Employment and Earnings Data Report

Prepared by

The Connecticut Independent College and University
Institute for Research and Public Service, Inc.
Student Longitudinal Data System (SLDS)

May 2019

P20·WIN
Connecticut's Preschool–20 and Workforce Information Network

CCIC Graduates in the Connecticut Workforce

Introduction

The main purpose of this report is to explore the employment and wage outcomes for students who earn credentials at participating CCIC Member Institutions and enter the Connecticut workforce. Results are based on based on students awarded credentials between the academic years of 2009-10 through 2014-15 and compiled via the Connecticut Independent College and University Institute for Research and Public Service's (CICU-IRPS) Student Longitudinal Data System (SLDS). The count of graduates includes all students, regardless of enrollment category.

As part of CCIC's participation in the "Preschool through 20 and Workforce Information Network" (P20WIN), graduates of participating CCIC Member Institutions were matched to Connecticut's Department of Labor (DOL) data base using procedures outlined in P20WIN's Data Request 0016 (see http://www.ct.edu/p20win/requests).

The overall data tables contain wage and employment data by year of graduation and program of study using the Classification of Instructional Program Codes (CIP codes).

Data Notes and Limitations

1. Eight of CCIC's 15 member institutions participated in the request, representing 61% of the total undergraduate, degree seeking population at CCIC member institutions in the 2014-15 academic year. When CCIC institutions are referenced in this report, it indicates only those participating in this study.
2. The employment and wage data only include employees who are covered by Unemployment Insurance (UI) law in Connecticut. Major exclusions from these data include those who are self-employed, all members of the Armed Forces, elected officials in most states, most agricultural workers on small farms, most employees of railroads, some domestic workers, most student workers at schools and employees of some types of non-profit organizations. According to the DOL, UI-covered jobs generally include approximately 95% of wage and salary positions in the labor market.
3. Only graduates who work in Connecticut are included.
4. Employment counts under-represent the true number of employed graduates for several reasons: 1) Unemployment Insurance data exclude some classes of employees, 2) Unemployment Insurance data to which DOL has access does not include CT residents who work in other states, and 3) Matches between education and UI records cannot be made for students who do not have valid Social Security Numbers (SSNs) on file.
5. Wage results may represent fulltime, part time, or non-continuous employment.
6. Level of wages under-represent typical annual salaries. The wage data DOL receives from employers includes everyone whether they worked full-time, part-time or intermittently (e.g. someone who starts or stops a job mid-quarter), and it does not include the number of hours or weeks individuals worked. Since they cannot be distinguished, employment metrics in this report combine data for everyone employed. Therefore, the total average wages reported for any given quarter are lower than what one would expect to earn if everyone in the calculation worked full-time and for all business days within the quarter.
7. Employment data are suppressed when the cell size is less than six and in instances where secondary cell suppression is needed to avoid situations where information about individuals may be determined through calculation. This affects the counts of individuals employed and all related wage data that would be calculated from the suppressed cell.

Wage Results

The credentials earned by students in this study include certificate, associate's, and bachelor's degree. Graduates can be represented in multiple degree programs and class years (e.g., Certificate and Bachelor's). Graduates may have received a further degree after the degree listed.

The information provided from the DOL presents quarterly wages. For the purpose of comparison, the Post Q8 quarterly wage is multiplied times four to approximate an annual wage (please see Data Caveat Section, #6 for details on annual salaries).

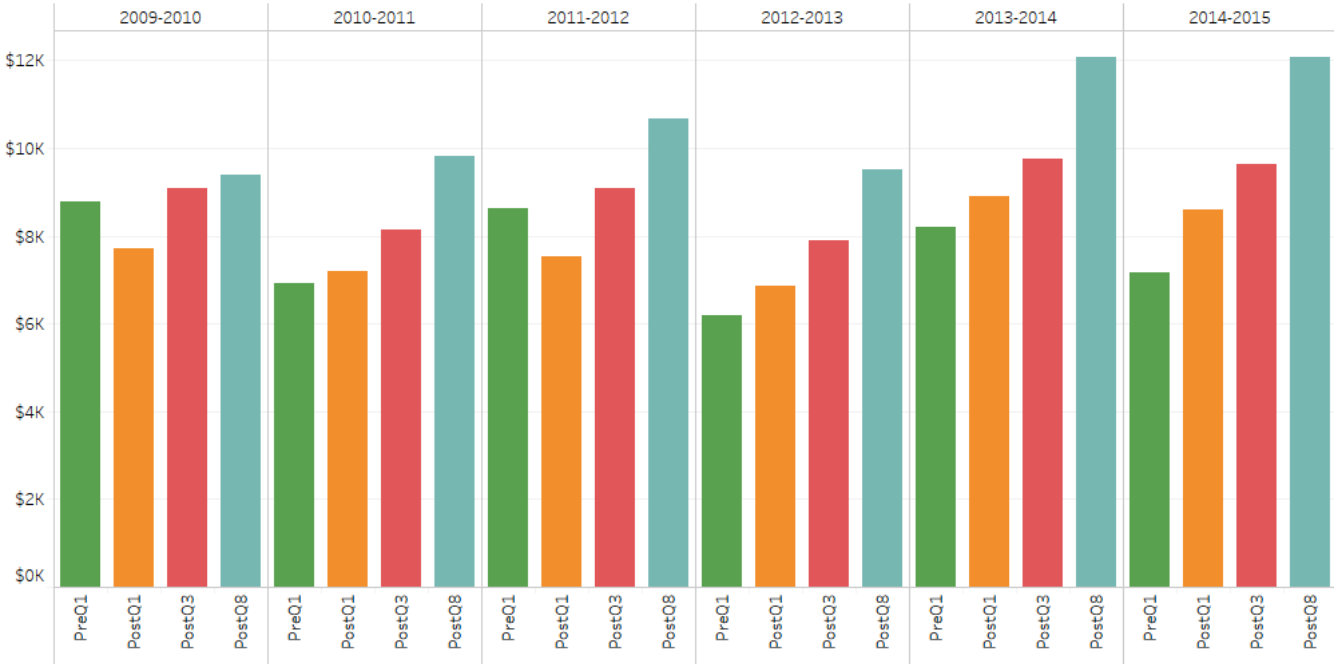
Those with Associate's Degrees average wages range from $39K to $51K. The reader should recall the caveats presented above when interpreting these results. It is possible that those receiving Associate's Degrees (as well as Certificate recipients) continued on to other degrees within the two years after receiving their degrees and that these earnings may be influenced by part-time work.

Bachelor's Degree recipients show a range that begins higher, at $46K, with a high of $50K, slightly lower than that of those earning an Associate's. Those receiving Certificates have estimated yearly wages ranging from about $35K to $42K.

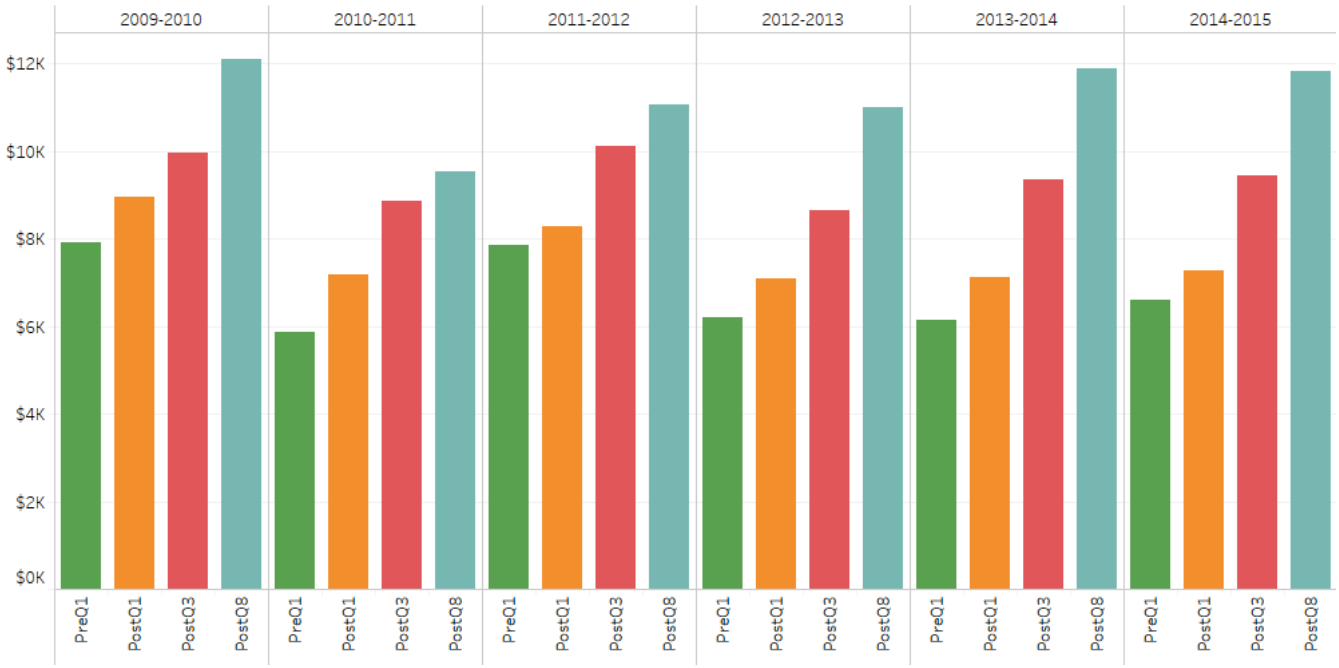
Wages Average Overall Annualized

Degree_Type	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Associates Degree	$49,722	$39,986	$43,949	$48,911	$49,219	$51,405
Bachelors Degree	$46,493	$47,063	$46,527	$47,970	$49,388	$50,372
Certificate	$37,822	$35,312	$38,139	$36,145	$40,984	$42,390

