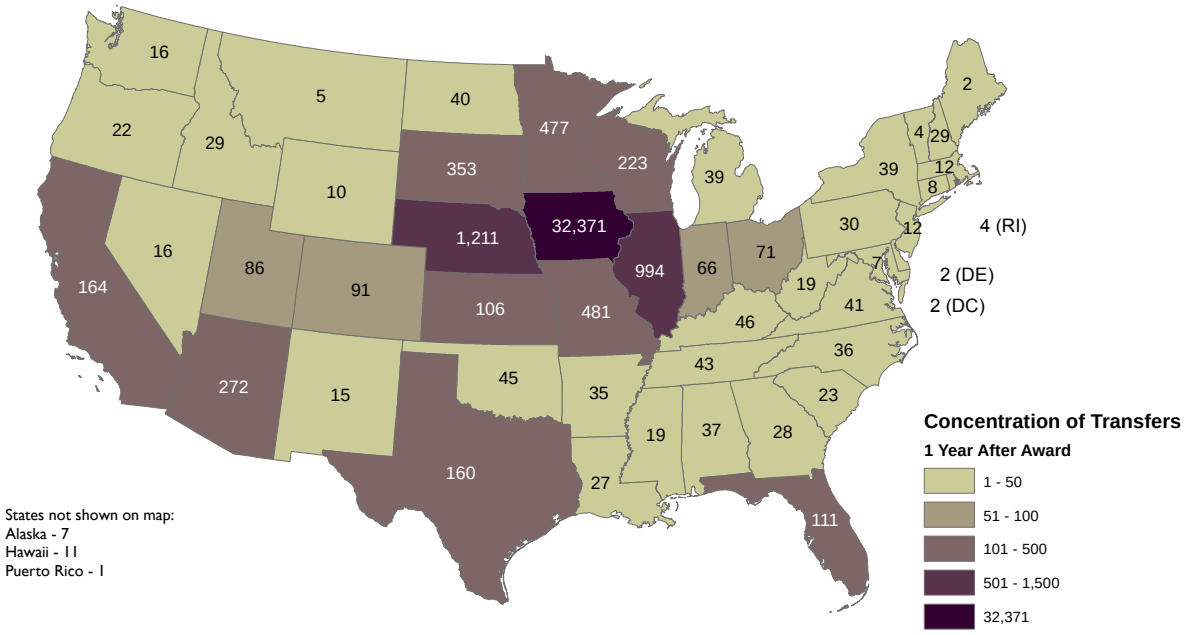


Figure 25. AY 2010 to AY 2014 Cohorts Educational Migration One-Year After Award



Pursuing Further Education Cohort

Using the National Student Clearinghouse (NSC) database, the IDOE was able to identify whether an Iowa community college graduate transferred to a postsecondary institution that was in– or out-of-state, two- or four-year, or private or public. Figure 26 illustrates the distribution of these graduates based on these transfer institution types (based on the first fiscal year after their graduation).

Using the AY 2010 cohort as an example, 6,329 students continued their education at an in-state institution the academic year after graduation, whereas 1,007 students continued their education at an out-of-state institution. Of those who continued their education in-state, 45.1 percent continued their education at a two-year, public college and 23.1 percent transferred to an in-state, four-year, public college.

Many students earn awards on their way to getting an associate degree or higher. This type of analysis at the community colleges recognizes success in incremental steps.

Figure 26. AY 2010 to AY 2014 Further Education, First Year Following Award

Academic Year of Enrollment After Award	Characteristics of Institution		Continued Education		Continued Education	
	2yr / 4yr	Public/Private	In-State #	In-State %	Out-of-State #	Out-of-State %
2010 Cohort						
2011	2	Private	6	0.1%	10	0.1%
		Public	3,311	45.1%	120	1.6%
	4	Private	1,314	17.9%	354	4.8%
		Public	1,698	23.1%	523	7.1%
Total 2010 Cohort			6,329	86.3%	1,007	13.7%
2011 Cohort						
2012	2	Private	1	0.0%	8	0.1%
		Public	3,640	46.1%	124	1.6%
	4	Private	1,408	17.8%	370	4.7%
		Public	1,767	22.4%	576	7.3%
Total 2011 Cohort			6,816	86.3%	1,078	13.7%
2012 Cohort						
2013	2	Private	12	0.2%	7	0.1%
		Public	3,431	43.6%	118	1.5%
	4	Private	1,489	18.9%	410	5.2%
		Public	1,767	22.5%	636	8.1%
Total 2012 Cohort			6,699	85.1%	1,171	14.9%
2013 Cohort						
2014	2	Private	12	0.2%	0	0.0%
		Public	3,222	43.3%	89	1.2%
	4	Private	1,371	18.4%	413	5.5%
		Public	1,706	22.9%	633	8.5%
Total 2013 Cohort			6,311	84.8%	1,135	15.2%
2014 Cohort						
2015	2	Private	10	0.1%	3	0.0%
		Public	3,151	42.3%	93	1.2%
	4	Private	1,330	17.9%	464	6.2%
		Public	1,731	23.2%	668	9.0%
Total 2014 Cohort			6,222	83.5%	1,228	16.5%

Workforce Cohort

After analyzing the data regarding the Iowa community college graduates who continued their education, a cohort was developed to analyze the employment trends of the remaining graduates.

Both in- and out-of-state employment data were gathered using the Iowa Unemployment Insurance (UI) database and the Wage Record Interchange System (WRIS). Unfortunately, out-of-state wage data were not available for the entirety of AY 2011 for this analysis, nor were it available for awards less than 22 credits and a small number of other awardees prior to 2013-Q3 (July-September, 2013). However, Iowa UI records were available to identify in-state employment for all periods of time.

The next sections of this report provide an analysis of in- and out-of-state employment regarding the industry of those employed and their annual wages. Out-of-state employment is measured using WRIS, which, as mentioned above, was not available for AY 2011. Therefore, out-of-state wage data for the AY 2010 cohort is incomplete. Consequently, the number of unmatched records encompasses those that could not be matched to out-of-state records, those employed for an employer that does not pay unemployment insurance tax, and those who were unemployed for the described uncovered periods of time.

Due to the availability of five years of wage data for the AY 2010 cohort, it is used as an example in Figure 27. This table illustrates the aggregate employment and wages for the AY 2010 cohort in the first five years of data available after graduation.

The data show that in 2011 (October 1, 2010 to September 30, 2011), there were 6,797 graduates after transfers were excluded. Of those, 5,544 were matched to the Iowa UI wage records, representing 81.6 percent of the non-transfer cohort. In order to compare wages from AY 2011 to current wages (AY 2015), a cost of living adjustment was applied and documented in the *Adjusted Median Wage* columns in figures 27 and 28 (a detailed explanation is contained in the Employment and Wage Record Methodology section). This adjustment is used to determine whether real wages have increased over the study period.

