

ALASKA APPRENTICESHIPS



Training option has grown in popularity in the last 10 years

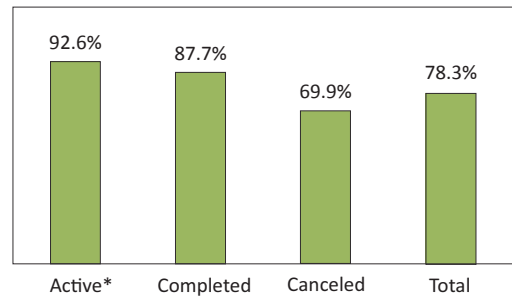
By **ROB KREIGER**

Registered apprenticeships have become an increasingly popular option for Alaskans who want to advance their education, especially after high school. Nearly 9,000 people participated in a registered apprenticeship program between 2004 and 2014, and new registrations were over 50 percent higher in 2014 than in 2004. (See Exhibit 1.)

A registered apprenticeship, recognized by the U.S. Department of Labor, usually consists of at least 2,000 hours of paid on-the-job training plus classroom technical instruction. As apprentices gain experience, their wages increase.

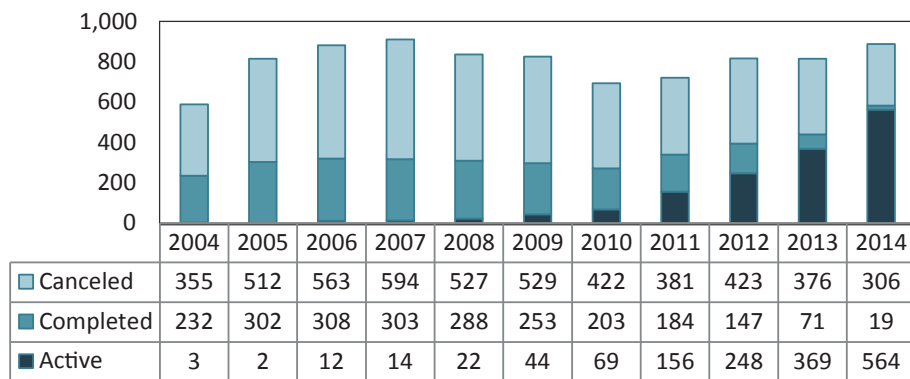
Those who completed their program earned about

2 Percent Working in Alaska BY APPRENTICESHIP STATUS, 2014



*Active doesn't equal 100 percent because federal and self-employment are not included.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

1 Jump in Apprenticeship Registrations ALASKA, 2004 TO 2014



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

three times more on average in 2014 than they had the year before registering.

Employment, earnings, and residency

Between 2004 and 2014, 8,801 people participated in a registered apprenticeship program in Alaska. Nearly 80 percent of those were working in Alaska in 2014. Those who were still active in an apprenticeship had the highest employment rate at nearly 93 percent. (See Exhibit 2.)

Most were Alaska residents at the time of registration (meaning they applied for a Permanent Fund Dividend). In 2014, 88 percent of registrants were Alaska residents. (See Exhibit 3.)

The most common jobs for apprenticeship participants were in construction, at 39.6 percent, and natural resources and mining, at 10.7 percent. (See Exhibit 4.)

For the 6,930 participants who were employed in 2014, the average wage was \$52,818. Those who had completed their apprenticeship earned the most by far, at \$72,990. (See Exhibit 5.)

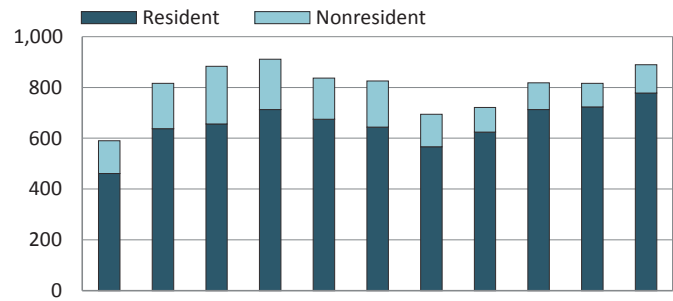
Still, regardless of the outcome, participating in an apprenticeship is linked to an increase in wages over time, provided the person stays in the labor force.

