ALASKA ECONOMIC TRENDS

FEBRUARY 2011

Science, Technology, Engineering, and Math

WHAT'S INSIDE

ALASKA DEPARTMENT OF LABOR & WORKFORCE DEVELOPMENT

Governor Sean Parnell
Commissioner Click Bishop

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Cover:
The aurora borealis shimmers over Bear Lake near Eielson Air Force Base. Photo by Joshua Strang

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STEM occupations help grow Alaska's economy

By Commissioner Click Bishop

This month's Trends focuses on STEM occupations —– those requiring specialized skills in science, technology, engineering, and math. The list is varied, from surveyors to engineers and auditors to computer programmers.

STEM jobs generate products and services that have become part of our everyday lives, such as airplanes, smart phones, CT scans, and — especially convenient in Alaska — remote starters for your favorite auto.

Workers in STEM jobs require more formal education — 75 percent require a bachelor's degree or higher. But STEM workers are also among the highest paid, averaging $73,000 a year while non-STEM workers average about $45,000.

In 2008, almost 25,000 of Alaska's nearly 322,000 jobs were STEM-related jobs. The Alaska Department of Labor and Workforce Development predicts that by 2018, we'll see more than 2,700 new STEM jobs and nearly 5,400 more openings as workers retire or change occupations.

Alaska Performance Scholarship

One way we're preparing Alaskans to fill these 8,000-plus projected vacancies is through an Alaska Performance Scholarship. This new program, approved by the Alaska Legislature, would invest in Alaska's students who are attending in-state university or vocational programs. Gov. Parnell has proposed a sustainable funding mechanism for the scholarship program based on recommendations from the Legislature's Joint Higher Education Scholarship Funding Task Force.

"The Alaska Performance Scholarship will lead to increased academic rigor in our high schools as students earn these scholarships," Parnell has said. "The scholarship helps a variety of students — those who seek career and technical training as well as university-level studies — to realize their dreams through their own hard work."

The graduating class of 2011 will be the first eligible for this opportunity.

Alaska Education Tax Credit

The Alaska Legislature expanded the Alaska Education Tax Credit to include more institutions and also for capital projects. The credit provides tax incentives and rewards for businesses that make contributions for vocational courses, programs, and facilities, including those offered at AVTEC: Alaska's Institute of Technology, the University of Alaska, some of Alaska's regional training centers, and Alaska's K-12 schools.

Companies that pay corporate, fisheries business, fisheries landing, insurance premium/title insurance premium, mining license, oil and gas production, and transportation or oil and gas property taxes are eligible.

Donors can receive a credit equal to 50 percent of contributions up to $100,000, and an additional 100 percent for donations between $100,000 and $300,000. Cash donations greater than $300,000 and up to $10 million earn tax credits of 50 percent, with a maximum Alaska state tax credit of $5 million.

In addition to the state tax credit, businesses may qualify for federal tax savings by making charitable cash donations. Business representatives should contact their tax consultants to determine the tax credit benefit of any donation.

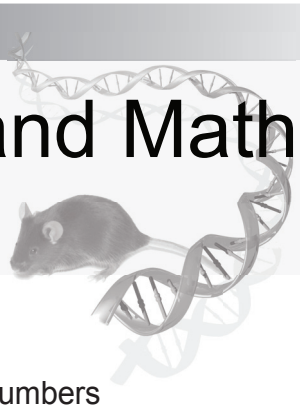
Unemployment benefits

Also in this issue is a report on Alaska's unemployment insurance program. More than 63,000 claimants in 2009 received about $130 million in federal and state benefits, which were directly injected into Alaska's economy. This doesn't include the "trickle-down" effect of those dollars in our economy. The U.S. Department of Labor estimates that every dollar paid in UI benefits generates an additional 60 cents of local economic activity.

By ERIK STIMPFLE, Research Analyst; and TODD MOSHER, Economist

Science, Tech, Engineering, and Math

Knowledge-based workers in Alaska



Science and engineering are embedded into the fabric of our lives, from improving everyday activities to developing our economy.

Even during the coldest winter days, we remain warm in comfortably heated buildings and connected to the outside world by television, Internet, and cell phones. Science and technology operate behind the scenes, quietly and efficiently providing most of the comforts of modern living.

This article focuses on the state's scientists, engineers, surveyors, mathematicians, computer programmers, architects, and other workers who need highly specialized skills to do their jobs. These science, technology, engineering, and math occupations are collectively referred to as STEM occupations.

STEM workers' contributions to Alaska's economy are numerous. Geologists search for mineral deposits, and environmental scientists obtain permits before a new mine can operate. In the fishing industry, biologists research ways to raise king crab in hatcheries and determine how many salmon can be harvested each year while ensuring their return in the years ahead. These are just a few examples of STEM activities; science and technology are everywhere in Alaska's industries.

1 STEM Occupations

Categories and 2008 Alaska employment numbers

ARCHITECTS, SURVEYORS, AND CARTOGRAPHERS (1,554)

- Architects, Except Landscape and Naval (321)
- Architectural and Civil Drafters (236)
- Cartographers and Photogrammetrists (82)
- Drafters, All Other (154)
- Electrical and Electronics Drafters (53)
- Landscape Architects (<50)
- Mechanical Drafters (<50)
- Surveying and Mapping Technicians (187)
- Surveyors (464)

BUSINESS AND FINANCE (4,212)

- Accountants and Auditors (1,860)
- Budget Analysts (226)
- Cost Estimators (138)
- Credit Analysts (<50)
- Financial Analysts (244)
- Financial Specialists, All Other (1,470)
- Logisticians (257)

COMPUTER AND MATH SCIENCE (4,385)

- Actuaries (<50)
- Computer and Information Scientists, Research (58)
- Computer Programmers (680)
- Computer Software Engineers, Applications (326)
- Computer Software Engineers, Systems Software (290)
- Computer Specialists, All Other (375)
- Computer Support Specialists (1,124)
- Computer Systems Analysts (465)
- Database Administrators (121)
- Mathematical Scientists, All Other (<50)
- Mathematical Technicians (<50)
- Mathematicians (<50)
- Network and Computer Systems Administrators (541)
- Network Systems and Data Communications Analysts (191)
- Operations Research Analysts (139)
- Statisticians (58)

ENGINEERS (6,145)

- Aerospace Engineering and Operations Technicians (<50)
- Aerospace Engineers (71)
- Agricultural Engineers (<50)
- Biomedical Engineers (<50)
- Chemical Engineers (<50)
- Civil Engineering Technicians (449)
- Civil Engineers (700)
- Computer Hardware Engineers (74)
- Electrical and Electronic Engineering Technicians (310)
- Electrical Engineers (282)
- Electro-Mechanical Technicians (100)
- Electronics Engineers, Except Computer (234)
- Engineering Technicians, Except Drafters, All Other (678)
- Engineers, All Other (1,223)
- Environmental Engineering Technicians (249)
- Environmental Engineers (247)
- Health and Safety Engineers, Except Mining Safety Engineers and Inspectors (226)
- Industrial Engineering Technicians (94)
- Industrial Engineers (83)
- Marine Engineers and Naval Architects (<50)
- Materials Engineers (<50)
- Mechanical Engineering Technicians (<50)
- Mechanical Engineers (288)
- Mining and Geological Engineers, Including Mining Safety Engineers (150)
- Nuclear Engineers (0)
- Petroleum Engineers (482)

LIFE AND PHYSICAL SCIENTISTS (4,739)

- Agricultural and Food Science Technicians (<50)
- Animal Scientists (<50)
- Astronomers (<50)
- Atmospheric and Space Scientists (86)
- Biochemists and Biophysicists (<50)
- Biological Scientists, All Other (194)
- Biological Technicians (480)
- Forest and Conservation Technicians (*)
- Foresters (*)
- Geological and Petroleum Technicians (616)
- Geoscientists, Except Hydrologists and Geographers (331)
- Hydrologists (<50)
- Life Scientists, All Other (<50)
- Life, Physical, and Social Science Technicians, All Other (327)

(continued on the next page)

Defining the STEM workforce

Describing Alaska's STEM workforce is a challenge. There is no accepted national list of STEM occupations, and definitions vary depending on the source and the purpose of the research.

For this article, the Research and Analysis section of the Alaska Department of Labor and Workforce Development created a working definition for STEM occupations as a contribution to the ongoing discussion.