The increased rate of matched records in AY 2012 through AY 2015 reflects the out-of-state employment data gap being filled by the availability of WRIS records.

Figure 27. Five Year Employment and Wage Trend for AY 2010 Cohort

Year of Employment[1]	% Matched to Employment	Adjusted Median Wage	% with Previous Degree[2]	% Earning More than One Award[2]
2011*	81.6%	$26,647	19.5%	7.4%
2012	89.2%	$30,124	20.2%	7.7%
2013	89.4%	$32,999	19.9%	8.1%
2014	88.9%	$35,364	19.9%	8.1%
2015	87.4%	$37,432	19.9%	8.3%

Figure 28. Each Cohort's Employment and Wages, First Year Following Award

Cohort Year	Year of Employment[1]	% Matched to Employment	Adjusted Median Wage	% with Previous Degree[2]	% Earning More than One Award[2]
2010	2011*	81.6%	$26,647	19.5%	7.4%
2011	2012	91.6%	$26,848	9.6%	9.9%
2012	2013	91.5%	$26,960	9.9%	11.2%
2013	2014	91.7%	$27,205	9.4%	12.0%
2014	2015	91.7%	$28,607	9.8%	12.2%

[1] Ex. 2011 defined as October 1, 2010 through September 30, 2011
[2] Percentage calculated of those matching employment in that year
* Out-of-state data not available

Employment and Wages by State

The Wage Record Interchange System (WRIS) was 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 (full- or part-time), overtime, or occupation, they do identify the number of graduates working in other states.

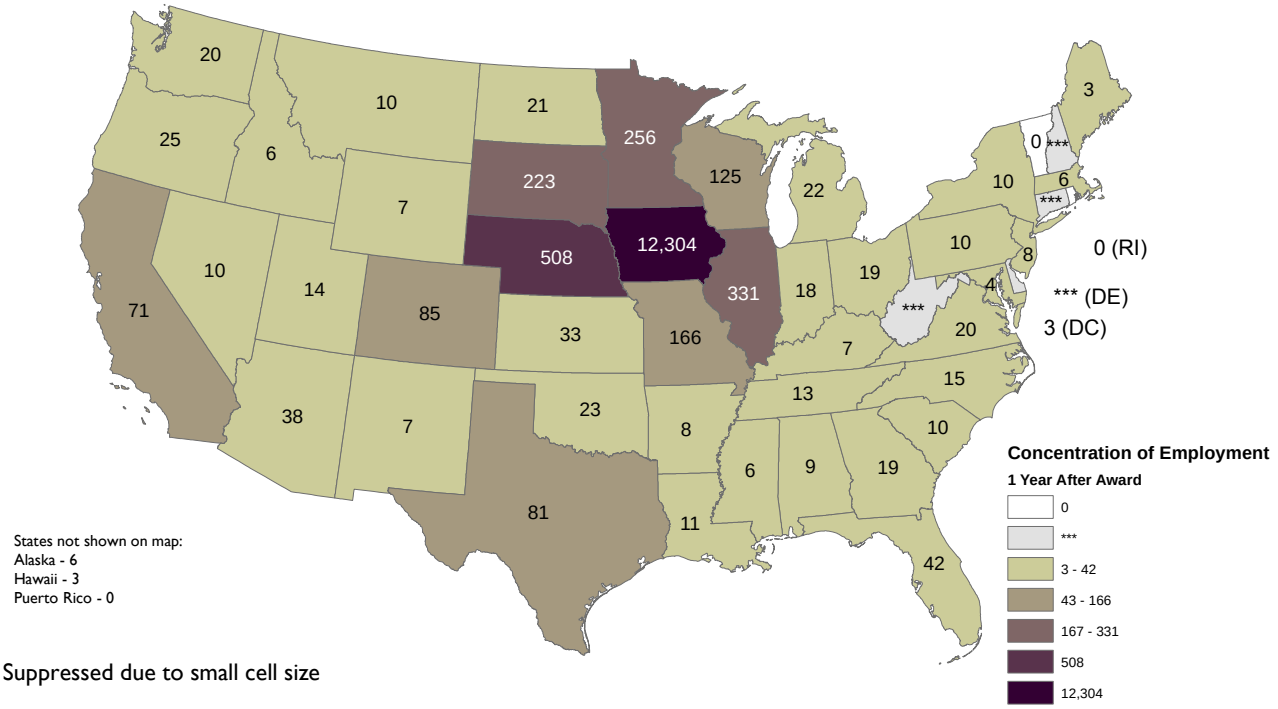
Figure 29 illustrates that the majority (84.0 percent) of those who received an award in AY 2013 or 2014, and who matched to employment data in the first year following an award, remained in Iowa. Similar to those who continued their education, most graduates who were employed outside of Iowa were employed in contiguous states.

It is important to note that when analyzing wage data, all industries are encompassed.

Some industries (e.g. manufacturing) pay higher wages than others; therefore if a state has a higher concentration of manufacturing jobs it would likely show higher wages. Conversely, if a state has a high number of retail establishments, the median wage may be lower. For example, the median annual wage for AY 2014 graduates in the year following awards in Iowa's manufacturing industry sector was $36,997. The median annual wage in the healthcare industry sector in Iowa was $31,994. The median annual wage in the retail trade industry sector in Iowa, however, was $20,978.

Due to limited historical data for out-of-state employment reporting (past eight quarters), the data are limited for the AY 2010 cohort. Detailed tables relating to all cohorts can be found in Appendix A.

Figure 29. AY 2013 to AY 2014 Cohorts, Primary Employment by State, First Year Following Award



*** Suppressed due to small cell size

Employment and Wages by Award Type

Figures 30 and 31 reflect the employment and wages, in aggregate, for those in the AY 2014 cohort who were employed in the year following graduation. Of the 3,955 AAS degree recipients from Iowa community colleges who did not continue their education the year after graduation, 94.0 percent matched employment within that year and earned a median wage of $33,057 (see AAS row in Figure 30). Though the percentage of AAS graduates who became employed within one year of graduation is the highest of the award categories listed, all types exceeded 85.0 percent employed with the exception of APS, which had a very low sample size (programs just started at one Iowa community college in AY 2015).

