



A Decade Later

Tracking Wyoming's Youth into the Labor Force



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Joan Evans, Director

Internet Address: <http://doe.state.wy.us/LMI/>

Research & Planning

Tom Gallagher, Manager

Prepared by:

Tony Glover
Michael Moore

Edited by:

David Bullard
Valerie A. Davis
Phil Ellsworth
Michael Moore

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Research & Planning

P.O. Box 2760
Phone: (307) 473-3807
Fax: (307) 473-3834

R&P Website: <http://doe.state.wy.us/LMI/>

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**Research & Planning
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A Decade Later: Tracking Wyoming's Youth into the Labor Force

by: Tony Glover, Workforce Information Supervisor

Previous research conducted by the Research & Planning (R&P) section of the Wyoming Department of Workforce Services has demonstrated that the population of Wyoming is aging faster than the nation and many bordering states (see box on page 13 for examples of this research). The baby boomers of Wyoming are retaining their employment in relatively stable jobs in the natural resources & mining, health care & social services, educational services, and public administration industries. A result of the attachment of older workers is a loss of opportunity for the youth of Wyoming to obtain and retain employment in this state. A common belief is that Wyoming's primary exports are coal, oil & gas, and young workers.

This article provides the context and explores issues related to exporting Wyoming's youth and lays a foundation to better understand forthcoming research on the Hathaway

Scholarship program (see related box on page 4), which provides tuition assistance to Wyoming's youth who attend the state's colleges and university.

The current research describes characteristics of a cohort (group) of 18-year-olds employed in Wyoming in 2000 in relation to Wyoming's labor force across time. The analysis will answer the following questions:

1. Where do the youth go?
2. Are more males than females retained in Wyoming's labor force?
3. What is the typical industry career path of those retained? Where do they start and where do they wind up?
4. Are the characteristics of 18-year-old workers from 2000 similar to other cohorts?

5. How can this type of analysis be used to better understand the outcomes of a program like the Hathaway Scholarship?

Key Findings

- From 1992 to 2006, the average five-year retention rate for 18-year-olds with Wyoming as a primary state of wages was 55.8%. The average 10-year retention rate from 1992 to 2001 was just 43.8%.
- Economic conditions appear to influence retention rates. Youth from 2001 to 2005 appeared to have higher retention rates for the first few years than all other *cohorts*, or groups of 18-year-olds. This could be a result of Wyoming's rapid growth in employment from 2000 to 2009.
- Wyoming youth appear to have difficulty finding jobs in industries that require a higher education, such as health care & social assistance, educational services, and public administration. Members of the boom generation tend to hold onto jobs in these industries longer, reducing the opportunities for younger workers. If the boom generation retires at a normal rate, there will be many opportunities for the educated youth of Wyoming.

The bottom line is that of all 18-year-olds working in Wyoming from any given year, only an estimated 40% are still working in Wyoming 10 years later.

The data used in this article were collected from the unemployment insurance tax systems of Alaska, Colorado, Idaho, Montana, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, Utah, and Wyoming. Additional databases allowed for the collection of demographic (age & gender) data on the youth studied. Future research will incorporate the data from program participants that received a Hathaway Scholarship or other education and training program assistance. It is important to keep in mind that the data described in this article represent a population of which the scholarship program participants would be a subset, had such a program been in place in 2000.

Methodology & Definitions

The cohort for this analysis is defined as all individuals who were 18 years old and had Wyoming as their primary state of wages in 2000. The primary state of wages is defined as the state in which the individual (identified by social security number [SSN]) was paid the most wages in a given year. Likewise, the primary industry of wages is the major industry paying the individual the most wages in a given year. For example, any or all of individuals assigned to the 2000 cohort could have had wages in any or all of the states discussed in this article in 2000, but each individual was paid the most wages in Wyoming during that year. This defines an anchor point of all of the data and individuals discussed in this article. Individuals who were 18 years old in 2000 with wages in Wyoming but were paid more

wages in any other state are excluded from this research. Wages for the excluded

Studying the Hathaway Scholarship Program

The Wyoming State Legislature allocated money in 2005 for the creation of a merit-based scholarship program for Wyoming students to continue their education subsequent to high school graduation at Wyoming's colleges and university. The Hathaway Scholarship program awards a graduated amount of funding to Wyoming students who complete certain core educational requirements during their high school education while maintaining a designated grade point average.

In 2012 the Legislature allocated funding to assess the long-term impact of the Hathaway Scholarship program on retaining youth in Wyoming's post-secondary institutions and subsequently into the state's labor force. The first round of graduates who participated in the Hathaway program are now reaching the point at which they could acquire a four-year degree and enter post-graduate employment. Research & Planning has been tasked with "collection and analysis of data necessary for the long-term effects of the Hathaway student scholarship program on Wyoming high school students" (HB0001-General government appropriations, Section 326 [d]).

The intent of the collection and analysis of these data is to learn more about the "employment, location of employment, and earnings level after leaving a post-secondary education program at a college or the university" (Session Laws of Wyoming, 2008, Ch. 95).

individuals demonstrate a stronger connection to a state other than Wyoming. Analysis of industry of employment reveals that many of these individuals were seasonal labor in the leisure & hospitality or construction industries.

As of April 1, 2000, there were 8,257 18-year-olds living in Wyoming (U.S. Census Bureau); fall enrollment of high school

seniors of Wyoming in 2000 was 6,851 (Wyoming Department of Education). The first column of Table 1 shows that there were 7,325 individuals employed at any time in 2000 in Wyoming who were 18 years old and whose primary state of wages was Wyoming (*2000 cohort*). The same definition of primary state of wages described in the methodology section is applied to the subsequent years and results for 2001 to 2010. Of the original cohort of 7,325 individuals, only 5,980 (81.6%) remained in Wyoming in 2001, 540 (7.4%) transitioned to a state with which R&P has a data sharing agreement (*partner state*), and 805 (11.0%) cannot be accounted for within the available administrative databases. By 2010, the number of the original cohort of 7,325 dwindled to 3,517 (48.0%) in Wyoming, 1,252 (17.1%) in a partner state, and 2,556 (34.9%) are unaccounted for by the databases used in this analysis. This is illustrated in Figure 1a (see page 6). The trend presented in this figure is relatively consistent across all cohorts, or groups of 18-year-old workers

(Text continued on page 7)

Defining “Unknown”

For the purposes of this article, “unknown” refers to individuals who moved to a state with which R&P does not have a data sharing agreement, those who exited the labor force for other reasons, and those who are deceased. R&P has the capability to examine other paths in the unknown category, but it is beyond the scope of the current article. The “unknown” category also includes self-employed individuals, and employees of railroads, the federal government, and the armed forces.