For an explanation of our criteria, refer to the methodology on page 12. Based on these criteria, we identified 135 STEM positions, 132 of which had employment in Alaska in 2008. (See Exhibit 1.)

We organized STEM occupations into eight broad categories: business and finance; computer and math science; architects, surveyors, and cartographers; engineers; social scientists; life and physical scientists; and postsecondary teachers. STEM occupations that did not fit into any of these categories were grouped into "all other."

Forecasted STEM openings

In 2008, Alaska had roughly 24,441 STEM-related jobs, and this number is projected to increase to 27,174 by 2018. (See Exhibit 2.)

An estimated 2,748 new STEM-related positions will be created during the forecast period, and an additional 5,376 will open as workers retire, change occupations, or leave the labor force. All together, more than 8,100 projected STEM openings will need to be filled.

In 2008, the highest STEM employment was in engineering, life and physical sciences, and computer and math science, in that order. (See Exhibits 2 and 3.) Occupations in these categories, as well as in business and finance, are each expected to generate more than 1,000 openings by 2018, and taken together will account for over 77 percent of STEM openings. Engineering-related occupations are expected to produce slightly more than 2,000 openings — the highest of any category.

Help wanted: Seeking skilled workers

Over the next ten years, STEM workers will be in demand for a range of occupations. Exhibit 4 lists the STEM occupations forecasted to generate the most job openings from growth and replacements.[1] Accountants and auditors top the list with about 580 total openings. STEM postsecondary teachers

[1]Growth openings are equal to the positive change in employment (i.e., new jobs). Replacement openings are vacancies left by workers who choose another occupation or exit the workforce.

STEM Occupations (continued) 1

Alaska, 2008

LIFE AND PHYSICAL SCIENTISTS (continued)	
Chemical Technicians (141)	Materials Scientists (<50)
Chemists (112)	Medical Scientists, Except Epidemiologists (<50)
Conservation Scientists (210)	Microbiologists (<50)
Environmental Science and Protection Technicians, Including Health (189)	Nuclear Technicians (0)
Environmental Scientists and Specialists, Including Health (595)	Physical Scientists, All Other (126)
Epidemiologists (<50)	Physicists (<50)
Food Scientists and Technologists (<50)	Soil and Plant Scientists (<50)
Forensic Science Technicians (<50)	Zoologists and Wildlife Biologists (635)

POSTSECONDARY TEACHERS (834)[1]	
Agricultural Sciences Teachers (*)	Engineering Teachers (*)
Anthropology and Archeology Teachers (*)	Environmental Science Teachers (*)
Architecture Teachers (*)	Forestry and Conservation Science Teachers (*)
Atmospheric, Earth, Marine, and Space Sciences (*)	Geography Teachers (*)
Biological Science Teachers (*)	Mathematical Science Teachers (*)
Chemistry Teachers (*)	Physics Teachers (*)
Computer Science Teachers (*)	Sociology Teachers (*)
Economics Teachers (*)	

SOCIAL SCIENTISTS (478)	
Anthropologists and Archeologists (<50)	Social Science Research Assistants (<50)
Economists (70)	Sociologists (<50)
Geographers (<50)	Survey Researchers (75)
Industrial-Organizational Psychologists (0)	Urban and Regional Planners (220)
Market Research Analysts (<50)	

ALL OTHER (2,094)	
Audio and Video Equipment Technicians (144)	Film and Video Editors (<50)
Audio-Visual Collections Specialists (<50)	Fire Inspectors and Investigators (<50)
Broadcast Technicians (75)	Graphic Designers (172)
Chemical Plant and System Operators (<50)	Multimedia Artists and Animators (<50)
Commercial and Industrial Designers (<50)	Museum Technicians and Conservators (53)
Computer and Information Systems Managers (397)	Natural Sciences Managers (264)
Construction and Building Inspectors (234)	Numerical Tool and Process Control Programmers (<50)
Desktop Publishers (<50)	Sales Engineers (<50)
Embalmers (<50)	Sound Engineering Technicians (<50)
Engineering Managers (426)	Statistical Assistants (54)
Farm, Ranch, and Other Agricultural Managers (<50)	Traffic Technicians (<50)
Farmers and Ranchers (<50)	

[1]There are no employment estimates for individual postsecondary teachers.
An asterisk (*) indicates suppressed data.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

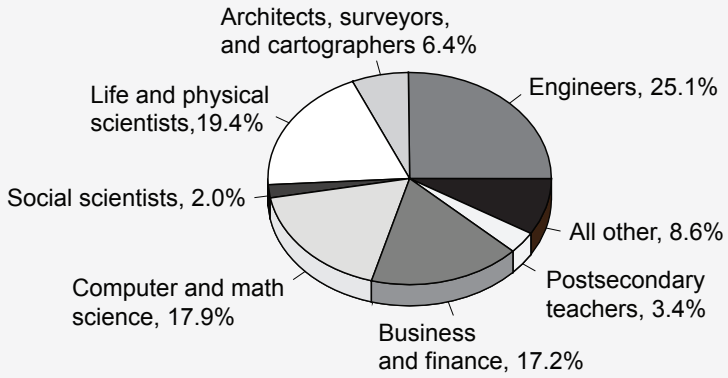
2 Projected STEM Employment by Category
Alaska, 2008 to 2018

	Employment			Openings, 2008 to 2018		
Occupational Categories	2008	2018	Percent change	Growth[1]	Replacement[2]	Total
Business and Finance	4,212	4,681	11.1%	469	763	1,232
Computer and Math Science	4,385	4,945	12.8%	560	607	1,167
Architects, Surveyors, and Cartographers	1,554	1,757	13.1%	203	520	723
Engineers	6,145	6,755	9.9%	610	1,430	2,040
Social Scientists	478	537	12.3%	59	160	219
Life and Physical Scientists	4,739	5,273	11.3%	535	1,244	1,779
Postsecondary Teachers	834	959	15.0%	125	208	333
All Other[2]	2,094	2,267	8.3%	187	444	631
Total for All STEM:	24,441	27,174	11.2%	2,748	5,376	8,124

[1]Growth openings are equal to the positive change in employment (i.e., new jobs).
[2]Replacement openings are vacancies left by workers who choose another occupation or exit the workforce.
Note: Data for individual occupations are at: http://labor.alaska.gov/research/occs/alaskaoccs/OccList.htm.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

3 Makeup of STEM Employment[1]
Alaska, 2008

Total STEM Employment: 24,441



[1]Excludes self-employed workers, private household workers, most agricultural workers, fishermen, and others not covered by the state's unemployment insurance program.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

are next, with estimated job vacancies of 300-plus.

Engineering-related occupations accounted for eight of the 30 occupations on the list. Civil and petroleum engineers are expected to generate more than 200 openings each, and both professions pay excellent annual wages. Openings for civil engineering technicians may exceed 160 positions, and these workers often train to become fully licensed engineers.

Seven computer science-related occupations made the list, and taken together they account for more than 1,000 job openings. Of this group, computer support specialists topped the list at more than 260 potential openings.

Education is essential

An estimated 95 percent of STEM workers need more than a high school diploma for their positions, compared to just 47 percent of non-STEM workers.[2] About 75 percent of STEM workers need a bachelor's or graduate degree, compared to only 20 percent of non-STEM workers. (See Exhibit 5.)

College degrees that prepare workers for STEM occupations require more math and science courses, and preparation for those classes begins in grade school.

Because an educated workforce is fundamental to STEM jobs, emphasis at the national level is on improving math and science education for students in kindergarten through 12th grade. This push includes getting kids interested in math and science careers as well as maximizing teacher and student performance.

Americans have known for some time that our high

[2]Based on O*NET surveys of occupation incumbent workers, applied to Alaska 2008 employment estimates.

school students lag behind other countries in math and science. Every three years, the Program for International Student Assessment reports test scores in math and science for 15-year-olds, and the 2009 results are not much different from previous years. In math, students in 17 of 33 countries performed better than Americans, and in science, 12 of 33 countries outranked the U.S.

One encouraging sign for Alaska is that more high school students are taking STEM-related courses at the University of Alaska. These dually enrolled students receive high school and college credits for attending college classes.

Between 2002 and 2010, the number of dually enrolled students in STEM-related classes increased from 35 to 417.[3] In 2010, there were 203 students enrolled in math and 101 students taking engineering technology courses. The remainder were enrolled in a variety of STEM-related disciplines such as computer science, biology, biomedical science, physical science, and natural resource management.

