What's Happening

March 2016

Alaska students' pathways from high school to postsecondary education and employment

Havala Hanson
Ashley Pierson
Education Northwest

Key findings

- Most Alaska students either enrolled in college or started working in the state right after leaving high school. Male, Alaska Native, and rural students were more likely to work in Alaska rather than enroll in college right after high school compared with female, White, and urban students.
- Students followed more than 3,000 unique postsecondary pathways. The most common pathways included enrolling in college, working in Alaska, or both.
- Students who attained higher levels of education tended to have higher employment rates and earn higher wages, but wage gaps existed within and across education levels between male and female students and between Alaska Native and White students.

ies NATIONAL CENTER FOR EDUCATION EVALUATION AND REGIONAL ASSISTANCE
Institute of Education Sciences
U.S. Department of Education

REL NORTHWEST
Regional Educational Laboratory
At Education Northwest

U.S. Department of Education
John B. King, Jr., *Secretary*

Institute of Education Sciences
Ruth Neild, *Deputy Director for Policy and Research*
Delegated Duties of the Director

National Center for Education Evaluation and Regional Assistance
Joy Lesnick, *Acting Commissioner*
Amy Johnson, *Action Editor*
OK-Choon Park, *Project Officer*

REL 2016–114

The National Center for Education Evaluation and Regional Assistance (NCEE) conducts unbiased large-scale evaluations of education programs and practices supported by federal funds; provides research-based technical assistance to educators and policymakers; and supports the synthesis and the widespread dissemination of the results of research and evaluation throughout the United States.

March 2016

This report was prepared for the Institute of Education Sciences (IES) under Contract ED-IES-12-C-0003 by Regional Educational Laboratory (REL) Northwest administered by Education Northwest. The content of the publication does not necessarily reflect the views or policies of IES or the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

Hanson, H., & Pierson, A. (2016). *Alaska students' pathways from high school to postsecondary education and employment* (REL 2016–114). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northwest. Retrieved from http://ies.ed.gov/ncee/edlabs.

This report is available on the Regional Educational Laboratory website at http://ies.ed.gov/ncee/edlabs.

Summary

Approximately 10,000 students leave Alaska high schools each year, with or without a diploma. In pursuit of their career and life goals, they chart courses across college enrollment, employment, and other opportunities. Until recently, policymakers and educators had little information about the pathways students took into their early careers. To obtain this information, Regional Educational Laboratory Northwest examined data through 2012 from multiple national and state education and labor sources to discern the pathways of 40,000 students who left public high schools in Alaska from 2004/05 to 2007/08. Of this sample 67 percent of students graduated from high school and 33 percent did not. The study also followed Alaska students who graduated in 2004/05 and 2005/06 in their first six years after high school to describe the pathways they took to their early careers. The following are among the key findings:

- *Most Alaska students either enrolled in college or started working in the state right after high school.* The share of students who enrolled in college right after high school varied across student groups. Female students, White students, and urban students were more likely than male students, Alaska Native students, and rural students to enroll in college. However, students from each of these groups with similar academic and personal background characteristics had similar probabilities of enrolling directly after high school.
- *Students followed more than 3,000 unique postsecondary pathways, which often included attending college, working in Alaska, or both.* Three pathways were followed most frequently:
  - Worked in Alaska and stayed employed through 2012 (10 percent of students).
  - Attended college full time, then attended college half time, then worked in Alaska (7 percent of students).
  - Worked in Alaska, then lived in Alaska but did not appear in education, employment, or incarceration records (6 percent of students).
- *Students who earned a college degree tended to have higher rates of early-career employment and higher wages than students who did not earn a degree.* Students' number of years of schooling was positively correlated with wages. In addition, earning a high school diploma was a gateway to a college education and higher wages. High school graduates earned higher wages than students who did not earn a diploma, a group that includes those who went on to pass a General Educational Development (GED) test.

Contents

Why this study?

The transition from high school to postsecondary education and the workforce is often described as a "pipeline." This metaphor, while vivid, fails to capture the diversity of early-career destinations and the multiplicity of choices, actions, and contexts that lead to them. A complex landscape of crisscrossing paths among education and employment options reflects individual decisions that often veer from the traditional college-to-workforce trajectory. By following Alaska students from the time they leave high school into their early careers, this study explores those complexities. It observes movement across two- and four-year colleges, job training programs, the workforce, prisons, and migration out of the state (see box 1 for definitions of key terms).

This study fills an important information gap on Alaska students' trajectories into postsecondary education and the workforce

This study fills an important information gap for Alaska policymakers. Few data are available about students' trajectories into postsecondary education and the workforce, leaving policymakers with incomplete or anecdotal evidence on which to base decisions about preparing Alaska students for education, work, and life after high school. Understanding how postsecondary choices and pathways differ among various groups is of special interest in the Alaska policy landscape. For this reason, the study—conducted by members of the Alaska State Policy Research Alliance in collaboration with Regional Educational Laboratory Northwest—emphasizes comparisons between male and female students, Alaska Native and White students, and students from rural and urban high schools.

This study also makes valuable and unique contributions to the understanding of the transition from high school through postsecondary education, job training, and the labor force in three ways:

- It tracks students' movement across several postsecondary outcomes into their early careers, capturing how students move in and out of college, job training, employment, and the justice system after leaving high school with or without a diploma.
- It observes multiple transitions in students' first few years after high school: from high school to the workforce, from high school to postsecondary education, and from postsecondary education to the workforce.
- It focuses on outcomes for both high school graduates and students who left without a diploma.

What the study examined

This study tracked postsecondary outcomes through 2012 for approximately 40,000 Alaska students who left high school between the 2004/05 and 2007/08 school years. The study examined how Alaska students progressed from high school into their early careers through three stages:

1. ***First pathway steps***. What students do immediately after leaving high school is most directly related to their high school experiences. This study describes where students start and the likelihood that their first pathway step was in postsecondary education.
2. ***Pathways through postsecondary education and employment options***. The study observes students' postsecondary pathways over the first several years after leaving high school and how some students bounced among different education

Box 1. Key terms

Alaska resident. A student who has a Permanent Fund Dividend record, an employment record, a post–high-school enrollment record, an unemployment record, or a prison record in Alaska in the relevant year.

College. A two- or four-year college.

Economic disadvantage. Eligible for free- or reduced-price lunch at any point during high school.

General Educational Development (GED). A General Educational Development test and certification, referred to colloquially as "receiving a GED."

High school graduate. A student who received a high school diploma from an Alaskan public high school. Students who passed a GED test are not considered high school graduates.

Labor force participant. An individual who is working or actively looking for work.

Permanent Fund Dividend. An annual payment Alaskans receive from the investment earnings of the Alaska Permanent Fund, a constitutionally protected fund created and perpetuated from a portion of the state's oil tax revenue. Every Alaskan who has lived in the state for a full calendar year is eligible, giving the state a unique and especially comprehensive dataset for determining who is an Alaska resident.

Postsecondary education. Attending a two- year college, a four-year college, or participating in an employment or professional advancement program recognized by the state (referred to in this report as a career training program).

Subsistence living/subsistence lifestyle. Taking fish, wildlife, and other wild resources for personal food, shelter, and other needs, a common practice in Alaska, particularly in rural communities.

Unemployed. Claiming unemployment insurance.

Urban and rural high schools. Students are considered to have left an urban high school if the last district they attended was included in one of the six micro- or metropolitan areas in Alaska according to the U.S. Census: Anchorage, Fairbanks, Juneau, Ketchikan, Kodiak, and Matanuska-Susitna. All other students are considered to have left rural high schools.

and employment activities while others followed a linear path from high school to the workforce.

