

QUICK FACTS

- Nearly three-fourths (72%) of the associate degree completers and more than half (57%) of the bachelor's degree completers from Kentucky's public and independent colleges in 2005-06 were employed in Kentucky five years later during fiscal year 2010-11.
- Two-thirds (67%) of Kentucky's in-state students who completed a bachelor's degree at one of these institutions appeared to be employed here in 2010-11.
- About one out of five (22%) of the out-of-state students who earned a credential at a Kentucky institution in 2005-06 appeared to be employed here in 2010-11.
- Students who completed an associate degree in 2005-06 earned almost 50% more in 2010-11 than people who completed an undergraduate certificate.
- One third (33%) of the graduates who completed a doctoral degree in 2005-06 appeared to be employed in Kentucky in 2010-11.
- Health / social service and education were the largest industries employing graduates from 2005-06.



KENTUCKY CENTER FOR
EDUCATION & WORKFORCE STATISTICS

Employment and Earnings of Kentucky's College Graduates: A Preliminary Report

Charles McGrew

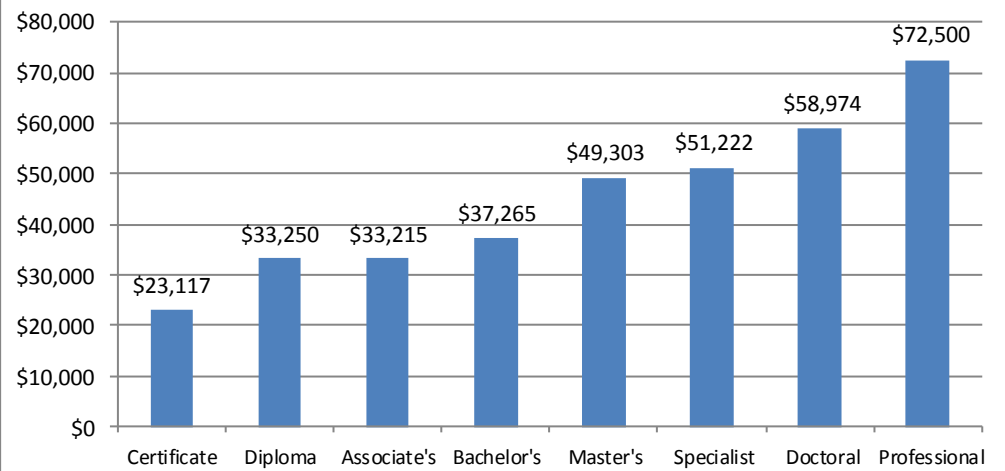
This first special report from the Kentucky Center for Education and Workforce Statistics (KCEWS) is a preliminary investigation into the employment rates and wages earned by graduates from Kentucky's public and independent not-for-profit colleges and universities. The primary purpose of this report is to provide a high level comparison of employment rates and earnings for people who completed different levels of degrees and credentials as well as for the different academic majors.

Policy makers may use these types of data as indicators of the return-on-investment (ROI) for education programs and as a gauge of how likely our college graduates are to remain in-state after they finish their credentials. Educators, parents, and students may also be interested in the outcomes of various programs to make more-informed decisions. Future analyses are expected to include information broken out by institution so colleges and universities can have a better understanding of the employment dynamics of their graduates.

Methodology and Limitations

These results are from authenticated sources and are not self-reported or survey results.

Figure 1
Median Annual Earnings by Postsecondary Degree or Credential Level



The Kentucky Center for Education and Workforce Statistics (KCEWS) is attached to the Kentucky Education and Workforce Development Cabinet Office of the Secretary. It is charged with evaluating and measuring education and workforce efforts within the Commonwealth. For more information, please visit us on the web at <http://kcews.ky.gov>

Definitions of Terms and Calculations

Academic Program or Major

Academic programs are identified by the first two-digits of the six-digit federal CIP code which is assigned to each major at every college. The first two digits represents a general area such as *Engineering* which would contain a number of individual majors such as *Chemical Engineering, Electrical Engineering, etc.*

Annual Wages

The sum of earnings for an individual from all four quarters in fiscal year 2010-11 which includes the third and fourth calendar quarters of 2010 and the first and second calendar quarters of 2011.

Degree or Credential Level

The highest level degree or credential completed by the individuals during the 2005-06 academic year at a Kentucky public or AIKCU independent college or university. Degree and credential types include:

- **Certificate** – a credential that requires completion of an academic program below the baccalaureate degree in a specific time period; less than one academic year, at least one but fewer than two academic years, or at least two but fewer than four academic years.
- **Diploma** – a program of postsecondary study designed to prepare students for technical employment within a one to two year period. The total number of credit hours for the diploma must not exceed those required for a degree in the same program of study.
- **Associate** – an award that normally requires at least 60 semester credit hours or the equivalent.
- **Bachelor** – an award that normally requires at least 120 semester credit hours or the equivalent. This includes all bachelor's degrees conferred in a five-year cooperative (work study) program and degrees in which the normal four years of work are completed in three years.
- **Master** – an award that requires the successful completion of an academic program of at least 30 semester credit hours or the equivalent at the post-baccalaureate, graduate, or professional level.
- **Specialist** – an award that normally requires 60 semester hours of concentrated and approved graduate coursework beyond the bachelor's degree. It is generally offered in the field of education to acknowledge completion of advanced graduate study designed to help individuals meet licensure requirements or develop additional knowledge and skill beyond the master's degree but not at the doctoral level.
- **Doctoral** – Research: a Ph.D. or other doctor's degree that requires advanced work beyond the master's level including the preparation and defense of a dissertation based on original research, or the planning and execution of an original project demonstrating substantial artistic or scholarly achievement.
- **Professional** – Includes both Professional and Professional Practice credentials. A Professional Practice credential is a doctor's degree that is conferred upon completion of the program providing the knowledge and skills for the recognition, credential, or license required for professional practice. The degree is awarded after a period of study such that the total time to the degree, including both pre-professional and professional preparation, equals at least six full-time equivalent academic years. A Professional credential provides advanced training and enhances knowledge in important areas of clinical or research specialization and specialty practice for individuals who hold a professional degree

Employed

The individual had wages reported on one or more employment records as reported by an employer in the UI system during the 2010-11 fiscal year which includes the third and fourth calendar quarters of 2010 and the first and second calendar quarters of 2011.

Independent Colleges and Universities

This study includes graduates from the twenty not-for-profit colleges and universities which are members of the Association of Independent Kentucky Colleges and Universities (AIKCU) including Alice Lloyd College, Asbury University, Bellarmine University, Berea College, Brescia University, Campbellsville University, Centre College, Georgetown College, Kentucky Christian University, Kentucky Wesleyan College, Lindsey Wilson College, Mid-Continent University, Midway College, St. Catharine College, Spalding University, Thomas More College, Transylvania University, Union College, University of the Cumberlands, and University of Pikeville.

Industry

Industry of employment is based on the North American Industry Classification System (NAICS) code provided by employers when they register with the UI program. These codes represent general categories of types of industries or businesses and are not a direct reflection of types of positions individuals may hold.

In-State and Out-of-State Students

Students are identified as being in-state or out-of-state for residency purposes based upon their permanent residence at the point they enroll in a college or university program. In-state students generally pay a lower tuition than out-of-state students because the state supports residents' education in part through appropriations. In-state students may also be eligible for state funded financial aid programs which are not available to out-of-state students.