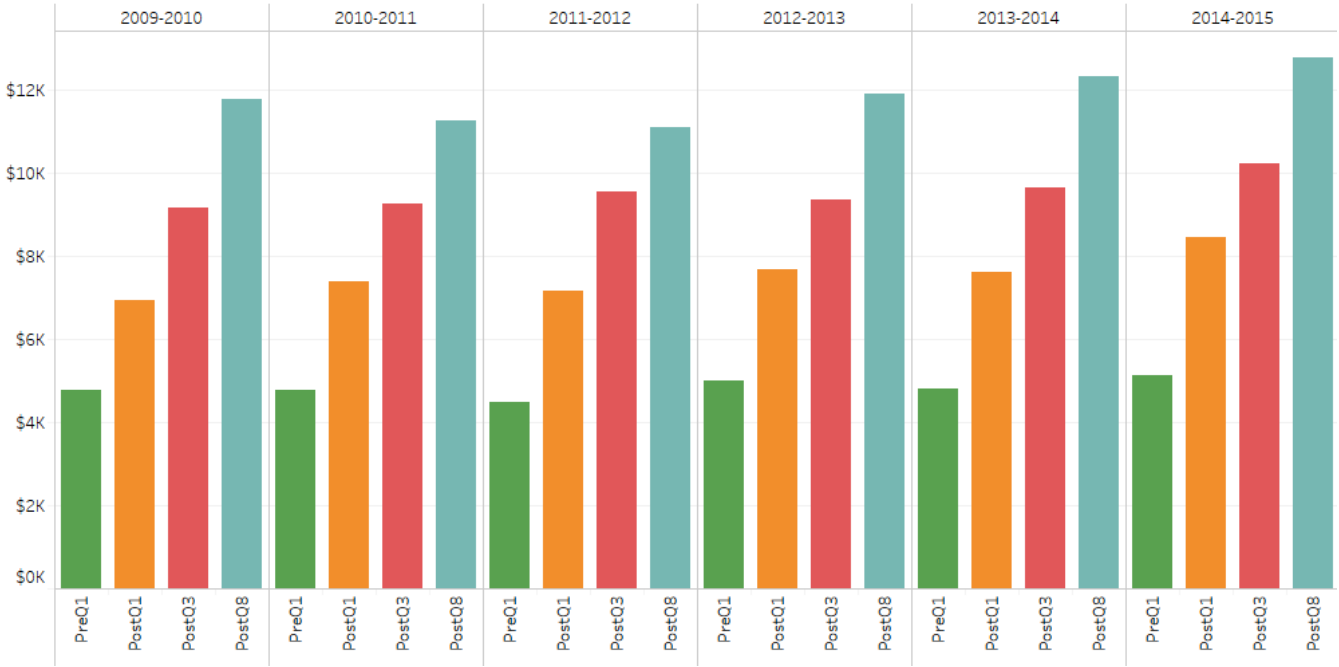
Certificates: Average Quarterly Wages Over Time



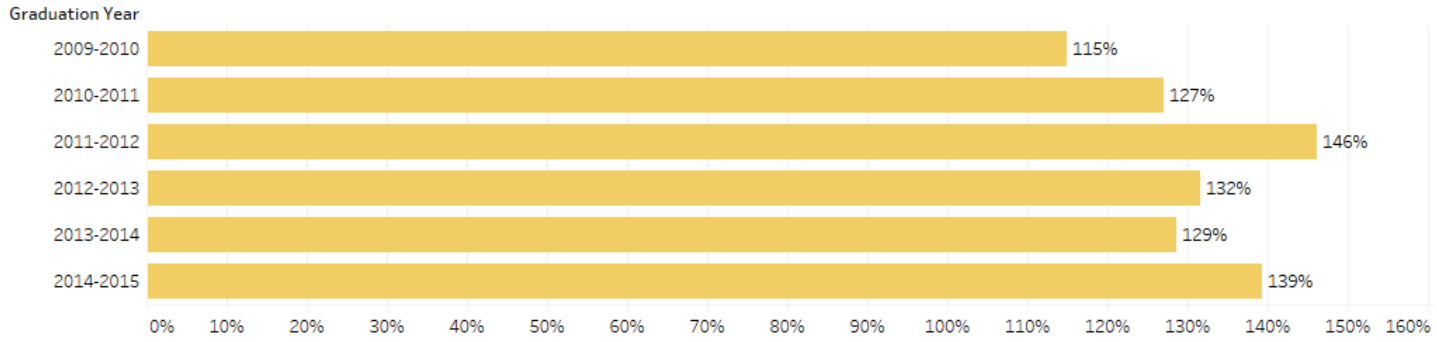
Associate's: Average Quarterly Wages Over Time



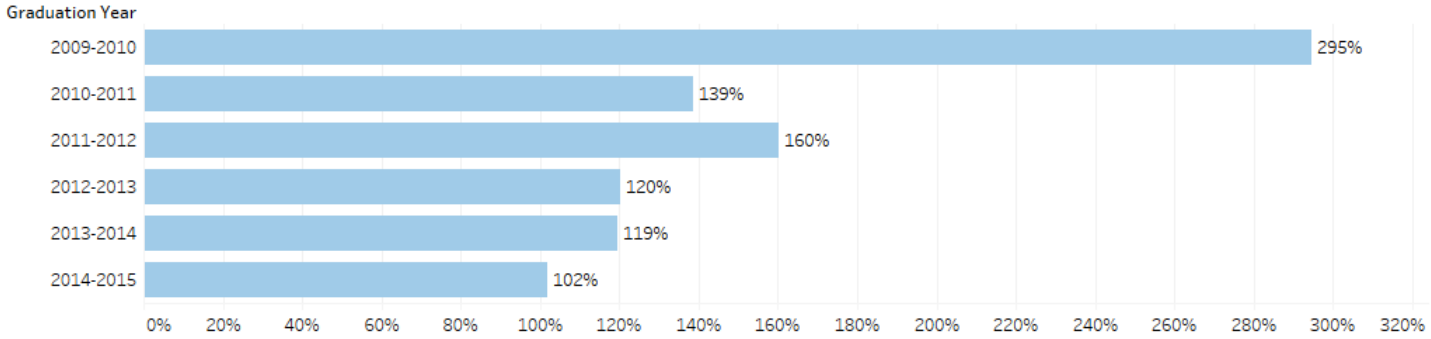
Bachelor's: Average Quarterly Wages Over Time



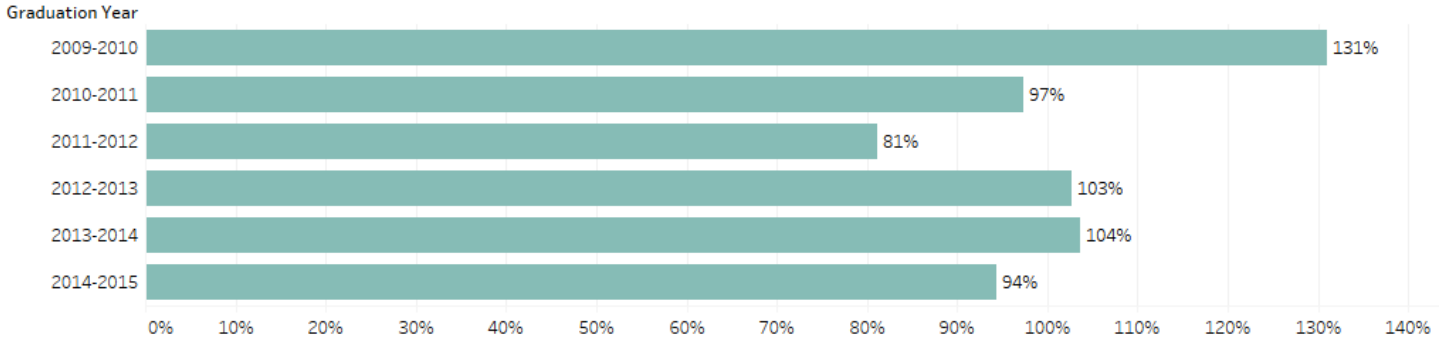
Bachelor's Degree: Average Wage Change from PreQ1 to PostQ8



