

Workforce Development
Training Fund
Evaluation at the Macro
and Micro Levels

May 2005

**Research
&
Planning**



**Wyoming Department of
Employment**

*An in-depth review of
Wyoming Labor Market
Information topics.*

Contents

Page

Foreword

1

by: Mark A. Harris, Ph.D., Sociologist

Overview of Employers Utilizing the Workforce Development Training Fund

3

by: Douglas W. Leonard, Research Analyst

Labor Market Outcomes of Workforce Development Training Fund Participants

20

by: Mark A. Harris, Ph.D., Sociologist

Catalog of Occasional Papers

No. 1: Evaluation of Federal Training & Education Programs 10/2004

Contents:

Examining Workforce Investment Act Programmatic Outcomes

A Comparison of Employment and Enrollment Outcomes Based on Temporary Assistance for Needy Families Eligibility

No. 2: An Analysis of Wyoming Unemployment Insurance Monetary Eligibility 1/2005

Wyoming Department of Employment

Cynthia A. Pomeroy, Director

Research & Planning

Tom Gallagher, Manager

Dr. Mark Harris, Workforce Information Supervisor

Krista R. Shinkle, Editor

e-mail: kshink@state.wy.us
307-473-3808

Susan J. Murray,
Associate Editor

e-mail: smurray1@state.wy.us
307-473-3835

Editorial Committee: David Bullard, Valerie A. Davis, Dr. Mark A. Harris, Susan J. Murray, Brad Payne, and Krista Shinkle.

Subscriptions, additional copies, and back issues available free of charge.

© Copyright 2005 by the Wyoming Department of Employment, Research & Planning.

Department of Employment Nondiscrimination Statement

The Department of Employment does not discriminate on the basis of race, color, religion, national origin, sex, age, or disability. It is our intention that all individuals seeking services from our agency be given equal opportunity and that eligibility decisions be based upon applicable statutes, rules, and regulations.

ISSN 1551-3629 (print)
ISSN 1551-3637 (online)

Foreword

by: *Mark A. Harris, Ph.D., Sociologist*

Through June 30, 2002, the Wyoming Workforce Development Training Fund (WDTF) was managed by the Department of Employment (Harris, 2002a). Management of the WDTF was transferred to the Department of Workforce Services (Enrolled Act No. 47, 2002) on July 1, 2002, subsequent to the legislative creation of the department (Enrolled Act No. 94, 2001).

The WDTF went through a substantive rule change effective July 1, 2004 (Department of Workforce Services, 2004). This evaluation examines firms and individual trainees who completed WDTF training contracts under prior rules (Department of Workforce Services, 2004). Additionally, the analysis reflects upon grants to a specific employer with intended employment for participants after training (i.e., referred to as Section 2 grants; Department of Workforce Services, 2004, p. 1-1) as opposed to training in high demand occupations (referred to as Section 3 grants; Department of Workforce Services, 2004, p. 1-4) not tied to a specific employer (e.g., training provided by a community college).

Research Context

Research & Planning has conducted a number of individual-level (e.g., retention, wage progression) programmatic outcomes analyses (Glover, 2000; Harris, 2002a; Harris 2002b; Harris, 2004; Harris, Potter, Mixer, & Burgin, 2004; Jones, 2004; Saulcy, Glover, & Leonard,

2004). This publication examines firm characteristics (e.g., a macro-level phenomena) among establishments in which trainees are employed as well as individual-level outcomes experienced by participants. Identifying the employment context of program participants helps researchers and policy makers to better interpret individual-level outcomes.

For example, an analysis of individual-level labor market outcomes of program completers may indicate that participants largely fail to retain employment in the state. One may conclude from this that training is ineffective for retaining employment and should be altered or terminated. Additional macro-level analysis may reveal however that, for whatever reason, trainees were employed in firms that were themselves unstable (e.g., characteristically high turnover, firms going out of business). In such a case, the inability to retain employment in the state may be more closely related to the instability of firms rather than the failure of training to imbue skills in individual trainees. A redirection of training recipients into more stable firms rather than modification or abandonment of the training program may increase worker retention in the state.

The first article (see page 3) provides the employer context (e.g., characteristics such as the average age and average wage of all employees in the firm) in which WDTF trainees are employed and compares these attributes to the characteristics of firms generally. The second article (see page 20) provides an

examination of individual labor market outcomes of WDTF participants and utilizes manually matched (Glover, 2002) and statistical control group methodologies (Harris, 2002b; Jones, 2004).

References

- Department of Workforce Services, Business Training and Outreach Division. (2004). Chapter 1: Workforce Development Training Fund. In *Wyoming Administrative Rules*. Retrieved March 10, 2005, from <http://www.wyomingworkforce.org/programs/wdtf/pdf/4Chapter%201,%20WDTF%20Business%20Training%20Grants.pdf>
- Enrolled Act No. 47, House of Representatives Fifty-Sixth Legislature of the State of Wyoming, W.S. §9-2-2604 (2002).
- Enrolled Act No. 94, House of Representatives Fifty-Sixth Legislature of the State of Wyoming, W.S. §9-2-2018 (2001).
- Glover, W. (2000, March). The flow of labor in Wyoming: Department of Family Services, Division of Vocational Rehabilitation and Job Training Partnership Act. *Wyoming Labor Force Trends*. Retrieved February 14, 2005, from <http://doe.state.wy.us/lmi/0300/a1.htm>
- Glover, W. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved February 11, 2005, from <http://doe.state.wy.us/lmi/0602/a2.htm>
- Harris, M. (2002a, May). Measuring the impact of Wyoming's workforce development training fund. *Wyoming Labor Force Trends*. Retrieved February 14, 2005, from <http://doe.state.wy.us/lmi/0502/a1.htm>
- Harris, M. (2002b, June). Measuring the impact of Wyoming's workforce development training fund: Part two. *Wyoming Labor Force Trends*. Retrieved February 11, 2005, from <http://doe.state.wy.us/lmi/0602/a1.htm>
- Harris, M. (2004). Chapter 2: Work activity one year after graduation. In *Where are they now? Wyoming community college graduates' labor market outcomes*. Casper, WY: Wyoming Department of Employment, Research & Planning.
- Harris, M., Potter, B., Mixer, L., & Burgin, R. (2004, October). A comparison of employment and enrollment outcomes based on temporary assistance for needy families' eligibility. *Occasional Paper No. 1: Evaluation of Federal Training & Education Programs*. 1, 18-26.
- Jones, S. D. (2004, October). Examining workforce investment act programmatic outcomes. *Occasional Paper No. 1: Evaluation of Federal Training & Education Programs*. 1, 1-17.
- Saulcy, S., Glover, W., & Leonard, D.W. (2004) Chapter 3: Research using only administrative data. In *Where are they now? Wyoming community college graduates' labor market outcomes*. Casper, WY: Wyoming Department of Employment, Research & Planning.

Overview of Employers Utilizing the Workforce Development Training Fund

by: *Douglas W. Leonard, Research Analyst*

This portion of the Workforce Development Training Fund (WDTF) evaluation provides the context in which program participants work. The results present a descriptive overview of employers utilizing the WDTF.

Research results are based on all employers who received funds from the WDTF at any time prior to the end of third quarter 2003 (2003Q3) and appeared in the Wage Records database in that quarter (2003Q3). Employment is defined as individuals who worked at any time during 2003Q3, which includes job switching and multiple job holding. Industry classifications were assigned using the North American Industry Classification System (NAICS) codes (Office of Management and Budget, 2002).

Data from the Quarterly Census of Employment and Wages (QCEW; Brennan, 2003; U.S. Department of Labor, 2003) and Unemployment Insurance mainframe programs were used to visually inspect the Unemployment Insurance account numbers provided in the Workforce Development Training Fund database (Wyoming Department of Workforce Services, 2004), as some difficulty arose in the matching process due to incorrect account numbers.¹

The information contained in the tables and figures (see pages 7 to 19) does not describe a causal relationship

between any employer descriptive attributes (e.g., turnover) and program utilization. Although the narrative contained herein focuses on the figures, readers may access additional and/or detailed information by viewing the tables.

Results in Brief

Wyoming employers participating in the Workforce Development Training Fund (WDTF) generally possessed the following traits in 2003Q3:

- Large size (i.e., 50 or more workers)
- Established firms (i.e., two-thirds had eight or more years experience in the state)
- High pay (WDTF firms paid an average of 46.4% more per worker than firms statewide)
- Disproportionately concentrated in certain industries (Health Care, Manufacturing, Retail Trade)
- Low turnover
- Relatively low proportions of workers 24 years of age or less

Results in Detail

Figure 1 (see page 14) displays the distribution of WDTF and all Wyoming employers in 2003Q3. The chart indicates that the proportions of WDTF participating employers in Manufacturing (11.8%), Retail Trade (15.2%), Information (3.3%), and Health Care & Social Assistance (18.2%) were higher than the

distribution of all employers (3.3%, 12.2%, 1.6%, and 7.3%, respectively). Conversely, industries where the opposite was true included Natural Resources & Mining, Construction, Leisure & Hospitality, and Other Services. Table 1 (see page 7) indicates that 1.9 percent of firms operating in 2003Q3 had used the WDTF.

Figure 2 (see page 14) shows that while more than 70 percent of firms statewide employed fewer than 10 workers, only 25.8 percent of WDTF firms employed fewer than 10 workers. In contrast, 34.0 percent of WDTF employers had 50 or more workers, compared to the statewide average of 5.4 percent. The size difference for participating employers is further highlighted when analyzing the distribution of workers shown in Figure 3 (see page 15). More than three-fourths of workers attached to WDTF firms worked for employers of 100 or more employees, while only 1.4 percent worked in firms with fewer than 10 employees. At the same time, 14.4 percent of workers statewide were employed in firms of fewer than 10 workers, while 45.6 percent of workers statewide worked in firms of 100 or more employees. Following the results in Figure 3, the average size (number of workers) of employers participating in the WDTF was considerably higher than all employers. The differences were particularly large in Natural Resources & Mining (394 compared to 23), Wholesale Trade, Transportation & Utilities (137 compared to 12), Financial Activities (81 compared to 8), and Education Services (262 compared to 152; see Figure 4, page 15). Overall, WDTF employers averaged 92 workers compared to 17 for employers statewide in 2003Q3.

The differences in worker age between WDTF employers and all employers (see Figure 5, page 16) were less than the differences in employer size (see Figure 4, page 15). Wyoming employers generally had higher proportions of workers under age 25 (18.8% compared to 12.7%) than WDTF employers.² However, 58.3 percent of workers in WDTF firms were 35 years of age or older compared to 51.2 percent statewide.

Figure 6 (see page 16) shows that the proportional difference between men and women in WDTF firms (1.5%) was smaller than in the general population (2.8%). We were able to identify the gender of people working for WDTF employers more often than workers for all statewide firms because a greater percent was found in our administrative records (from which we draw demographics). Therefore, we conclude that workers attached to WDTF employers had a great likelihood of state residency than employers in general.

Turnover rates (Glover & Leonard, 2003) were considerably lower for workers in WDTF firms than for workers statewide as shown in Figures 7, 8, and 9 (see pages 17 and 18). Figure 7 shows that the overall turnover rate for WDTF employers was 14.9 percent, compared to the turnover rate for workers statewide of 25.5 percent.³ The differences in turnover rates were particularly large in Natural Resources & Mining (18.3% compared to 6.8%) and Professional & Business Services (35.5% compared to 18.4%). Turnover rates were higher for WDTF employers than for employers statewide in the following three industries: Information (17.7% compared to 16.1%), Education Services (30.8% compared to

12.9%), and Other Services (30.7% compared to 20.1%). Age group results in Figure 8 (see page 17) show a similar pattern. While turnover rates among workers less than 20 years of age were comparable (50.1% for employers statewide compared to 49.1% for WDTF), differences were more pronounced in other age groups. For workers between 45 and 54 years of age, turnover rates for employers statewide were more than twice that of participating employers. Figure 9 (see page 18) shows that the turnover rates for men and women statewide were nearly equal (21.9% compared to 21.7%). Turnover rates for both men and women were lower in WDTF firms (11.5% and 13.9%) than statewide.

WDTF employers paid their workers 46.4 percent more on average than employers statewide (see Figure 10, All Industries, page 18). While the difference in wages paid between WDTF-participating and non-participating firms were smaller in Construction, Manufacturing, Financial Activities, and Health Care, substantial differences were observed in Natural Resources & Mining and Professional & Business Services. The scenario repeats in Figure 11 (see page 19), where men working for WDTF firms earned 47.7 percent more than men statewide, and women working for WDTF firms earned 45.4 percent more than women statewide.

Program utilization tends to vary by the amount of operating experience firms have in Wyoming. Figure 12 (see page 19) shows that more than two-thirds (67.0%) of employers participating in the WDTF had operated in Wyoming eight or more

years since 1992Q1, compared to 52.8 percent statewide. WDTF participation was lower than statewide in businesses with fewer than two years of experience (6.7% compared to 16.8%, respectively).

Conclusion

Employers utilizing the WDTF pay higher wages, have more operating experience, have lower turnover, and have a higher proportion of men than do employers statewide. In addition, employers participating in WDTF programs are much larger on average than the average employer statewide. This could be due to a variety of factors. First, larger and more established firms may be more likely to have a dedicated human resource department that can manage WDTF reporting requirements, thereby making it easier for them to participate. Second, larger firms may be better positioned to provide stable, long-term employment opportunities than do smaller firms regardless of program participation. Third, firms in certain industries may be more likely to form associations in which program information may be disseminated more easily than through program personnel contact. The substantial differences between participating and non-participating employers poses interesting questions for future research which may be able to explain whether or not program participation leads to changes in attributes.

Notes

¹The QCEW program produces a comprehensive tabulation of employment and wage information for workers covered

by state unemployment insurance (UI) laws and federal workers covered by the Unemployment Compensation for Federal Employees (UCFE) program (Bureau of Labor Statistics, 2003).

²Worker demographics (age and gender) were developed using Wyoming driver's license data (Wyoming Department of Transportation, 2003). Some data were imputed using methods developed by Research & Planning (Glover, 2001a and b).

³Two columns are shown in Tables 11, 12, and 13 (see pages 12 and 13) for each employer participation status: stable and turnover. Stable indicates the number or proportion of workers attached to an employer during the prior quarter (2003Q2), the current quarter (2003Q3) and the subsequent quarter 2003Q4). Turnover indicates workers who terminated employment during the current quarter (2003Q3) and did not reattach to the same employer until at least 2004Q2.

References

- Brennan, N. (2003). [Quarterly Census of Employment and Wages]. Unpublished raw data.
- Glover, T. (2001a, April). Enhancing the quality of wage records through imputation: Part one. *Wyoming Labor Force Trends*. Retrieved February 11, 2005, from <http://doe.state.wy.us/LMI/0401/a2.htm>
- Glover, T. (2001b, June). Enhancing the quality of wage records through imputation: Part two. *Wyoming Labor Force Trends*. Retrieved February 11, 2005, from <http://doe.state.wy.us/LMI/0601/a1.htm>
- Glover, T. & Leonard, D. (2003, December). Your firm's employee turnover: How to calculate it and how it compares. *Wyoming Labor Force Trends*. Retrieved March 9, 2005, from <http://doe.state.wy.us/lmi/1203/a1.htm>
- Office of Management and Budget. (2002). *North American Industry Classification System*. (PB2002-101430). Springfield, VA: National Technical Information Service.
- U.S. Department of Labor, Bureau of Labor Statistics (2003, December). *Quarterly Census of Employment and Wages (ES-202) Program*. Retrieved February 2, 2005, from <http://www.bls.gov/cew/cewover.htm>
- Wyoming Department of Transportation. (2003). [Wyoming Driver's License Database]. Unpublished raw data.
- Wyoming Department of Workforce Services. (2004). [Workforce Development Training Fund Database]. Unpublished raw data.

Table 1: Distribution of Employers by Industry and Workforce Development Training Fund (WDTF) Participation Status, Third Quarter 2003

Industry		Employer Status		
		WDTF Participant	Nonparticipant	All Employers
Natural Resources & Mining	Employers	13	1,081	1,094
	Row %	1.2%	98.8%	100.0%
	Column %	3.9%	6.2%	6.2%
Construction	Employers	18	2,707	2,725
	Row %	0.7%	99.3%	100.0%
	Column %	5.5%	15.6%	15.4%
Manufacturing	Employers	39	541	580
	Row %	6.7%	93.3%	100.0%
	Column %	11.8%	3.1%	3.3%
Wholesale Trade, Transportation, & Utilities	Employers	23	1,641	1,664
	Row %	1.4%	98.6%	100.0%
	Column %	7.0%	9.5%	9.4%
Retail Trade	Employers	50	2,097	2,147
	Row %	2.3%	97.7%	100.0%
	Column %	15.2%	12.1%	12.2%
Information	Employers	11	264	275
	Row %	4.0%	96.0%	100.0%
	Column %	3.3%	1.5%	1.6%
Financial Activities	Employers	21	1,386	1,407
	Row %	1.5%	98.5%	100.0%
	Column %	6.4%	8.0%	8.0%
Professional & Business Services	Employers	48	2,544	2,592
	Row %	1.9%	98.1%	100.0%
	Column %	14.5%	14.7%	14.7%
Education Services	Employers	3	171	174
	Row %	1.7%	98.3%	100.0%
	Column %	0.9%	1.0%	1.0%
Health Care & Social Assistance	Employers	60	1,220	1,280
	Row %	4.7%	95.3%	100.0%
	Column %	18.2%	7.0%	7.3%
Leisure & Hospitality	Employers	22	1,840	1,862
	Row %	1.2%	98.8%	100.0%
	Column %	6.7%	10.6%	10.6%
Other Services	Employers	22	1,822	1,844
	Row %	1.2%	98.8%	100.0%
	Column %	6.7%	10.5%	10.5%
Total	Employers	330	17,314	17,644
	Row %	1.9%	98.1%	100.0%
	Column %	100.0%	100.0%	100.0%

Note: Sum may not total to 100 percent due to rounding.

Table 2: Distribution of Employers by Firm Size and Workforce Development Training Fund (WDTF) Participation Status, Third Quarter 2003

Number of Workers		Employer Status		
		WDTF Participant	Nonparticipant	All Employers
<10	Employers	85	12,313	12,398
	Row %	0.7%	99.3%	100.0%
	Column %	25.8%	71.1%	70.3%
10 - 49	Employers	133	4,146	4,279
	Row %	3.1%	96.9%	100.0%
	Column %	40.3%	23.9%	24.3%
50 - 99	Employers	53	467	520
	Row %	10.2%	89.8%	100.0%
	Column %	16.1%	2.7%	2.9%
=>100	Employers	59	388	447
	Row %	13.2%	86.8%	100.0%
	Column %	17.9%	2.2%	2.5%
Total	Employers	330	17,314	17,644
	Row %	1.9%	98.1%	100.0%
	Column %	100.0%	100.0%	100.0%

Note: Sum may not total to 100 percent due to rounding.

Table 3: Distribution of Employers by Region and Workforce Development Training Fund (WDTF) Participation Status, Third Quarter 2003

Region		Employer Status		
		WDTF Participant	Nonparticipant	All Employers
Southeast	Employers	41	3,763	3,804
	Row %	1.1%	98.9%	100.0%
	Column %	12.4%	21.7%	21.6%
Northeast	Employers	67	2,813	2,880
	Row %	2.3%	97.7%	100.0%
	Column %	20.3%	16.2%	16.3%
Central	Employers	37	3,099	3,136
	Row %	1.2%	98.8%	100.0%
	Column %	11.2%	17.9%	17.8%
Northwest	Employers	89	2,893	2,982
	Row %	3.0%	97.0%	100.0%
	Column %	27.0%	16.7%	16.9%
Southwest	Employers	60	3,974	4,034
	Row %	1.5%	98.5%	100.0%
	Column %	18.2%	23.0%	22.9%
Unclassified ^a	Employers	36	772	808
	Row %	4.5%	95.5%	100.0%
	Column %	10.9%	4.5%	4.6%
Statewide	Employers	330	17,314	17,644
	Row %	1.9%	98.1%	100.0%
	Column %	100.0%	100.0%	100.0%

Note: Sum may not total to 100 percent due to rounding.

^aUnclassified includes all firms missing county information or those having more than one county location (multi-county firms).

Table 4: Average Size of Firms by Industry and Workforce Development Training Fund (WDTF) Participation Status, Third Quarter 2003

Industry	Average Workers per Employer by Employer Status		
	WDTF		All
	Participant	Nonparticipant	Employers
Natural Resources & Mining	395	19	23
Construction	35	12	12
Manufacturing	65	17	21
Wholesale Trade, Transportation, & Utilities	137	10	12
Retail Trade	44	18	19
Information	86	18	21
Financial Activities	82	8	9
Professional & Business Services	17	9	9
Education Services	262	150	152
Health Care & Social Assistance	145	18	24
Leisure & Hospitality	164	25	27
Other Services	13	18	18
Total	92	16	18

Note: Sum may not total to 100 percent due to rounding.

Table 5: Distribution of Workers by Employer Size and Employers' Workforce Development Training Fund (WDTF) Participation Status, Third Quarter 2003

		Employer Status		
		WDTF		All
		Participant	Nonparticipant	Employers
<10 Workers	Workers	418	43,055	43,473
	Row %	1.0%	99.0%	100.0%
	Column %	1.4%	15.8%	14.4%
10 - 49 Workers	Workers	2,903	82,167	85,070
	Row %	3.4%	96.6%	100.0%
	Column %	9.6%	30.2%	28.2%
50 - 99 Workers	Workers	3,670	32,031	35,701
	Row %	10.3%	89.7%	100.0%
	Column %	12.1%	11.8%	11.8%
100+ Workers	Workers	23,358	114,558	137,916
	Row %	16.9%	83.1%	100.0%
	Column %	77.0%	42.1%	45.6%
Total	Workers	30,349	271,811	302,160
	Row %	10.0%	90.0%	100.0%
	Column %	100.0%	100.0%	100.0%

Note: Sum may not total to 100 percent due to rounding.

Table 6: Average Size of Firms by Region and Workforce Development Training Fund (WDTF) Participation Status, Third Quarter 2003

Region	Average Workers per Employer by Employer Status		
	WDTF		All
	Participant	Nonparticipant	Employers
Southeast	82	13	14
Northeast	56	12	13
Central	85	13	14
Northwest	37	11	12
Southwest	80	13	14
Unclassified ^a	337	91	102
Statewide	92	16	18

^aUnclassified includes all firms missing county information or those having more than one county location (multi-county firms).

