The Newest Nam-Powers-Boyd Occupational Scale: Development and Insights\*

by

Monica Boyd and Charles B. Nam\*\*

**Abstract**

This paper presents the Nam-Powers-Boyd occupational scores, developed from the 2010, 2011 and 2012 American Community Surveys, fielded by the United States Bureau of the Census and available from IPUMS\_USA. These scores update the last scale produced from the 2000 census of population. In this paper we review the methodology behind the construction of these indices and highlight the challenges that can arise with ACS data that are subject to temporal changes. We then demonstrate the analytical range of the scores, particularly for users of the 2010-2012 ACS, in three domains of inquiry: racial and nativity inequalities, STEM fields of study, and disabilities. Additional information can be found at www.npb-ses.info

\* Presented at the Southern Demographic Association annual meeting, San Antonio Texas, October 14-16, 2015; minor editorial revisions were made in March, 2016 to the original. The authors thank Melissa Chiu and Liana Christin Landivar, U.S. Census Bureau for their assistance and advice on harmonizing occupational classifications across the 2010, 2011, and 2012 American Community Surveys. Access to the 2010-2012 American Community Survey was obtained through **IPUMS-USA, University of Minnesota (Ruggles et. al., 2010).**This project was funded by a Social Science and Humanities Research Council award of a Canada Research Chair in Immigration, Inequality and Public Policy awarded to Monica Boyd.

\*\* Monica Boyd, Department of Sociology, University of Toronto St. George, 725 Spadina Avenue, Toronto, Ontario, Canada M5S 2J4. Email address: monica.boyd@utoronto.ca

Charles Nam, Distinguished Research Professor Emeritus of Sociology and Research Associate of the Center for Demography and Population Health at Florida State University. Email address cnam@fsu.edu

***Citation:*** Boyd, Monica and Charles B. Nam. 2015. The Newest Nam-Powers-Boyd Occupational Scale: Development and Insights. Paper presented at at the Southern Demographic Association annual meeting, San Antonio Texas, October 14-16, 2015. Available from: www.npb-ses.info

**The Newest Nam-Powers-Boyd Occupational Scale: Development and Insights**

***Introduction***

Some 50 to 65 years ago, two seminal works highlighted the significance of occupations in American quantitative research on inequality. In his 1950 ASR publication, Paul K. Hatt noted the importance of occupation as an indicator of differential social positions. Writing from a socio-demographic perspective, Otis Dudley Duncan and Peter Blau observed “men’s [sic] careers occupy a dominant place in their lives today and the occupational structure is the foundation of the stratification structure of contemporary industrial society.…[C]lass differences come to rest primarily on occupational positions and the economic advantages and powers associated with them” (Blau and Duncan 1967: vii and Chapter 1).

Both works signify the rapid changes occurring in American research. The rich community based studies that dominated the 1920s, 1930s and 1940s were giving way to large national surveys. Additionally, increases occurred in the availability and use of census based data which utilized state developed classifications of social and economic characteristics (Boyd 2008). In utilizing such material, scholars noted occupational rankings that relied on the duties, prerequisites and financial rewards or working conditions associated with occupations (Hatt 1950) and/or reflected the historical evolution of census based classifications (Powers 1982; Nam and Powers 1983; Nam and Boyd 2004). However, the major accompaniment of national surveys and censuses was the scaling of occupational classifications into interval measures that could be used in the burgeoning research on socio-economic inequality and social mobility. Two alternative strategies were employed within a few years of each other: the development of prestige based occupational scales (Duncan 1961) utilizing a 1947 NORC survey and the creation of a socioeconomic scale introduced as part of the Bureau of the Census program in 1960 (Nam, Powers and Glick 1964; Nam and Powers 1983).

Despite critiques (Hauser and Warren 1997), these two approaches to scaling occupational classifications continue to be used, and sometimes confused. As noted by several scholars (Nam and Powers 1983; Nam and Terrie 1982; Powers 1982) it may be specious to argue for the correctness of one measure versus the other, as the prestige scale rests more on status while the socioeconomic scale is based only on educational and earnings measures. If prestige or power dimensions of stratification are desired, then prestige based measures make more sense; if it is the objective living conditions or prospect for life chances one wants to identify, the socioeconomic occupational index is preferable.

Occupational scales change over time, in response to the changing characteristics of the incumbents and in response to temporal alterations in occupational classifications. Using data from the 2010, 2011 and 2012 American Community Surveys, this paper updates the Nam prototype of a socioeconomic scale of occupations, last created from the 2000 U.S. census of population. Following the description of how the scale is constructed and the presentation of results, average scores are presented for various subpopulations in the United States, for those who have university degrees in science, technology, engineering and mathematics, and for those with and without select disabilities. The results highlight the socioeconomic differences among groups.

***Methodology and results***

The Nam-Powers-Boyd scale (NPB) scores presented in this paper are the seventh version of a scale that was developed at the U.S. Bureau of the Census as part of the 1960 census plans; the original scale used the 1950 census. These scores were conceptualized as reflecting the average education and income of incumbents for each detailed occupational category in the census classification of occupations in use at that time. Because the score is an average for the occupation, it was recognized that the score did not apply to the particular person to whom the score was assigned but rather to the typical person in that occupation.

The basic strategy for calculating the scores has persisted over time although the increasing availability of additional data has permitted refinements. Initially, average education and family income were the indicators used to array occupations into a socio-economic scale (Nam and Terrie 1982) and the 1950 scores were produced for men only (Nam and Terrie 1988). By the time the score for the 1980 census were produced, median education and median individual income were used and the index was developed for the entire civilian labor force, including both men and women (Nam and Terrie 1988; Terrie and Nam 1994). Access to micro-data files permitted further refinements. For example, the 2000 NPB, which was based on the 2000 IPUMs 1% file housed at the University of Minnesota, used median education and median earnings of occupations to construct the socioeconomic scores. As done in the earlier scale constructions, the population for these scores consists of the civilian experienced labor force, age 16 and older, male and female combined. It excludes those who are unemployed, never worked or did not work during the last five years. As well, those with military occupations or who reported working for the armed forces are excluded. This omission is consistent with data collection practices in censuses from 1960 to 1980. During these years, the universe for occupations excluded persons currently in the armed forces. The 2010-2012 Nam-Powers-Boyd scale presented in this paper continues to exclude those who are unemployed, never worked or did not work during the last five years and those with military employment and/or military occupations in order to reduce the sensitivity of rankings of civilian occupations to upswings and downturns in the size of the military as a result of governmental actions.

This seventh version of the NDP scale is constructed from data from the 2010-2012 American Community Surveys, obtained in June, 2015 from the Integrated Public Use Microdata Series (IPUMS) at the Minnesota Population Center, University of Minnesota (Ruggles et.al. 2010). The 2010-2012 dates are selected because of substantial changes in the occupational classification from 2009 to 2010 which had two major consequences for researchers using the 2009 and subsequent years. First, in some cases, occupations in 2009 were split across occupations for the 2010 ACS, making harmonization impossible. Second, and related, harmonizing the two classifications would require the aggregation of more than 100 occupations. As an aside, as an instrument of annual data collection, the ACS is highly vulnerable to changes in occupational classifications as changes can occur every year rather than once a decade, which was the case for the decennial census. Major classification changes occurred in 2004 and a substantial dramatic change will occur for the 2018 ACS and those that follow.