Average Wage Change from PreQ1 to PostQ8, GSP Recipients



Average Wage Change from PreQ1 to PostQ8, Pell Recipients



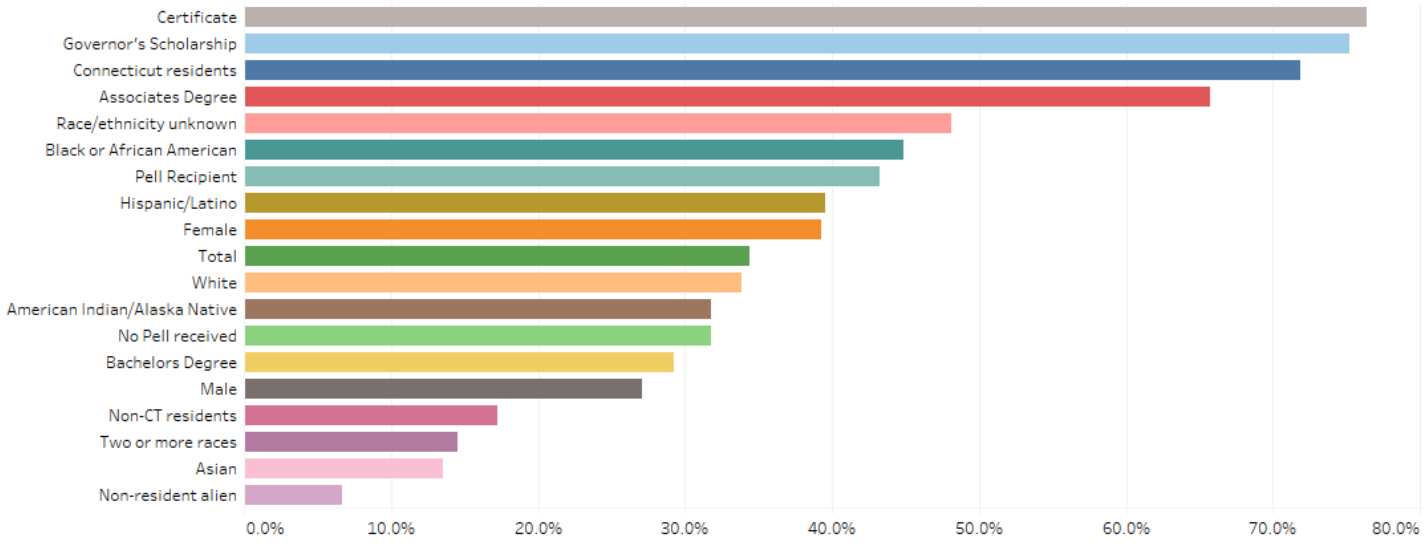
Students Working in Connecticut Post Graduation

Overall, an average of 57% of the students remained in state, across all years and all degree types in the study. For the same time frame, certificate earners were employed at an average rate of 76%, associate's earners at 66%, and bachelor's degree recipients at an average of 29%.

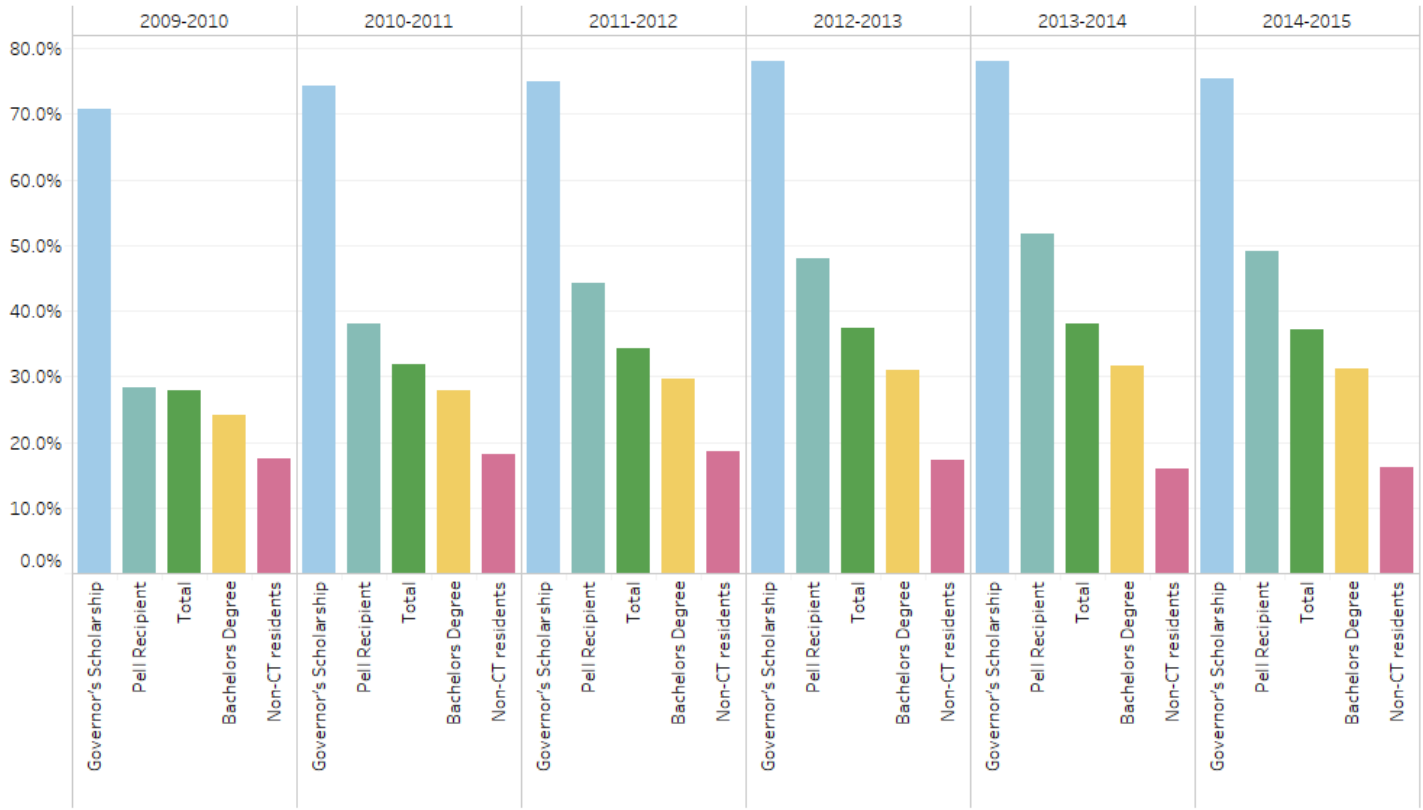
For Governor's Scholarship Recipients, that number rises steeply to 71%-78% remaining in state to work. Pell recipients remain at rates of between 28%-52% and 16%-19% of non-Connecticut residents stay in state to work post-graduation.

The following charts explore the average percent of graduates who are employed post Q8 in a variety of views.

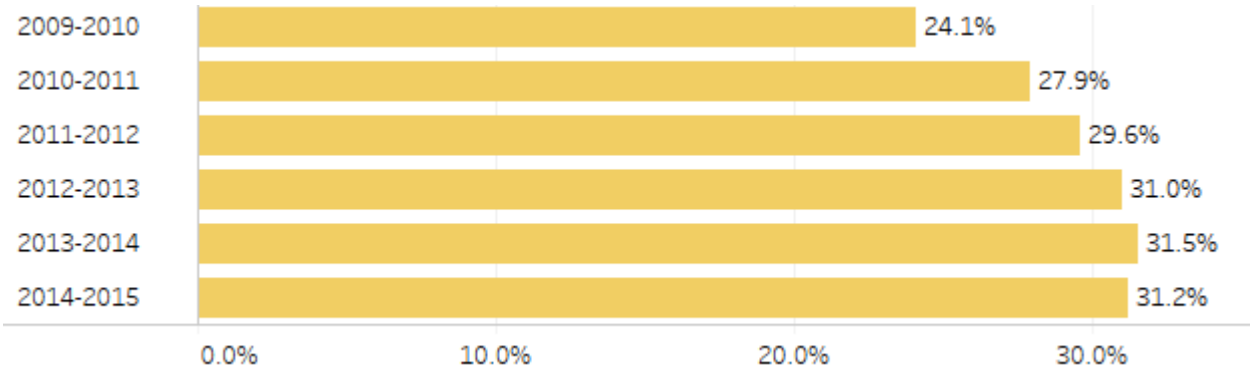
Average Percent of Grads Employed in Connecticut Post Q8, All Degrees, 2009-10 through 2014-15



