What’s Up at WICHE? An Update on WICHE’s Multistate Data Exchange

WICHE Commission Meeting
Spokane, WA ~ May 20, 2013

Presented by:
Brian T. Prescott
Director of Policy Research
Goals

1. To demonstrate some of the first results obtained from the data exchange project.
2. To focus on mobility, not traditional accountability/productivity.
3. To gather feedback on the presentation of data.

Overview

• A brief refresher concerning the data exchange
• Mobility into the workforce for all postsecondary degree earners
• Mobility into the workforce by field of study
• Postsecondary education and mobility into the workforce for the high school class of 2005
What is the data exchange? What are the questions? What data are being exchanged?

A BRIEF REFRESHER
A Statewide Longitudinal Data System

My State's Labor Force

Credential

My State's Postsecondary

My State's K-12
Economic Success Measures - Colorado

School Profile

University of Colorado Boulder

School Information

<table>
<thead>
<tr>
<th>Carnegie Classification:</th>
<th>Research Universities (Very High Research Activity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>Regent Drive at Broadway</td>
</tr>
<tr>
<td></td>
<td>Boulder CO, 80309-0017</td>
</tr>
<tr>
<td>Sector:</td>
<td>Public, 4-year or above</td>
</tr>
</tbody>
</table>

Three Most Popular Disclosable Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Median First-year Earnings</th>
<th>First-Year Earnings - Q1%</th>
<th>First-Year Earnings - Q9%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Admin. [BA/BIS]</td>
<td>$37,735</td>
<td>$29,853</td>
<td>$48,100</td>
</tr>
<tr>
<td>Psychology, Ge.. [BA/BIS]</td>
<td>$56,132</td>
<td>$44,218</td>
<td>$75,558</td>
</tr>
<tr>
<td>Journalism [BA/BIS]</td>
<td>$57,541</td>
<td>$46,821</td>
<td>$82,570</td>
</tr>
</tbody>
</table>

Detailed Breakdown (5 Year Data)

<table>
<thead>
<tr>
<th>Degree Level</th>
<th>Disclosable Programs</th>
<th># of Completers</th>
<th>% of Completers with Earnings Data</th>
<th>First-Year Earnings - Median</th>
<th>First-Year Earnings - Q1%</th>
<th>First-Year Earnings - Q9%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor’s Degree</td>
<td>53 disclosable programs</td>
<td>28,569</td>
<td>17 %</td>
<td>$37,735</td>
<td>$29,853</td>
<td>$48,100</td>
</tr>
<tr>
<td>Master’s Degree</td>
<td>48 disclosable programs</td>
<td>5,291</td>
<td>30 %</td>
<td>$56,132</td>
<td>$44,218</td>
<td>$75,558</td>
</tr>
<tr>
<td>Doctoral Degree</td>
<td>43 disclosable programs</td>
<td>2,573</td>
<td>26 %</td>
<td>$57,541</td>
<td>$46,821</td>
<td>$82,570</td>
</tr>
</tbody>
</table>

*Data have been suppressed due to there being fewer than 5 Completers with Earnings data or fewer than 15% of Completers with Earnings Data

Methodology | About the Data
Integrating Other States’ Data

Other States’ Education Institutions

My State’s Postsecondary

My State’s Secondary

My State’s Labor Force

Credential

Other States’ Labor Force
Products

1. Aggregated analysis tracking human capital development and mobility among four states.

2. Enhanced identifiable data returned to state agencies with legitimate interests.

3. The infrastructure – governance and architecture – necessary to sustain the data exchange and expand to or export to additional states.
Research Questions Embedded in MOA

1. What are the patterns of postsecondary enrollment and employment of high school graduates from each participating state?

2. What are the patterns of postsecondary enrollment and employment of students in public postsecondary institutions in participating states?