Public Colleges and Universities

This study includes graduates from Kentucky's eight public universities and sixteen public two-year colleges including Eastern Kentucky University, Kentucky State University, Morehead State University, Murray State University, Northern Kentucky University, University of Louisville, University of Kentucky, Western Kentucky University, Ashland Community & Technical College, Big Sandy Community & Technical College, Bluegrass Community & Technical College, Bowling Green Technical College, Elizabethtown Community & Technical College, Gateway Community & Technical College, Hazard Community & Technical College, Henderson Community College, Hopkinsville Community College, Jefferson Community & Technical College, Madisonville Community College, Maysville Community & Technical College, Owensboro Community & Technical College, Somerset Community College, Southeast Kentucky Community & Technical College, and West Kentucky Community & Technical College.

They were compiled by linking the college and university records collected from the Kentucky Council on Postsecondary Education (CPE) with the employment and earnings records which were reported to Kentucky's Office of Employment and Training (OET) through the Unemployment Insurance (UI) program.

The postsecondary graduates are limited to people who completed a degree or other credential at one of Kentucky's public universities, Kentucky Community and Technical College (KCTCS) two-year institutions, or one of the twenty not-for-profit independent colleges which is a member of the Association of Independent Kentucky Colleges and Universities. Proprietary and out-of-state colleges and universities do not currently provide student level data to the state. Their graduates could not be included in this study.

The employment and earnings records are limited to people whose employers report data to the state UI system. This includes approximately 90% of the wage earners in Kentucky however the employment data do not include people who work out-of-state, federal employees, the military, and individuals who are self-employed.

In order to provide comparable data across credential levels and programs, we limited this study to college and university graduates from the 2005-06 academic year. Students who completed more than one credential in that year are only reported under their highest level credential. A small number of less-common credentials are awarded outside of those represented in this report including post-graduate certificates. For clarity purposes these are not included in these reports and are not combined with the certificates listed because they are of a higher level and would skew the wage results. Employment and earnings vary

significantly for recent college graduates as they seek employment. Instead of looking at initial employment, we chose to look at the employment status and earnings of these graduates five years later in 2010-11 to allow sufficient time for them to find appropriate professional employment and to allow for earnings to "level out" as they become established in their careers.

Please note that these results are based on a single graduating class of college and university students at a single point in their careers. While these are important findings, changes in economic trends and the employment market for our graduates can change at any point in time yielding different results.

Findings

Overall, three out of five graduates from Kentucky's public and independent colleges and universities in 2005-06

appeared to still be in Kentucky five years later in the 2010-11 fiscal year or were at least employed here. Median annual earnings in 2010-11 for the graduates who were employed in Kentucky ranged from \$23,117 for certificate earners to \$72,500 for those who completed a professional program. In general, more years of education equated to higher earnings.

Employment Rates

As table 1 indicates, people who completed shorter-term credentials including diplomas, certificates, and associate degrees were more likely to be employed in Kentucky after five years than people who completed bachelor degrees and advanced doctoral or professional degrees.

Research suggests that people with greater levels of education tend to have higher levels of mobility. Master's and specialist's completers though in Kentucky were more likely to stay. This is

Table 1
Employment Rates by Degree or Credential Level

Degree or Credential Level	Number of Completers	Number with a Kentucky Employment Record	% Employed in Kentucky
Certificate	5,183	3,435	66%
Diploma	769	566	74%
Associate's	6,933	4,978	72%
Bachelor's	18,016	10,263	57%
Master's	6,730	4,027	60%
Specialist	60	40	67%
Doctoral	476	156	33%
Professional	896	429	48%
Overall*	39,204	23,932	61%

*Overall calculation also includes 141 individuals who completed less common types of credentials including post-graduate certificates.

Figure 2
Kentucky Employment Rates for 2010-11 by Credential Level

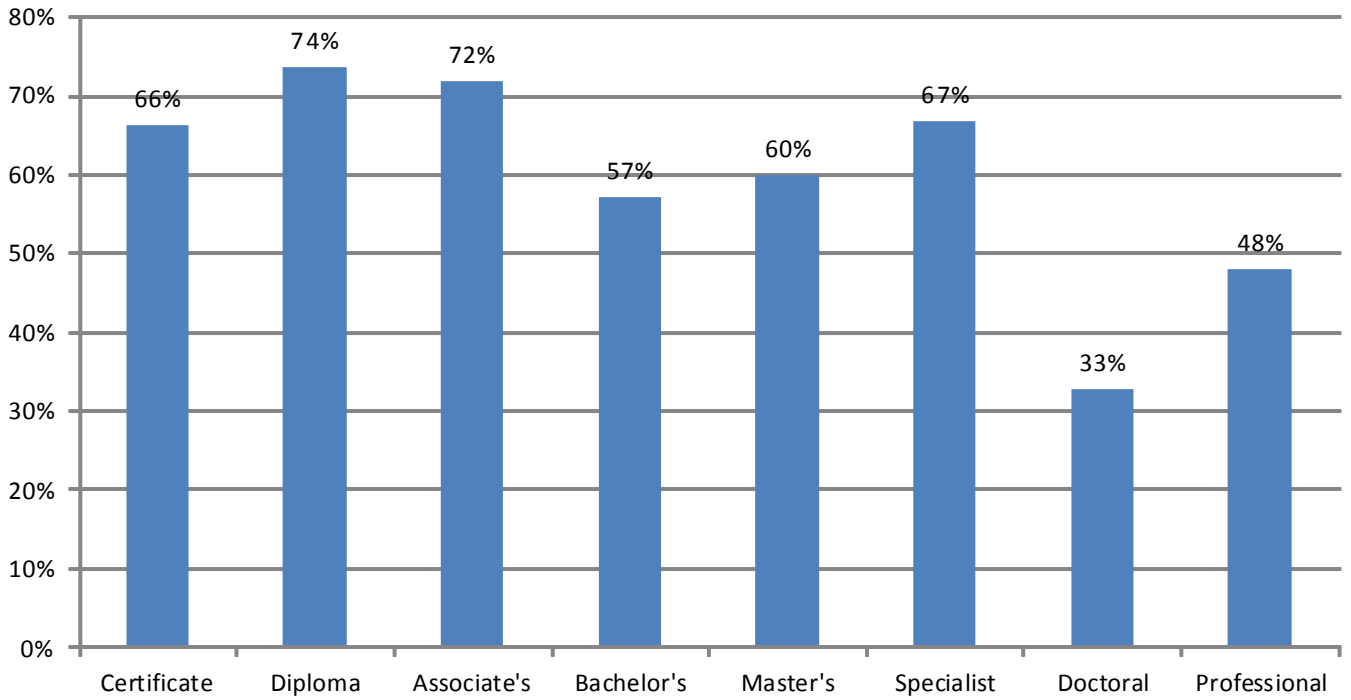
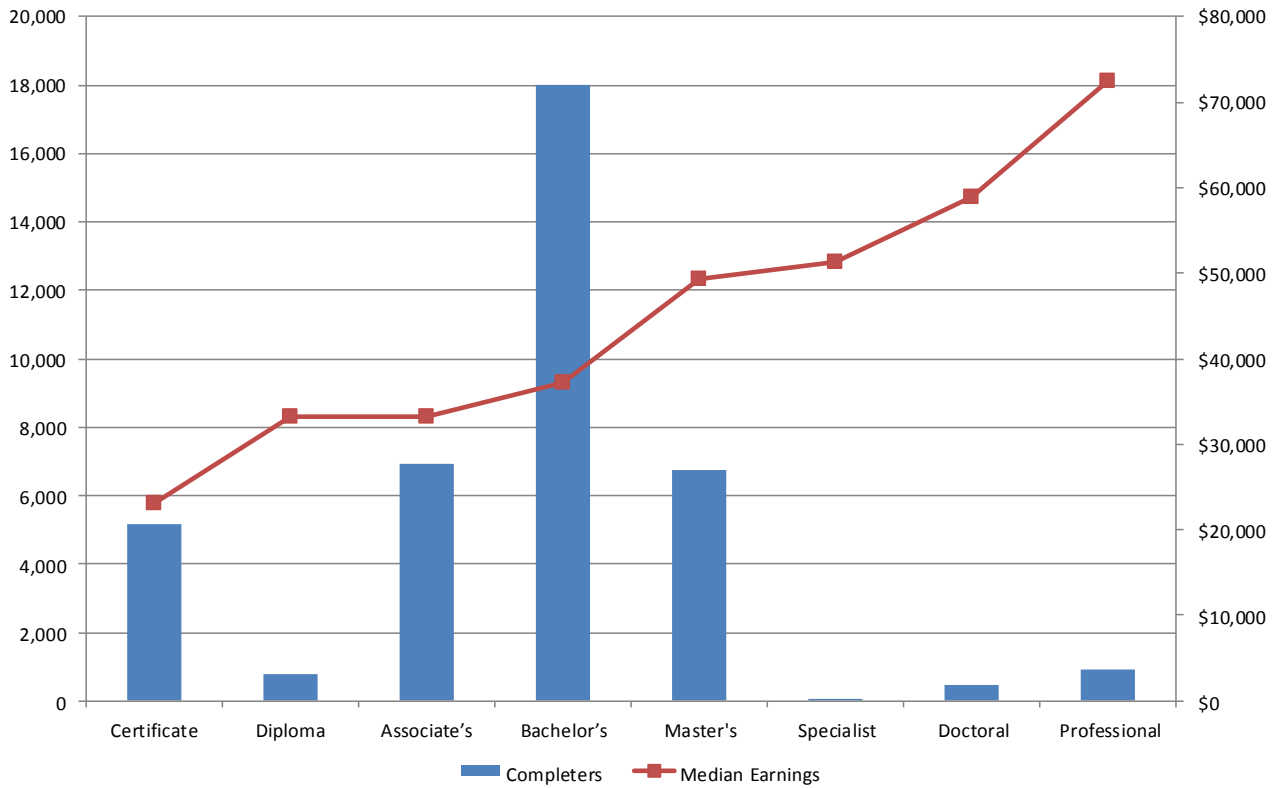