3. *Early-career outcomes*. Focusing on the sixth year after high school for students who left high school in 2004/05 or 2005/06, this study describes students' background characteristics, high school performance, and postsecondary education and work activities in relation to their employment status and wages in that year.

Three sets of questions motivated the study:

- What were the first pathway steps students took after leaving high school?
  - How did the first pathway steps vary for male and female students, Alaska Native and White students, and students from rural and urban high schools?
  - How does the probability of choosing postsecondary enrollment as a first pathway step vary for students with similar and different background characteristics such as socioeconomic status, high school test scores, and high school graduation status?

- What were the most common pathways students took through postsecondary education and employment options?
  - How did pathway steps vary for male and female students, Alaska Native and White students, and students from rural and urban high schools?
- How did students' high school performance, postsecondary experiences, and accomplishments relate to their employment status and wages six years after leaving high school?
  - How did the relationship between these factors and wages vary for male and female students, Alaska Native and White students, and students from rural and urban high schools?
  - How do wages vary across subgroups for students with similar and different background characteristics, such as socioeconomic status, high school test scores, and high school graduation status?

This study analyzes differences among students in six subgroups with historically different education and economic outcomes in Alaska: male and female students, Alaska Native and White students, and rural and urban students. (See box 2 for a description of the data and methods and appendix A for more detail.)

Alaska's natural resource extraction industries, such as oil, mining, commercial fishing, and logging, tend to attract more men than women. These industries require different types of education and training than Alaska's other major industries, such as state government, healthcare, education, and retail, where women make up a larger share of the workforce. This study observes how education and work experience pathways differ for male and female students in the state, including how secondary school and postsecondary school factors relate to early career employment rates and wages. This information may be relevant for other states with large natural resource extraction industries.

This study observes how education and work experience pathways differ for male and female students in the state, including how secondary school and postsecondary school factors relate to early career employment rates and wages

Alaska Natives are Alaska's largest minority group; about 20 percent of Alaskans identify as Alaska Native (U.S. Census Bureau, 2013). A better understanding of postsecondary pathways and outcomes for Alaska Native students compared with their White peers is a priority for education stakeholders in the state and contributes to a limited body of research on indigenous students nationwide.

Like people in many states, most Alaskans live in urban areas. Yet about a third of Alaska's population lives in rural or remote areas (U.S. Census Bureau, 2012). For two reasons, postsecondary education and employment patterns could differ between students from rural and urban areas. First, Alaska's size and terrain present infrastructure challenges to resource distribution in rural areas, including access to education and technology. Second, economies in rural areas differ from economies in urban centers. In addition to a smaller number of active industries in rural areas, 95 percent of rural households practice some kind of subsistence living (Driscoll, 2013; U.S. Department of the Interior, 2008).

Box 2. Data and methods

This study tracks postsecondary outcomes through 2012 for approximately 40,000 Alaska students who left high school between the 2004/05 and 2007/08 school years. Two-thirds of students in the sample graduated from high school, 19 percent did not earn a diploma, and 14 percent had a missing or unknown withdrawal code. The study does not include students whose exit codes indicated that they transferred out of Alaska public schools.

Data for the study come from the Alaska Department of Education and Early Development, the Alaska Department of Labor and Workforce Development, the Alaska Department of Corrections, and the National Student Clearinghouse. The sample includes students whose high school education records matched to any employment, incarceration, or postsecondary records from the other data sources (about 85 percent of student records). Due to this matching, the study's sample is different from the sample of students that the Alaska Department of Education and Early Development uses to generate reports; therefore, direct comparisons should not be made to publicly reported data.

Data availability and methodological decisions limited the sample for some of the analyses. The sample used in each section of the report is described in the following table. See appendix A for more details on data and methods.

Analytic sample by student pathways and outcomes

Analysis	Sample	Comments
First pathway steps	All students in study sample (*n* = 39,631).	Includes all Alaska students who exited high school between 2004/05 and 2007/08.
Pathways through postsecondary education and the workforce	All students in study sample (*n* = 39,631).	Results are shown for students from all high school exit years combined from 2004/05–2007/08; individual exit year results are shown in table B1 in appendix B.
Early career outcomes—employment rates	Students who left high school in the 2004/05 or 2005/06 school year and were Alaska residents in the sixth year after high school and were not enrolled in college half time or full time (*n* = 12,135).	Employment results are shown only for students with six years of Alaska data after they left high school, so that early career outcomes could be measured. Six years was considered enough time for students to obtain a bachelor's degree and gain work experience. Since the final year in the data is 2012, sixth-year outcomes could be measured only for students who left high school in the 2004/05 or 2005/06 school year. The sample was limited to students who were still Alaska residents in the sixth year because employment and wage data for other states are not recorded in the dataset. Current college students enrolled at least half-time are excluded because this analysis focuses on people who are likely to have the capacity to work full time.
Early career outcomes—wages	Students who left high school in the 2004/05 or 2005/06 school year and and were not enrolled in college half time or full time. Descriptive analysis compares wages for students who worked all four quarters of the year (*n* = 4,924); regression analysis includes students who worked between one and four quarters of the year (*n* = 11,353).	Among students with six years of Alaska data after they left high school, wage results are shown for the sample of students who worked all four quarters of the year. This is because data on how many hours an individual worked are not collected. Limiting the sample to people who worked four quarters offers the ability to compare annual wages among people who worked all year, rather than between some people who worked all year and others who worked part of the year. Since the number of quarters worked can be accounted for as a control variable in a regression model, all students who worked during the sixth year after high school are included in the regression analysis.

Source: Authors' description.

What the study found

Alaska students followed thousands of unique pathways after high school. Study findings describe how students began their pathways, the steps they took through postsecondary pathways, and what their education and employment outcomes were six years after high school (for those who left high school in 2004/05 or 2005/06).

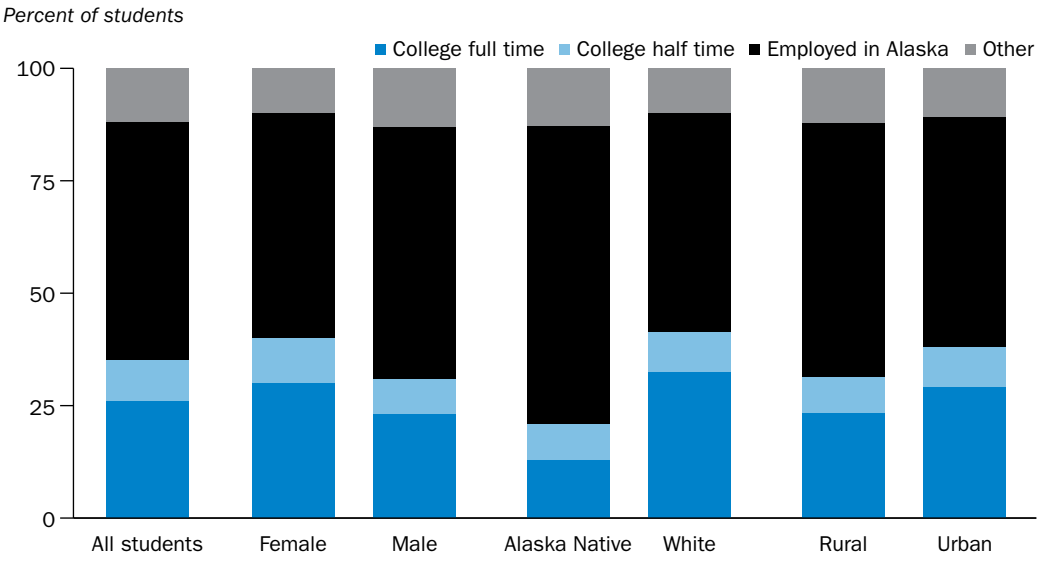
Most Alaska students either enrolled in college or started working in the state right after leaving high school

Immediately after leaving high school, 35 percent of students enrolled in college and 53 percent went directly into the workforce in Alaska. The other 12 percent of students started their postsecondary pathways in a number of different ways (figure 1). Some pursued educational opportunities such as enrolling in a job training program or passing the General Educational Development (GED) test. Others were unemployed or incarcerated. Students who do not appear in Alaska's records are also represented in the "other" category: some of these students left Alaska, and others were Alaska residents who may have held federal or out-of-state jobs or may not have participated in the labor force (a category that includes individuals who were not working and not looking for work, such as full-time parents and individuals practicing a subsistence lifestyle).