STEM jobs pay well

The average annual wage for STEM workers is $73,251 — almost $28,000 higher than for non-STEM workers. As in most professions, STEM occupations that require a higher level of education typically have more earning power.

Workers in STEM occupations earn higher average wages than their non-STEM counterparts at every level of education. (See Exhibit 6.) The difference is greatest at the lower levels of education attainment, where STEM-related technical certificates apparently trump general associate degrees and other certificates.

The wage gap between STEM and non-STEM occupations diminishes with higher levels of education. Still, on average, STEM jobs requir-

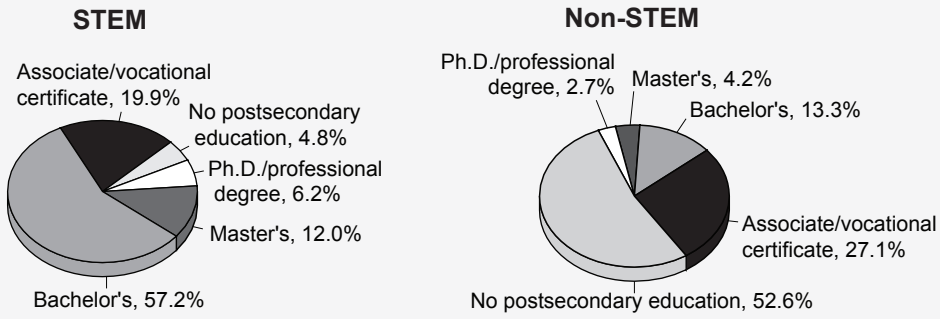
[3] Source: University of Alaska, Statewide Planning and Institutional Research

Highest Projected STEM Occupation Openings 4
Alaska, 2008 to 2018

Occupation	2008 Employment	Growth Openings[1]	Replacement Openings[2]	Total Openings
Accountants and Auditors	1,860	225	356	581
STEM Postsecondary Teachers	834	125	208	333
Zoologists and Wildlife Biologists	635	70	213	283
Computer Support Specialists	1,124	136	132	268
Surveyors	464	68	198	266
Geological and Petroleum Technicians	616	67	157	224
Petroleum Engineers	482	50	172	222
Civil Engineers	700	100	114	214
Environmental Scientists and Specialists, Including Health	595	82	107	189
Computer Programmers	680	15	154	169
Civil Engineering Technicians	449	63	104	167
Biological Technicians	480	60	79	139
Computer Systems Analysts	465	75	57	132
Network and Computer Systems Administrators	541	69	59	128
Engineering Managers	426	36	83	119
Urban and Regional Planners	220	27	86	113
Computer Software Engineers, Applications	326	64	48	112
Surveying and Mapping Technicians	187	28	83	111
Computer and Information Systems Managers	397	35	74	109
Computer Software Engineers, Systems Software	290	60	43	103
Mechanical Engineers	288	17	83	100
Geoscientists, Except Hydrologists/ Geographers	331	39	60	99
Architectural and Civil Drafters	236	24	72	96
Environmental Engineering Technicians	249	40	52	92
Mining and Geological Engineers, Including Mining Safety Engineers	150	30	62	92
Architects, Except Landscape and Naval	321	49	37	86
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	226	20	66	86
Electrical and Electronic Engineering Technicians	310	15	67	82
Conservation Scientists	210	21	61	82
Construction and Building Inspectors	234	26	53	79

Note: Excludes residual ("all other") occupations.
[1]Growth openings are equal to the positive change in employment (i.e., new jobs).
[2]Replacement openings are vacancies left by workers who choose another occupation or exit the workforce.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

5 Required Education Levels[1]
Alaska, 2008



[1]Based on required education data from O*NET database, weighted by employment.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

6 Average Earnings by Education Level
All Alaska jobs, 2009

Education Level	STEM	Non-STEM	Difference
Associate degree, certificate, or some college	$63,192	$49,059	28.8%
Bachelor's degree	$75,499	$62,732	20.4%
Master's degree	$79,733	$70,731	12.7%
Doctorate or professional degree	$86,052	$82,751	4.0%

Note: Based on O*NET required education data and an employment weighted average of May 2009 OES wage estimates. Excludes residual ("all other") occupations.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

7 Ten Highest-Paying STEM Jobs
Alaska, 2009

Occupation	Annual Wages
Petroleum Engineers	$154,500
Chemical Engineers	$125,820
Engineering Managers	$118,440
Materials Engineers	$108,180
Geoscientists, Except Hydrologists and Geographers	$104,410
Electrical Engineers	$100,250
Industrial Engineers	$98,790
Mechanical Engineers	$98,790
Mining and Geological Engineers, Including Mining Safety Engineers	$95,200
Natural Sciences Managers	$92,340

Note: Based on May 2009 OES wage estimates.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

ing a bachelor's degree pay 20 percent more than those in non-STEM categories, and those needing a master's degree pay 13 percent more.

As a group, STEM postsecondary teachers had the highest wages, with an average salary of about $92,000. (See Exhibit 8.)

For individual occupations, petroleum engineers top the list with average earnings of $154,500, and eight of the ten highest paying occupations are engineering-related. (See Exhibit 7.)

Engineers typically earn a bachelor's degree and spend several years gaining on-the-job experience before they can take an exam to become fully licensed and start earning top-dollar wages.

An aging STEM workforce

There are relatively few young STEM workers. In 2008, only about 9 percent were under the age of 25 (see Exhibit 9), compared to 20 percent of non-STEM workers. This is likely because it takes time to obtain the necessary postsecondary education or training for STEM employment.

Alaska's STEM workforce is aging, and replacements will be needed as these workers retire. About 41 percent of Alaska's STEM workers were ages 45 to 64 in 2008, and many of these workers will retire in the near future. It will be a challenge to replace them, because these workers typically have many years of experience, education, knowledge, and skills built up over a career. However, the large number of aging workers also means continued opportunities for younger workers just starting their careers, provided they have the required education and training.

Most STEM workers are men

STEM workers in Alaska are predominately male, a long-time trend that mirrors the rest of the nation. Business and finance was the only category with significantly more women than men. (See Exhibit 10.) Social sciences had an almost even split of males and females. But in nearly every other category, there were significantly more men.

Engineering had the highest difference, with four males to every female.

However, data from the National Science Foundation suggest that the number of women choosing STEM careers is on the rise. Women made up 27 percent of the nation's science and engineering workforce in 2007, compared to only 12 percent in 1980.[4]

Despite the apparent gender gap in science and engineering, Alaska's women are closing the gap in some individual occupations.

Eight of the top 15 STEM occupations with the highest percentage of females require a background in science. (See Exhibit 11.) Four of those are in the environmental sciences. Conservation scientists are 52 percent female, followed by environmental technicians (48 percent), environmental scientists (47 percent), and environmental engineers (36 percent). In contrast, only 20 percent of engineers overall are women.

Finding qualified workers

Employers who can't find workers locally have to look outside the state. In 2008, about 16 percent of workers in STEM-related jobs were nonresidents, compared to 20 percent nonresidency for non-STEM positions.

Finding qualified Alaska residents is a challenge for employers in a variety of industries. Because most STEM workers need a bachelor's degree or higher, short-term training programs are less likely to provide a quick fix for any worker shortages.

Among STEM occupations, the life and physical sciences category had the highest percentage of nonresidents; about 23 percent of its workers were from outside the state. However, rates for individual occupations can vary widely.

For residency information for specific occupations, refer to the Alaska Occupations Web site, which provides data on more than 500 occupations.[5]

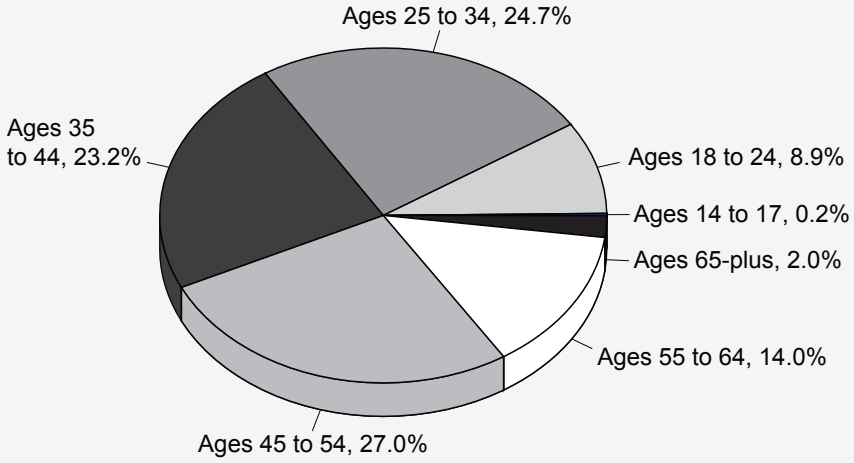
[4]Source: The National Science Foundation's Science and Engineering Indicators 2010 Report
[5]See http://labor.alaska.gov/research/occs/alaskaoccs/home.htm.