Figure 3
Median Earnings by Credential Levels with Number of Completers



heavily weighted by the sheer number of completers from the education field. Most of the Master's degree programs (15 out of 20) had employment rates of less than 50%.

More than half (2,108 out of 3,679) of the people who completed a Master's degree in 2005-06 did so in Education programs. Kentucky's promotion system requires teachers to continue their education above a bachelor's degree while most professions do not have those kinds of requirements to retain employment. In this analyses people who were working in education industries were more likely to be found employed in Kentucky than most fields at the same credential level. Roughly four out of five of the people who completed a Master's degree in education were working in Kentucky five years later. Fifteen out of the twenty programs that produced Master's degree completers in 2005-06 had Kentucky employment rates of less than 50%.

Earnings

People who earned associate degrees and postsecondary diplomas in 2005-06 were on average earning about 50% more than people who had completed a certificate — approximately thirty three thousand dollars compared to twenty three thousand for certificates.

After five years, the difference between median earnings for people who had completed a bachelor's degree and those who completed an associate's or diploma was about \$4,000 for the year. The gap in median earnings between those who earned a bachelor's degree and those who earned a master's degree was three times that or about \$12,000.

Figure 3 provides the same median earnings information as figure 1 but also provides the perspective of the number of people who completed each level of credential. While earnings for people who completed doctoral or professional degrees were much higher than those who earned an undergradu-

ate credential, in reality a very small number of people completed them. The number of people who completed a specialist credential (60) was so small it is barely distinguishable on the graph.

In-State and Out-of-State College Graduates

Graduates who were from Kentucky when they started college were more than three times more likely to be working in Kentucky than their counterparts who were considered out of state students in college. Seventy percent of in-state students who completed a credential were working in Kentucky compared to 21% of the out-of-state or non-resident students. As table 2 illustrates, in-state and out-of-state students were generally more likely to be working in Kentucky than those who completed graduate degrees and credentials.

Industries of Employment

Data describing the types of specific occupations held by these graduates are not currently available. Each employer does provide information about the in-

Table 2
Comparing Employment Rates for Resident and Non-Resident Graduates

Credential Level	In-State			Out-of-State		
	Graduates	Working in KY	% Employed in KY - Residents	Graduates	Working in KY	% Employed in KY - Non-Residents
Associate's	6,491	4,851	75%	442	127	29%
Bachelor's	14,080	9,400	67%	3,936	863	22%
Certificate	4,946	3,372	68%	237	63	27%
Diploma	741	557	75%	28	*	*
Doctoral	185	119	64%	291	37	13%
Master's	4,817	3,679	76%	1,913	348	18%
Professional	608	370	61%	288	59	20%
Specialist	42	35	83%	18	*	*
Overall**	31,950	22,416	70%	7,254	1,516	21%

Note: Resident and Non-Resident status is determined by whether the student was considered to be in-state or out-of-state when they went to college.

*Data redacted due to small cell sizes.

**Overall calculation also includes 141 individuals who completed less common types of credentials including post-graduate certificates.

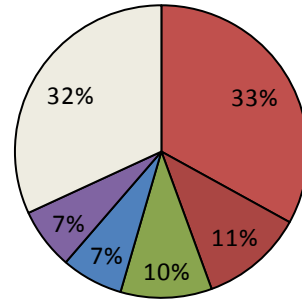
Figure 4

Industries Where These 2005-06 Graduates Were Employed in 2010-11 by Credential Level

The following graphs and tables provide a breakout of the industries in Kentucky in which these graduates were employed. Results are not presented for people who completed a postsecondary diploma, specialist credential, doctoral, or professional degree due to a combination of small numbers and lack of variability. Industries which comprise less than 3% of the completers are combined together and labeled *other*. The industry names correspond to the first two-digits of the NAICS codes provided by employers.