   – Each with appropriate disaggregations –

3. By more fully accounting for individual mobility across state lines, to what extent does sharing data among states supplement existing state data resources available for conducting evaluations leading to policy and program improvements?
Data Sources

- Single Source States *(State Longitudinal Data Systems that originally compiled the data owned by the responsible agencies in each respective state)*
  - Hawaii P-20
  - Idaho Office of the State Board of Education
  - Washington Education Research Research and Data Center

- Multiple Sources (Oregon)
  - Oregon Department of Education
  - Oregon Department of Community Colleges and Workforce Development
  - Oregon University System
  - Oregon Employment Department
Data Elements

• Identity and Demographics
  • Randomly-generated Exchange ID#

• Education (Term)
  • High School Diploma
  • Postsecondary Institution
  • Credits Attempted, Passed
  • Postsecondary Awards
  • Field of Study

• Employment: Unemployment Insurance Wage Records (Quarterly)
  • Social Security Number
  • Gross Wages
  • Employer’s Industry Classification
Preparing the Dataset for Analysis

Phase 1 deduplication via matches on fname, lname, suffix, DOB

The combined file sent back to states for PSE and additional SSNs

Phase 2 deduplication via NSC StudentTracker

Here, NSC appends enrollment and awards data from its main collection

Exclusions to omit students who didn’t meet cohort definitions

273,529

252,267

222,547

192,689

Note: A & B refer to the cohorts of students from each of the four states identified for the exchange. A is all public high school graduates from 2004-05; B is first-time postsecondary students in public institutions.
Unpacking the “Not Found” Category

- Employed in WA
- Employed in another state
- Military or federal government employment and self-employed
- Not in the workforce
- No SSN available
- Unemployed
Unpacking the “Not Found” Category

100% of completers from Washington institutions by December 2010

- Employed in WA
- Unemployed
- Not in the workforce
- No SSN available
- Employed in another state
- Employed in HI, ID, or OR
- Military or federal government employment and self-employed
Some Definitions

• Cohorts
  • Public high school graduates in 2004-05
  • First-time postsecondary students at public institutions in 2005-06

• Timing: employment records are sought for the quarter as close to 12 months after award completion as possible

• “Elsewhere”: students who attended or graduated from institutions outside of the four states. (Records obtained from NSC)

• Treatment of Private Institutions: for analyses of mobility, students/graduates from private institutions located within the four participating states are counted with public students/graduates in those states
Employment locations for all in original cohorts who earned associate’s degrees or higher by December 2010

**MOBILITY INTO THE WORKFORCE FOR ALL POSTSECONDARY DEGREE EARNERS**
How Far Does the Exchange Extend Coverage of Employment Outcomes?

Number of Completers of an Associate’s Degree or Higher

<table>
<thead>
<tr>
<th>Assoc+ Conferred by State</th>
<th>(1) Total Number of Completers by December 2010</th>
<th>(2) Number of Completers With a Valid SSN</th>
<th>(3) Number of Completers With an Employment Record in At Least 1 of the 4 States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawaii</td>
<td>3,208</td>
<td>2,403</td>
<td>1,438</td>
</tr>
<tr>
<td>Idaho</td>
<td>3,640</td>
<td>3,014</td>
<td>1,956</td>
</tr>
<tr>
<td>Oregon</td>
<td>12,429</td>
<td>10,762</td>
<td>7,013</td>
</tr>
<tr>
<td>Washington</td>
<td>23,683</td>
<td>20,815</td>
<td>12,310</td>
</tr>
<tr>
<td>Elsewhere</td>
<td>7,939</td>
<td>4,471</td>
<td>959</td>
</tr>
<tr>
<td>Total</td>
<td>50,899</td>
<td>41,465</td>
<td>23,676</td>
</tr>
</tbody>
</table>

Note: Column 1 awardees for whom no SSN was available, multiple SSNs were found, or the SSN that was found was shared with another individual. These were excluded from Column 2. Column 3 excludes individuals for whom no employment record was found. “Elsewhere” means the award was conferred by a public or private institution anywhere outside of the four states.
How Far Does the Exchange Extend Coverage of Employment Outcomes?