Even within years where the occupational classifications seem to be the same, minor adjustments must be made by researchers seeking to analyze two or more ACS files. For the 2010-2012 ACS, the OCC classification was used. However, thirteen occupational titles appearing in the 2010 and 2011 American Community Surveys had been removed for the 2012 ACS. The following indicate where those 13 occupational titles were aggregated into another occupation:

(6430=6420)

(6500=6220)

(7550=7630)

(7960=7950)

(8000=7950)

(8010=7950)

(8060=8100)

(8150=8220)

(8200=8220)

(8210=8220)

(8340=8330)

(8860=8965)

(9230=9260)

As well, in 2012, one occupation (code 8220) had a randomized proportion moved to another occupation (code 7950) based on the gender and education levels of incumbents (discussion with Melissa M. Chui, U.S. Census Bureau July 27 2014; reconfirmed by Liana Christin Landivar, U.S. Census Bureau March 15, 2016). We applied this randomizing procedure to the 2010 and 2011 ACS data in order to make occupational comparisons comparable across all years. The number of cases moved from occupational code 8220 to 7950 is exceptionally small at 54 cases out of an original unweighted number of 14,727 in the occupational category 8220. The conversion rates are as follows:

Men, high school or less 0.0070

Men, university degree 0.0056

Men, advanced degree 0.0001

Women, high school or less 0.0027

Women, university degree 0.0049

Women, advanced degree 0.0001

Once these transformations were completed, the scores were calculated using educational, occupational and earnings data from the combined 2010-2012 ACS databases. The procedures for calculating the scores are as follows: (1) array the detailed list of census detailed occupations in the experienced civilian labor force according to the median educational level of the incumbents; (2) array the same occupations separately according to the median income level of the incumbents; (3) using the population estimates for persons engaged in each occupation, determine the cumulative interval of persons in each occupation for each of the two arrays, beginning with the lowest-ranked occupation; (4) average the midpoints of the two cumulative intervals of occupants and divide by the total number of persons in all occupations. The alternative method, which produces the same results is to create a cumulative percentile distribution based on median education; repeat for earnings and combine, dividing the results by 2 (since each produced scores that range from 0 to 100, with the combined scores thus having an upper limit of 200).

Operationally, the numbers of persons in a given occupational category are used to weight the median values for education and earnings or income, and the array is transformed into percentiles. In this sense, the derivation of each score depends on the score for all other occupations and on the resulting hierarchical structure (Nam, 2000; Nam and Boyd, 2004). As a result, the Nam-Powers method takes into account the shape of the distribution (the density function) as well as the absolute difference between occupations in median education or income. And the value for the ith occupation has a straightforward interpretation: it is the percentage of persons who are in occupations having combined average levels of (median) education and earnings/income lower than the ith occupation. The scores range between 0 and 100 (Nam, 2000; Nam and Boyd, 2004).

Appendix A gives the Nam-Powers-Boyd score for each of the 474 OCC classification of occupational titles found in the harmonized 2010-2012 ACS, achieved by recoding the thirteen occupations noted earlier. Table 1 lists the twenty occupational titles that have either the highest or the lowest scores. Physicians, surgeons and dentists are at with top of the occupational hierarchy followed by professional occupations such as lawyers, and judges, magistrates, and other judicial workers, podiatrists, optometrists, pharmacists, nurse anesthetists, veterinarians. The top twenty also include select occupations in other professions, and in the medical and natural sciences and in engineering. Economists also are among the top twenty ranked occupations. Occupations at the bottom of the scale include dishwashers which has the lowest rank, followed by graders and sorters of agricultural products, attendants and bartender helpers, miscellaneous food preparation and serving related workers, counter attendant, cafeteria, food concession, and coffee shop workers (Table 1).

***What do the Scores tell us?***

Within the field of inequality, the demographic perspective emphasizes socioeconomic differentials between sub-populations variously defined on the basis of gender, age, race, and Hispanic status, region of residence, labor market characteristics and health. Socioeconomic scores highlight the relative occupational standing of these sub-populations and permit both descriptive comparisons and multivariate investigations into factors underlying sub-group differences. In the remainder of the paper, we demonstrate the variations in the occupational scores between subpopulations, using three well established domains of stratification research, notably differentials by measures of race, Hispanic status and nativity; differentials by college major, particularly with respect to majors in science, technology, engineering and mathematics (STEM); and differentials by measures of disability. Our analysis uses the 2010-2012 ACS data obtained from IPUMS in June 2015.

*Demographic Variations*

We begin with a cursory look at variations in the average occupational scores using standard demographic variables. As seen in Table 2, differences between men and women are negligible. The slightly higher, one point difference in favor of women is also found in recent scores constructed from the Canadian 2011 census of population. The movement away from women on average having lower scores than men to one of near equality appears to reflect a number of factors, specifically 1) the rising educational attainments of women, particularly with respect to college and university degrees; 2) the related “missing male” problem where young men are increasing less likely to have university degrees compared to women and 3) the growth of women’s employment in the expanding health sectors of employment.

Age differences in occupational scores exist. Persons under the age of 25 have on average lower occupational scores than older age groups, a phenomenon that is attributed to a number of factors including part-time employment and difficulties in getting launched early in the life cycle. There exists little variation by region of residence (data by cities are not available from the 2010-2012 ACS) although on average scores are highest for those living in New England and the Atlantic states and lowest for those living in the South Central region. However, groups differentiated by type of household differ substantially in the average occupational scores. Those residing in institutions (prisons etc.) and in non-institutional group quarter have average occupational scores that are substantially lower than observed for those in non-group quarters, notably private households. Expressed a somewhat different way, persons who reside in institutions and who are part of the experienced labor force have on average an occupational score that places them about two-thirds down in the socio-economic hierarchy that is produced by combining the educational and earnings properties of occupations.

*Hispanic status, race and nativity characteristics*

Variations also exist by Hispanic status, race, and nativity. Data in Table 3 show that the non-Hispanic population has the highest average occupational score. Within the Hispanic population, Cubans and Columbians have higher average scores than those who identify as Mexican, Salvadoran and Guatemalan, corroborating discussion that note the disadvantaged statuses of these latter groups in American society. Occupational scores also vary substantially by race. The average score of 52 places the white population in the middle of the occupational hierarchy. As documented in recent works (Sakamoto and Woo 2007; Takei et.al. 2013) persons who identify racially as Asian Indian, Japanese, Chinese , and Korea on average are in occupations with higher socioeconomic scores, while Vietnamese, Blacks and native Indians have lower scores on average than do whites. Much has been written on the model minority or success story of these groups relative to whites and on the reasons for the more disadvantaged positions of the Vietnamese, Blacks, American Indians and Alaskan natives. Among the theories that explain disparities in labor market outcomes among different racial and ethnic groups, two dominate in recent sociological research. First, according to the racial stratification perspective, the market disadvantage for some racial groups results from ascribed and phenotypical characteristics such as skin colour (see Bobo and Massagli, 2001; Feagin and Vera, 1995; Oreopoulos, 2011. North American, non-white minorities are systematically subjected to prejudice and discrimination in a labor market that favours whites. By way of contrast, the demographic heterogeneity perspective (Duncan and Duncan, 1968; Kim and Sakamoto, 2010) points to compositional differences among racial groups in labor market related characteristics and resources as important explanatory factors of socioeconomic inequalities. Existing racial differences in labor market outcomes either decline substantially or disappear when demographic and educational variables are taken into account (Banerjee, 2009; Fang and Heywood, 2010; Sakamoto and Woo, 2007; Zeng and Xie, 2004).

Socioeconomic standing also varies for groups defined by citizenship, birthplace, duration and language use. In particular, persons who are not citizens of the United States are on average two-thirds down the occupational hierarchy. Strong occupational differences also exist by birthplace. In keeping with admissions of highly educated and highly skilled workers (Boyd 2014), those who are born in Canada, North and Western European countries, in India and Nepal on average are working in occupations that have higher scores than observed for the American born population. The recent shift toward higher skilled immigrants partially underlies the u-shaped nature of the occupational scores according to duration in the United States. Using the 2010-2012 ACS, an unpublished cross-tabulation of country/region of origin by period of duration in the United States shows a strong upswing in the percentages that have arrived in the past 5 years and who are born in Asian countries.