Figure 30. AY 2014 Cohort, AY 2015 Employment and Wages by Award Type

Award Type	Year of Employment[1]	# in Cohort (not enrolled)	Matched to Employment		Adjusted Median Wage	% with Previous Degree	% Earning More than One Award
			#	%			
AA	2015	1,557	1,344	86.3%	$21,884	6.5%	6.0%
AS	2015	150	134	89.3%	$24,718	4.5%	4.5%
ASCO	2015	294	267	90.8%	$25,611	2.6%	5.6%
APS	2015	6	4	66.7%	$23,480	0.0%	0.0%
AGS	2015	85	71	83.5%	$24,106	2.8%	8.5%
AAA	2015	131	123	93.9%	$27,728	7.3%	5.7%
AAS	2015	3,955	3,718	94.0%	$33,057	13.6%	16.0%
Diploma (>= 22 cr.)	2015	774	723	93.4%	$26,696	5.5%	8.7%
Certificate (>= 22 cr.)	2015	116	108	93.1%	$28,156	7.4%	66.7%
Cert./Dipl. (< 22 cr.)	2015	513	459	89.5%	$22,369	4.1%	0.0%

Associate of Arts (AA)
Associate of Applied Arts (AAA)
Associate of General Studies (AGS)
Associate of Science (AS)
Associate of Applied Science (AAS)
Associate of Science/Career Option (ASCO)
Associate of Professional Studies (APS)

Comparatively, Figure 31 shows the total of all AY 2014 associate degree recipients (across all types) had a 91.6 percent employment match in the first year after graduation. Diploma and certificate (22 or more credits) recipients had a 93.4 percent employment match rate, while diploma and certificate (less than 22 credits) recipients had an 89.5 percent employment match rate. Though the AAS degree (two-year program) has much higher wages when analyzed separately, the data in aggregate shows that the associate degree median wage was only $2,416 higher than the combined diploma or certificate graduate (22 or more credits) median wage in the first year after graduation.

Figure 31. AY 2014 Cohort, AY 2015 Employment and Wages by Award Type Aggregate

Award Type (Aggregated)	Year of Employment[1]	# in Cohort (not enrolled)	Matched to Employment		Adjusted Median Wage	% with Previous Degree	% Earning More than One Award
			#	%			
Certificate/Diploma (< 22 cr.)	2015	513	459	89.5%	$22,369	4.1%	0.0%
Certificate/Diploma (>= 22 cr.)	2015	890	831	93.4%	$26,944	5.8%	16.2%
Associate	2015	6,178	5,661	91.6%	$29,360	10.9%	12.5%

[1] 2015 defined as October 1, 2014 through September 30, 2015

Employment and Wages by Gender

For each of the five cohorts in this study, there was a larger number of females receiving awards from Iowa community colleges than males. Of the 15,031 award recipients in the AY 2014 cohort, 58.8 percent were female (Figure 32). Furthermore, the distribution of awards and programs by gender varies significantly, but that information is not examined in this report.

Figure 32. Percent of Awards by Gender, AY 2014 Cohort

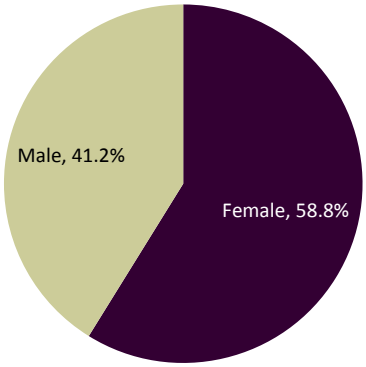


Figure 33 provides the employment and wages of AY 2014 award recipients who entered the workforce in the first year after graduation (i.e., did not continue their education). Females matched employment at a higher rate (92.5 percent) than males (90.6 percent).

Employment data showed that the adjusted median wage for males ($32,061) was significantly higher than that of females ($26,225). To do a more serious 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. Other factors, such as age and previous education may also need to be taken into account. Overall, 10.8 percent of female awardees who matched employment had associate degrees or higher prior to receiving this award, however males with previously awarded associate degrees represented 8.5 percent of students analyzed.

Figure 33. AY 2014 Cohort, Employment and Wages by Gender, First Year Following Award

Gender	Year of Employment[1]	# in Cohort (not enrolled)	Matched to Employment		Adjusted Median Wage	% with Previous Degree	% Earning More than One Award
			#	%			
Female	2015	4,255	3,936	92.5%	$26,218	10.8%	10.3%
Male	2015	3,326	3,015	90.6%	$32,052	8.5%	14.6%

[1] 2015 defined as October 1, 2014 through September 30, 2015

Employment and Wages by Industry Sector

Figure 34 shows the employment and median wages by industry sector for the AY 2014 cohort in the first year after award completion. The industry sectors displayed are from the North American Industry Classification System (NAICS) code included in the Iowa UI and WRIS wage data.

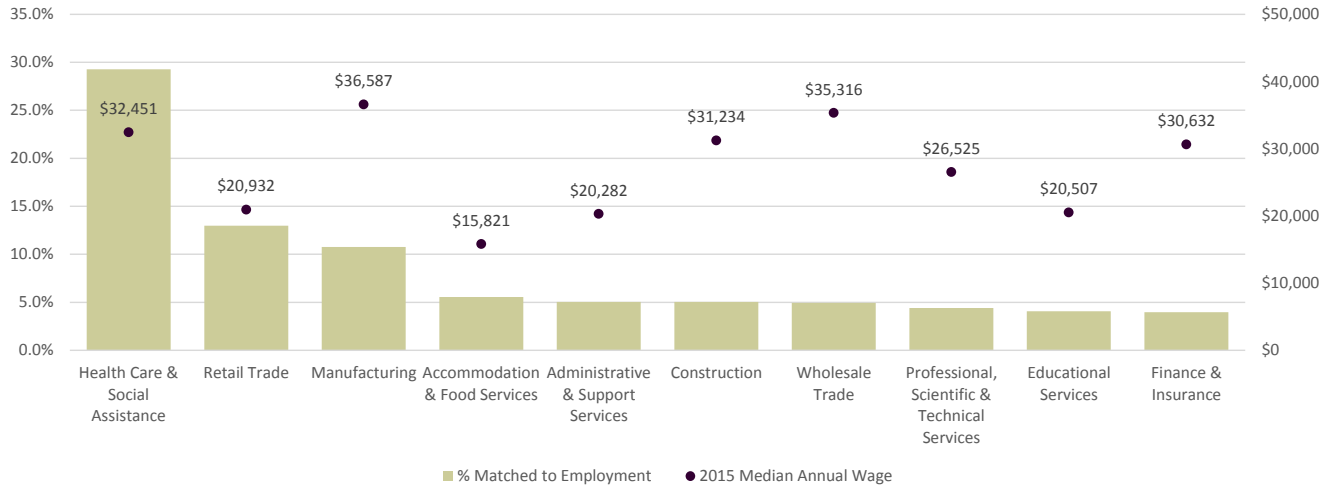
Industry sectors are defined by the type of business that an employer engages in, not the occupation of an employee (defined by the day-to-day tasks the employee performs). As an example, a person who received his or her degree in health science could be a pharmaceutical technician working in the pharmacy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