Apprenticeship participants who ended up working in construction earned the most, making 52 percent of all participant wages in 2014 for a total of \$191.4 million. Among all Alaska construction workers in 2014, almost 13 percent had registered for an apprenticeship program at some point since 2004.

About 4 percent of all natural resources and mining

3 Most Are Alaska Residents

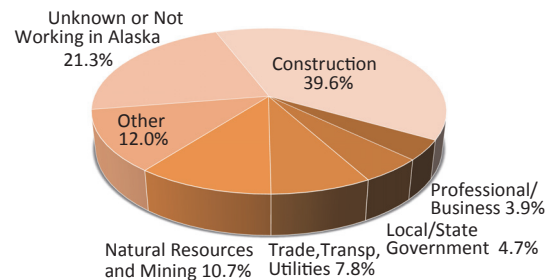
RESIDENCY AT TIME OF APPRENTICESHIP REGISTRATION



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

4 Industries for Apprentices

EMPLOYED IN ALASKA IN 2014

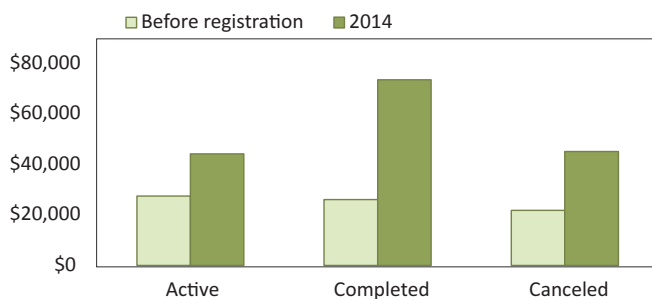


Sources: Alaska Department of Labor and Workforce Development, Research and Analysis Section

workers had participated in an apprenticeship program. This industry had the highest average yearly wage at \$77,252, mainly due to the higher pay for oil and gas jobs.

5 Apprenticeships and Higher Wages

ALASKA, BASED ON APPRENTICESHIP STATUS, 2014



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

Completions and cancellations

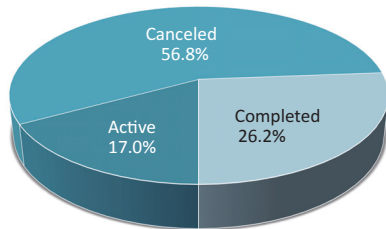
Of those who participated in an apprenticeship program between 2004 and 2014, about 26 percent successfully completed their program and 17 percent were still active as of 2014. Fifty-seven percent canceled or failed to complete their apprenticeship. (See Exhibit 6.)

Participants who cancel their apprenticeship typically do so within the first 12 months. (See Exhibit 7.) For many apprenticeship programs, completion requires three to five years — so if the program isn't a good fit for the trainee, that's often apparent early.

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Most Recent Status

REGISTERED BETWEEN 2004 AND 2014



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

Among the apprenticeship programs by occupation with at least 100 participants over the 2004-2014 period, cancellation rates were highest for roofer programs at 95 percent, residential electrical wireman at 81 percent, and cement mason at 79 percent. Cancellation rates were lowest for line maintainer at 26 percent, maintenance mechanic at 35 percent, operating engineer at 37 percent, and pipe fitter at 38 percent. (See Exhibit 13.)