Table 1: Retention Rates of Wyoming 18-Year-Olds from 2000 (2000 Cohort) in Wyoming and States with Data Sharing Agreements, 2000-2010

State	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	% in 2010
Wyoming	7,325	5,980	5,119	4,739	4,508	4,200	4,003	3,906	3,763	3,640	3,517	48.0%
%	100.0%	81.6%	69.9%	64.7%	61.5%	57.3%	54.6%	53.3%	51.4%	49.7%	48.0%	
Alaska		12	19	25	34	32	35	28	26	32	36	0.5%
Colorado		170	246	276	329	379	408	423	452	422	435	5.9%
Idaho		29	38	56	71	80	96	86	91	76	65	0.9%
Montana		63	118	127	160	175	185	170	162	154	150	2.0%
Nebraska		27	44	64	68	69	70	61	62	69	70	1.0%
New Mexico		8	13	17	17	25	26	29	30	26	30	0.4%
Oklahoma		11	21	19	0	0	0	21	36	30	35	0.5%
South Dakota		50	77	107	113	115	94	83	72	81	81	1.1%
Texas		50	68	77	92	98	109	113	122	117	129	1.8%
Utah		120	165	177	207	224	224	253	252	234	221	3.0%
Sub-total, Data Sharing States		540	809	945	1,091	1,197	1,247	1,267	1,305	1,241	1,252	17.1%
%		7.4%	11.0%	12.9%	14.9%	16.3%	17.0%	17.3%	17.8%	16.9%	17.1%	
Sub-total, Unknown		805	1,397	1,641	1,726	1,928	2,075	2,152	2,257	2,444	2,556	34.9%
%		11.0%	19.1%	22.4%	23.6%	26.3%	28.3%	29.4%	30.8%	33.4%	34.9%	
Total	7,325	7,325	7,325	7,325	7,325	7,325	7,325	7,325	7,325	7,325	7,325	100.0%

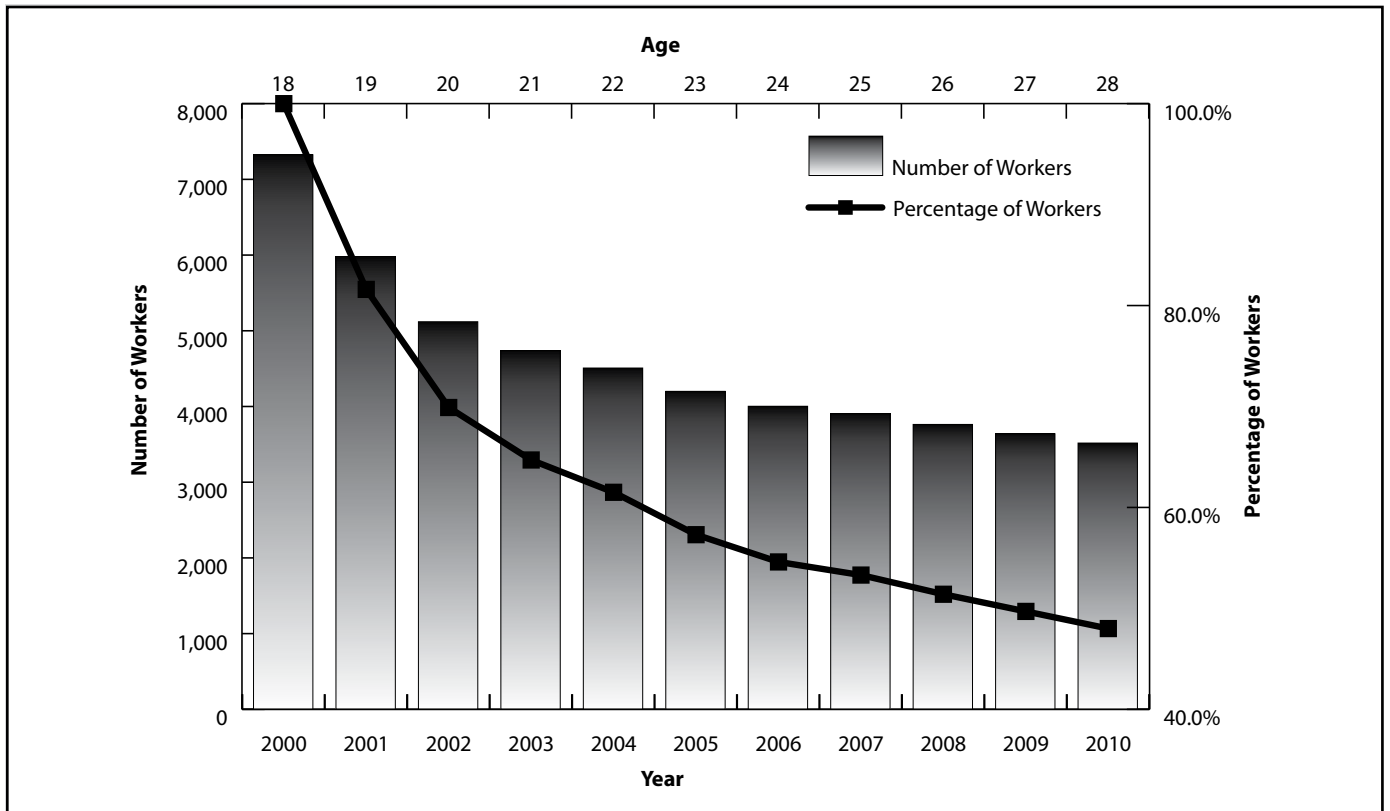


Figure 1a: Retention Rates of 18-Year-Old Wyoming Workers from 2000 (2000 Cohort), 2000 to 2010