Certificate

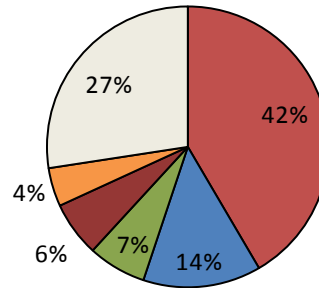
Industry	Percent
Health Care & Social Assistance	33%
Manufacturing	11%
Retail Trade	10%
Educational Services	7%
Admin. & Support, Waste Management, & Remediation Services.	7%
Other	32%



- Health Care & Social Assistance
- Manufacturing
- Retail Trade
- Educational Services
- Admin. & Support, Waste Mgt., & Remediation Svcs.
- Other

Associate's

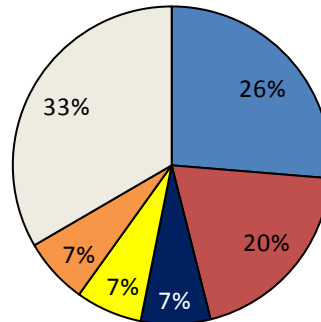
Industry	Percent
Health Care and Social Assistance	42%
Educational Services	14%
Retail Trade	7%
Manufacturing	6%
Public Administration	4%
Other	27%



- Health Care and Social Assistance
- Educational Services
- Retail Trade
- Manufacturing
- Public Administration
- Other

Bachelor's

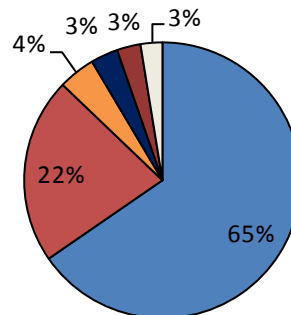
Industry	Percent
Educational Services	26%
Health Care and Social Assistance	20%
Professional, Scientific, and Technical Services	7%
Finance and Insurance	7%
Public Administration	7%
Other	33%



- Educational Services
- Health Care and Social Assistance
- Professional, Scientific, and Technical Services
- Finance and Insurance
- Public Administration
- Other

Master's

Industry	Percent
Educational Services	65%
Health Care and Social Assistance	22%
Public Administration	4%
Professional, Scientific, and Technical Services	3%
Manufacturing	3%
Other	3%



- Educational Services
- Health Care and Social Assistance
- Public Administration
- Professional, Scientific, and Technical Services
- Manufacturing
- Other

dustry in which they operate. These are identified by a set of standardized codes however there are a variety of different types of occupations within various industries. While a hospital may be categorized as being in the health care industry, it may employ both sanitation workers as well as brain surgeons.

Figure 4 illustrates the industries which were employing the largest proportion of graduates from each credential level.

From 20% to more than 40% of the graduates from 2005-06 who were employed in 2010-11 were working in healthcare and social assistance industries. One-fourth (26%) of graduates with a bachelor's degree and two-thirds (65%) who had completed a master's degree were working in education.

Public funded or largely public service types of industries including healthcare and social assistance, educational services, and public administration are employing more than half of the associate and bachelor's degree graduates and nearly all (91%) of the master's degree completers from this group.

Employment Rates and Numbers by Median Earnings

Figures 5a-5d and 6a-6d provide comparisons by academic program for employment rates and numbers with median earnings. A summary table is available at <http://KCEWS.KY.GOV> under special reports with this information side-by-side to allow for easier comparison across credential levels.

Conclusions and Next Steps

Tables 3a and 3b provide additional detail about employment rates and median earnings by credential level and academic program to illustrate the differences within individual areas. These can be used to compare the differences in earnings five years after completing a bachelor's degree compared to an associate's or master's in an individual field.

In general, within the same academic areas, people who complete higher level credentials are earning more than those who complete lower level or shorter term credentials. In some in-

stances, people who completed shorter term certificates in technical areas like engineering technology and computer information sciences were earning more than graduates from two-year and four-year programs in some fields.

When reviewing the data presented in this report, it is important to remember that this is a preliminary view following a single class of college graduates at a specific point in time. Now that Kentucky is able to link education and employment data, it will need to be analyzed over a longer period of time with a number of different classes to establish trends and more meaningful information. One of the next steps in the use of these data is to provide these types of information back to the colleges and universities so they can develop a better understanding of the employment dynamics that affect their graduates and the types of industries where they are employed.

In the future, linking information about potential earnings with information about financial aid and tuition could help students and parents make more informed decisions about their education. These data are also useful from a policy making perspective to better understand the relationships between economic development, education, and to what degree Kentucky is retaining its college graduates to live and work in the Commonwealth.

Questions or Comments

Please send any questions or comments about this report or requests for additional information to:

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KENTUCKY CENTER FOR
EDUCATION & WORKFORCE STATISTICS

The Kentucky Center for Education and Workforce Statistics (KCEWS) was created through an executive order in December 2012. Its purpose is to provide independent, accurate, and timely data about the Commonwealth's education and workforce processes to better inform policy and decision making.

KCEWS was created to expand upon the work initiated by the Kentucky P-20 Data Collaborative including maintaining the Kentucky Longitudinal Data System which includes early childhood, K-12, postsecondary, adult education, and workforce data. KCEWS is attached to the Education and Workforce Development Cabinet Office of the Secretary and is overseen by a Board composed of the agency heads from the Kentucky Department of Education (KDE), the Council on Postsecondary Education (CPE), the Education Professional Standards Board (EPSB), and the Kentucky Education and Workforce Development Cabinet.

Please visit <http://KCEWS.KY.GOV> to view additional reports and statistics.

