Wyoming Community College Market Pay Study

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Table of Contents

Detail Tables

Tabular data referenced in this article are available online at http://doe.state.wy.us/LMI/education_costs.htm. Because of the size of these tables, they were not included in this publication but are available online as references.

Wyoming Community College Market Pay Study

by: Tom Gallagher, Research & Planning Manager

I. Introduction

A Wyoming Community College Market Pay study (*College Pay*) was requested by the college presidents in the spring of 2014 (see page 26). The request was based on reviewing a report, *Teacher Salaries in Wyoming; Competitive Enough to Retain the Best?*, published by the Research & Planning (R&P) section of the Wyoming Department of Workforce Services. Teacher Salaries condenses the larger *Monitoring School District Human Resource Cost Pressures* report (*Monitoring*) and extensive supplemental tabulations of occupational employment and wages, into a synopsis intended for wide public distribution. Both reports were funded by the Legislature and have at their core the analysis of occupational staffing patterns and wage rates for public school districts in Wyoming, bordering states, and at the national level. Taken together, they represent a major, multi-month report production effort.

Tabular comparisons were developed for *Monitoring* from the Occupational Employment Statistics program (OES), a nationwide state-federal statistical program, which began collecting wage information in 1997. The Legislature first provided funding for this work, related analysis, and the development of a Hathaway Scholarship Program workforce outcomes analysis in March of 2012.

The OES program is funded by the U.S. Department of Labor's Bureau of Labor Statistics (BLS). BLS produces many estimates files which go through a pre-publication labor-intensive review process by BLS and the states. However, additional estimates do not go through this process and are therefore unavailable to the public. R&P's school district compensation analysis presented in *Monitoring* used unpublished estimates files with the permission of bordering states and with technical support from the BLS Dallas, Texas Regional Office. R&P tabulations of these unpublished files were reviewed extensively by OES program staff in Wyoming, state OES program staff in bordering states, and by the BLS Regional Office. Tabulations of OES pay rate information for occupations in public sector school districts are used throughout this *College Pay* report and it is suggested that serious readers thoroughly familiarize themselves with both *Monitoring* and its supplementary tables, which are available at http://doe.state.wy.us/LMI/education_costs.htm.

The *Monitoring* report engaged in analysis that can only be produced by R&P but which cannot be produced in parallel form for College Pay. The absence of a systematic, comparable (current and historic) set of employee-specific payroll data from the community colleges including occupational identifiers and hours worked by assignment type made available to R&P is a fatal barrier to such a report. A second constraint is the absence of a waiver of State statute prohibiting the public identification (e.g. report publication) of employers by State employees who access confidential information in State Unemployment Insurance (UI) records. A third constraint to the development of a College Pay report comparable to *Monitoring* is resources. At the same time, it is clear that we cannot

deny access to information developed with public funds (OES), or fail to capitalize on the occasion to improve our understanding of the costs and requirements involved in the potential production of more comprehensive *College Pay* reports.

Based, then, on the available data, this report focuses on three areas: core occupational wage analysis and findings, the recent history of public sector compensation in Wyoming and the region, and the broader labor market context driving demand and retention in public sector education and the labor market as a whole.

II. Core Occupational Analysis

A Note on Data Sources

Two sources of data underlie this analysis. The Quarterly Census of Employment and Wages (QCEW) is a BLS state-federal statistical program operated in each state. State Labor Market Information (LMI) offices obtain employer UI quarterly tax records containing quarterly total payroll and monthly employment levels. LMI offices edit these files for statistical use and inter-state comparability. These employer records are used in a variety of statistical activities including serving as the sample frame for the OES program.

The OES program is based on random sampling of employment by area (i.e. Metropolitan Statistical Areas, and multi-county regions) and by industry. Industries are organized using the North American Industrial Classification System (NAICS; see **Figure 1**). Higher education employers are organized in NAICS code 6112 Community Colleges, and NAICS 6113 Universities.

The OES program uses the Standard Occupational Classification (SOC) system to collect employment and wage rate information and publish estimates. As illustrated in **Figure 2** (see page 5), the OES program uses the detailed, six-digit SOC code to collect wage rate information. However, some detailed six-digit occupations occur too infrequently, especially in smaller geographic areas, and estimates are published only at the two-digit level signifying a general grouping of more detailed six-digit occupations.

The principal compensation product from the QCEW is the average wage per job, while the OES program staff produce the rate of compensation by occupation. Direct comparison between the

Ownership	Federal Government (Ownership 1)	Private (Ownership 5)	State Government (Ownership 2)	Local Government (Ownership 3)	Total Covered (Ownership 0)
Industry	North American Industry Classification System (NAICS) (e.g. 6112, Community Colleges)				
Occupation	Standard Occupational Classification (SOC) System (e.g. 25-2000 Primary, Secondary, & Special Education School Teachers)				

Figure 1: **Industry and Ownership Publication Structure for Occupational Wage Estimates**

two measures is limited by differences in the types of compensation included in each program and reference periods. The QCEW starts as an administrative tax system of records that is used as a statistical program. On the other hand, the genesis of OES is solely a statistical program. Therefore, QCEW includes, while OES excludes, all types of bonuses, severance pay, profit distributions, tips and gratuities, and other pay types. The reference periods in the QCEW are the month (for employment) and the quarter for payroll. The OES program uses the months of November and May from the QCEW for the level of employment, and the rate of compensation for the payroll period covering the day of the 12th of the month for those respective months. At the conceptual level, both programs measure the demand for labor, but they do so in somewhat different ways.

Using both programs in this research adds a level of complexity. However, each program has a strength the other lacks. There is another salient value to data from these programs: All data in this report are drawn from public sector resources and, except where records are confidential, can be independently verified, i.e. by contacting another state's LMI office or accessing the BLS website.

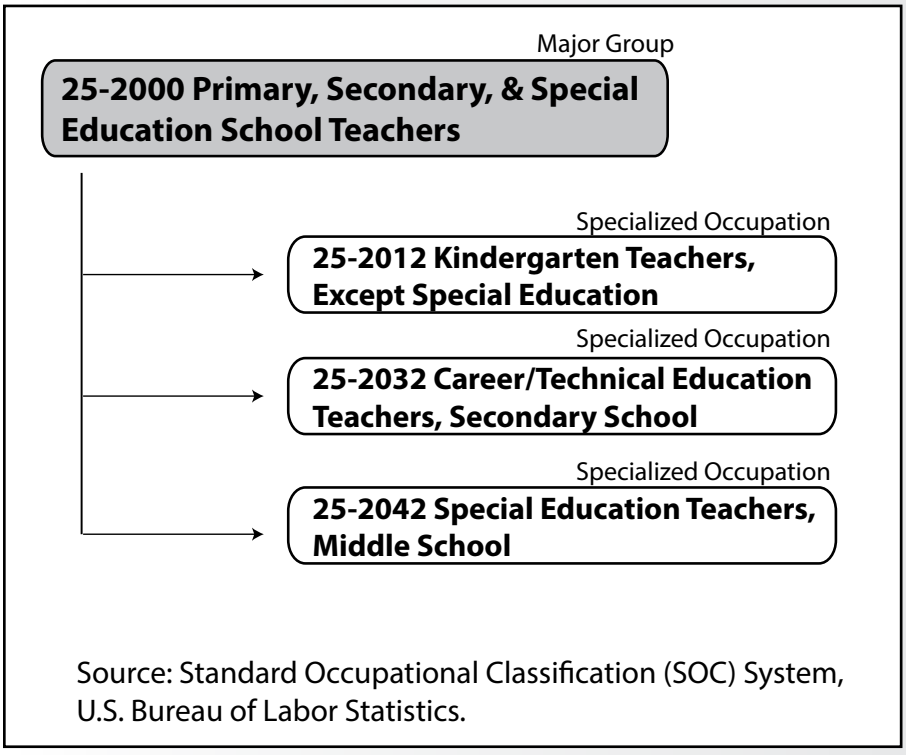


Figure 2: **Standard Occupational Classification (SOC) System Structure**

The OES program (see http://www.bls.gov/oes/) nationally produces many more estimates of occupational staffing patterns and related wage rates than are publicly available. As discussed in *Monitoring* (page 11), access to these estimates files is only available to BLS, State employees serving as sworn agents of the BLS, and through special access granted to researchers by BLS. Without sworn agent status accorded to state employees working in LMI offices, access to OES estimates in Wyoming and bordering states for community colleges (NAICS 6112) would be unavailable. Given that OES estimates are produced with federal resources, but unavailable to customers that need them, R&P elected to commit to the production of the estimates found in Attachment A to this report.

The availability of sample survey-based estimates is a function of resource availability relative to the frequency with which an object, for which estimates are prepared, occurs in the surveyed universe. For this reason, Attachment A frequently contains non-disclosable (ND) estimates where an occupation occurs

too infrequently to be estimated with reliability, or the estimate is applicable to an identifiable employer. Some occupations occur with such a low level of frequency as to be undetectable through the OES program as it is currently funded. In these circumstances, table values are left blank. One of the reasons for a comparatively high level of non-disclosable table cells in Attachment A has to do with the relative size of community college employment, in particular in bordering states.

III. Findings

1. Relative Importance of Community Colleges in Higher Education by State

Table 1 displays the employment level and relative importance of community college employment in higher education in Wyoming and bordering states. Jobs in Wyoming's community colleges are more abundant than in Idaho, Montana, or South Dakota. At 47.4 percent of the total system of higher education, employment in Wyoming's community colleges represents more than twice that of any border states. From these perspectives, community colleges are far more important to higher education than in any border state.

Based on the absolute number of jobs found in Wyoming's community colleges, and their relative share of employment in higher education, policy decisions made about the colleges have a greater relative impact in Wyoming than elsewhere in the region.

Relative Importance of Public School Districts and Community Colleges in Wyoming

The history section of this report discusses public school district compensation as a relevant consideration is a discussion of the successful competition for labor by community colleges in Wyoming. As can be seen in **Table 2**, employment in public school districts with 19,817 jobs in Wyoming makes up 7.0% of UI covered employment in comparison

Table 1: **Distribution of Employment in Post Secondary Education for Wyoming and Border States, 2012/13**

	Colleges (6112)		Universities (6113)		Post Secondary
State	N	Row %	N	Row %	N
Colorado	11,187	19.7	45,473	80.3	56,660
Idaho	2,209	14.5	13,062	85.5	15,271
Montana	1,594	14.0	9,813	86.0	11,407
Nebraska	6,033	21.2	22,429	78.8	28,462
South Dakota	860	9.4	8,275	90.6	9,134
Utah	5,165	13.6	32,939	86.4	38,104
Wyoming	3,374	47.4	3,744	52.6	7,118
Wyoming QCEW[a]	3,370	46.6	3,856	53.4	7,226

Source: Occupational Employment Statistics Aggregation for 2013.

[a]Source: Quarterly Census of Employment and Wages (QCEW) Average for November 2012 and May 2013.

Table 2: **Total Payroll and Average Monthly Employment for Local Government Schools and Junior Colleges in Wyoming, 2013**

	Total Payroll		Average Monthly Employment	
Industry	$	% of Total	N	% of Total
Local Government Schools (NAICS 611100)	$841,136,426	6.7%	19,817	7.0%
Junior Colleges (NAICS 611200)	$113,014,252	0.9%	3,059	1.1%
Total, All Industries	**$12,580,934,221**	**100.0%**	**281,687**	**100.0%**

Source: Quarterly Census of Employment and Wages (QCEW).

to 1.1% of the total in the community colleges. To the extent that skills are transferrable between the two industries, it is evident that school districts offer a larger set of employment opportunities than do the colleges combined.

