

Wyoming Department of Workforce Services
Research & Planning

Administrative Records as Strategic Assets
Quarterly Census of Employment &
Wages Data Matching
Tom Gallagher

Association for University Business and Economic Research
Fall Conference, October 2015

- ▶ Who We Are
- ▶ Brief History of Administrative Records Use in Wyoming
- ▶ Workforce Data Quality Initiative

OUR ORGANIZATION:

R&P is a separate, exclusively statistical entity.

WHAT WE DO:

R&P collects, analyzes, and publishes timely and accurate labor market information (LMI) meeting established statistical standards.

OUR CUSTOMERS:

LMI makes the labor market more efficient by providing the public and the public's representatives with the basis for informed decision making.



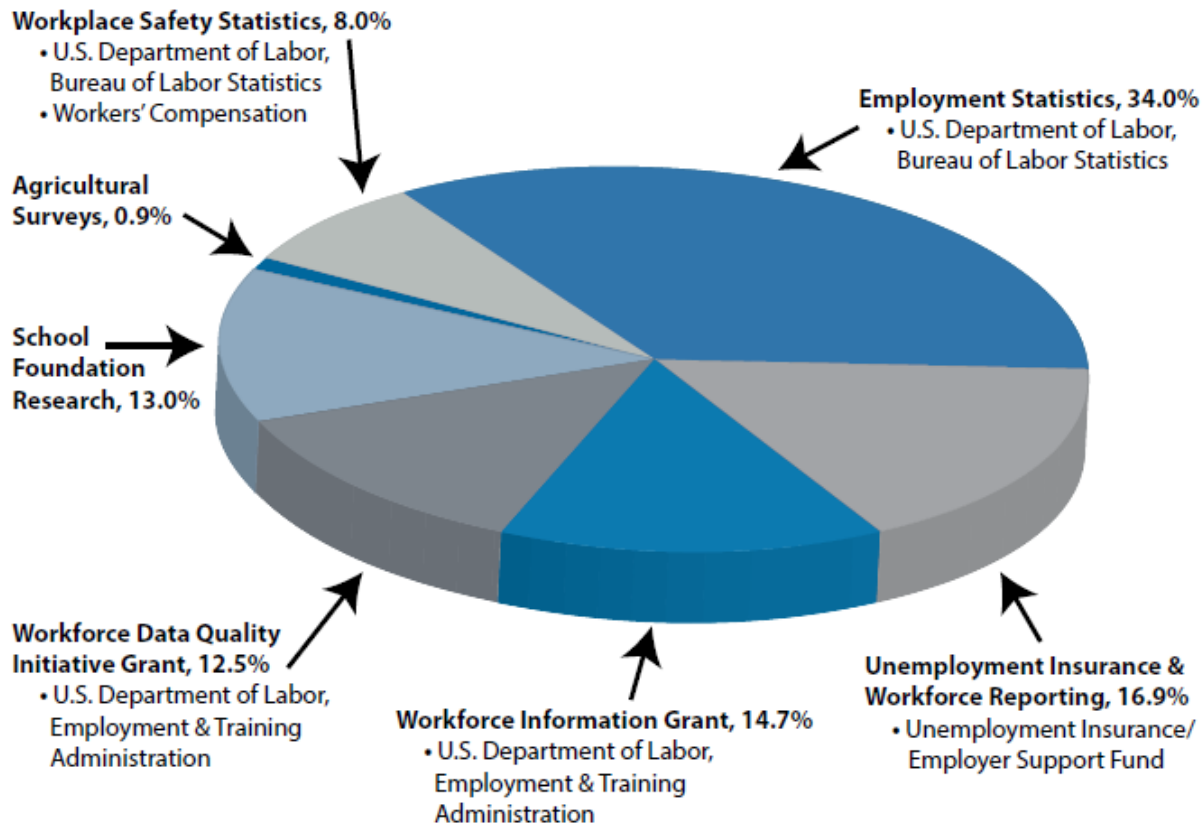
Research & Planning
Wyoming DWS

Research & Planning's Mission:

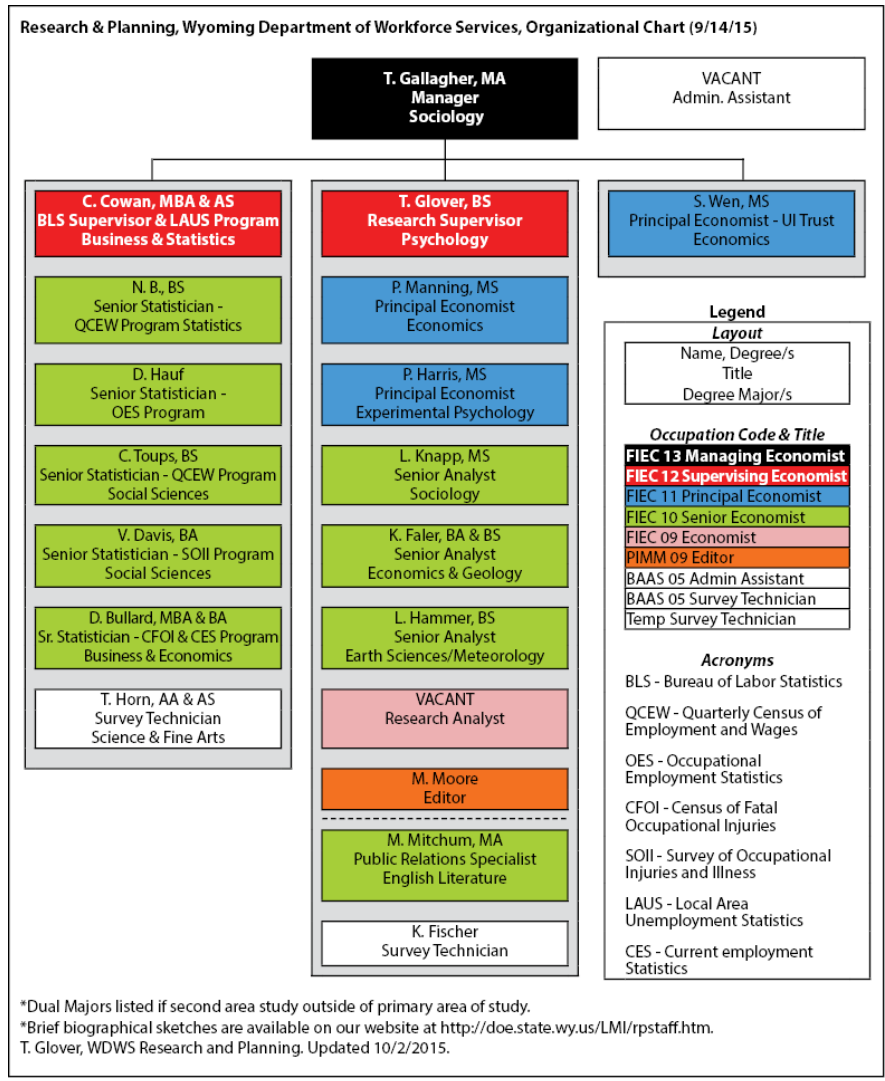
- ▶ To establish an empirically based comprehensive understanding of the labor market: its constituent elements, systems integrating its components, and subsequent outcomes.