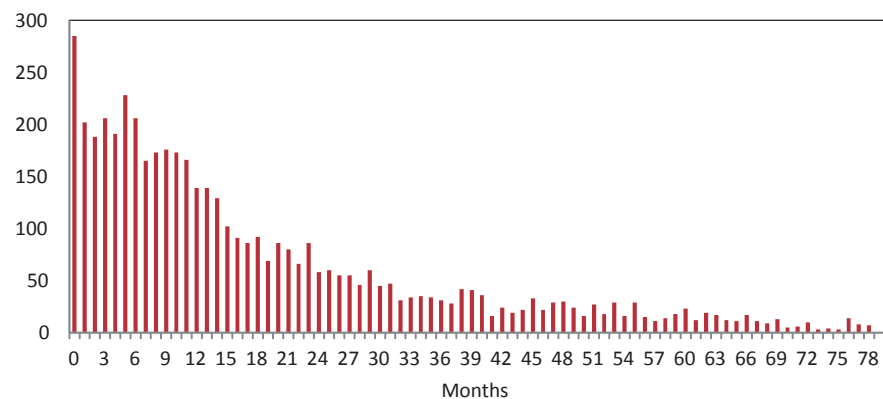
How apprentices stack up among all Alaska workers

Apprenticeship participants also tend to earn more than the average Alaska worker. In 2014, their average wage of \$52,818 was nearly 35 percent more than the average for all workers (\$38,995). (See Exhibit 8.)

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Most Apprenticeship Cancellations Happen Early

NUMBER OF MONTHS INTO APPRENTICESHIP, 2014



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

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How Apprentices Compare to Other Workers

THOSE WHO REGISTERED FOR ALASKA APPRENTICESHIPS BETWEEN 2004 AND 2014

Industry	Apprentices		All Workers		Percent Apprentices	Apprentice Wages as % of Total Wages
	Workers	Total Wages	Workers	Total Wages		
Construction	3,485	\$191,443,889	27,763	\$1,343,025,743	12.6%	14.3%
Natural Resources and Mining	945	\$73,003,316	24,740	\$2,417,728,937	3.8%	3.0%
Trade, Transportation, and Utilities	685	\$32,001,914	84,241	\$2,856,679,279	0.8%	1.1%
Local and State Government	412	\$17,185,887	78,464	\$3,165,838,552	0.5%	0.5%
Professional and Business Svcs	345	\$16,833,698	39,040	\$1,757,471,516	0.9%	1.0%
All Other	1,058	\$35,560,339	168,268	\$4,935,168,898	0.6%	0.7%
Total	6,930	\$366,029,043	422,516	\$16,475,912,924	1.6%	2.2%

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

9 How Apprentices Compare to Other Year-Round Workers

EMPLOYED IN ALASKA IN 2014

Top Occupations	Total Workers	Average Wages of All Workers	Avg Wages of Yr-Rd Workers	Working Yr-Rd	Number of Apprentices	Apprentice Avg Wages	Avg Wages, Apprentices Working Yr-Rd	Avg Wages for Completers	Avg Wages, Completers Who Work Yr-Rd
Electricians	2,743	\$63,905	\$77,808	1,938	1,116	\$56,289	\$63,229	\$69,515	\$75,537
Plumbers, Pipefitters, and Steamfitters	2,078	\$59,317	\$72,996	1,411	676	\$52,993	\$60,074	\$69,604	\$73,301
Construction Laborers	7,340	\$27,660	\$45,567	2,944	498	\$39,655	\$47,898	\$53,628	\$60,504
Carpenters	4,064	\$37,577	\$56,786	2,058	355	\$37,609	\$46,371	\$52,191	\$60,186
Oper Engineers and Other Const Equip Operators	4,683	\$55,360	\$68,762	2,994	265	\$53,499	\$59,496	\$64,800	\$66,538
Helpers: Electricians	266	\$44,778	\$59,814	156	222	\$38,572	\$50,556	\$71,879	\$72,848
Electrical Power-Line Installers and Repairers	457	\$88,397	\$100,872	365	163	\$78,879	\$85,340	\$98,831	\$107,254
Laborers and Freight, Stock, and Material Movers, Hand	5,416	\$20,058	\$36,360	2,463	117	\$37,177	\$47,502	\$47,620	\$56,416
Heavy and Tractor-Trailer Truck Drivers	3,861	\$48,078	\$60,106	2,603	114	\$48,922	\$57,556	\$58,743	\$66,003
Sheet Metal Workers	439	\$54,798	\$65,619	333	106	\$54,043	\$58,300	\$70,516	\$72,474
Maintenance and Repair Workers, General	4,278	\$35,812	\$49,959	2,638	91	\$37,716	\$45,674	\$41,965	\$44,269
Welders, Cutters, Solderers, and Brazers	1,354	\$47,975	\$68,678	733	76	\$39,385	\$46,524	\$46,819	\$46,406