Assuming, for the sake of discussion, that turnover due to retirement is approximately equal in both school districts and the community colleges, the size difference alone between the two industries suggests a far greater replacement need in school districts. Assuming no growth difference between the industries, and skills transferability, it would appear that the school districts are a competitive factor when considering staff compensation.

Within Industry Regional Occupational Comparisons

Comparing direct compensation within industry, community colleges, and within public ownership may allow us to assume that indirect compensation is a relative constant. That assumption may be less credible as we change comparisons for the same occupation to different industries and ownerships.

Table 3: **Total Number of Unique Unemployment Insurance (UI) Benefit Recipients in Wyoming, 2005-2012**

		Nonresidents	
Year	Total Unique Claimants	N	%
2005	2,463	375	15.2%
2006	3,204	455	14.2%
2007	3,731	634	17.0%
2008	5,505	1,162	21.1%
2009	14,943	4,077	27.3%
2010	9,611	2,771	28.8%
2011	6,989	2,409	34.5%
2012	6,496	2,025	31.2%
Total	**52,942**	**13,908**	**26.3%**

Source: Research & Planning, Wyoming Department of Workforce Service.

Labor competition is dynamic and it is not particularly clear which occupations are recruited locally, regionally, or nationally across the cycles of Wyoming's rapid economic expansions and contractions in the context of the national business cycle. Wyoming employers have historically relied upon nonresident workers to some degree; nonresidents are defined as "individuals without a Wyoming-issued driver's license or at least four quarters of work history in Wyoming" (Jones, 2002)[1]. At the peak of the last expansion (2008), 13.5% of the workforce were nonresidents, in contrast to 9.0% during a period of much slower growth (2000) in Wyoming. After the collapse of the coal bed methane industry, at one point, 34.5% of individuals claiming unemployment insurance from a Wyoming employer account did so from a nonresident address (see **Table 3**).

Total Number of Unique Unemployment Insurance (UI) Benefit Recipients in Wyoming, 2005-2012

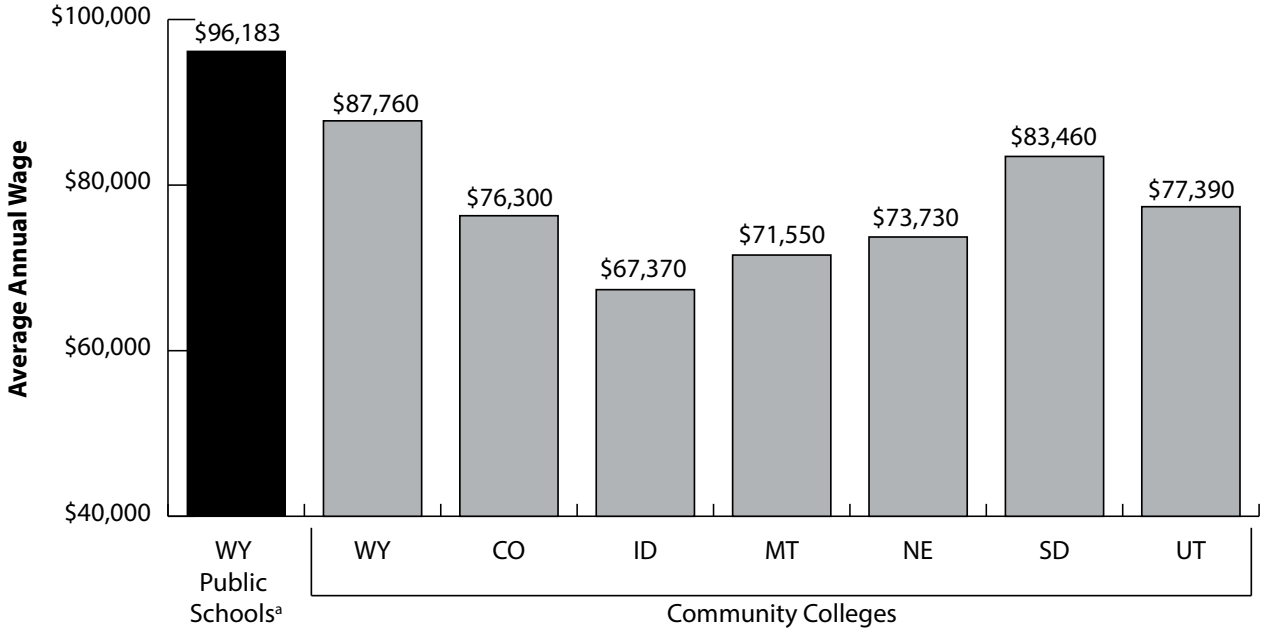
Evidence of the effect of coal bed methane's rapid employment expansion and contraction on Wyoming's labor market and dependence on non-resident labor is displayed in Table 3. During the period of economic build-up (2005-06), non-resident UI claimants as a percent of total claimants remained below 20%. During the peak period of UI claims activity (2009), there were more individuals (4,077) claiming UI benefits than there were jobs among Wyoming's community colleges in the 2012/13 school year (see Table 1). While it may be suggested that some types of occupations are always recruited locally and others always recruited nationally, the scale

1 Jones, S. (2002). Defining residency for the Wyoming workforce. Wyoming Labor Force Trends, 39(11). Retrieved December 22, 2014, from http://doe.state.wy.us/LMI/1102/a1.htm

of Wyoming's dependence on nonresident labor during certain periods clearly tests that assumption.

In this segment of the report, we compare average wage levels between occupations. While useful, such comparisons are far from an empirical demonstration of wage differences precipitating behavioral change. A more rigorous test of inter-industry wage competition is post-job change earnings gain. As is demonstrated in *Monitoring*, employees who leave Wyoming's school districts, and who find work, are most likely to obtain work in another school district (public schools, education services, NAICS 6111, ownership 3; see *Monitoring*, page 48). For school district teachers who leave one school district for another (*Monitoring*, page 49), there was no wage gain for the period under study suggesting that alternative explanations must be explored. However, in the case of community colleges, the absence of occupational information on employee records available to R&P means that post-job change analysis cannot be performed.

This portion of the report describes direct compensation (wages) in community colleges for Wyoming and border states. Tabular data are available in Attachment A by year for 2009 to 2013. As can be seen in Attachment A, only nine occupations were identified in 2013 where pay in a border state was greater than that found on average among Wyoming's community colleges. Postsecondary education administrators (SOC 11-9033) in Utah were paid an estimated $90,990 in comparison to $79,350 in Wyoming; the next highest level of pay was 2.3% below the estimate for Wyoming. At $56,180, the average estimated wage for Utah's arts, design, entertainment, sports, and



Source: Occupational Employment Statistics Aggregation for 2013.
[a]Source: Table 1: Employment and Mean Wage by State, Region, US and Ownership for Occupations in Public Schools in Wyoming or Bordering States (http://doe.state.wy.us/LMI/LSO_Report/LSO_Report2014_OES_Table1_2009to2013.pdf).

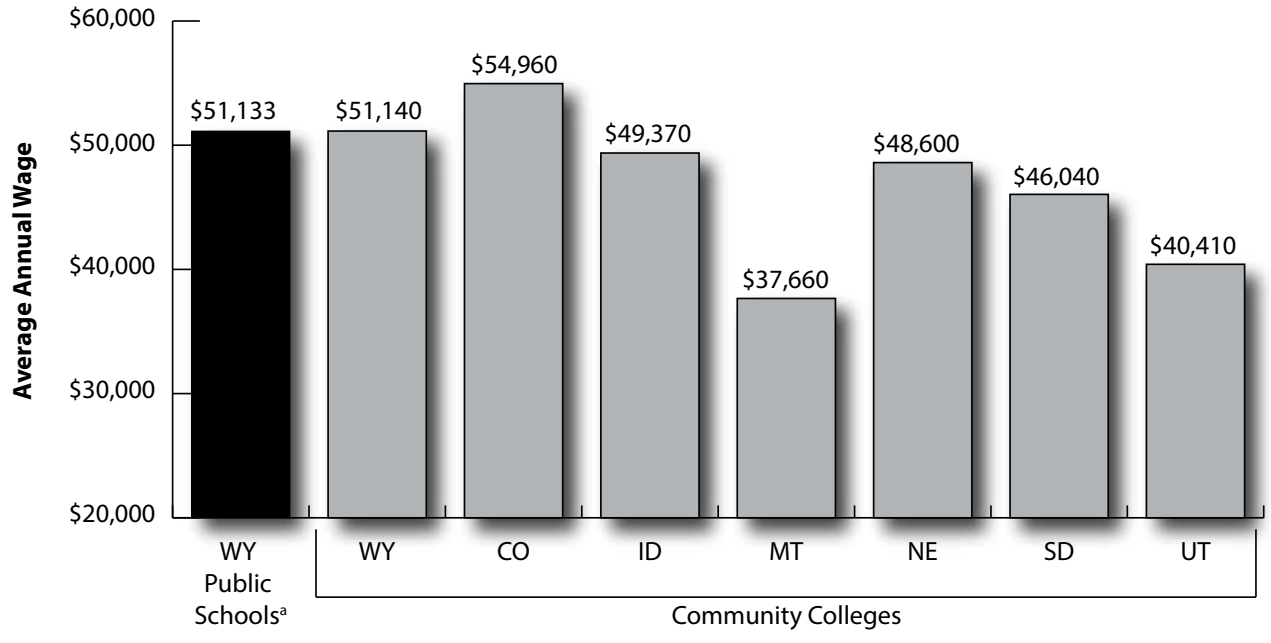
Figure 3: Average Annual Wage for Management Occupations (2-Digit SOC 11-0000) in Public Schools in Wyoming and in Community Colleges for Wyoming and Border States, 2013

media occupations (SOC 27-000) was 14.7% higher than in Wyoming, which was the second highest among states in Attachment A. Office clerks in Wyoming community colleges were paid fractionally lower than in other states. These were exceptions. On the whole, average direct compensation among colleges in Wyoming was higher than in border states.

Figures 3-5 draw upon the wage estimates in Attachment A, and introduce estimates from Table 1 for Wyoming school districts. At $87,760 in Wyoming (see **Figure 3**, page 8), the average wage for all management occupations (SOC 11-0000) was the highest among community colleges in the region. South Dakota followed with an average wage of $83,460 (a difference of $4,000). However, the average wage in Wyoming's public schools was estimated at $96,183, or $8,423 above the wage paid to management in public schools. Occupational detail for SOC 11-0000 includes such detailed occupations as marketing managers (SOC 11-2021), general operations, human resource, and other types of managers.

Figure 4 shows that computer and mathematical occupations (SOC 15-0000) in public schools and community colleges in Wyoming, on average, are paid the same, and that wages in this occupational category are above those in border states except one. The average wage for computer and mathematical occupations in Colorado was 7% higher than in Wyoming's school districts and among its colleges.