Table 5a

Employment Rates and Median Earnings by Academic Program

Certificate Completers

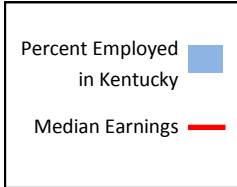
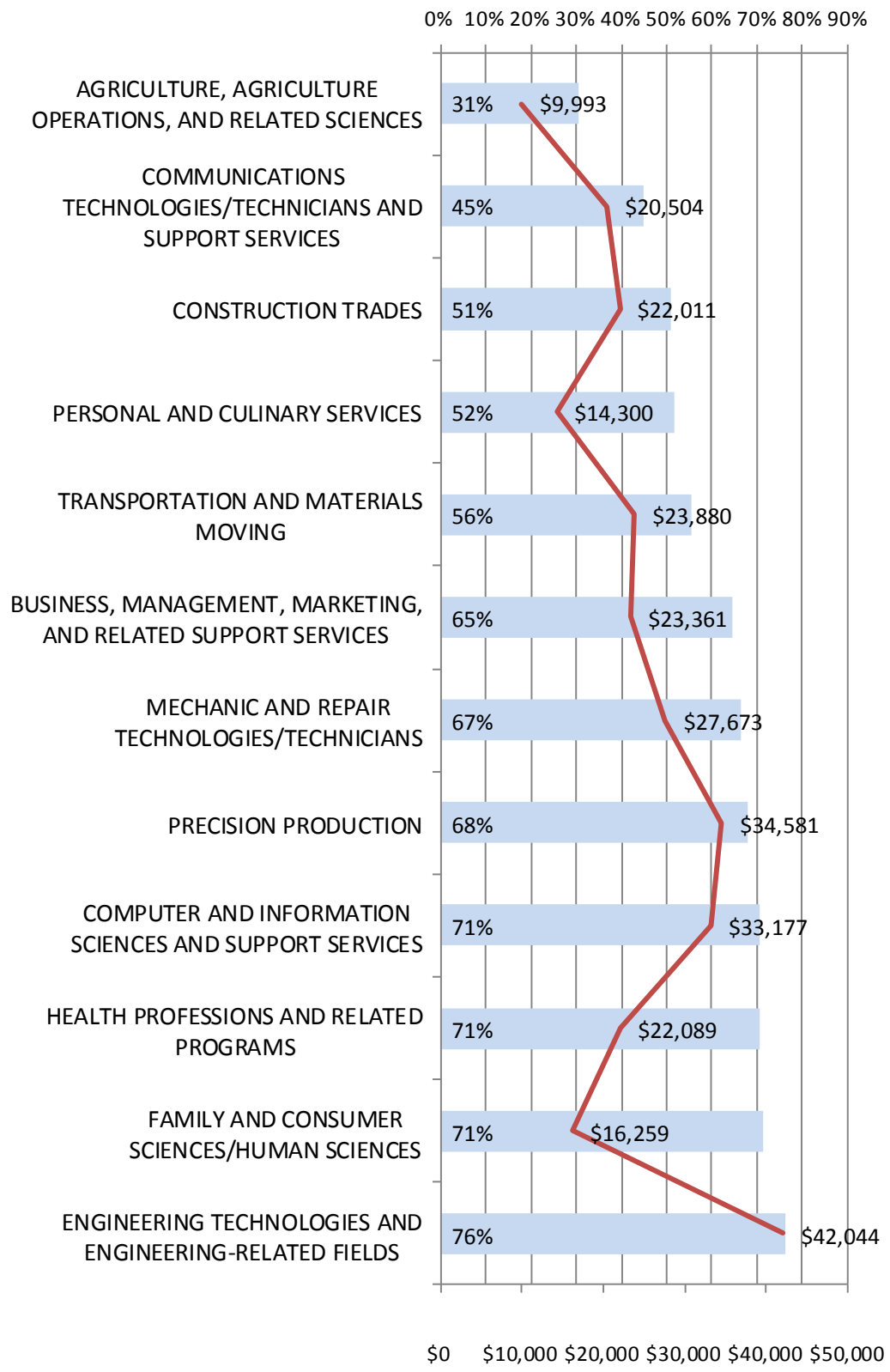
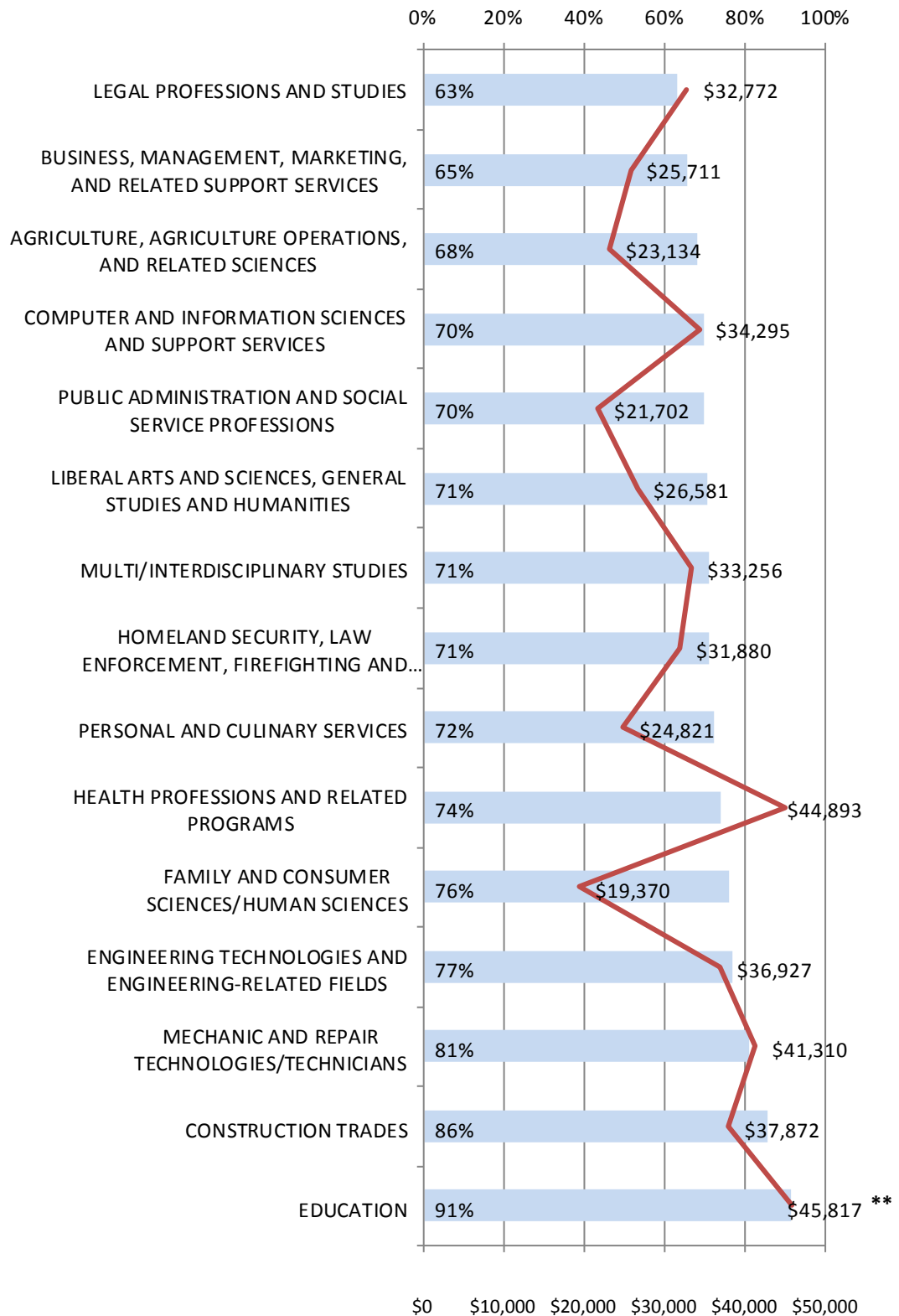


Table 5b

**Employment Rates and Median Earnings by Academic Program
Associate's Degree Completers**



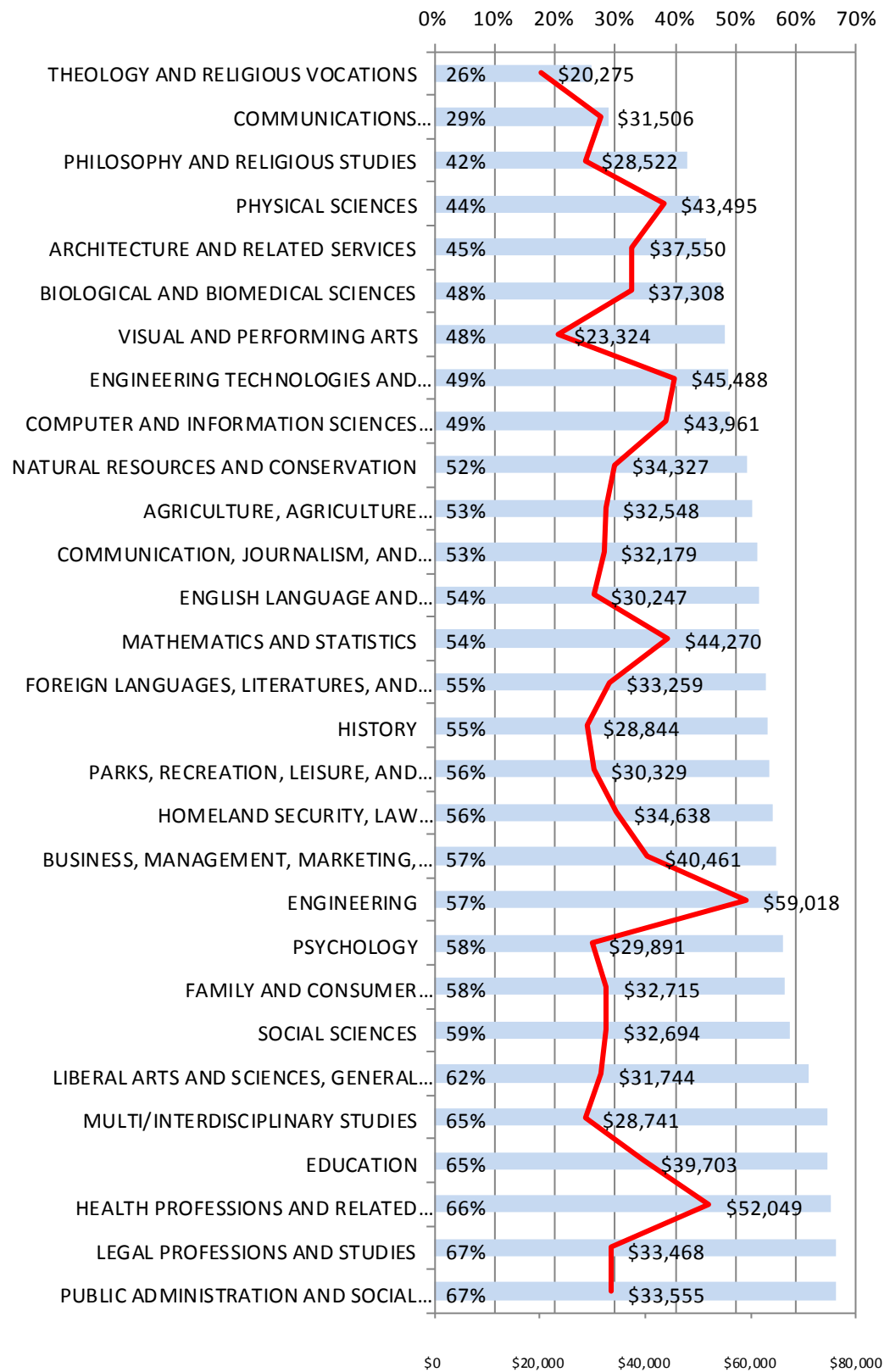
Percent Employed in Kentucky ■
Median Earnings —