8 Average Wages by Category
All Alaska jobs, 2009

Occupational Category	STEM Wages	Non-STEM Wages
Postsecondary Teachers	$91,968	$71,259
Engineers	$89,053	*
Architects, Surveyors, and Cartographers	$69,335	*
Computer and Math Science	$66,853	*
Business and Finance	$65,046	$63,390
Life and Physical Scientists	$62,895	*
Social Scientists	$61,503	$70,863
All Other[1]	$78,266	$44,790

[1]For a list of occupations see Exhibit 1.
*All occupations in this category are STEM.
Note: Based on an employment weighted average of May 2009 OES wage estimates.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

9 Age of STEM Workers
Alaska, 2008



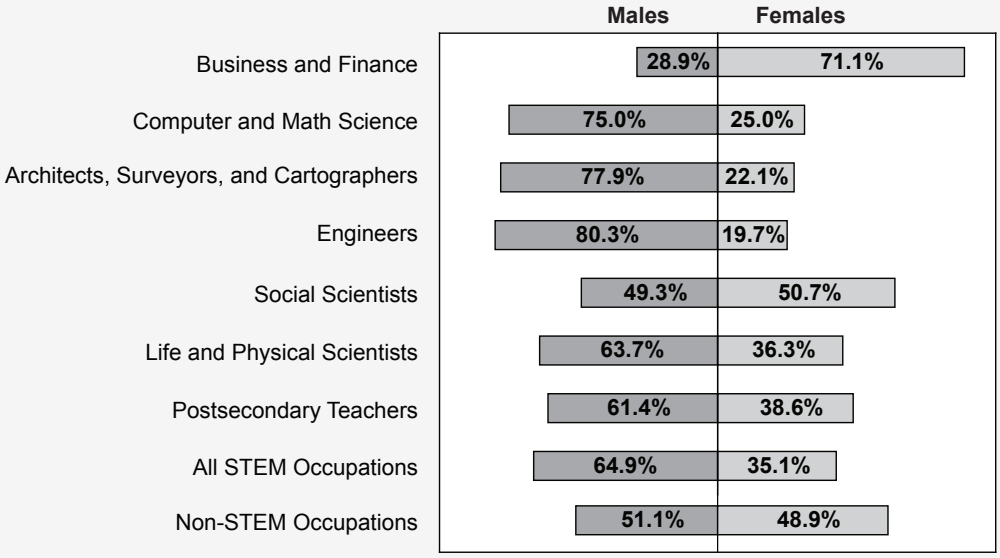
Note: Based on 2008 Alaska Permanent Fund Dividend data.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

The national push for STEM

In 2007, Congress passed the America Competes Act, with the goals of promoting scientific research and development and helping the U.S. stay competitive. The act was partly in response to a 2007 federal report titled "Rising Above the Gathering Storm."

The report concluded that although the United

10 Gender Makeup of STEM Categories
Alaska, 2009



Note: Based on 2008 Alaska Permanent Fund Dividend data.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

11 Highest Percentages of Women
Alaska STEM jobs, 2008

Occupation	Percent female
Budget Analysts	77.9%
Accountants and Auditors	72.7%
Graphic Designers	57.9%
Financial Analysts	54.7%
Conservation Scientists	51.7%
Environmental Science and Protection Technicians, Including Health	47.5%
Environmental Scientists and Specialists, Including Health	47.1%
Urban and Regional Planners	45.6%
Operations Research Analysts	45.5%
Natural Sciences Managers	44.2%
Biological Technicians	42.7%
Chemists	41.6%
STEM Postsecondary Teachers	38.6%
Environmental Engineers	35.5%
Database Administrators	35.4%

Note: Only includes occupations with 100 or more jobs. Excludes residual ("all other") occupations. Gender percentages are based on 2008 Alaska Permanent Fund Dividend data.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

States was still among the world's leaders in scientific research, discovery, and innovation, it was in danger of losing its global technological edge.

The act increased funding for scientific research and development, promoted STEM-related education, and extended tax credits for companies engaged in scientific research.

In late December of 2010, the America Competes Act was reauthorized with bipartisan support and was signed into law on Jan. 4. The act includes research and development tax credits for private companies and more than $40 billion in funding for the National Science Foundation, the Department of Energy, and the National Institute of Standards and Technology.

The America Competes Act is just one example of U.S. efforts to promote STEM-related education. One of the largest is led by a nonprofit group called Change the Equation. This umbrella organization's 110 corporate partners have pledged millions of dollars worth of funding and in-kind contributions to promote STEM-related education.

Research dollars for Alaska

It is difficult to obtain data on the research expenditures of private companies, but information on government funding awarded to the University of Alaska is quantifiable and a good example of how these dollars filter into the state economy.

In 2009, the National Science Foundation awarded $40.5 million for research and $162.2 million for major research equipment to the University of Alaska Fairbanks.[6] Most of the equipment funding was for the construction of a new research vessel, the R/V Sikuliaq, which is scheduled to begin operations in 2014 and will port in Seward.

UAF will operate the 254-foot, $123 million ship, which will be owned by the National Science Foundation and is under construction in Marinette, Wisc. Scientists from Alaska and

[6]Source: The National Science Foundation's Budget Internet Information System, http://dellweb.bfa.nsf.gov/

around the world will have a new platform to study climate change, sea ice, fisheries, and sub-sea volcanic activity.

Research resembles an industry

Scott Goldsmith, an economics professor at the University of Alaska Anchorage, has studied the benefits of scientific research and development conducted by the university. He wrote that research is an economic enterprise comparable to mining, seafood, timber, or oil and gas.[7] Research brings money into Alaska and creates jobs.

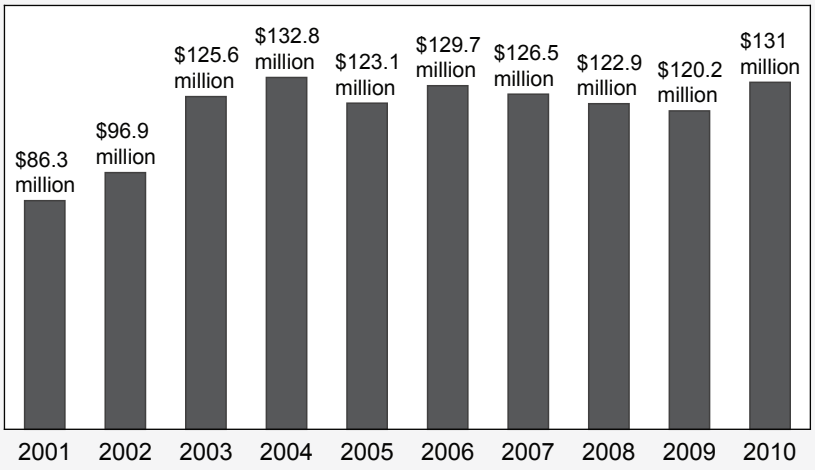
Goldsmith estimated that in 2006, university research money helped fund $52.6 million in payroll — or 1,292 jobs — within the university and an additional 1,100 jobs in Alaska's private sector, or $39.5 million in wages. Research expenditures have increased since these 2006 data.

Research dollars support more than just science. During fiscal year 2010, the University of Alaska spent $131 million on research-related activities. (See Exhibit 12.) These expenditures include wages for employees and the purchase of goods and services from local businesses. The university spends additional money when building new science labs, which provides jobs for construction workers.

Most of the university's research budget comes from nonstate funds. According to the University of Alaska in Review 2010 Report, the university system leveraged $5.70 in external funding for every dollar of state funding provided during fiscal year 2009.