Based on Age in 2014

16 to 24	63,154	\$15,390	\$25,575	29,665	1,280	\$40,313	\$48,683	\$67,014	\$70,263
25 to 34	78,913	\$38,072	\$48,016	56,779	3,814	\$56,012	\$66,080	\$76,132	\$82,690
35 to 44	61,513	\$51,109	\$60,910	48,173	1,250	\$55,371	\$67,333	\$70,129	\$79,212
45 to 54	65,093	\$55,169	\$64,480	52,288	471	\$55,084	\$68,032	\$68,037	\$77,551
55 to 64	50,096	\$54,314	\$64,509	38,869	109	\$50,624	\$66,920	\$54,389	\$67,783
64 to 74	11,375	\$39,055	\$51,534	7,454	6	\$20,646	\$23,942	\$23,942	\$23,942

Based on Gender

Female	162,537	\$33,411	\$43,556	114,469	631	\$38,304	\$45,508	\$49,133	\$51,707
Male	172,068	\$49,260	\$64,494	119,667	6,299	\$54,272	\$64,980	\$76,327	\$83,990
Total	422,516	\$38,995	\$56,193	254,897	6,930	\$52,818	\$63,307	\$72,990	\$80,158

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

Among those employed during all four quarters of the year, apprenticeship participants earned about 13 percent more than average, and those who completed made 30 percent more. (See Exhibit 9.)

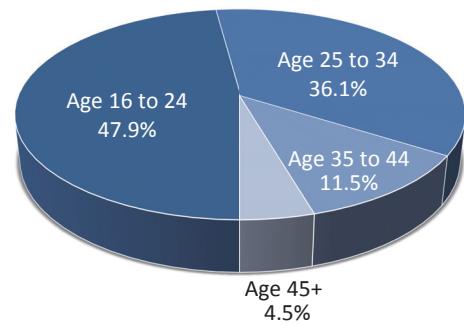
Who the participants are

As with most education and training programs, the majority of Alaska's registered apprentices are young — about 84 percent age 34 or younger. (See Exhibit 10.)

Completing the program resulted in markedly higher wages for younger workers, especially for those between 16 and 24. In that youngest age group, completers who worked year-round made an average of

10 Age at Registration

ALASKA, 2004 TO 2014

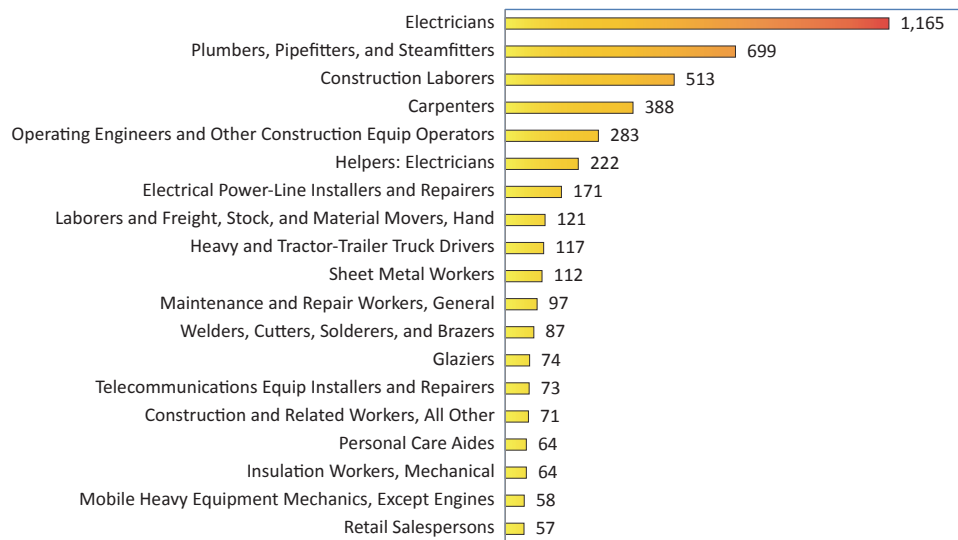


Sources: Alaska Department of Labor and Workforce Development, Research and Analysis Section

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Top Occupations After Apprenticeships

THOSE WHO REGISTERED BETWEEN 2004 AND 2014



Note: These occupations are not necessarily the occupations for which participants registered as apprentices. See Exhibit 10 for the top occupations for apprenticeships.