For analysts of labor markets and immigration, language is a most important form of social and economic capital (Chiswick and Miller 2007). Knowing the language(s) of the host society enhances the capacity to obtain information about the new society - information about schools, health care, social programs, housing, employment opportunities, unemployment benefits, and civic and legal rights. Language also is a form of economic capital in that it influences where workers are hired, their job productivity and thus, under the assumptions of neo-classical economics, their wages. With limited or no knowledge of the host country's language(s), workers are likely to find employment only in those settings their own language is used, such as in ethnic enclaves. They also may work where the host country language(s) is not required for job performance (for example, cleaning occupations). Such workers are likely to be employed in low status and low wage jobs (Boyd and Cao 2009). The labor market advantages of speaking English well are corroborated with the Nam-Powers-Boyd scores for the 2010-2012 ACS data. On average those who either speak only English or speak another language but also speak English very well have the highest average scores, followed by those who speak English well. Persons with limited English language skills are three-quarters down in the occupational hierarchy, with an NPB average score of 25 (Table 3).

*Majoring in STEM fields of study*

The development of occupational scales is closely linked to the study of stratification and mobility between parents and offspring, between sub-populations, and by groups over time. Their use continues (see: Bannerjee and Phan 2014, 2015; Mazumder and Acosta 2015; Schwenkenberg 2014); however, because the scores represent relative positions in an occupational hierarchy, they also indicate the labour market correlates of various educational indicators, including level of education and major fields of study. The latter, field of study at the bachelor`s level, is a new addition to the American Community Surveys, first asked in 2009 with minor changes in the classification system made by 2010.

Two recent studies (Breede et al 2011; Landivar 2013) use the ACS field of study question to investigate the links between educational levels of attainment, fields of study and employment in science, technology, engineering and mathematics (STEM) occupations. Using the updated Nam-Powers-Boyd occupational scores goes beyond these count and inflow estimates by highlighting the differences between various fields of study in the relative location of all occupational outcomes. Our initial introduction to this approach uses information from the first question on the field of study associated with receipt of a bachelor`s degree; a second question was asked in order to capture joint majors (for example: a sociology-chemistry joint major or a biology-chemistry major) but it is not analyzed here. The emphasis on the field of study associated with bachelor`s degrees follows the protocol use in the successive National Graduate Surveys by the National Science Foundation. It thus collects data at a particular point in the educational trajectory. Persons who subsequently received graduate degrees but either have switched into STEM fields or changed their STEM fields do not have these post-bachelor`s majors recorded.

Table 4 shows the mean occupational scores for the STEM fields of study, following the broad classification of STEM majors used by many researchers (see: Landivar 2013; Lowell 2010) which includes Life Sciences and Social Sciences. Table 4 also shows the average Nam-Powers-Boyd score for STEM occupations, STEM related including the health fields, and non-STEM occupations, using a U.S. Bureau classification for these three categories (www.census.gov/people/io/methodology/ and select the third table under occupations). Those with bachelor`s degrees in STEM fields on average are employed in occupations in the top quarter of the occupational hierarchy (NPB score of 75). Persons with non-STEM bachelor’s degrees are five points lower on the scale while those without bachelor’s degrees on average have occupational scores that place them near the bottom 40 percent (NPB score of 41).

The new NPB occupational scores demonstrate variability in the STEM fields of study. Persons with majors in engineering, computer and information sciences, biology and life sciences and physical sciences have the highest occupational scores, ranging from 78-80 whereas those who majored in agriculture have the lowest scores (63) on average. Each one of the major fields of study contains more detailed titles, and those for social science fields show that the highest mean scores exist for political science and government and for economics (NPB scores of 76 and 75 respectively). Anthropology, Archeology, Sociology and Criminology have lower average scores between 66 and 68 points.

*Disability*

A voluminous body of American research documents the relationship between socioeconomic variables, including education, earnings, and occupational status, and various aspects of health (for indicators, see: National Center for Health Statistics 2015). Disability measures are an important component of this research , referring to the presence of physical or mental impairments that limit a person’s ability to perform an important activity and affect the use of or need for supports, accommodations, or interventions to improve functioning. Studies find different disability estimates for children, and by immigrant status, race, country of origin and same or different sex partnering for adults (Dallo et.al. 2015; Elo, Mehta and Huang 2011; Halfon et.al. 2012; Huang et.al. 2011; Siordia 2015) with most including age, marital status and education as explanatory factors. Working age persons with disabilities are also of interest, both because they are the recipients of legal protection and services (U.S. Department of Justice 2009) and because they may – or may not – be in the labour force (Brault 2012 Table A.1).

Following the data collection practices of the 2000 census of population, the American Community Survey continues to ask questions on disability. Revisions to the roster of questions were made in 2008 (Brault 2009); current questions cover six disability types: **independent living difficulty, self-care difficulty**, vision difficulty, hearing difficulty, ambulatory difficulty and cognitive difficulty. For those who have been employed in the past 5 years, these difficulties are associated with lower Nam-Power-Boyd scores (Table 5). On average the population without difficulties is at the middle of the occupational hierarchy. However, persons who have one or more disabilities are in occupations that, on average, are in the bottom half of the distribution. Those with difficulties in independent living, vision and/or cognition have the lowest average scores of 41, 41 and 37 respectively. It should be noted, that these are point estimates, indicating only associations between types of disabilities and occupational status. By themselves, they do not indicate if the associations exist because certain occupations have disability creating settings or because persons with disabilities are more likely to choose or to be hired in select occupations.

***Conclusion***

Occupational scales indicate the location of individuals in an occupational hierarchy. They are used in sociological research as dependent variables and in other fields as mediating and independent variables. This paper provides the update of the 2000 Nam-Power-Boyd scores using the occupational classifications of the 2010-2012 American Community Surveys. Further analysis of the ACS data show that the new scale captures differences between sub-populations, defined by socio-demographic characteristics, fields of study and disabilities. The availability of these updated occupational scores thus offer options for on-going and new analyses in the areas of stratification, health and other areas of social science.

**References**

Banerjee, Rupa. (2009). Income growth of new immigrants in Canada: evidence from the survey of labour and income dynamics. *Industrial Relations 64*(3): 466-488.

Banerjee, Rupa, and Phan, Mai. (2014). Licensing requirements and occupational mobility among highly skilled new immigrants in Canada.*Industrial Relations, 69*(2), 290-315.

Banerjee, Rupa, and Phan, Mai. 2015. Do Tied Movers Get Tied Down? The Occupational Displacement of Dependent Applicant Immigrants in Canada. *International Migration* 16: 333-353.

Blau, Peter, M. and Duncan, Otis, D. (1967). *The American Occupational Structure, with the collaboration of Andrea Tyree.* New York, NY: John Wiley & Sons, Inc.

Bobo, Lawrence D. & Michael P. Massagli. (2001). Stereotypes and urban inequality. Pp. 89- 162 in *Urban Inequality: Evidence from Four Cities*. A. O’Connor, C. Tilly & L. D. Bobo (ed.). New York: Russell Sage Foundation.

Boyd, Monica. (2008). A socioeconomic scale for Canada: Measuring occupational status from the census.*Canadian Review of Sociology and Anthropology, 45*(1), 51-91.

Boyd, Monica and Xingshan Cao. 2009. Immigrant Language Proficiency, Earnings and Language Policies. *Canadian Studies in Population* 36(1-2): 63-86.

Boyd, Monica. 2014. Recruiting High Skill Labour in North America: Policies and Outcomes. *International Migration* 52(3): 40-54.

Brault, Matthew W. 2009. Review of Changes to the Measurement of Disability in the

2008 American Community Survey. Available from: https://www.census.gov/people/disability/files/2008ACS\_disability.pdf

Brault, Matthew W. 2012. Americans with Disabilities 2010. *Current Population Reports* P70-131 (July). Suitland, Maryland: U.S Bureau of the Census.