A large portion of that funding came from the federal government, but private grants and donations also contributed significantly. During FY 2009, the federal government provided roughly 86 percent of the funding for UA research; private, local, and other sources funded 12 percent; and 2 percent came from state government.[8]

University Research Expenditures **12**
U of A, fiscal years 2001 to 2010



Note: Includes activities directly related to scientific and academic research, including capital expenditures.
Source: University of Alaska Statewide Planning and Institutional Research

STEM for Alaska's future

The contributions that engineers, scientists, and other STEM workers make to the state are multifaceted, as they solve problems and bolster the economy throughout Alaska's industries. As we move into the future, we need an educated and highly skilled STEM workforce to provide solutions for short-term and long-term challenges of life in Alaska.

[7]Source: Scott Goldsmith, "University of Alaska Research: An Economic Enterprise," UAA Institute of Social and Economic Research, http://iser.uaa.alaska.edu/Publications/ua_econent.pdf
[8]Percentages are based on data from Table 5.07 of the University of Alaska in Review 2010 Report.

Methodology: Defining jobs in science, technology, engineering, and math

The first step for this article was to define which occupations would be considered STEM. Currently, there is no widely accepted list of STEM jobs. Based on a review of existing literature and occupational data, we developed our own method for defining STEM occupations.

A position qualified as STEM by passing criteria in one or more of the following five subjects: mathematics, computer technology, architecture, engineering, or science. Data and information from the Occupational Information Network (O*NET)[1] were the primary evaluation tool. We considered the following occupational characteristics: knowledge, abilities, skills, tools and technologies, and occupational tasks.

Many occupations use sophisticated tools and technology; the difference is how they use it. The use of tools and technology must be direct and active or creative, and not passive or indirect. This means that simple use of a technology was not enough for an occupation to qualify as STEM. "Active or creative use" means workers use the technology in a sophisticated manner, employing relevant skills, knowledge, and abilities. "Passive use" means the technology itself is doing most or all of the work; there is little reasoning, creation, or direct application of relevant skills or knowledge.

An example of an active use of computer technology would be a computer programmer who develops a custom program to store, access, and process data. An example of a passive use of computer technology would be a clerk who enters the names and addresses of clients into a database. The programmer applies considerable knowledge and skill using computer languages. On the other hand, the data clerk uses the computer to complete a routine task.

A work in progress

The STEM occupations list is in some ways a work in progress. We hope to collaborate further with other states and researchers to establish a more universal set of criteria. To date, there is no clear consensus.

Occupations in the health care category have largely been treated by others as a separate entity, and not considered for inclusion as STEM occupations. Although we followed that precedent for this article, we acknowledge that many occupations in the health care arena would otherwise qualify as STEM jobs by our criteria (on the basis of life sciences and/or the active use of computer technology).

The construction category has a similar precedent. By our criteria, some construction occupations not on our list might qualify upon further examination, but for now we have excluded the construction category with few exceptions.

Further Alaska STEM-related research projects may expand the definition of STEM-related occupations to the health care and construction fields in the future.

For a complete description of our methods, please visit: http://www.labor.state.ak.us/research/stem/stemmethod.pdf.

Note: Economist Kelsey Kost contributed to the development of the STEM occupations list.

[1] O*NET is developed under the sponsorship of the U.S. Department of Labor/Employment and Training Administration, and its data are available at http://online.onetcenter.org.

By LENNON WELLER, Economist

Changes in Unemployment Benefits

Economic effects of bigger payouts and new maximum

In Alaska, a fixed legislative schedule determines a person's weekly unemployment benefits. Inflation erodes the value of the benefit amounts over time, and statutory changes are required to adjust benefit amounts upward.

Before the Alaska Legislature adoped the most recent revision in early 2009, the last time the schedule was amended was 1997, making this the longest period without changes since the 1960s. (See Exhibit 1.)

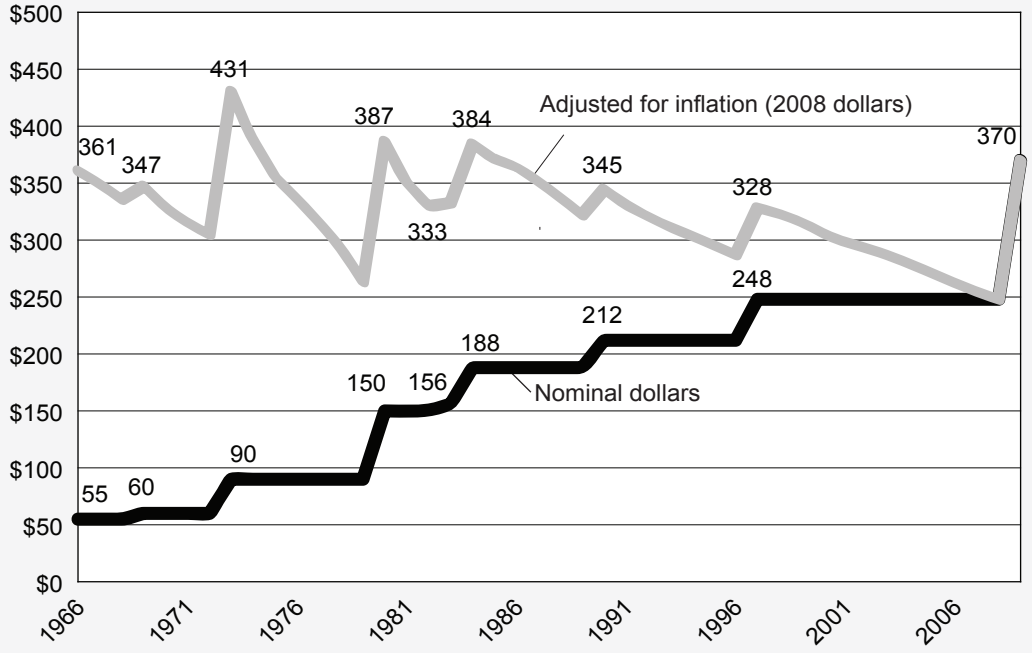
Legislature expands benefit schedule

The latest round of changes went into effect on Jan. 1, 2009. Senate Bill 120 updated the unemployment insurance benefit payment schedule by adding a net 55 steps — 61 tacked on to the end and six removed from the beginning.[1] (See Exhibit 2.)

This change increased the maximum weekly benefit amount from $248 to $370, as those earning $26,750 or more in base period[2] wages became eligible to receive up to $122 more per week. A person qualifies for an extra $2 in weekly benefits for every $250 in earnings during the qualifying base period.

Under the new schedule, a claimant with wages of at least $2,500 per year (previously $1,000) qualifies for $56 in weekly benefits (previously $44). At the higher end, $41,750 in wages (previously $26,500) means a new maximum of $370 (previously $248). Any earnings beyond $41,750 won't provide additional compensation. However, this is an increase of $15,000 from the previous ceiling on base period wages.

1 Maximum Weekly Benefit Amount
Alaska Unemployment Insurance, 1966 to 2009



Note: The adjustment for inflation reflects the true purchasing power of the maximum weekly benefit amount, while the nominal dollar values are the actual numbers reflected in the schedule.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

41.7 percent stuck at prior maximum

Of the 63,630 total claimants in 2009, 26,506 reported annual earnings of at least $26,750 — that means

[1] For the complete 2009 revision table, see the August 2008 issue of *Trends* at http://labor.alaska.gov/trends/aug08.pdf.
[2] Base period: The first four of the last five completed calendar quarters immediately preceding the first day of an individual's benefit year.

2 Steps Deleted from Start of Schedule

2009 changes from prior benefit rate revision

2008			2009		
Base Period Wages		Weekly Benefit Amount	Base Period Wages		Weekly Benefit Amount
At Least	But Less Than		At Least	But Less Than	
0	$1,000	0			
$1,000	$1,250	$44			
$1,250	$1,500	$46			
$1,500	$1,750	$48			
$1,750	$2,000	$50			
$2,000	$2,250	$52			
$2,250	$2,500	$54	0	$2,500	0
$2,500	$2,750	$56	$2,500	$2,750	$56
$2,750	$3,000	$58	$2,750	$3,000	$58
$3,000	$3,250	$60	$3,000	$3,250	$60

Note: Beginning Jan. 1, 2009, benefits were deleted for wages of at least $1,000 but less than $2,500, and benefits were added for wages of at least $26,750 but less than or equal to $41,750.