How Research & Planning is Funded

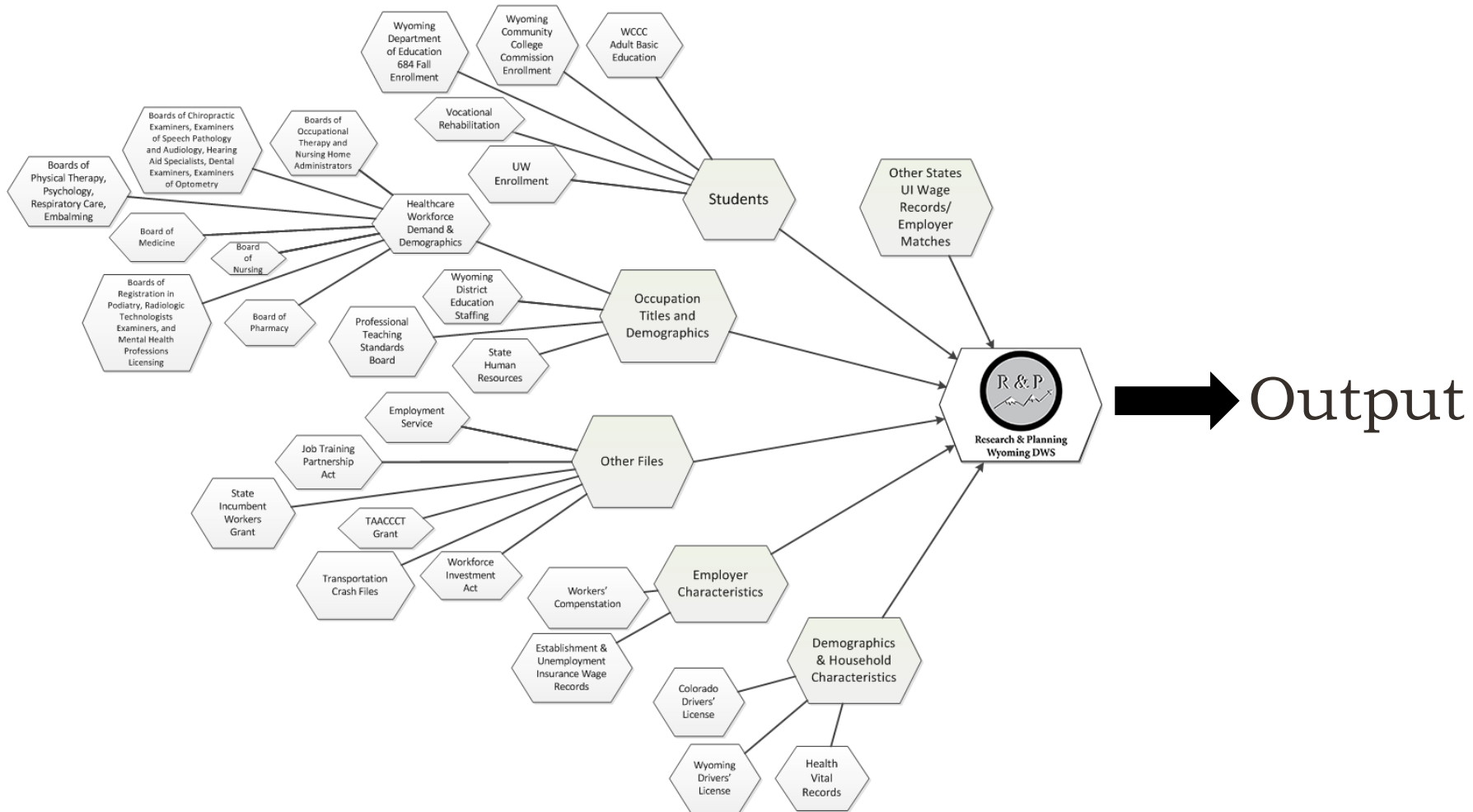
Funding Sources and Annual Budget: \$2 Million
Program Year 2015/Fiscal Year 2016