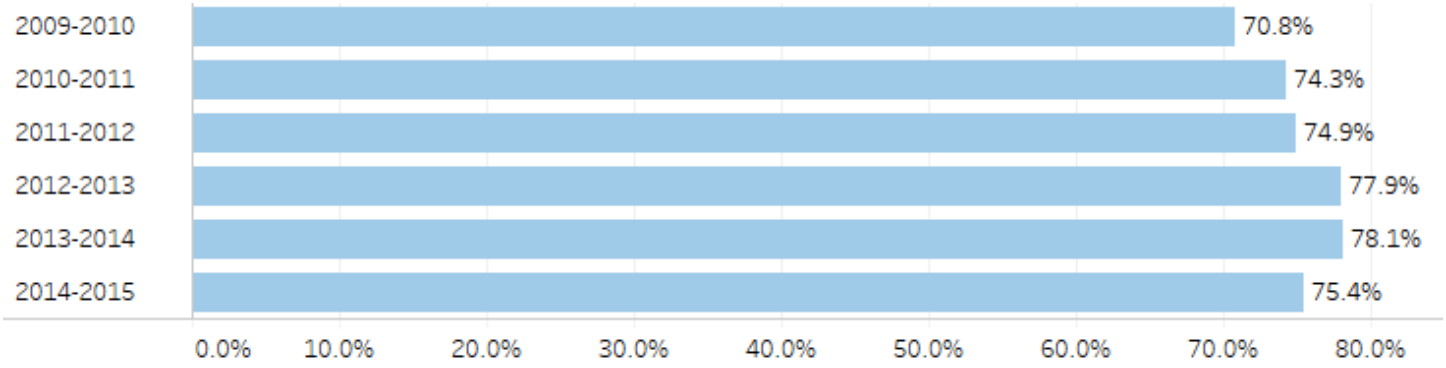
Percent of CCIC Graduates Employed in Connecticut Post Q8, by Year



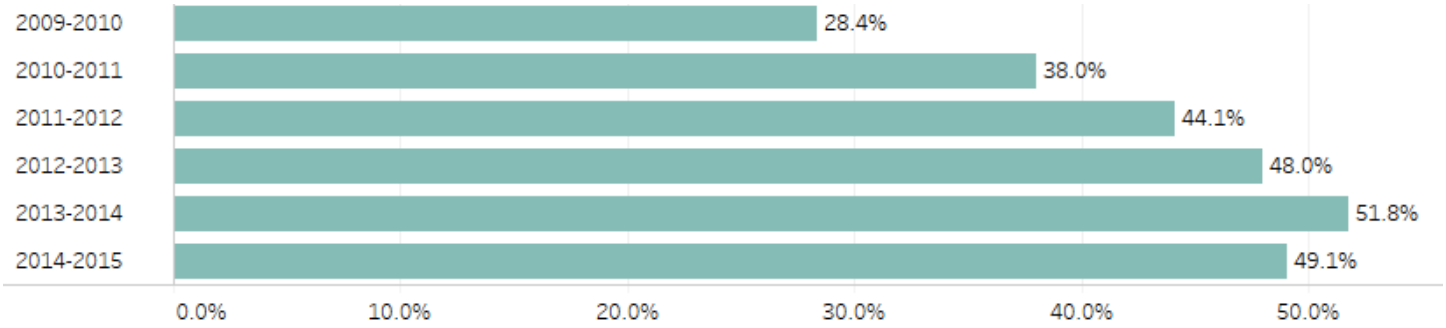
Bachelor's Degree: Percent of CCIC Graduates Employed in Connecticut Post Q8



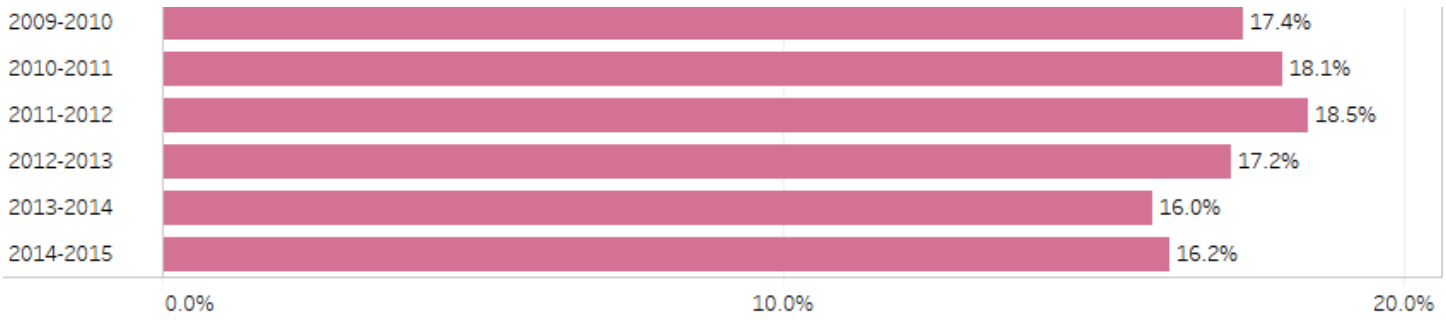
Governor's Scholarship Recipients: Percent of CCIC Graduates Employed in Connecticut Post Q8



Pell Recipients: Percent of CCIC Graduates Employed in Connecticut Post Q8



Non-Connecticut Residents: Percent of CCIC Graduates Employed in Connecticut Post Q8



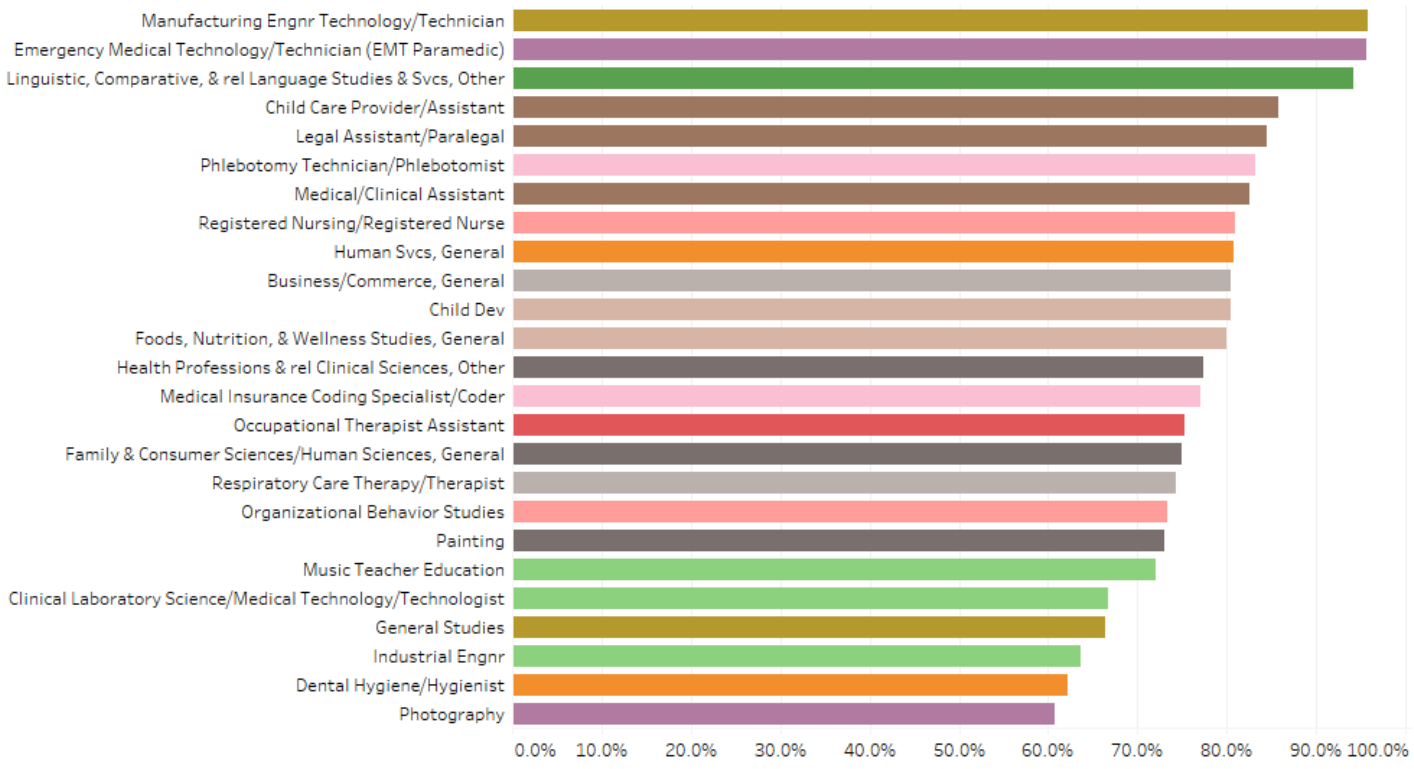
Instructional Programs

The DOL's wage data was also made available by Classification of Instructional Programs (CIP) Code. A fluctuation in graduate numbers for each class year can add to the year-to-year wage variations. In order to compensate for this, as well as suppression of data small-cell data, the DOL has combined multiple years into each reporting group.