Figure 34 illustrates that employers in the health care and social assistance industry sector employ more than twice the number of AY 2014 Iowa community college graduates (29.3 percent) than the next largest industry sector (retail trade - 13.0 percent). The next largest industry sectors, by employment, are manufacturing (10.8 percent), accommodation and food services (5.6 percent), and administrative and support services (5.0 percent). As expected, these proportions tend to change over time. For instance, the five largest industry sectors of employment for AY 2010 graduates in AY 2015 (i.e., five years after award completion) are health care and social assistance, manufacturing, retail trade, wholesale trade, and construction.

Among the industry sectors employing 250 or more AY 2014 graduates, those with the highest median wages in the year after award were manufacturing ($36,587), wholesale trade ($35,316), and health care and social assistance ($32,451). However, it is important to note that wages vary widely depending on the type of program the graduates completed and some of the data can be misleading due to the employees' occupations not matching the industry directly as discussed above.

Complete industry data for all cohorts and all years can be found in Appendix A.

Figure 34. AY 2014 Cohort, Median Wages by Industry, First Year Following Award (Top Ten Industries by Employment)



Employment and Wages by Award Type and Industry

Figure 35 shows the employment and median wages by industry sector for the AY 2014 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 in Appendix A.

As illustrated below, wages vary substantially within the same industry sector across award types and vice versa. For instance, Associate of Arts (AA) recipients in the health care and social assistance industry sector have a median wage of $20,288, while those with Associate of Applied Sciences (AAS) degrees earned $38,286. However, as noted on the previous page, wage levels vary widely by award program and occupations within industry sectors.

See the next page for a more in-depth look at wages by program.

Figure 35. AY 2014 Cohort, AY 2015 Industry Median Wages by Award Type

Award Type	Year of Employment[1]	Industry Sector of Employment	# Matched to Emp.	Adjusted Median Wage
AA	2015	Retail Trade	281	$18,141
AA	2015	Health Care & Social Assistance	191	$20,288
AA	2015	Accommodation & Food Services	131	$15,268
AS	2015	Health Care & Social Assistance	27	$25,459
AS	2015	Retail Trade	27	$21,328
AS	2015	Accommodation & Food Services	15	$12,824
ASCO	2015	Retail Trade	40	$21,941
ASCO	2015	Health Care & Social Assistance	38	$22,923
ASCO	2015	Manufacturing	31	$29,676
AGS	2015	Health Care & Social Assistance	21	$17,978
AGS	2015	Finance & Insurance	9	$35,349
AGS	2015	Retail Trade	9	$21,917
AAA	2015	Health Care & Social Assistance	41	$42,337
AAA	2015	Retail Trade	24	$20,110
AAA	2015	Manufacturing	8	$27,699
AAS	2015	Health Care & Social Assistance	1,348	$38,286
AAS	2015	Retail Trade	382	$24,972
AAS	2015	Manufacturing	371	$40,055
Diploma (>= 22 cr.)	2015	Health Care & Social Assistance	214	$27,504
Diploma (>= 22 cr.)	2015	Manufacturing	112	$34,285
Diploma (>= 22 cr.)	2015	Construction	94	$30,192
Certificate (>= 22 cr.)	2015	Manufacturing	26	$29,490
Certificate (>= 22 cr.)	2015	Retail Trade	13	$13,177
Certificate (>= 22 cr.)	2015	Administrative & Support Services	10	$14,834
Cert./Dipl. (< 22 cr.)	2015	Health Care & Social Assistance	145	$20,331
Cert./Dipl. (< 22 cr.)	2015	Manufacturing	69	$35,169
Cert./Dipl. (< 22 cr.)	2015	Retail Trade	50	$13,749

[1] 2015 defined as October 1, 2014 through September 30, 2015

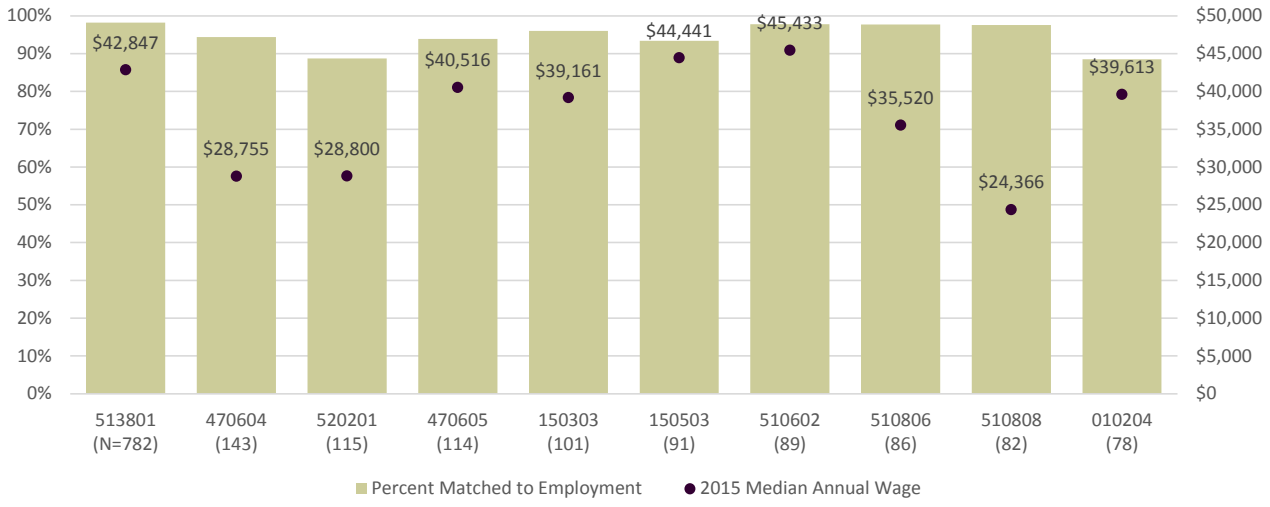
Employment and Wages by CIP

When analyzing wage and employment data, it is important to note the restrictions and limitations of the Iowa UI and WRIS data, as explained in the *Process and Methodology* section of this report. Two important factors that impact the data are: (1) the wage data only represents employees of a company that pays unemployment insurance tax; and (2) the number of hours worked are not reported within the data, making it impossible to identify part– versus full-time employment. This lack of distinction between part– and full-time employment is the primary reason the median annual wage is utilized for analysis, as it mitigates the effects of outliers to provide a more accurate representation of the typical employee's wages, particularly for comparison purposes.