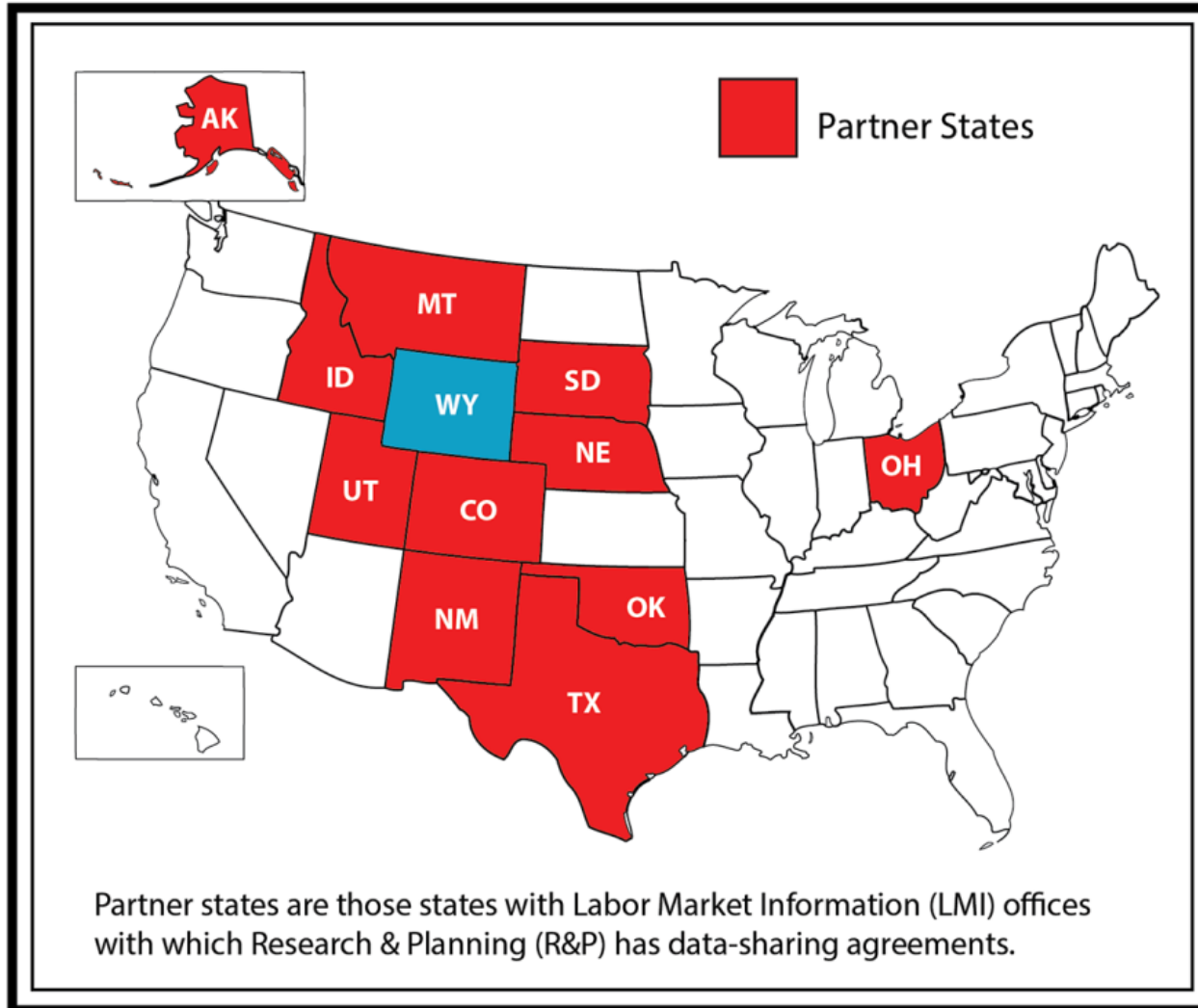
How Research & Planning is Organized



Research & Planning's Administrative Records Data Providers



Research & Planning's UI Wage Records & Employer Characteristic Sharing Agreements



Chronology of Selected R&P Publications For Linked Administrative Records

- ▶ *Tracking University of Wyoming Graduates Into the Wyoming Work-force*, September 1995
- ▶ *Under the Lamppost: Report to Workforce Development Council on Wyoming Institutions of Higher Education Program Completers*, November 1998
- ▶ *Workforce Development and Community College Outcomes; and When Does Training Pay Off? Wyoming Labor Force Trends*, July 2001
- ▶ *The Effects of a College Degree on Wages: The Different Experiences of Men and Women*, October 2001
- ▶ *Where Are They Now? Wyoming Community College Graduates' Labor Market Outcomes 2004*, August 2004
- ▶ *Cooking Up a Career: Examining the Outcomes of a High School Training Program in the Culinary Arts and Hospitality Management*, August 2005
- ▶ *Wyoming Community College Graduates' Labor Market Outcomes 2005: An Administrative Records Approach*, April 2006
- ▶ *Retention of Nurses in Wyoming: Part II*, August 2008
- ▶ *Job Attainment and Wages of Wyoming Vocational Rehabilitation Participants*, *Wyoming Labor Force Trends*, February 2010
- ▶ *Driven by Demographics: Examining Employee Exits in State Government*, *Wyoming Labor Force Trends*, December 2010
- ▶ ***Health Care Workforce Needs in Wyoming: Advancing the Study, Occasional Paper No. 6, Fall 2011***
- ▶ *Monitoring School District Human Resource Cost Pressures*, Fall 2013
- ▶ *Effects of Decline in Teen Drivers*, *Wyoming Labor Force Trends*, September 2014
- ▶ *Nurses Returning to School: Motivation and Job Satisfaction as a Buffer between Perceived Employer Discouragement and Time Constraints*, Fall 2014

Research & Planning's *Occasional Paper No. 6* Health Care Professions Linked To:

Table: Selected Wyoming Licensed Health Care Professions by Worker, Fall 2010*

Licensing Board and Occupation	Worked in Wyoming Fall 2010	
	N	Column %
Board of Occupational Therapy		
Occupational Therapists	225	1.3
State Board of Dental Examiners		
Dental Hygienists	328	1.9
Dentists	182	1.1
State Board of Pharmacy		
Pharmacists	470	2.7
Pharmacy Technicians	492	2.9
State Board of Physical Therapy		
Physical Therapists	312	1.8
State Board of Medicine		
Physician Assistants	103	0.6
Physicians	794	4.6
State Board of Mental Health		
Certified Addictions Professionals	40	0.2
Licensed Clinical Social Workers	288	1.7
Licensed Professional Counselors	487	2.8
Wyoming Board of Radiologic Technologists		
Radiologic Technologists*	757	4.4
Wyoming State Board of Respiratory Care		
Respiratory Therapists	250	1.5
Wyoming State Board of Nursing		
Advance Practice Nurses	227	1.3
Certified Nursing Assistants	5,127	29.8
Licensed Practical Nurses	795	4.6
Registered Nurses	4,698	27.3
All Other		
All Other Licensed Health Care Occupations	1,610	9.4
Total	17,185	100.0

Sources:
Wyoming state licensing boards.
Wyoming Unemployment Insurance tax records.

*Excludes federal employees. As of May 2010, there were 63 physicians and 265 nurses working as federal employees in Wyoming. Source: Occupational Employment Statistics program files.

*Fall = July through September.