Breede, David, Tiffany Julian, David Langdon, George McKittrick, Beethika Khan and Mark Doms. 2011. Women in STEM: A Gender Gap to Innovation. ESA Issue Brief /04-11 (August). Washington D.C.: U.S. Department of Commerce, Economics and Statistics Administration.

Chiswick, Barry R. and Paul W. Miller. 2007. *The Economics of Language.* New York: Routledge.

Duncan, Otis Dudley. (1961). A socioeconomic index for all occupations, pp. 109-138, in: A.J. Reiss, Jr. (ed.), *Occupations and Social Status*. New York, NY: Free Press. Duncan, Beverly, & Duncan, Otis, D. (1968). Minorities and the process of stratification.*American Sociological Review, 33*(3), 356-364.

Elo, Irma, T., Mehta, Neil, K., & Huang, Cheng. (2011). Disability among native-born and foreign-born blacks in the United States.*Demography, 48*(1), 241-265.

Fang, Tony & John S. Heywood. 2010. Immigration, ethnic wage differentials and output pay in Canada. *British Journal of Industrial Relations 48*(1): 109-130.

Feagin, Joe R. & Hernan Vera. 1995. *White Racism: The Basics*. New York: Routledge.

Halfon, Neal, Amy Houtrow, Kandyce Larson, and Paul W. Newaheck. 2012. The Changing Landscape of Disability in Childhood. *The Future of Children* 22(1): 13-42

Hatt, Paul. K. (1950). Occupation and social stratification.*American Journal of Sociology, 55*(6), 533-543.

Dallo, Florence J.; Booza, Jason; Nguyen, Norma D. 2015. Functional Limitations and Nativity Status Among Older Arab, Asian, Black, Hispanic, and White Americans. *Journal of Immigrant and Minority Health* 17(2): 535-542.

Hauser, Robert, M., & Warren, John, R. (1997). Socioeconomic indexes for occupations: A review, update, and critique.*Sociological Methodology, 27*, 177-298.

Huang, Cheng., Mehta, Neil., Elo, Irma., Cunningham, Solveig., Stephenson, Rob., Williamson, David., & Venkat Narayan, K. (2011). Region of birth and disability among recent U.S. immigrants: Evidence from the 2000 census.*Population Research and Policy Review, 30*(3), 399-418.

Kim, Chang Hwan., & Sakamoto, Arthur. (2010). Have Asian American men achieved labor market parity with white men?*American Sociological Review, 75*(6), 934-957.

Landivar, Liana, C. (2013). The relationship between science and engineering occupations and employment in STEM occupations. *American Community Survey Reports ACS-23*. Suitland, MD: U.S. Bureau of the Census.

Lowell, Lindsay B. 2010. A Long View of America’s Immigration Policy and the Supply of Foreign-Born STEM Workers in the United States. *American Behavioral Scientist* 53 (7): 1029–1044.

Mazumder, Bhaskar and Miguel Acosta. 2015. Using Occupation to Measure Intergenerational Mobility. *Annals of the American Academy of Political and Social Science* 657 (January): 174-193.

Nam, Charles B. (2000). Comparison of three occupational scales. Unpublished paper. Center for the Study of Population, Florida State University.

Nam, Charles B. & Terrie, E.Walter (1988). 1980-based Nam-Powers occupational status scores. Working Paper 88-48. Tallahassee, FL: Center for the Study of Population, Florida State University.

Nam, Charles. B., & Boyd, Monica. (2004). Occupational status in 2000: Over a century of census-based measurement.*Population Research and Policy Review, 23*(4), 327-358.

Nam, Charles, B., & Powers, Mary, G. (1983). The socioeconomic approach to status measurement. Houston, TX: Cap and Gown Press.

Nam, Charles, B., & Terries, E. Walter. (1982). Measurement of socioeconomic status from United States census data. Pp. 29-42 in Mary G. Powers (Ed.), Measures of socioeconomic status: Current Issues Pp. 29-42. Boulder, CO: Published by Westview Press for the American Association for the Advancement of Science.

National Center for Health Statistics. 2015. *Health, United States, 2014: With Special Feature on Adults Aged 55–64*. Hyattsville, MD.

Oreopoulos, Philip. 2011. Why Do Skilled Immigrants Struggle in the Labor Market? A Field Experiment with Thirteen Thousand Resumes. *American Economic Journal: Economic Policy* 3(November): 148-171.

Powers, Mary, G. (1982). Measures of socioeconomic status: An introduction. In Mary G. Powers (Ed.), Measures of socioeconomic status: Current Issues (1-28). Boulder, Colo.: Published by Westview Press for the American Association for the Advancement of Science.

Ruggles, Steven, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. Integrated Public Use Microdata Series: Version 5.0 [Machine-readable database]. Minneapolis: University of Minnesota, 2010.

Sakamoto, Arthur and Hyeyoung Woo. 2007. The socioeconomic attainments of second-generation Cambodian, Hmong, Laotian, and Vietnamese Americans. *Sociological Inquiry 77*(1): 44-75.

Schwenkenberg, Julia. 2014. Occupations and the Evolution of Gender Differences in Intergenerational Socioeconomic Mobility. *Economics Letters* 124:348-352.

Siordia, Carlos. 2015. Disability Estimates between Same- and Different-Sex Couples: Microdata from the American Community Survey (2009-2011). *Sexuality and Disability* 33(1): 107-121.

Takei, Isao, Sakamoto, Arthur, & Kim, ChangHwan. (2013). The socioeconomic attainments of non-immigrant Cambodian, Filipino, Hmong, Laotian, Thai, and Vietnamese Americans.*Race and Social Problems, 5*(3), 198-212.

Terrie, E. Walter, & Nam, Charles, B. (1994). 1990 and 1980 Nam-Powers-Terrie occupational status scores. Working paper 94-118. Tallahassee, FL: Center for the Study of Population, Florida State University.

U.S. Department of Justice. Civil Rights Division. Disability Rights Section. 2009. *A Guide to Disability Rights Laws.* Available from http://www.ada.gov/cguide.htm

Zeng, Zhen and Yu Xie. 2004. Asian-Americans’ Earnings Disadvantage Reexamined: The role of Place of Education. *American Journal of Sociology* 5(March):1075-1108.