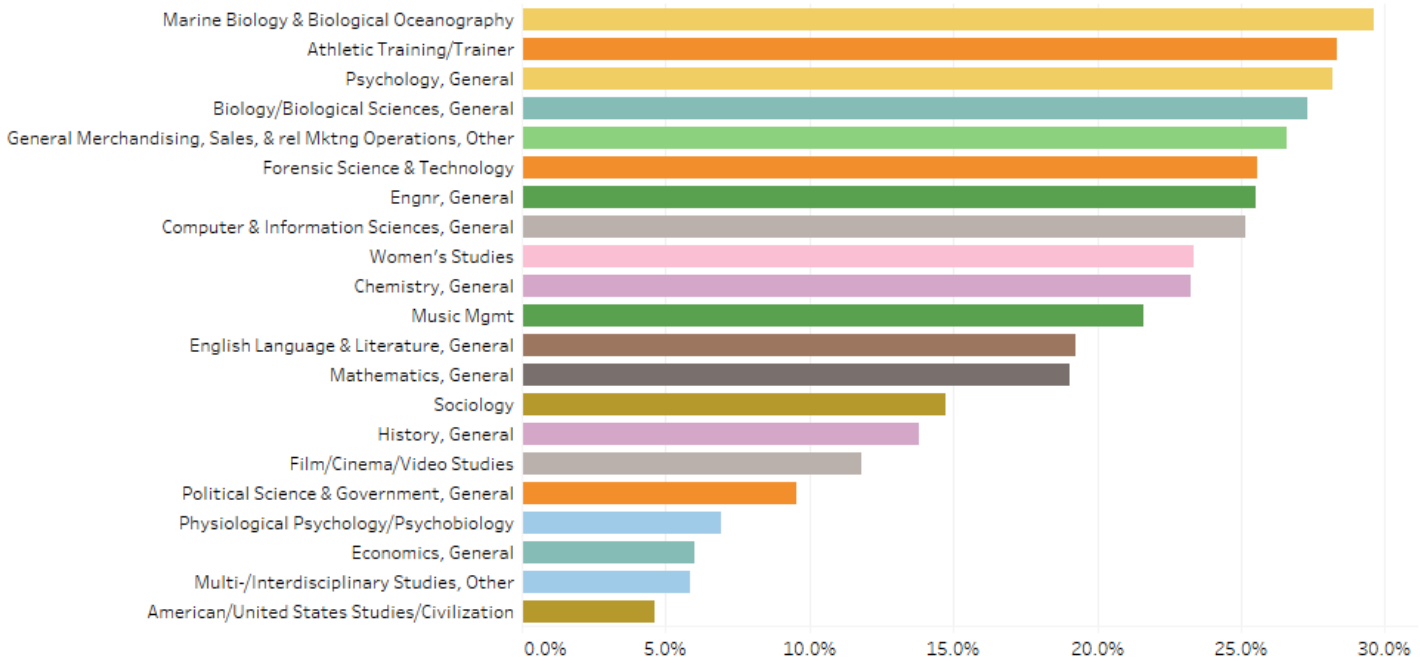
Two-digit CIP codes are totals for a particular group; six-digit CIP codes are subsets of the two-digit groups. The CIP level has been indicated in the visualizations below.

Looking across degree types for the 2012-13 to 2014-15 reporting group, employed in Connecticut at high rates are those individuals with credentials in Manufacturing, Health Sciences, Child Care and Legal/Paralegal Studies.

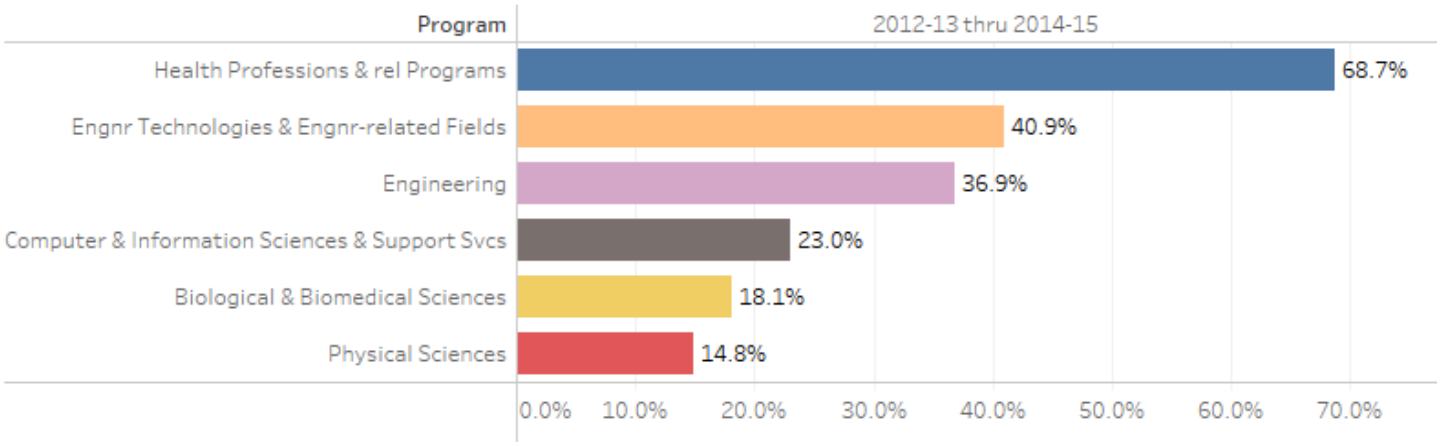
2012-2015: Over 60% Employed Post Q8 for All Degree types, by 6-Digit CIP



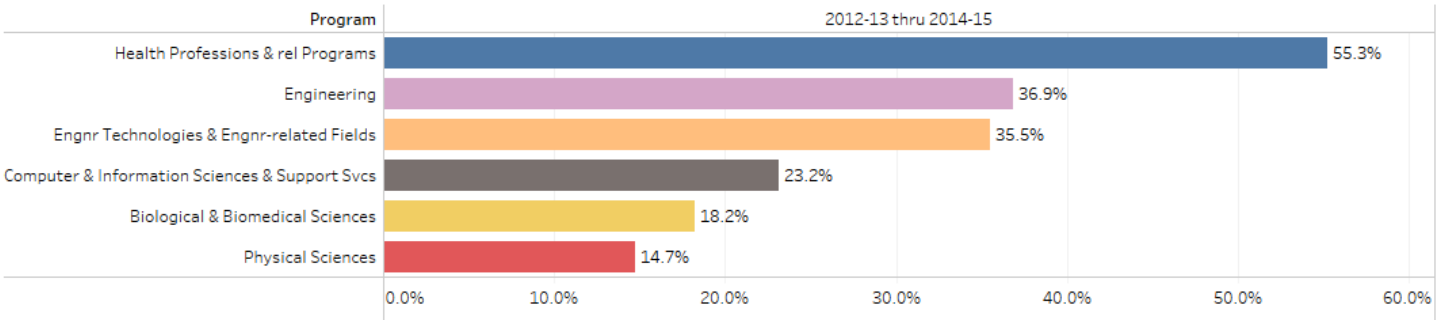
2012-2015: Under 30% Employed Post Q8 for All Degree types, by 6-Digit CIP