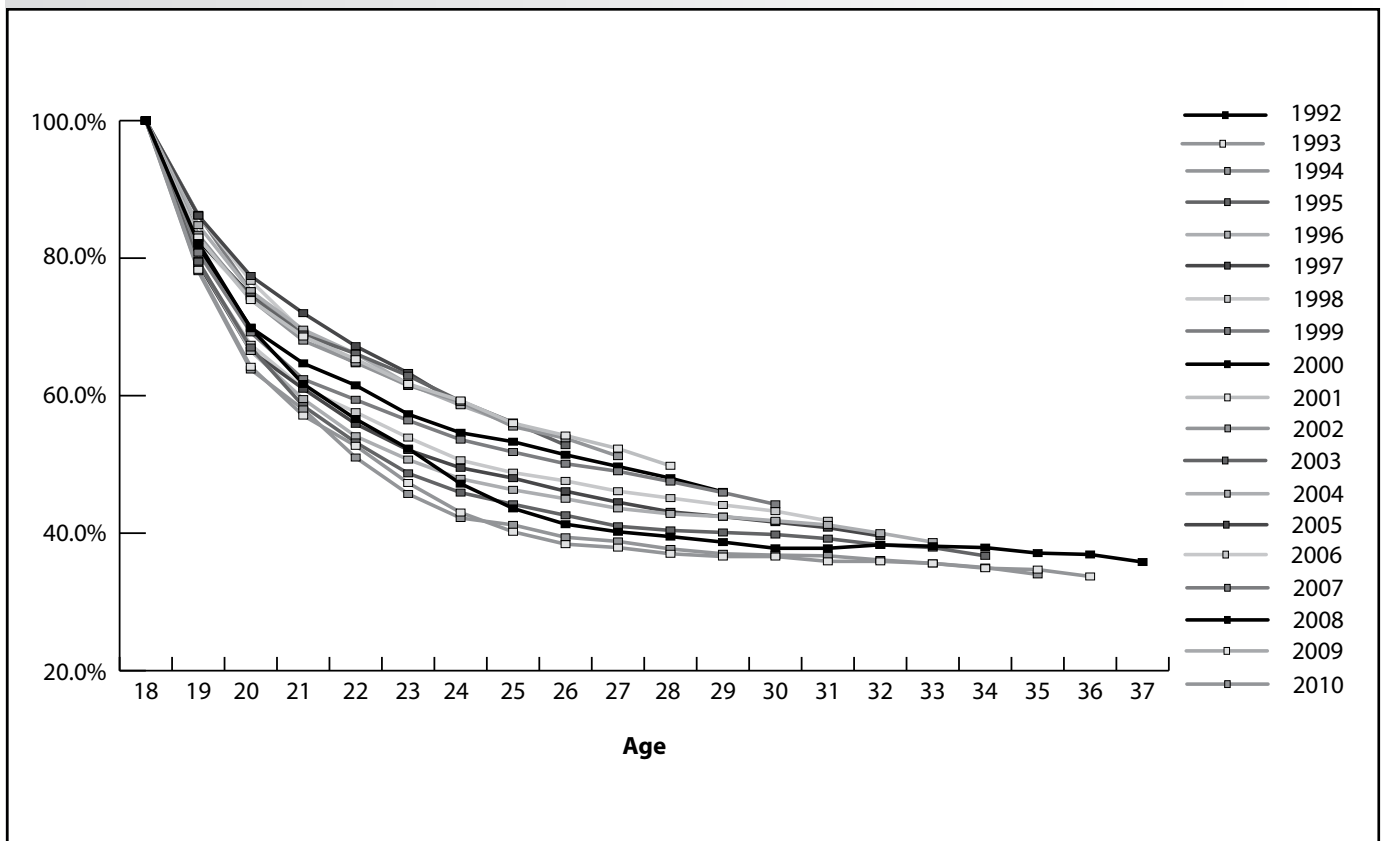


Figure 1b: Percentage of All Cohorts of 18-Year-Old Workers Retained in Wyoming, 1992 to 2010

(Text continued from page 5)

from 1992 to 2010 (see Figure 1b, page 6).

The trend presented in Figures 1a and 1b

is consistent with prior research conducted by R&P. A similar exodus from the Wyoming workforce can be seen in Figure 2, which tracks a cohort of Wyoming

workers age 16-34 from 2000 to 2007 (Jones, 2009).

Figure 3 shows where the 2000 cohort had wages a decade later. Those retained in Wyoming comprised the largest category in 2010 (48.0%) followed by the category labeled “unknown” (34.9%). The unknown category includes individuals who went to a state with which R&P does not have a data sharing agreement, those who exited the labor force for other reasons, and those who are deceased.

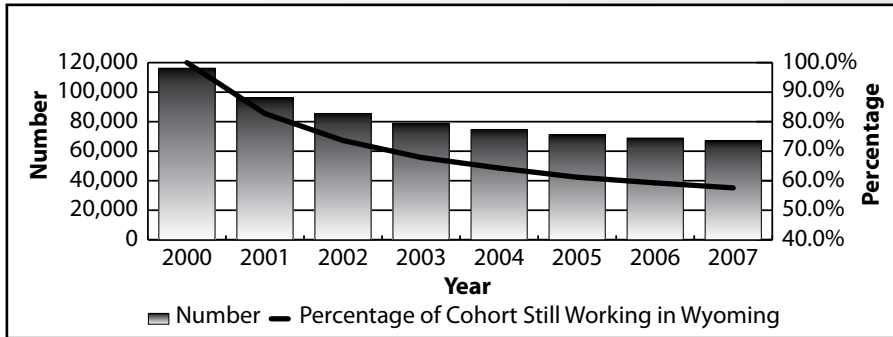


Figure 2: Number and Percentage of 2000 Worker Cohort Age 16-34 Still Working in Wyoming through 2007