|  |  |  |  |
| --- | --- | --- | --- |
| Appendix A: Occupational Codes, Occupational Titles and the Nam-Powers-Boyd scores, American Community Survey, 2010-2012 | | | |
| 2010-2012 ACS Occup Code |  | Occupational Title | Nam-Powers-Boyd Score |
| 10 |  | Chief executives and legislators | 92 |
| 20 |  | General and Operations Managers | 84 |
| 40 |  | Advertising and Promotions Managers | 85 |
| 50 |  | Marketing and Sales Managers | 89 |
| 60 |  | Public Relations and Fundraising Managers | 92 |
| 100 |  | Administrative Services Managers | 78 |
| 110 |  | Computer and Information Systems Managers | 92 |
| 120 |  | Financial Managers | 85 |
| 135 |  | Compensation and Benefits Managers | 89 |
| 136 |  | Human Resources Managers | 84 |
| 137 |  | Training and Development Managers | 87 |
| 140 |  | Industrial Production Managers | 82 |
| 150 |  | Purchasing Managers | 87 |
| 160 |  | Transportation, Storage, and Distribution Managers | 68 |
| 205 |  | Farmers, Ranchers, and Other Agricultural Managers | 42 |
| 220 |  | Constructions Managers | 74 |
| 230 |  | Education Administrators | 92 |
| 300 |  | Architectural and Engineering Managers | 96 |
| 310 |  | Food Service Managers | 49 |
| 330 |  | Gaming Managers | 65 |
| 340 |  | Lodging Managers | 65 |
| 350 |  | Medical and Health Services Managers | 87 |
| 360 |  | Natural Science Managers | 97 |
| 410 |  | Property, Real Estate, and Community Association Managers | 67 |
| 420 |  | Social and Community Service Managers | 81 |
| 425 |  | Emergency Management Directors | 84 |
| 430 |  | Miscellaneous Managers, Including Funeral Service Managers and Postmasters and Mail Superintendents | 86 |
| 500 |  | Agents and Business Managers of Artists, Performers, and Athletes | 67 |
| 510 |  | Buyers and Purchasing Agents, Farm Products | 56 |
| 520 |  | Wholesale and Retail Buyers, Except Farm Products | 61 |
| 530 |  | Purchasing Agents, Except Wholesale, Retail, and Farm Products | 74 |
| 540 |  | Claims Adjusters, Appraisers, Examiners, and Investigators | 75 |
| 565 |  | Compliance Officers | 83 |
| 600 |  | Cost Estimators | 75 |
| 630 |  | Human Resources Workers | 79 |
| 640 |  | Compensation, Benefits, and Job Analysis Specialists | 76 |
| 650 |  | Training and Development Specialists | 77 |
| 700 |  | Logisticians | 72 |
| 710 |  | Management Analysts | 90 |
| 725 |  | Meeting, Convention, and Event Planners | 70 |
| 726 |  | Fundraisers | 78 |
| 735 |  | Market Research Analysts and Marketing Specialists | 85 |
| 740 |  | Business Operations Specialists, All Other | 77 |
| 800 |  | Accountants and Auditors | 86 |
| 810 |  | Appraisers and Assessors of Real Estate | 73 |
| 820 |  | Budget Analysts | 88 |
| 830 |  | Credit Analysts | 81 |
| 840 |  | Financial Analysts | 94 |
| 850 |  | Personal Financial Advisors | 92 |
| 860 |  | Insurance Underwriters | 80 |
| 900 |  | Financial Examiners | 91 |
| 910 |  | Credit Counselors and Loan Officers | 76 |
| 930 |  | Tax Examiners and Collectors, and Revenue Agents | 73 |
| 940 |  | Tax Preparers | 45 |
| 950 |  | Financial Specialists, All Other | 78 |
| 1005 |  | Computer and Information Research Scientists | 94 |
| 1006 |  | Computer Scientists and Systems Analysts | 90 |
| 1007 |  | Information Security Analysts | 90 |
| 1010 |  | Computer Programmers | 90 |
| 1020 |  | Software Developers, Applications and Systems Software | 94 |
| 1030 |  | Web Developers | 77 |
| 1050 |  | Computer Support Specialists | 73 |
| 1060 |  | Database Administrators | 89 |
| 1105 |  | Network and Computer Systems Administrators | 83 |
| 1106 |  | Computer Network Architects | 89 |
| 1107 |  | Computer Occupations, All Other | 81 |
| 1200 |  | Actuaries | 95 |
| 1220 |  | Operations Research Analysts | 92 |
| 1240 |  | Miscellaneous mathematical science occupations, including mathematicians and statisticians | 93 |
| 1300 |  | Architects, Except Naval | 90 |
| 1310 |  | Surveyors, Cartographers, and Photogrammetrists | 82 |
| 1320 |  | Aerospace Engineers | 95 |
| 1340 |  | Biomedical and agricultural engineers | 93 |
| 1350 |  | Chemical Engineers | 94 |
| 1360 |  | Civil Engineers | 93 |
| 1400 |  | Computer Hardware Engineers | 91 |
| 1410 |  | Electrical and Electronics Engineers | 93 |
| 1420 |  | Environmental Engineers | 94 |
| 1430 |  | Industrial Engineers, including Health and Safety | 90 |
| 1440 |  | Marine Engineers and Naval Architects | 90 |
| 1450 |  | Materials Engineers | 90 |
| 1460 |  | Mechanical Engineers | 91 |
| 1520 |  | Petroleum, mining and geological engineers, including mining safety engineers | 93 |
| 1530 |  | Miscellaneous engineeers including nuclear engineers | 93 |
| 1540 |  | Drafters | 71 |
| 1550 |  | Engineering Technicians, Except Drafters | 70 |
| 1560 |  | Surveying and Mapping Technicians | 57 |
| 1600 |  | Agricultural and Food Scientists | 82 |
| 1610 |  | Biological Scientists | 88 |
| 1640 |  | Conservation Scientists and Foresters | 84 |
| 1650 |  | Medical Scientists, and Life Scientists, All Other | 95 |
| 1700 |  | Astronomers and Physicists | 97 |
| 1710 |  | Atmospheric and Space Scientists | 93 |
| 1720 |  | Chemists and Materials Scientists | 91 |
| 1740 |  | Environmental Scientists and Geoscientists | 91 |
| 1760 |  | Physical Scientists, All Other | 93 |
| 1800 |  | Economists | 98 |
| 1820 |  | Psychologists | 92 |
| 1840 |  | Urban and Regional Planners | 94 |
| 1860 |  | Miscellaneous Social Scientists, Including Survey Researchers and Sociologists | 82 |
| 1900 |  | Agricultural and Food Science Technicians | 59 |
| 1910 |  | Biological Technicians | 64 |
| 1920 |  | Chemical Technicians | 68 |
| 1930 |  | Geological and Petroleum Technicians, and Nuclear Technicians | 76 |
| 1965 |  | Miscellaneous Life, Physical, and Social Science Technicians, Including Social Science Research Assistants | 53 |
| 2000 |  | Counselors | 76 |
| 2010 |  | Social Workers | 77 |
| 2015 |  | Probation Officers and Correctional Treatment Specialists | 78 |
| 2016 |  | Social and Human Service Assistants | 56 |
| 2025 |  | Miscellaneous Community and Social Service Specialists, Including Health Educators and Community Health Workers | 65 |
| 2040 |  | Clergy | 78 |
| 2050 |  | Directors, Religious Activities and Education | 66 |
| 2060 |  | Religious Workers, All Other | 52 |
| 2100 |  | Lawyers, and judges, magistrates, and other judicial workers | 99 |
| 2105 |  | Judicial Law Clerks | 81 |
| 2145 |  | Paralegals and Legal Assistants | 70 |
| 2160 |  | Miscellaneous Legal Support Workers | 67 |
| 2200 |  | Postsecondary Teachers | 83 |
| 2300 |  | Preschool and Kindergarten Teachers | 50 |
| 2310 |  | Elementary and Middle School Teachers | 84 |
| 2320 |  | Secondary School Teachers | 86 |
| 2330 |  | Special Education Teachers | 81 |
| 2340 |  | Other Teachers and Instructors | 46 |
| 2400 |  | Archivists, Curators, and Museum Technicians | 77 |