Source: Alaska Statute 23.20.350(d), amendment effective Jan. 1, 2009.

41.7 percent would have received the previous $248 weekly maximum benefit. Once the 2009 changes went into effect, those 26,506 claimants who made more than $26,750 per year (and whose claims began 2009) were eligible for up to an additional $122 per week. Of that group, 20,697 received more than $248 in weekly benefits.

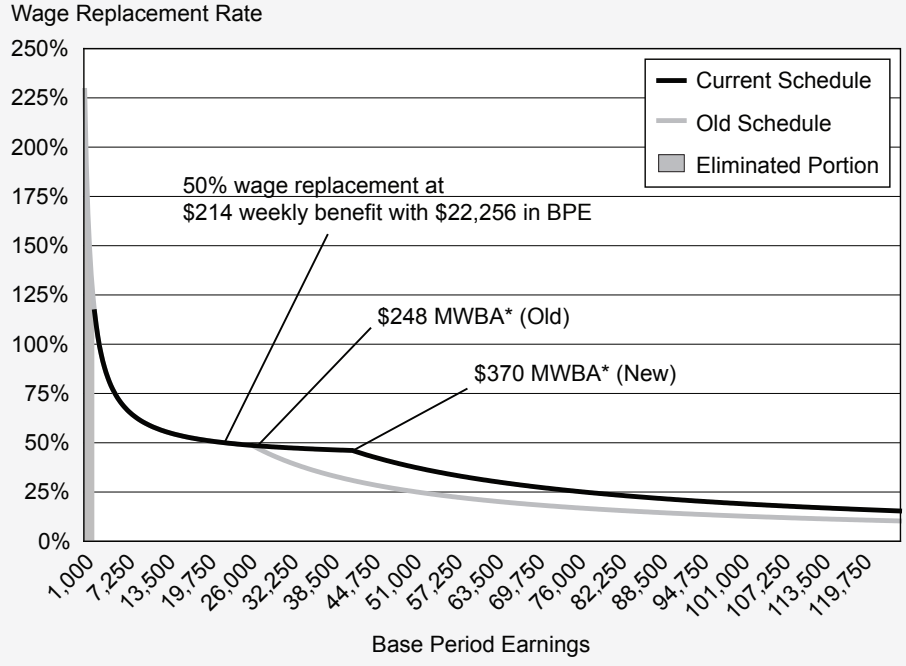
A total of 11,600 individuals — or 18.2 percent of claimants — received the new $370 maximum weekly benefit amount in 2009, the first year of the new schedule.

Replacement of lost wages

The goal for the replacement of lost wages is 50 percent, a compromise between the parties in Congress who crafted the 1935 legislation creating the unemployment insurance program. This measure aims to provide enough to cover basic expenses without discouraging people from getting back to work as quickly as possible given economic conditions.

3 UI Wage Replacement Rates

Benefits as a percentage of weekly earnings



*MBA: Maximum weekly benefit amount

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Within the current schedule, wage replacement is exactly 50 percent when the qualifying wage is $22,256. (See Exhibit 3.)

The average weekly wage for all covered employment[3] in 2009 was $881 — or $45,812 annually — so the previous maximum weekly benefit was a 28.1 percent wage replacement rate.

In contrast, the average weekly wage for the claimant population in 2009 was $568, or $29,536 per year. At this level, the wage replacement rate would have been 43.6 percent under the old schedule, and under the new schedule it's 47.9 percent: the result of a $24 increase in the benefit amount based on the average claimant's wages.

[3] Covered employment is the number of people working during the pay period that includes the 12th of each month, by place of work. Workers who are not covered include agricultural workers, the self-employed, some employed students, most fishermen, full commissioned sales workers, private railroad workers, and elected and appointed officials.

Economic implications of increase

Just as the new benefit schedule went into effect, a national recession (which technically started a year earlier) began to take its toll on Alaska's economy. After three years of continuous declines in the number of active claimants, the tide turned in 2009 with a 40 percent increase from the previous year.

The simultaneous increase in the maximum weekly benefit amount and the recession had a compounding effect on the volume of payments in the same year. Claimants went up by 18,287 and regular benefit payments rose by $64.7 million with an additional $65 million for extension programs — $129.7 million more than compensation in 2008. Of that total increase in payments, $27.8 million can be attributed to the change in the maximum weekly benefit amount.[4]

[4] The $27.8 million was determined by taking the difference between what was actually paid to those with a weekly benefit amount of greater than $248 and what would have been paid to them by multiplying the number of weeks paid by the previous maximum weekly benefit amount of $248. This hypothetical amount doesn't take into account dependence allowances, garnishments, or any other monetary adjustments; all of which occur after determination of the eligible benefit amount.

Broken down by program, the change in the maximum weekly benefit increased regular UI compensation by an estimated $24.1 million, by an additional $2.7 million for extended benefits, and by $1 million for emergency unemployment compensation. However, only regular UI payments were chargeable to the trust fund, because the federal government picked up the tab on extension program payments made in 2009.

On the flip side, the effect of injecting an extra $27.8 million into the economy is significant. Money that goes into the hands of the unemployed is very likely to be spent; they tend not to save their benefit dollars.

Further, the U.S. Department of Labor estimates the multiplier for UI benefits at 1.6, meaning that every dollar paid in benefits generates an additional $0.60 of activity in the local economy. Therefore, the increase in the maximum weekly benefit amount alone could have pumped as much as an extra $44.5 million into the economy.

A Safety Minute

Heavy snow is in the forecast this winter, so take extra precautions

We expect significant snowfall across the state this year, and Alaskans should take extra care during and after a snowstorm to avoid accidents.

Most seasoned Alaskans own a trusty snow shovel and have more experience with it than they really care to have, and some are lucky enough to have a willing youngster with a strong back around the house. However, everyone can benefit from some key advice when shoveling:

- Dress for the weather and use the right equipment for conditions. Wear boots with good traction or use over-the-shoe traction enhancers.
- Use proper body mechanics. Remember to bend your knees and lift with your legs while keeping your back straight. Avoid excessive twisting, and take your time. It may help to warm up and stretch before strenuous snow shoveling.
- If you have a snow blower, make sure it's well-maintained with operable safety guards. Never attempt to clear a jammed snow blower while it's running.
- If you have to get on the roof to remove snow, protect yourself from falls.

Alaska has some of the most efficient snow removal professionals in the world. You can help them by watching for snow removal equipment and taking precautions. Slow down and give them as much room as possible. Drive with your lights on and don't assume the equipment operator sees you.

During extreme snowfall, power lines and trees are susceptible to damage. Limit travel during and immediately after a snowstorm, and avoid downed power lines. Wear protective clothing and use eye, hearing, and face protection when using a chainsaw to remove downed trees. If the power goes out, do not operate a generator in an enclosed space where carbon monoxide fumes could create a fatal health hazard.

For more information on winter safety, contact the AKOSH Consultation and Training program at (800) 656-4972, or 269-4955 in Anchorage.

By NEAL FRIED, Economist

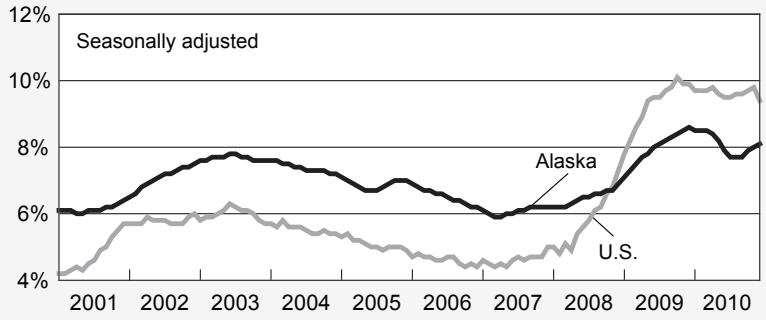
Employment Scene

Unemployment rate at 8.1 percent in December

Alaska's seasonally adjusted unemployment rate for December inched up slightly to 8.1 percent. November's rate was 8.0 percent.