Table 7: Distribution of Wyoming Workers by Age Group and Employers' Workforce Development Training Fund (WDTF) Participation Status, Third Quarter 2003

Age Group		Employer Status		
		WDTF Participant	Nonparticipant	All Employers
Under 20	Workers	1,031	22,680	23,711
	Row %	4.3%	95.7%	100.0%
	Column %	3.4%	8.3%	7.8%
20 - 24	Workers	2,825	30,543	33,368
	Row %	8.5%	91.5%	100.0%
	Column %	9.3%	11.2%	11.0%
25 - 34	Workers	5,915	48,297	54,212
	Row %	10.9%	89.1%	100.0%
	Column %	19.5%	17.8%	17.9%
35 - 44	Workers	6,465	50,431	56,896
	Row %	11.4%	88.6%	100.0%
	Column %	21.3%	18.6%	18.8%
45 - 54	Workers	7,559	53,698	61,257
	Row %	12.3%	87.7%	100.0%
	Column %	24.9%	19.8%	20.3%
55 - 64	Workers	3,154	25,762	28,916
	Row %	10.9%	89.1%	100.0%
	Column %	10.4%	9.5%	9.6%
65 & Over	Workers	517	6,980	7,497
	Row %	6.9%	93.1%	100.0%
	Column %	1.7%	2.6%	2.5%
N/A	Workers	2,883	33,420	36,303
	Row %	7.9%	92.1%	100.0%
	Column %	9.5%	12.3%	12.0%
Total	Workers	30,349	271,811	302,160
	Row %	10.0%	90.0%	100.0%
	Column %	100.0%	100.0%	100.0%

N/A - Age not available.
 Note: Sum may not total to 100 percent due to rounding.

Table 8: Distribution of Wyoming Workers by Residency Status and Employers' Workforce Development Training Fund (WDTF) Participation Status, Third Quarter 2003

Wyoming Residency Status		Employer Status		
		WDTF Participant	Nonparticipant	All Employers
Resident	Workers	26,339	226,902	253,241
	Row %	10.4%	89.6%	100.0%
	Column %	86.8%	83.5%	83.8%
Nonresident	Workers	4,010	44,909	48,919
	Row %	8.2%	91.8%	100.0%
	Column %	13.2%	16.5%	16.2%
Total	Workers	30,349	271,811	302,160
	Row %	10.0%	90.0%	100.0%
	Column %	100.0%	100.0%	100.0%

Note: Sum may not total to 100 percent due to rounding.

Table 9: Distribution of Wyoming Workers by Gender, Industry, and Employers' Workforce Development Training Fund (WDTF) Participation Status, Third Quarter 2003

Gender		Employer Status		
		WDTF Participant	Nonparticipant	All Employers
Men	Workers	13,947	123,111	137,058
	Row %	10.2%	89.8%	100.0%
	Column %	46.0%	45.3%	45.4%
Women	Workers	13,519	115,280	128,799
	Row %	10.5%	89.5%	100.0%
	Column %	44.5%	42.4%	42.6%
N/A	Workers	2,883	33,420	36,303
	Row %	7.9%	92.1%	100.0%
	Column %	9.5%	12.3%	12.0%
Total	Workers	30,349	271,811	302,160
	Row %	10.0%	90.0%	100.0%
	Column %	100.0%	100.0%	100.0%

N/A - Gender not available.

Note: Sum may not total to 100 percent due to rounding.

Table 10: Turnover Rates for Wyoming Workers by Industry and Employers' Workforce Development Training Fund (WDTF) Participation Status, Third Quarter 2003

Industry		Employer Status					
		WDTF Participant		Nonparticipant		All Employers	
		Stable	Turnover	Stable	Turnover	Stable	Turnover
Natural Resources & Mining	Count	4,774	349	15,523	4,205	20,297	4,554
	Row %	93.2%	6.8%	78.7%	21.3%	81.7%	18.3%
Construction	Count	482	148	19,509	10,424	19,991	10,572
	Row %	76.5%	23.5%	65.2%	34.8%	65.4%	34.6%
Manufacturing	Count	2,139	391	7,399	1,686	9,538	2,077
	Row %	84.5%	15.5%	81.4%	18.6%	82.1%	17.9%
Wholesale Trade, Transportation, & Utilities	Count	2,753	395	13,122	2,861	15,875	3,256
	Row %	87.5%	12.5%	82.1%	17.9%	83.0%	17.0%
Retail Trade	Count	1,775	396	26,803	9,859	28,578	10,255
	Row %	81.8%	18.2%	73.1%	26.9%	73.6%	26.4%
Information	Count	772	166	3,980	745	4,752	911
	Row %	82.3%	17.7%	84.2%	15.8%	83.9%	16.1%
Financial Activities	Count	1,539	167	8,359	1,805	9,898	1,972
	Row %	90.2%	9.8%	82.2%	17.8%	83.4%	16.6%
Professional & Business Services	Count	637	144	14,153	8,002	14,790	8,146
	Row %	81.6%	18.4%	63.9%	36.1%	64.5%	35.5%
Education Services	Count	543	242	22,441	3,153	22,984	3,395
	Row %	69.2%	30.8%	87.7%	12.3%	87.1%	12.9%
Health Care & Social Assistance	Count	7,724	933	17,161	3,692	24,885	4,625
	Row %	89.2%	10.8%	82.3%	17.7%	84.3%	15.7%
Leisure & Hospitality	Count	2,508	1,092	25,390	19,568	27,898	20,660
	Row %	69.7%	30.3%	56.5%	43.5%	57.5%	42.5%
Other Services	Count	194	86	25,573	6,398	25,767	6,484
	Row %	69.3%	30.7%	80.0%	20.0%	79.9%	20.1%
Total	Count	25,840	4,509	199,413	72,398	225,253	76,907
	Row %	85.1%	14.9%	73.4%	26.6%	74.5%	25.5%

Note: Sum may not total to 100 percent due to rounding.

Table 11: Turnover Rates for Wyoming Workers by Gender and Employers' Workforce Development Training Fund (WDTF) Participation Status, Third Quarter 2003

Gender		Employer Status					
		WDTF Participant		Nonparticipant		All Employers	
		Stable	Turnover	Stable	Turnover	Stable	Turnover
Men	Count	12,337	1,610	94,701	28,410	107,038	30,020
	Row %	88.5%	11.5%	76.9%	23.1%	78.1%	21.9%
Women	Count	11,644	1,875	89,157	26,123	100,801	27,998
	Row %	86.1%	13.9%	77.3%	22.7%	78.3%	21.7%
N/A	Count	1,859	1,024	15,555	17,865	17,414	18,889
	Row %	64.5%	35.5%	46.5%	53.5%	48.0%	52.0%
Total	Count	25,840	4,509	199,413	72,398	225,253	76,907
	Row %	85.1%	14.9%	73.4%	26.6%	74.5%	25.5%

N/A - Gender not available.
 Note: Sum may not total to 100 percent due to rounding.

Table 12: Turnover Rates for Wyoming Workers by Age Group and Employers' Workforce Development Training Fund (WDTF) Participation Status, Third Quarter 2003

Age Group		Employer Status					
		WDTF Participant		Nonparticipant		All Employers	
		Stable	Turnover	Stable	Turnover	Stable	Turnover
Under 20	Count	525	506	11,301	11,379	11,826	11,885
	Row %	50.9%	49.1%	49.8%	50.2%	49.9%	50.1%
20 - 24	Count	1,937	888	18,213	12,330	20,150	13,218
	Row %	68.6%	31.4%	59.6%	40.4%	60.4%	39.6%
25 - 34	Count	5,120	795	36,624	11,673	41,744	12,468
	Row %	86.6%	13.4%	75.8%	24.2%	77.0%	23.0%
35 - 44	Count	5,886	579	42,098	8,333	47,984	8,912
	Row %	91.0%	9.0%	83.5%	16.5%	84.3%	15.7%
45 - 54	Count	7,130	429	47,060	6,638	54,190	7,067
	Row %	94.3%	5.7%	87.6%	12.4%	88.5%	11.5%
55 - 64	Count	2,928	226	22,719	3,043	25,647	3,269
	Row %	92.8%	7.2%	88.2%	11.8%	88.7%	11.3%
65 & Over	Count	455	62	5,843	1,137	6,298	1,199
	Row %	88.0%	12.0%	83.7%	16.3%	84.0%	16.0%
N/A	Count	1,859	1,024	15,555	17,865	17,414	18,889
	Row %	64.5%	35.5%	46.5%	53.5%	48.0%	52.0%
Total	Count	25,840	4,509	199,413	72,398	225,253	76,907
	Row %	85.1%	14.9%	73.4%	26.6%	74.5%	25.5%

N/A - Age not available.
 Note: Sum may not total to 100 percent due to rounding.

Table 13: Average Wages of Wyoming Workers by Industry and Employers' Workforce Development Training Fund (WDTF) Participation Status, Third Quarter 2003

Industry	Average Quarterly Wages by Employer Status		
	WDTF		All
	Participant	Nonparticipant	Employers
Natural Resources & Mining	\$15,352	\$9,803	\$10,947
Construction	\$7,088	\$5,918	\$5,942
Manufacturing	\$8,652	\$7,985	\$8,130
Wholesale Trade, Transportation, & Utilities	\$10,005	\$7,924	\$8,267
Retail Trade	\$5,140	\$3,963	\$4,029
Information	\$8,113	\$5,743	\$6,136
Financial Activities	\$7,706	\$6,777	\$6,911
Professional & Business Services	\$8,529	\$4,903	\$5,026
Education Services	\$5,061	\$5,387	\$5,377
Health Care & Social Assistance	\$7,326	\$6,526	\$6,761
Leisure & Hospitality	\$3,912	\$2,200	\$2,326
Other Services	\$4,070	\$6,298	\$6,279
Total	\$8,491	\$5,496	\$5,797

Table 14: Average Wages of Wyoming Workers by Gender and Employers' Workforce Development Training Fund (WDTF) Participation Status, Third Quarter 2003

Sex	Average Quarterly Wages by Employer Status		
	WDTF		All
	Participant	Nonparticipant	Employers
Men	\$11,545	\$7,393	\$7,815
Women	\$6,199	\$4,035	\$4,262
N/A	\$4,467	\$3,548	\$3,621
Total	\$8,491	\$5,496	\$5,797

N/A - Gender not available.

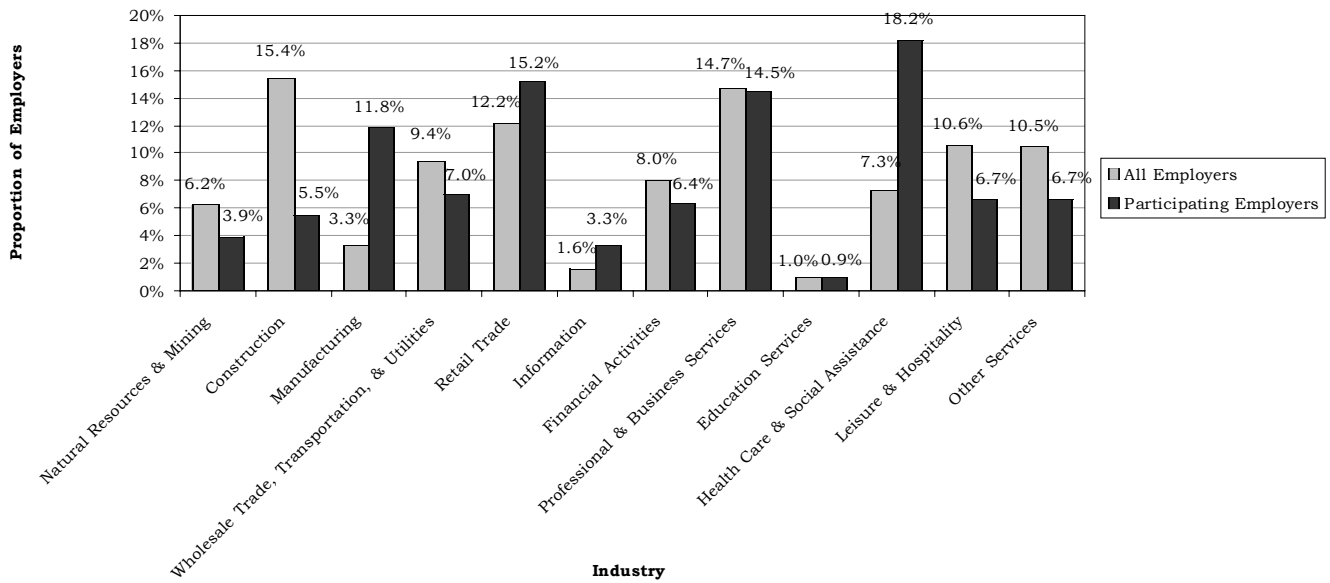
Table 15: Number of Years Employers Reported Wages in Wyoming^a From First Quarter 1992 (1992Q1) to 2003Q3 by Workforce Development Training Fund (WDTF) Participation Status

Years of Reported Wages ^a		WDTF		All
		Participant	Nonparticipant	Employers
< 1	Employers	5	1,459	1,464
	Column %	1.5%	8.4%	8.3%
> = 1 and < 2	Employers	17	1,474	1,491
	Column %	5.2%	8.5%	8.5%
> = 2 and < 5	Employers	59	3,120	3,179
	Column %	17.9%	18.0%	18.0%
> = 5 and < 8	Employers	28	2,161	2,189
	Column %	8.5%	12.5%	12.4%
> = 8	Employers	221	9,100	9,321
	Column %	67.0%	52.6%	52.8%
Total	Employers	330	17,314	17,644
	Column %	100.0%	100.0%	100.0%

^aIncludes wages which employers reported for Unemployment Insurance tax purposes. Corporate merger, buyout, and divestiture activities are not accounted for in the data model.

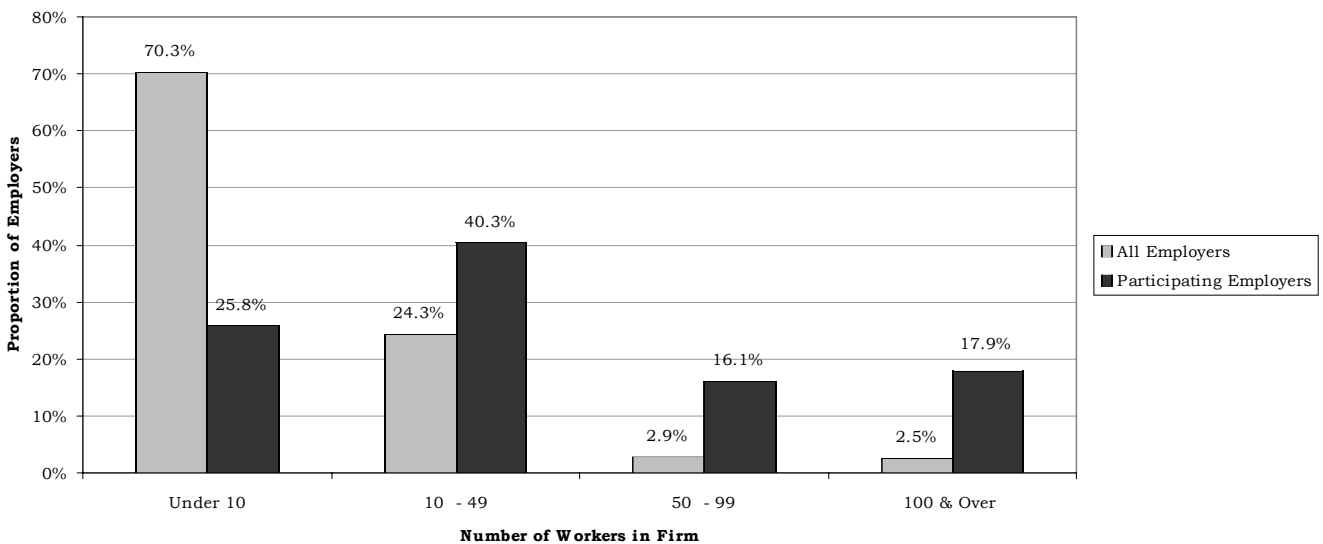
Note: Sum may not total to 100 percent due to rounding.

Figure 1: Distribution of Employers by Industry and Workforce Development Training Fund Participation Status, Third Quarter 2003 (2003Q3)



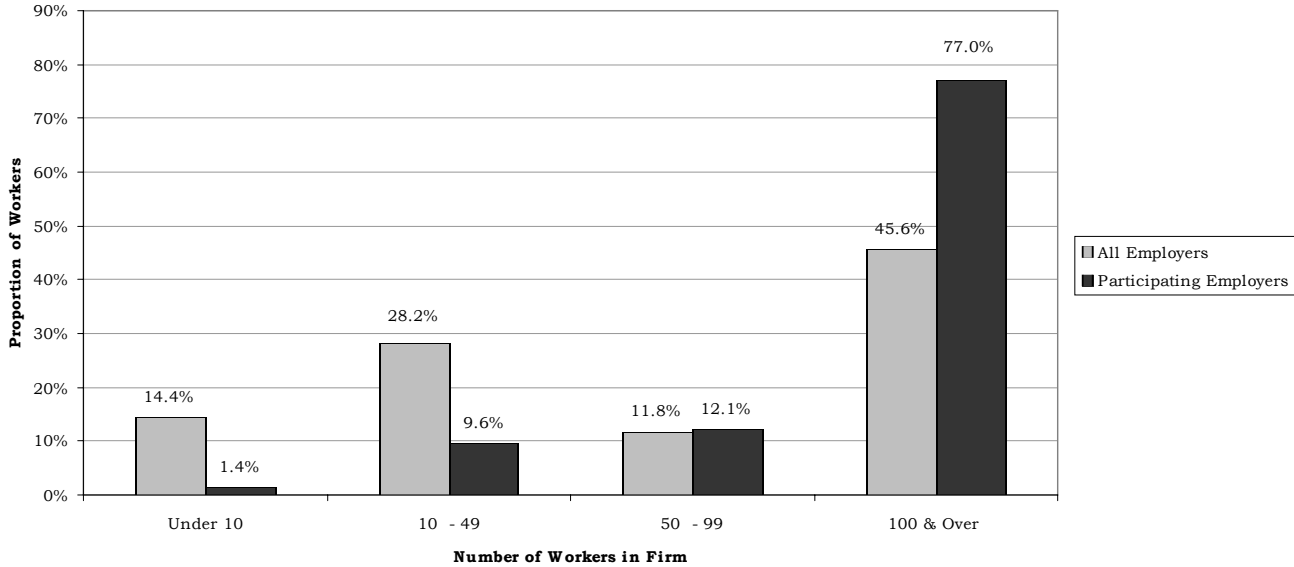
Note: Total may not sum to 100 percent due to rounding.

Figure 2: Distribution of Employers by Firm Size and Workforce Development Training Fund Participation Status, Third Quarter 2003



Note: Total may not sum to 100 percent due to rounding.

Figure 3: Distribution of Workers by Employer Size and Employers' Workforce Development Training Fund Participation Status, Third Quarter 2003



Note: Total may not sum to 100 percent due to rounding.

Figure 4: Average Employer Size by Industry and Workforce Development Training Fund Participation Status, Third Quarter 2003

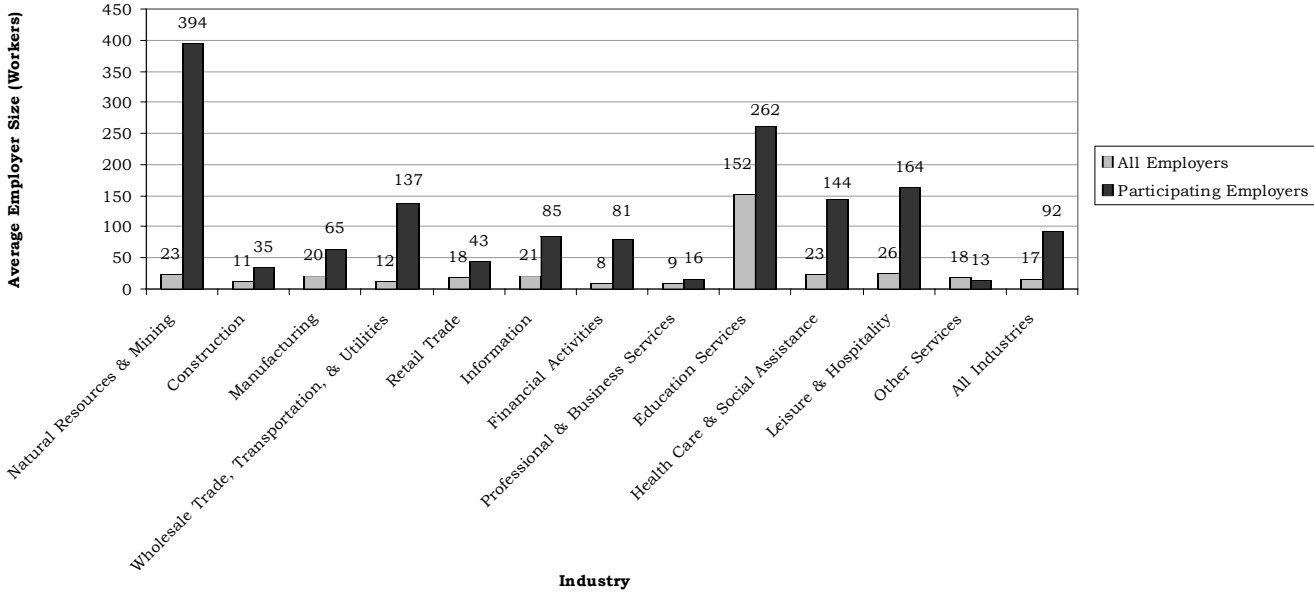
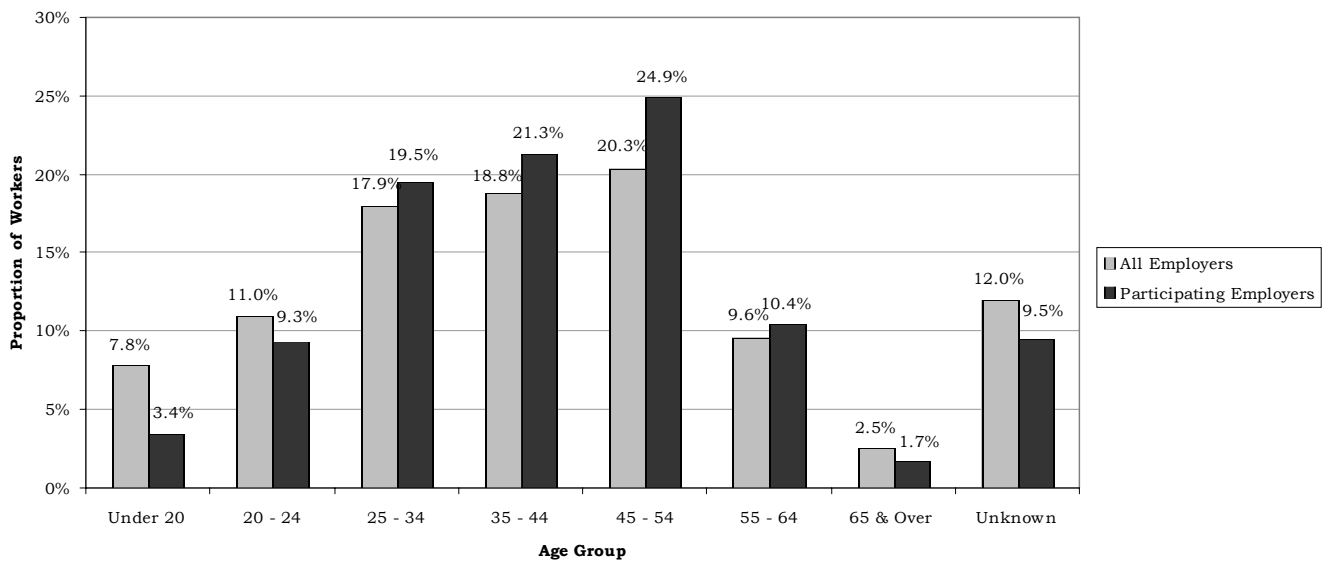


Figure 5: Distribution of Workers by Age and Employers' Workforce Development Training Fund Participation Status, 2003Q3



Note: Total may not sum to 100 percent due to rounding.