** The associate degree in Education wages are skewed because of a group who were earning unusually high wages. These do not represent typical results for wages for this credential.

Table 5c

Employment Rates and Median Earnings by Academic Program

Bachelor's Degree Completers

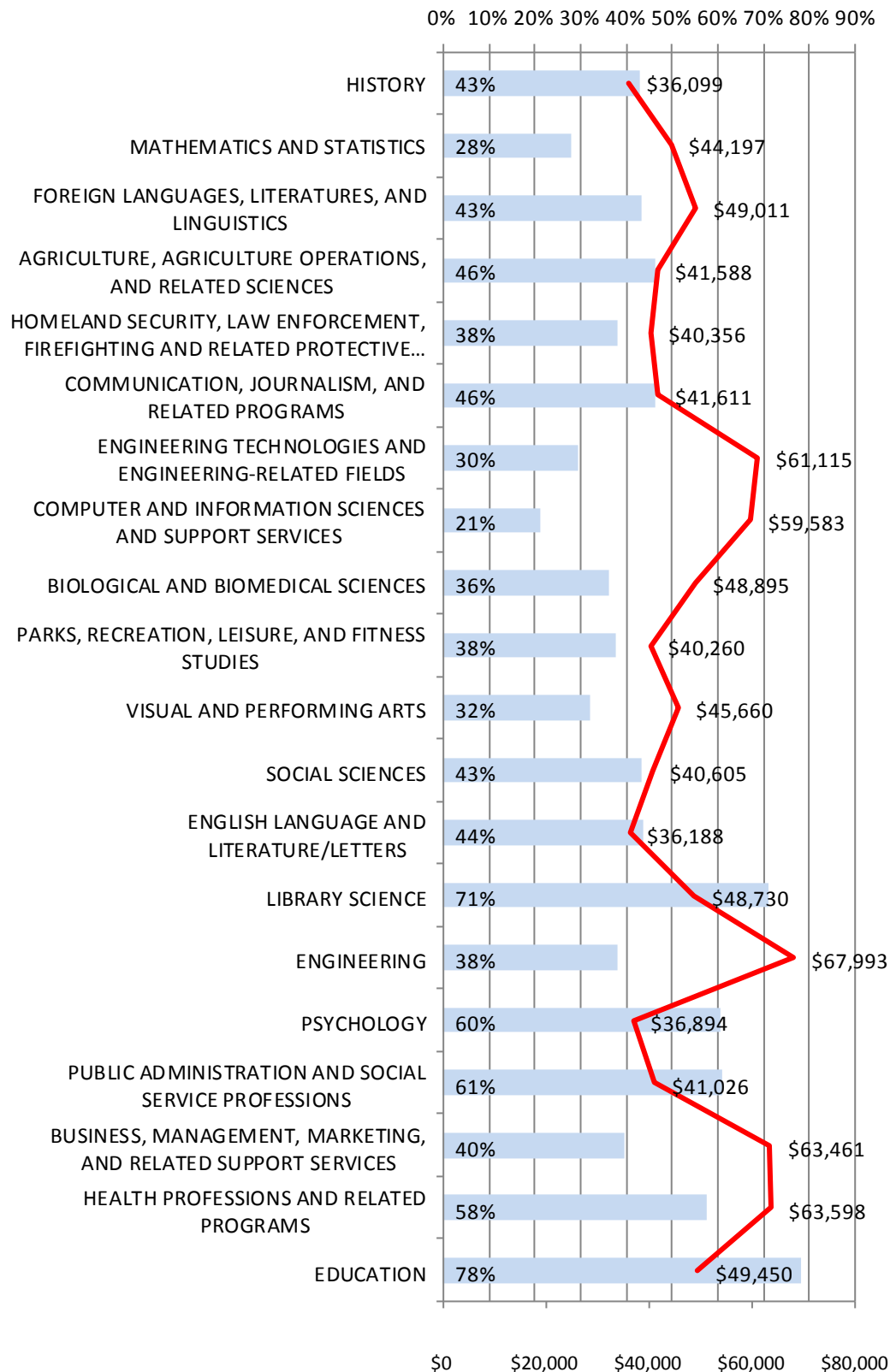


Percent Employed in Kentucky Median Earnings

Table 5d

Employment Rates and Median Earnings by Academic Program