| 2430 |  | Librarians | 81 |
| 2440 |  | Library Technicians | 26 |
| 2540 |  | Teacher Assistants | 38 |
| 2550 |  | Other Education, Training, and Library Workers | 78 |
| 2600 |  | Artists and Related Workers | 58 |
| 2630 |  | Designers | 69 |
| 2700 |  | Actors | 39 |
| 2710 |  | Producers and Directors | 82 |
| 2720 |  | Athletes, Coaches, Umpires, and Related Workers | 33 |
| 2740 |  | Dancers and Choreographers | 31 |
| 2750 |  | Musicians, Singers, and Related Workers | 44 |
| 2760 |  | Entertainers and Performers, Sports and Related Workers, All Other | 41 |
| 2800 |  | Announcers | 54 |
| 2810 |  | News Analysts, Reporters and Correspondents | 75 |
| 2825 |  | Public Relations Specialists | 84 |
| 2830 |  | Editors | 78 |
| 2840 |  | Technical Writers | 87 |
| 2850 |  | Writers and Authors | 74 |
| 2860 |  | Miscellaneous Media and Communication Workers | 56 |
| 2900 |  | Broadcast & Sound Engineering Technicians & Radio Operators,media and communication equipment workers, all other | 66 |
| 2910 |  | Photographers | 48 |
| 2920 |  | Television, Video, and Motion Picture Camera Operators and Editors | 64 |
| 3000 |  | Chiropractors | 94 |
| 3010 |  | Dentists | 100 |
| 3030 |  | Dieticians and Nutritionists | 76 |
| 3040 |  | Optometrists | 98 |
| 3050 |  | Pharmacists | 98 |
| 3060 |  | Physicians and Surgeons | 100 |
| 3110 |  | Physician Assistants | 90 |
| 3120 |  | Podiatrists | 99 |
| 3140 |  | Audiologists | 94 |
| 3150 |  | Occupational Therapists | 89 |
| 3160 |  | Physical Therapists | 93 |
| 3200 |  | Radiation Therapists | 87 |
| 3210 |  | Recreational Therapists | 71 |
| 3220 |  | Respiratory Therapists | 77 |
| 3230 |  | SpeechLanguage Pathologists | 90 |
| 3245 |  | Other Therapists, Including Exercise Physiologists | 79 |
| 3250 |  | Veterinarians | 98 |
| 3255 |  | Registered Nurses | 84 |
| 3256 |  | Nurse Anesthetists | 98 |
| 3258 |  | Nurse Practitioners and Nurse Midwives | 97 |
| 3260 |  | Health Diagnosing and Treating Practitioners, All Other | 73 |
| 3300 |  | Clinical Laboratory Technologists and Technicians | 72 |
| 3310 |  | Dental Hygienists | 73 |
| 3320 |  | Diagnostic Related Technologists and Technicians | 74 |
| 3400 |  | Emergency Medical Technicians and Paramedics | 63 |
| 3420 |  | Health Practitioner Support Technologists and Technicians | 53 |
| 3500 |  | Licensed Practical and Licensed Vocational Nurses | 60 |
| 3510 |  | Medical Records and Health Information Technicians | 52 |
| 3520 |  | Opticians, Dispensing | 58 |
| 3535 |  | Miscellaneous Health Technologists and Technicians | 63 |
| 3540 |  | Other Healthcare Practitioners and Technical Occupations | 77 |
| 3600 |  | Nursing, Psychiatric, and Home Health Aides | 33 |
| 3610 |  | Occupational Therapy Assistants and Aides | 69 |
| 3620 |  | Physical Therapist Assistants and Aides | 60 |
| 3630 |  | Massage Therapists | 47 |
| 3640 |  | Dental Assistants | 46 |
| 3645 |  | Medical Assistants | 51 |
| 3646 |  | Medical Transcriptionists | 53 |
| 3647 |  | Pharmacy Aides | 43 |
| 3648 |  | Veterinary Assistants and Laboratory Animal Caretakers | 37 |
| 3649 |  | Phlebotmists | 49 |
| 3655 |  | Healthcare Support Workers, All Other, Including Medical Equipment Preparers | 32 |
| 3700 |  | First-Line Supervisors of Correctional Officers | 71 |
| 3710 |  | First-Line Supervisors of Police and Detectives | 84 |
| 3720 |  | First-Line Supervisors of Fire Fighting and Prevention Workers | 82 |
| 3730 |  | First-Line Supervisors of Protective Service Workers, All Other | 67 |
| 3740 |  | Firefighters | 76 |
| 3750 |  | Fire Inspectors | 71 |
| 3800 |  | Bailiffs, Correctional Officers, and Jailers | 57 |
| 3820 |  | Detectives and Criminal Investigators | 86 |
| 3840 |  | Miscellaneous law enforcement workers | 61 |
| 3850 |  | Police Officers | 78 |
| 3900 |  | Animal Control Workers | 45 |
| 3910 |  | Private Detectives and Investigators | 73 |
| 3930 |  | Security Guards and Gaming Surveillance Officers | 39 |
| 3940 |  | Crossing Guards | 11 |
| 3945 |  | Transportation Security Screeners | 62 |
| 3955 |  | Lifeguards and Other Recreational, and All Other Protective Service Workers | 14 |
| 4000 |  | Chefs and Head Cooks | 40 |
| 4010 |  | First-Line Supervisors of Food Preparation and Serving Workers | 34 |
| 4020 |  | Cooks | 11 |
| 4030 |  | Food Preparation Workers | 13 |
| 4040 |  | Bartenders | 36 |
| 4050 |  | Combined Food Preparation and Serving Workers, Including Fast Food | 12 |
| 4060 |  | Counter Attendant, Cafeteria, Food Concession, and Coffee Shop | 6 |
| 4110 |  | Waiters and Waitresses | 25 |
| 4120 |  | Food Servers, Nonrestaurant | 16 |
| 4130 |  | Miscellaneous food preparation and serving related workers including dining room and cafeteria attendants and bartender helpers | 5 |
| 4140 |  | Dishwashers | 1 |
| 4150 |  | Host and Hostesses, Restaurant, Lounge, and Coffee Shop | 16 |
| 4200 |  | First-Line Supervisors of Housekeeping and Janitorial Workers | 40 |
| 4210 |  | First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers | 42 |
| 4220 |  | Janitors and Building Cleaners | 18 |
| 4230 |  | Maids and Housekeeping Cleaners | 6 |
| 4240 |  | Pest Control Workers | 40 |
| 4250 |  | Grounds Maintenance Workers | 10 |
| 4300 |  | First-Line Supervisors of Gaming Workers | 60 |
| 4320 |  | First-Line Supervisors of Personal Service Workers | 52 |
| 4340 |  | Animal Trainers | 40 |
| 4350 |  | Nonfarm Animal Caretakers | 26 |
| 4400 |  | Gaming Services Workers | 45 |
| 4410 |  | Motion Picture Projectionists | 29 |
| 4420 |  | Ushers, Lobby Attendants, and Ticket Takers | 20 |
| 4430 |  | Miscellaneous Entertainment Attendants and Related Workers | 21 |
| 4460 |  | Embalmers and Funeral Attendants | 38 |
| 4465 |  | Morticians, Undertakers, and Funeral Directors | 71 |
| 4500 |  | Barbers | 25 |
| 4510 |  | Hairdressers, Hairstylists, and Cosmetologists | 27 |
| 4520 |  | Miscellaneous Personal Appearance Workers | 22 |
| 4530 |  | Baggage Porters, Bellhops, and Concierges | 38 |
| 4540 |  | Tour and Travel Guides | 33 |
| 4600 |  | Childcare Workers | 21 |
| 4610 |  | Personal Care Aides | 22 |
| 4620 |  | Recreation and Fitness Workers | 32 |
| 4640 |  | Residential Advisors | 32 |
| 4650 |  | Personal Care and Service Workers, All Other | 25 |
| 4700 |  | First-Line Supervisors of Retail Sales Workers | 57 |
| 4710 |  | First-Line Supervisors of Non-Retail Sales | 74 |
| 4720 |  | Cashiers | 17 |
| 4740 |  | Counter and Rental Clerks | 23 |
| 4750 |  | Parts Salespersons | 37 |
| 4760 |  | Retail Salespersons | 34 |
| 4800 |  | Advertising Sales Agents | 72 |
| 4810 |  | Insurance Sales Agents | 71 |
| 4820 |  | Securities, Commodities, and Financial Services Sales Agents | 86 |
| 4830 |  | Travel Agents | 58 |
| 4840 |  | Sales Representatives, Services, All Other | 72 |
| 4850 |  | Sales Representatives, Wholesale and Manufacturing | 76 |