2012-2015: Cluster Degrees, All Degree Levels



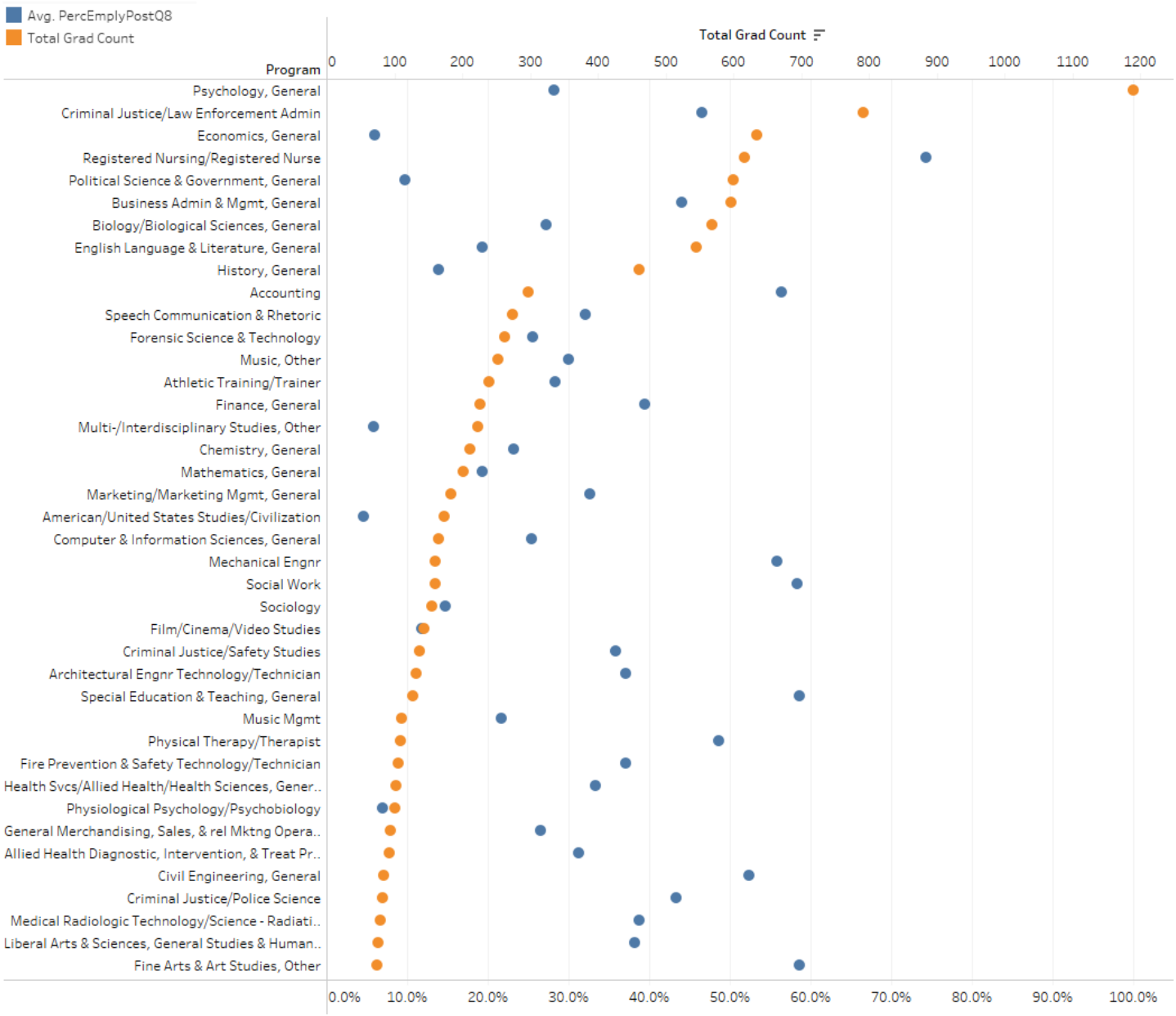
2012-2015: Cluster Degrees, Bachelor's Degrees



The visualization below illustrates the bachelor's degree programs with the highest number of graduates (orange) in descending order. The average percent employed Post Q8 in Connecticut for the program is indicated by the blue dot, on the same line.

Graduates of psychology programs are the most numerous at 1,189, but the number of employed is on the low end with 28.2% working in state.

Percent Employed Post Q8 for Programs by Total Number of Bachelor's Degree Earners, 2012-2015



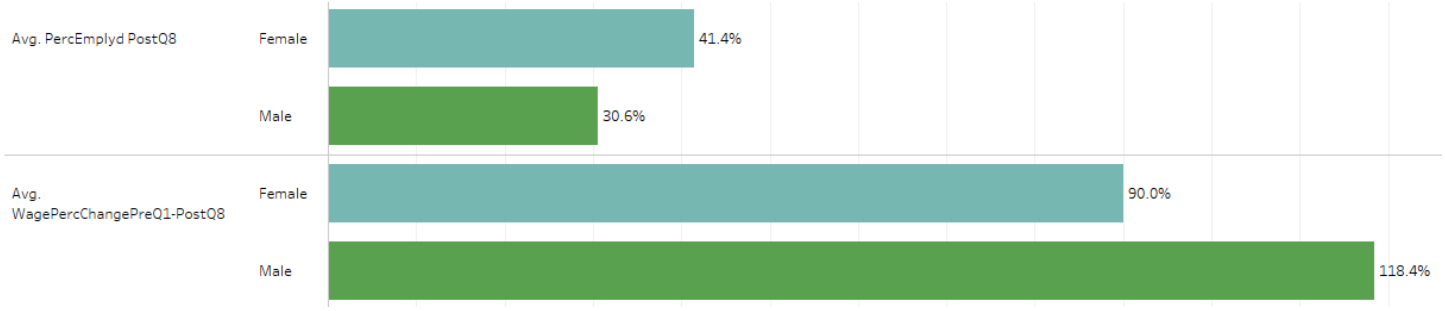
Demographic Groups

When the data is examined through the lens of gender, race and ethnicity, it reveals several insights.

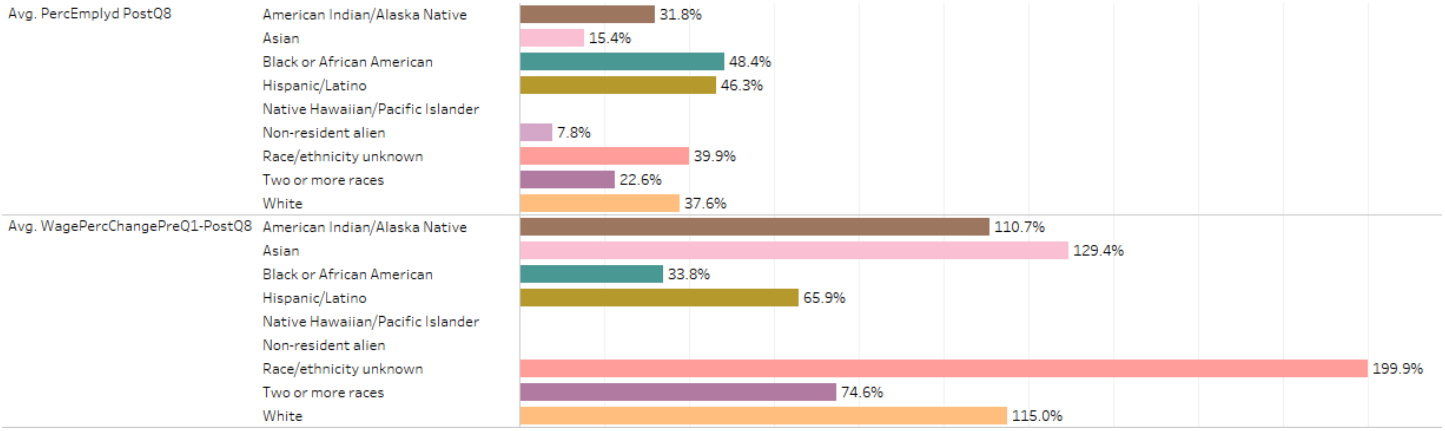
While the average percent of female working in state is higher than that of males, 41% compared to 31%, the wage change PreQ1 to Post Q8 is significantly lower for females working in Connecticut. Males on average attain a wage increase of 118% while the wages of females only increase by 90%.

Black or African Americans are employed at the highest percentage of graduates at 48%, while the race/ethnicity unknown category shows the highest increase in wages at 200% from PreQ1 or PostQ8. Asians show the second highest with an average increase of 129%.

Comparison of the Percent of Graduates Employed Post Q8 and Average Wage Change by Gender, 2014-15



Comparison of the Percent of Graduates Employed Post Q8 and Average Wage Change by Race/Ethnicity, 2014-15