- ▶ QCEW/UI Account Name
+
- ▶ Links to other states
+
- ▶ Drivers' License files
+
- ▶ UI Wage Records
=
- ▶ 1. Wage Progression
- ▶ 2. Multiple job holding earnings
- ▶ 3. Commuting intra- & inter-state employment
- ▶ 4. Turnover/Retention
- ▶ 5. Demographics/replacement need

Research & Planning's USDOL Workforce Data Quality Initiative Grant Activity

▶ **WDQI Purpose**

- ▶ States enable their workforce systems to be linked to existing education data systems

▶ **Goals**

- ▶ Use longitudinal data to evaluate the performance of federally and State-supported education and job training programs
- ▶ Provide user-friendly information to consumers to help them select the education and training programs that best suit their needs
- ▶ Enhance knowledge about the workforce system and the impact of State workforce development programs

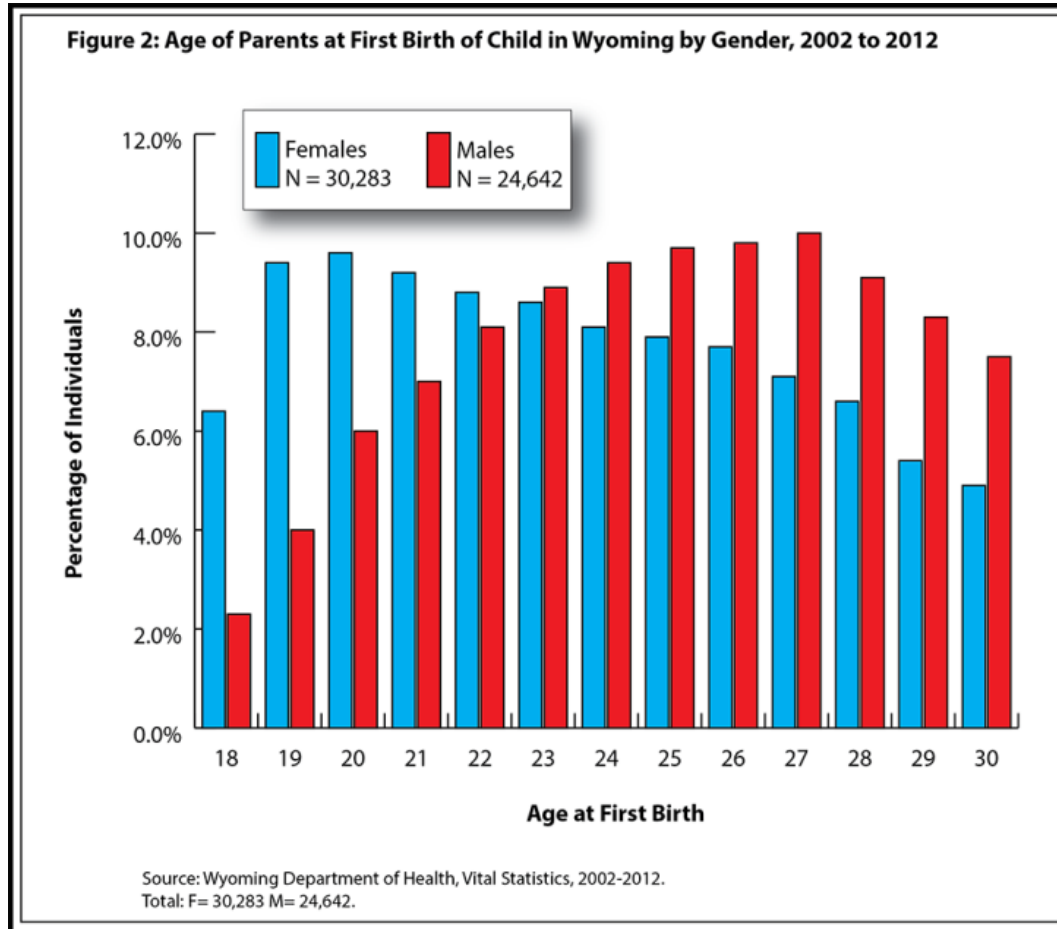
Source: U.S. Department of Labor Employment and Training, Notice of Availability of Funds and Solicitation for WDQI Grant, SGA-DFA-PY-12-07

Research & Planning's USDOL Workforce Data Quality Initiative Grant Activity

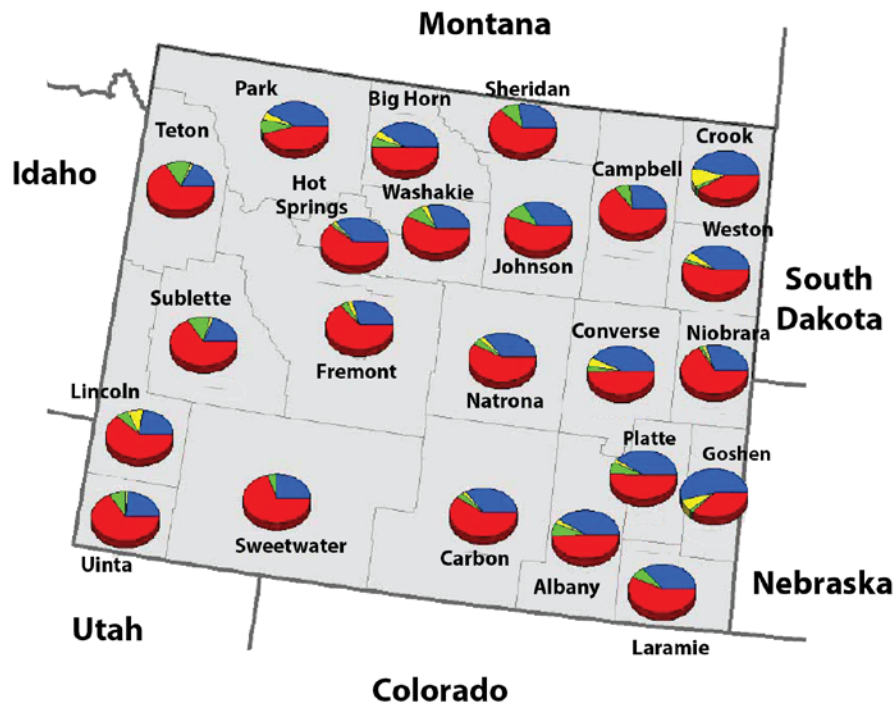
- ▶ **Pre-WDQI**
 - ▶ Intermittent Access to selected student records
- ▶ **Post-WDQI**
 - ▶ Comprehensive, continuous access to student records
- ▶ **Assembling the Building Blocks**
- ▶ **Developing Control/Comparison Groups**
- ▶ **Establishing Continuity in Direction**