| 4900 |  | Models, Demonstrators, and Product Promoters | 19 |
| 4920 |  | Real Estate Brokers and Sales Agents | 63 |
| 4930 |  | Sales Engineers | 91 |
| 4940 |  | Telemarketers | 25 |
| 4950 |  | Door-to-Door Sales Workers, News and Street Vendors, and Related Workers | 20 |
| 4965 |  | Sales and Related Workers, All Other | 58 |
| 5000 |  | First-Line Supervisors of Office and Administrative Support Workers | 68 |
| 5010 |  | Switchboard Operators, Including Answering Service | 36 |
| 5020 |  | Telephone Operators | 39 |
| 5030 |  | Communications Equipment Operators, All Other | 58 |
| 5100 |  | Bill and Account Collectors | 48 |
| 5110 |  | Billing and Posting Clerks | 49 |
| 5120 |  | Bookkeeping, Accounting, and Auditing Clerks | 50 |
| 5130 |  | Gaming Cage Workers | 38 |
| 5140 |  | Payroll and Timekeeping Clerks | 60 |
| 5150 |  | Procurement Clerks | 68 |
| 5160 |  | Tellers | 42 |
| 5165 |  | Financial Clerks, All Other | 65 |
| 5200 |  | Brokerage Clerks | 70 |
| 5220 |  | Court, Municipal, and License Clerks | 60 |
| 5230 |  | Credit Authorizers, Checkers, and Clerks | 56 |
| 5240 |  | Customer Service Representatives | 45 |
| 5250 |  | Eligibility Interviewers, Government Programs | 68 |
| 5260 |  | File Clerks | 38 |
| 5300 |  | Hotel, Motel, and Resort Desk Clerks | 31 |
| 5310 |  | Interviewers, Except Eligibility and Loan | 38 |
| 5320 |  | Library Assistants, Clerical | 38 |
| 5330 |  | Loan Interviewers and Clerks | 61 |
| 5340 |  | New Account Clerks | 58 |
| 5350 |  | Correspondent clerks and order clerks | 41 |
| 5360 |  | Human Resources Assistants, Except Payroll and Timekeeping | 60 |
| 5400 |  | Receptionists and Information Clerks | 36 |
| 5410 |  | Reservation and Transportation Ticket Agents and Travel Clerks | 55 |
| 5420 |  | Information and Record Clerks, All Other | 55 |
| 5500 |  | Cargo and Freight Agents | 52 |
| 5510 |  | Couriers and Messengers | 42 |
| 5520 |  | Dispatchers | 50 |
| 5530 |  | Meter Readers, Utilities | 47 |
| 5540 |  | Postal Service Clerks | 63 |
| 5550 |  | Postal Service Mail Carriers | 63 |
| 5560 |  | Postal Service Mail Sorters, Processors, and Processing Machine Operators | 62 |
| 5600 |  | Production, Planning, and Expediting Clerks | 63 |
| 5610 |  | Shipping, Receiving, and Traffic Clerks | 33 |
| 5620 |  | Stock Clerks and Order Fillers | 23 |
| 5630 |  | Weighers, Measurers, Checkers, and Samplers, Recordkeeping | 37 |
| 5700 |  | Secretaries and Administrative Assistants | 53 |
| 5800 |  | Computer Operators | 61 |
| 5810 |  | Data Entry Keyers | 46 |
| 5820 |  | Word Processors and Typists | 47 |
| 5840 |  | Insurance Claims and Policy Processing Clerks | 59 |
| 5850 |  | Mail Clerks and Mail Machine Operators, Except Postal Service | 35 |
| 5860 |  | Office Clerks, General | 46 |
| 5900 |  | Office Machine Operators, Except Computer | 39 |
| 5910 |  | Proofreaders and Copy Markers | 55 |
| 5920 |  | Statistical Assistants | 62 |
| 5940 |  | Miscellaneous office and administrative support workers including desktop publishers | 60 |
| 6005 |  | First-Line Supervisors of farming, fishing, and forestry workers | 39 |
| 6010 |  | Agricultural Inspectors | 66 |
| 6040 |  | Graders and Sorters, Agricultural Products | 5 |
| 6050 |  | Miscellaneous agricultural workers including animal breeders | 7 |
| 6100 |  | Fishing and hunting workers | 23 |
| 6120 |  | Forest and Conservation Workers | 23 |
| 6130 |  | Logging Workers | 18 |
| 6200 |  | First-Line Supervisors of Construction Trades and Extraction Workers | 53 |
| 6210 |  | Boilermakers | 48 |
| 6220 |  | Brickmasons, Blockmasons,Stonemasons, Reinforcing Iron and Rebar Workers | 20 |
| 6230 |  | Carpenters | 28 |
| 6240 |  | Carpet, Floor, and Tile Installers and Finishers | 19 |
| 6250 |  | Cement Masons, Concrete Finishers, and Terrazzo Workers | 19 |
| 6260 |  | Construction Laborers | 20 |
| 6300 |  | Paving, Surfacing, and Tamping Equipment Operators | 25 |
| 6320 |  | Construction equipment operators except paving, surfacing, and tamping equipment operators | 37 |
| 6330 |  | Drywall Installers, Ceiling Tile Installers, and Tapers | 16 |
| 6355 |  | Electricians | 52 |
| 6360 |  | Glaziers | 35 |
| 6400 |  | Insulation Workers | 30 |
| 6420 |  | Painters, Construction and Maintenance, Paperhangers | 19 |
| 6440 |  | Pipelayers, Plumbers, Pipefitters, and Steamfitters | 42 |
| 6460 |  | Plasterers and Stucco Masons | 17 |
| 6515 |  | Roofers | 15 |
| 6520 |  | Sheet Metal Workers | 41 |
| 6530 |  | Structural Iron and Steel Workers | 39 |
| 6600 |  | Helpers, Construction Trades | 11 |
| 6660 |  | Construction and Building Inspectors | 66 |
| 6700 |  | Elevator Installers and Repairers | 64 |
| 6710 |  | Fence Erectors | 18 |
| 6720 |  | Hazardous Materials Removal Workers | 34 |
| 6730 |  | Highway Maintenance Workers | 37 |
| 6740 |  | Rail-Track Laying and Maintenance Equipment Operators | 48 |
| 6765 |  | Miscellaneous construction workers including solar Photovaltaic Installers, and septic tank servicers and sewer pipe cleaners | 32 |
| 6800 |  | Derrick, rotary drill, and service unit operators, and roustabouts, oil, gas, and mining | 43 |
| 6820 |  | Earth Drillers, Except Oil and Gar | 41 |
| 6830 |  | Explosives Workers, Ordnance Handling Experts, and Blasters | 54 |
| 6840 |  | Mining Machine Operators | 48 |
| 6940 |  | Miscellaneous extraction workers including roof bolters and helpers | 40 |
| 7000 |  | First-Line Supervisors of Mechanics, Installers, and Repairers | 62 |
| 7010 |  | Computer, Automated Teller, and Office Machine Repairers | 64 |
| 7020 |  | Radio and Telecommunications Equipment Installers and Repairers | 61 |
| 7030 |  | Avionics Technicians | 71 |
| 7040 |  | Electric Motor, Power Tool, and Related Repairers | 49 |
| 7100 |  | Electrical and electronics repairers, transportation equipment, and industrial and utility | 73 |
| 7110 |  | Electronic Equipment Installers and Repairers, Motor Vehicles | 49 |
| 7120 |  | Electronic Home Entertainment Equipment Installers and Repairers | 46 |
| 7130 |  | Security and Fire Alarm Systems Installers | 52 |
| 7140 |  | Aircraft Mechanics and Service Technicians | 69 |
| 7150 |  | Automotive Body and Related Repairers | 32 |
| 7160 |  | Automotive Glass Installers and Repairers | 30 |
| 7200 |  | Automotive Service Technicians and Mechanics | 36 |
| 7210 |  | Bus and Truck Mechanics and Diesel Engine Specialists | 44 |
| 7220 |  | Heavy Vehicle and Mobile Equipment Service Technicians and Mechanics | 46 |
| 7240 |  | Small Engine Mechanics | 32 |
| 7260 |  | Miscellaneous Vehicle and Mobile Equipment Mechanics, Installers, and Repairers | 22 |
| 7300 |  | Control and Valve Installers and Repairers | 51 |
| 7315 |  | Heating, Air Conditioning, and Refrigeration Mechanics and Installers | 47 |
| 7320 |  | Home Appliance Repairers | 38 |
| 7330 |  | Industrial and Refractory Machinery Mechanic | 51 |