Female students, White students, and urban students were more likely than male students, Alaska Native students, and rural students to start their pathways by enrolling in college

First pathway steps varied across demographic groups. Female students, White students, and urban students were more likely than male students, Alaska Native students, and rural students to start their pathways by enrolling in college. The share of students who enrolled in college right after high school was 9 percentage points higher for female students than for male students. Similarly, the share of students who started their pathways by enrolling in college was 7 percentage points higher for urban students than for rural students. The

Figure 1. First pathway step after leaving high school by gender, race/ethnicity, and locale, for students who left high school between 2004/05 and 2007/08



Source: Authors' analysis based on data and methods described in appendix A.

largest difference was between Alaska Native and White students: 21 percent of Alaska Native students enrolled compared with 41 percent of White students.

When high school achievement, graduation status, and economic disadvantage in high school are held constant, the difference in the probability of Alaska Native and White students enrolling in college immediately after high school drops from 20 percentage points to 6 percentage points

Students from different demographic groups who had similar background characteristics had similar probabilities of enrolling in college right after leaving high school. Simple percentages like those in figure 1 do not account for the range of individual differences, abilities, preferences, and contexts of students within each group. These differences might help explain the gap in immediate college enrollment between groups. For example, Alaska Native and White students differ in ways that might be related to the decision to enroll in college upon leaving high school. Alaska Native students in the sample had lower high school graduation rates (53 percent) than White students (72 percent). They also had higher rates of economic disadvantage during high school: 71 percent of Alaska Native students were eligible for free- or reduced-price lunch compared with 27 percent of White students.

When high school achievement, graduation status, and economic disadvantage in high school are held constant, the change in the percent probability of Alaska Native and White students enrolling in college immediately after high school drops from 20 percentage points (when no other factors are considered) to 6 percentage points (table 1). This means that Alaska Native and White students with similar characteristics who come from similar circumstances tend to make similar choices. It also suggests that an unequal distribution of various experiences within racial/ethnic groups—for example, living in poverty or graduating from high school—can in part account for why a larger share of White students than Alaska Native students chose to enroll immediately in college.

Table 1. Characteristics that had a statistically significant relationship with enrolling in college immediately after high school—holding other characteristics constant—for students who exited high school between 2004/05 and 2007/08

Characteristic	Change in percent probability of enrolling in college immediately after exiting high school (percentage points)
Relative to students without these characteristics	
Economic disadvantage in high school	–16
English learner student in high school	–6
Special education student in high school	–12
Male student	–10
Relative to average test scores for the sample	
One standard deviation increase in math test scores	+10
One standard deviation increase in reading test scores	+5
Relative to White students	
Alaska Native students	–6
Asian students	+6
Black students	–6

Note: Results are based on odds ratios from a regression model of whether the student enrolled in college immediately after leaving high school and on student gender, student race/ethnicity, student state standardized math and reading test scores with indicators for whether a test score was imputed due to missing data, quarter and year in which the student exited high school, whether the student graduated high school, whether the student exited an urban high school, whether the student was economically disadvantaged in high school, whether the student was ever an English learner student, and whether the student ever had a special education plan. The regression model is described in appendix A. Full results are presented in table B2 in appendix B.

Source: Authors' analysis based on data and methods described in appendix A.

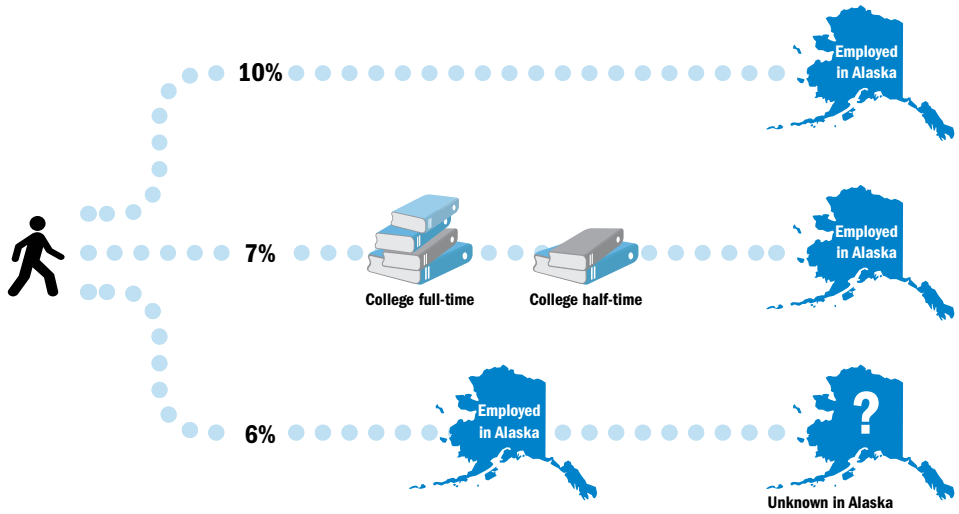
Some potential drivers increased or decreased the probability of enrolling in college. For example, when other factors are held constant, economic disadvantage in high school lowered a high school graduate's probability of enrolling by 16 percentage points (see table 1). In addition, students who scored in the 84th percentile on their high school math test had a 10 percentage point higher probability of enrolling immediately after high school compared with students who scored at the 50th percentile.

Students followed more than 3,000 unique postsecondary pathways, but the most common pathways included enrolling in college, working in Alaska, or both

Postsecondary pathways among high school graduates and students who left high school without a diploma are as varied as the individuals who follow them. In the first few years after high school, students often change direction a number of times, oscillating between college, employment, and, for some, unemployment. Most pathways (96 percent) have fewer than five students following them, but 23 percent of students followed one of the three most common pathways: working in Alaska, attending college and then working in Alaska, and working in Alaska and then unknown in Alaska (figure 2).

Most students who did not follow one of the three most common pathways followed pathways that at some point included working in Alaska, attending college, or both. However, they did

Figure 2. Three most common postsecondary pathways and percentage of the sample who took them, among students who left high school between 2004/05 and 2007/08



Most pathways have fewer than five students following them, but 23 percent of students followed one of the three most common pathways: working in Alaska, attending college and then working in Alaska, and working in Alaska and then unknown in Alaska

Note: Individuals who are employed in Alaska receive earnings in Alaska according to the Alaska Department of Labor and Workforce Development. Individuals who attend college are reported by the National Student Clearinghouse to be enrolled as either full-time or half-time students. Individuals who are unknown in Alaska have Permanent Fund Dividend records that indicate they are Alaska residents but do not have education, employment, or incarceration records. These individuals may include federal employees such as postal workers and active duty military, independent small business owners, commercial fishers, individuals practicing subsistence living, and individuals who are not in the labor force (that is, not working and not claiming unemployment insurance). College enrollments include two- and four-year institutions; enrollment in job training is considered a separate pathway step. Four to seven years of data were used to determine postsecondary pathways, depending on when students left high school. Those who left high school in 2004/05 had seven years of pathway data and those who left high school in 2007/08 had four years of pathway data. The top three pathways shown here are similar to the top three pathways among students in each exit year, listed in table B1 in appendix B.