Using the AY 2014 cohort of students who did not continue their education in the year following their award, recipients were matched to Iowa UI and WRIS data to determine if they obtained employment within the first year after their award. Figure 36 illustrates the data for graduates who earned an Associate of Applied Science (AAS) by CIP code. The bars represent the percentage of the cohort that matched employment records, and the dots represent the AY 2015 median annual wage. For example, 98.2 percent of students who received an AAS in the registered nurse program (CIP 513801) in AY 2014 matched employment and earned a median annual wage of $42,847; while 94.4 percent of those in the automobile/automotive mechanics technology/technician AAS program (CIP 470604) matched employment and earned a median annual wage of $28,755.

The programs with the most graduates not continuing their education in the first year after award are shown in Figure 36, while data for all other programs can be found in Appendix A.

Figure 36. AY 2014 Cohort, Employment and Wages by Associate of Applied Science (AAS) Degree, First Year Following Award

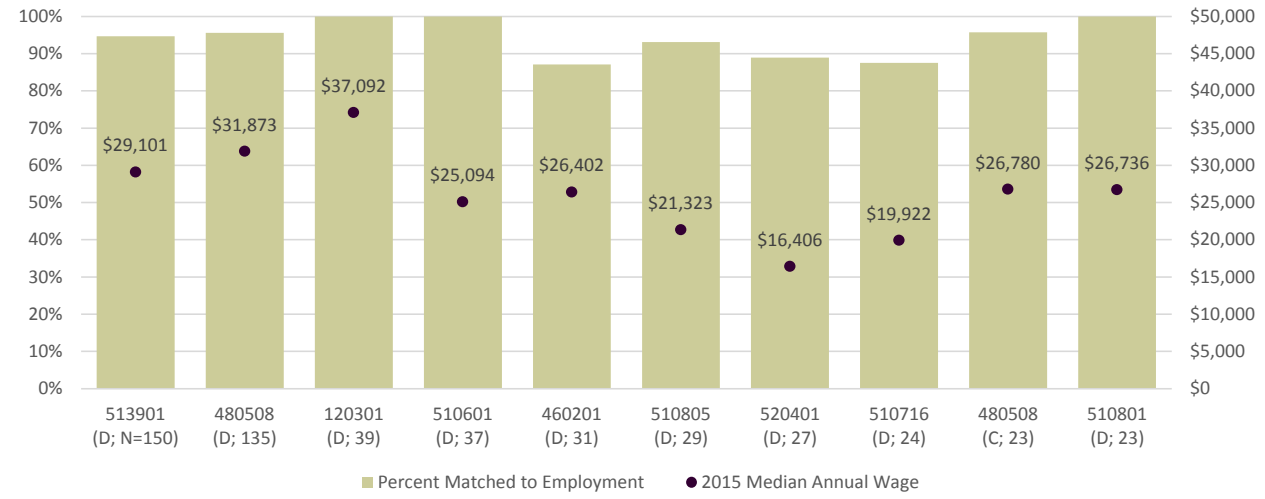


AAS Degree Legend:
513801: Registered Nursing/Registered Nurse
520201: Business Administration and Management, General
150303: Electrical, Electronic and Communications Engineering Tech.
510602: Dental Hygiene/Hygienist
510808: Veterinary/Animal Health Tech. and Veterinary Assistant
470604: Automobile/Automotive Mechanics Technology
470605: Diesel Mechanics Technology/Technician
150503: Energy Management and Systems Technology/Technician
510806: Physical Therapy Technician/Assistant
010204: Agricultural Power Machinery Operation

See Appendix A for other CIP codes and data not represented above.

Below is a sample of certificate and diploma outcomes for the AY 2015 cohort grouped by more or less than 22 program credits, Figures 37 and 38 respectively. Again, the employment match rates and AY 2015 median annual wages are provided. Appendix A contains data for other program awards by CIP.

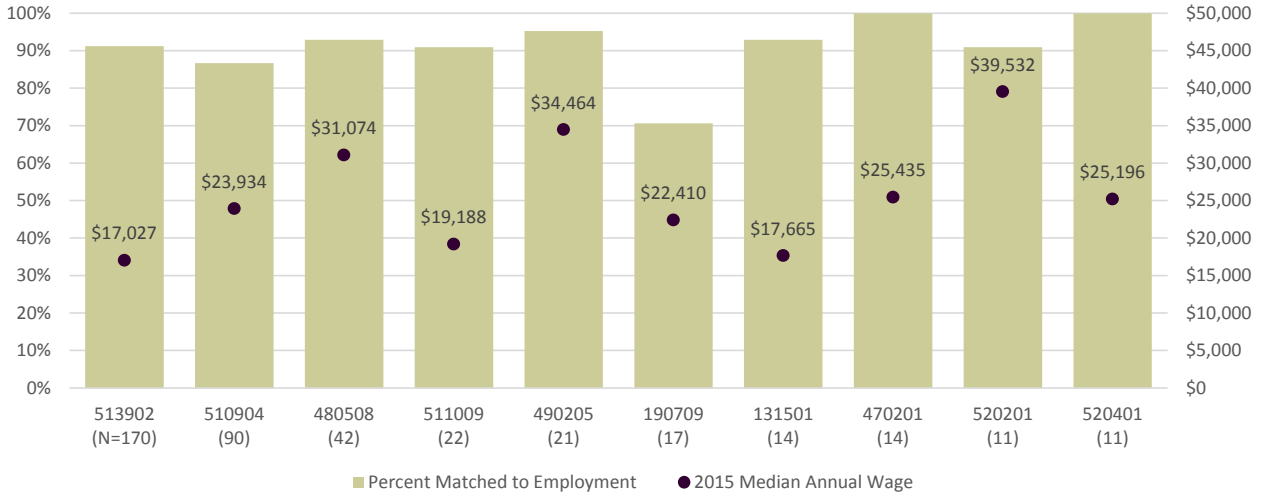
Figure 37. AY 2014 Cohort, Employment, and Wages by Certificate/Diploma Program (22 or More Credits), First Year Following Award



Certificate/Diploma (22 or more credits) Programs Legend:

513901: Licensed Practical/Vocational Nurse Training
120301: Funeral Service and Mortuary Science, General
460201: Carpentry/Carpenter
520401: Administrative Assistant and Secretarial Science, General
480508: Welding Technology/Welder
480508: Welding Technology/Welder
510601: Dental Assisting/Assistant
510805: Pharmacy Technician/Assistant
510716: Medical Administrative/Exec. Assistant and Med. Secretary
510801: Medical/Clinical Assistant

Figure 38. AY 2014 Cohort, Employment, and Wages by Certificate/Diploma Program (Less than 22 Credits), First Year Following Award



Certificate/Diploma (Less than 22 credits) Programs Legend:

513902: Nursing Assistant/Aide and Patient Care Assistant/Aide
480508: Welding Technology/Welder
490205: Truck and Bus Driver/Commercial Vehicle Op./Instr.
131501: Teacher Assistant/Aide
520201: Business Administration and Management, General
510904: Emergency Medical Technology/Technician (EMT Paramedic)
511009: Phlebotomy Technician/Phlebotomist
190709: Child Care Provider/Assistant
470201: Heating, Air Conditioning, Ventilation and Refrigeration Maint. Tech.
520401: Administrative Assistant and Secretarial Science, General

Career Clusters

Career and technical education (CTE) in Iowa consists of educational programs offering courses that are designed to prepare individuals for employment in current or emerging occupations. These programs involve competency-based, applied learning which contributes 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 are organized according to 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 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
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 are 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.

Figure 39 illustrates the number of awards earned by Iowa community college students by career cluster from AY 2010 to AY 2014. The list also includes awards earned by students in the 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 skills like the CTE programs.

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

Note: Only 15 of the 16 career clusters are listed in Figure 38 because data was not available for the Government and Public Administration career cluster.

Figure 39. AY 2010 - AY 2014 Awards by Career Cluster

Cluster Name	2010 Awards	2011 Awards	2012 Awards	2013 Awards	2014 Awards	Total Awards
Agriculture, Food and Natural Resource Cluster	533	636	646	668	608	3,091
Architecture and Construction Cluster	636	723	709	754	622	3,444
Arts, Audio/Video Technology and Communications Cluster	249	281	318	251	315	1,414
Business, Management and Administration Cluster	829	931	942	1,103	951	4,756
Education and Training Cluster	42	45	45	93	108	333
Finance Cluster	330	412	425	354	301	1,822
Health Science Cluster	4,198	4,431	4,698	4,565	4,315	22,207
Hospitality and Tourism Cluster	148	179	237	242	254	1,060
Human Service Cluster	327	440	435	446	458	2,106
Information Technology Cluster	349	404	504	527	489	2,273
Law, Public Safety, Corrections and Security Cluster	340	388	408	347	312	1,795
Manufacturing Career Cluster	887	1,147	1,205	1,197	1,215	5,651
Marketing Sales and Service Cluster	227	181	213	202	176	999
Science, Technology, Engineering and Mathematics Cluster	99	136	119	90	84	528
Transportation, Distribution, and Logistics Cluster	705	771	800	861	726	3,863
College Parallel/Liberal Arts	5,456	5,976	6,481	6,296	6,090	30,299
Total	**15,355**	**17,081**	**18,185**	**17,996**	**17,024**	**85,641**

Employment by Career Cluster

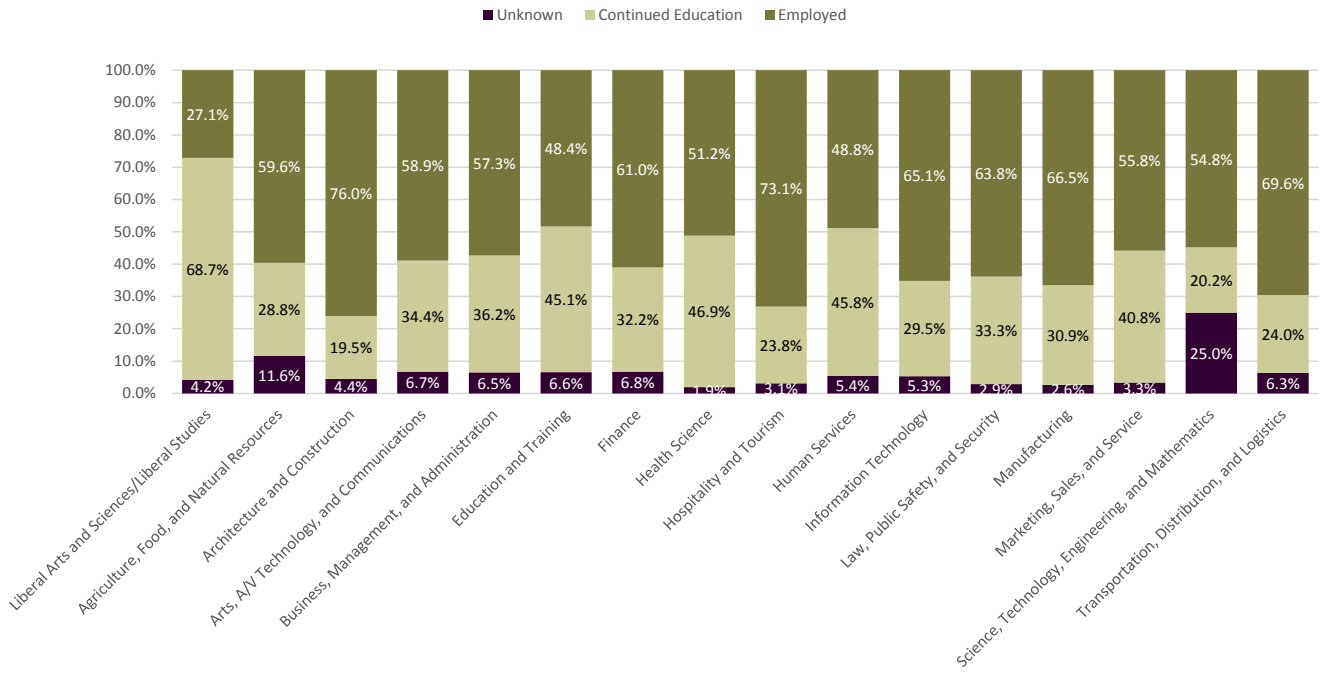
By analyzing and charting each career cluster based on the percentage of students who continued their education versus those who became employed, it is evident which clusters are targeted toward direct employment.

Using the AY 2014 cohort as an example, Figure 40 illustrates that within the first year following award completion, approximately three-fourths of the architecture and construction (76.0 percent) and hospitality and tourism (73.1 percent) graduates became employed. In each cluster, 19.5 and 23.8 percent, respectively, continued their education, while a small percentage of completers could not be found in either the National Student Clearinghouse or the Unemployment Insurance wage records. These award completers are denoted as "Unknown" in Figure 40.