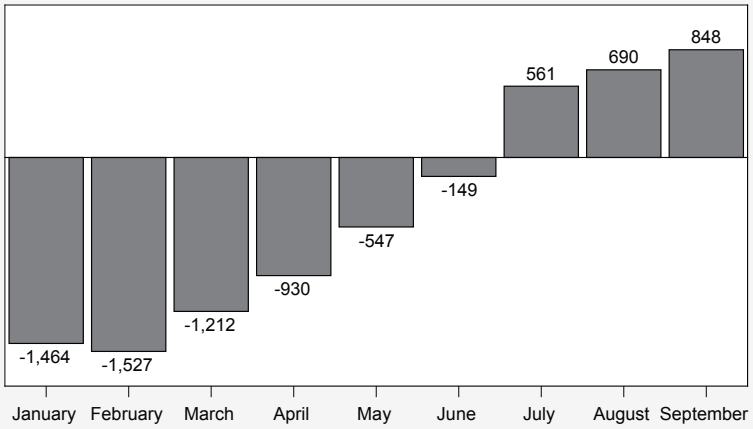
Alaska's jobless rate remains lower than the rest of the United States. The comparable national unemployment rate for December was 9.4 percent, down from 9.8 percent in November. Exactly a year ago, the national unemployment rate was 9.9 percent, compared to 8.6 percent for Alaska.

1 Unemployment Rates
Alaska and U.S., Jan. 2001 to Dec. 2010



Source: Alaska Department of Labor and Workforce Development, Research and Analysis

2 Oil Industry Growth Turns Positive
Alaska, 2010



Sources: Alaska Department of Labor and Workforce Development, Research and Analysis; QCEW

Unemployment rises with winter

The not seasonally adjusted unemployment rates increased in nearly all of the state's regions in December. In most cases, the jobless numbers are close to year-ago levels. For example, the Interior's rate was 8.0 percent in December, up from 7.8 percent in November, and a bit lower than its year-ago rate of 8.2 percent.

Some Alaska areas hit double digits

In December, jobless rates reached double digits in 20 out of 28 areas in the state — a characteristic of winter in Alaska — with unemployment highest in Skagway and Hoonah-Angoon. The economies with the highest unemployment tend to be smaller communities with strong ties to fishing and tourism, and/or those with a chronic lack of year-round employment opportunities.

Surprising growth in third quarter

Preliminary third-quarter data became available recently from the 2010 Quarterly Census of Employment and Wages. Nearly all of the QCEW employment is based on a census of quarterly payroll reports provided by employers around the state.

As a census, these numbers are different from the Current Employment Statistics, which are sample-based estimates. Eventually, these QCEW numbers will largely replace the CES numbers during our annual benchmarking that will be complete by March.

The importance of these new numbers is two-

fold. First, these statistics represent a census of employers versus estimates. Second is what the figures show. Over-the-year changes in total employment were mixed during the first quarter of 2010, but turned positive during the second quarter and stayed positive throughout the third quarter. The third quarter represents peak economic activity in Alaska as construction, fishing, and visitor industries reach their highest levels of employment.

Two solid quarters of over-the-year employment gains in 2010 may not only make up for the small losses in 2009, but could result in overall higher employment in 2010 than in 2009.

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The QCEW oil and gas employment numbers tell a similar tale. Over-the-year changes were negative during the first two quarters of 2010 for the oil industry, but changed course in the third and turned increasingly positive. (See Exhibit 2.)

Comparing the average of the first nine months of 2009 to the first nine months of 2010 produces oil industry employment that remains slightly negative. However, we won't know for sure where 2010's numbers will eventually land until fourth quarter employment census figures are released.

Trends Index 2010

January
Employment Forecast for 2010: The end of a streak
Employment Scene: Unemployment rate at 8.7 percent in November

February
Anchorage Migration: The movement between Alaska's major Native areas and Anchorage
Alaska's 2008 Per Capita Income: The state's personal income in 2008 is a standout, but in 2009 it loses steam
Employment Scene: Unemployment rate ends year at 8.8. percent

March
Alaska's Health Care Industry: A large industry that just keeps growing
Nursing Across the State: Nursing care workers in a fast-growing industry
Alaska's Unemployment Insurance Rate: Seasonal adjustments to the insured employment rate and what they say
Employment Scene: Unemployment rate begins the year at 8.5 percent

April
Alaska's 2009 Population: State and local estimates
The Kenai Peninsula Borough: Oil and gas jobs, tourism, and retirees
Alaska's Unemployment Insurance Trust Fund: How is Alaska's trust fund faring?
Employment Scene: Unemployment rate at 8.5 percent in February

May
Older Workers in Alaska: A wage record analysis
Alaska's Self-Employed: Not everyone gets a paycheck
Petersburg: The story of a 100-year-old fishing community
Employment Scene: Unemployment rate at 8.6 percent in March

June
Tracking Alaska's Students: Measuring Alaska's secondary student performance
The Kodiak Island Borough: An economy steeped in fishing, but the Coast Guard and tourism play a role too
Employment Scene: Unemployment rate at 8.4 percent in April

July
The *Trends* 100: Alaska's Largest Private Employers in 2009
Alaska's Teachers: Genius without education is like silver in the mine
Employment Scene: Unemployment rate at 8.3 percent in May

August
The Cost of Living in Alaska: Alaskans love to talk about it
A Snapshot of Alaska's Housing Market: Housing market responds to crisis but looks relatively good
Employment Scene: Unemployment rate at 7.9 percent in June

September
Alaska's 10-Year Industry Forecast: A look at industries, 2008 to 2018
Alaska's 10-Year Occupational Forecast: Health care occupations will have strongest growth
The Haines Borough: A unique location
Employment Scene: Unemployment rate at 7.9 percent in July

October
Alaska's Mining Industry: From a golden past to a polymetallic future
Alaska's Timber Industry: Fallen on hard times
Employment Scene: Unemployment rate at 7.7 percent in August

November
Employment in the Seafood Industry: Alaska regions saw a mix of losses and gains in 2009
Alaska's "Other" Manufacturing: The 29 percent outside seafood processing
Employment Scene: Unemployment at 7.8 percent in September

December
Population Projections, 2010 to 2034: Alaska by age, sex, and race
The Matanuska-Susitna Borough: Growth continues to eclipse rest of Alaska
Employment Scene: Unemployment at 7.9 percent in October

3 Statewide Employment
Nonfarm wage and salary

Alaska	Preliminary 12/10	Revised 11/10	Revised 12/09	Year-Over-Year Change 12/09	90% Confidence Interval	
Total Nonfarm Wage and Salary[1]	308,200	311,700	307,200	1,000	-6,383	8,383
Goods-Producing[2]	33,600	38,500	34,700	-1,100	-3,984	1,784
Service-Providing[3]	274,600	273,200	272,500	2,100	–	–
Mining and Logging	14,100	14,200	14,600	-500	-1,293	293
Mining	14,000	13,900	14,500	-500	–	–
Oil and Gas	12,000	11,900	12,200	-200	–	–
Construction	12,600	13,900	13,600	-1,000	-3,583	1,583
Manufacturing	6,900	10,400	6,500	400	-594	1,394
Seafood Processing	2,900	4,700	3,000	-100	–	–
Trade, Transportation, Utilities	61,000	60,600	61,600	-600	-2,972	1,772
Wholesale Trade	5,800	5,900	6,000	-200	-756	356
Retail Trade	35,300	34,900	35,600	-300	-2,328	1,728
Food and Beverage Stores	6,000	5,900	6,300	-300	–	–
General Merchandise Stores	10,000	10,000	10,100	-100	–	–
Transportation, Warehousing, Utilities	19,900	19,800	20,000	-100	-1,138	938
Air Transportation	5,400	5,400	6,300	-900	–	–
Truck Transportation	2,900	2,900	3,000	-100	–	–
Information	6,200	6,300	6,400	-200	-781	381
Telecommunications	4,200	4,200	4,200	0	–	–
Financial Activities	14,600	15,000	14,400	200	-1,743	2,143
Professional and Business Services	25,000	24,600	24,500	500	-1,293	2,293
Educational[4] **and Health Services**	41,700	42,700	39,700	2,000	732	3,268
Health Care	29,900	30,700	28,800	1,100	–	–
Leisure and Hospitality	28,800	26,800	28,700	100	-1,937	2,137
Accommodations	6,400	5,900	6,200	200	–	–
Food Services and Drinking Places	18,500	17,400	18,600	-100	–	–
Other Services	11,200	11,400	11,500	-300	-3,476	2,876
Government	86,100	85,800	85,700	400	–	–
Federal Government[5]	16,500	16,200	16,600	-100	–	–
State Government	25,900	26,300	25,700	200	–	–
State Government Education[6]	8,000	8,200	7,800	200	–	–
Local Government	43,700	43,300	43,400	300	–	–
Local Government Education[7]	25,200	25,000	24,700	500	–	–
Tribal Government	3,800	3,800	3,600	200	–	–