Source: Authors' analysis based on data and methods described in appendix A.

so in a different sequence and their pathways may have included other activities. For example, 5 percent of students worked in Alaska and then left the state (see table B1 in appendix B). Others worked between periods of attending college. Some students followed pathways that included spells of unemployment or incarceration. For example, 3 percent of students followed the pathway of working in Alaska, then being unemployed, and then working in Alaska again.

Higher shares of female students, White students, and urban students took the "full-time college, half-time college, employed in Alaska" pathway than male students, Alaska Native students, and rural students

Male and female students, Alaska Native and White students, and rural and urban students had almost the same three most common pathways. However, higher shares of female students, White students, and urban students took the "full-time college, half-time college, employed in Alaska" pathway than male students, Alaska Native students, and rural students (table 2).

Students who attained higher levels of education tended to have higher employment rates and earn higher wages, but wage gaps existed within and across education levels between male and female students and between Alaska Native and White students

Students who attained higher levels of education had higher employment rates. Students who obtained a four-year college degree had the highest employment rate (79 percent) relative to students who obtained lower levels of education (figure 3). Students who left high school without a diploma had the lowest employment rate (62 percent).

Students who obtained a college degree earned higher wages than those who did not. On average, students earned $34,000 six years after high school (table 3). Four-year degree holders earned an average of $36,300. Students who obtained a two-year degree earned $40,800, which was $7,000 higher than those with only a high school diploma. High school graduates without a postsecondary degree earned about $6,000 more than those who left high school without a diploma.

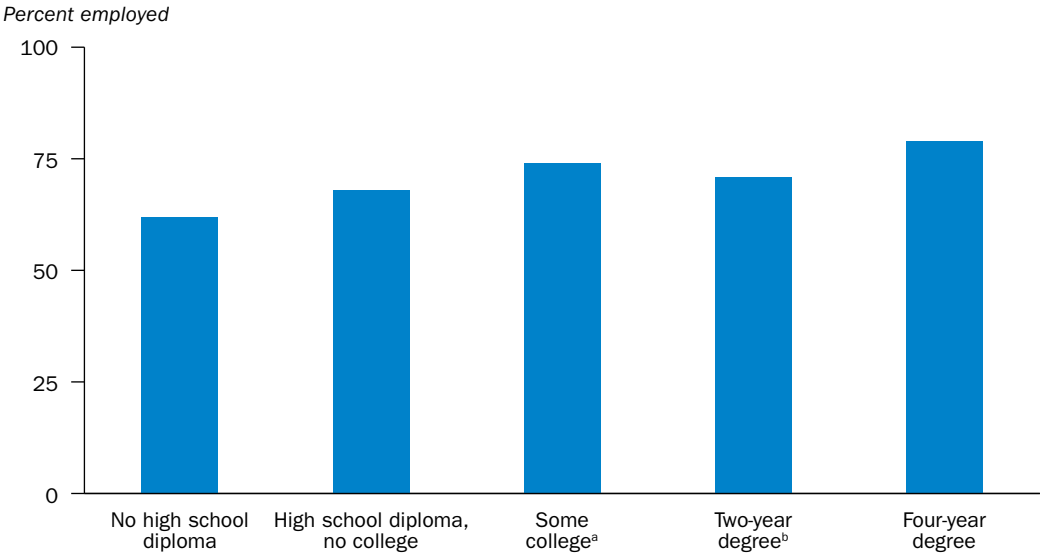
Table 2. Three most common postsecondary pathways by rank for male and female high school graduates, Alaska Native and White graduates, and rural and urban graduates, among students who left high school between the 2004/05 and 2007/08 school years

Rank	Male	Female	Alaska Native	White	Rural	Urban
1	Employed in Alaska (11 percent)	Full-time college, half-time college, employed in Alaska (9 percent)	Employed in Alaska (12 percent)	Full-time college, half-time college, employed in Alaska (10 percent)	Employed in Alaska (11 percent)	Employed in Alaska (10 percent)
2	Full-time college, half-time college, employed in Alaska (6 percent)	Employed in Alaska (9 percent)	Employed in Alaska, unknown in Alaska (9 percent)	Employed in Alaska (9 percent)	Employed in Alaska, unknown in Alaska (7 percent)	Full-time college, half-time college, employed in Alaska (8 percent)
3	Employed in Alaska, unknown in Alaska (6 percent)	Employed in Alaska, unknown in Alaska (6 percent)	Employed in Alaska, unemployed, employed in Alaska (5 percent)	Employed in Alaska, unknown in Alaska (6 percent)	Full-time college, half-time college, employed in Alaska (7 percent)	Employed in Alaska, unknown in Alaska (6 percent)

Note: 3 percent of Alaska Native students followed the "full-time college, half-time college, employed in Alaska" pathway, the fourth most common pathway for this group.

Source: Authors' analysis based on data and methods described in appendix A.

Figure 3. Employment rate among students who left high school between 2004/05 and 2005/06 and who were living in Alaska in the sixth year after leaving high school, by highest education level attained



Note: By the sixth year after leaving high school, 19 percent of students had earned a four-year degree, 4 percent had earned a maximum of a two-year degree, 20 percent attended college and left without a degree, 28 percent held a high school diploma but did not attend college, and 16 percent did not have a high school diploma (a quarter of these received a GED). An additional 13 percent of students attended college at least half time during the sixth year after leaving high school; they are not included in this figure. Overall, 73 percent of students who left high school between 2004/05 and 2005/06 were Alaska residents in the sixth year after high school, including 75 percent of students with no high school diploma, 67 percent of students with a high school diploma who did not attend college, 75 percent of students who attended some college and left without a degree, 88 percent of students with a two-year degree, and 73 percent of students with a four-year degree.

a. Includes only students who attended college, were no longer enrolled, and did not earn a degree; does not include students who were enrolled in college during the sixth year after leaving high school.

b. Includes individuals with career and technical credentials.

Source: Authors' analysis based on data and methods described in appendix A.

Table 3. Average annual wages among students who left high school between 2004/05 and 2005/06 and who worked all four quarters in Alaska in the sixth year after leaving high school, by education level ($)

Student group	All students	Left high school without a diploma	High school graduate, no college	Some college, left without a degree[a]	Two year degree[b]	Four year degree
All students	34,000	27,000	32,800	33,200	40,800	36,300
Male	39,300	29,200	38,400	37,100	48,400	43,700
Female	27,500	23,400	26,300	29,000	27,100	31,900
Alaska Native	30,900	24,600	29,200	31,300	32,800	36,600
White	36,000	27,600	34,600	34,300	47,000	36,500
Rural	34,400	27,200	33,200	33,900	40,300	37,400
Urban	33,900	26,800	32,500	32,900	41,300	35,700

a. Includes only students who attended college, were no longer enrolled, and did not earn a degree; does not include students who were enrolled in college during the sixth year after leaving high school.

b. Includes individuals with career and technical credentials.

Source: Authors' analysis based on data and methods described in appendix A.