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

\$70,263: nearly 2.75 times more than the average for all year-round workers. Completers in all age groups out-earned the average, though, with the exception of those between 64 and 74. (See Exhibit 9.)

Besides being young, apprentices were mostly male, at 91 percent, and white, at about 66 percent. Nineteen percent were Alaska Native or American Indian. The high percentage of men is due to the high shares of men working in construction, a common focus of Alaska apprenticeship programs. (See Exhibit 13 at the end of the article.)

Factors affecting apprenticeship participant wages include choice of apprenticeship, completion, level of experience afterward, and attachment to the Alaska labor force. Overall, men earned more on average than women in 2014, whites earned more than other minority groups, and those between 25 and 34 earned more than other age groups.

What occupations they tend to hold after participating

The top occupations for apprenticeship programs

between 2004 and 2014 were electrician, plumber, carpenter, construction craft laborer, pipefitter, line maintainer, building maintenance repairer, telephone maintenance mechanic, structural steel/iron worker, and sheet metal worker.

Many go on to work in the same occupation for which they apprenticed, but not all. More than half of the participants employed in 2014 were in just 12 occupations. (See Exhibit 11.) In eight of those 12, participants working year-round made more than the average Alaska worker in those occupations.

Among the top 12 occupations, the highest average wages for those who completed their apprenticeship were as electrical power-line installers and repairers; electricians; and plumbers, pipefitters, and steamfitters.

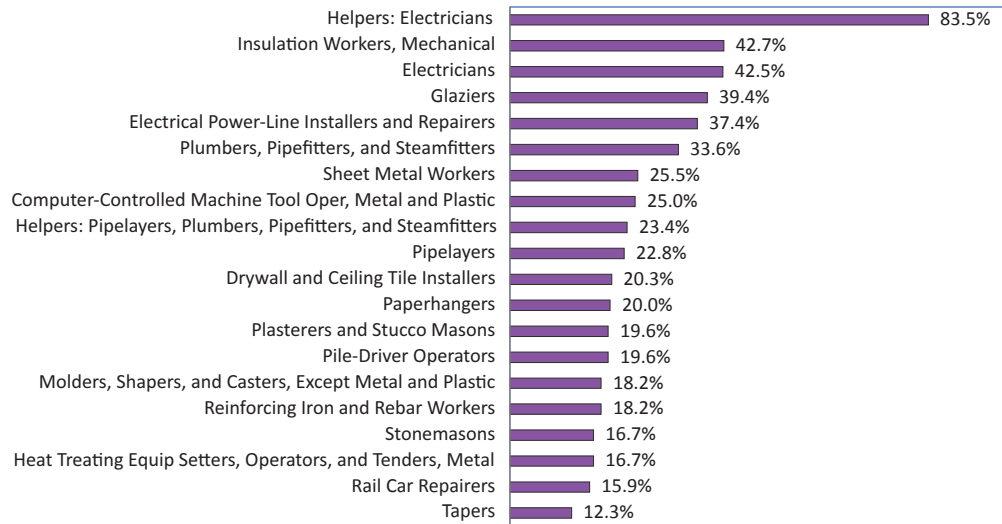
Among electrician helpers, 84 percent had participated in an apprenticeship. Mechanical insulation workers and electricians also had high shares of participants, each at about 43 percent. (See Exhibit 12.)