Among Completers With an Employment Record in At Least 1 of the 4 States

<table>
<thead>
<tr>
<th>Assoc+ Conferred by State</th>
<th>Number of Completers With an Employment Record in At Least 1 of the 4 States</th>
<th>% Employed in Same State</th>
<th>% Employed in At Least 1 of the Other 3 States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawaii</td>
<td>1,438</td>
<td>83.9%</td>
<td>16.1%</td>
</tr>
<tr>
<td>Idaho</td>
<td>1,956</td>
<td>85.3%</td>
<td>14.7%</td>
</tr>
<tr>
<td>Oregon</td>
<td>7,013</td>
<td>91.2%</td>
<td>8.8%</td>
</tr>
<tr>
<td>Washington</td>
<td>12,310</td>
<td>93.0%</td>
<td>7.0%</td>
</tr>
</tbody>
</table>
How Far Does the Exchange Extend Coverage of Employment Outcomes?

Among Completers, Whether or Not an Employment Record Exists

**Hawaii**
- 1,206 (50.2%)
- 965 (40.2%)
- 99 (4.1%)
- 24 (1.0%)

**Idaho**
- 1,669 (55.4%)
- 1,058 (35.1%)
- 208 (6.9%)
- 76 (2.5%)

**Oregon**
- 6,396 (59.4%)
- 422 (3.9%)
- 144 (1.3%)
- 51 (0.5%)

**Washington**
- 8,505 (40.9%)
- 557 (2.7%)
- 51 (0.5%)
- 11,447 (55.0%)

**Elsewhere**
- 3,511
- 441
- 341
- 84

**Employment Location**
- Hawaii
- Idaho
- Oregon
- Washington
- Not found
Reducing Uncertainty About Employment Outcomes
Among Completers, Whether or Not an Employment Record Exists

<table>
<thead>
<tr>
<th>Assoc+ Conferred by State</th>
<th>(1) Number of Completers with a Valid SSN</th>
<th>(2) Number of Completers Without an Employment Record in State</th>
<th>(3) Among Completers Without an Employment Record in State, % With an Employment Record in At Least 1 of the Other 3 States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawaii</td>
<td>2,403</td>
<td>1,197</td>
<td>19.4%</td>
</tr>
<tr>
<td>Idaho</td>
<td>3,014</td>
<td>1,342</td>
<td>21.3%</td>
</tr>
<tr>
<td>Oregon</td>
<td>10,762</td>
<td>4,366</td>
<td>14.1%</td>
</tr>
<tr>
<td>Washington</td>
<td>20,815</td>
<td>9,368</td>
<td>9.2%</td>
</tr>
</tbody>
</table>

**Column 1:** The students for whom an employment record might be obtainable.

**Column 2:** The number of students for whom an employment record cannot be located within the state that conferred the degree. In other words, employment outcomes for these individuals are not available to a single state’s SLDS.

**Column 3:** The percentage of the completers for which the data exchange found an employment record outside of the state conferring the degree. In other words, this is the share of the employment record information that would remain missing in a single state’s SLDS but which can be obtained through the data exchange.
“Partial” Net Migration of Completers With an Associate’s Degree or Higher

<table>
<thead>
<tr>
<th>State</th>
<th>In-Migrants (from Anywhere)</th>
<th>In-Migrants as % of All Completers From Any State With an Employment Record in Data Exchange States</th>
<th>Out-Migrants as % of All Completers From Data Exchange States Only, With an Employment Record in Any of the 4 States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawaii</td>
<td>192</td>
<td>13.8%</td>
<td>225</td>
</tr>
<tr>
<td>Idaho</td>
<td>438</td>
<td>23.8%</td>
<td>269</td>
</tr>
<tr>
<td>Oregon</td>
<td>948</td>
<td>13.6%</td>
<td>581</td>
</tr>
<tr>
<td>Washington</td>
<td>1,078</td>
<td>8.8%</td>
<td>804</td>
</tr>
</tbody>
</table>