Not surprisingly, the liberal arts and sciences cluster, which is designed for transfer to a four-year institution, has the highest rate of graduates continuing their education (68.7 percent). Naturally, this is accompanied by a lower rate of graduates entering employment after graduation.

Similar data were analyzed for other cohorts and are available in Appendix A. It is important to reiterate that out-of-state (WRIS) data were not available for the entirety of AY 2011. Therefore, when analyzing employment data one year following the award, the AY 2010 cohort data are incomplete.

Figure 40. AY 2014 Cohort, Enrollment, and Employment Status by Career Cluster, First Year Following Award



Transition into the Workforce

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

Figure 41 relates these two variables for the AY 2010 through 2014 cohorts, in aggregate, utilizing Circos, a software that uses polar coordinate mapping to illustrate data relationships. The Iowa Unemployment Insurance (UI) wage record database and the Wage Record Interchange System (WRIS) provided the industry information for each graduate.

The colored bars on the left side of the circle represent the career clusters and college parallel/ liberal arts in which students earned awards. 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 twenty aggregate industry sectors listed on the right.

Figure 42 on the next page illustrates the relationship between career clusters and industry sectors via hundreds of ribbons connecting the career cluster graduates (left) to their industry sectors of employment (right). The width of the bars on both sides illustrate the size of the overall number of graduates (left bars) and employment within each sector (right bars). It is important to note that bars/ribbons representing data cells that were suppressed were removed from the visualization, resulting in less colored and gray bars in Figure 42 than there are in Figure 41.

Another important thing to keep in mind is that this data show the industry sectors in which completers are primarily employed, not their actual occupations. For instance, a person who received his or her degree in health science could be a pharmaceutical technician employed by the pharmacy of a large retail store. While he or she is doing work related to the health care field, he or she is technically employed in the retail trade sector. The distinction between occupation and industry sector is important to consider when analyzing the flow from education to industry shown in Figures 42 and 43 on the next pages.

Figure 41. Circos Visualization

Career Cluster

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

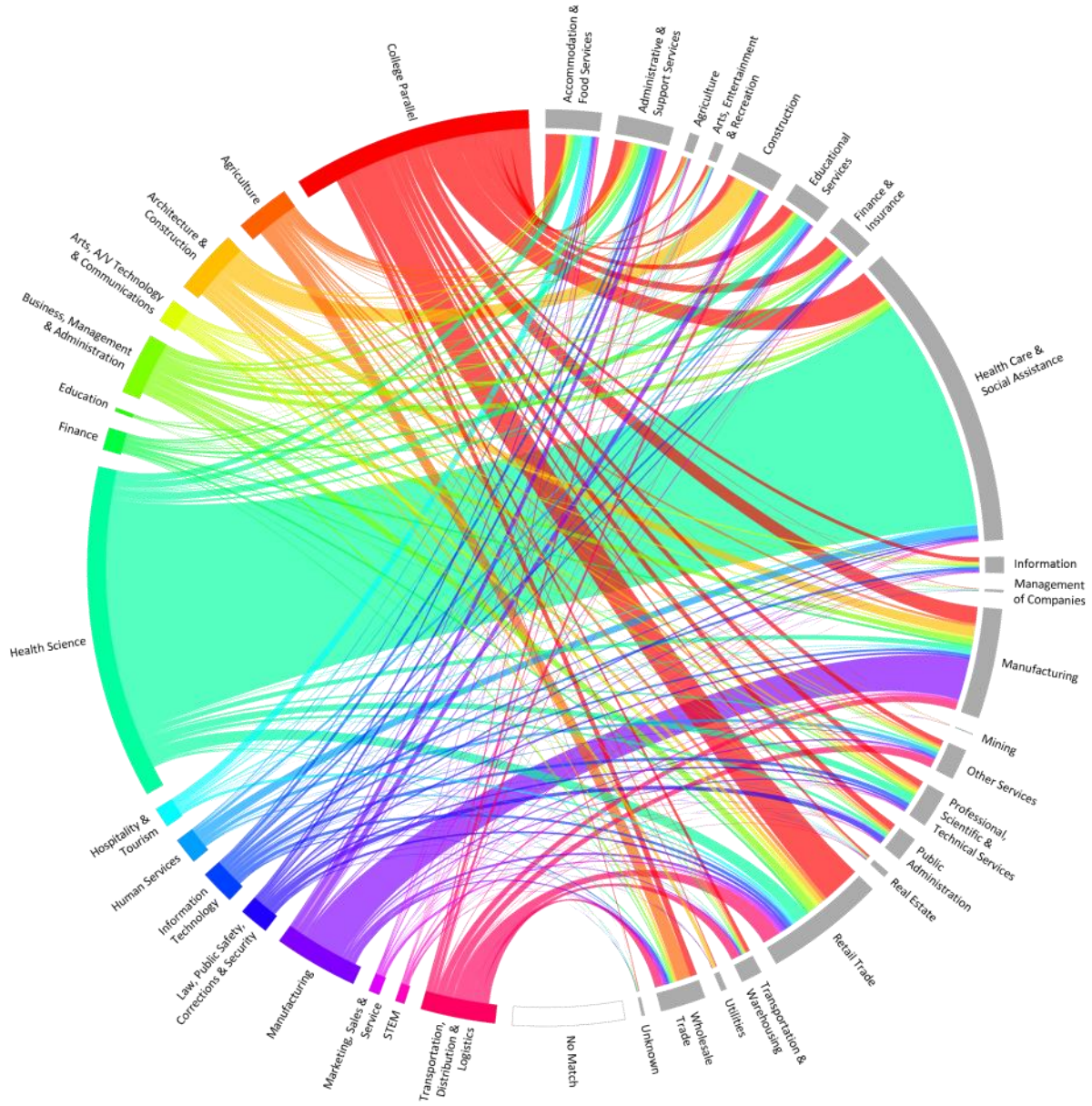
Industry Sector

Accommodation and Food Services
Admin. Support, Waste Mgmt. and Remediation
Agriculture, Forestry, Fishing and Hunting
Arts, Entertainment and Recreation
Construction
Educational Services
Finance and Insurance
Health Care and Social Assistance
Information
Management of Companies and Enterprises
Manufacturing
Mining
Other Services
Professional, Scientific and Tech. Services
Public Administration
Real Estate, Rental and Leasing
Retail Trade
Transportation and 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 2010 to AY 2014 graduates, which explains why the red and green sectors on the left of Figure 42 are so wide. All graduates who did not enter further education within one year of graduation are graphically represented in this figure, with the "No Match" 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, and accommodation and food services.