Figure 5 (see page 10) reveals that secretaries in Wyoming's public school districts are paid slightly above (within the margin of the error of the estimate) the average pay for secretaries in Colorado's community colleges while the average pay



Source: Occupational Employment Statistics Aggregation for 2013.
[a]Source: Table 1: Employment and Mean Wage by State, Region, US and Ownership for Occupations in Public Schools in Wyoming or Bordering States (http://doe.state.wy.us/LMI/LSO_Report/LSO_Report2014_OES_Table1_2009to2013.pdf).

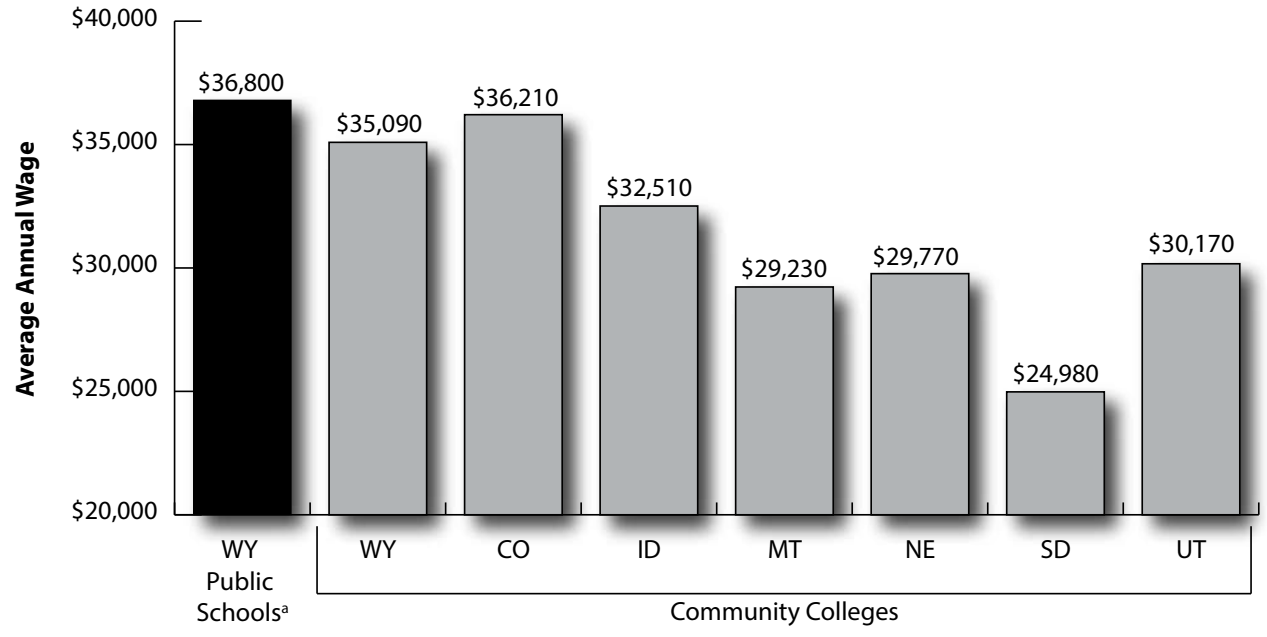
Figure 4: **Average Annual Wage for Computer and Mathematical Occupations (2-Digit SOC 15-0000) in Public Schools in Wyoming and in Community Colleges for Wyoming and Border States, 2013**

among Wyoming's community colleges is only slightly lower than pay in Colorado. Secretaries are found in SOC 43-6014 indicating that it is a detailed occupational classification. Employment estimates (Attachment A) for 2013 reveal that there were an estimated employment of 198 secretaries in Wyoming, while at the general level of Management Occupations, employment stood at 340. This ratio of secretarial positions to general management positions across the region appears reasonable.

Our illustration of occupational comparisons between Wyoming's community colleges with border states and Wyoming public schools is intended to illustrate the fact that public schools in Wyoming, in general, tend to pay at higher average rates than in Wyoming's community colleges, and that as often as not, Colorado community colleges pay rates are often higher (but not greatly) than both public sectors in Wyoming.

2. Comparisons of Selected Occupations, Industries, Geographic Areas, and Ownerships

While a certain amount of subject matter expertise may be required for some management positions, it is less clear that that distinction is relevant for computing and clerical positions. Therefore, it is important to incorporate consideration of the private sector in occupational wage comparison. As indicated earlier, the implicit assumption is often made that the relationship between commuting and/or relocation distances is linear when, in fact, the available evidence suggests that the relationship between geographic distance and competition is mediated by the national business cycle and



Source: Occupational Employment Statistics Aggregation for 2013.
[a]Source: Table 1: Employment and Mean Wage by State, Region, US and Ownership for Occupations in Public Schools in Wyoming or Bordering States (http://doe.state.wy.us/LMI/LSO_Report/LSO_Report2014_OES_Table1_2009to2013.pdf).

Figure 5: **Average Annual Wage for Secretaries, Except Legal, Medical, and Executive (6-Digit SOC 43-6014) in Public Schools in Wyoming and in Community Colleges for Wyoming and Border States, 2013**

Wyoming's rapid economic expansions and contractions. The following three graphics incorporate private sector wage information for bordering states and the U.S. as a whole. (National OES wage estimates for community colleges can be found at http://www.bls.gov/oes/home.htm.)

The data used to construct Figures 3-5 are presented in **Table 4** (see page 13). As can be seen in Table 4 and **Figure 6**, private sector management occupations (SOC 11-0000) in Wyoming, on average, pay about the same level as among community colleges. Both the colleges and private sector lag behind compensation for this broad grouping of Management Occupations in comparison to wages in public schools. Community college average wage rates fall far below private sector management occupations in the U.S. as a whole and in border states except Idaho and Montana.

Figure 7 (see page 12) once again focuses on computer and mathematical occupations (SOC 15-0000). Clearly, private sector wages for this occupation out strip the public sector in Wyoming as well as community college compensation in border states. As can be seen in Table 4, computer occupations in Colorado have an average wage of $86,507 which is $35,367 or 69.2% higher than among community colleges in Wyoming.

Secretaries in Wyoming's public schools earn, on average, more than in the U.S. private sector, the private sector of border states and Wyoming, and among Wyoming's community colleges (see **Figure 8**, page 12). As sample survey estimates, the concept of estimation error is important to keep in mind. Secretaries (SOC 43-6014) are comparatively

(Text continued on page 13)

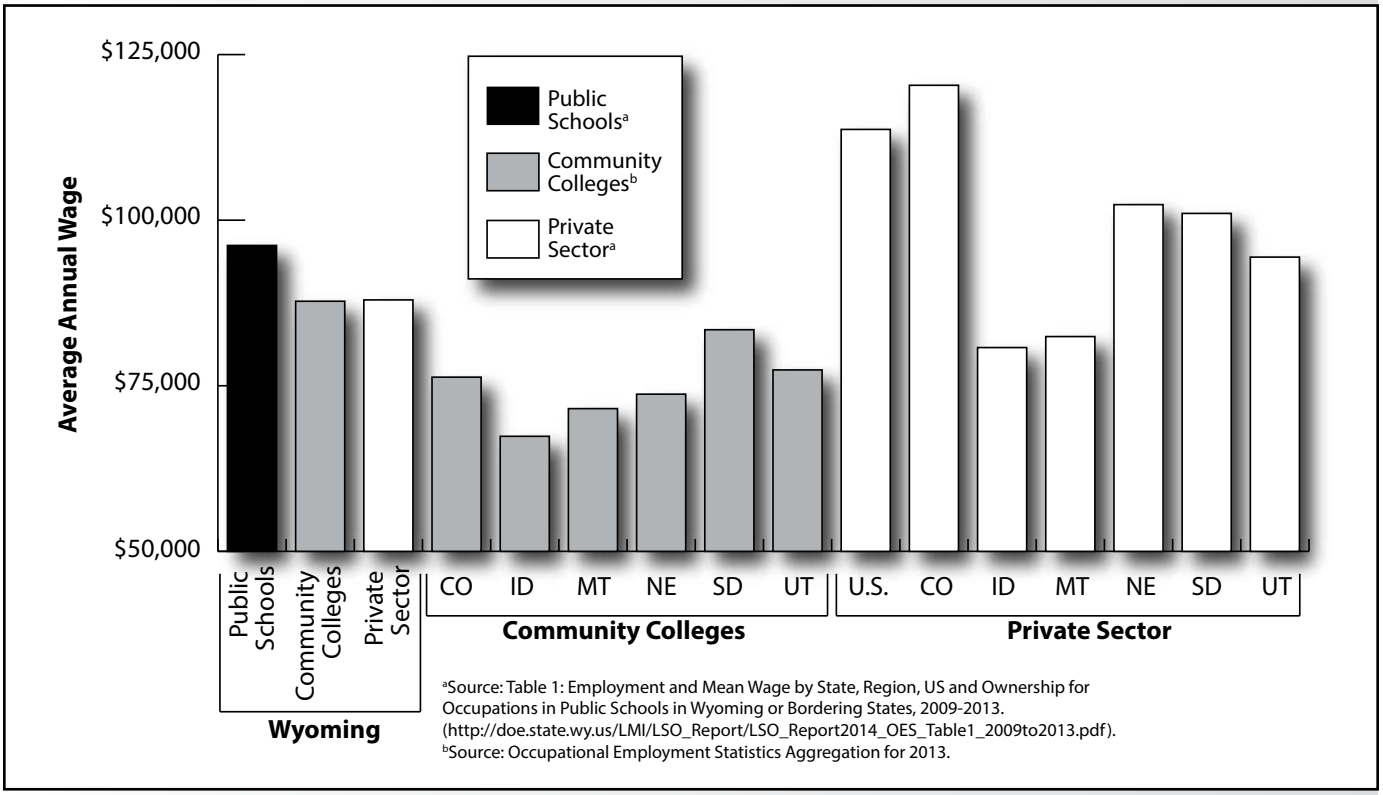


Figure 6: **Average Annual Wage for Management Occupations (2-Digit SOC 11-0000) in Community Colleges, Public Schools, and Private Sector for Wyoming and Border States, 2013**