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Percent Who Held Apprenticeships, By Occupation

THOSE WHO REGISTERED BETWEEN 2004 AND 2014



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

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Who the Apprentices Are

DEMOGRAPHICS OF THOSE WHO REGISTERED BETWEEN 2004 AND 2014

	Total, Current and Former	Number Completed	Percent Completed	Number Canceled	Percent Canceled	Number Employed	Percent Employed	Total Wages	Average Wages	Residents	Work in Related Occ.
Total	8,801	2,310	26.2%	4,988	56.7%	6,930	78.7%	\$366,029,043	\$52,818	7,607	3,463
By Sex											
Female	813	288	35.4%	409	50.3%	631	77.6%	\$24,169,781	\$38,304	724	268
Male	7,988	2,022	25.3%	4,579	57.3%	6,299	78.9%	\$341,859,263	\$54,272	6,883	3,195
By Race or Ethnicity											
Asian/Islander	153	44	28.8%	82	53.6%	131	85.6%	\$7,059,503	\$53,889	139	70
Unknown	640	138	21.6%	315	49.2%	528	82.5%	\$20,432,795	\$38,698	557	288
Hispanic	142	32	22.5%	79	55.6%	95	66.9%	\$4,136,577	\$43,543	105	50
White	5,801	1,661	28.6%	3,181	54.8%	4,498	77.5%	\$258,752,978	\$57,526	4,939	2,355
Black	415	85	20.5%	267	64.3%	315	75.9%	\$13,967,208	\$44,340	347	136
AK Native	1,650	350	21.2%	1,064	64.5%	1,363	82.6%	\$61,679,982	\$45,253	1,520	564
By Age in 2014											
16 to 24	1,438	171	11.9%	699	48.6%	1,280	89.0%	\$51,600,167	\$40,313	1,341	724
25 to 34	4,805	1,378	28.7%	2,726	56.7%	3,814	79.4%	\$213,628,049	\$56,012	4,152	1,928
35 to 44	1,697	512	30.2%	1,023	60.3%	1,250	73.7%	\$69,214,196	\$55,371	1,417	588
45 to 54	678	193	28.5%	426	62.8%	471	69.5%	\$25,944,751	\$55,084	549	182
55 to 64	170	48	28.2%	109	64.1%	109	64.1%	\$5,518,007	\$50,624	138	37
64 to 74	13	8	61.5%	5	38.5%	6	46.2%	\$123,874	\$20,646	10	4
By Place of Registration											
Unknown	1,695	368	21.7%	1,056	62.3%	985	58.1%	\$51,491,405	\$52,276	1,086	483
Aleutians E	10	0	0	9	90.0%	8	80.0%	\$284,283	\$35,535	9	1
Aleutians W	14	1	7.1%	7	50.0%	12	85.7%	\$835,636	\$69,636	12	5
Anchorage	2,598	677	26.1%	1,465	56.4%	2,172	83.6%	\$107,640,807	\$49,558	2,375	1,038
Bethel	116	16	13.8%	85	73.3%	104	89.7%	\$2,926,323	\$28,138	112	28
Bristol Bay	2	0	0	2	100.0%	0	0	\$0	\$0	1	0
Denali	26	11	42.3%	11	42.3%	24	92.3%	\$1,540,194	\$64,175	24	11

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Who the Apprentices Are, continued