Figure 6: Distribution of Wyoming Workers by Sex and Employers' Workforce Development Training Fund Participation Status, Third Quarter 2003

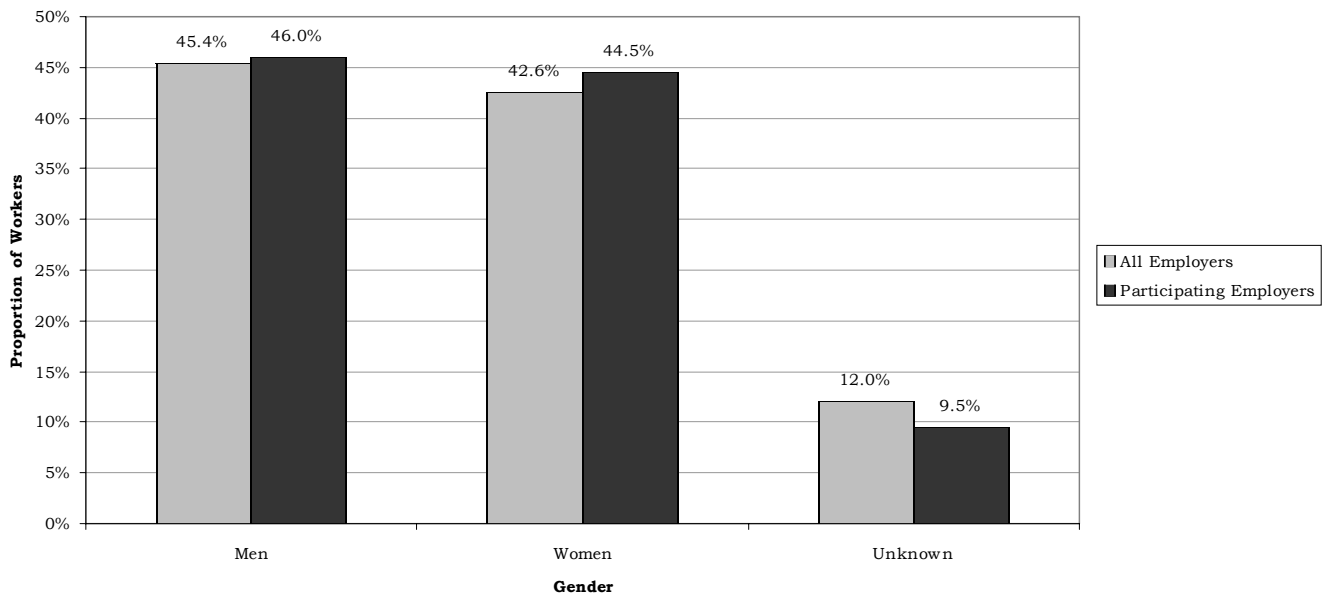
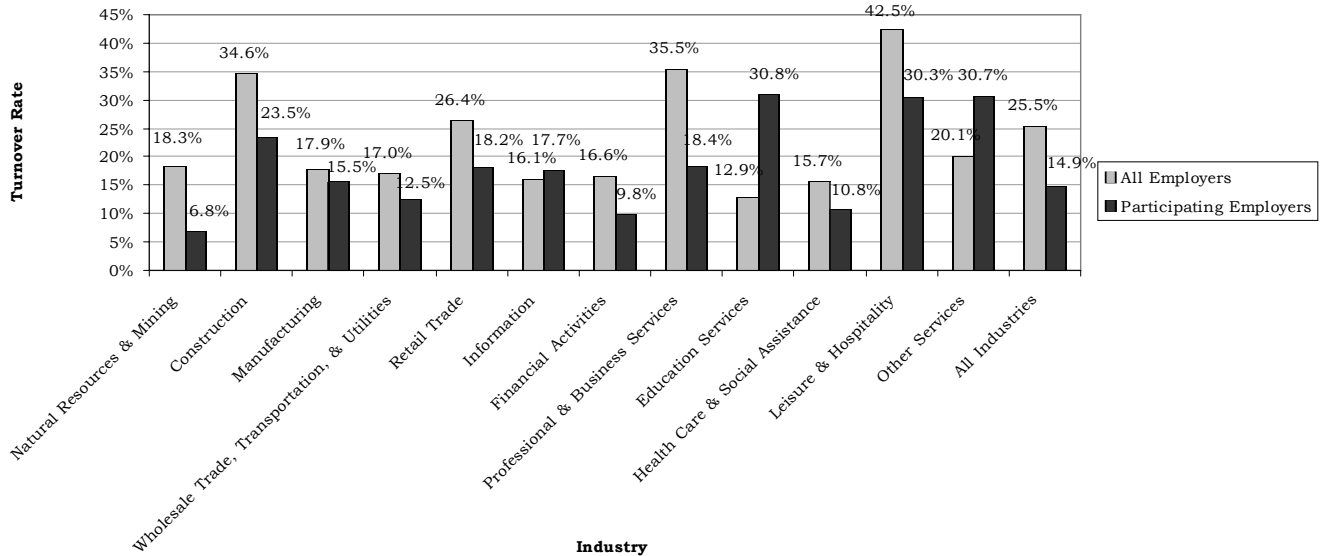


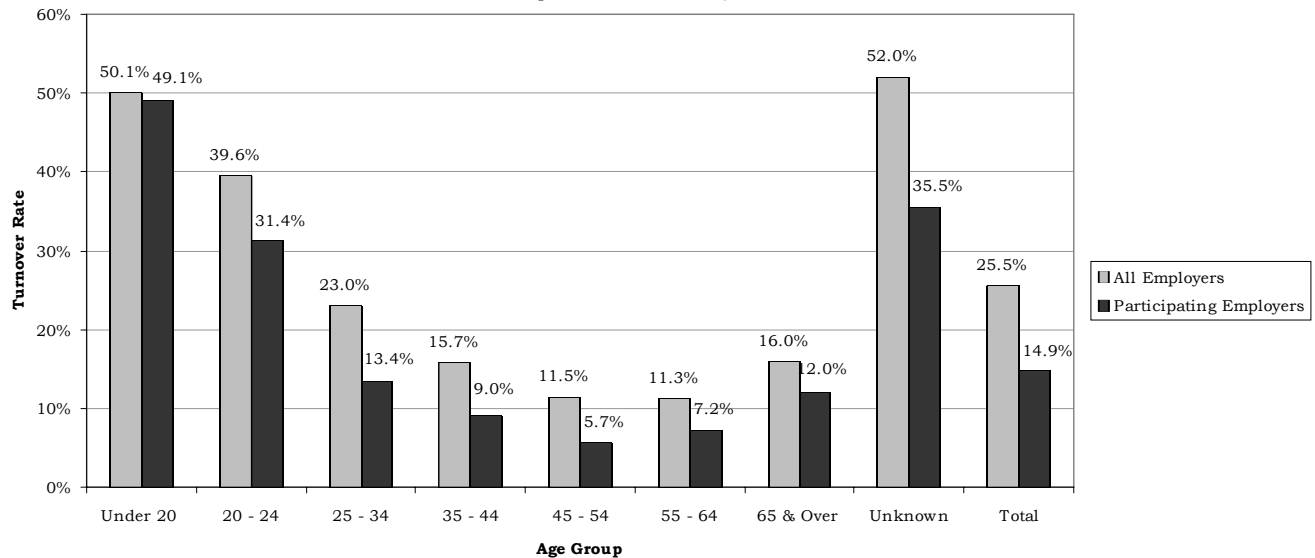
Figure 7: Turnover Rates^a by Industry and Employer Workforce Development Training Fund Participation Status, Third Quarter 2003



Note: Total may not sum to 100 percent due to rounding.

^aSee Glover, T. and Leonard, D. (2003, December). Your firm's employee turnover: How to calculate it and how it compares. *Wyoming Labor Force Trends*. Retrieved March 9, 2005, from <http://doe.state.wy.us/lmi/1203/a1.htm>

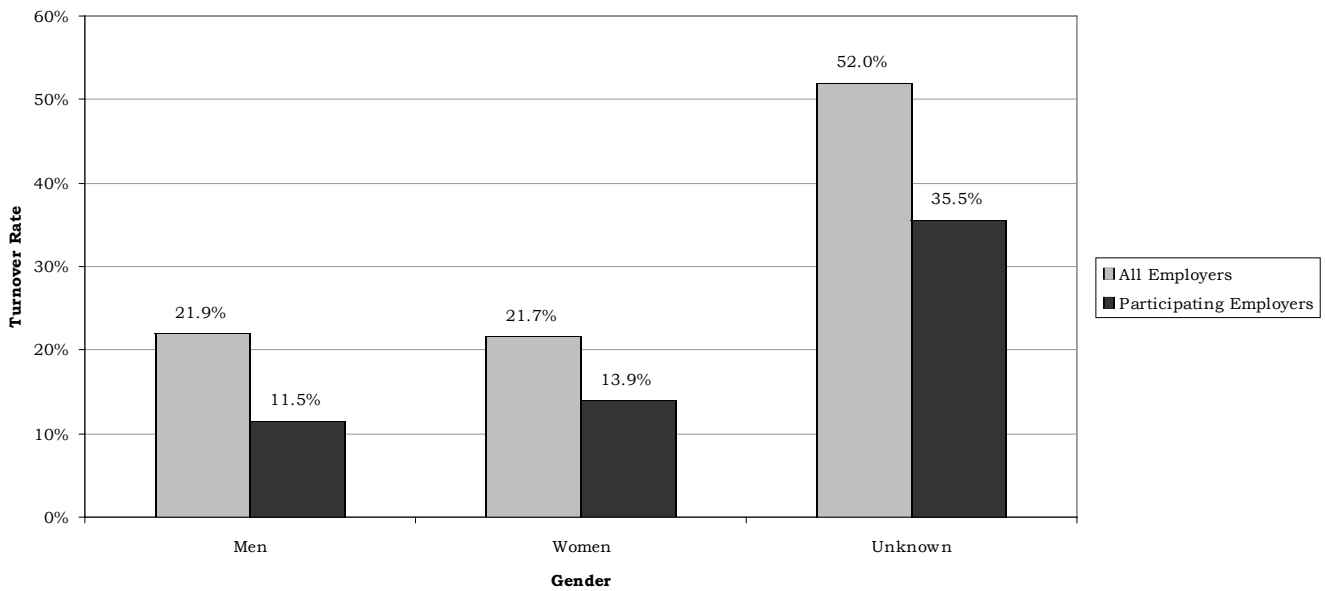
Figure 8: Turnover Rates^a by Age Group and Employer Workforce Development Training Fund Participation Status, Third Quarter 2003



Note: Total may not sum to 100 percent due to rounding.

^aSee Glover, T. and Leonard, D. (2003, December). Your firm's employee turnover: How to calculate it and how it compares. *Wyoming Labor Force Trends*. Retrieved March 9, 2005, from <http://doe.state.wy.us/lmi/1203/a1.htm>

Figure 9: Turnover Rates by Gender and Employers' Workforce Development Training Fund Participation Status, Third Quarter 2003



Note: Total may not sum to 100 percent due to rounding.

Figure 10: Average Worker Wages by Industry and Employers' Workforce Development Training Fund Participation Status, Third Quarter 2003

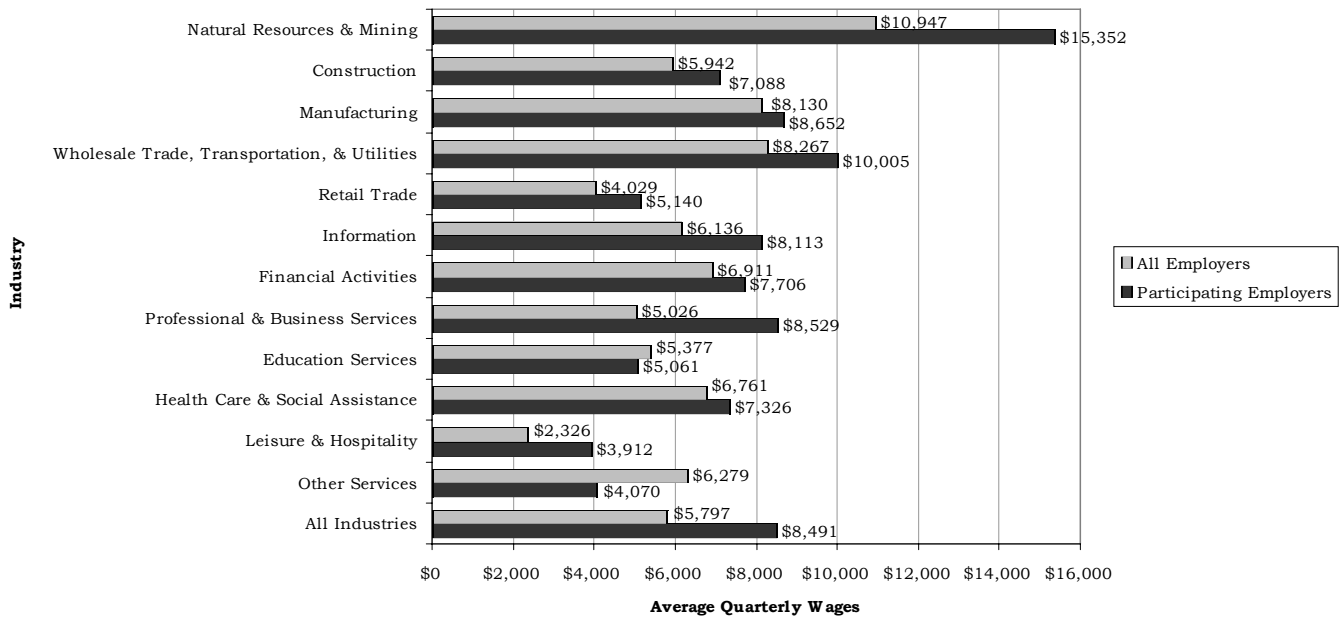


Figure 11: Average Wages by Gender and Employers' Workforce Development Training Fund Participation Status, Third Quarter 2003

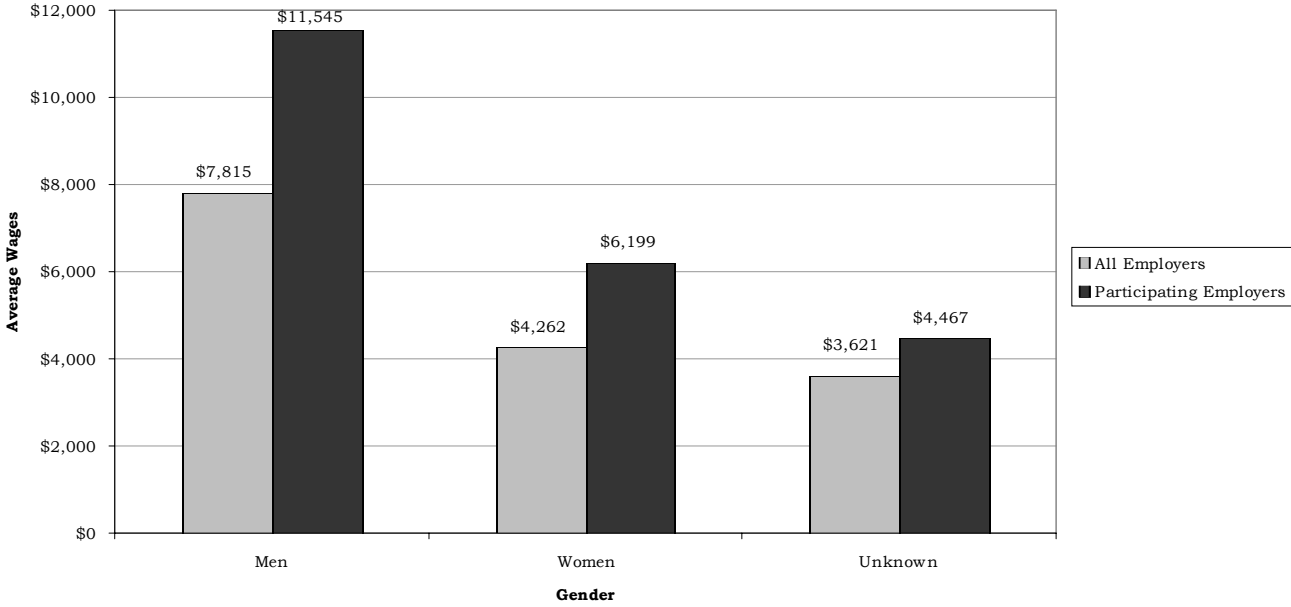
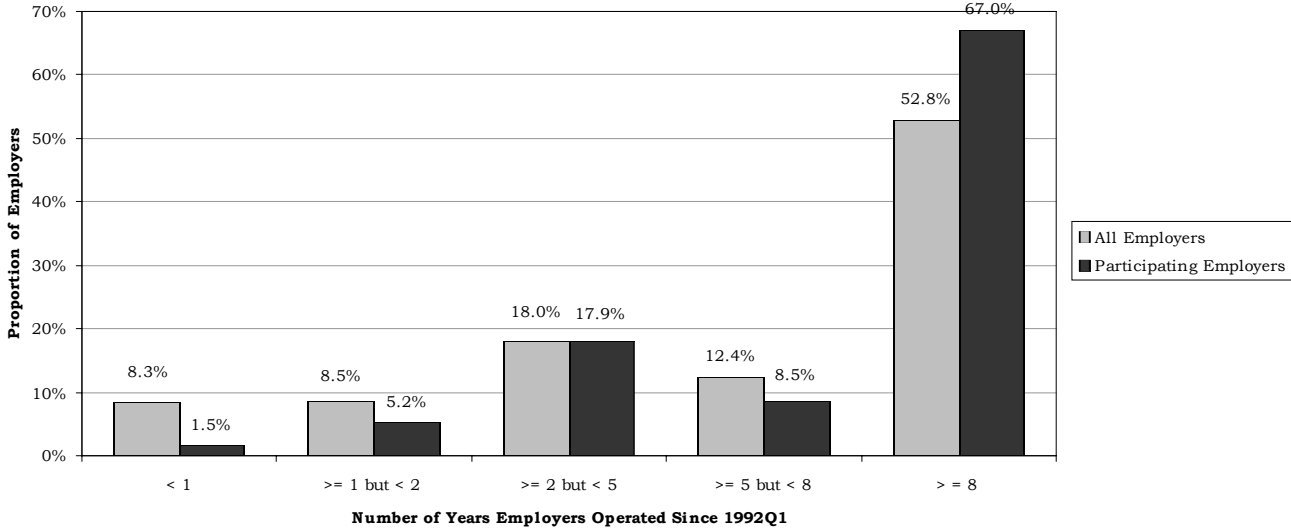


Figure 12: Distribution of Employers' by Workforce Development Training Fund Participation Status and Number of Years of Reported Wages in Wyoming, First Quarter 1992 (1992Q1) to 2003Q3



Note: Total may not sum to 100 percent due to rounding.

Labor Market Outcomes of Workforce Development Training Fund Participants

by: Mark A. Harris, Ph.D., Sociologist

The following represents a summation of tables and figures associated with Workforce Development Training Fund participants and, in some instances, manually matched and statistical control group members (Glover, 2002; Harris, 2002a; Jones, 2004b). The analysis is based on the 3,475 participants appearing at any time during FY1999 to FY2003. Some of the 3,475 individuals appeared in multiple employer contracts. When this occurred, data from the most recent employer contract was utilized. Not all participants are utilized in all parts of the study because not all of them meet specific eligibility criteria for inclusion in various parts of the analysis (e.g., falling outside the top and bottom 2.5% of the wage distribution in the wage change analysis).

Data for this analysis come from: (a) WDTF programmatic data provided by the Department of Workforce Services, (b) historical Unemployment Insurance (UI) Wage Records data maintained by the Department of Employment, Research & Planning (R&P) which include interstate wage records information from Colorado, Idaho, Montana, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Utah [referred to as Memorandum of Understanding (MOU) states] in the control group analyses, and (c) driver's license data from the Wyoming Department of Transportation.

Key Findings

- Over time, a higher percentage of

older and higher wage individuals are being trained with WDTF monies.

- The gender distribution of participants has become more balanced.
- A broader range of primary industries employ WDTF participants now than in the past.
- Trainees do not appear to perform substantial within-industry job changing in Wyoming. They either leave the market or change industries.
- The percentage of WDTF participants working for their training provider and in Wyoming drops steadily from one quarter to four years after training.
- Slightly more than 55 percent of WDTF participants were working in Wyoming up to four years after training.
- Wage progression is statistically significant for participants in the lowest three wage quintiles.
- Except for the FY2003 cohort, participants who had wages in the highest two wage quintiles prior to training did not experience significant wage progression after training.
- WDTF participants have higher retention in Wyoming than either non-participants (general market comparison) or matched controls.

Age and Gender

Of WDTF participants that had demographic data (6.3% of cases or 219 individuals were lacking demographic

data), 1,578 were female and 1,678 were male (see Table 1, page 26). Participants were concentrated in age categories ranging from 25 to 54 years of age (70.8% of participants) with the highest percentage in the 25 to 34 age category (26.5%).

The age distribution of participants changed substantially over time with latter cohorts having a higher percentage of older participants. As can be seen in Figure 1 (see page 33), the proportion of participants in the 45 to 54 age category increased substantially over the five fiscal years. More than 40 percent of FY1999 participants were in the 20 to 24 age category, whereas less than 15 percent of FY2003 participants were in this category.

The gender distribution of WDTF participants also changed over the period of FY1999 through FY2003. The first fiscal year (FY1999) was dominated by men and the following year (FY2000) was dominated by women (see Figure 2, page 33). Since FY2000, however, the distribution has become more balanced but with more men than women in each of the remaining years.