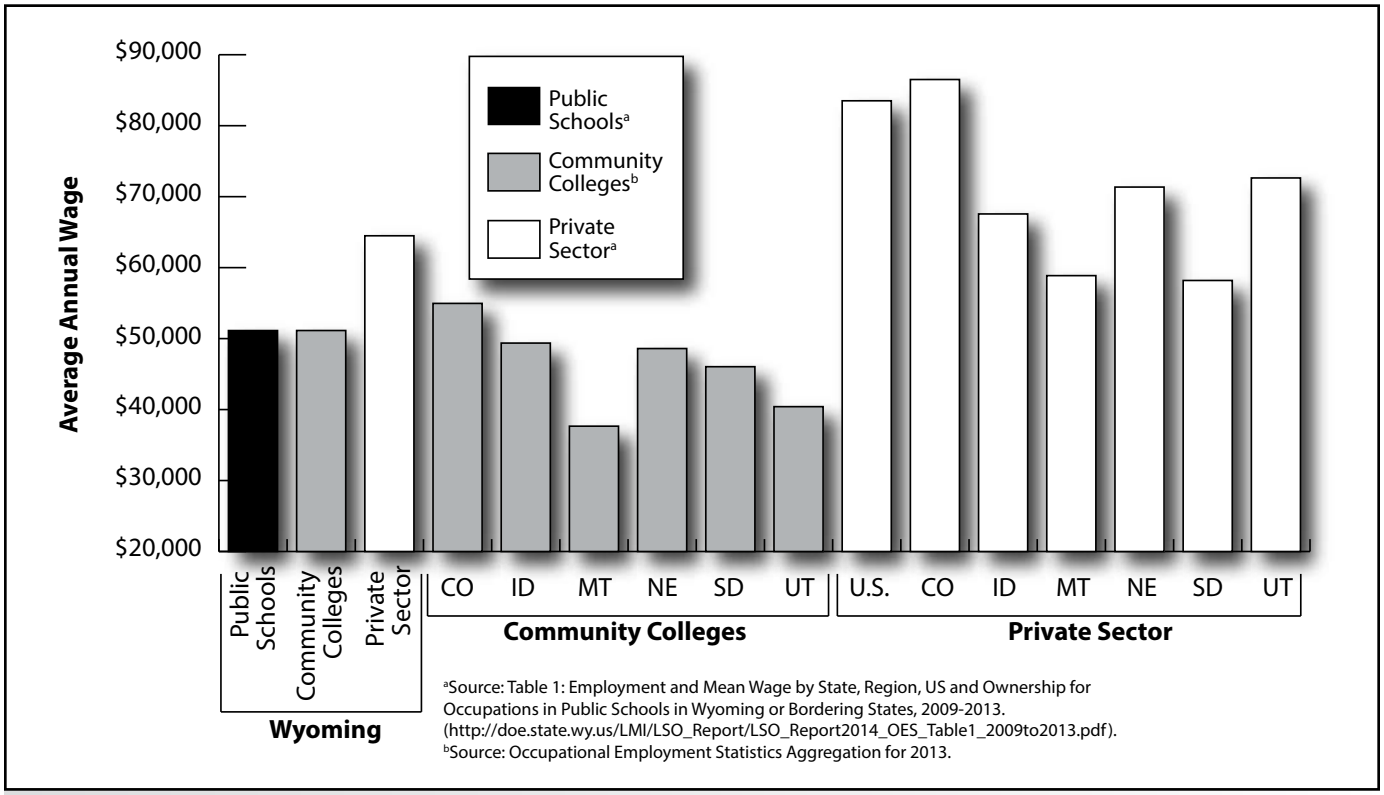


Figure 7: Average Annual Wage for Computer and Mathematical Occupations (2-Digit SOC 15-0000) in Community Colleges, Public Schools, and Private Sector for Wyoming and Border States, 2013

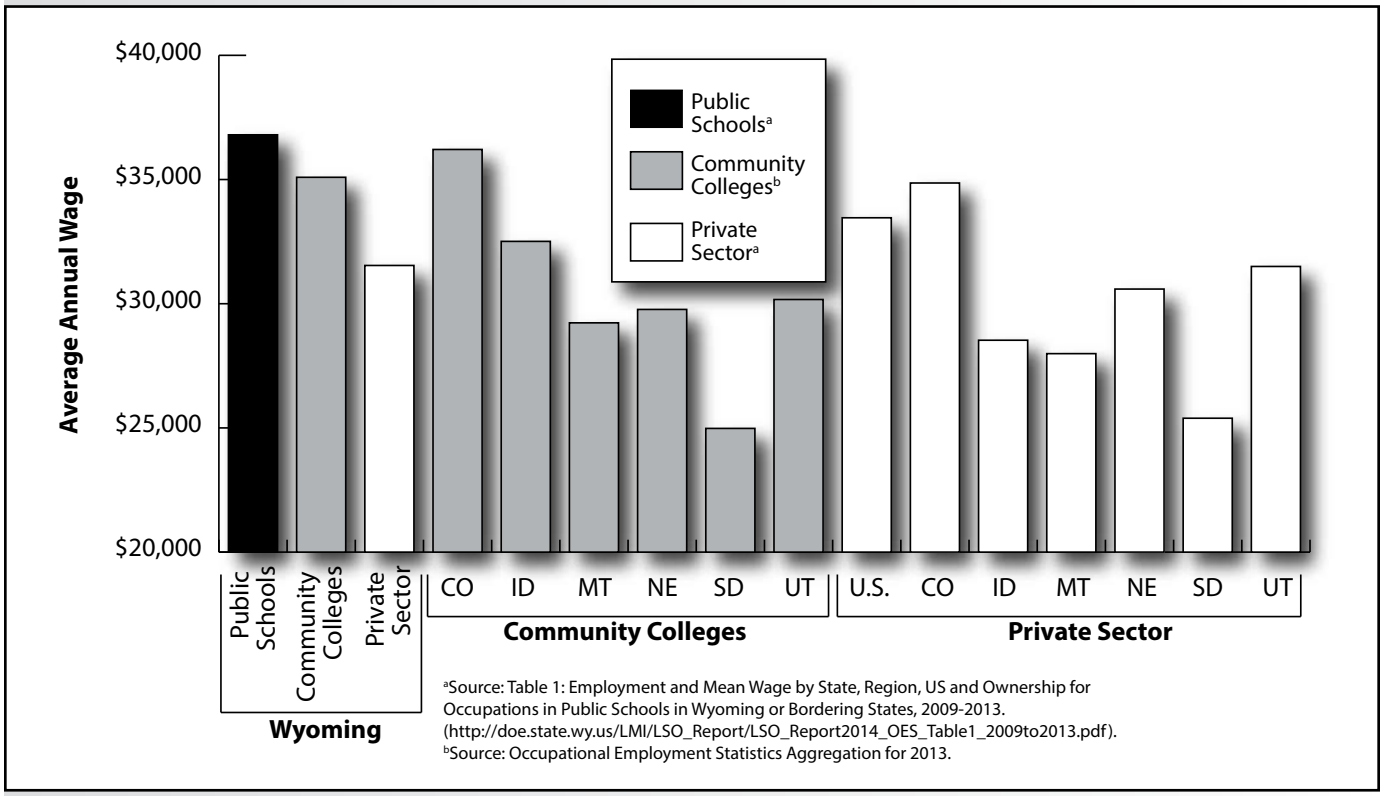


Figure 8: Average Annual Wage for Secretaries, Except Legal, Medical, and Executive (6-Digit SOC 43-6014) in Community Colleges, Public Schools, and Private Sector for Wyoming and Border States, 2013

(Text continued from page 11)

plentiful relative to other occupations. Therefore, estimates at the county level over all industries are available. The average wage for secretaries in Campbell County is estimated at $36,191 (see http://doe.state.wy.us/LMI/EDSSept2014/PAGE0156.HTM) and are estimated at $35,062 in Natrona County (see http://doe.state.wy.us/LMI/EDSSept2014/PAGE0372.HTM).

These county estimates have been updated with the BLS' Employment Cost Index. Non-adjusted county level data for Wyoming and sub-state areas can be found at http://data.bls.gov/oes/search.jsp?data_tool=OES'.

This section's wage comparisons demonstrate the ready availability of OES estimates and demonstrate the use of OES estimates published only by Wyoming's Research & Planning. Based on the available evidence it is not clear which occupations are recruited for the community colleges (or from the community colleges) without at least some job changing evidence similar to that identified in R&P's *Monitoring* report.

Table 4: Average Annual Wage for Selected Occupations in Community Colleges, Public Schools, and Private Sector for Wyoming and Border States, 2013

Ownership	State	Figures 3 and 6 Management Occupations (2-Digit SOC 11-000)	Figures 4 and 7 Computer and Mathematical Occupations (2-Digit SOC 15-0000)	Figures 5 and 8 Secretaries, Except Legal, Medical, and Executive (6-Digit SOC 43-6014)
Public Schools	WY	$96,183	$51,133	$36,800
Community Colleges	WY	$87,760	$51,140	$35,090
Private Sector	WY	$87,960	$64,489	$31,540
Community Colleges	CO	$76,300	$54,960	$36,210
	ID	$67,370	$49,370	$32,510
	MT	$71,550	$37,660	$29,230
	NE	$73,730	$48,600	$29,770
	SD	$83,460	$46,040	$24,980
	UT	$77,390	$40,410	$30,170
Private Sector	U.S.	$113,700	$83,510	$33,460
	CO	$120,363	$86,507	$34,860
	ID	$80,766	$67,565	$28,530
	MT	$82,427	$58,872	$27,990
	NE	$102,347	$71,352	$30,590
	SD	$101,020	$58,191	$25,390
	UT	$94,423	$72,636	$31,500

Sources:

Public Schools and Private Sector: Employment and Mean Wage by State, Region, US and Ownership for Occupations in Public Schools in Wyoming or Bordering States, 2009-2013 (http://doe.state.wy.us/LMI/LSO_Report/LSO_Report2014_OES_Table1_2009to2013.pdf).

Community Colleges: Occupational Employment Statistics Aggregation for 2013.

IV. Recent History of Wyoming's Labor Market as it Applied to Community College Compensation

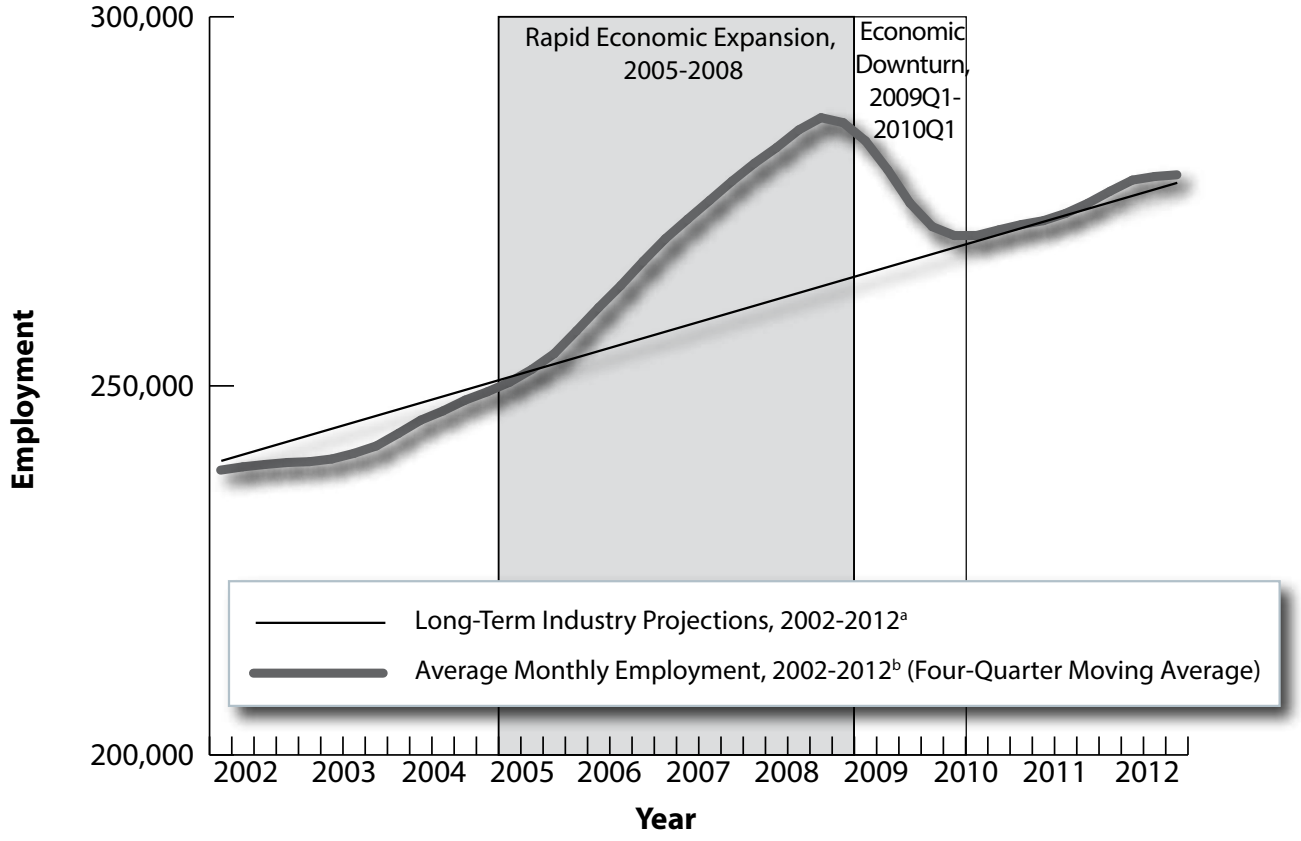
Rapid private sector employment and compensation growth during the 2000 to 2010 decade and resolution through Supreme Court challenge to funding school districts in Wyoming are key to understanding community college compensation today.