Master's Degree Completers

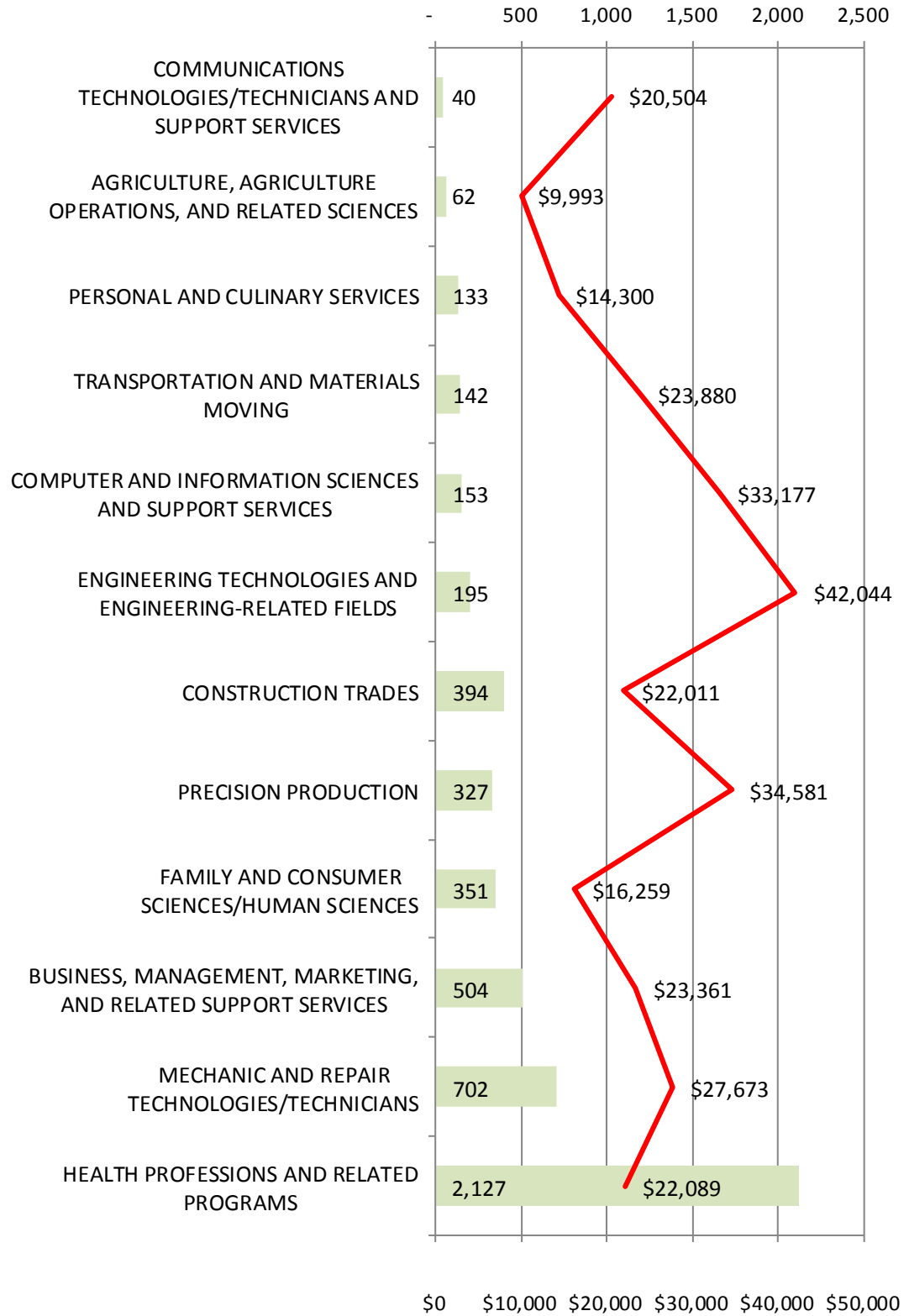


Percent Employed in Kentucky ■
 Median Earnings —

Table 6a

Number of Completers Employed in Kentucky and Median Earnings by Academic Program

Certificate Completers

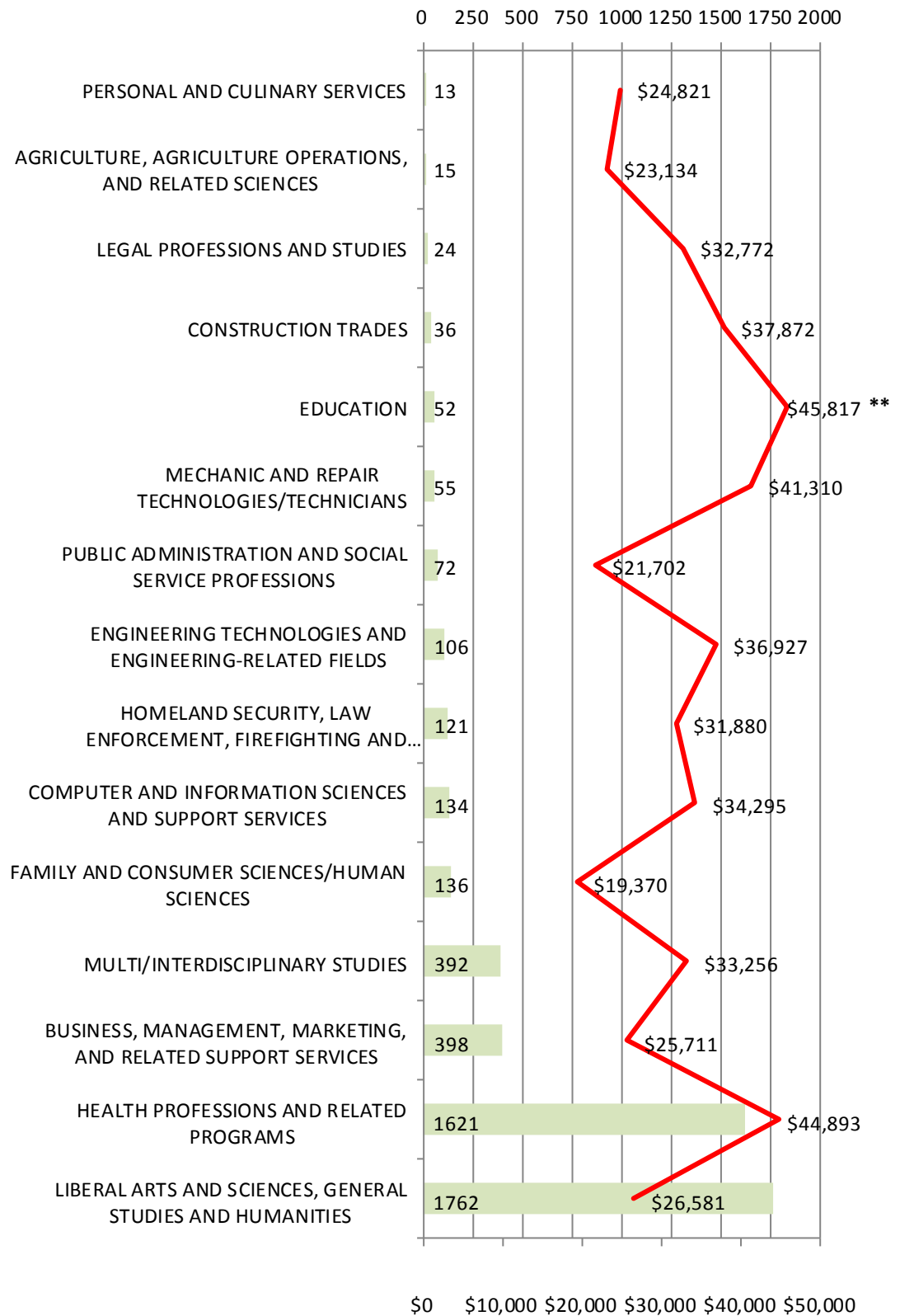


Number Employed in Kentucky █
 Median Earnings —

Table 6b

Number of Completers Employed in Kentucky and Median Earnings by Academic Program