Industry

The primary industry determination was made the quarter after training ended and is the industry of the firm that paid the participant the most wages during the quarter. Usually this is the same firm that trained the employee, but there may be exceptions. Industry categories come from the North American Industry Classification System (NAICS) and are shown by supersectors (see Figure 3, page 34). WDTF participants are employed across a wide range of supersectors but are most heavily concentrated in Information

(16.1%), Retail Trade (14.2%), Health Care & Social Assistance (13.8%), and Leisure & Hospitality (11.3%).

The industry distribution of WDTF participants has diversified over time (see Figure 4, page 34). Participants were heavily concentrated in Information and Retail Trade during the first three fiscal years. In the last two fiscal years, Information and Retail Trade employed a smaller percent of participants and the proportion being primarily employed in other industries has increased (e.g., Health Care & Social Assistance). No single industry made up more than 25 percent of total participants in the last two fiscal years, and the vast majority of industries comprised less than 15 percent of the total.

Wyoming Labor Market Activity

Tables 2 through 7 (see pages 27 to 29) and Figures 5 through 10 (see pages 35 to 37) examine the Wyoming labor market activity of WDTF participants subsequent to training. Not all cohorts were included in each of the tables and figures because wage records data do not exist for more recent cohorts. All cohorts under study had measures of labor market activity up to one year after training. Measures after one year were limited to available data.

Participants found working with their training employer included those individuals who were reported in UI wage records data with their training employer based upon a match between the UI number reported in the WDTF database and the UI number reported in Wage Records. Those found working in their industry of training included those who remained within the same NAICS supersector as their training employer

(e.g., John was trained in the Mining supersector at firm X but took a job with firm Y, also in the Mining supersector, one year later). Because employers can change NAICS codes over time for economic or non-economic reasons, it is logically possible for there to be fewer individuals working in their training industry than with their training employer (e.g., a training employer changes from Retail Trade to Leisure and Hospitality one year after their WDTF contract ends but retains all or most of their employees). Typically, there are more individuals working in their training industry than with their training employer at any given time.

Tables 2 through 7 (see pages 27 to 29) summarize the data displayed graphically in Figures 5 through 10 (see pages 35 to 37). Since the pattern of results are more easily seen in the figures, the discussion of results in this section will focus on Figures 5 through 10. Readers may refer to the tables for detailed data.

Regardless of the time frame, there was little difference between the number of individuals who remain working with their training employer and the number of individuals who remained in their training industry (see Figures 5 through 10). Job changing appears to be associated with either leaving the market altogether (i.e., not being found in Wyoming Wage Records) or changing to another industry.

When examining all cohorts together, over 80 percent of WDTF participants were working with their training employer three months after training and over 90 percent were working in Wyoming (see Figure 5, page 35). At six months, just over 70 percent of WDTF participants were working with their training employer and just under 90 percent were found in

Wyoming (see Figure 6, page 35). One year after training 60 percent of participants were with their training employer and just over 80 percent were working in Wyoming (see Figure 7, page 36). Some variation exists among the individual cohorts over these three time periods. Both FY1999 and FY2001 participants were less likely to be found working with their training employer or working in Wyoming at six months and one year after training.

Figures 8, 9, and 10 (see pages 36 to 37) will be discussed separately as they involve different cohorts. Figure 8 shows labor market outcomes two years after training for FY1999 through FY2002 cohorts. Just under 40 percent of FY1999 through FY2002 WDTF participants remained with their training employer two years after training. Approximately 70 percent were found working in Wyoming two years after WDTF training.

About 30 percent of FY1999 through FY2001 participants were found working with their training employer three years after training (see Figure 9, see page 37). Just over 60 percent of FY1999 through FY2001 participants were working in Wyoming three years after training.

Four years of wage records data exist for the first two WDTF cohorts (see Figure 10, see page 37). Twenty-three percent of FY1999 through FY2000 WDTF participants were found working with their employer four years after training. Fifty-seven percent of FY1999 through FY2000 WDTF participants were found working in Wyoming four years after training.

The percentage of WDTF participants working with their training provider or in Wyoming dropped steadily from one quarter to four years after training. Data

beyond one year are limited to available wage records. Slightly more than 55 percent of WDTF participants were found working in Wyoming up to four years after training.

Wage Progression (one-group pretest-posttest)

One-group pretest-posttest wage progression analysis indicates that all but the highest wage quintile (based upon wages before training) show wage progression from one quarter before to one quarter after training (see Table 8). The magnitude of the wage progression is largest for the lowest wage quintile (\$2.96 and \$2.59 assuming either a 35- or 40-hour work week, respectively) and is smaller in each of the three succeeding quintiles (to \$.54 and \$.48 assuming either a 35- or 40-hour week, respectively). There is a slight decline in hourly wages for the fifth quintile.

Wage Progression (manually matched and statistical control groups)

Results of both the manually matched and statistical control group evaluations are sub-divided into the three lowest and two highest wage quintiles (based upon wages prior to training). The purpose of control group evaluations is to show whether wage progression experienced by participants (as shown in Table 8, see page 30) is also occurring for individuals who did not receive training. If non-trainees also experience similar wage progression, then training does not cause the subsequent increase in wages but some other factor does (e.g., wage growth in the economy due to a boom in oil and gas). Such large scale economic factors affect both the participant and non-participant groups. Control group analyses

better capture these factors and help to determine the impact of training rather than that of general economic conditions within the state.

For the manually matched control group analysis, participants were matched with controls based upon wage and demographic data. Specifically, both participants and controls must have been found in Wage Records for at least any two quarters in the year prior to training and at least any one quarter in the year training ended. Participants and controls were also matched on age and gender to obtain similar demographic distributions. Participant and control cohorts should be most similar in average quarterly wages the year prior to training (this can be seen graphically on Figures 11 through 15 and Figures 17 through 21, pages 38 to 43).

The discussion will first focus on graphs showing participant and control cohorts in the lowest three wage quintiles (see Figures 11 through 16, pages 38 to 40). The last series of figures will show participants and controls in the highest two wage quintiles (see Figures 17 through 22, pages 41 to 43). For FY2003, or Figures 15 and 21, one year of wage data exists after the training year.

For those in the lowest three wage quintiles, all years but FY1999 show greater wage progression (see Figures 11 through 15) for participants (see Figure 16 for statistical tests). The statistical tests shown in Figure 16 utilize Ordinary Least Squares regression techniques. Equations are solved separately for males and females and indicate the average quarterly wage of workers in a services-providing industry one year after training who earned the average quarterly wage prior to training.

Based upon analysis shown in Figures 11 through 16 (see pages 38 to 40) it appears that WDTF participants in the lowest three wage quintiles experienced wage progression greater than that experienced by control group members (all but one cohort had a statistically significant relationship).

The analyses for the highest two wage quintiles were less distinct (see Figures 17 through 22, pages 41 to 43). Results indicate no statistically significant difference between participants and controls for the FY1999 through FY2001 cohorts (see Figure 22). Further, FY2002 produced a statistically significant difference but results indicated that control group members, on average, were earning more than WDTF participants one year after training. Only FY2003 produced a statistically significant effect in the expected direction. It appears that WDTF training is less effective in producing the expected wage progression for participants in the two highest wage quintiles prior to training.

Labor Market Retention in Wyoming and Interstate Outcomes

Figures 23 through 32 (see pages 44 to 48) show the average number of quarters worked in Wyoming for WDTF participant and manually matched control group cohorts. Across both the lowest three (see Figures 23 through 27) and highest two (see Figures 28 through 32) wage quintiles, WDTF participants work more quarters, on average, subsequent to training than control group members.

Figures 33 and 34 (see page 49) show interstate labor market outcomes (see Tables 9 and 10, pages 31 to 32, for detailed data). Figure 33 indicates that, in

comparison to non-participants (e.g., a general labor market comparison), a much higher percentage of WDTF participants (across the four cohorts shown) were found primarily working in Wyoming during the second year after training. Typically, less than 20 percent of WDTF participants and non-participants were found working in an MOU state during the second year after training. The graph also indicates that during the second year after training a much higher proportion of non-participants were not working in either Wyoming or an MOU state. Additionally, higher proportions were found not working than found working in an MOU state.

Similar patterns are also found when comparing WDTF participants with matched controls, although the differences are less pronounced (see Figure 34, page 49). Higher proportions of WDTF participants were found primarily working in Wyoming than matched control group members.

Wage outcomes for those primarily working in Wyoming during the second year after training and those working primarily in an MOU state show no clear pattern (see Tables 9 and 10, pages 31 and 32). Some cohorts indicate that those primarily working in an MOU state have higher average quarterly wages whereas other cohorts show those primarily working in Wyoming have higher average quarterly wages.

Summary and Conclusions

Over time, a higher percentage of older and higher wage individuals are being trained with WDTF monies. Potentially this trend mirrors the general aging of Wyoming's population (Liu, 2003). The gender distribution has become more

balanced since inception. Additionally, a broader range of primary industries employ WDTF participants now than in the past. The diversification of industries is likely responsible for the changes in gender concentration. Some industries in Wyoming are known to have large gender imbalances (Jones, 2004a).

Trainees do not appear to perform substantial within-industry job changing in Wyoming. They either leave the market or change industries. This may be due to the generally under-diversified nature of Wyoming's economy (Harris, 2002b). Industry changing may indicate the development of transferable skills through WDTF training.

The percentage of WDTF participants working for their training provider and in Wyoming drops steadily from one quarter to four years after training. Slightly more than 55 percent of WDTF participants were working in Wyoming up to four years after training. However, statistical evidence indicates that WDTF participants have higher rates of retention in Wyoming than either non-participants (general market comparison) or matched controls. Wyoming's labor market is extremely dynamic (Harris, 2003). WDTF sponsored training may buffer economic ups and downs that cause fluidity in the labor market.

With the exception of the first cohort (FY1999), wage progression is statistically significant for participants in the lowest three wage quintiles prior to training. Although wage progression is evident for both participant and control cohorts (as can be seen in the upward sloping lines shown in Figures 11 through 15, pages 38 to 40), separation between WDTF and control groups visually seen in Figures 12

through 15 and results of OLS statistical tests (see Figure 16, page 49) indicate that, on average, WDTF participants in the lowest three wage quintiles experience wage progression greater than that experienced by control group members.

Except for the FY2003 cohort, participants who had wages in the highest two wage quintiles prior to training did not experience significant wage progression after training. It may be unrealistic to expect wage progression among individuals already at the higher end of the wage distribution.

References

- Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved February 11, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>
- Harris, M. (2002a, June). Measuring the impact of Wyoming's workforce development training fund: Part two. *Wyoming Labor Force Trends*. Retrieved February 11, 2005, from <http://doe.state.wy.us/LMI/0602/a1.htm>
- Harris, M. (2002b, September). Is Wyoming's economy diversifying and is economic diversity in Wyoming desirable? *Wyoming Labor Force Trends*. Retrieved February 11, 2005, from <http://doe.state.wy.us/LMI/0902/a1.htm>
- Harris, M. (2003). An examination of the fluid nature of Wyoming's labor supply. In S. Murray and K. Shinkle (Eds.) *Employment Outlook: 2010 (pp. 47-50)*. Casper WY: Wyoming Department of Employment, Research & Planning.

Jones, S. (2004a). *Earnings by Age, Gender, and Industry*. Retrieved February 11, 2005, from <http://doe.state.wy.us/LMI/wfdemog/toc3.htm>

Jones, S. (2004b, April). Examining Workforce Information Act programmatic outcomes using the Wyoming wage records universe as a statistical comparison group. *Wyoming*

Labor Force Trends. Retrieved March 3, 2005, from: <http://doe.state.wy.us/LMI/0404/a1.htm>

Liu, W. (2003). Wyoming's resident population: Historical and projected data. In S. Murray and K. Shinkle (Eds.) *Employment Outlook: 2010* (pp. 41-46). Casper WY: Wyoming Department of Employment, Research & Planning.

Table 1: Age^a and Gender^b Profile for Wyoming Workforce Development Training Fund Participants Associated with Contracts Ending in Fiscal Years 1999 to 2003

Gender	Age Group								Total	Percent
	16-19	20-24	25-34	35-44	45-54	55-64	65+	Unknown		
Women	43	221	429	400	381	97	7		1,578	45.4%
Men	51	249	493	416	342	118	9		1,678	48.3%
Unknown								219	219	6.3%
Total	94	470	922	816	723	215	16	219	3,475	100.0%
Percent	2.7%	13.5%	26.5%	23.5%	20.8%	6.2%	0.5%	6.3%	100.0%	

^aDemographics derived from the Wyoming Driver's License Database.

^bSome demographics are imputed. For technical information on the imputation process, see Glover, T. (2001, April). Enhancing the quality of wage records for analysis through imputation: Part one. *Wyoming Labor Force Trends*. Retrieved January 14, 2005, from <http://doe.state.wy.us/lmi/0401/a2.htm>

Table 2: State Labor Market Activity of Fiscal Year 1999 (FY1999) to FY2003 Wyoming Workforce Development Training Fund Participants Three Months After Training Ended**Panel A: Found With Training Employer Three Months After Training Ended**

	FY1999	FY2000	FY2001	FY2002	FY2003	Total
Participants Found	381	352	243	480	1,357	2,813
Participants Not Found	14	66	54	116	412	662
% Found	96.5%	84.2%	81.8%	80.5%	76.7%	80.9%
Total	395	418	297	596	1,769	3,475

Panel B: Found Working In Training Industry Three Months After Training Ended

	FY1999	FY2000	FY2001	FY2002	FY2003	Total
Participants Found	381	355	243	482	1,363	2,824
Participants Not Found	14	63	54	114	406	651
% Found	96.5%	84.9%	81.8%	80.9%	77.0%	81.3%
Total	395	418	297	596	1,769	3,475

Panel C: Found Working In Wyoming Three Months After Training Ended

	FY1999	FY2000	FY2001	FY2002	FY2003	Total
Participants Found	381	387	265	553	1,631	3,217
Participants Not Found	14	31	32	43	138	258
% Found	96.5%	92.6%	89.2%	92.8%	92.2%	92.6%
Total	395	418	297	596	1,769	3,475

Table 3: State Labor Market Activity of Fiscal Year 1999 (FY1999) to FY2003 Wyoming Workforce Development Training Fund Participants Six Months After Training Ended**Panel A: Found With Training Employer Six Months After Training Ended**

	FY1999	FY2000	FY2001	FY2002	FY2003	Total
Participants Found	261	313	204	453	1,288	2,519
Participants Not Found	134	105	93	143	481	956
% Found	66.1%	74.9%	68.7%	76.0%	72.8%	72.5%
Total	395	418	297	596	1,769	3,475

Panel B: Found Working In Training Industry Six Months After Training Ended

	FY1999	FY2000	FY2001	FY2002	FY2003	Total
Participants Found	262	331	206	458	1,305	2,562
Participants Not Found	133	87	91	138	464	913
% Found	66.3%	79.2%	69.4%	76.8%	73.8%	73.7%
Total	395	418	297	596	1,769	3,475

Panel C: Found Working In Wyoming Six Months After Training Ended

	FY1999	FY2000	FY2001	FY2002	FY2003	Total
Participants Found	315	384	245	537	1,583	3,064
Participants Not Found	80	34	52	59	186	411
% Found	79.7%	91.9%	82.5%	90.1%	89.5%	88.2%
Total	395	418	297	596	1,769	3,475

Table 4: State Labor Market Activity of Fiscal Year 1999 (FY1999) to FY2003 Wyoming Workforce Development Training Fund Participants One Year After Training Ended

Panel A: Found With Training Employer One Year After Training Ended

	FY1999	FY2000	FY2001	FY2002	FY2003	Total
Participants Found	169	275	116	364	1,153	2,077
Participants Not Found	226	143	181	232	616	1,398
% Found	42.8%	65.8%	39.1%	61.1%	65.2%	59.8%
Total	395	418	297	596	1,769	3,475

Panel B: Found Working In Training Industry One Year After Training Ended

	FY1999	FY2000	FY2001	FY2002	FY2003	Total
Participants Found	171	298	120	374	1,196	2,159
Participants Not Found	224	120	177	222	573	1,316
% Found	43.3%	71.3%	40.4%	62.8%	67.6%	62.1%
Total	395	418	297	596	1,769	3,475

Panel C: Found Working In Wyoming One Year After Training Ended

	FY1999	FY2000	FY2001	FY2002	FY2003	Total
Participants Found	283	363	215	497	1,525	2,883
Participants Not Found	112	55	82	99	244	592
% Found	71.6%	86.8%	72.4%	83.4%	86.2%	83.0%
Total	395	418	297	596	1,769	3,475

Table 5: State Labor Market Activity of Fiscal Year 1999 (FY1999) to FY2002 Wyoming Workforce Development Training Fund Participants Two Years After Training Ended

Panel A: Found With Training Employer Two Years After Training Ended

	FY1999	FY2000	FY2001	FY2002	Total
Participants Found	74	215	65	281	635
Participants Not Found	321	203	232	315	1,071
% Found	18.7%	51.4%	21.9%	47.1%	37.2%
Total	395	418	297	596	1,706

Panel B: Found Working In Training Industry Two Years After Training Ended

	FY1999	FY2000	FY2001	FY2002	Total
Participants Found	80	240	73	300	693
Participants Not Found	315	178	224	296	1,013
% Found	20.3%	57.4%	24.6%	50.3%	40.6%
Total	395	418	297	596	1,706

Panel C: Found Working In Wyoming Two Years After Training Ended

	FY1999	FY2000	FY2001	FY2002	Total
Participants Found	218	337	178	454	1,187
Participants Not Found	177	81	119	142	519
% Found	55.2%	80.6%	59.9%	76.2%	69.6%
Total	395	418	297	596	1,706

Table 6: State Labor Market Activity of Fiscal Year 1999 (FY1999) to FY2001 Wyoming Workforce Development Training Fund Participants Three Years After Training Ended

Panel A: Found With Training Employer Three Years After Training Ended

	FY1999	FY2000	FY2001	Total
Participants Found	50	181	64	295
Participants Not Found	345	237	233	815
% Found	12.7%	43.3%	21.5%	26.6%
Total	395	418	297	1,110

Panel B: Found Working In Training Industry Three Years After Training Ended

	FY1999	FY2000	FY2001	Total
Participants Found	57	209	70	336
Participants Not Found	338	209	227	774
% Found	14.4%	50.0%	23.6%	30.3%
Total	395	418	297	1,110

Panel C: Found Working In Wyoming Three Years After Training Ended

	FY1999	FY2000	FY2001	Total
Participants Found	189	313	171	673
Participants Not Found	206	105	126	437
% Found	47.8%	74.9%	57.6%	60.6%
Total	395	418	297	1,110

Table 7: State Labor Market Activity of Fiscal Year 1999 (FY1999) to FY2000 Wyoming Workforce Development Training Fund Participants Four Years After Training Ended

Panel A: Found With Training Employer Four Years After Training Ended

	FY1999	FY2000	Total
Participants Found	40	150	190
Participants Not Found	355	268	623
% Found	10.1%	35.9%	23.4%
Total	395	418	813

Panel B: Found Working In Training Industry Four Years After Training Ended

	FY1999	FY2000	Total
Participants Found	47	179	226
Participants Not Found	348	239	587
% Found	11.9%	42.8%	27.8%
Total	395	418	813

Panel C: Found Working In Wyoming Four Years After Training Ended

	FY1999	FY2000	Total
Participants Found	175	287	462
Participants Not Found	220	131	351
% Found	44.3%	68.7%	56.8%
Total	395	418	813

Table 8: Participants^a Appearing One Quarter Before and One Quarter After by Real Wage Quintiles, Fiscal Year 1999 (FY1999) to FY2003^b

Quintile	Number of Participants	Assuming a 35-Hour Week			Assuming a 40-Hour Week		
		Average Hourly Wage ^c Before Training	Average Hourly Wage After Training	Wage Progression or Decline	Average Hourly Wage Before Training	Average Hourly Wage After Training	Wage Progression or Decline
First	573	\$4.97	\$7.93	\$2.96	\$4.35	\$6.94	\$2.59
Second	559	\$9.66	\$11.08	\$1.42	\$8.46	\$9.70	\$1.24
Third	560	\$14.01	\$15.26	\$1.25	\$12.26	\$13.35	\$1.10
Fourth	559	\$20.97	\$21.52	\$0.54	\$18.35	\$18.83	\$0.48
Fifth	546	\$33.89	\$33.84	-\$0.05	\$29.65	\$29.61	-\$0.04

^aParticipants earning within the top and bottom 2.5 percent of the wage distribution during the quarter before training were eliminated from this table.

^bTotal Quarterly Wages for FY1999 To FY2003 were Consumer Price Index (All Urban Consumers U.S. all items, 1982-1984=100) adjusted for inflation.

^cThe formula for calculating average hourly wages is the sum of total quarterly wages for all individuals divided by total quarterly hours worked. Total quarterly hours worked may increase or decrease depending upon the assumptions made about how many hours, on average, individuals work on a weekly basis. In this data set, we have no way of determining how many hours were actually worked by individuals in a week. Thus, we present average hourly wages calculated for both 35- and 40-hour work weeks. Total quarterly wages are used here, instead of wages for the training employer only, because skills gained from the training employer may lead to an increase in wages at other jobs.