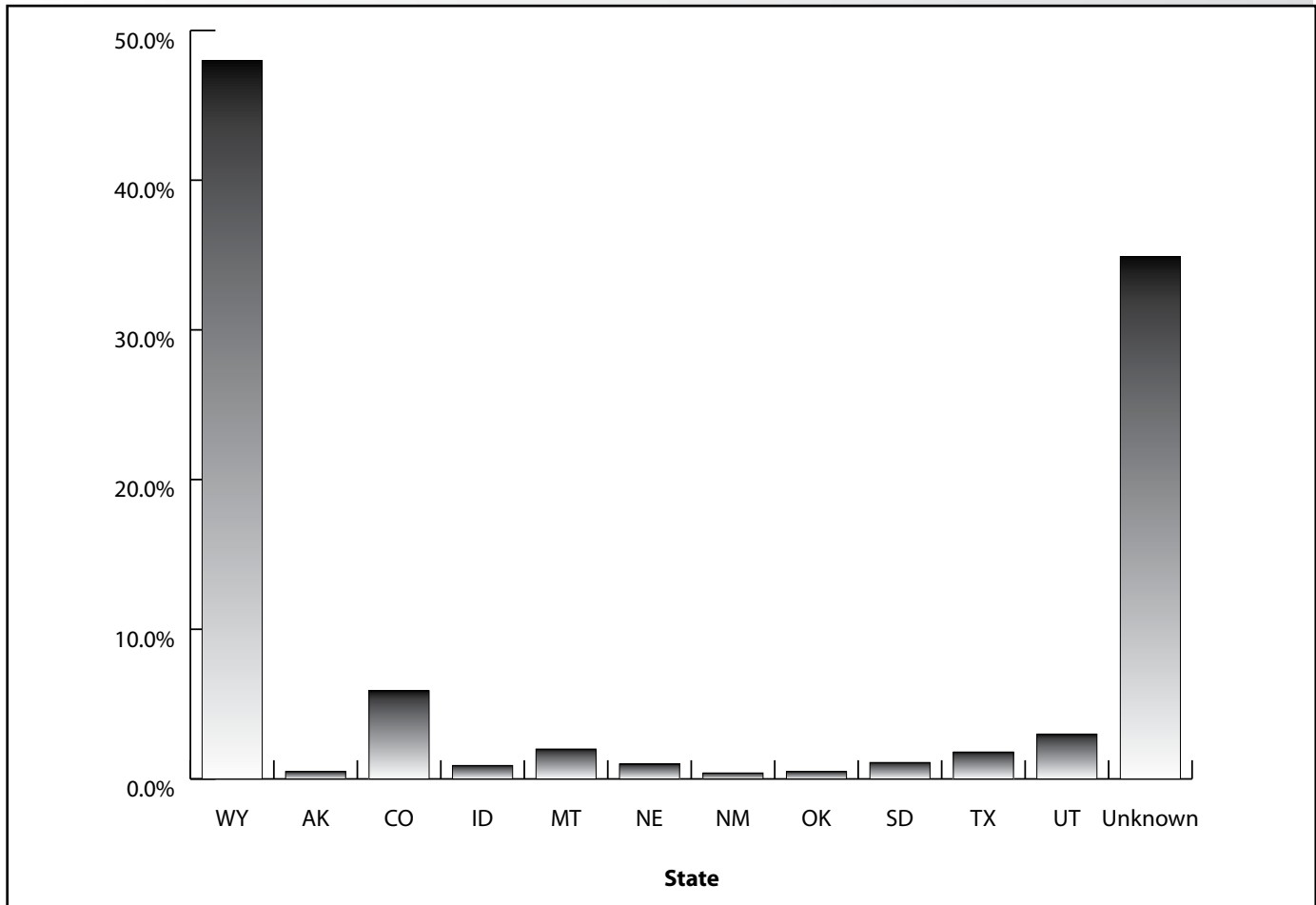


Figure 3: Percentage of 18-Year-Old Wyoming Workers from 2000 (2000 Cohort) Found Working in Wyoming and States with Data-Sharing Agreements in 2010

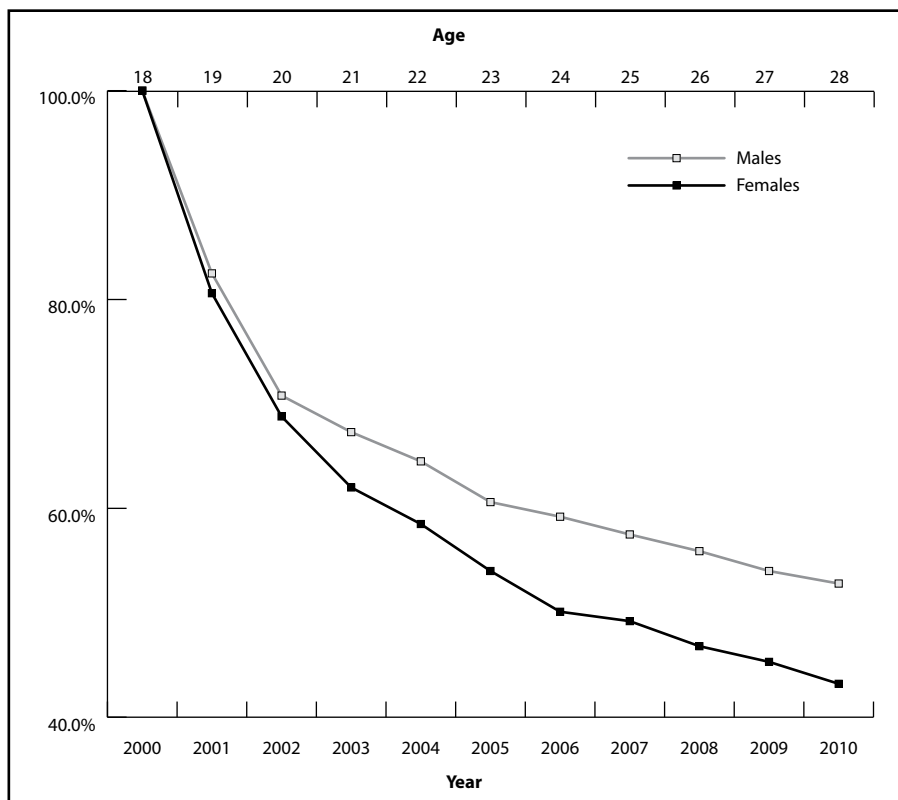
R&P has the capability to examine other paths in the unknown category, but it is beyond the scope of the current article.