Building Blocks for Education

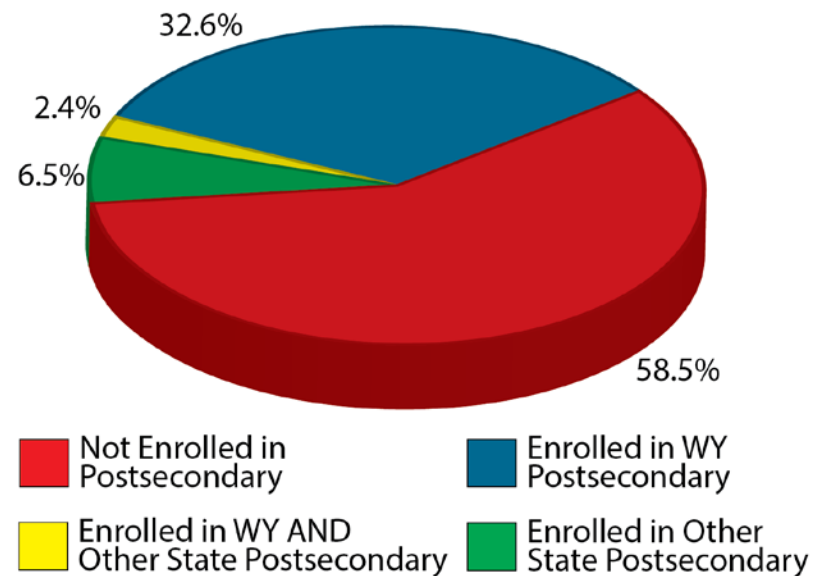
- Identify, link, & establish the rate of social choice