Table 9: Primary Location^a and Average Quarterly Wage (AQW) During the Second Year After the Year Training Ended or Random Year End Assignment**Panel A Workforce Development Training Fund (WDTF) Participants**

	FY1999 Cohort						FY2000 Cohort					
	Number Working	Column %	Number of Quarters Worked ^b	Average Number of Quarters Worked	Total Wages ^c	Average Quarterly Wage	Number Working	Column %	Number of Quarters Worked	Average Number of Quarters Worked	Total Wages	Average Quarterly Wage
Wyoming	229	58.0%	778	3.4	\$3,935,115	\$5,058	356	85.2%	1341	3.8	\$7,102,261	\$5,296
MOU Border States ^d	56	14.2%	179	3.2	\$1,197,713	\$6,691	15	3.6%	51	3.4	\$259,670	\$5,092
MOU Non-Border States ^e	10	2.5%	37	3.7	\$232,726	\$6,290	4	1.0%	12	3.0	\$49,790	\$4,149
Not Found	100	25.3%	-	-	-	-	43	10.3%	-	-	-	-
Total Cohort	395	100.0%	NA	NA	NA	NA	418	100.0%	NA	NA	NA	NA

	FY2001 Cohort						FY2002 Cohort					
	Number Working	Column %	Number of Quarters Worked	Average Number of Quarters Worked	Total Wages	Average Quarterly Wage	Number Working	Column %	Number of Quarters Worked	Average Number of Quarters Worked	Total Wages	Average Quarterly Wage
Wyoming	211	71%	751	3.6	\$4,476,867	\$5,961	498	83.6%	1812	3.6	\$15,253,363	\$8,418
MOU Border States ^d	25	8%	82	3.3	\$353,706	\$4,313	3	0.5%	4	1.3	\$23,930	\$5,983
MOU Non-Border States ^e	3	1%	12	4.0	\$95,829	\$7,986	1	0.2%	1	1.0	\$4,102	\$4,102
Not Found	58	20%	-	-	-	-	94	15.8%	-	-	-	-
Total Cohort	297	100%	NA	NA	NA	NA	596	100.0%	NA	NA	NA	NA

Panel B WDTF Non-Participants^f (General Market Comparison)

	FY1999 Cohort						FY2000 Cohort					
	Number Working	Column %	Number of Quarters Worked	Average Number of Quarters Worked	Total Wages	Average Quarterly Wage	Number Working	Column %	Number of Quarters Worked	Average Number of Quarters Worked	Total Wages	Average Quarterly Wage
Wyoming	36,404	36.5%	123,487	3.4	\$879,768,350	\$7,124	36,503	39.4%	124,034	3.4	\$921,344,011	\$7,428
MOU Border States ^d	16,148	16.2%	53,168	3.3	\$340,634,068	\$6,407	13,692	14.8%	44,692	3.3	\$283,993,783	\$6,354
MOU Non-Border States ^e	4,103	4.1%	13,269	3.2	\$103,288,357	\$7,784	3,817	4.1%	11,895	3.1	\$92,861,525	\$7,807
Not Found	43,153	43.2%	-	-	-	-	38,741	41.8%	-	-	-	-
Total Cohort	99,808	100.0%	NA	NA	NA	NA	92,753	100.0%	NA	NA	NA	NA

	FY2001 Cohort						FY2002 Cohort					
	Number Working	Column %	Number of Quarters Worked	Average Number of Quarters Worked	Total Wages	AQW	Number Working	Column %	Number of Quarters Worked	Average Number of Quarters Worked	Total Wages	AQW
Wyoming	37,427	40.4%	127,281	3.4	\$949,865,850	\$7,463	42,120	43.7%	140,161	3.3	\$1,048,527,749	\$7,481
MOU Border States ^d	12,277	13.3%	39,433	3.2	\$245,004,225	\$6,213	1,179	1.2%	1,255	1.1	\$9,550,370	\$7,610
MOU Non-Border States ^e	3,533	3.8%	11,161	3.2	\$86,889,677	\$7,785	446	0.5%	461	1.0	\$2,484,135	\$5,389
Not Found	39,394	42.5%	-	-	-	-	52,684	54.6%	-	-	-	-
Total Cohort	92,631	100.0%	NA	NA	NA	NA	96,429	100.0%	NA	NA	NA	NA

^aPrimary location is the state that paid the most wages during the second year after the year training ended.^bNumber of Quarters Worked includes all state locations.^cTotal Wages includes all state locations.^dMemorandum of Understanding (MOU) Border States include Colorado, Idaho, Montana, Nebraska, South Dakota, Utah.^eMOU Non-Border States include New Mexico, Oklahoma, and Texas.^fNon-participants are those individuals appearing in Wyoming Wage Records who did not receive WDTF training. Non-participants were assigned randomly to a fiscal year cohort but were not matched on any demographic or labor market characteristics.

NA = Not Applicable.

WDTF Participants

Table 10: Primary Location^a and Average Quarterly Wage (AQW) During the Second Year After the Year Training Ended or Random Year End Assignment

Panel A Workforce Development Training Fund (WDTF) Participants

	FY1999 Cohort						FY2000 Cohort					
	Number Working	Column %	Number of Quarters Worked ^b	Average Number of Quarters Worked	Total Wages ^c	AQW	Number Working	Column %	Number of Quarters Worked	Average Number of Quarters Worked	Total Wages	AQW
Wyoming	171	61.1%	588	3.4	\$2,779,228	\$4,727	289	88.4%	1,097	3.8	\$5,729,530	\$5,223
MOU Border States ^d	45	16.1%	142	3.2	\$998,466	\$7,031	11	3.4%	40	3.6	\$230,413	\$5,760
MOU Non-Border States ^e	8	2.9%	31	3.9	\$225,473	\$7,273	2	0.6%	7	3.5	\$23,722	\$3,389
Not Found	56	20.0%	-	-	-	-	25	7.6%	-	-	-	-
Total Participant Cohort	280	100.0%	NA	NA	NA	NA	327	100.0%	NA	NA	NA	NA
Total Participant Cohort	280						327					
Did Not Meet Control Group Analysis Inclusion Criteria	115						91					
Total Cohort	395						418					
	FY2001 Cohort						FY2002 Cohort					
	Number Working	Column %	Number of Quarters Worked	Average Number of Quarters Worked	Total Wages	AQW	Number Working	Column %	Number of Quarters Worked	Average Number of Quarters Worked	Total Wages	AQW
Wyoming	180	81.8%	642	3.6	\$3,637,177	\$5,665	427	87.9%	1,565	3.7	\$12,507,651	\$7,992
MOU Border States ^d	15	6.8%	47	3.1	\$186,973	\$3,978	2	0.4%	3	1.5	\$8,334	\$2,778
MOU Non-Border States ^e	2	0.9%	8	4.0	\$59,872	\$7,484	1	0.2%	1	1.0	\$4,102	\$4,102
Not Found	23	10.5%	-	-	-	-	56	11.5%	-	-	-	-
Total Participant Cohort	220	100.0%	NA	NA	NA	NA	486	100.0%	NA	NA	NA	NA
Total Participant Cohort	220						486					
Did Not Meet Control Group Analysis Inclusion Criteria	77						110					
Total Cohort	297						596					

Panel B WDTF Manual Control Group^f

	FY1999 Cohort						FY2000 Cohort					
	Number Working	Column %	Number of Quarters Worked	Average Number of Quarters Worked	Total Wages	AQW	Number Working	Column %	Number of Quarters Worked	Average Number of Quarters Worked	Total Wages	AQW
Wyoming	3,128	47.4%	10,483	3.4	\$53,304,021	\$5,085	2,032	62.1%	7,246	3.6	\$38,384,303	\$5,297
MOU Border States	1,419	21.5%	4,802	3.4	\$24,900,163	\$5,185	474	14.5%	1,663	3.5	\$9,184,833	\$5,523
MOU Non-Border States	214	3.2%	699	3.3	\$4,036,715	\$5,775	74	2.3%	241	3.3	\$1,234,860	\$5,124
Not Found	1,842	27.9%	-	-	-	-	690	21.1%	-	-	-	-
Total Cohort	6,603	100.0%	NA	NA	NA	NA	3,270	100.0%	NA	NA	NA	NA
Total Participant Cohort	6,603						3,270					
Did Not Meet Inclusion Criteria or Were Randomly Selected Out of Inclusion	92,205						89,483					
Total Cohort	98,808						92,753					
	FY2001 Cohort						FY2002 Cohort					
	Number Working	Column %	Number of Quarters Worked	Average Number of Quarters Worked	Total Wages	AQW	Number Working	Column %	Number of Quarters Worked	Average Number of Quarters Worked	Total Wages	AQW
Wyoming	5,739	65.6%	20,015	3.5	\$116,037,843	\$5,798	4,184	78.4%	15,024	3.6	\$121,039,201	\$8,056
MOU Border States	1,096	12.5%	3,639	3.3	\$19,307,593	\$5,306	42	0.8%	48	1.1	\$385,214	\$8,025
MOU Non-Border States	192	2.2%	624	3.3	\$3,648,301	\$5,847	13	0.2%	13	1.0	\$113,435	\$8,726
Not Found	1,728	19.7%	-	-	-	-	1,098	20.6%	-	-	-	-
Total Cohort	8,755	100.0%	NA	NA	NA	NA	5,337	100.0%	NA	NA	NA	NA
Total Participant Cohort	8,755						5,337					
Did Not Meet Inclusion Criteria or Were Randomly Selected Out of Inclusion	84,876						91,092					
Total Cohort	93,631						96,429					

^aPrimary location is the state that paid the most wages during the second year after the year training ended.

^bNumber of Quarters Worked includes all state locations.

^cTotal Wages includes all state locations.

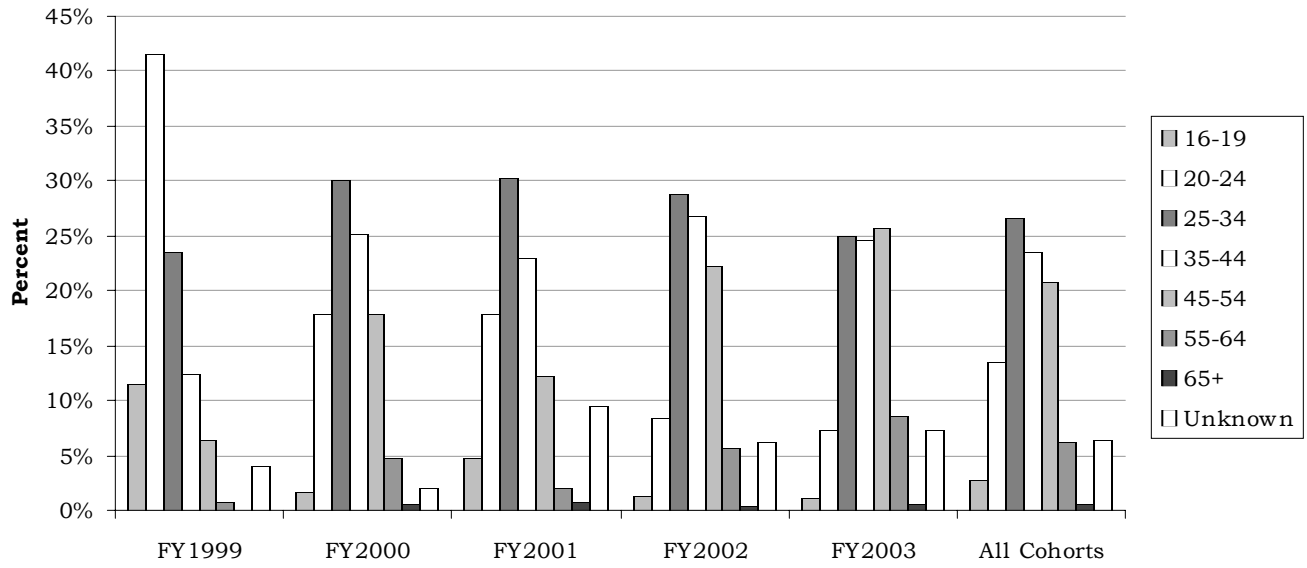
^dMOU Border States include Colorado, Idaho, Montana, Nebraska, South Dakota, Utah.

^eMOU Non-Border States include New Mexico, Oklahoma, and Texas.

^fParticipants and control group members were matched during the year prior to training using methodology derived from Glover, W. (2002, June). Compared to what? The purpose and method of control group selection. Wyoming Labor Force Trends. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

NA = Not Applicable.

Figure 1: Age Profile^a for Workforce Development Training Fund (WDTF) Participants, Fiscal Year 1999 (FY1999) to FY2003



^aBased upon the participant's age during the first quarter after training ended.

Figure 2: Workforce Development Training Fund (WDTF) Participants by Sex, Fiscal Year 1999 (FY1999) to FY2003

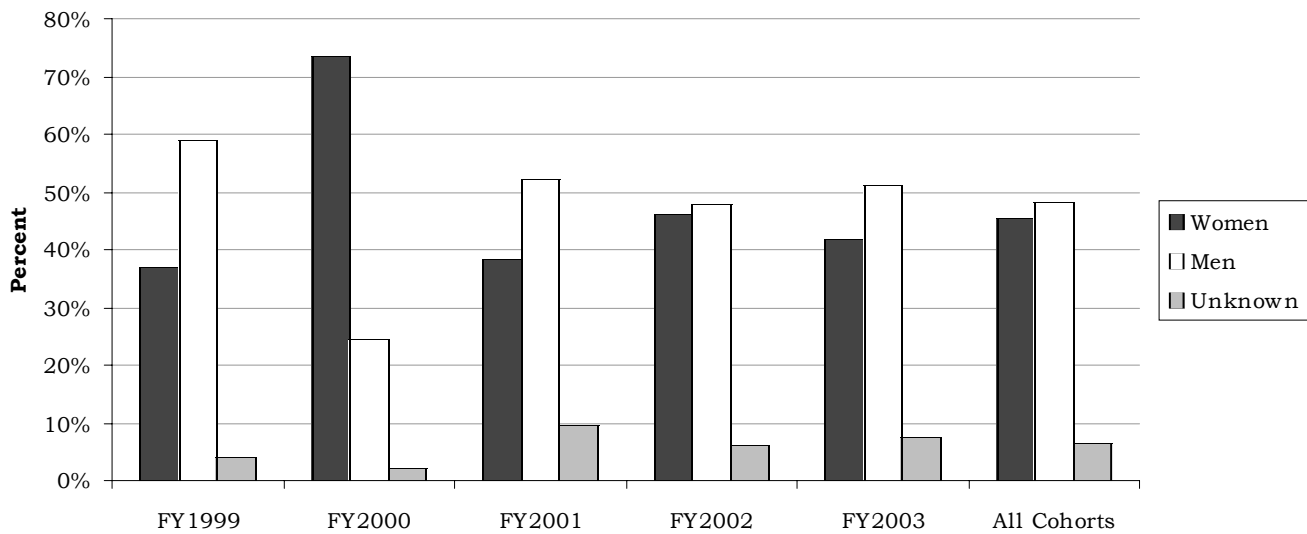
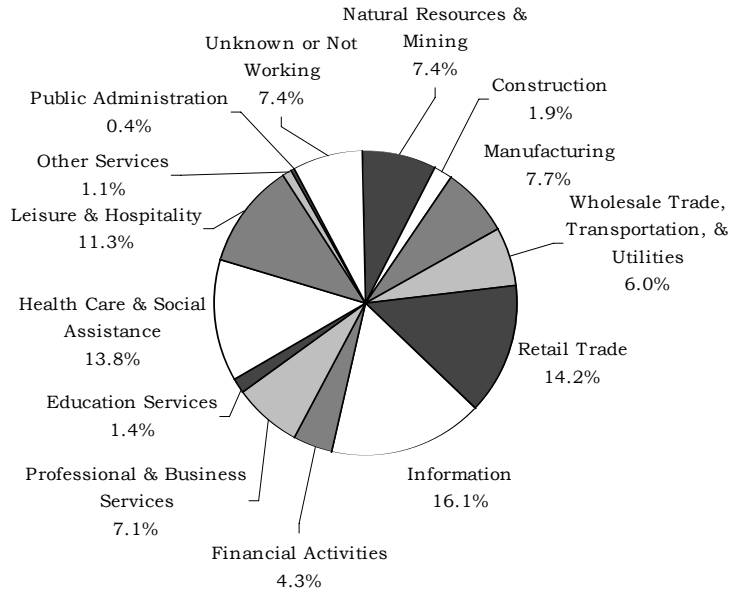
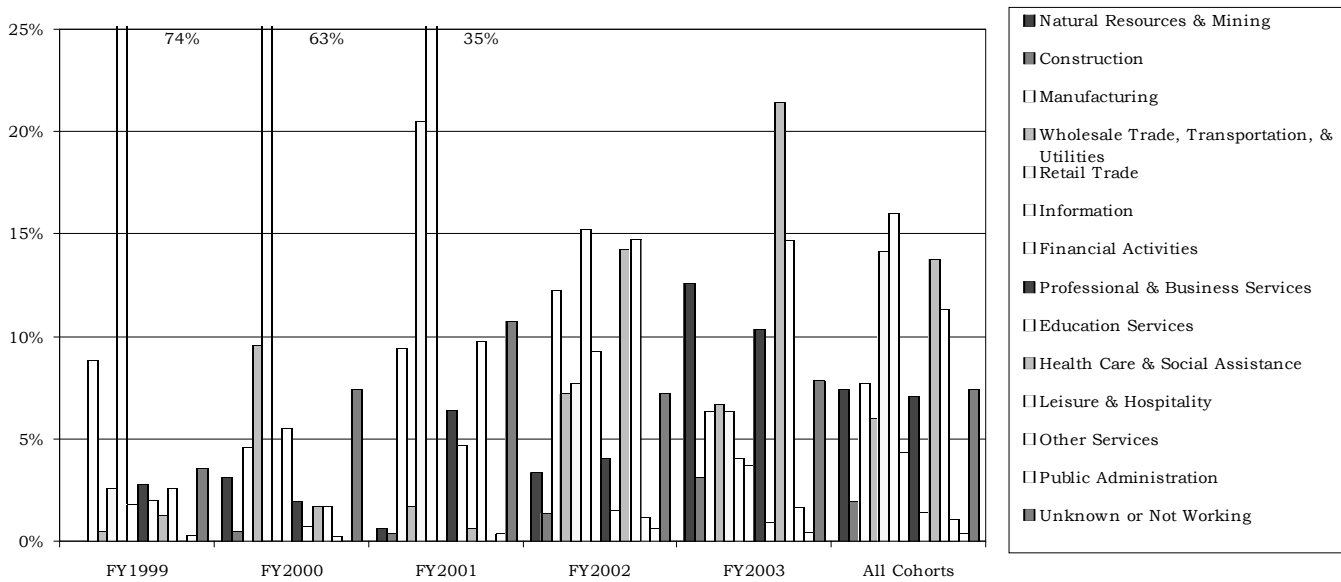


Figure 3: Employment of Wyoming Workforce Development Training Fund Participants By Industry,^a Fiscal Years 1999 to 2003



^aBased on the participant's primary employer identified in Wage Records during the first quarter after training. This may be different than the training employer.
 Note: Sum may not total to 100 percent due to rounding.

Figure 4: Employment of Wyoming Workforce Development Training Fund Participants by Primary Industry,^a Fiscal Year 1999 (FY1999) to FY2003



^aBased upon the participant's primary employer identified in Wage Records during the first quarter after training ended. This may not be the same employer as the training employer.

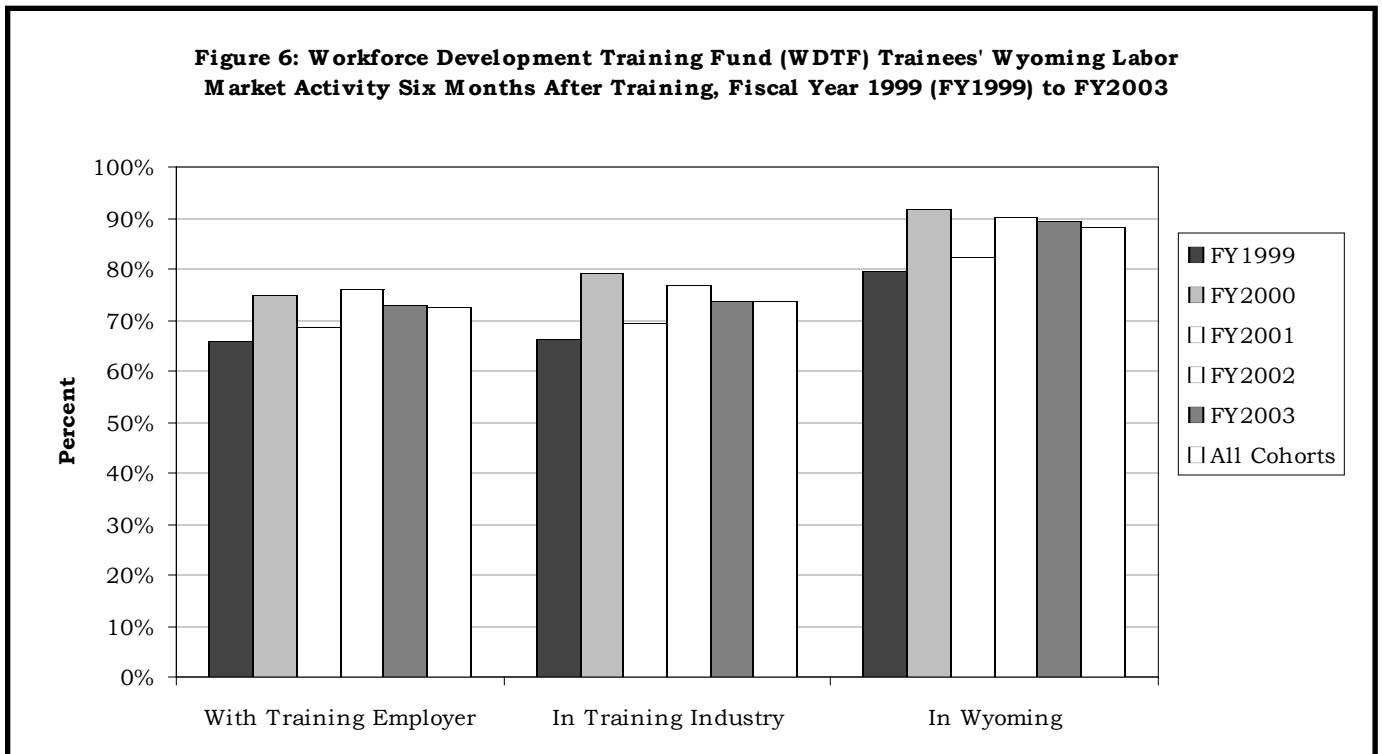
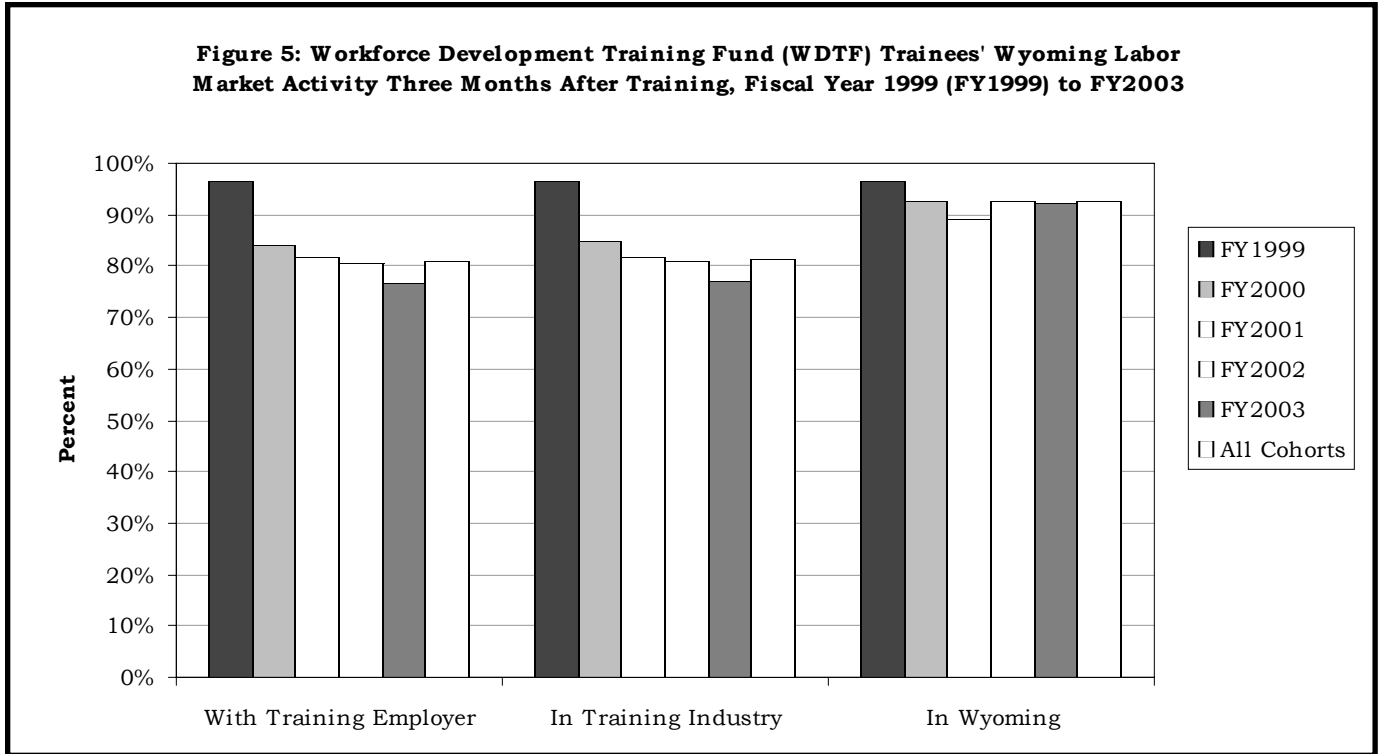