Within and across education levels, wage gaps were evident between male and female students and between Alaska Native and White students. Male students earned $12,000 more than female students, and White students earned $5,000 more than Alaska Native students, on average. The gap between male and female students' wages six years after leaving high school does not notably decrease even when comparing earnings for those with the same education level, except for individuals who left high school without a diploma. The difference in wages was greatest among two-year degree holders—male students earned approximately $21,000 more than female students. When comparing Alaska Native and White students who achieved the same level of education, the difference in wages decreased in most cases. For example, among those who earned a four-year degree, Alaska Native students earned $100 more than White students, on average. The exception is among two-year degree holders, where Alaska Native students earned approximately $14,000 less than White students.

Work experience, years of schooling, graduating from high school, and performing well on high school math and reading tests were positively associated with wages. Each additional quarter of work experience was associated with about a 2 percent increase in wages (table 4). Each additional year of schooling also had a positive association with wages. A high school diploma was associated with increases in wages, particularly for male students and Alaska Native students, compared with their peers who left high school without a diploma. Furthermore, a one standard deviation increase in math scores (akin to going

Table 4. Percentage changes in wages associated with education, work experience, and high school achievement among students who left high school between 2004/05 and 2005/06 and who worked all four quarters in Alaska in the sixth year after leaving high school, by gender and race/ethnicity

			Alaska Native		White	
Category	Male students	Female students	Male students	Female students	Male students	Female students
Quarter of work experience	2.2***	1.6***	1.4**	2.3***	1.8***	1.6***
Year of schooling[a]	1.0	1.8*	1.0	0.5	0.6	1.7
High school graduate	13.1***	5.9	44.6***	14.2**	7.7	7.4
One standard deviation increase in math scores	4.4**	5.4***	–3.8	5.2	1.7	3.0
One standard deviation increase in reading scores	2.0	4.1	9.3	–1.5	2.0	6.9

* Significant at $p < 0.05$; ** significant at $p < 0.01$; *** significant at $p < 0.001$.

Note: Results are based on regressions of log wages in the sixth year after leaving high school on each student's years of schooling, quarters of work experience from grade 9 through the sixth year after high school, quarters worked during the sixth year after high school, high school graduation status, state standardized math and reading test scores with indicators for whether a test score was imputed due to missing data, first pathway step (enrolled in college or worked in Alaska relative to other activities), economic region in which the student worked during the sixth year after high school (relative to the Anchorage/Matanuska-Susitna economic region), whether the student was enrolled in college during the sixth year after high school, whether the student exited an urban high school relative to a rural school, whether the student was economically disadvantaged in high school, whether the student was ever an English learner student, whether the student ever had an Individualized Education Plan, and whether the student left high school in the 2005/06 school year relative to 2004/05. Each column represents a separate regression. See appendix A for details about the model and table B3 in appendix B for full regression results.

a. Includes grades 9–12 and postsecondary education to capture the number of years of schooling attained by nongraduates.

Source: Authors' analysis based on data and methods described in appendix A.

Each additional quarter of work experience was associated with about a 2 percent increase in wages. Each additional year of schooling also had a positive association with wages

from the 50th percentile to the 84th percentile) equated to a 4 percent increase in wages for male students and a 5 percent increase for female students. Combined, these work and education experiences are associated with meaningful increases in wages. For example, three years of schooling, three years of work experience, graduating from high school, and a one standard deviation increase in math and reading test scores were collectively associated with increases in wages of 49 percent for male students and 40 percent for female students.

Implications of the study findings

This study provides initial evidence for education stakeholders about postsecondary pathways that can inform current policy deliberations in Alaska and elsewhere. The findings indicate that academic readiness, as measured by high school completion and test scores, is associated with higher educational attainment and employment rates. The findings also suggest that economic disadvantage in high school has a strong negative relationship with college enrollment and early-career earnings. Given this, Alaska stakeholders might investigate, for example, how well existing merit-based scholarships and needs-based grants are reaching the populations they are designed to support.

The findings indicate that academic readiness, as measured by high school completion and test scores, is associated with higher educational attainment and employment rates and that economic disadvantage in high school has a strong negative relationship with college enrollment and early-career earnings

The evidence also underscores the importance of evaluating and adapting strategies to support postsecondary success for Alaska Native students. The Alaska Native students in this study had lower college enrollment rates, but they also had lower high school graduation rates and high school achievement. Since students with similar characteristics tend to make similar postsecondary choices, it may be worth investigating the drivers of these gaps in Alaska and for American Indian/Alaska Native students nationwide, and the strategies to close them.

Limitations of the study

The boundaries of available data limit some of the inferences that can be drawn from this study. For example, the data were not available to measure six-year wage and employment outcomes for students who left high school after August 2006. Data elements that might better describe differences among high school students, such as grade point average and teacher quality, were not available in the state database. In addition, having data on out-of-state employees, federal employees, small business owners, commercial fishers, or individuals who support themselves through a subsistence lifestyle would provide a more robust picture of employment rates and wages. However, these data are not collected or are not available from the Alaska Department of Labor and Workforce Development.

The National Student Clearinghouse designates schools in the University of Alaska system as four-year institutions, even though they offer both two- and four-year programs at all campuses. Consequently, students who obtain an associate's degree from a bachelor's-degree granting institution—in Alaska or elsewhere—are coded as four-year degree holders. About 55 percent of students who enrolled in college attended a four-year institution in Alaska, and 31 percent enrolled in a four-year institution outside of Alaska. Some of these students may have enrolled in an associate's program, but it is impossible to determine who did without institution-level data.

Appendix A. Data sources and methods

This appendix provides details about the study's data sources, sample, and methods.

Data sources

Data from three agencies contributed to this study's analysis.

Alaska Department of Education and Early Development Online Alaska Student Information System student data files for 2000/01–2007/08. Data include all students who were enrolled or took a state assessment between the 2000/01 and 2007/08 school years. Students enrolled before 2002/03 who were not counted in the October 1 data collection were added to the dataset using their assessment data. If these students appeared in another school year in either the October 1 count or an assessment file, they were included in the dataset.

Alaska Department of Labor and Workforce Development data for 2004–12. Data include employment status and wages for Alaska residents on a quarterly basis. The data do not include federal employees, commercial fishers, independent small business owners, individuals practicing subsistence living, and individuals who are not in the labor force. Part-time and full-time status and number of hours worked are not collected. The Alaska Department of Labor and Workforce Development also holds data on which students passed the General Educational Development (GED) test, some career training program enrollment and certificate data, National Student Clearinghouse records, and Permanent Fund Dividend (PFD) records. Alaska is unique among states in that all residents who have lived in the state one year or more are eligible for a stipend under the PFD, which provides a reimbursement of excess revenue from oil and gas taxes. As a result, the PFD identifies whether individuals are Alaska residents.

Alaska Department of Corrections incarceration data for 2004–12. Data include dates of incarceration and dates of release.

Determining postsecondary pathways

Each student's postsecondary education, employment, and incarceration status was measured once each quarter during 2004–12. Each quarter, students were assigned one of the indicators shown in table A1.

When students were doing the same activity for consecutive quarters, that activity was considered one pathway step. For example, the pathway step would be "Employed" for students who were employed for four consecutive quarters. Students who were enrolled in college and working at the same time were considered "Enrolled in college" if they were enrolled at least half time. Students who held summer jobs between two academic years were also considered continuous college attendees. For example, a student whose pathway was quarter 1, college full time; quarter 2, college full time; quarter 3, employed; and quarter 4, college full time would be considered "college full time" throughout that year.