DEMOGRAPHICS OF THOSE WHO REGISTERED BETWEEN 2004 AND 2014

	Total, Current and Former	Number Completed	Percent Completed	Number Canceled	Percent Canceled	Number Employed	Percent Employed	Total Wages	Average Wages	Residents	Work in Related Occ.
By Place of Registration, continued											
Dillingham	34	5	14.7%	22	64.7%	29	85.3%	\$1,365,983	\$47,103	32	10
Fairbanks NS	1,501	473	31.5%	769	51.2%	1,260	83.9%	\$70,681,690	\$56,097	1,365	693
Haines	10	3	30.0%	3	30.0%	10	100.0%	\$533,749	\$53,375	10	7
Hoonah-Angoon	19	7	36.8%	9	47.4%	17	89.5%	\$920,785	\$54,164	19	6
Juneau	250	75	30.0%	129	51.6%	212	84.8%	\$11,787,382	\$55,601	229	115
Kenai Peninsula	568	179	31.5%	294	51.8%	463	81.5%	\$27,145,139	\$58,629	520	250
Ketchikan Gateway	97	33	34.0%	47	48.5%	84	86.6%	\$4,189,312	\$49,873	93	42
Kodiak Island	78	16	20.5%	44	56.4%	63	80.8%	\$3,449,163	\$54,749	73	31
Kusilvak	57	7	12.3%	47	82.5%	46	80.7%	\$1,240,221	\$26,961	52	17
Lake and Peninsula	15	3	20.0%	10	66.7%	13	86.7%	\$626,659	\$48,205	15	4
Mat-Su	1,168	270	23.1%	677	58.0%	959	82.1%	\$52,956,011	\$55,220	1,070	505
Nome	46	8	17.4%	30	65.2%	39	84.8%	\$1,674,160	\$42,927	41	11
North Slope	32	5	15.6%	22	68.8%	29	90.6%	\$1,608,847	\$55,477	30	10
Northwest Arctic	61	22	36.1%	29	47.5%	53	86.9%	\$3,721,159	\$70,211	60	26
Petersburg	16	6	37.5%	5	31.3%	16	100.0%	\$807,514	\$50,470	16	9
POW-Hyder	20	5	25.0%	13	65.0%	17	85.0%	\$779,997	\$45,882	18	10
Sitka	59	12	20.3%	37	62.7%	52	88.1%	\$3,101,428	\$59,643	55	30
Skagway	6	2	33.3%	3	50.0%	6	100.0%	\$477,027	\$79,505	6	3
SE Fairbanks	94	35	37.2%	45	47.9%	74	78.7%	\$4,039,750	\$54,591	84	41
Valdez-Cordova	121	47	38.8%	62	51.2%	106	87.6%	\$6,050,981	\$57,085	117	42
Wrangell	9	2	22.2%	5	55.6%	5	55.6%	\$222,544	\$44,509	6	2
Yakutat	2	1	50.0%	1	50.0%	1	50.0%	ND	ND	1	0
Yukon-Koyukuk	77	21	27.3%	50	64.9%	71	92.2%	\$3,846,708	\$54,179	76	33

By Industry

Construction	3,485	1,225	35.2%	1,342	38.5%	3,485	100.0%	\$191,443,889	\$54,934	3,485	2,493
Educational and Health	336	136	40.5%	165	49.1%	336	100.0%	\$11,908,108	\$35,441	336	109
Financial Activities	13	2	15.4%	11	84.6%	13	100.0%	\$324,020	\$24,925	13	0
Information	77	24	31.2%	36	46.8%	77	100.0%	\$4,540,995	\$58,974	77	22
Leisure and Hospitality	217	18	8.3%	181	83.4%	217	100.0%	\$3,983,773	\$18,358	217	7
Local Gov	300	77	25.7%	193	64.3%	300	100.0%	\$12,357,010	\$41,190	300	69
Manufacturing	177	22	12.4%	120	67.8%	177	100.0%	\$7,308,894	\$41,293	177	18
Resources and Mining	945	284	30.1%	463	49.0%	945	100.0%	\$73,003,316	\$77,252	945	542
Other Svcs	113	15	13.3%	81	71.7%	113	100.0%	\$3,562,185	\$31,524	113	25
Professional and Bus	470	84	17.9%	326	69.4%	470	100.0%	\$20,766,063	\$44,183	470	69
State Gov	112	22	19.6%	86	76.8%	112	100.0%	\$4,828,877	\$43,115	112	14
Trade, Trans and Utilities	685	120	17.5%	513	74.9%	685	100.0%	\$32,001,914	\$46,718	685	95
Unknown/Not Working	1,871	281	15.0%	1,471	78.6%	0	0	\$0	\$0	677	0

By Employment Status

In related job	3,463	1,410	40.7%	1,091	31.5%	3,463	100.0%	\$204,649,618	\$59,096	3,463	3,463
Not working	1,871	281	15.0%	1,471	78.6%	0	0	\$0	\$0	677	0
In unrelated job	3,467	619	17.9%	2,426	70.0%	3,467	100.0%	\$161,379,425	\$46,547	3,467	0