Table 2 is similar to Table 1 and shows the 2000 cohort by gender. Figure 4 (see page 9) shows that males (52.8%) were more often retained in Wyoming than females (43.2%). Figure 5 (see page 9) shows a

gender breakdown of where the cohort had wages a decade later. The exodus to partner states is comparable between males and females. The largest difference between the two genders was that 39.8% of females fell into the unknown category in 2010, versus 30.0% of males. Finding fewer females working 10 years later (at age 28) and more in the unknown category is consistent with

Table 2: Retention Rates of Wyoming 18-Year-Olds from 2000 (2000 Cohort) in Wyoming and States with Data Sharing Agreements by Gender, 2000-2010

	State	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	% in 2010	
Females	Wyoming	3,727	3,005	2,564	2,309	2,182	2,014	1,867	1,833	1,744	1,689	1,609	43.2%	
	%	100.0%	80.6%	68.8%	62.0%	58.5%	54.0%	50.1%	49.2%	46.8%	45.3%	43.2%		
	Alaska		4	11	14	18	20	21	15	13	13	14	0.4%	
	Colorado		81	118	155	178	204	216	220	235	219	224	6.0%	
	Idaho		19	22	35	39	43	57	44	45	37	34	0.9%	
	Montana		34	74	80	95	102	101	96	91	80	75	2.0%	
	Nebraska		12	26	35	36	39	39	37	39	39	41	1.1%	
	New Mexico		5	6	10	9	10	15	18	15	12	14	0.4%	
	Oklahoma		4	11	12	0	0	0	13	15	15	17	0.5%	
	South Dakota		32	49	66	66	64	48	49	43	44	46	1.2%	
	Texas		25	38	39	49	56	58	58	65	63	60	1.6%	
	Utah		73	107	107	110	110	111	119	118	111	109	2.9%	
	Sub-total, Data Sharing States			289	462	553	600	648	666	669	679	633	634	17.0%
	%			7.8%	12.4%	14.8%	16.1%	17.4%	17.9%	18.0%	18.2%	17.0%	17.0%	
	Sub-total, Unknown			433	701	865	945	1,065	1,194	1,225	1,304	1,405	1,484	39.8%
%			11.6%	18.8%	23.2%	25.4%	28.6%	32.0%	32.9%	35.0%	37.7%	39.8%		
Total, All Females		3,727	3,727	3,727	3,727	3,727	3,727	3,727	3,727	3,727	3,727	3,727	100.0%	
Males	Wyoming	3,570	2,947	2,528	2,404	2,302	2,162	2,113	2,051	1,996	1,929	1,885	52.8%	
	%	100.0%	82.5%	70.8%	67.3%	64.5%	60.6%	59.2%	57.5%	55.9%	54.0%	52.8%		
	Alaska		8	8	11	16	12	14	13	13	18	21	0.6%	
	Colorado		89	128	121	151	175	192	202	216	201	209	5.9%	
	Idaho		10	16	21	32	37	39	40	44	39	31	0.9%	
	Montana		29	44	47	64	73	84	74	71	74	75	2.1%	
	Nebraska		15	18	29	31	29	30	24	23	30	29	0.8%	
	New Mexico		3	7	7	8	15	11	11	15	14	16	0.4%	
	Oklahoma		7	10	7	0	0	0	8	21	15	18	0.5%	
	South Dakota		18	28	41	47	51	46	34	29	37	35	1.0%	
	Texas		25	30	38	43	42	51	55	57	54	69	1.9%	
	Utah		47	58	70	97	114	113	134	134	123	112	3.1%	
	Sub-total, Data Sharing States			251	347	392	489	548	580	595	623	605	615	
	%			7.0%	9.7%	11.0%	13.7%	15.4%	16.2%	16.7%	17.5%	16.9%	17.2%	
	Sub-total, Unknown			372	695	774	779	860	877	924	951	1,036	1,070	30.0%
%			10.4%	19.5%	21.7%	21.8%	24.1%	24.6%	25.9%	26.6%	29.0%	30.0%		
Total, All Males		3,570	3,570	3,570	3,570	3,570	3,570	3,570	3,570	3,570	3,570	3,570	100.0%	



national data from the Current Population Survey (CPS). In 2011, 78.3% of men between 25-29 years old were working, while 67.3% of women of the same age were working (U.S. Bureau of Labor Statistics, 2012).

Table 3 and Figure 6 (see page 10) show the industry distribution of the 2000 cohort both in 2000 and 2010. In 2000, the largest number of workers from this cohort had wages in leisure & hospitality (36.0%) and retail trade (23.3%). By 2010, the remaining 3,517 individuals from the original cohort had moved into industries more synonymous with long-term employment in Wyoming,

Figure 4: Retention Rates of 18-Year-Old Wyoming Workers from 2000 (2000 Cohort) by Gender, 2000 to 2010