Figure 7: Workforce Development Training Fund (WDTF) Trainees' Wyoming Labor Market Activity One Year After Training, Fiscal Year 1999 (FY1999) to FY2003

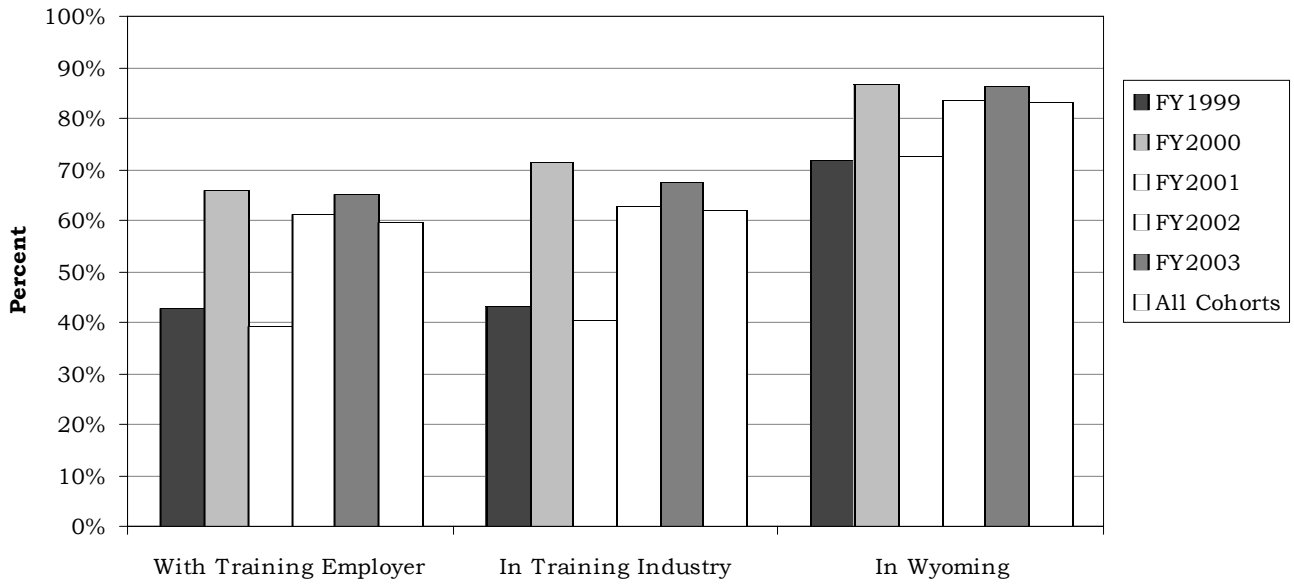


Figure 8: Workforce Development Training Fund (WDTF) Trainees' Wyoming Labor Market Activity Two Years After Training, Fiscal Year 1999 (FY1999) to FY2002

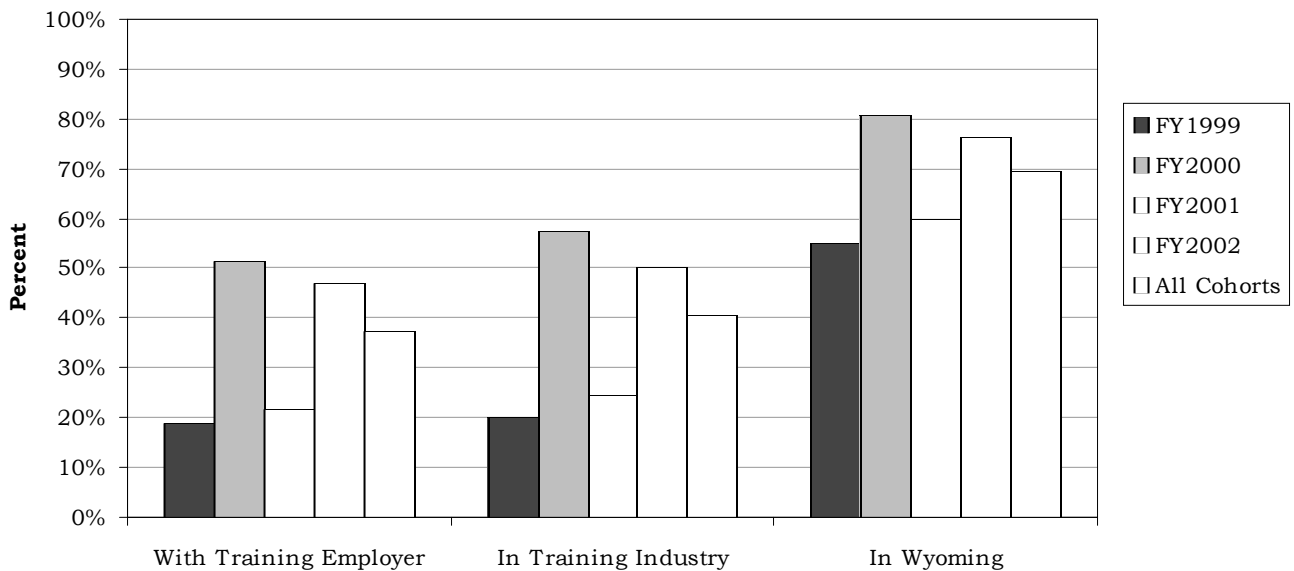


Figure 9: Workforce Development Training Fund (WDTF) Trainees' Wyoming Labor Market Activity Three Years After Training, Fiscal Year 1999 (FY1999) to FY2001

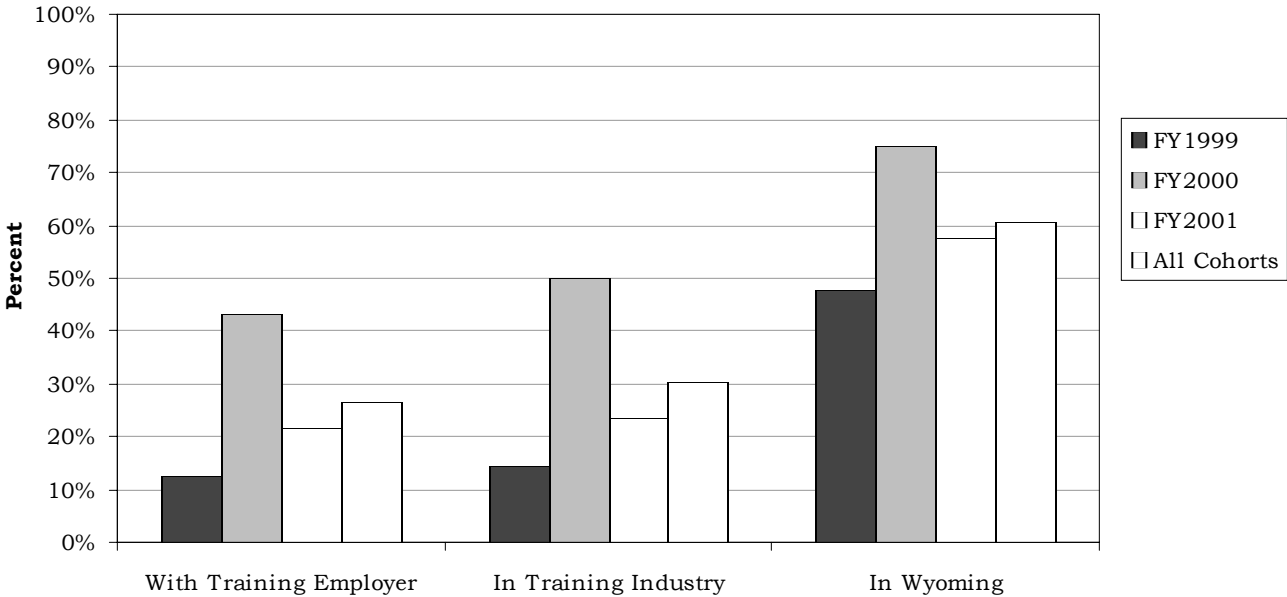


Figure 10: Workforce Development Training Fund (WDTF) Trainees' Wyoming Labor Market Activity Four Years After Training, Fiscal Year 1999 (FY1999) and FY2000

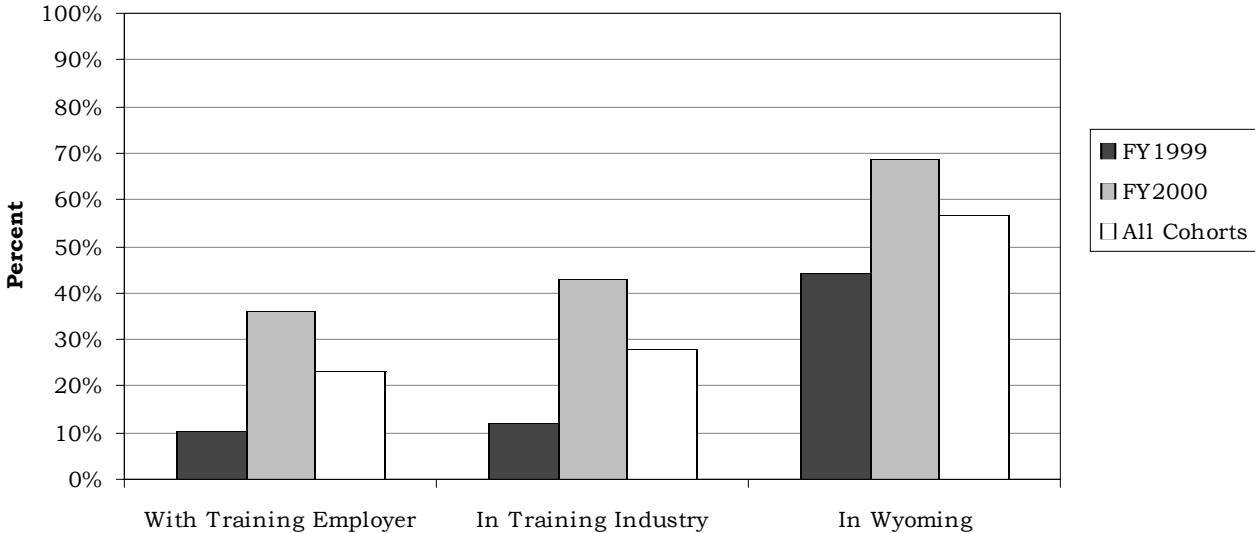
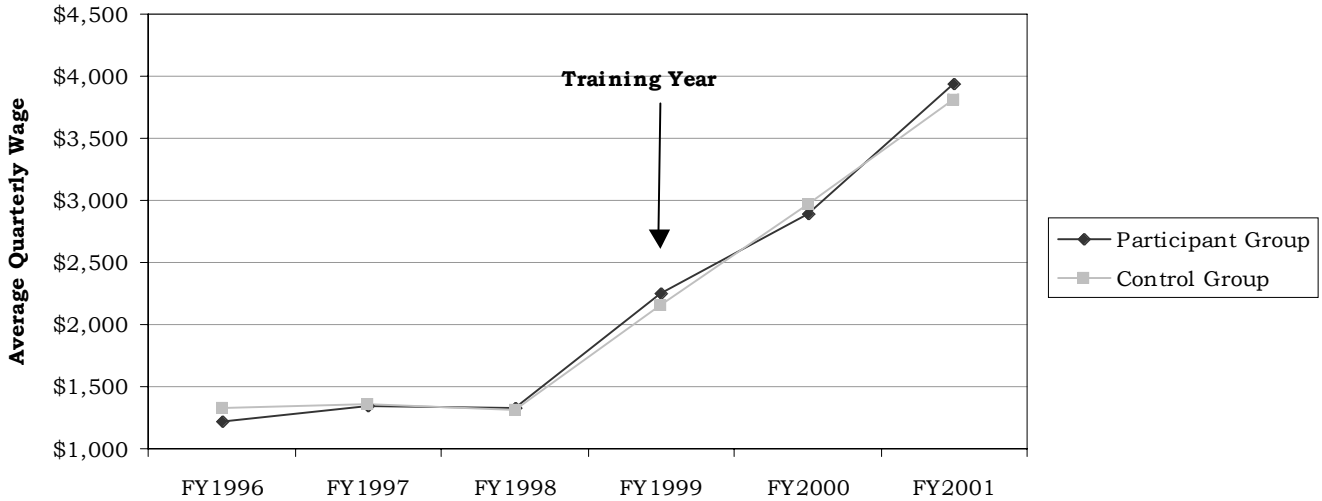
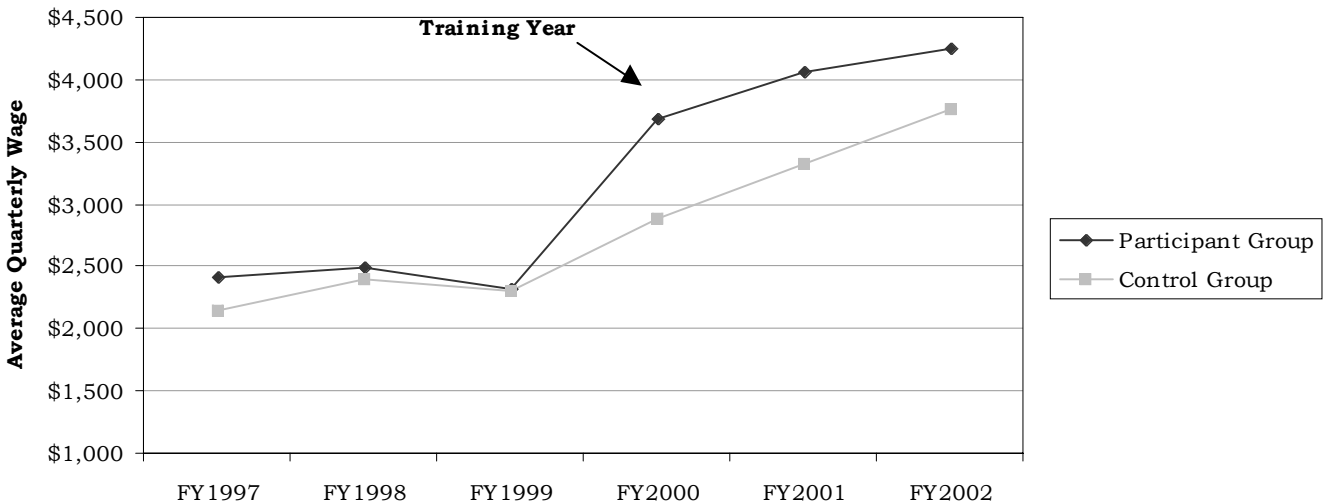


Figure 11: Workforce Development Training Fund Participant and Control Group Analysis, Lowest Three Wage Quintiles Prior to Training, Fiscal Year 1999 (FY1999)



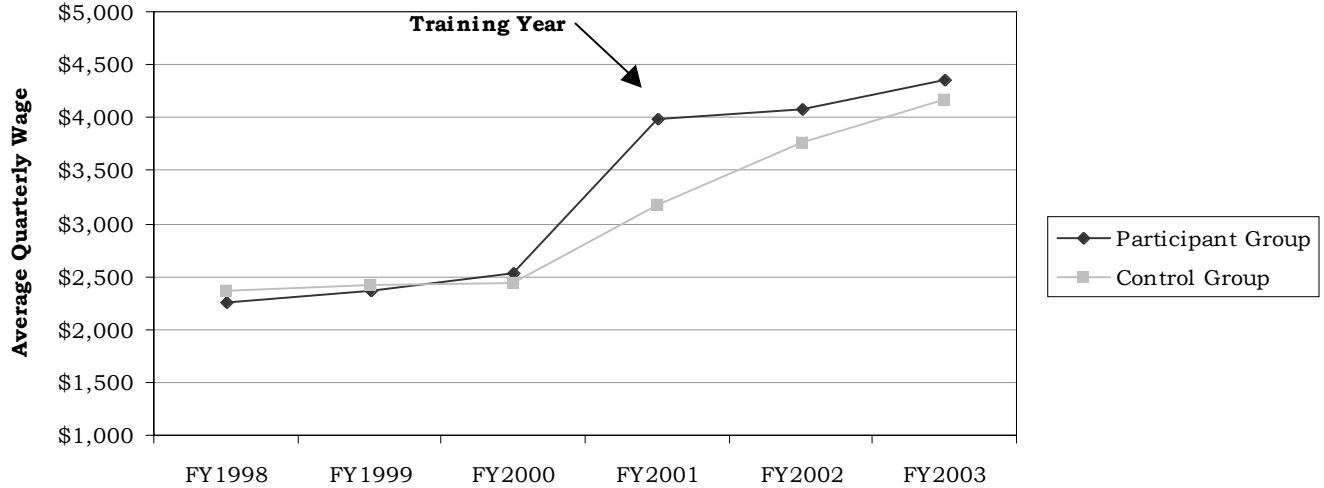
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 12: Workforce Development Training Fund Participant and Control Group Analysis, Lowest Three Wage Quintiles Prior to Training, Fiscal Year 2000 (FY2000)



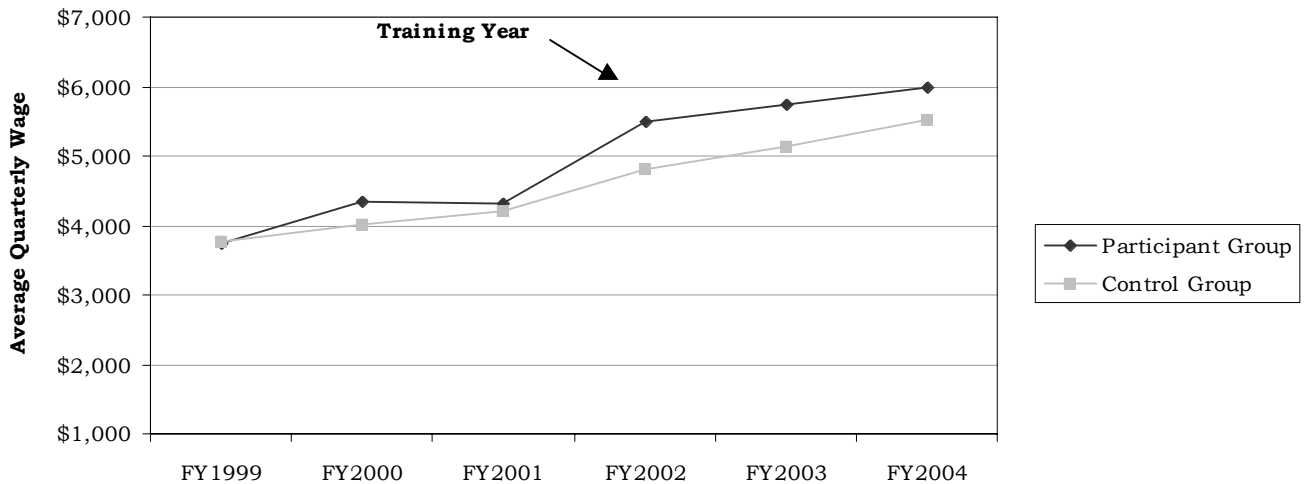
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 13: Workforce Development Training Fund Participant and Control Group Analysis, Lowest Three Wage Quintiles Prior to Training, Fiscal Year 2001 (FY2001)



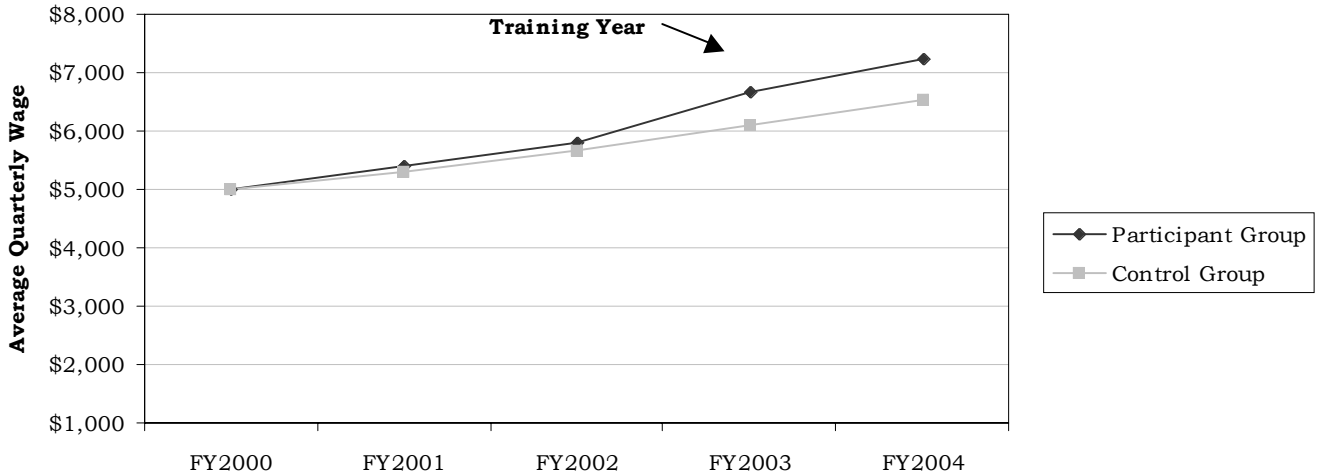
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 14: Workforce Development Training Fund Participant and Control Group Analysis, Lowest Three Wage Quintiles Prior to Training, Fiscal Year 2002 (FY2002)