In fourth quarter 2004, UI covered employment growth rose above 2% on an over-the-year basis (see **Figure 9**), and pretty much stayed above that point until falling in first quarter 2009. For three years (from the end of 2005 through third

quarter 2008) employment growth, driven largely by the exploitation of coal bed methane, was above 3%. Sustaining this employment growth was an increase in the 2006 employment-to-population ratio to 70% in Wyoming, well above the national pre-recession level of 62.5% while the unemployment rate remained well below 4% (see **Figure 10**, page 14). As described in the previous section, employment growth could not have been sustained without importing a large nonresident workforce. Rapid workforce population growth created a substantial impact on housing availability and prices.

However, in the middle of the last decade another source of labor competition arose. On January 8, 2008, Wyoming's Supreme Court issued a report summarizing the history of litigation over the adequacy of the Legislature's funding of school districts under the State's Constitution (*Summary*)[2]. The resolution of differences between the school districts and the Legislature

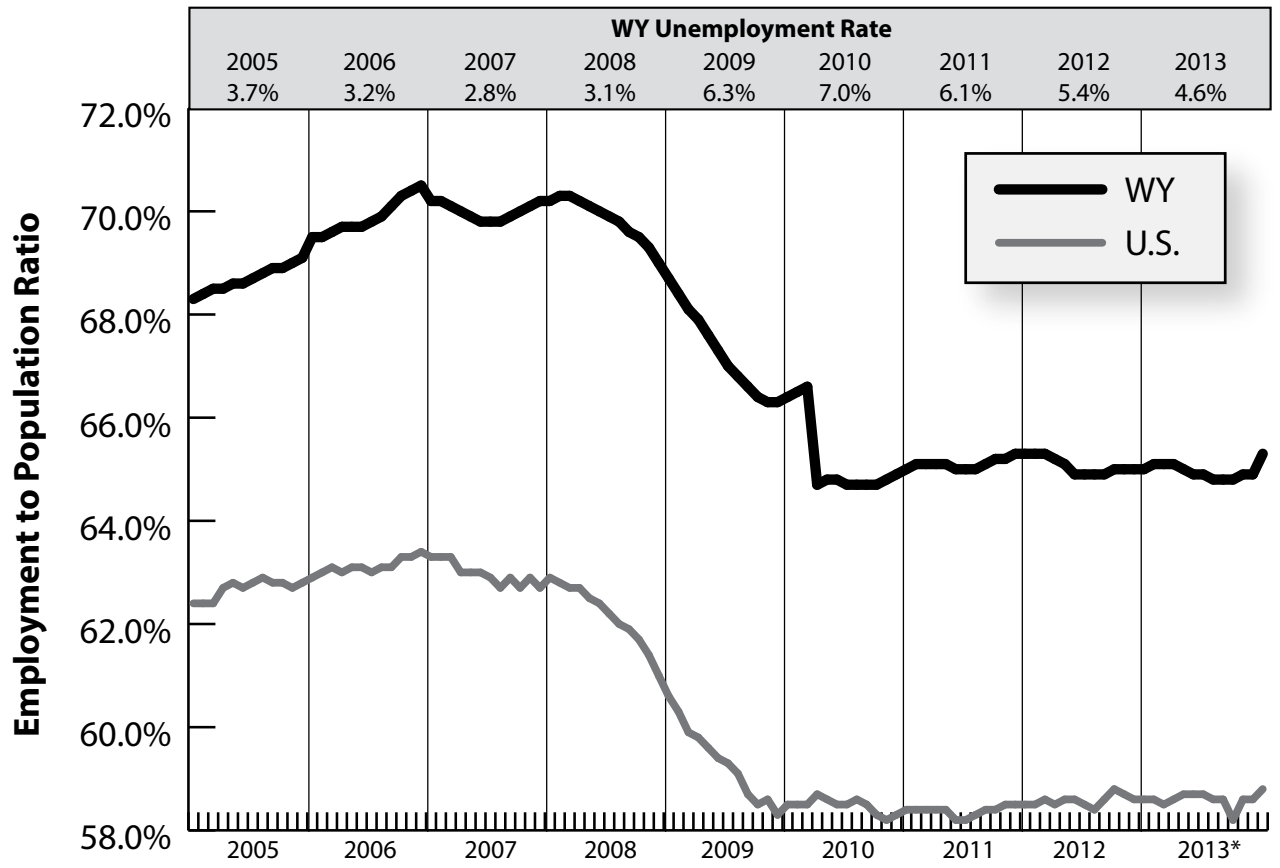
2 Summary Issued by the Wyoming Supreme Courty (2008, January 8). Campbell County School Dist. v. State, Nos. 06-74, 06-75, 2008 WY 2 (Campbell IV).



aSource: Long-Term Industry Projections, 2002-2012 (http://doe.state.wy.us/lmi/proj2004/Wyoming_Report%203Dig%202012.pdf).
bSource: Quarterly Census of Employment and Wages (http://doe.state.wy.us/LMI/toc_202.htm).

Figure 9: **Long-Term Industry Projections and Average Monthly Employment Across All Industries in Wyoming, 2002-2012**

produced several consequences relating to school district staffing and compensation levels. Among those consequences was a relatively rapid escalation in teacher salaries, "As support for its conclusions, the district court noted Wyoming's average teacher salary … caused it to rank 42nd nationally, and in 2002-03, that rank had improved to 36th; Wyoming's beginning and average salaries exceeded other states in the region except Colorado…" (*Summary*, p. 8). However, the impact of court decisions went beyond teacher salaries, the "… state's actions resulted in the average salary increasing to $40,618 in 2004, and a special appropriation in 2005 of $22,736,000 for employee bonuses … an additional $33,321,418 was appropriated in 2005 to assist districts with increasing health insurance costs…" (*Summary*, p. 9). Thus, school districts were provided with large increases in funds for both direct and indirect funding during the same period of rapid private sector growth.



*Includes January 2014.
Series break in April 2010 is related to the introduction of new population estimates.
Employment to Population Ratio = Employment/Population.
Source: Local Area Unemployment Statistics (LAUS).

Figure 10: **Seasonally Adjusted Employment-to-Population Ratio and Annual Unemployment Rate for Wyoming, 2005-2013**

Market and public sector dynamics are captured in selected published narratives relating to housing availability and cost as a barrier to workforce recruitment, and intensified competition between school districts and the community colleges (see **Box**). Indeed, at any point where labor had the skills to move between industrial components of the private sector (e.g. manufacturing and mining) or between the public sector (state government heavy equipment operators) and the private sector (e.g. transportation) were the subject of extensive public anecdote.

Box: Community College Pay in the News, 2006

Education Without Representation

"And now that many public school teachers are being paid more than $40,000 in starting salaries, colleges want to raise pay to compete, (Wyoming Community College Commission Executive Director Jim) Rose said. That salary is more than some colleges pay instructors with master's degrees, he said (Nordby, 2006a).

High K-12 pay hurts state colleges, officials say

"Recent pay raises for K-12 teachers in Wyoming are making it tough for the state's community colleges to attract new faculty, officials say. A legislative committee has agreed to look into the issue of college funding.

"Jim Rose, executive director of the Wyoming Community College Commission, addressed the Legislature's Joint Education Interim Committee on Friday.

"Rose said he wasn't disparaging recent pay raises for K-12 teachers. However, he said, 'There is a concern, frankly, now that we have lost ground in the ability of the colleges to hire faculty.'

"Rose said the salary for a beginning teacher with a bachelor's degree in Campbell County School District 1 is $9,000 higher than that paid to a faculty member with a master's degree at Sheridan College.

"The consequences of that has been that at some of the colleges, we're losing faculty," he said.

"An increase in funding by the Legislature earlier this year has allowed the state's school districts to sharply increase teacher pay.

"According to information from 41 of Wyoming's 48 districts this month, districts have boosted starting salaries by an average of $6,700" (Associated Press, 2006).

College pay hikes gain steam

"CODY- Wyoming community college presidents said it happened all over the state this year: Their top candidates for jobs turned down good offers after finding out just how expensive it is to buy houses in Wyoming.

"Members of Legislature's Joint Education Committee heard the concern at a meeting here Wednesday and voiced support for significant raises for community college employees.

"The Wyoming Community College Commission will ask the governor to include in his budget a 20 percent raise for college faculty, an 18 percent raise for other staff and a 10 percent raise for administrators. The raises would amount to $16.5 million" (Nordby, 2006b).

Set college faculty pay apart from K-12 system

"In determining an appropriate salary increase, the Legislature should not look at pay in the public schools and try to strike a balance with community college employees. Lawmakers need to look at what faculty and staff members are being paid at other community colleges in the region and nationally to get a clear sense of both markets where they must compete for employees.

"The commission has identified a real problem: Highly qualified instructors they would like to hire look at the housing market in Wyoming and take jobs elsewhere. There was a time when the state's relatively low cost of living was a selling point for job candidates, but no longer" (Bekke, et. al, 2006).

Table 5 and **Figure 11** (see page 18) provide an historic profile of average compensation (QCEW) for 2001 to 2013 for community colleges in Wyoming and selected border states and public school districts in Wyoming. The impact of increased funding on school district average wages can be seen in the 2005 to 2007 period, when wage growth increased from 6.4% to double-digit levels in 2006 and 2007. A substantial increase in average wages in community colleges was offset by one year taking place in 2006 to 2008 with more moderate rates of change. Following the mid-decade increase in the rate of change (ending in 2008), the rate of change in the average wage in Wyoming's community colleges, between 2009 and 2013, has grown at a rate between -0.4% and 1.2% while the same period the average rate of growth for school district wages was slightly higher ranging between 0.7% and 1.4%. The net effect of these changes is that legislative intervention in the compensation of colleges relative to the districts did not resolve the problem described in anecdote. In 2005, the average wage in Wyoming's school districts was $1,106 (or 3.7%) above average earnings in Wyoming's community colleges. By 2013, that difference had increased in a nearly linear fashion to $5,495 (or 4.7%). All else being equal, it appears that there is a meaningful change in the competitive position of the school districts relative to the community colleges. However, this difference has not been empirically demonstrated to systematically affect the colleges capacity to compete for labor.