5 Regional Employment
Nonfarm wage and salary

	Preliminary 12/10	Revised 11/10	Revised 12/09	Changes from 11/10	Changes from 12/09	Percent Change 11/10	Percent Change 12/09
Anch/Mat-Su	170,500	170,200	168,800	300	1,700	0.2%	1.0%
Anchorage	150,950	150,550	149,650	400	1,300	0.3%	0.9%
Gulf Coast	26,800	27,600	26,200	-800	600	-2.9%	2.3%
Interior	43,500	43,800	42,900	-300	600	-0.7%	1.4%
Fairbanks[8]	37,900	37,900	37,300	0	600	0.0%	1.6%
Northern	19,850	19,900	20,150	-50	-300	-0.3%	-1.5%
Southeast	33,000	33,400	32,800	-400	200	-1.2%	0.6%
Southwest	14,950	16,650	15,150	-1,700	-200	-10.2%	-1.3%

A dash indicates that confidence intervals aren't available at this level.

[1] Excludes the self-employed, fishermen and other agricultural workers, and private household workers. For estimates of fish harvesting employment, and other fisheries data, go to labor.alaska.gov/research/seafood/seafood.htm.

[2] Goods-producing sectors include natural resources and mining, construction, and manufacturing.

[3] Service-providing sectors include all others not listed as goods-producing sectors.

[4] Private education only

[5] Excludes uniformed military

[6] Includes the University of Alaska

[7] Includes public school systems

[8] Fairbanks North Star Borough

Sources for Exhibits 1, 2, and 3: Alaska Department of Labor and Workforce Development, Research and Analysis Section; U.S. Department of Labor, Bureau of Labor Statistics

Sources for Exhibit 4: Alaska Department of Labor and Workforce Development, Research and Analysis Section; also the U.S. Department of Labor, Bureau of Labor Statistics, for Anchorage/Mat-Su and Fairbanks

4 Unemployment Rates
Borough and census area

	Prelim. 12/10	Revised 11/10	Revised 12/09
SEASONALLY ADJUSTED			
United States	**9.4**	**9.8**	**9.9**
Alaska Statewide	**8.1**	**8.0**	**8.6**
NOT SEASONALLY ADJUSTED			
United States	**9.1**	**9.3**	**9.7**
Alaska Statewide	**8.1**	**7.8**	**8.8**
Anchorage/Mat-Su Region	**7.1**	**7.0**	**7.6**
Municipality of Anchorage	6.4	6.4	6.9
Matanuska-Susitna Borough	9.5	9.1	10.2
Gulf Coast Region	**10.8**	**9.9**	**12.1**
Kenai Peninsula Borough	10.7	10.2	11.9
Kodiak Island Borough	11.3	8.8	13.1
Valdez-Cordova Census Area	10.7	10.1	11.5
Interior Region	**8.0**	**7.8**	**8.9**
Denali Borough	18.2	19.5	24.0
Fairbanks North Star Borough	7.1	6.9	8.0
Southeast Fairbanks Census Area	10.8	10.5	11.8
Yukon-Koyukuk Census Area	16.3	15.5	16.9
Northern Region	**9.1**	**9.2**	**9.5**
Nome Census Area	11.9	11.8	13.1
North Slope Borough	5.0	5.4	4.8
Northwest Arctic Borough	11.8	11.9	13.7
Southeast Region	**8.6**	**7.9**	**9.4**
Haines Borough	12.1	9.9	13.3
Hoonah-Angoon Census Area[1]	21.4	19.4	26.4
Juneau, City and Borough of	5.8	5.7	6.5
Ketchikan Gateway Borough[1]	8.8	8.1	9.6
Prince of Wales-Outer Ketchikan CA[1]	16.2	14.2	17.0
Sitka, City and Borough of	7.4	6.5	7.9
Skagway, Municipality of[1]	27.8	26.0	19.4
Wrangell-Petersburg Census Area[1]	11.9	10.3	13.8
Yakutat, City and Borough of	14.1	13.1	15.1
Southwest Region	**14.1**	**12.7**	**14.8**
Aleutians East Borough	18.2	12.5	18.3
Aleutians West Census Area	12.0	7.7	14.0
Bethel Census Area	13.7	13.6	14.4
Bristol Bay Borough	9.5	7.6	11.2
Dillingham Census Area	11.7	10.5	11.9
Lake and Peninsula Borough	11.1	8.3	9.6
Wade Hampton Census Area	19.1	18.6	20.0

[1] Because of the creation of new boroughs, this borough or census area has been changed or no longer exists. Data for the Skagway Municipality and Hoonah-Angoon Census Area (previously Skagway-Hoonah-Angoon Census Area) became available in 2010. Data for the Wrangell Borough, and Petersburg and Prince of Wales-Hyder census areas will be available in 2011. Until then, data will continue to be published for the old areas.

Changes in Producing the Estimates

The U.S. Department of Labor's Bureau of Labor Statistics has implemented a change to the method used to produce statewide wage and salary employment estimates. That change has resulted in increased monthly volatility in the wage and salary estimates for many states, including Alaska. Therefore, one should be very cautious in interpreting any over-the-year or month-to-month change for these monthly estimates. The Quarterly Census of Employment and Wages series may be a better source of information for trends analysis (http://labor.alaska.gov/qcew.htm).

For more current state and regional employment and unemployment data, visit our Web site: **laborstats.alaska.gov**

Employer Resources

Alaska Career Ready helps employers hire the right person the first time

The Alaska Career Ready program helps take the guesswork out of hiring, helping you find the right employee the first time. The program, which is sponsored by the Alaska Department of Labor and Workforce Development, is free and will change the way you hire.

The Alaska Career Ready program uses three WorkKeys assessments to assess job seekers' "real world" skills — the abilities that employers believe are critical to job success, as they represent the requirements of 85 percent of all positions. The assessments are:

- **Applied Mathematics:** Measures workplace mathematical reasoning and problem-solving skills from basic addition, subtraction, multiplication, and division to multiple math functions such as calculating discount percentages and markups.
- **Reading for Information:** Measures reading comprehension and reasoning including memos, letters, directions, signs, notices, bulletins, policies, and regulations.
- **Locating Information:** Measures comprehension and application of workplace graphics such as charts, graphs, tables, forms, flowcharts, diagrams, floor plans, maps, and instrument gauges.

The assessments are proctored and developed by ACT®, the national testing company best known for the ACT college admissions exam. Each assessment takes about one hour — three hours total.

Upon completion, job seekers receive a National Career Readiness Certificate. When applicants have this certificate, you know they've taken the time to earn a credential, they have initiative, and they want to work.

Become an Alaska Career Ready employer

The National Career Readiness Certificate will help you make better hiring and promotion decisions and reduce employee turnover and training costs. The certificate will also save you time and money on interviewing, and increase productivity and profitability because you're hiring applicants with the right skills.

It's easy to become an Alaska Career Ready Employer:

- **Recognize** the certificate, starting today, as proof of job skills and initiative when attached to a resume or presented by a potential employee.
- **Request** the credential from job applicants as you become more familiar with the program. Start including "National Career Readiness Certificate preferred" in your job advertising and announcements. If job seekers don't have the credential, refer them to a local Alaska Job Center office.
- **Require** the credential when hiring, or use it to evaluate employees for promotion once you have profiled the job. (A job profile is a comprehensive analysis by an ACT-trained WorkKeys job profiler of the tasks, skills, and skill levels needed to perform successfully at entry level and the effective performance level of a job.)

If you're already an Alaska Career Ready employer, let us know that you're recognizing, requesting, or requiring the National Career Readiness Certificate or the WorkKeys Assessments by e-mailing us at dol.ACR@alaska.gov. Also, tell us how WorkKeys and the National Career Readiness Certificate are working for you.

To learn more about WorkKeys job profiling, contact Laurie Fuglvog at laurie.fuglvog@alaska.gov, or (907) 465-5926.

For more information on the Alaska Career Ready program, visit careerready.alaska.gov or contact Kim Kolvig at kimberly.kolvig@alaska.gov or (907) 465-5948.