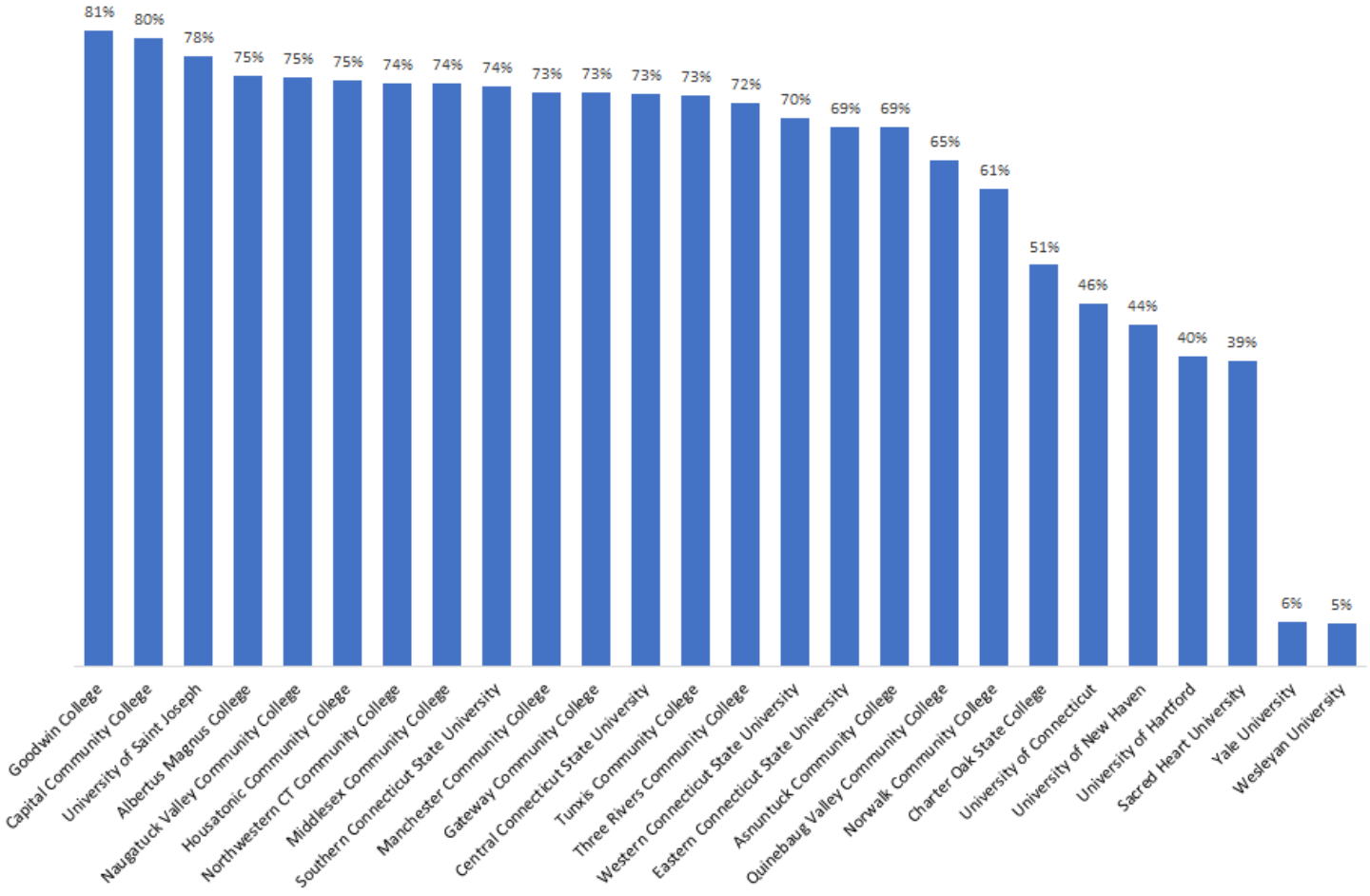


Statewide Overview

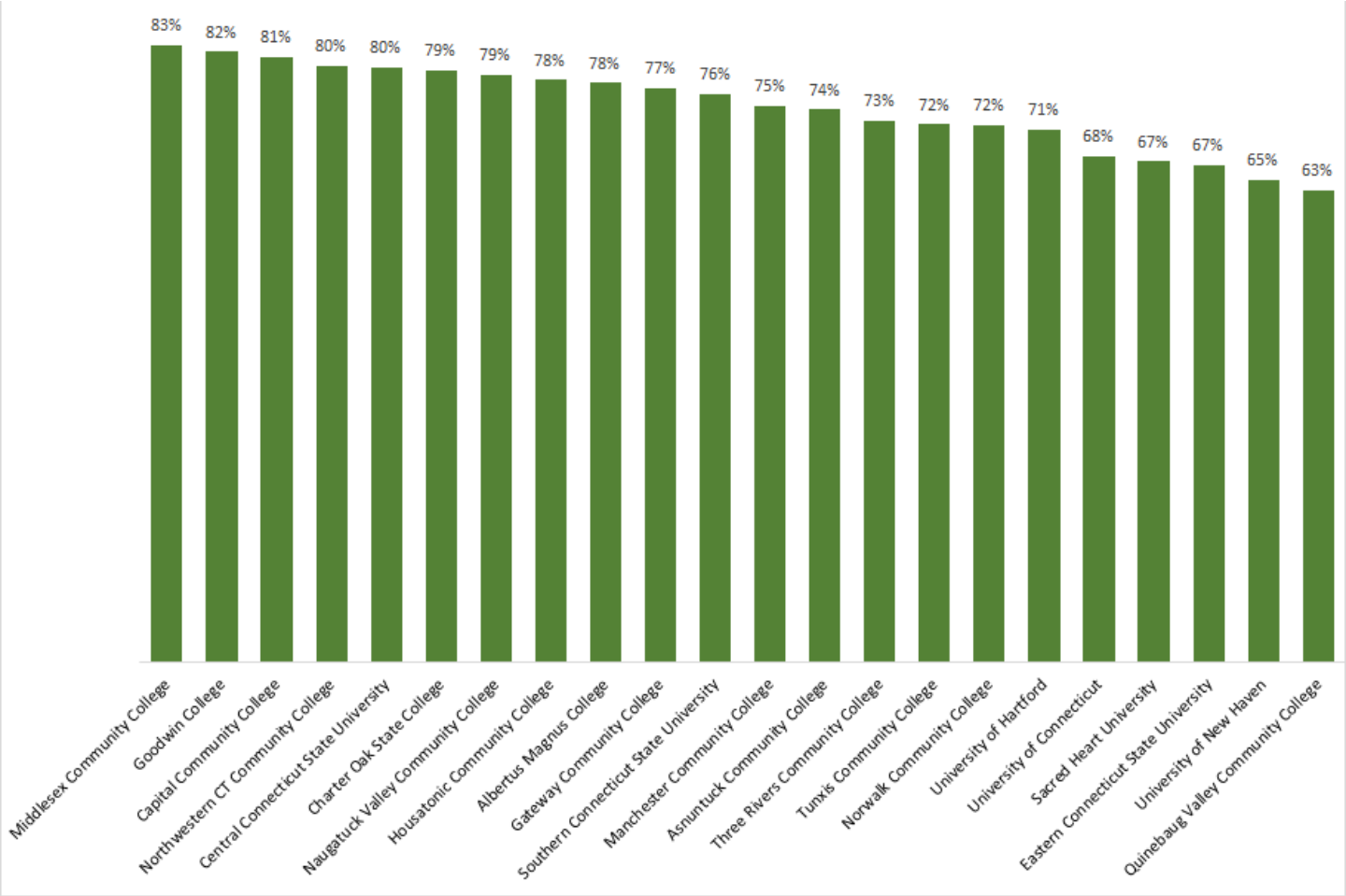
Connecticut is home to a wide range of institutions, both public and private. When compared as group, CCIC member institutions participating in this study have average percent of employment rates in Connecticut from a high of 81% down to a low of 5%. For example, Goodwin College and the University of Saint Joseph educate students from mostly within Connecticut's borders, universities like Wesleyan and Yale are importing most of their student body from outside of the state. Many then return to their home state upon graduation.

The rates of employment in state for Governor's Scholarship Recipients are much higher than the general student population, ranging from 63-83%.

Percent of 2014-15 Graduates Employed in Connecticut Post Q8, by Institution



Percent of 2014-15 GSP Graduates Employed in Connecticut Post Q8, by Institution



The Connecticut Conference of Independent Colleges CCIC Est. 1932

P20·WIN Connecticut's Preschool–20 and Workforce Information Network

Methodology and Data Security

The employment and wage outcome reports referenced in this report were produced by CCIC and DOL to provide information about the degree to which students completing credentials from participating postsecondary institutions in Connecticut are working in Connecticut during the initial years after program completion. Data show employment rates and wages earned by students completing undergraduate and graduate education programs by institution and by academic program from 2009-2010 through 2014-2015, as data were available when the data were matched.

Data were shared and linked using Connecticut's Preschool through Twenty and Workforce Information Network (P20 WIN) and the P20 WIN Data Request and Management Procedure. This procedure is a component of the data sharing agreement between CCIC and DOL and can be accessed on the P20 WIN website at: http://www.ct.edu/files/pdfs/P20-WIN-Data-Management-Procedure.pdf. Other documents and agreements specific to this analysis are located under 'Data Request 0016' at the Requests and Reports page within the P20 WIN website: http://www.ct.edu/p20win/requests.

There are three key characteristics of P20 WIN that maximize data security and student privacy. First, there is no centralized data warehouse where linked data are stored; therefore, there is no permanent location where linked data can be breached. Instead, each agency retains ownership of its source data, responsibility for its management and control over how it is used. Second, a two-step process is used for linking data that retains separation between information that might identify an individual (such as name) and information about that individual (such as gender, race or program studied). These different types of data are never brought together during the data exchange, matching or analytical processes; therefore, no-one can see identities of specific individuals in the data. Third, there is a high degree of control over data requests. Only designated authorized representatives of state and local educational agencies or other federal officials are approved to conduct analysis on the redacted data. The P20 WIN process for linking data maximize data security.

In addition to having processes to maintain data security, the Family Education Rights and Privacy Act (FERPA) requires that a written data sharing agreement be established when data from student records are shared. Each of these agreements sets a timeline for data destruction and provides for additional securities such as how data are to be secured and managed. In addition to the restrictions for education data, limitations are also established by state law for wage and employment data obtained through unemployment insurance records (UI). P20 WIN data sharing agreements, procedures and policies are in full compliance with both state and federal law for education and UI data.