The tradeoff is that the length of time students spend in any stage of their pathway is not observed. For example, consider two students with the same pathway of employed, college

Table A1. Postsecondary indicator definitions

Indicator	Definition
Employed in Alaska	Individual is employed in Alaska and receives earnings according to the Department of Labor and Workforce Development.
Unemployed	Individual has claimed unemployment insurance.
Incarcerated	Individual is incarcerated in an Alaska state corrections facility as reported by the Department of Corrections.
Unknown in Alaska	Permanent Fund Dividend data indicate the individual is still an Alaska resident, but do not include education, employment, or incarceration data. These individuals may include federal employees such as postal workers and active duty military, independent small business owners, commercial fishers, individuals practicing subsistence living, and individuals who are not in the labor force (that is, not working and not claiming unemployment insurance).
Left Alaska	Individual has disappeared from the data, assumed moved out of state or died.
Full-time college	Individual attended college full time, according to National Student Clearinghouse records.
Half-time college	Individual attended college half time, according to National Student Clearinghouse records.
Received General Educational Development (GED)	Individual passed GED test.
Employee training program	Individual was enrolled in a career training program in Alaska.

Source: Authors' definitions.

full time, employed. One student could have been employed continuously for six years after leaving high school except for two quarters of full-time college attendance in the fourth year. Another student with the same pathway could have been employed for three quarters, enrolled in college full time for four years, and then employed again for a year and a half. Identifying the pathways students take is an important first step; additional studies can then examine how long students spend at each step of their pathway.

Methods

Two principal strategies guided the analysis for this study: descriptive summaries (that is, calculating averages and percentages) and regression analysis. This study used two regression models. The first estimates the probability that a student will enroll in college immediately upon leaving high school:

$$\log\left[\frac{\varphi_i}{1-\varphi_i}\right] = \beta_1 S_i + \beta_2 A_i + \beta_3 C_i \qquad \text{(A1)}$$

where φ_i represents the probability that student i enrolls in college immediately after leaving high school given:

- S_i, a vector of student characteristics, including indicators for:
  - The gender of the student.
  - Each racial/ethnic subgroup.
  - Whether the student attended an urban or rural high school.
  - Whether the student was ever an English learner student.
  - Whether the student ever had a special education plan.

    - Whether the student was economically disadvantaged in high school, with an additional variable to indicate whether the value of this variable was imputed due to missing data.
    - Whether student *i* earned a high school diploma.
- A_i, student *i*'s prior math and English language arts achievement test scores, standardized with a mean of zero and a standard deviation of one for the year, grade, test type, and subject; a binary variable for each subject (math and reading) was included to indicate whether the value of the math or reading test score was imputed due to missing data.
- C_i, a vector of fixed effects that indicate the quarter and year in which student *i* left high school.

This model does not cluster students by school or district because many schools in rural Alaska are very small and may enroll 20 or fewer students between kindergarten and grade 12. In addition, some districts are so geographically large that the experiences of students in different schools within the same district can be very disparate, and this level of clustering is not appropriate.

The second regression model examines the wages early-career individuals earn based on secondary and postsecondary experiences and characteristics. Equation A2 describes the regression model:

$$\log(W_i) = \beta_0 + \beta_1 S_i + \beta_2 E_i + \beta_3 A_i + \beta_4 D_i + \beta_5 L_i + \beta_6 P_i + \varepsilon_i \qquad \text{(A2)}$$

where $\log(W_i)$ is the log of the wages (in dollars) student *i* earned in the sixth year after leaving high school, given:

- S_i, individual *i*'s years of schooling, from grade 9 through the sixth year after leaving high school.
- E_i, individual *i*'s number of quarters of work experience from grade 9 through the sixth year after high school. Wages usually increase with experience. Therefore, this indicator is included to compare wages of students with the same number of quarters of work experience.
- A_i, student *i*'s prior math and English language arts achievement test scores, standardized with a mean of zero and a standard deviation of one for the year, grade, test type, and subject; a binary variable for each subject (math and reading) was included to indicate whether the value of the math or reading test score was imputed due to missing data.
- D_i, a vector of individual characteristics that are likely to have a relationship with wages including indicators for:
    - Whether the student attended an urban or rural high school.
    - Whether the student was ever an English learner student.
    - Whether the student ever had a special education plan.
    - Whether the student was economically disadvantaged in high school.
    - Whether the student earned a high school diploma.
    - The number of quarters an individual was employed during the year.
    - The year in which the student left high school.
- L_i, a set of geographic region indicators for the economic region in which student *i*'s place of employment is located, relative to the Anchorage/Matanuska-Susitna

economic region, important since wages are often related to the cost of living in the job's location.

- P_i, a set of dummy variables to indicate whether student *i* entered the workforce or enrolled in college, relative to students who did not do either of those activities directly after leaving high school.
- ε_i, a random error term.

The dependent variable is log (*wage*), not *wage*. The distribution of log earnings is close to a normal distribution, whereas the distribution of wages can be skewed by a few outliers who make much higher wages than the median (Card, 1999; Heckman & Polachek, 1974). Because the study reports outcomes in log wages, they are transformed into percentage differences. For example, an Alaska Native male student with 11 years of schooling can expect a 1 percent increase in wages with one additional year of schooling, whereas a White male student with 11 years of schooling can expect a 0.6 percent increase in wages with one additional year of schooling.

The analysis further separates students into groups of male and female students and performs separate regressions for each gender. This is because male workers typically earn more than female workers, even within the same industry. According to labor and education economists, this is a standard practice when the outcome variable is wages (D. Goldhaber, personal communication, July 27, 2012; Reynolds, 2012; J. Tyler, personal communication, July 19, 2012).

Appendix B. Detailed results

The results presented here provide additional information about the study's findings. A brief introduction to each table describes the relevant section of the report and, in some cases, how to interpret the table.

Students in the sample followed 3,006 unique pathways through college enrollment, employment, and other options in the first four to seven years after high school. The report discussed the three most common pathways for all students. The 10 most common pathways for students overall, for high school graduates, and for non–high school graduates are shown in table B1. The pathways listed with an asterisk are present among the top 10 most common pathways for every high school exit year. Pathways without an asterisk are represented in all but one high school exit year, with one exception ("received GED, employed in Alaska" is present in only one of the four exit years).

Table B1. Top 10 most common pathways for high school graduates and non–high school graduates, all students and by high school exit year (2004/05–2007/08)

	All students		High school graduates		Non–high school graduate	
Rank	Pathway	Percent of students	Pathway	Percent of high school graduates	Pathway	Percent of non high school graduates
All high school exit years						
1	Employed in Alaska*	10	Full-time college, half-time college, employed in Alaska*	11	Employed in Alaska*	13
2	Full-time college, half-time college, employed in Alaska*	7	Employed in Alaska*	9	Employed in Alaska, unknown in Alaska*	9
3	Employed in Alaska, unknown in Alaska*	6	Full-time college, half-time college, left Alaska*	5	Employed in Alaska, left Alaska*	5
4	Employed in Alaska, left Alaska	5	Full-time college, half-time college, unknown in Alaska*	5	Employed in Alaska, unemployed, employed in Alaska*	4
5	Full-time college, half-time college, left Alaska	4	Employed in Alaska, unknown in Alaska*	4	Left Alaska*	3
6	Full-time college, half-time college, unknown in Alaska	3	Employed in Alaska, left Alaska*	4	Unknown in Alaska *	3
7	Left Alaska*	3	Full-time college, half-time college, employed in Alaska, half-time college, employed in Alaska*	3	Employed in Alaska, received GED, employed in Alaska*	2
8	Employed in Alaska, unemployed, employed in Alaska*	3	Employed in Alaska, unemployed, employed in Alaska*	3	Employed in Alaska, unemployed*	2
9	Full-time college, half-time college, employed in Alaska, half-time college, employed in Alaska	2	Half-time college, employed in Alaska*	3	Employed in Alaska, unemployed, employed in Alaska, unemployed, employed in Alaska	1