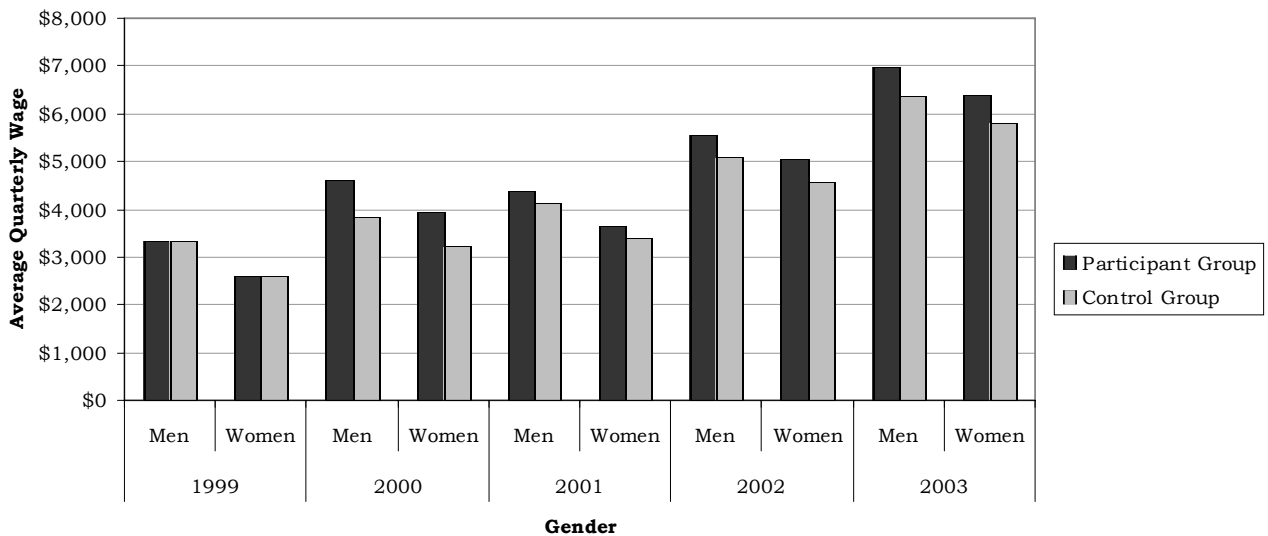
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 15: Workforce Development Training Fund Participant and Control Group Analysis, Lowest Three Wage Quintiles Prior to Training, Fiscal Year 2003 (FY2003)



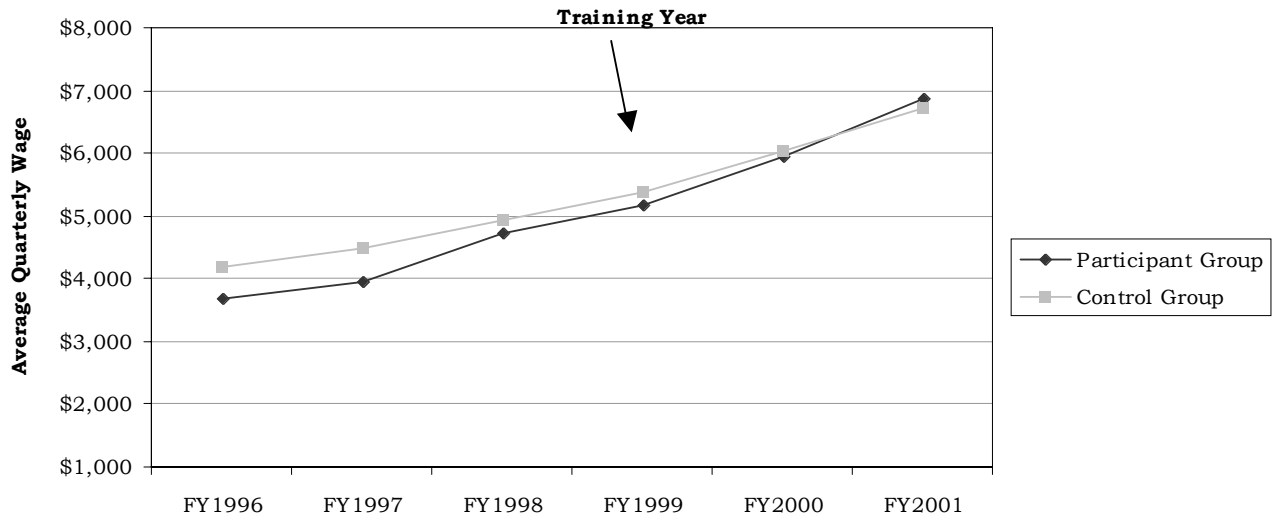
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 16: Predicted Average Quarterly Wage^a One Year After Workforce Development Training Fund (WDTF) Training or Control Group Random End Year Assignment: Lowest Three Wage Quintiles Prior to Training, Fiscal Year 1999 (FY1999) to FY2003



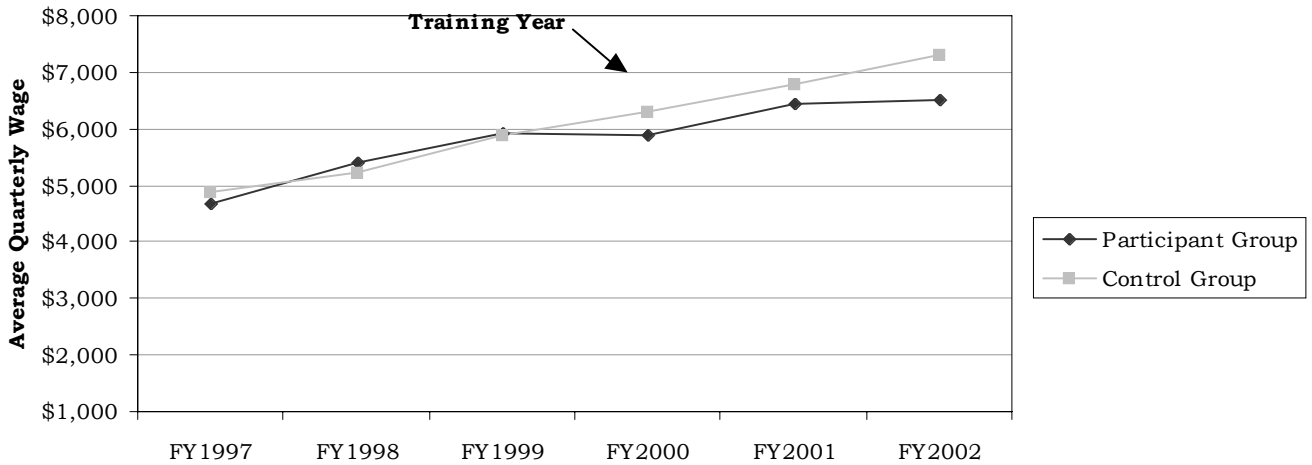
^aPredicted average quarterly wages were derived from Ordinary Least Squares regression techniques. Models control for age, gender, prior wages, and prior primary industry. For similar analysis see Harris, M. (2002 June). Measuring the impact of Wyoming's Workforce Development Training Fund: Part two. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a1.htm>

Figure 17: Workforce Development Training Fund Participant and Control Group Analysis: Highest Two Wage Quintiles Prior to Training, Fiscal Year 1999 (FY1999)



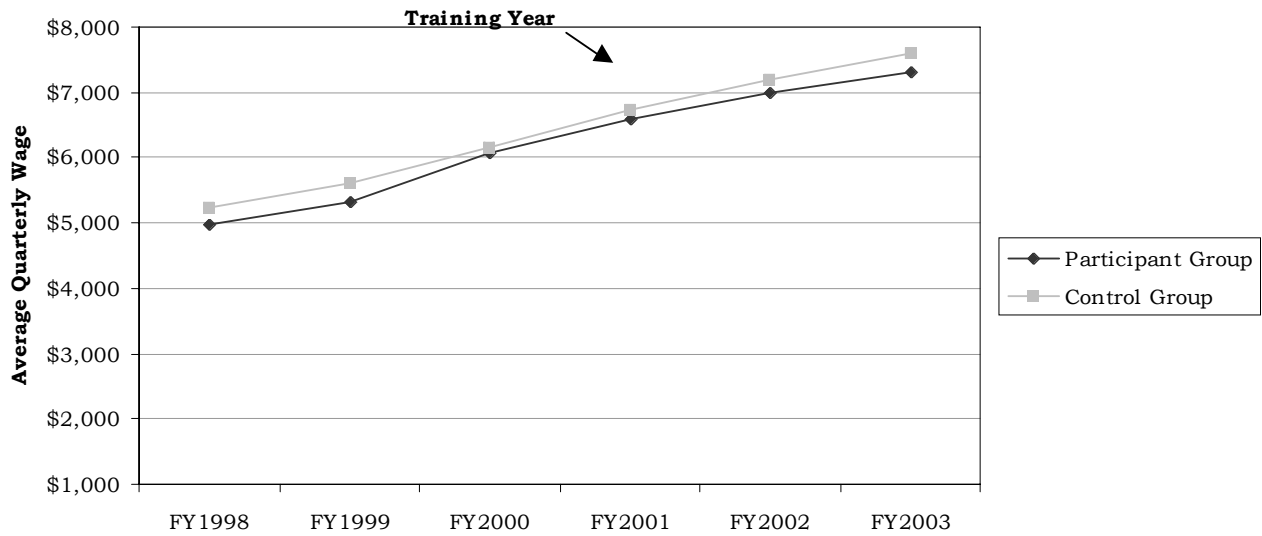
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 18: Workforce Development Training Fund Participant and Control Group Analysis, Highest Two Wage Quintiles Prior to Training, Fiscal Year 2000 (FY2000)



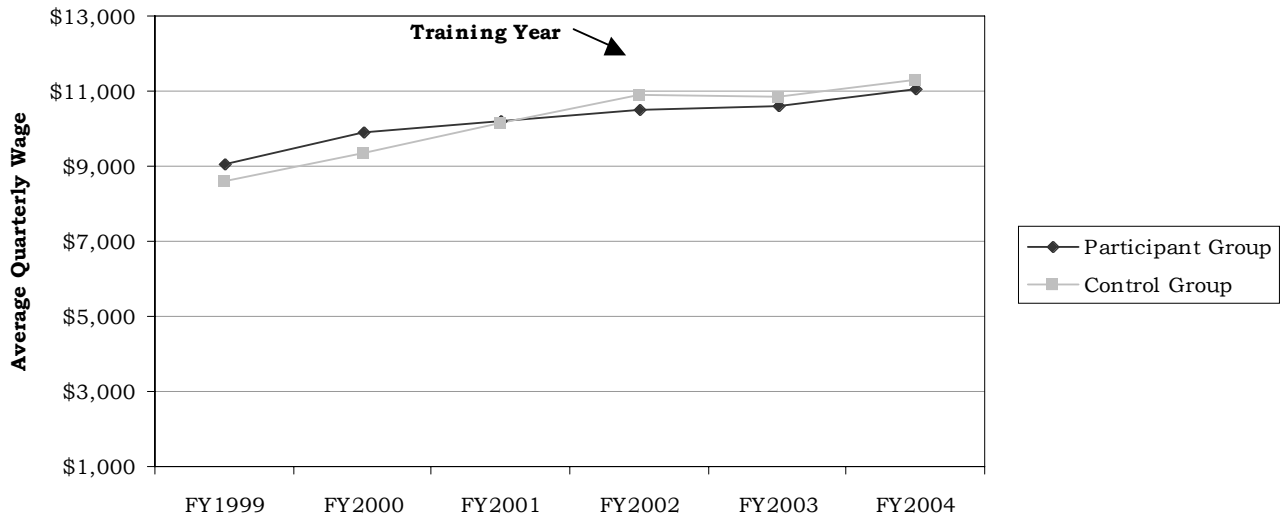
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 19: Workforce Development Training Fund Participant and Control Group Analysis: Highest Two Wage Quintiles Prior to Training, Fiscal Year 2001 (FY2001)



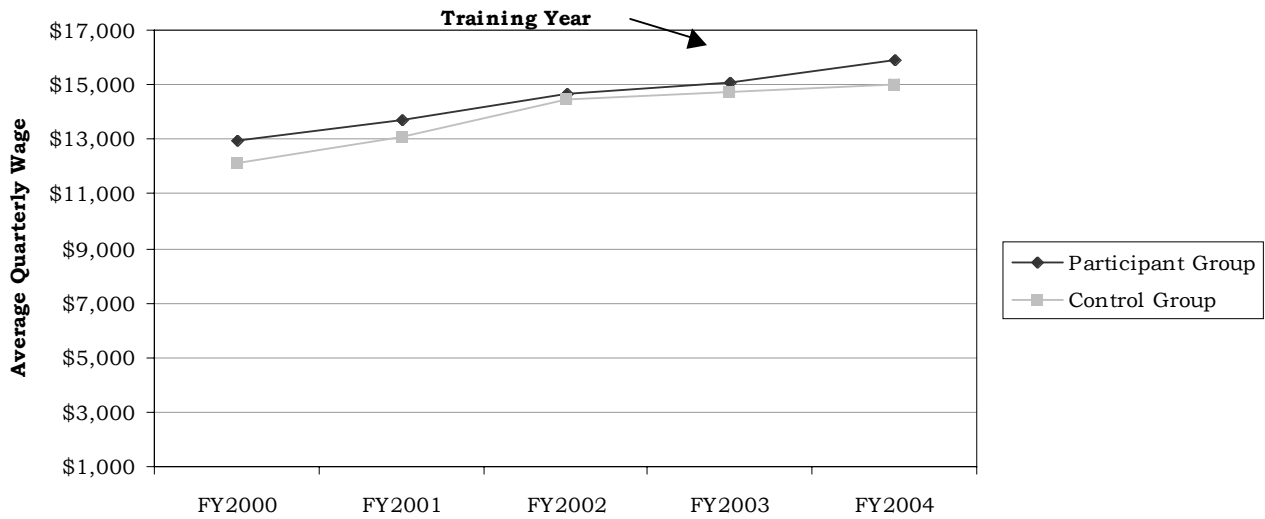
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 20: Workforce Development Training Fund Participant and Control Group Analysis: Highest Two Wage Quintiles Prior to Training, Fiscal Year 2002 (FY2002)



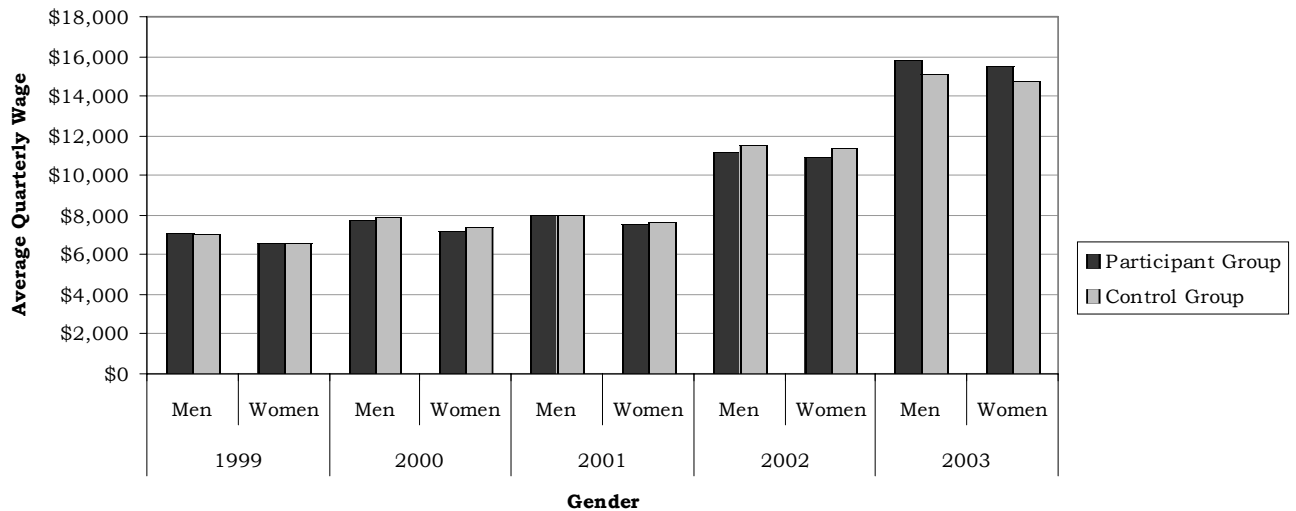
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 21: Workforce Development Training Fund Participant and Control Group Analysis: Highest Two Wage Quintiles Prior to Training, Fiscal Year 2003 (FY2003)



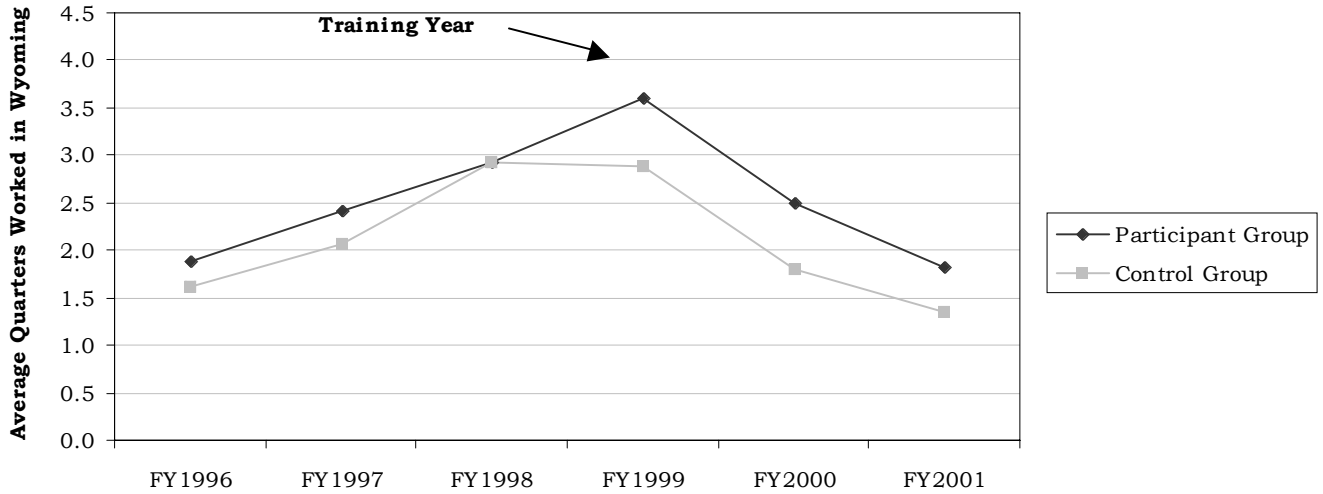
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 22: Predicted Average Quarterly Wage^a One Year After Workforce Development Training Fund (WDTF) Training or Control Group Random End Year Assignment, Highest Two Wage Quintiles Prior to Training, Fiscal Year 1999 (FY1999) to FY2003



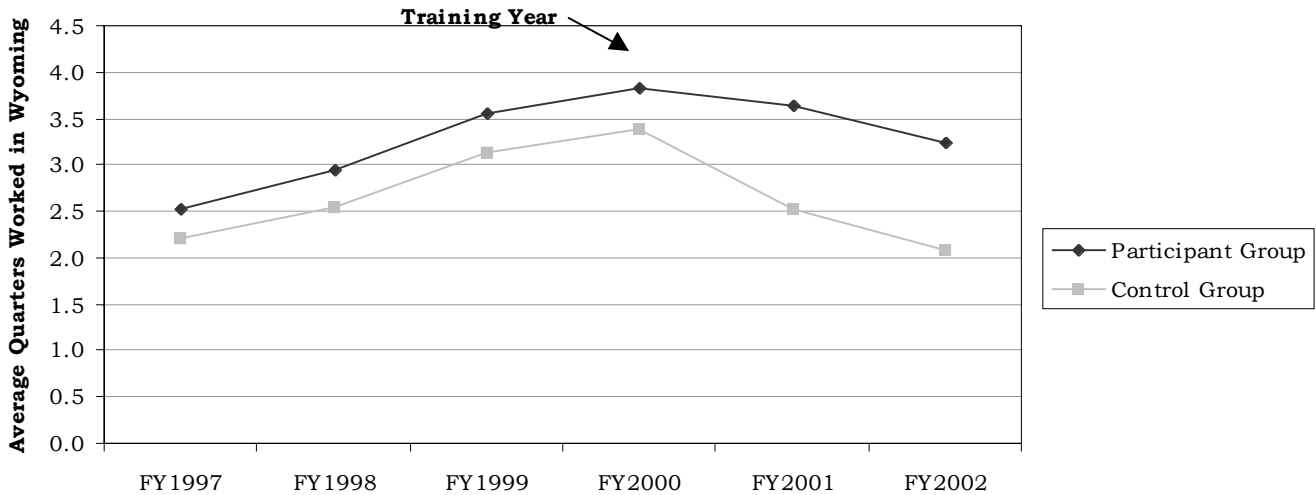
^aPredicted average quarterly wages were derived from Ordinary Least Squares regression techniques. Models control for age, gender, prior wages, and prior primary industry. For similar analysis see Harris, M. (2002, June). Measuring the impact of Wyoming's Workforce Development Training Fund: Part Two. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 23: Workforce Development Training Fund Participant and Control Group Analysis, Lowest Three Wage Quintiles Prior to Training, Fiscal Year 1999 (FY1999)



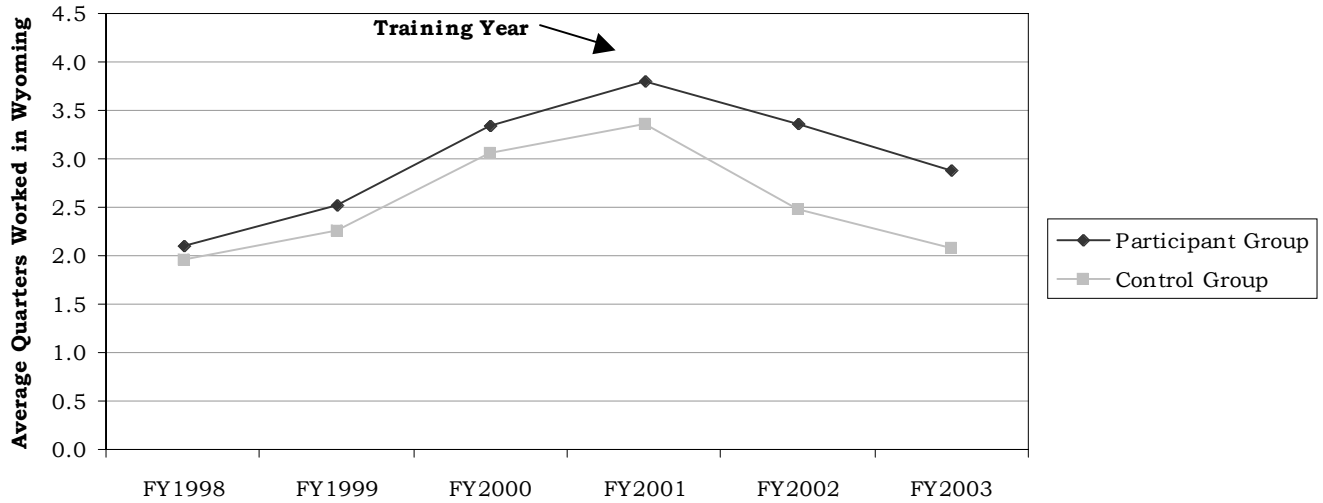
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 24: Workforce Development Training Fund Participant and Control Group Analysis, Lowest Three Wage Quintiles Prior to Training, Fiscal Year 2000 (FY2000)