Wyoming's High School Class of 2010 Post-Secondary Enrollment: Fall 2010

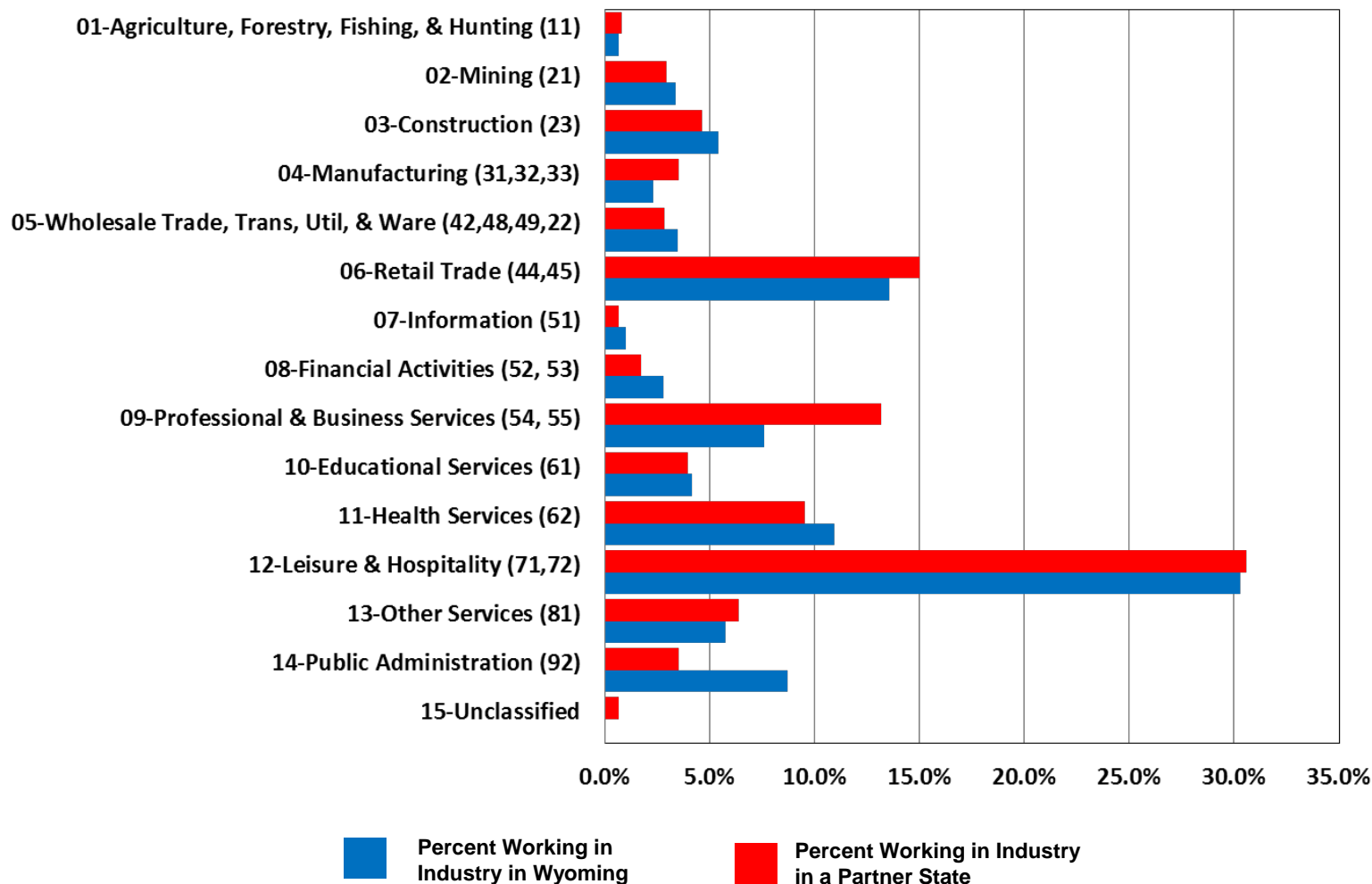


Wyoming State Average



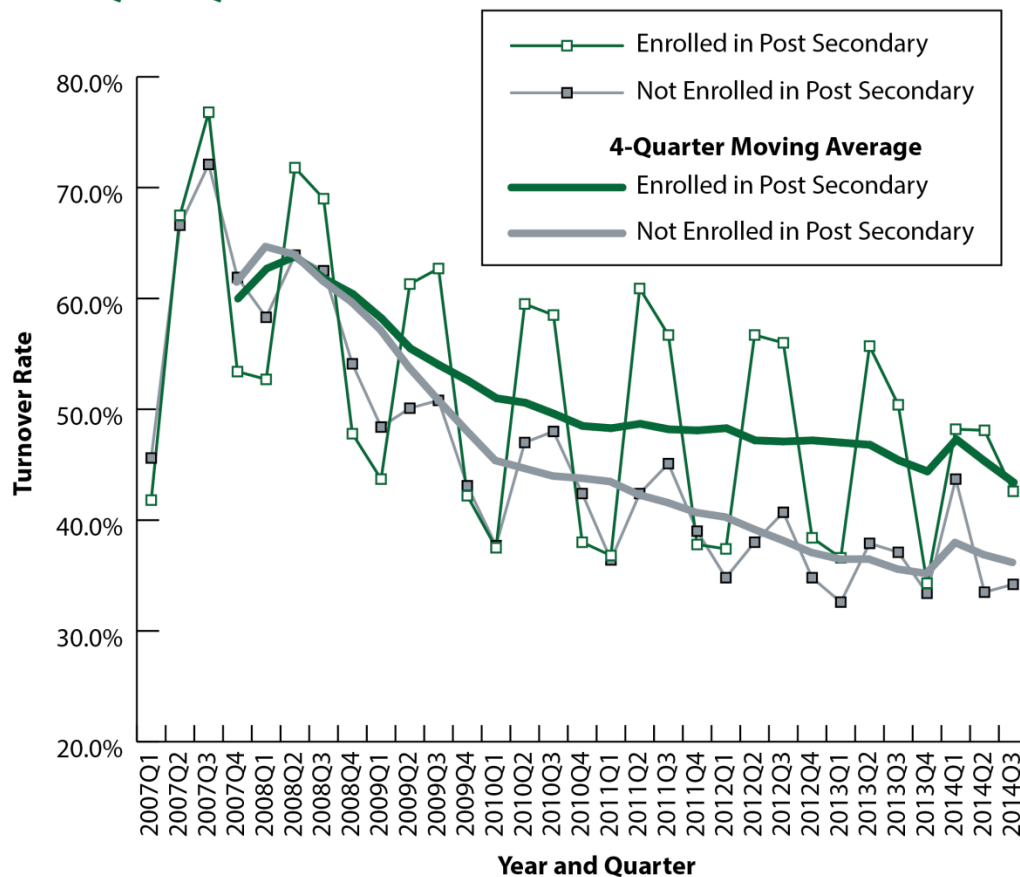
Source: Custom Extract from Workforce Data Quality Initiative (WDQI) Project.

Wyoming High School Class of 2010 Working in Wyoming or a Partner State by Primary Industry in 2013 (Four-Year Follow-Up)



WE Connect: Turnover Rate and Labor Market Outcomes for Wyoming High School Students

Figure 1: Turnover Rate for Wyoming High School Students from the Class of 2007 Working in Wyoming and Partner States by Postsecondary Enrollment Status, 2007Q1-2014Q3



Source: Custom Extract from Workforce Data Quality Initiative (WDQI) Project.

Table 1: Turnover Rate for Individuals Working in Wyoming at Any Time by Age Group and Calendar Quarter, 2014

	Q1	Q2	Q3	Q4
Less than 18	44.1%	68.2%	68.4%	53.1%
18 to 24	44.5%	55.6%	58.5%	47.7%
25 to 34	27.1%	32.6%	33.2%	30.9%
35 to 44	21.1%	24.6%	25.4%	23.4%
45 to 54	17.6%	20.7%	21.4%	19.6%
55+	15.1%	19.7%	18.5%	18.7%
Total	25.9%	34.1%	34.9%	30.5%

Source: Custom Extract from Workforce Data Quality Initiative (WDQI) Project.

Turnover Definitions

Hire

An individual who started working for an employer in the reference quarter.

Exit

Someone who left an employer at some point during the reference quarter.

Both

An individual who was hired by and left the same employer during the reference quarter.

Continuous

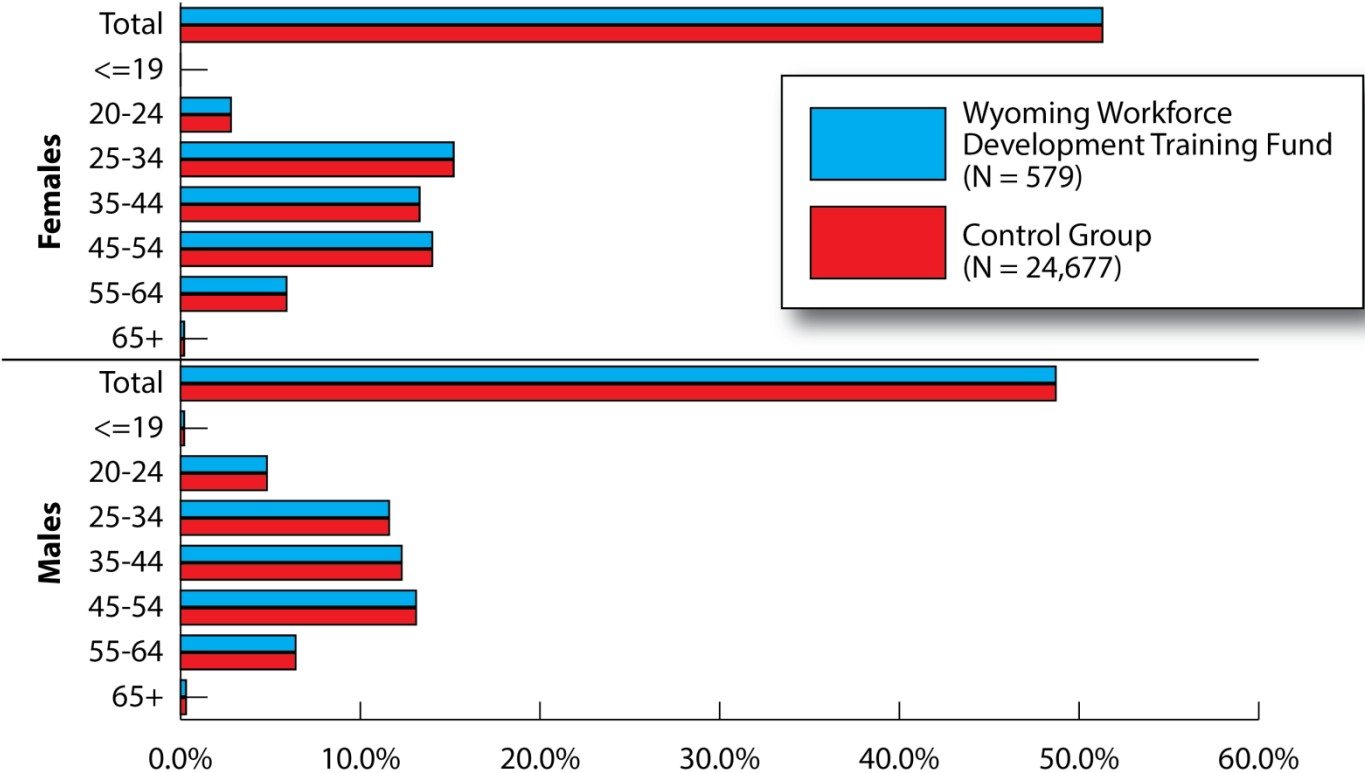
Individuals who were found with the same employer in the prior, reference, and subsequent quarters.