(continued)

Table B1. Top 10 most common pathways for high school graduates and students who left high school without a diploma, all students and by high school exit year (2004/05–2007/08) *(continued)*

	All students		High school graduates		Non–high school graduate	
Rank	Pathway	Percent of students	Pathway	Percent of high school graduates	Pathway	Percent of non high school graduates
10	Employed in Alaska, half-time college, employed in Alaska	2	Employed in Alaska, half-time college, employed in Alaska*	2	Received GED, employed in Alaska	1
2004/05 high school exit year						
1	Employed in Alaska	8	Full-time college, half-time college, employed in Alaska	8	Employed in Alaska	10
2	Employed in Alaska, unknown in Alaska	6	Full-time college, half-time college, left Alaska	7	Employed in Alaska, left Alaska	7
3	Full-time college, half-time college, employed in Alaska	5	Employed in Alaska	7	Employed in Alaska, unknown in Alaska	7
4	Full-time college, half-time college, left Alaska	5	Employed in Alaska, left Alaska	4	Employed in Alaska, unemployed, employed in Alaska	4
5	Employed in Alaska, unknown in Alaska	4	Full-time college, half-time college, employed in Alaska, half-time college, employed in Alaska	4	Left Alaska	4
6	Left Alaska	3	Employed in Alaska, unknown in Alaska	3	Employed in Alaska, unemployed, employed in Alaska, unemployed, employed in Alaska	2
7	Employed in Alaska, unemployed, employed in Alaska	3	Employed in Alaska, unemployed, employed in Alaska	2	Employed in Alaska, received GED, employed in Alaska	1
8	Full-time college, half-time college, employed in Alaska, half-time college, employed in Alaska	2	Employed in Alaska, half-time college, employed in Alaska	2	Employed in Alaska, unemployed	1
9	Employed in Alaska, half-time college, employed in Alaska	2	Half-time college, employed in Alaska	2	Unknown in Alaska	1
10	Unknown in Alaska, left Alaska	1	Full-time college, half-time college, unknown in Alaska	2	Unknown in Alaska, left Alaska	1
2005/06 high school exit year						
1	Employed in Alaska	9	Full-time college, half-time college, employed in Alaska	10	Employed in Alaska	11
2	Full-time college, half-time college, employed in Alaska	7	Employed in Alaska	8	Employed in Alaska, unknown in Alaska	9
3	Employed in Alaska, left Alaska	6	Full-time college, half-time college, left Alaska	6	Employed in Alaska, left Alaska	5
4	Employed in Alaska, unknown in Alaska	5	Employed in Alaska, left Alaska	4	Employed in Alaska, unemployed, employed in Alaska	4

(continued)

Table B1. Top 10 most common pathways for high school graduates and students who left high school without a diploma, all students and by high school exit year (2004/05–2007/08) *(continued)*

	All students		High school graduates		Non–high school graduate	
Rank	Pathway	Percent of students	Pathway	Percent of high school graduates	Pathway	Percent of non high school graduates
5	Full-time college, half-time college, left Alaska	4	Employed in Alaska, unknown in Alaska	4	Left Alaska	3
6	Left Alaska	3	Full-time college, half-time college, employed in Alaska, half-time college, employed in Alaska	3	Unknown in Alaska	2
7	Employed in Alaska, unemployed, employed in Alaska	3	Full-time college, half-time college, unknown in Alaska	3	Employed in Alaska, received GED, employed in Alaska	2
8	Full-time college, half-time college, employed in Alaska, half-time college, employed in Alaska	2	Employed in Alaska, unemployed, employed in Alaska	3	Employed in Alaska, unemployed	1
9	Full-time college, half-time college, unknown in Alaska	2	Half-time college, employed in Alaska	2	Unknown in Alaska, left Alaska	1
10	Half-time college, employed in Alaska	2	Employed in Alaska, half-time college, employed in Alaska	2	Employed in Alaska, unemployed, employed in Alaska, unemployed, employed in Alaska	1
2006/07 high school exit year						
1	Employed in Alaska	11	Full-time college, half-time college, employed in Alaska	12	Employed in Alaska	12
2	Full-time college, half-time college, employed in Alaska	9	Employed in Alaska	9	Employed in Alaska, unknown in Alaska	10
3	Employed in Alaska, unknown in Alaska	6	Full-time college, half-time college, unknown in Alaska	5	Employed in Alaska, left Alaska	5
4	Employed in Alaska, left Alaska	5	Full-time college, half-time college, left Alaska	5	Employed in Alaska, unemployed, employed in Alaska	4
5	Full-time college, half-time college, unknown in Alaska	4	Employed in Alaska, unknown in Alaska	4	Left Alaska	3
6	Full-time college, half-time college, left Alaska	3	Employed in Alaska, left Alaska	4	Unknown in Alaska	3
7	Employed in Alaska, unemployed, employed in Alaska	3	Full-time college, half-time college, employed in Alaska, half-time college, employed in Alaska	3	Employed in Alaska, received GED, employed in Alaska	3
8	Left Alaska	3	Employed in Alaska, half-time college, employed in Alaska	3	Employed in Alaska, unemployed	2
9	Employed in Alaska, half-time college, employed in Alaska	2	Employed in Alaska, unemployed, employed in Alaska	3	Employed in Alaska, unemployed, employed in Alaska, unemployed, employed in Alaska	2

(continued)

Table B1. Top 10 most common pathways for high school graduates and students who left high school without a diploma, all students and by high school exit year (2004/05–2007/08) *(continued)*

	All students		High school graduates		Non–high school graduate	
Rank	Pathway	Percent of students	Pathway	Percent of high school graduates	Pathway	Percent of non high school graduates
10	Full-time college, half-time college, employed in Alaska, half-time college, employed in Alaska	2	Half-time college, employed in Alaska	2	Employed in Alaska, unemployed, employed in Alaska, unknown in Alaska	1
2007/08 high school exit year						
1	Employed in Alaska	13	Full-time college, half-time college, employed in Alaska	13	Employed in Alaska	17
2	Full-time college, half-time college, employed in Alaska	9	Employed in Alaska	11	Employed in Alaska, unknown in Alaska	13
3	Employed in Alaska, unknown in Alaska	7	Full-time college, half-time college, unknown in Alaska	8	Employed in Alaska, left Alaska	5
4	Full-time college, half-time college, unknown in Alaska	6	Employed in Alaska, unknown in Alaska	5	Employed in Alaska, unemployed, employed in Alaska	5
5	Employed in Alaska, left Alaska	5	Employed in Alaska, left Alaska	3	Unknown in Alaska	5
6	Employed in Alaska, unemployed, employed in Alaska	3	Half-time college, employed in Alaska	3	Left Alaska	3
7	Left Alaska	3	Full-time college, half-time college, left Alaska	3	Employed in Alaska, received GED, employed in Alaska	2
8	Half-time college, employed in Alaska	2	Employed in Alaska, half-time college, employed in Alaska	3	Employed in Alaska, unemployed	2
9	Unknown in Alaska	2	Employed in Alaska, unemployed, employed in Alaska	3	Received GED, employed in Alaska	1
10	Employed in Alaska, half-time college, employed in Alaska	2	Full-time college, half-time college, employed in Alaska, half-time college, employed in Alaska	2	Employed in Alaska, unemployed, unknown in Alaska	1

* indicates pathways present among the top 10 most common pathways for every high school exit year.