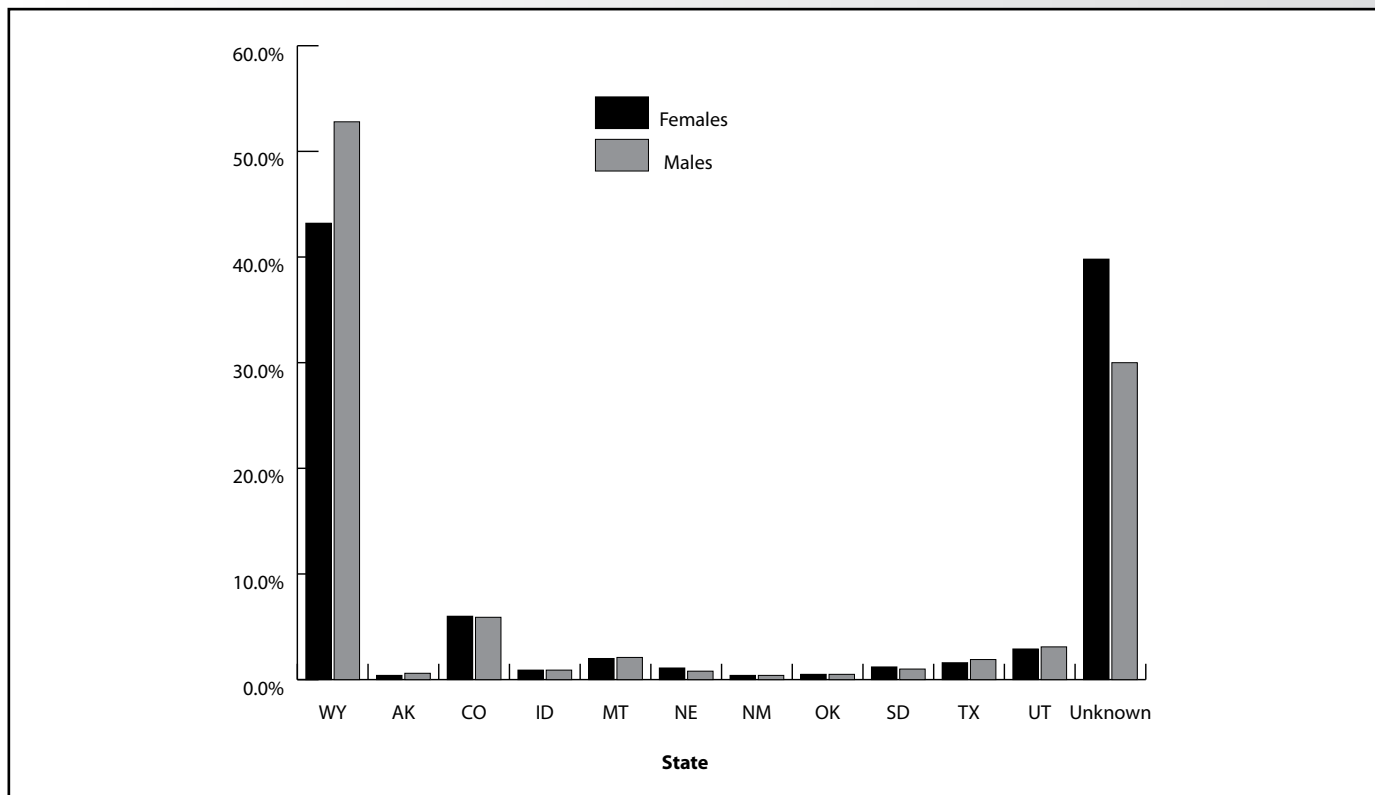


Figure 5: Percentage of 18-Year-Old Wyoming Workers from 2000 (2000 Cohort) by Gender Found Working in Wyoming and States with Data-Sharing Agreements in 2010

including health care & social assistance, educational services, natural resources & mining, and construction. All of these industries also experienced significant growth in total employment from 2000 to 2010.

Conclusion

This article demonstrates the use of administrative databases to track Wyoming youth across time. The applications are endless and the current research only touched briefly on a multitude of areas that lend themselves to exploration.

A question posed in the introduction to this piece – “Are the characteristics of the youth of 2000 similar to other cohorts?” – is answered by Figure 2, which shows the retention rates for all cohorts available to R&P. The five-year retention rate for individuals with Wyoming as their primary state of wages when they were 18 years old varies between 45.7% for the 1994 cohort and 63.3% for the 2005 cohort. The upper and lower bounds of the 10-year retention rates are 37.0% for the 1993 cohort and 49.8% for the 2001 cohort, respectively. The average five-year retention rate is

Table 3: Employment of Wyoming 18-Year-Olds from 2000 (2000 Cohort) Working in Wyoming by Industry, 2000 and 2010

Industry	2000		2010	
	n	Column %	n	Column %
Natural Resources & Mining	237	3.2%	440	12.5%
Construction	502	6.9%	352	10.0%
Manufacturing	254	3.5%	110	3.1%
Wholesale Trade, Transportation, & Utilities	135	1.8%	237	6.7%
Retail Trade	1,707	23.3%	409	11.6%
Information	133	1.8%	50	1.4%
Financial Activities	159	2.2%	153	4.4%
Professional & Business Services	483	6.6%	269	7.6%
Educational Services	220	3.0%	270	7.7%
Health Care & Social Assistance	338	4.6%	471	13.4%
Leisure & Hospitality	2,635	36.0%	387	11.0%
Other Services, Except Public Administration	192	2.6%	129	3.7%
Public Administration	324	4.4%	221	6.3%
Nonclassified Industry	6	0.1%	19	0.5%
Total, All Industries	7,325	100.0%	3,517	100.0%