Note: To be counted, completion must have occurred by December 2010 and an employment record existed 12 months later. Individuals who earned awards from private institutions located in each of the four states are counted in that state’s figures. In-migrants include those whose postsecondary degree was conferred by an institution in any of the other states.
“Partial” Net Migration by Degree Level and State

- **Associate’s:**
  - Hawaii: 27
  - Idaho: 168
  - Oregon: 38
  - Washington: -30

- **Bachelor’s or Higher:**
  - Hawaii: -86
  - Idaho: -43
  - Oregon: 26
  - Washington: 42

- **Net Migration (excluding in-migrants from elsewhere):**
  - Hawaii: -176
  - Idaho: -15
  - Oregon: -59
  - Washington: -115

- **Net Migration (including in-migrants from elsewhere):**
  - Hawaii: -15
  - Idaho: 192
  - Oregon: 94
  - Washington: 168

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**Legend:**
- Blue: Net Migration (excluding in-migrants from elsewhere)
- Red: Net Migration (including in-migrants from elsewhere)
Employment location for graduates of different academic programs

MOBILITY INTO THE WORKFORCE AND FIELDS OF STUDY
Fields of Study

• STEM
  • 04: Architecture and Related Services
  • 11: Computer and Information Sciences and Support Services
  • 14: Engineering
  • 15: Engineering Technologies and Engineering-Related Fields
  • 26: Biological and Biomedical Sciences
  • 27: Mathematics and Statistics
  • 40: Physical Sciences
  • 41: Science Technologies/Technicians
• 51: Health Professions and Related Programs
• 52: Business, Management, Marketing and Related Support Services
• Everything Else
Mobility of Washington Bachelor’s and Higher Graduates by Field of Study

- **Business**: 62.0% Washington, 4.4% Other 3 States, 4.4% Not Found
- **Health**: 61.0% Washington, 3.3% Other 3 States, 3.6% Not Found
- **Other**: 55.9% Washington, 3.6% Other 3 States, 4.4% Not Found
- **STEM**: 50.1% Washington, 4.4% Other 3 States, 4.4% Not Found
Immediate and delayed enrollment, completion, and employment outcomes for all public high school graduates in 2004-05

**POSTSECONDARY EDUCATION AND MOBILITY INTO THE WORKFORCE FOR THE HIGH SCHOOL CLASS OF 2005**
## Overall Employment Location for HS Class of 2005 Who Went Directly to College and Completed an Associate’s Degree or Better

<table>
<thead>
<tr>
<th>Assoc+ Degree Conferred by State</th>
<th>Employment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Same as HS</td>
<td>Other 3 States</td>
</tr>
<tr>
<td>Same as HS</td>
<td>12,475</td>
<td>654</td>
</tr>
<tr>
<td>Elsewhere</td>
<td>1,090</td>
<td>479</td>
</tr>
<tr>
<td>Total</td>
<td>13,565</td>
<td>1,133</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assoc+ Degree Conferred by State</th>
<th>Employment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Same as HS</td>
<td>Other 3 States</td>
</tr>
<tr>
<td>Same as HS</td>
<td>51.2%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Elsewhere</td>
<td>4.5%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Total</td>
<td>55.6%</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

Note: Employment is for the quarter twelve months following achievement of highest degree.
Employment Location for HS Class of 2005 Who Went Directly to College and Completed an Associate’s Degree or Better

- Same as HS: 13,565 (55%)
- Not Found: 9,686 (40%)
- Other 3 States: 1,133 (5%)

**Completion: Same as HS**
- Completion: 92%
- Not Found: 27%

**Completion: Elsewhere**
- Completion: 8%
- Not Found: 73%
Where To From Here?

• Additional analyses
  • Subsequent enrollment
  • Wages
  • Industry classifications
  • Employment concurrent with enrollment
  • Employment outcomes based on student enrollment patterns
  • Disaggregations for race/ethnicity, gender, age, Pell

• Moving beyond the pilot phase
  • Secure additional funding
  • Develop a process for adding states
Lessons So Far

• Multistateness
• Limitations
  • Wedded to the original cohort definition
  • Ambiguity in the UI wage records data
• Implications for use