Source: Authors' analysis based on data and methods described in appendix A.

This report discussed the probability of students enrolling in college immediately after leaving high school. That discussion is based on results from a logistic regression model that estimated the probability of enrolling in college immediately after high school, given several student attributes available in the data; table B2 displays the full regression results.

Table B2. Logistic regression results for the probability that a student will enroll in college immediately after leaving high school

Variable	Coefficient	Standard error	Significance (*p* value)	Odds ratio
Student characteristics and achievements				
Exited an urban high school, relative to students who exited a rural high school	–.040	.029	.170	.961
High school graduate	2.875	.072	.000	17.726
Male	–.401	.027	.000	.670
Race/ethnicity, relative to White students				
Alaska Native	–.253	.041	.000	.776
American Indian	–.007	.118	.950	.993
Asian	.226	.060	.000	1.254
Black	.224	.072	.002	1.251
Hispanic	–.036	.072	.611	.964
Multiracial	–.085	.089	.339	.918
High school performance and program participation				
Math score	.492	.023	.000	1.635
Math score imputation	–1.001	.314	.001	.368
Reading score	.260	.024	.000	1.298
Reading score imputation	–.138	.291	.635	.871
Economic disadvantage	–.666	.031	.000	.514
Economic disadvantage imputation	.098	.210	.640	1.103
English learner student	–.231	.048	.000	.794
Special education	–.497	.044	.000	.608
Year of high school exit, relative to third quarter of 2004				
Fourth quarter of 2004	–4.592	1.035	.000	.010
First quarter of 2005	–2.992	.415	.000	.050
Second quarter of 2005	.057	.231	.805	1.059
Third quarter of 2005	–.322	.297	.277	.724
Fourth quarter of 2005	–2.657	.519	.000	.070
First quarter of 2006	–3.071	.367	.000	.046
Second quarter of 2006	.099	.231	.666	1.105
Third quarter of 2006	–.523	.318	.100	.593
Fourth quarter of 2006	–3.686	.448	.000	.025
First quarter of 2007	–4.274	.751	.000	.014
Second quarter of 2007	.047	.231	.839	1.048
Third quarter of 2007	–1.247	.353	.000	.287
Fourth quarter of 2007	–5.155	.748	.000	.006
First quarter of 2008	–4.507	1.034	.000	.011
Second quarter of 2008	.127	.231	.582	1.136
Constant	–2.670	.226	.000	.069

Source: Authors' analysis based on data and methods described in appendix A.

This report described the relationship between education and work experiences and wages six years after leaving high school. The findings are based on a regression model with the log of wages as the dependent variable and several student attributes, education, and work experience factors as independent variables. Each column in table B3 represents a separate regression.

Table B3. Percentage change in sixth-year wages associated with prior education and experience, and high school achievement and program enrollment for students who left high school in 2005 and 2006, by gender and race/ethnicity

	Associated with a percentage increase or decrease in wages					
			Alaska Native		White	
Factor	Male students	Female students	Male students	Female students	Male students	Female students
Education and experience through the sixth year after leaving high school						
Each additional year of schooling from grade 9 through the sixth year after leaving high school	1.0	1.8*	1.0	0.5	0.6	1.7
Each additional quarter of work experience from grade 9 through the sixth year after leaving high school	2.2***	1.6***	1.4**	2.3***	1.8***	1.6***
First pathway step, relative to students who did not enroll in college or work in Alaska						
Enrolled in college	0.2	3.6	–5.9	10.7	4.9	4.5
Worked in Alaska	–4.1	–1.4	–4.8	0.1	–4.4	–4.1
Graduated from high school	13.1***	5.9	44.6**	14.2**	7.7	7.4
Quarters worked in sixth year after leaving high school	80.5***	83.3***	83.1***	92.3***	79.2***	82.2***
Economic region of place of employment, relative to Anchorage/Matanuska-Susitna						
Northern	61.6***	25.1***	65.2***	2.3	75.1***	29.7**
Interior	11.6***	–7.0	6.5	–14.9	15.3***	1.1
Southwest	–3.2	0.3	–0.6	–15.3	25.0*	14.9
Gulf Coast	10.4*	–6.8	38.3*	–17.1	6.1	–7.6
Southeast	3.7	3.9	20.2	–8.4	4.3	4.1
Enrolled in college during the sixth year after leaving high school	–22.0***	–19.1***	–8.6	–3.8	–23.0***	–20.4***
High school performance and program participation						
One standard deviation increase in high school math test scores (for example, going from the 50th to the 84th percentile)	4.4**	5.4***	–3.8	5.2	1.7	3.0
Math test score imputed due to missing data	–14.5	19.2	–23.0	–79.4*	–26.6	–4.0
One standard deviation increase in high school reading test scores (for example, going from the 50th to the 84th percentile)	2.0	4.1	9.3	–1.5	2.0	6.9
Reading test score imputed due to missing data	–20.9	–53.6*	11.7	30.3	–13.8	–41.0*
Graduated from urban high school (relative to rural high school)	–2.6	–3.3	–0.2	4.7	–8.0***	–1.7
Economic disadvantage	–9.6***	–3.7	2.4	–4.9	–10.1***	–7.5
English learner student	–18.0***	–3.4	–25.5**	1.0	–0.7	–1.9
Special education	–16.8***	–9.9	18.8	–13.9	–20.3***	–11.7
Left high school in 2005/06, relative to 2004/05	8.7***	6.2**	4.1	10.2**	8.7***	7.9**
Constant	632.0***	602.1***	594.4***	549.6***	651.5***	603.2***

* Significant at $p < 0.05$; ** significant at $p < 0.01$; *** significant at $p < 0.001$.

Source: Authors' analysis based on data and methods described in appendix A.

References

Card, D. (1999). The causal effect of education on earnings. In O. Ashenfelter & D. Card (Eds.), *Handbook of labor economics: Vol. 3, pt. 1* (pp. 1801–1863). Amsterdam, Netherlands: Elsevier.

Driscoll, D. (2013, September 27). *What is a subsistence diet?* (Web log post). Retrieved May 30, 2014, from http://www.inchr.com/what-is-a-subsistence-diet.

Heckman, J., & Polachek, S. (1974). Empirical evidence on the functional form of the earnings-schooling relationship. *Journal of the American Statistical Association, 69*(346), 350–354.

Reynolds, C. L. (2012). Where to attend? Estimating the effects of beginning college at a two-year institution. *Economics of Education Review, 31*(4), 345–362. http://eric.ed.gov/?id=EJ965925

U.S. Census Bureau. (2012). *American Community Survey (ACS): 1-Year Estimates, Selected Economic Characteristics*. Retrieved June 6, 2014, using the online data generator American FactFinder, from http://factfinder2.census.gov.

U.S. Census Bureau. (2013). *American Indian and Alaska Native heritage month: November 2013* (CB12-FF.26). Retrieved August 11, 2014, from http://www.census.gov/newsroom/releases/pdf/cb13ff-26_aian.pdf.

U.S. Department of the Interior, Bureau of Land Management. (2008). *Alaska programs: Subsistence*. Retrieved May 30, 2014, from http://www.blm.gov/ak/st/en/prog/subsistence.html.

The Regional Educational Laboratory Program produces 7 types of reports

Making Connections
Studies of correlational relationships

Making an Impact
Studies of cause and effect

What's Happening
Descriptions of policies, programs, implementation status, or data trends

What's Known
Summaries of previous research

Stated Briefly
Summaries of research findings for specific audiences

Applied Research Methods
Research methods for educational settings

Tools
Help for planning, gathering, analyzing, or reporting data or research