Contingencies

In 2005, when the average wage per job in school districts was 3.7% higher than in community colleges, slightly more than one in five employees in all of education (NAICS 61) in Wyoming was age 55 and over. By the time the wage gap

Table 5: **Average Annual Wage and Over-the-Year Percentage Change for Community Colleges in Selected States and Elementary and Secondary Schools in Wyoming (QCEW)**

	Colorado		Nebraska		Utah		Wyoming		Wyoming Elementary & Secondary Schools	
Year	$	Over-the-Year % Change	$	Over-the-Year % Change	$	Over-the-Year % Change	$	Over-the-Year % Change	$	Over-the-Year % Change
2001	$21,646		$23,057		$21,371		$24,590		$26,152	
2002	$22,247	2.8%	$24,207	5.0%	$22,344	4.6%	$27,005	9.8%	$27,829	6.4%
2003	$23,540	5.8%	$25,114	3.7%	$22,357	0.1%	$27,142	0.5%	$28,430	2.2%
2004	$23,708	0.7%	$25,585	1.9%	$23,722	6.1%	$28,329	4.4%	$29,008	2.0%
2005	$23,791	0.4%	$26,664	4.2%	$25,321	6.7%	$29,772	5.1%	$30,878	6.4%
2006	$24,521	3.1%	$26,951	1.1%	$26,317	3.9%	$31,616	6.2%	$34,342	11.2%
2007	$27,061	10.4%	$28,585	6.1%	$27,590	4.8%	$34,276	8.4%	$38,705	12.7%
2008	$26,541	-1.9%	$30,211	5.7%	$27,443	-0.5%	$36,293	5.9%	$40,266	4.0%
2009	$27,676	4.3%	$31,143	3.1%	$28,390	3.5%	$36,130	-0.4%	$40,873	1.5%
2010	$26,960	-2.6%	$32,427	4.1%	$27,713	-2.4%	$36,328	0.5%	$41,180	0.8%
2011	$28,791	6.8%	$33,483	3.3%	$27,906	0.7%	$36,750	1.2%	$41,749	1.4%
2012	$29,599	2.8%	$34,253	2.3%	$28,231	1.2%	$36,910	0.4%	$42,038	0.7%
2013	$30,683	3.7%	$34,724	1.4%	$28,752	1.8%	$36,951	0.1%	$42,446	1.0%
Change, 2001-2013	$9,037	41.7%	$11,667	50.6%	$7,381	34.5%	$12,361	50.3%	$16,294	62.3%

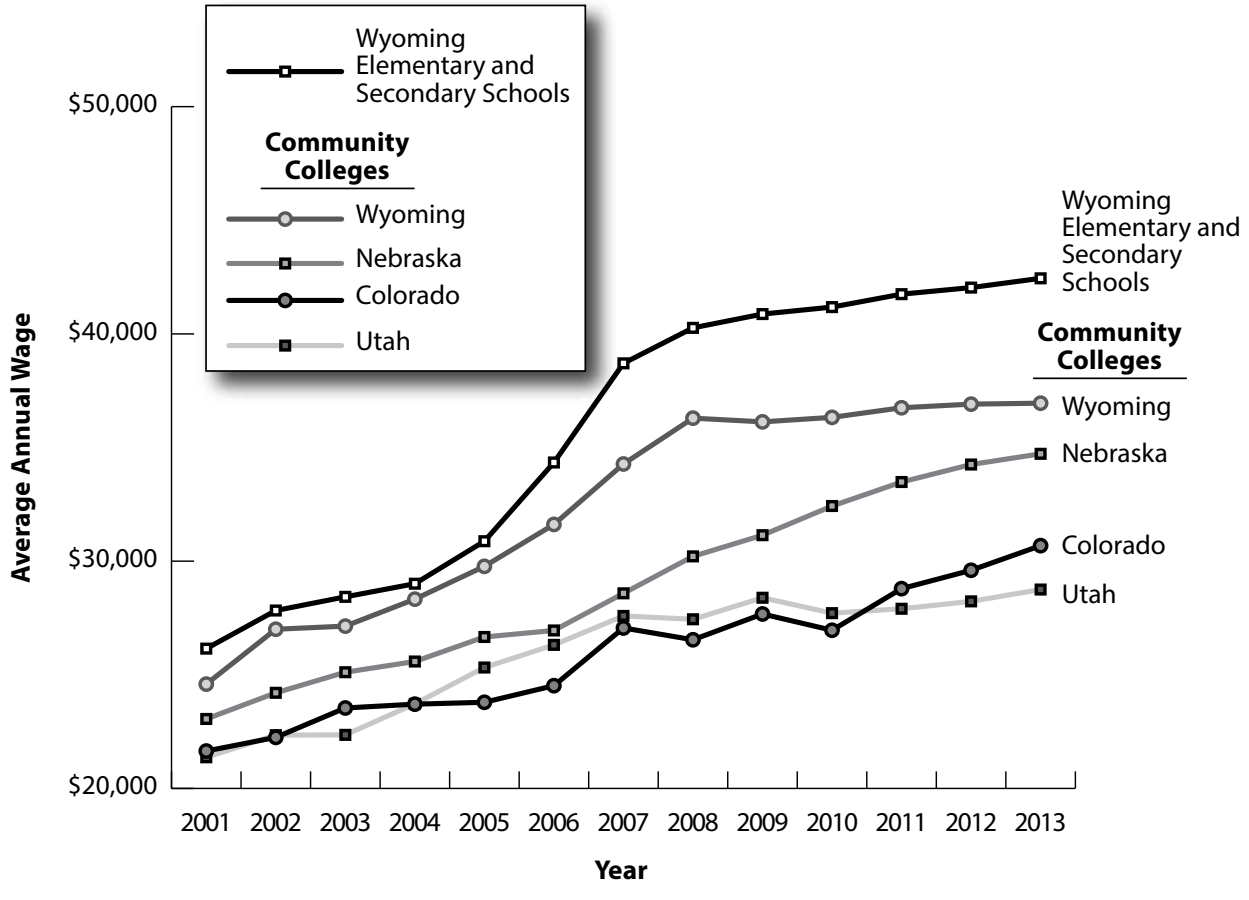
Source: Quarterly Census of Employment and Wages (QCEW), special Research & Planning tabulations.

had expanded to 4.7% (2013) almost one in three (29.7%) employees were age 55 and over[3]. As seen in **Figure 12** (see page 19), not only are employees in education substantially older as a population segment, they are also far more likely to hold a four-year degree or higher as a function of job requirements. Professional and business services, a very small information industry, financial activities, public administration, and health care and social assistance follow in terms of an aging, educated workforce with growing employment replacement need as a function of impending retirement.

Age has an aura of inevitability about it. While the traditional age of retirement may be changing, the scale of the need to replace well-educated individuals within all of education is expanding in the context of a regional and national labor market that is expanding more rapidly than in Wyoming. Employment in the state has almost returned to its 2008 level.

Estimates from R&P's New Hires Survey indicate that certain occupations in educational services are hired within the state while other occupations depend on nonresidents for job seekers. As can be

3 Research & Planning. (2014). Earnings by County, Age & Gender, 2000 to 2013. Retrieved December 29, 2014, from http://doe.state.wy.us/LMI/earnings_tables/2014/index.htm

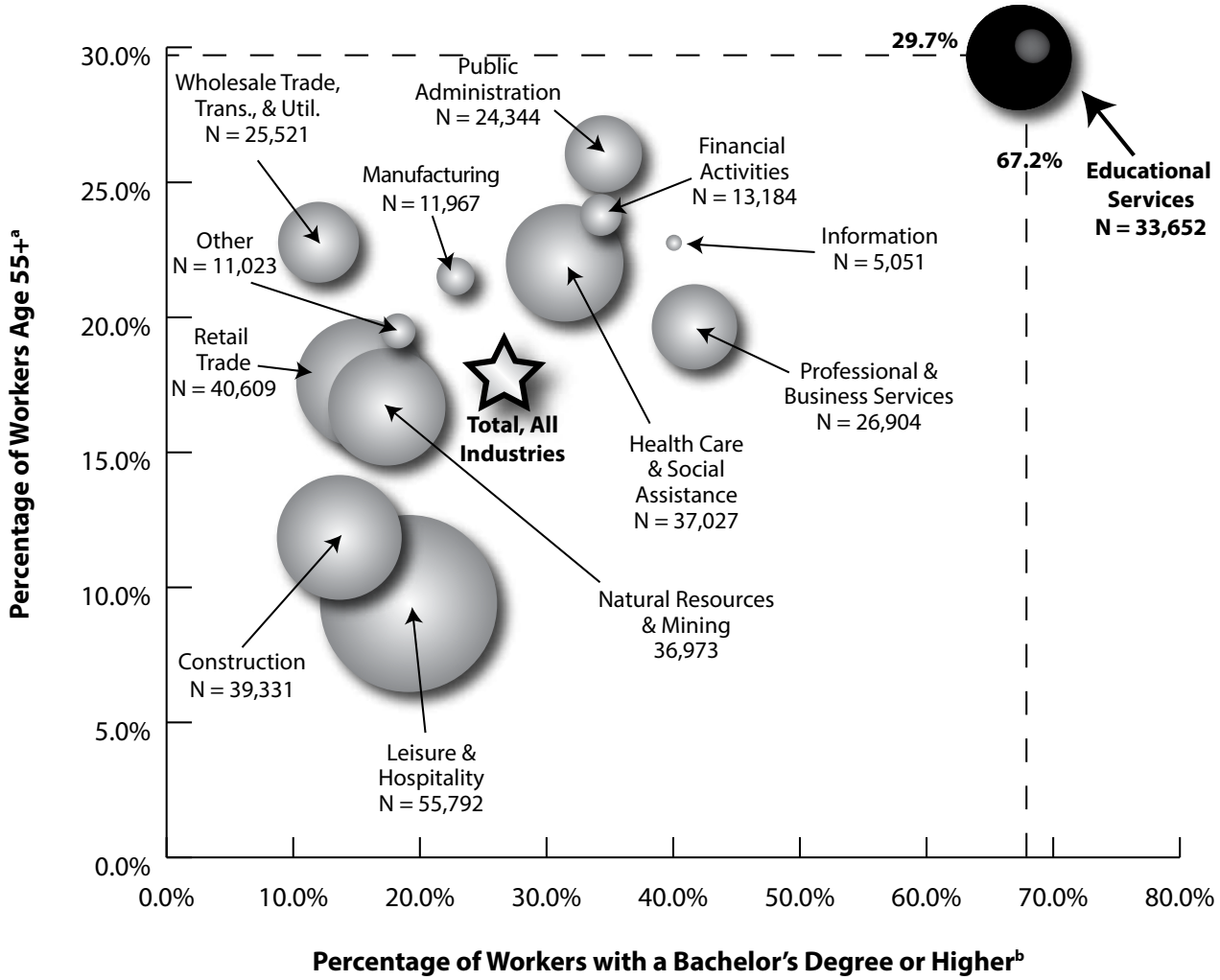


Source: Quarterly Census of Employment and Wages (QCEW), special Research & Planning tabulations.