By Apprenticeship Occupation

Electrician	2,517	522	20.7%	1,448	57.5%	2,008	79.8%	\$117,938,020	\$58,734	2,177	1,186
Plumber	977	154	15.8%	641	65.6%	772	79.0%	\$39,071,657	\$50,611	863	444

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Who the Apprentices Are, continued

DEMOGRAPHICS OF THOSE WHO REGISTERED BETWEEN 2004 AND 2014

	Total, Current and Former	Number Completed	Percent Completed	Number Canceled	Percent Canceled	Number Employed	Percent Employed	Total Wages	Average Wages	Residents	Work in Related Occ.
By Apprenticeship Occupation, continued											
Carpenter	733	178	24.3%	474	64.7%	559	76.3%	\$24,479,824	\$43,792	621	292
Construction Craft Laborer	633	267	42.2%	363	57.3%	511	80.7%	\$25,109,116	\$49,137	546	207
Pipe Fitter (Const)	310	118	38.1%	119	38.4%	269	86.8%	\$17,705,544	\$65,820	285	187
Line Maintainer	224	110	49.1%	58	25.9%	200	89.3%	\$17,167,590	\$85,838	207	124
Residential Elec Wireman	198	14	7.1%	160	80.8%	141	71.2%	\$5,912,498	\$41,933	167	78
Maintenance Mech (Tele)	192	74	38.5%	66	34.4%	173	90.1%	\$10,022,436	\$57,933	179	45
Sheet Metal Worker	188	54	28.7%	92	48.9%	144	76.6%	\$7,597,754	\$52,762	159	87
Structural Steel/ Iron Worker	188	59	31.4%	110	58.5%	146	77.7%	\$7,415,890	\$50,794	163	44
Maintenance Repair, Build	183	38	20.8%	110	60.1%	128	69.9%	\$4,241,609	\$33,138	156	13
Operating Engr (Hy)	163	44	27.0%	40	24.5%	154	94.5%	\$7,994,581	\$51,913	158	106
Operating Engineer	142	89	62.7%	52	36.6%	112	78.9%	\$8,127,271	\$72,565	123	77
Construction Driver	138	56	40.6%	75	54.3%	115	83.3%	\$6,071,111	\$52,792	124	49
Construction Craft Labr(Hy)	135	4	3.0%	75	55.6%	124	91.9%	\$3,905,415	\$31,495	129	70
Insulation Worker	128	19	14.8%	90	70.3%	94	73.4%	\$4,013,434	\$42,696	103	48
Painter (Const)	128	18	14.1%	106	82.8%	82	64.1%	\$2,725,303	\$33,235	92	26
Carpenter, Piledriver	127	45	35.4%	73	57.5%	93	73.2%	\$6,028,489	\$64,822	108	35
Glazier	110	27	24.5%	64	58.2%	80	72.7%	\$3,701,227	\$46,265	88	53
Maint Mech (Const,Petrol)	106	61	57.5%	42	39.6%	85	80.2%	\$6,976,727	\$82,079	94	5
Roofer	105	3	2.9%	100	95.2%	61	58.1%	\$1,894,675	\$31,060	74	10
Cement Mason	100	18	18.0%	79	79.0%	65	65.0%	\$2,595,400	\$39,929	74	12

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

About the data

The Research and Analysis Section identified people who participated in a registered apprenticeship program between 2004 and 2014 using data from the U.S. Department of Labor's Employment and Training Administration, Office of Apprenticeships, as well as our own administrative records. For this article, all references to apprentices refer to anyone who participated in an apprenticeship program during that decade.

For the 10-year period, we looked at participation status (complete, active, and canceled), wages before and after registration, employment status, industry representation, occupations, and demographic characteristics such as age, sex, and race.

During that period, 9,051 records were found in the US-DOL apprenticeship data, which we narrowed to 8,801 after getting rid of incomplete records and duplicates and matching the remainder with administrative data.