Associate's Degree Completers



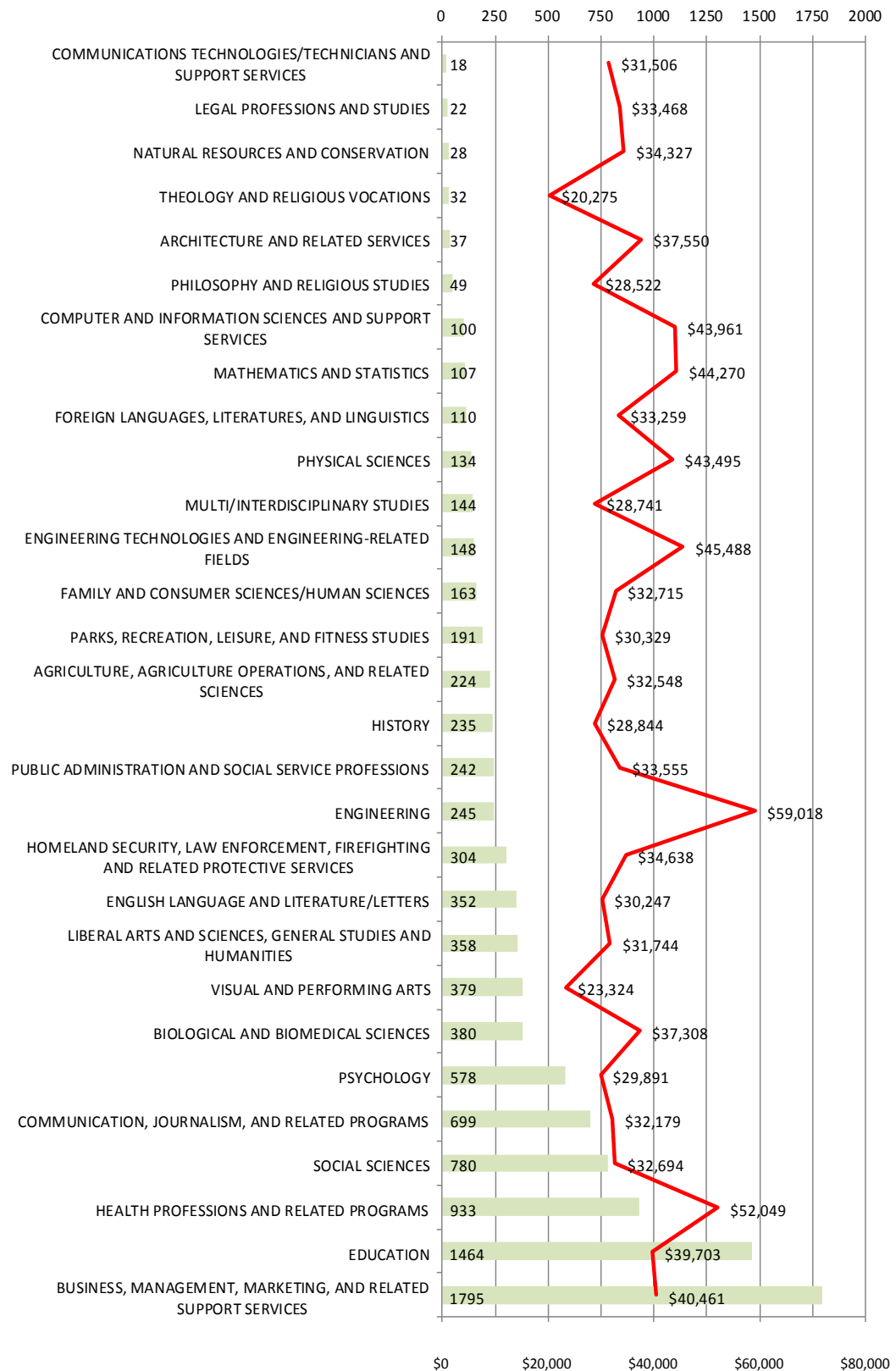
Number Employed in Kentucky
 Median Earnings

** The associate degree in Education wages are skewed because of a group who were earning unusually high wages. These do not represent typical results for wages for this credential.

Table 6c

Number of Completers Employed in Kentucky and Median Earnings by Academic Program

Bachelor's Degree Completers

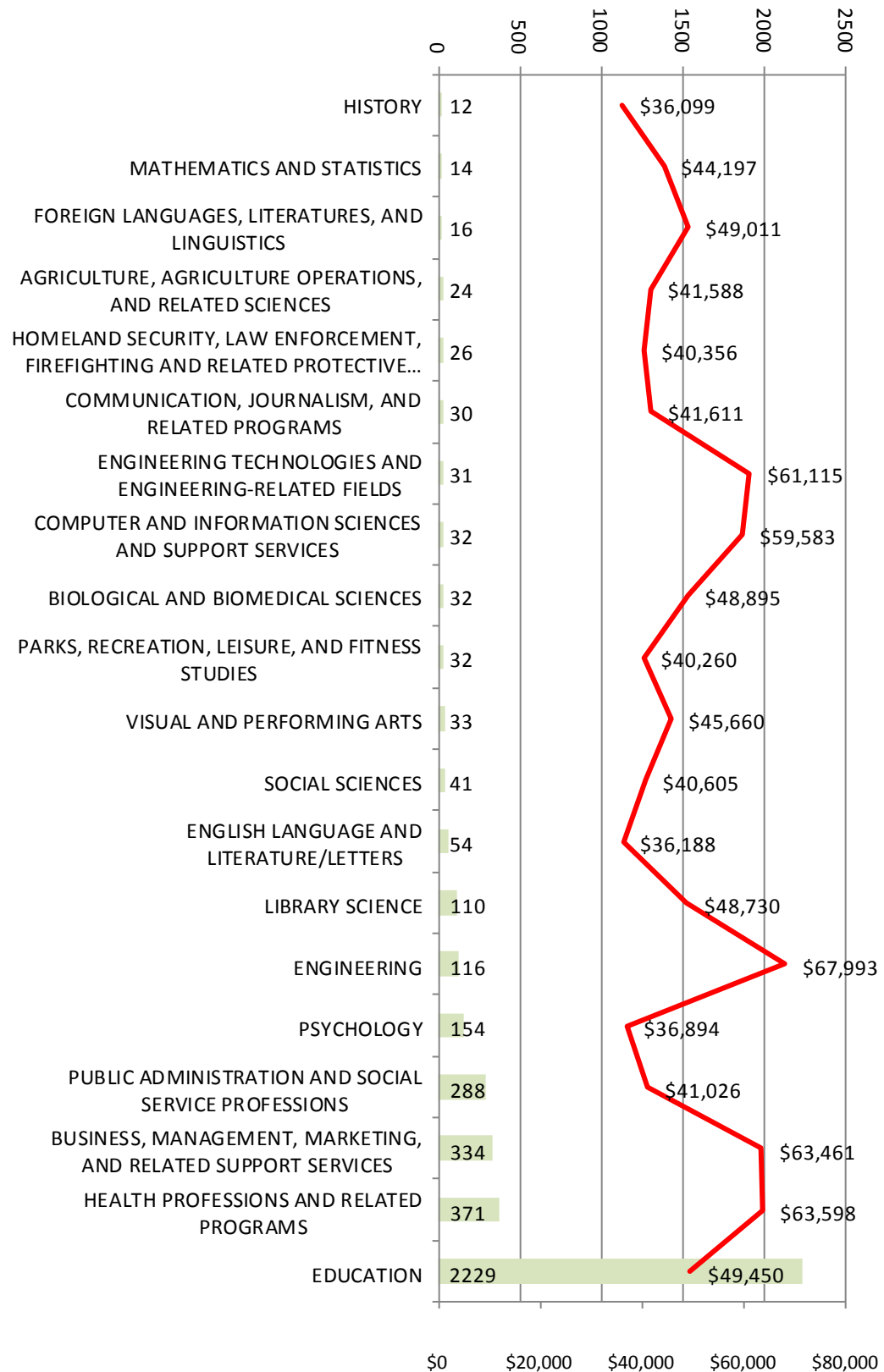


Number Employed in Kentucky ■
 Median Earnings —

Table 6d

Number of Completers Employed in Kentucky and Median Earnings by Academic Program

Master's Degree Completers



Number Employed in Kentucky ■
 Median Earnings —



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