Figure 11: **Average Annual Wage for Community Colleges in Selected States and Elementary and Secondary Schools in Wyoming, 2001-2013**

seen in **Table 6** (see pages 20-22), during a recent two-year period (2011Q4 to 2013Q3), 11.8% of hires in educational services were nonresidents. Janitors and cleaners, coaches and scouts, office clerks, and other support staff were hired primarily among residents of Wyoming. However, half of postsecondary health specialty teachers (SOC 25-1071), general and operations managers, business teachers and art, drama, and music teachers were drawn from outside of the state. These sample survey estimates are instructive, but represent neither the exhaustive of definitive data to thoroughly understand the geographic scale of the market upon which institutions of higher education draw. Such information must come from the community colleges themselves in a comparable manner.

The geographic proximity of other labor markets is important for several reasons. Regional markets share common competitive



Sources:
[a]Earnings by County, Age & Gender, 2000 to 2013. Research & Planning, WY DWS, 2014.
[b]American Community Survey. U.S. Census Bureau, 2012 (Three-Year Average).

Figure 12: **Percentage of Workers Age 55 and Older (2013) and Percentage of Workers with a Bachelor's Degree or Higher by Industry in Wyoming (2012)**

features with respect to location, climate, and shared labor market areas. As recently as first quarter 2014, R&P's administrative records showed that there were 393 commutes to employment in educational services from Wyoming to Colorado, and 286 instances of commuting to Utah for employment in education. (The analysis of commuting to Wyoming from other states is still under development.) Any analysis of competition must take in to account the capacity to commute to work without the

Table 6: Estimates of New Hires Job Characteristics for Selected Occupations in Educational Services Across All Ownerships in Wyoming for 2011Q4-2013Q3 (Two Years) Ranked by the Estimated Number of New Hires

			Occupation and SOC[a] Code		
	Job Characteristics	Total, All Occupations	Janitors and Cleaners, Except Maids & Housekeeping (37-2011)	Coaches & Scouts (27-2022)	Office Clerks, General (43-9061)
	Typical Education[b]	N/A	High School Diploma	Bachelor's Degree	High School Diploma
	N	7,612	736	399	250
	Average Hourly Wage ($)	$13.13	$12.30	$15.00	$12.72
	% Paid Piece Rate	3.9	0.0	37.5	0.0
% Offered Selected Benefits	Health Insurance	38.0	35.6	3.1	45.0
	Retirement	40.2	35.6	6.3	45.0
	Paid Leave	32.1	30.5	0.0	35.0
Skills Selected as "Important" (%)	Service Orientation	82.8	61.0	84.4	95.0
	Critical Thinking	82.0	66.1	71.9	95.0
	Reading Comprehension	76.2	44.1	37.5	80.0
	Technology Design	37.2	18.6	9.4	40.0
	Operation and Control	41.6	59.3	25.0	55.0
Employers' Satisfaction with New Hires' Skills (%)	Satisfied	62.8	55.9	68.8	65.0
	Not Satisfied	1.6	3.4	0.0	5.0
	Neither	7.0	13.6	9.4	15.0
	Other	28.5	27.1	21.9	15.0
Average Weekly Hours Worked	20 or Less	33.9	14.6	68.2	40.0
	21-35	25.4	27.1	27.3	6.7
	36 or More	40.4	58.3	4.5	53.3
Gender	Female	57.0	42.4	53.1	70.0
	Male	32.1	47.5	34.4	15.0
	Nonresident	10.8	10.2	12.5	15.0
Age Group	19 and Younger	6.1	18.6	6.3	5.0
	20-24	16.2	13.6	15.6	5.0
	25-34	26.2	20.3	28.1	35.0
	35-44	17.4	16.9	21.9	35.0
	45-54	13.0	8.5	3.1	5.0
	55-64	7.7	10.2	6.3	0.0
	65 and Older	1.6	0.0	3.1	0.0
	Nonresidents	11.8	11.9	15.6	15.0
Turnover	% Still Working 1 Quarter After Hire	79.5	69.5	43.8	100.0

Source: Research & Planning, WY DWS, New Hires Job Skills Survey (http://doe.state.wy.us/LMI/newhires.htm).

[a]Source: Standard Occupational Classification System.

[b]Source: O*Net Online (http://www.onetonline.org/).

(Table continued on page 21)

necessity of changing a place of residence. This applies to school districts overlapping and adjacent to community colleges.

Figure 12 shows the percent change in employment for Wyoming and border states from school years 2008/09 to 2012/13. Utah (8.4%) and Colorado

(Table continued from page 20)

Table 6: **Estimates of New Hires Job Characteristics for Selected Occupations in Educational Services Across All Ownerships in Wyoming for 2011Q4-2013Q3 (Two Years) Ranked by the Estimated Number of New Hires**

		Occupation and SOC[a] Code				
	Job Characteristics	**Landscaping & Groundskeeping Workers (37-3011)**	**Health Specialties Teachers, Postsecondary (25-1071)**	**General & Operations Managers (11-1021)**	**Business Teachers, Postsecondary (25-1011)**	**Art, Drama, & Music Teachers, Postsecondary (25-1121)**
	Typical Education[b]	Less than High School Diploma	Doctorate	Associate's Degree	Doctorate	Doctorate
	N	162	100	75	75	75
	Average Hourly Wage ($)	$11.00	$40.69	$18.24	$30.30	$24.33
	% Paid Piece Rate	0.0	0.0	0.0	0.0	0.0
% Offered Selected Benefits	Health Insurance	7.7	0.0	33.3	50.0	16.7
	Retirement	7.7	0.0	33.3	50.0	16.7
	Paid Leave	7.7	0.0	33.3	50.0	16.7
Skills Selected as "Important" (%)	Service Orientation	61.5	100.0	100.0	100.0	100.0
	Critical Thinking	38.5	100.0	100.0	100.0	100.0
	Reading Comprehension	23.1	75.0	100.0	100.0	66.7
	Technology Design	15.4	62.5	50.0	50.0	16.7
	Operation and Control	76.9	87.5	33.3	50.0	0.0
Employers' Satisfaction with New Hires' Skills (%)	Satisfied	69.2	75.0	100.0	0.0	50.0
	Not Satisfied	0.0	0.0	0.0	0.0	0.0
	Neither	0.0	0.0	0.0	0.0	0.0
	Other	30.8	25.0	0.0	100.0	50.0
Average Weekly Hours Worked	20 or Less	0.0	100.0	0.0	50.0	0.0
	21-35	0.0	0.0	0.0	0.0	0.0
	36 or More	100.0	0.0	100.0	50.0	100.0
Gender	Female	15.4	50.0	33.3	66.7	50.0
	Male	76.9	37.5	66.7	33.3	16.7
	Nonresident	7.7	12.5	0.0	0.0	33.3
Age Group	19 and Younger	69.2	0.0	0.0	16.7	0.0
	20-24	15.4	25.0	33.3	16.7	16.7
	25-34	0.0	37.5	16.7	0.0	16.7
	35-44	0.0	12.5	16.7	16.7	16.7
	45-54	0.0	0.0	0.0	16.7	0.0
	55-64	7.7	12.5	33.3	33.3	0.0
	65 and Older	0.0	0.0	0.0	0.0	0.0
	Nonresidents	7.7	12.5	0.0	0.0	50.0
Turnover	% Still Working 1 Quarter After Hire	84.6	50.0	50.0	50.0	50.0

Source: Research & Planning, WY DWS, New Hires Job Skills Survey (http://doe.state.wy.us/LMI/newhires.htm).

[a]Source: Standard Occupational Classification System.

[b]Source: O*Net Online (http://www.onetonline.org/).

(6.1%) saw large increases in UI covered employment over this period, while Wyoming's employment grew by 1.8%.

Finally, **Figure 13** (see pages 24-25) displays growth rates in UI covered (QCEW) employment in employment for Wyoming, border states, and the U.S from 2009 through 2013. For comparison, the gray lines in Figure 2-2 are those of border states' change in UI covered employment from 2009 to 2013. The thick black line represents the state named in that box. The attractiveness of a location for workers depends in part upon an area's capacity to compete for the labor of all members of the household in the present environment and over a longer-term horizon.

In fourth quarter 2013, Colorado (3.1%), Utah (3.1%), and Idaho (2.6%) saw the largest growth in employment. Wyoming's growth rate was 0.6%. In general, stronger growth rates, and greater occupational diversity among border states may serve to attract labor, including teachers, currently residing in Wyoming. Decisions to migrate represent the decisions of households and the idea of cost pressures must be understood in the context of households comprised of more than one adult making career choices. Key decisions about migration and retirement are made at the household level. It is suggested that those working in education are likely to be married to partners working in the same industry. Therefore, the impact of retirement decisions in this industry will require additional research.

People change employment for many reasons, including family-based decisions (care for young children, elderly parents, or to relocate with a spouse), personal reasons (the chosen profession is no longer desirable because of schedules, work environment, workplace safety, or retirement), and financial reasons. R&P captures data from the Wyoming Department of Health on births, deaths, divorces, and marriages. All or any of these events could impact career decisions. Births data could help determine whether or not teachers who have young children are more likely to leave full-time employment for part-time. Marriages may attach a teacher to a spouse who cannot find local career opportunities, and divorces may make the teacher want to leave one geographical area for another.

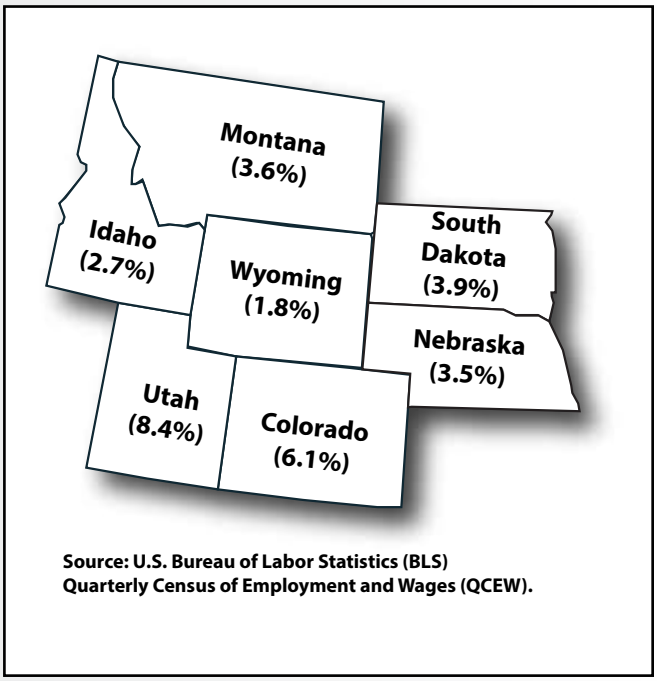


Figure 12: **Percentage Change in Unemployment Insurance Covered Employment for Wyoming and Border States, 2008/09 to 2012/13 (5-Year Change)**

Perhaps the spouse of a school district employee may not be able to find suitable employment in the same geographic location as their public school spouse. R&P has started research using administrative databases to create household (husband, wife, and children) level data, which would

be of interest to explore the relationship between leavers and their partners.