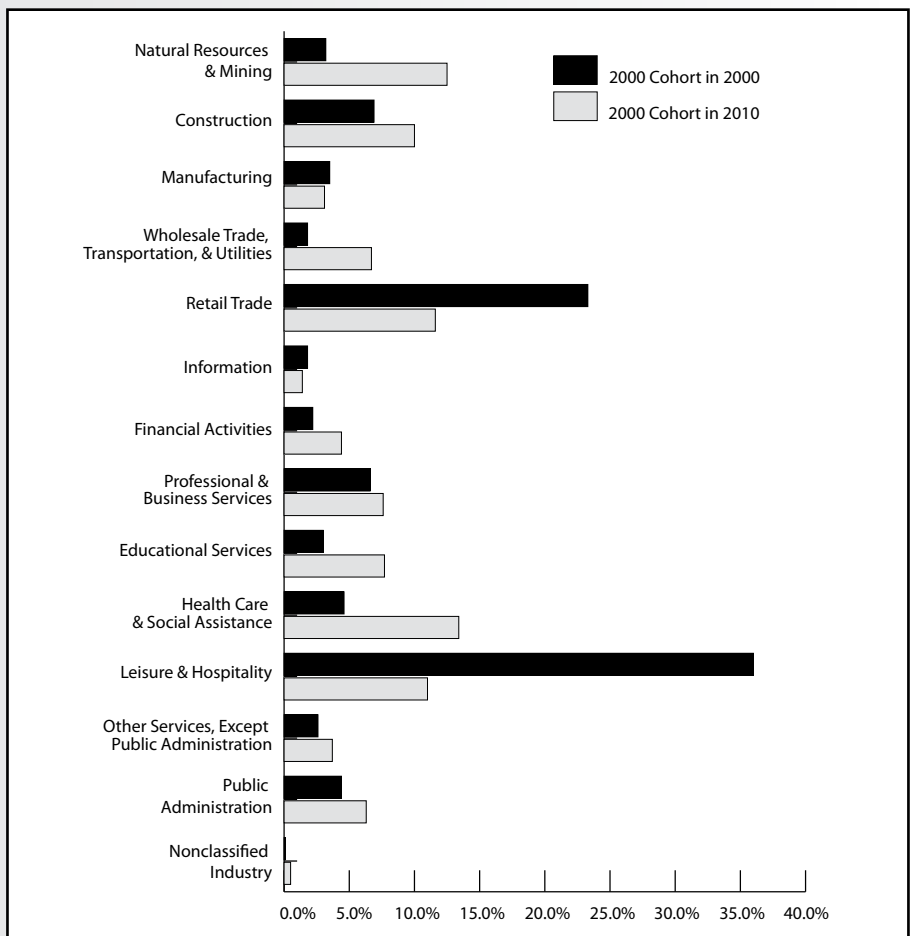


Figure 6: Percentage of 18-Year-Old Wyoming Workers from 2000 (2000 Cohort) Working in Wyoming by Industry, 2000 and 2010

55.8%, while the average 10-year retention rate is 43.8%.

Some of the variation in retention rates for different cohorts across time can be explained by economic conditions in Wyoming. For example, the 2001 to 2005 youth appeared to have higher retention rates for the first few years than all other cohorts (see the top bundle of lines in Figure 1b). This could be influenced by Wyoming's rapid growth in employment from 2000 to 2009. Future research will focus on defining and describing the opportunity structure available to Wyoming's youth.

The last question asked at the beginning of this article was, "How can this type of analysis be used to better understand the outcomes of a program like the Hathaway Scholarship?" The Hathaway Scholarship program provides funds to Wyoming students to attend state colleges or the university based upon students' curriculum in a Wyoming high school. If a long-term goal of the Hathaway program is to retain well-educated youth in Wyoming's labor force, then the retention rates of the Hathaway participants can be calculated as a sub-group of the cohorts described in this paper. Figure 7 is a hypothetical example of what

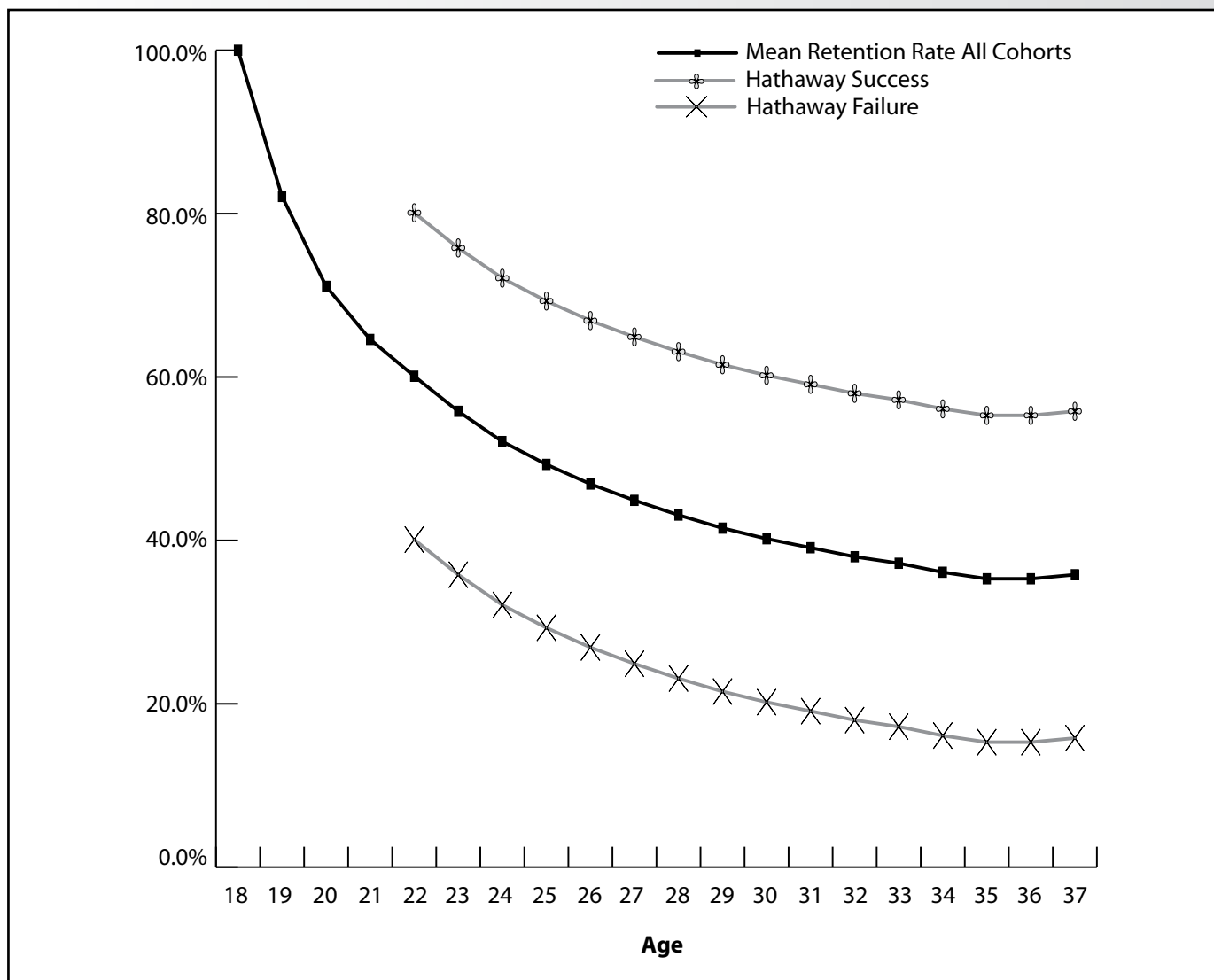


Figure 7: Hypothetical Retention Rates for Potential Hathaway Scholarship Outcomes