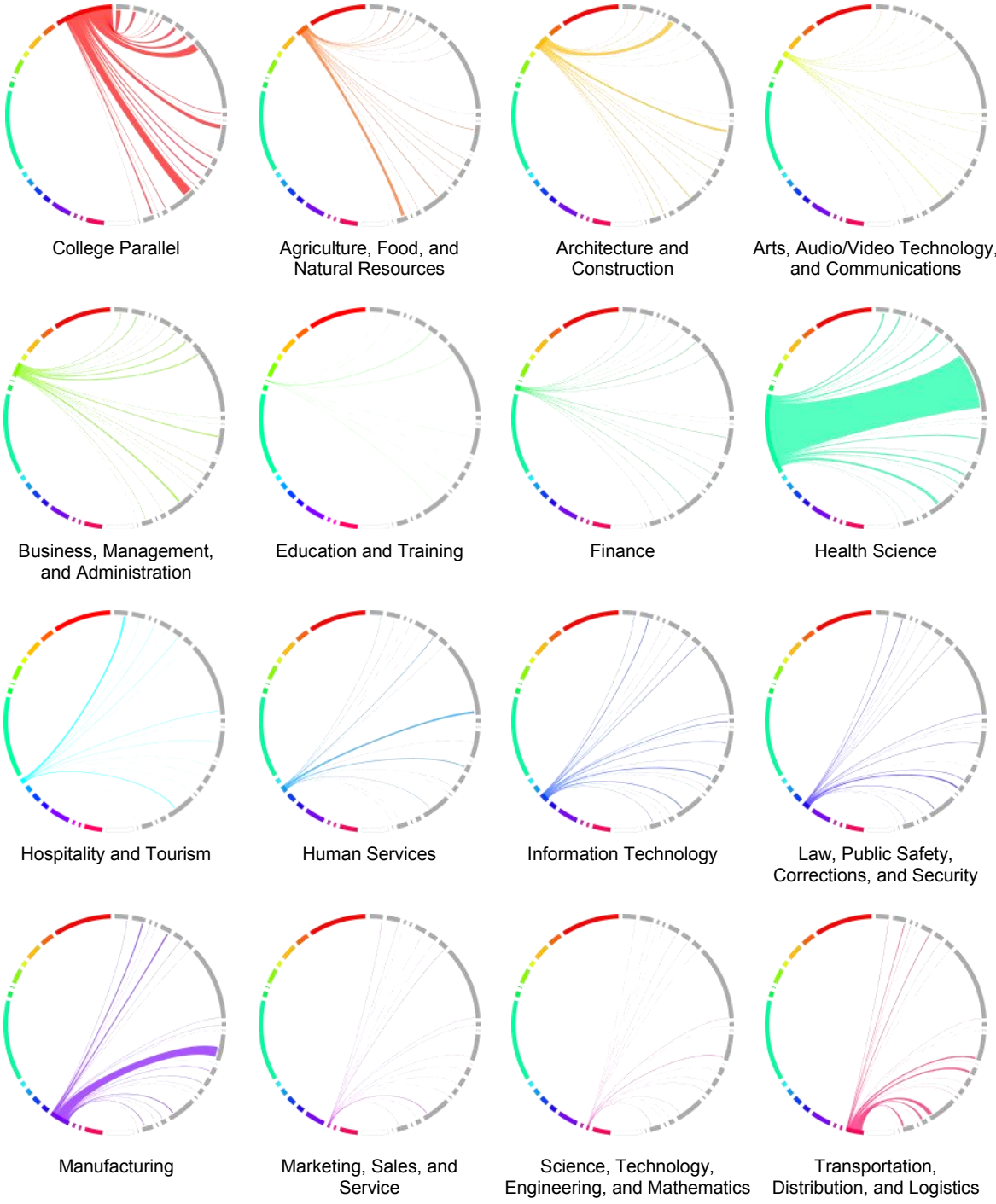
Figure 42. Cluster to Industry Mapping for AY 2010-AY 2014 Community College Graduates



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

The circular graphics in Figure 43 illustrate each award category (i.e., career clusters and college parallel programs) on the left side of the circle aligning with the industry in which each graduate is working. This is simply Figure 42 separated into 16 individual graphics for each career cluster to more easily distinguish industry patterns within a cluster.

Figure 43. Industry Mapping by Cluster, AY 2010-AY 2014 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 Unemployment Insurance (UI) wage database or the Wage Record Interchange System (WRIS) 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 academic year 2015 (October 2014 - September 2015) levels (CPI-u=236.7417) 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_{base} is the CPI value of the base time period (AY 2015), CPI_t is the CPI value of the time period being adjusted from, and W_t is the wage of the time period being adjusted from. 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).

- To protect individual identities, small sample size cells were suppressed using the following rules:
  1. Suppress cell if number of employed in 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 greater).

- Out-of-state (WRIS) data was not available for the entirety of AY 2011 due to the available data within the WRIS system (8 quarters) during this reporting period.

References

Krzywinski, M. et al. "Circos: an Information Aesthetic for Comparative Genomics.", http://www.circos.ca/

Institute of Educational Sciences, National Center for Education Statistics, "Classification of Instructional Programs", http://nces.ed.gov/

Appendix A—Contents

Below is a list of the detailed data tables for this report. There are separate Excel spreadsheets for each cohort (AY2010, AY2011, AY2012, AY2013, and AY2014) which can be accessed at https://www.educateiowa.gov/community-colleges.

Table 1: Overall Employment and Wages

Table 2: Overall Employment and Wages by State of Employment

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

Table 4: Overall Employment and Wages by State and Industry Sector of Employment

Table 5: Employment and Wages by Gender

Table 6: Employment and Wages by Award Type (Aggregated)

Table 7: Employment and Wages by Award Type (Aggregated) by State of Employment

Table 8: Employment and Wages by Award Type (Aggregated) by Industry Sector of Employment

Table 9: Employment and Wages by Award Type (Aggregated) by State and Industry Sector of Employment

Table 10: Employment and Wages by Specific Award Type

Table 11: Employment and Wages by Specific Award Type and State of Employment

Table 12: Employment and Wages by Specific Award Type and Industry Sector of Employment

Table 13: Employment and Wages by Specific Award Type, State and Industry Sector of Employment

Table 14: Employment and Wages by Program (CIP) and Specific Award Type

Table 15: Employment and Wages by Program (CIP), Specific Award Type and State of Employment

Table 16: Employment and Wages by Program (CIP), Specific Award Type and Industry Sector of Employment

Table 17: Employment and Wages by Career Cluster

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