CCIC data about graduates of participating institutions were matched to unemployment insurance (UI) data from the Connecticut State Department of Labor (DOL). Graduates were included if they completed a credential or degree at any time during academic years 2009-10 through 2014-15. The data tables and summary analysis contain wage and employment data at the system and institution levels with detailed data by program of study, using the Classification of Instructional Program Codes (CIP codes), and by degree type (e.g. Associates, Bachelor's, etc.). Additional categories included in the data tables include gender, race and ethnicity, Connecticut residency and whether individuals received a Pell Grant or Governor's scholarship. Counts of individuals found to be employed in Connecticut, their average quarterly wages and difference in wages over time are provided at four points in time: one quarter prior to the beginning of the program of study (Pre-Q1), one quarter after graduation (PQ1), three quarters after graduation (PQ3) and eight quarters after graduation (PQ8).

It is necessary to keep in mind that these reports provide only a high-level view of participating CCIC institutions and student outcomes. On their own, this report and the underlying data tables do not justify action. Rather, this information opens the doorway for further discussion and analysis. There are critical limitations to the source data sets that need to be understood and considered when utilizing this report and the underlying source data tables. See section labeled "Data Notes and Limitations" above.

Data Glossary

Data elements are listed in alphabetical order. Not all elements appear in each table.

Field Name, Prefix, or Suffix	Definition / Calculation
Sector	CT Conference of Independent Colleges = all CCIC Members institutions participating in data request 0016
Academic Year	YYYY-YYYY. The academic year or range of years in which a student's credential completion was reported to IPEDS. In Table 2B, the academic year is a three-year time period in order to provide employment values for programs that are very small. Cohorts of graduates will be grouped in this fashion: 2010-2011-2012, 2011- 2012-2013, or 2012-2013-2014. Data reported for these combined cohorts would be the same as for the other categories
DemogCategory	A 3 digit code to represent demographic categories like gender, race and ethnicity. Also includes residency status, financial aid status and a total grouping. A = total C = Residency E = Credential F = Financial Aid G = Gender R = Race/Ethnicity
Demographic	Detailed name for the corresponding DemogCatergory
Residence Desc	Residence Description indicates whether an individual's permanent address at the time if graduation was in Connecticut or not.
Pell Recipient	Individuals are counted if they received any Pell dollars at any point during the given academic program
No Pell Received	Individuals are counted if they did not receive any Pell dollars at any point during the given academic program
Governor's Scholarship	Individuals are counted if they received state scholarship funding of any time during the academic programs.
CIP Level	The Classification of Instructional Program (CIP) level indicates whether the CIP codes is provided in its 2 digit or 6 digit form.
CIP Code	The Classification of Instructional Program (CIP) code is a nationally recognized code for identifying fields of study. https://nces.ed.gov/pubs2002/cip2000/
Program	Program is the text name for the corresponding CIP Code.
Pre-Q1	The quarter before an individual began the education program for the given credential. For example, if an individual completed an Associate Degree in May of 2014 but started the Associate Program in October of 2012, Pre-Q1 would be the second calendar quarter of 2012, July-September 2012.

Post Q1 or Q1	The quarter after an individual completed the given credential. For example, if an individual completed an Associate Degree in May of 2014, Post-Q1 would be the third calendar quarter of 2014, July-September 2014.
Post Q3 or Q3	The third quarter after an individual completed the given credential. For example, if an individual completed an Associate Degree in May of 2014, Post-Q3 would be the first calendar quarter of 2015, January-March 2015.
Post Q8 or Q8	The third quarter after an individual completed the given credential. For example, if an individual completed an Associate Degree in May of 2014, Post-Q8 would be the second calendar quarter of 2016, April-June 2016.
Total Grad Count	The total number of graduates for a given category as reported by the postsecondary institution.
# Emp **Emp** **EmpGrads** **Employed** **Number Employed**	Count of individuals found employed in Connecticut during a given time period
Stable Emp SEmp SEmployed Stbl_Emp Stbl_Employed	Count or percent of individuals employed during a given quarter (t) using a 'stable' definition of employment. The 'stable' approach counts individuals as employed and uses their wages in calculations if they were employed in the quarter of interest (t), in the quarter prior to (t-1) and also in the quarter after the quarter of interest (t+1). The definition of stable employment developed by for the US Census was modified slightly here to account for normal employment patterns prior to when individuals begin their education program and immediately after completion. • **Pre-Q1:** individuals are counted as stable employed if they earned any wages in Pre-Q1 (t) • **Post-Q1:** individuals are counted as stable employed if they earned any wages in Post Q1 (t) and the quarter after Post Q1 (t+1). • **Post-Q3:** individuals are counted as stable employed if they earned any wages in the quarter prior to Post-Q3 (t-1), in Post-Q3 itself (t) and in the quarter after Post-Q3 (t+1). • **Post-Q8:** individuals are counted as stable employed if they earned any wages in the quarter prior to Post-Q8 (t-1), in Post-Q8 itself (t) and in the quarter after Post-Q8 (t+1) • **StblEmpYYYY (e.g. StblEmp2013):** individuals are counted as stable employed if they earned any wages in the quarter prior to a given year (t-1), each quarter of the calendar year (t) and the first quarter after the given year (t+1).

AWage **AvgWages**	AWage equals the average of wages earned by a group of individuals who are counted for a given time period. Those counted differ based on the point in time. • **AWage_PreQ1**: Wages are averaged for individuals who earned wages in CT in Pre-Q1 (t) • **AWage_PostQ1**: Wages earned in Post Q1 are averaged only for individuals who earned wages in both PostQ1 (t) and PostQ2 (t+1) • **AWage_PostQ3**: Wages earned in PostQ3 are averaged only for individuals who earned wages in Post Q2 (t-1), Post Q3 (t) and Post Q4 (t+1) • **AWage_PostQ8**: Wages earned in PostQ8 are averaged only forindividuals who earned wages in Post Q7 (t-1), Post Q8 (t) and Post Q9 (t+1) • **AvgWagesYYYY** (e.g. AvgWages2011): Wages earned in the given calendar year are averaged only for individuals who met the definition of being stable employed during that year.
MWage **MedWages**	The MWage equals the median of wages earned by a group of individuals who are counted for a given time period. Those counted differ based on the point in time. • **MWage_PreQ1**: The median wage is calculated in Post Q1 for individuals who earned wages in CT in Pre-Q1 (t) • **MWage_PostQ1**: The median wage is calculated in Post Q1 for individuals who earned wages in both PostQ1 (t) and PostQ2 (t+1) • **MWage_PostQ3**: The median wage is calculated in PostQ3 for individuals who earned wages in Post Q2 (t-1), Post Q3 (t) and Post Q4 (t+1) • **MWage_PostQ8**: The median wage is calculated in PostQ8 for individuals who earned wages in Post Q7 (t-1), Post Q8 (t) and Post Q9 (t+1) • **MedWagesYYYY** (e.g. MedWages2011): the median of Wages earned in the given calendar year are calculated only for individuals who met the definition of being stable employed during that year. -
Emp PreQ1+Q3 **BothPre+PostQ3** **EmpBoth_Pre_PostQ3** **Pre_Post Q3**	Count or percentage of individuals employed both at PreQ1 (one quarter prior to the beginning of the education program from which they received the given credential, t) and Post Q3 (3 quarters past completion of the given credential using the 'stable' employment definition, t-1, t, t+1)
# Emp PreQ1+Q8 **EmpBoth_Pre_PostQ8** **EmpBoth_Pre_PostQ8** **Pre_Post Q8**	Count or percentage of individuals employed both at PreQ1 (one quarter prior to the beginning of the education program from which they received the given credential, t) and Post Q8 (8 quarters past completion of the given credential using the 'stable' employment definition, t-1, t, t+1)
AWageDiff	AWageDiff equals the average of the wage differences for individuals who earned wages at two points in time (e.g. either PreQ1 and PreQ3 or PreQ1 and PreQ8)
MWageDiff	AWageDiff equals the median of the wage differences for individuals who earned wages at two points in time (e.g. either PreQ1 and PreQ3 or PreQ1 and PreQ8)
AnnAWages	Annual Average Wages: This is an estimated annual wage calculated by multiplying by four the average wages earned for individuals who were found to meet the definition of 'stable employment' in Q8.
AnnMWages	Annual Median Wages: This is an estimated median wage calculated by multiplying by four the median wages earned for individuals who were found to meet the definition of 'stable employment' in Q8.

Table C - Stable Employed	In determining who to count as 'Stable Employed' for a calendar year, count individuals who were stable employed for the whole year including 1 quarter prior to and 1 quarter after the calendar year. Therefore, those counted for 2014 would have had wages > $0 in each quarter from 2013 Q4, 2014 Q1 – Q4, and 2015 Q1.
Table C - Years	The 'year' for the annual wage is a calendar year, and it should be the calendar year that begins after the academic year of graduation. So, if someone completed a credential in December 2012 or May 2013, both of these are within the 2012-13 academic year. Wages for the 1st year calculation would be to add up everything earned in 2014: 1/1/2014 – 12/31/2014. Wages for the 2nd year would be 1/1/2015 – 12/31/2015, etc.