this would look like. The gray line is the average retention rate of all of the cohorts. The top line represents a higher percentage of Hathaway participants retained in Wyoming employment (success) and the bottom line represents a lower percentage of Hathaway participants retained (failure).

Workforce Information Supervisor Tony Glover can be contacted at (307) 473-3826 or tony.glover@wyo.gov.

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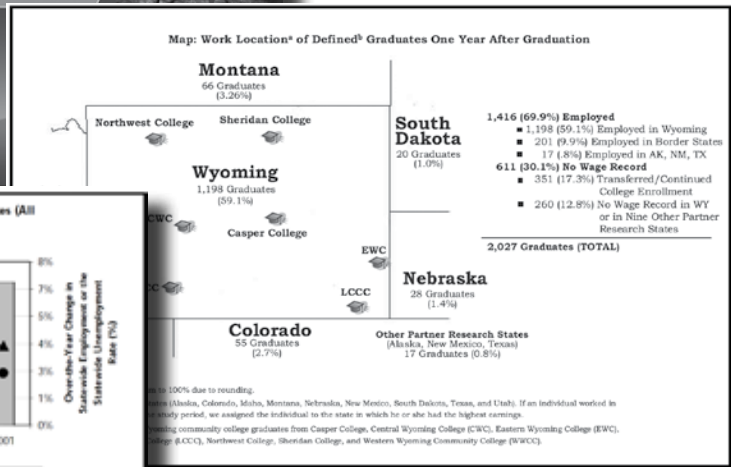
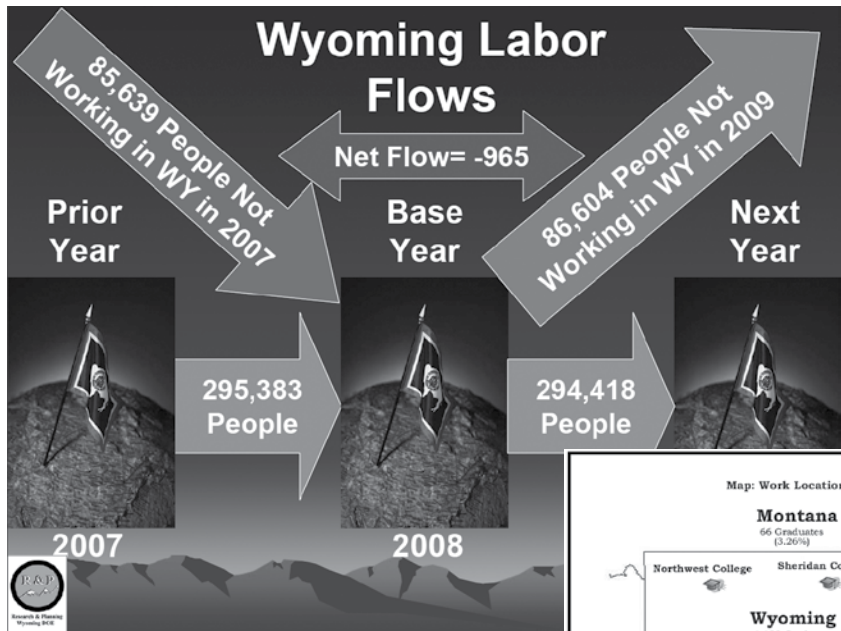
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Research & Planning E-Mail Addresses

Tom Gallagher, Manager
 Tony Glover, Workforce Information Supervisor
 Carola Cowan, Bureau of Labor Statistics Programs Supervisor
 Nancy Brennan, Senior Economist
 David Bullard, Senior Economist
 Jodi Davey, Administrative Specialist
 Valerie A. Davis, Senior Statistician
 Phil Ellsworth, Publications Editor
 Deana Hauf, Senior Statistician
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 Michael Moore, Associate Editor
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 Carol Toups, Senior Statistician
 Sherry (Yu) Wen, Senior Economist

tom.gallagher@wyo.gov
tony.glover@wyo.gov
carola.cowan@wyo.gov
nancy.brennan@wyo.gov
david.bullard@wyo.gov
jodi.davey@wyo.gov
val.davis@wyo.gov
phil.ellsworth@wyo.gov
deana.hauf@wyo.gov
margaret.hiatt@wyo.gov
lisa.knapp@wyo.gov
doug.leonard@wyo.gov
patrick.manning@wyo.gov
michael.moore@wyo.gov
sara.saulcy@wyo.gov
carol.toups@wyo.gov
sherry.wen@wyo.gov

Examples of Longitudinal Research from Research & Planning



Selected Research on Wyoming's Aging Population

- *Health Care Workforce Needs in Wyoming: Advancing the Study*
<http://doe.state.wy.us/LMI/occasional/occ6.pdf>
- Driven by demographics: examining employee exits in state government
<http://doe.state.wy.us/LMI/1210/a3.htm>
- Cashing out? Labor market withdrawal by Wyoming workers age 45 and older
<http://wydoe.state.wy.us/LMI/0608/a1.htm>
 - Demographic effects of Wyoming's energy-related expansion
<http://doe.state.wy.us/LMI/0407/a1.htm>

Bottom line: if the boom generation retires at a normal rate, there will be many opportunities for the educated youth of Wyoming.

**Wyoming Department
of Workforce Services
Research & Planning
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Casper, WY 82602**

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