Turnover Rate

$$\frac{\text{Hires} + \text{Exits} + \text{Both}}{\text{Total (Hires} + \text{Exits} + \text{Both} + \text{Continuous)}}$$

Wyoming Incumbent Worker Training Program Evaluation Using a Comparison Group

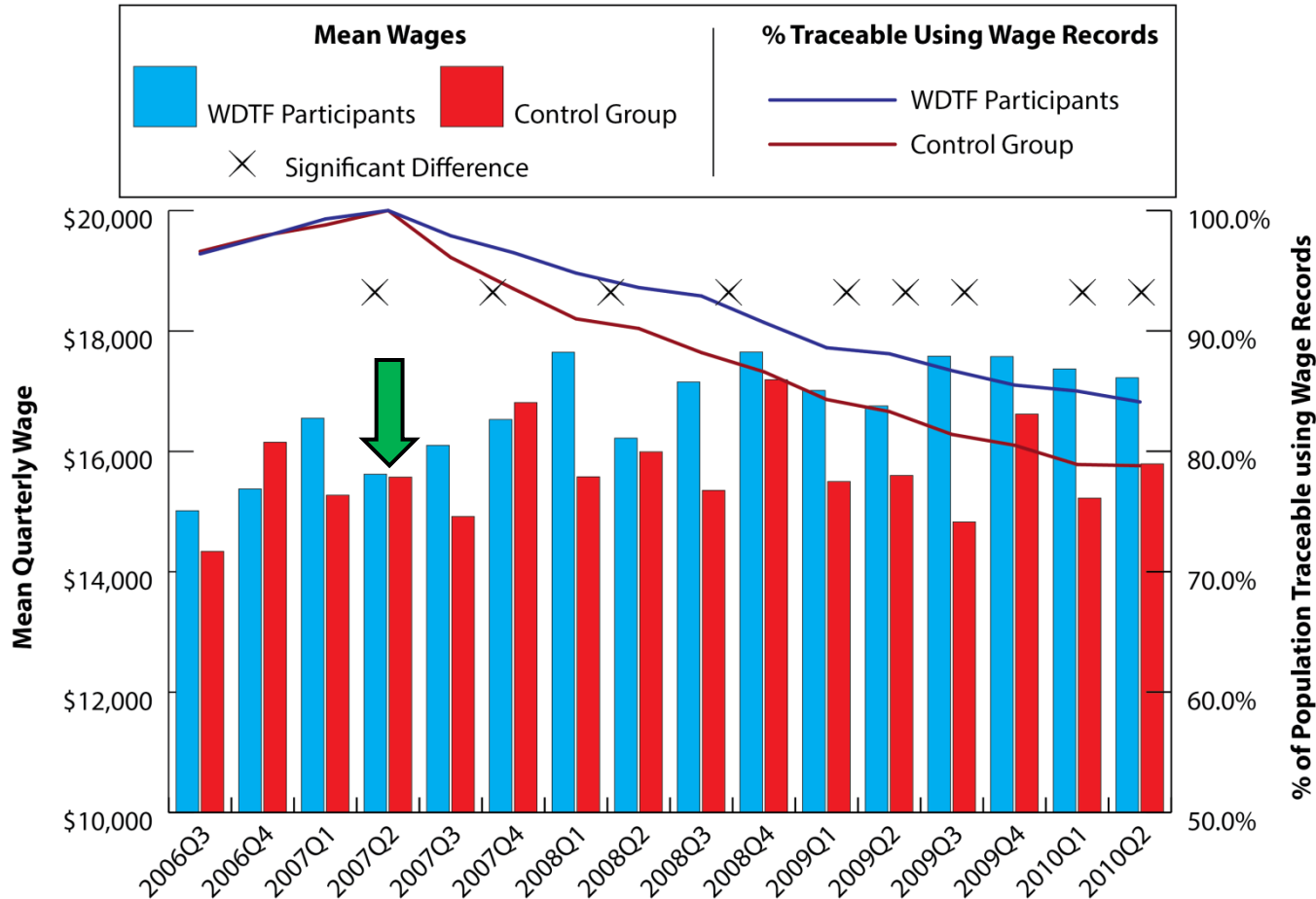
Figure 1a: Gender and Age Distribution of Wyoming Workforce Development Training Fund and Control Group, 2007Q2



- ▶ Other controlled dimensions
 - ▶ Distribution of quarters worked
 - ▶ Distribution of mean quarterly wage

State Incumbent Worker Training Program Evaluation Using a Comparison Group

Figure 2: Tracking the 2007Q2 Wyoming Workforce Development Training Fund (WDTF) Participants Through Time
 Comparing the Percent of Traceable Records and Mean Quarterly Wage of WDTF Participants to the Control Group



Wyoming's greatest success:

Workforce Data Quality Initiative Report No. 1 for Wyoming: School Attendance and Employment, 2006 to 2013, April 2015

Baseline Report, Longitudinal tracking of Wyoming high school students into the markets & postsecondary attendance in 12 states

Monographs

Where They Work and What They Earn, 2015

High School Graduation, Participation in the Labor Market, Earnings, Employment, Industry, Interstate markets

Cost of Pursuing a Postsecondary Education, 2015

Opportunity Cost, Community Colleges and University of Wyoming, Attendance, Employment by Industry, Gender and Age Distribution