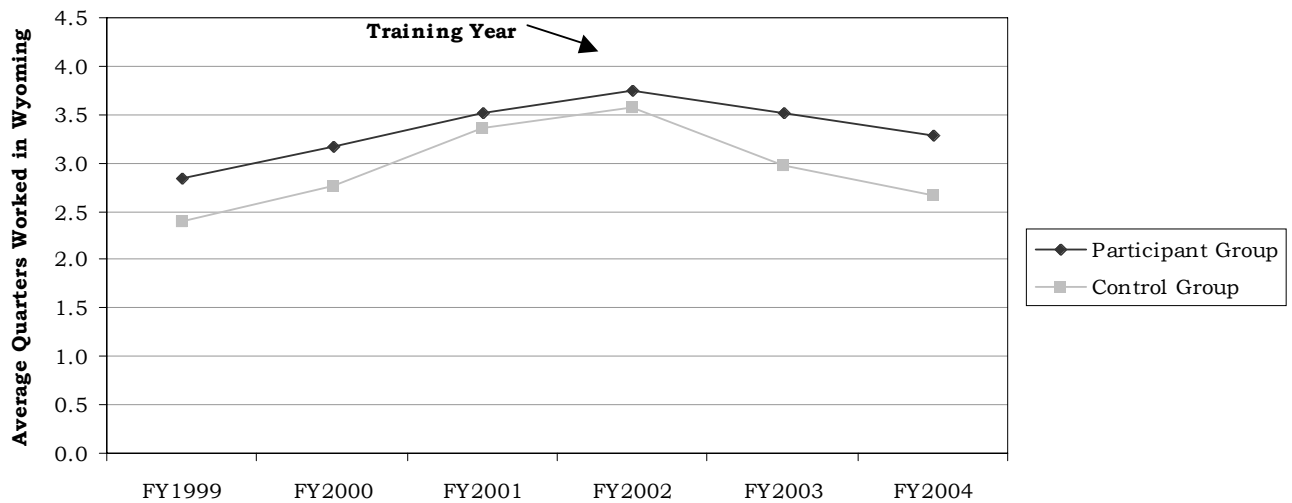
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 25: Workforce Development Training Fund Participant and Control Group Analysis, Lowest Three Wage Quintiles Prior to Training, Fiscal Year 2001 (FY2001)



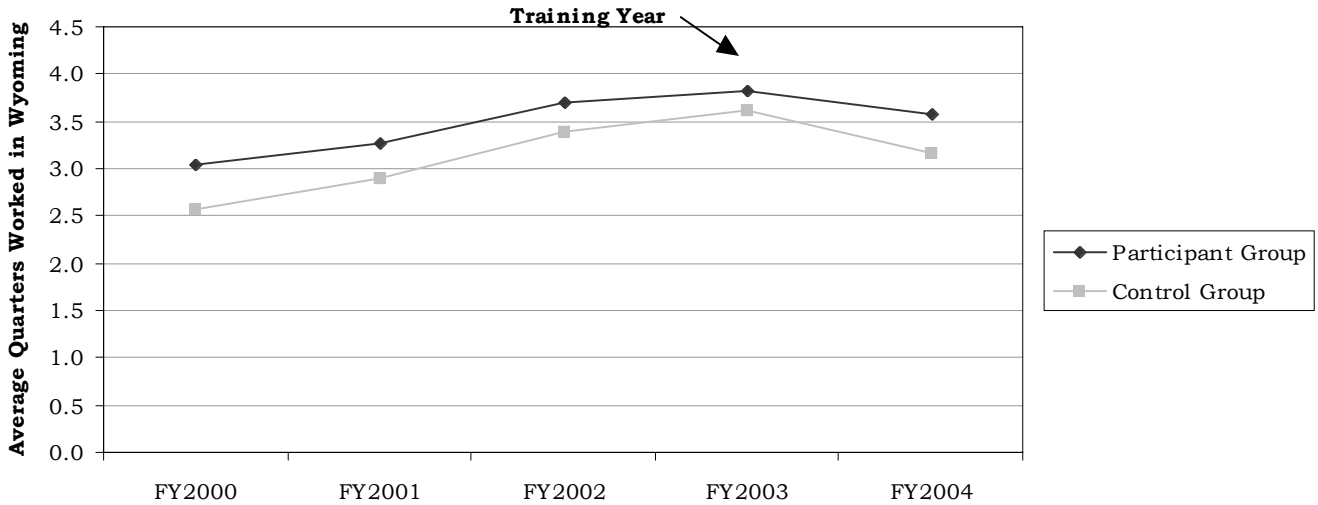
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 26: Workforce Development Training Fund Participant and Control Group Analysis, Lowest Three Wage Quintiles Prior to Training, Fiscal Year 2002 (FY2002)



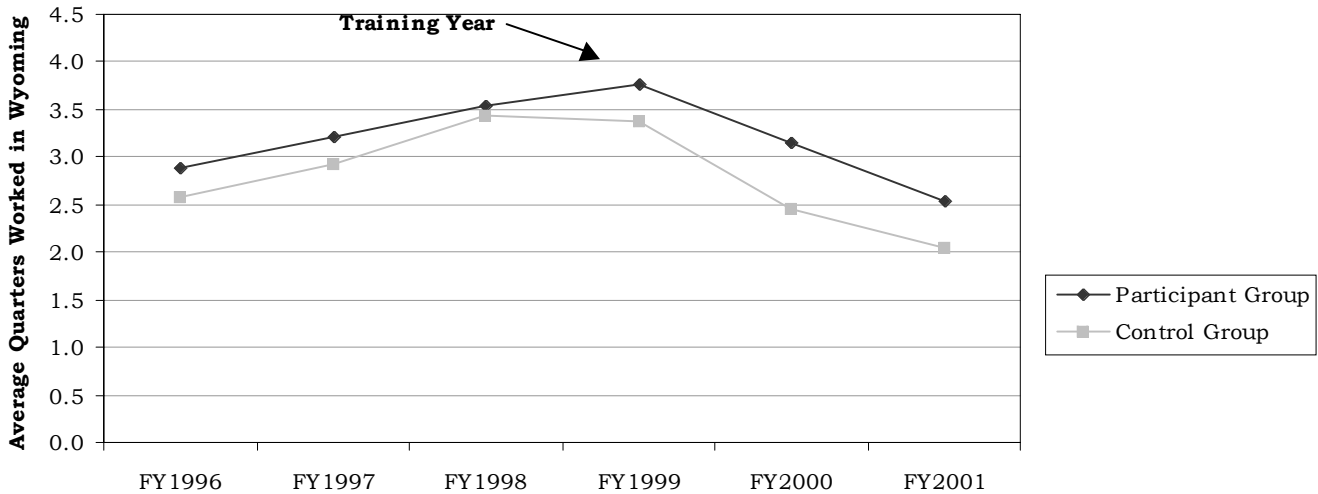
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 27: Workforce Development Training Fund Participant and Control Group Analysis, Lowest Three Wage Quintiles Prior to Training, Fiscal Year 2003 (FY2003)



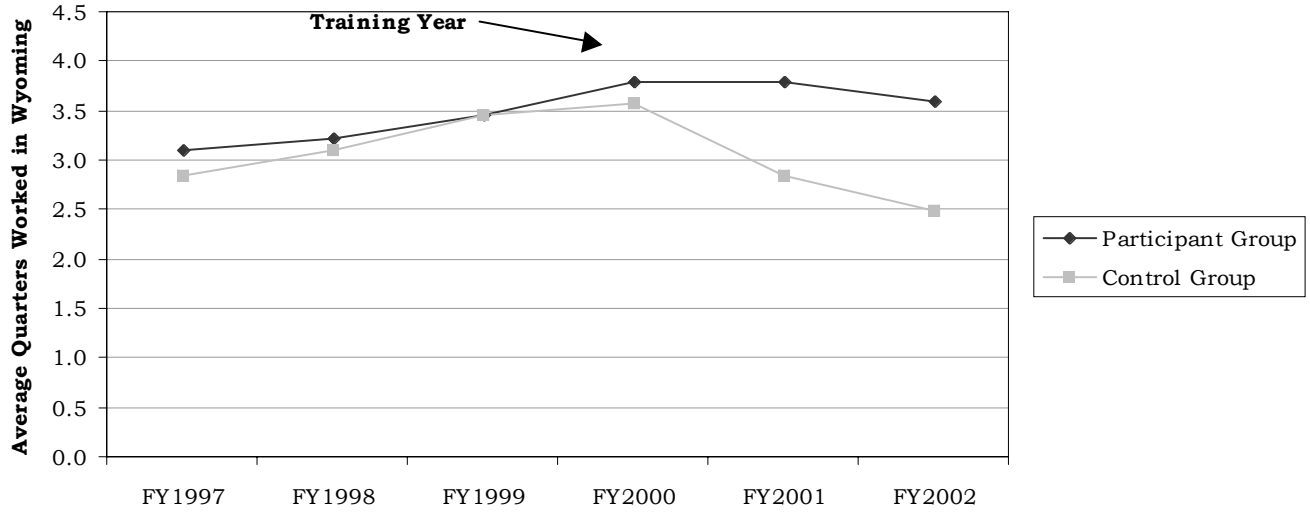
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 28: Workforce Development Training Fund Participant and Control Group Analysis: Highest Two Wage Quintiles Prior to Training, Fiscal Year 1999 (FY1999)



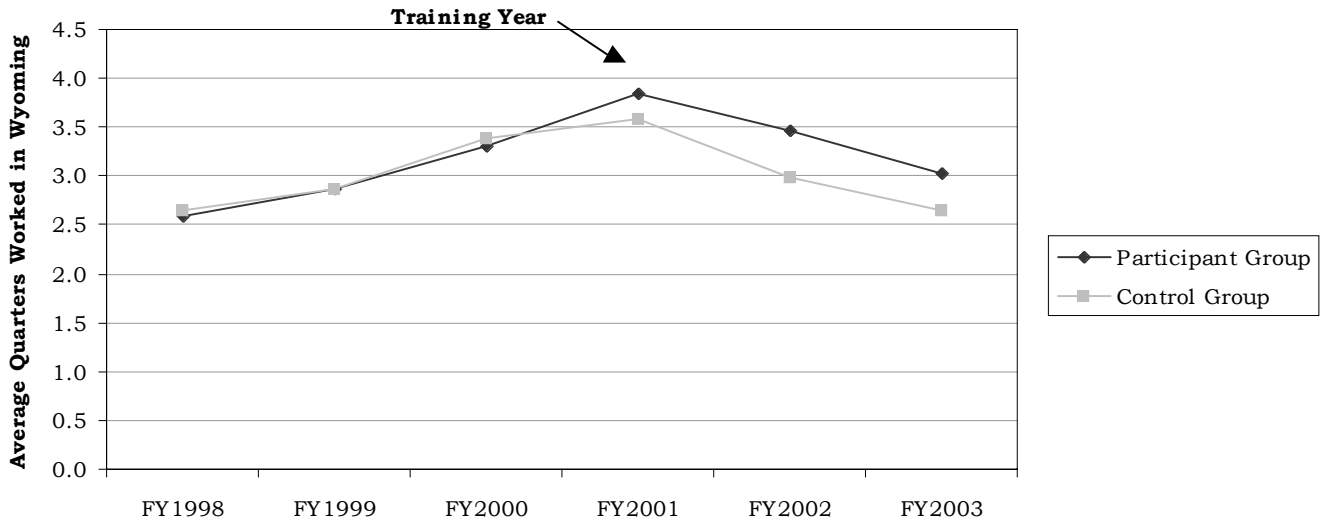
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 29: Workforce Development Training Fund Participant and Control Group Analysis, Highest Two Wage Quintiles Prior to Training, Fiscal Year 2000 (FY2000)



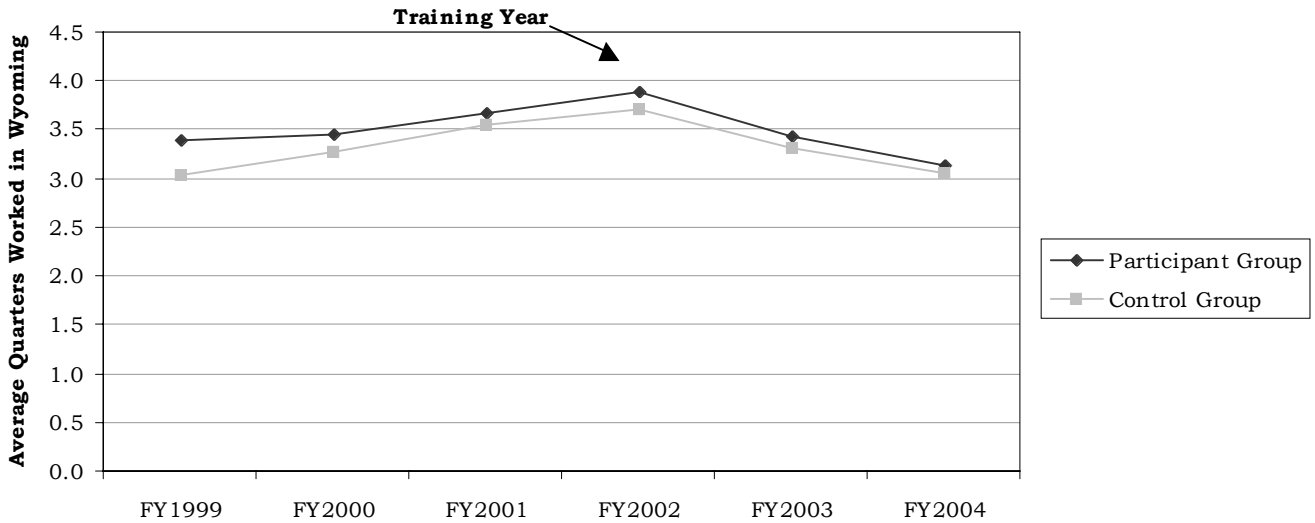
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. Wyoming Labor Force Trends. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 30: Workforce Development Training Fund Participant and Control Group Analysis: Highest Two Wage Quintiles Prior to Training, Fiscal Year 2001 (FY2001)



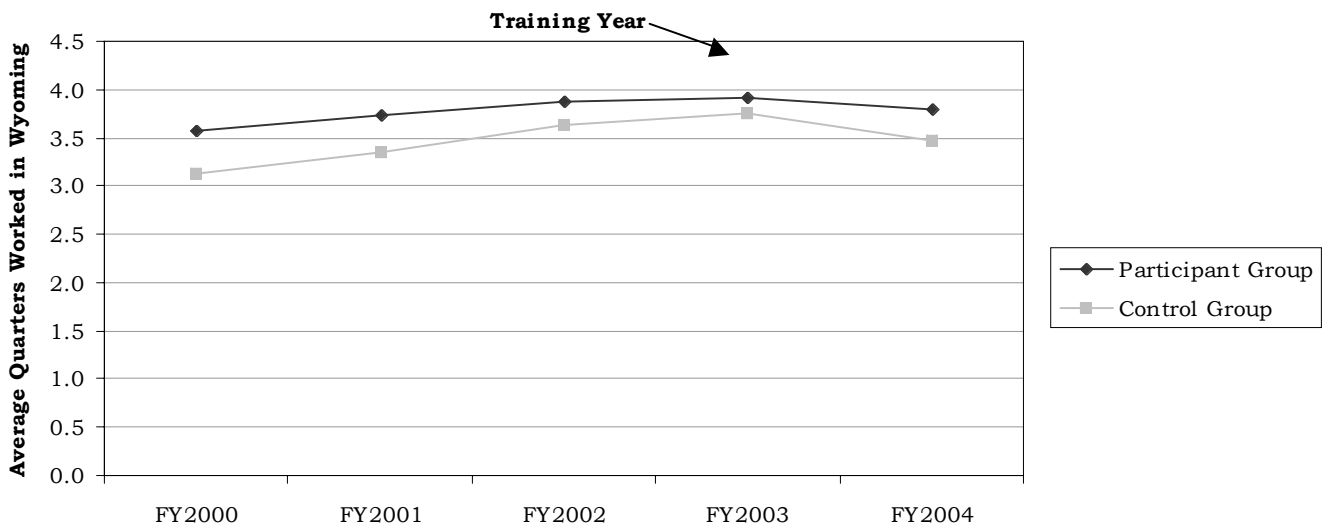
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. Wyoming Labor Force Trends. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 31: Workforce Development Training Fund Participant and Control Group Analysis: Highest Two Wage Quintiles Prior to Training, Fiscal Year 2002 (FY2002)



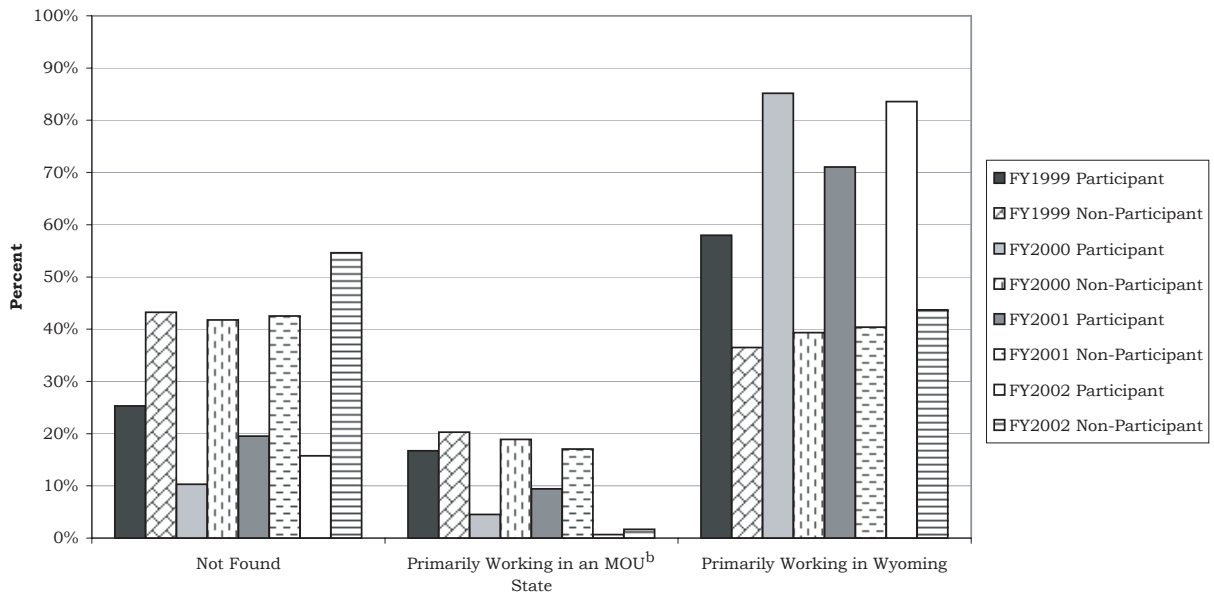
Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

Figure 32: Workforce Development Training Fund Participant and Control Group Analysis: Highest Two Wage Quintiles Prior to Training, Fiscal Year 2003 (FY2003)



Note: Participants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LMI/0602/a2.htm>

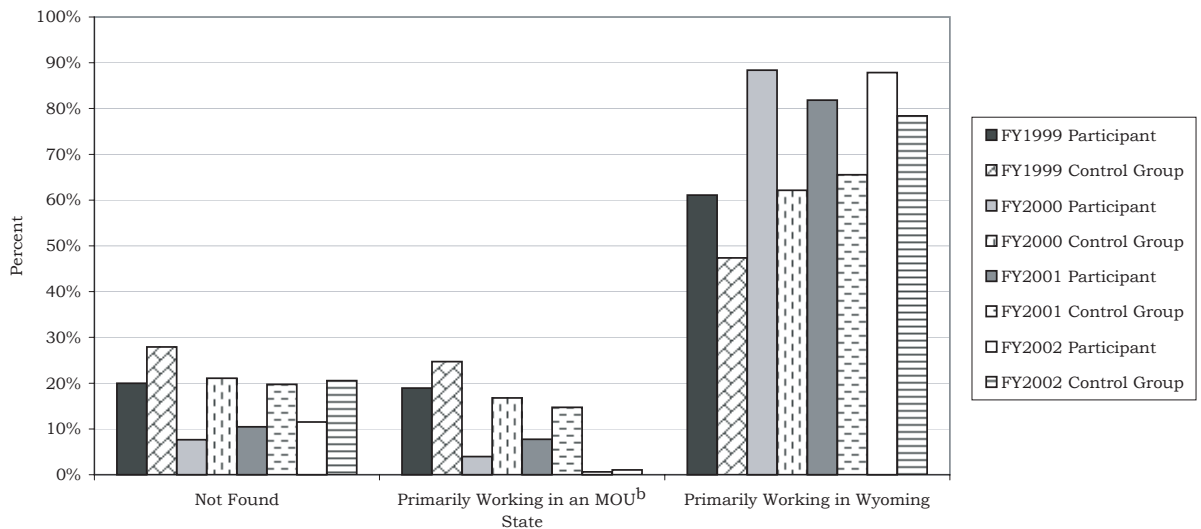
Figure 33: Workforce Development Training Fund Participant and Non-Participant^a Labor Market Outcomes During the Second Year After Training, Fiscal Year 1999 (FY1999) through FY2002



^aNon-participants are those individuals appearing in Wyoming Wage Records who did not receive WDTF training. Non-participants were assigned randomly to a fiscal year cohort but were not matched on any demographic or labor market characteristics.

^bMemorandum of Understanding States include Colorado, Idaho, Montana, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Utah.

Figure 34: Workforce Development Training Fund Participant and Control Group^a Labor Market Outcomes During the Second Year After Training, Fiscal Year 1999 (FY1999) through FY2002



^aParticipants and control group members were matched during the year prior to training using methodology derived from Glover, T. (2002, June). Compared to what? The purpose and method of control group selection. *Wyoming Labor Force Trends*. Retrieved January 13, 2005, from <http://doe.state.wy.us/LM1/0602/a2.htm>

^bMemorandum of Understanding States include Colorado, Idaho, Montana, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Utah.