V. Next Steps

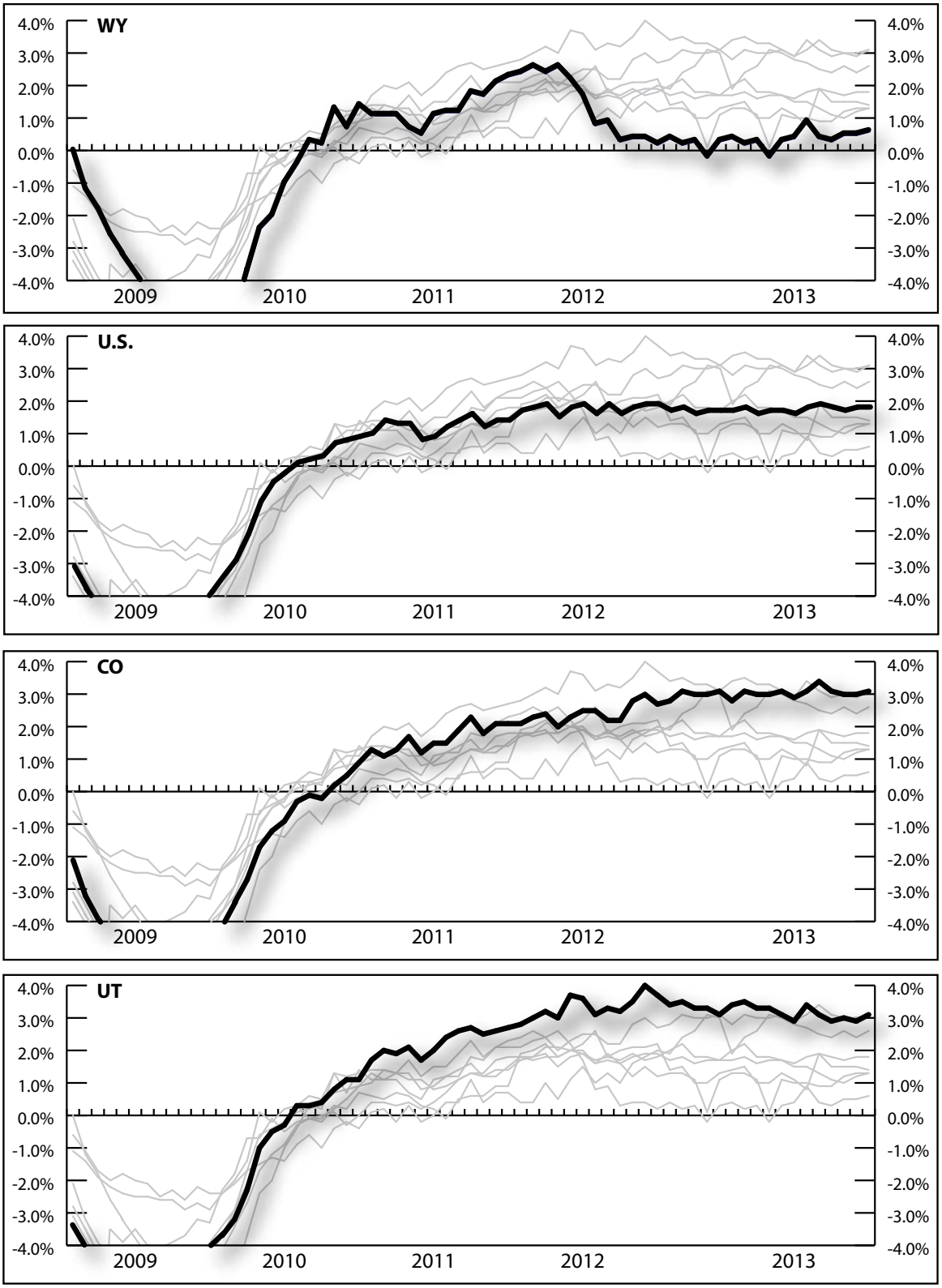
Students of statistical policy argue that there are "three tenets of an ethic of information in a free society: democratic accountability, constitutional empowerment, and individual autonomy" (Duncan, Jabine, and de Wolf, 1993).

> Functionally, democratic accountability recognizes the responsibilities of those who serve on behalf of others. It requires that the public have access to comprehensive information on the effectiveness of government policies. Government statistical agencies play a pivotal role in ensuring democratic accountability by obtaining, protecting, and disseminating the data that allow the accurate assessment of the influence of government policies on the public's well-being. Furthermore, they themselves are accountable to the public for two key functions in this process: (1) protecting the interests of data subjects through procedures that ensure appropriate standards of privacy and confidentiality and (2) facilitating the responsible dissemination of data to users.

Subscribing to the tenet of democratic accountability means that as a research organization, R&P has an ethical obligation to respond to a request from the community colleges for Market Pay analysis. However, the comprehensiveness of that response depends upon the availability of resources relative to the information needed to fully answer the questions implied by the broadness of the task. A purpose of this research has been to identify data gaps. In some cases those data gaps can be addressed through more systematic management of human resource records among the colleges. In other cases, it is clear that the analysts need to establish a level of boundaries around the idea of minimum return from the next level of data and analysis, e.g. how many more states need to be added to OES wage survey information to ensure complete coverage relative to the effort and cost of obtaining that information. A third gap in information involves establishing wage change after job change or the graduation of students who are entering the education labor market. There is an implied challenge to our assumptions about the role of employer provided benefits and the importance of household choices, rather than individual choices about subscribing to one employment location over another. At some point, the list of factors must be narrowed to the most relevant package of data and analysis if Market Pay products are to be affordable. In this regard, the Bureau of Labor Statistics incurs the most costly component of the analysis, an occupational wage survey (OES), to which only State Research analysts have access in its confidential form.

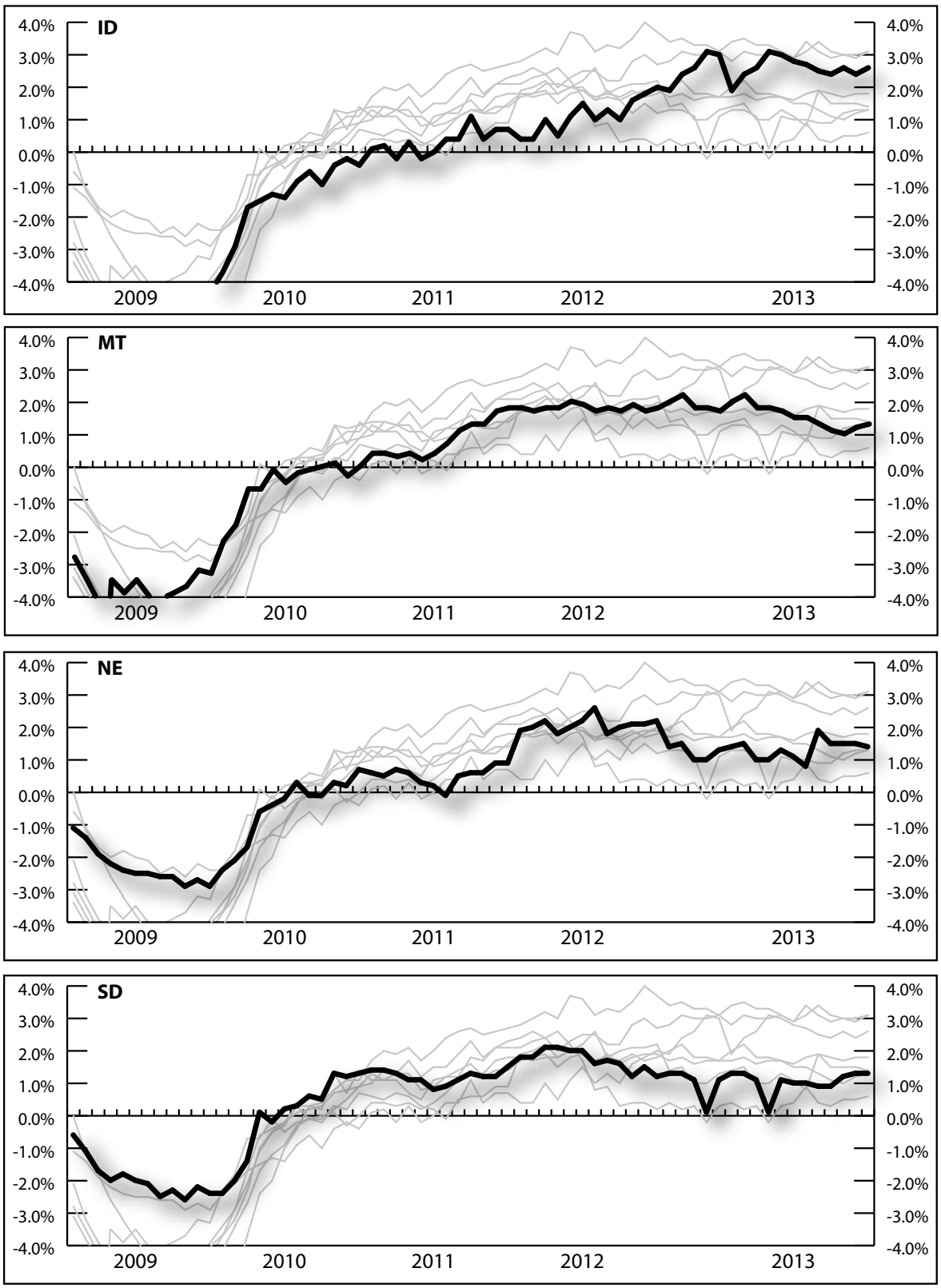
Last, while this report has been prepared in response to a request from the colleges, it has implications for other domains and the public at large. Because of these implications, any next steps must be taken with an invitation to the Wyoming Community College Commission to participate to the extent that they deem it as important to their role and obligations.

Figure 13: Over-the-Year Percentage Change in Total Unemployment Insurance Covered Employment for Wyoming, Border States, and the U.S., 2008/09 to 2012/13



Source: U.S. Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW).

Figure 13 (continued): Over-the-Year Percentage Change in Total Unemployment Insurance Covered Employment for Wyoming, Border States, and the U.S., 2008/09 to 2012/13



Source: U.S. Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW).

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Correspondance from Eastern Community College President Tom Armstrong to Research & Planning Manager Tom Gallagher

Tom,

We met at a meeting in Casper with a Complete College Wyoming group looking interested in tracking certain college completion metrics. Discussion also centered around being able to gather employment data—both placement, wage, and satisfaction data for graduates in Wyoming. I know work has progressed some with ETS and the WCCC—Andy Corbin's crew in Cheyenne. Looking for good things to come from those efforts.

On another note, I just received a Copy your letter and copy of the Occasional Paper No. 7: Teacher Salaries in Wyoming. Because I currently serve as president of the community colleges presidents' council, I'm inquiring about the report. CC presidents are interested in providing the same kind of information to the legislature regarding salaries at Wyoming's seven community colleges.

Is this something you can discuss with Director Evans? Governor Mead has, over the past couple of years, requested we provide credible data to assess salaries. I expect the Joint Education Committee and Joint Appropriations Committee would also benefit from the study. In fact, this past session, community colleges received a minimal increase—partly because they had managed to provide some relief. The fact that modest salary increases were made available does not in any way demonstrate that needs have been met, that salaries are competitive with other states in the region, or that community college salaries are comparable with K-12, other state agencies that received larger increases this year, or the University of Wyoming.

Can you please take this under consideration and provide guidance on potential next steps and the possibility of providing this type of comparable salary evaluation in respect to community colleges?

Thank you very much for your consideration,

Tom Armstrong, Ph.D.
President
Eastern Wyoming College

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