Work Experience and Earnings for Special Populations, 2015

Longitudinal tracking of students with special needs into postsecondary education and the markets of 12 states

Turnover Rate and Labor Market Outcomes, 2015

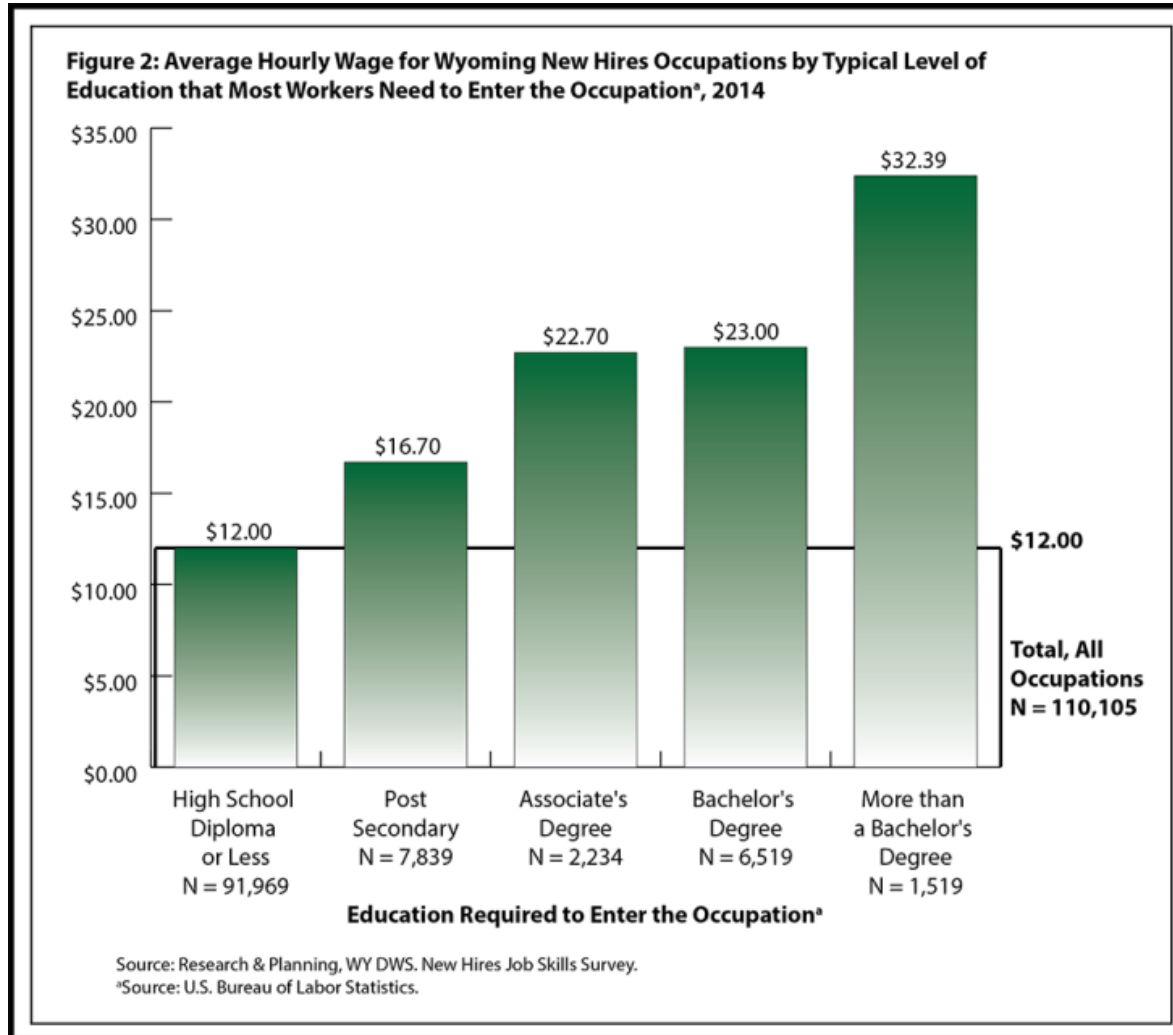
Employment turnover and post secondary school attendance by gender - tracking a cohort of 12th graders for seven years across 12 states

Where Do They Go to School?, 2015

Postsecondary education of Wyoming high school students, enrollment and degrees by state for the nation

► Enhancing Administrative Records with Survey Data

Average Hourly Wage for Wyoming New Hires Estimates by Typical Level of Education Most Workers Need to Enter the Occupation, 2014



Data-Related Challenge:
Balancing Competing Demand

Basic Research

- ▶ *Workforce Data Quality Initiative Report No. 1: School Attendance and Employment, 2006 to 2013*
- ▶ Developing the tabular and narrative descriptive longitudinal analysis focusing on young adulthood challenges of job and education choice, household formation, financing the job search, migration, industry progression across the business cycle and geography... And evaluating data quality from each source
- ▶ Developing interstate LMI and other relationships

Developing Building Blocks

- ▶ Shifting the analysis from the individual (wage record/ UI account) to the household as the unit of economic and social decision making
- ▶ Introducing hours worked to licensed occupations (e.g. nurses, physicians, teachers) and to the population of workers as a whole from Workers' Compensation tax files

Supporting WIOA and other workforce development planning and evaluation

- Identifying the prevalence and distribution of key service populations (e.g. single parent drop-outs)
- Conducting impact evaluations using quasi-experimental and other designs
- Documenting career pathways in selected industries and occupations (e.g. engineers)
- Responding to industrial dislocation in coal and oil and gas mining; re-employment of UI claimants
- Evaluating occupational projections
- Participating in workplace safety research State/NIOSH

Supporting higher education

- Outcomes reports and marketing tools
- Environmental scans
- Providing feedback on public investments in education, e.g. placement statistics for teaching, nursing, engineering graduates
- Hathaway Scholarship program evaluation

Questions?

Tom Gallagher, Manager
tom.gallagher@wyo.gov

Research & Planning
Wyoming Department
of Workforce Services
PO Box 2760
246 S. Center St.
Casper, WY 82601
(307) 473-3807



Research & Planning
Wyoming DWS

DWS-RESEARCHPLANNING@wyo.gov
<http://wyomingLMI.org>