| 7340 |  | Maintenance and Repair Workers, General | 45 |
| 7350 |  | Maintenance Workers, Machinery | 45 |
| 7360 |  | Millwrights | 54 |
| 7410 |  | Electrical Power-Line Installers and Repairers | 60 |
| 7420 |  | Telecommunications Line Installers and Repairers | 55 |
| 7430 |  | Precision Instrument and Equipment Repairers | 67 |
| 7510 |  | Coin, Vending, and Amusement Machine Servicers and Repairers | 38 |
| 7540 |  | Locksmiths and Safe Repairers | 45 |
| 7560 |  | Riggers | 43 |
| 7610 |  | Helpers--Installation, Maintenance, and Repair Workers | 11 |
| 7630 |  | Other Installation, Maintenance, & Repair Workers Including Wind Turbine Service Technicians, Commercial Divers, and Signal and Track Switch Repairers,Manufactured Building & Mobile Home Installers | 40 |
| 7700 |  | First-Line Supervisors of Production and Operating Workers | 57 |
| 7710 |  | Aircraft Structure, Surfaces, Rigging, and Systems Assemblers | 47 |
| 7720 |  | Electrical, Electronics, and Electromechanical Assemblers | 30 |
| 7730 |  | Engine and Other Machine Assemblers | 40 |
| 7740 |  | Structural Metal Fabricators and Fitters | 41 |
| 7750 |  | Miscellaneous Assemblers and Fabricators | 28 |
| 7800 |  | Bakers | 24 |
| 7810 |  | Butchers and Other Meat, Poultry, and Fish Processing Workers | 19 |
| 7830 |  | Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders | 30 |
| 7840 |  | Food Batchmakers | 24 |
| 7850 |  | Food Cooking Machine Operators and Tenders | 17 |
| 7855 |  | Food Processing Workers, All Other | 23 |
| 7900 |  | Computer Control Programmers and Operators | 48 |
| 7920 |  | Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic | 41 |
| 7930 |  | Forging Machine Setters, Operators, and Tenders, Metal and Plastic | 36 |
| 7940 |  | Rolling Machine Setters, Operators, and Tenders, metal and Plastic | 32 |
| 7950 |  | Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic,Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic; Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic | 28 |
| 8030 |  | Machinists | 47 |
| 8040 |  | Metal Furnace Operators, Tenders, Pourers, and Casters | 40 |
| 8100 |  | Molders and Molding Machine Setters, Operators, and Tenders, Metal and Plastic;Model Makers and Patternmakers, Metal and Plastic | 34 |
| 8130 |  | Tool and Die Makers | 55 |
| 8140 |  | Welding, Soldering, and Brazing Workers | 34 |
| 8220 |  | Miscellaneous metal workers and plastic workers including milling and planing machine setters, and multiple machine tool setters, and lay-out workers; 8150 Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic; 8200 Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic; 8210 Tool Grinders, Filers, and Sharpeners | 31 |
| 8250 |  | Prepress Technicians and Workers | 40 |
| 8255 |  | Printing Machine Operators | 37 |
| 8256 |  | Print Binding and Finishing Workers | 30 |
| 8300 |  | Laundry and Dry-Cleaning Workers | 12 |
| 8310 |  | Pressers, Textile, Garment, and Related Materials | 10 |
| 8320 |  | Sewing Machine Operators | 12 |
| 8330 |  | Shoe and Leather Workers and Repairers; 8340 Shoe Machine Operators and Tenders | 20 |
| 8350 |  | Tailors, Dressmakers, and Sewers | 22 |
| 8400 |  | Textile bleaching and dyeing, and cutting machine setters, operators, and tenders | 20 |
| 8410 |  | Textile Knitting and Weaving Machine Setters, Operators, and Tenders | 22 |
| 8420 |  | Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders | 18 |
| 8450 |  | Upholsterers | 22 |
| 8460 |  | Miscellaneous textile, apparel, and furnishings workers except upholsterers | 28 |
| 8500 |  | Cabinetmakers and Bench Carpenters | 30 |
| 8510 |  | Furniture Finishers | 23 |
| 8530 |  | Sawing Machine Setters, Operators, and Tenders, Wood | 18 |
| 8540 |  | Woodworking Machine Setters, Operators, and Tenders, Except Sawing | 20 |
| 8550 |  | Miscellaneous woodworkers including model makers and patternmakers | 29 |
| 8600 |  | Power Plant Operators, Distributors, and Dispatchers | 74 |
| 8610 |  | Stationary Engineers and Boiler Operators | 59 |
| 8620 |  | Water and Wastewater Treatment Plant and System Operators | 55 |
| 8630 |  | Miscellaneous Plant and System Operators | 63 |
| 8640 |  | Chemical Processing Machine Setters, Operators, and Tenders | 57 |
| 8650 |  | Crushing, Grinding, Polishing, Mixing, and Blending Workers | 30 |
| 8710 |  | Cutting Workers | 20 |
| 8720 |  | Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders | 29 |
| 8730 |  | Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders | 46 |
| 8740 |  | Inspectors, Testers, Sorters, Samplers, and Weighers | 43 |
| 8750 |  | Jewelers and Precious Stone and Metal Workers | 36 |
| 8760 |  | Medical, Dental, and Ophthalmic Laboratory Technicians | 47 |
| 8800 |  | Packaging and Filling Machine Operators and Tenders | 17 |
| 8810 |  | Painting Workers | 29 |
| 8830 |  | Photographic Process Workers and Processing Machine Operators | 38 |
| 8850 |  | Adhesive Bonding Machine Operators and Tenders | 24 |
| 8910 |  | Etchers and Engravers | 35 |
| 8920 |  | Molders, Shapers, and Casters, Except Metal and Plastic | 32 |
| 8930 |  | Paper Goods Machine Setters, Operators, and Tenders | 30 |
| 8940 |  | Tire Builders | 45 |
| 8950 |  | Helpers--Production Workers | 14 |
| 8965 |  | Other production workers including semiconductor processors and cooling and freezing equipment operators; 8860 Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders | 29 |
| 9000 |  | Supervisors ofTransportation and Material Moving Workers | 56 |
| 9030 |  | Aircraft Pilots and Flight Engineers | 91 |
| 9040 |  | Air Traffic Controllers and Airfield Operations Specialists | 82 |
| 9050 |  | Flight Attendants | 66 |
| 9110 |  | Ambulance Drivers and Attendants, Except Emergency Medical Technicians | 33 |
| 9120 |  | Bus Drivers | 32 |
| 9130 |  | Driver/Sales Workers and Truck Drivers | 38 |
| 9140 |  | Taxi Drivers and Chauffeurs | 31 |
| 9150 |  | Motor Vehicle Operators, All Other | 15 |
| 9200 |  | Locomotive Engineers and Operators | 68 |
| 9240 |  | Railroad Conductors and Yardmasters | 65 |
| 9260 |  | Subway, Streetcar, and Other Rail Transportation Workers; 9230 Railroad Brake, Signal, and Switch Operators | 56 |
| 9300 |  | Sailors and marine oilers, and ship engineers | 46 |
| 9310 |  | Ship and Boat Captains and Operators | 61 |
| 9350 |  | Parking Lot Attendants | 23 |
| 9360 |  | Automotive and Watercraft Service Attendants | 18 |
| 9410 |  | Transportation Inspectors | 60 |
| 9415 |  | Transportation Attendants, Except Flight Attendants | 23 |
| 9420 |  | Miscellaneous transportation workers including bridge and lock tenders and traffic technicians | 51 |
| 9510 |  | Crane and Tower Operators | 45 |
| 9520 |  | Dredge, Excavating, and Loading Machine Operators | 32 |
| 9560 |  | Conveyor operators and tenders, and hoist and winch operators | 34 |
| 9600 |  | Industrial Truck and Tractor Operators | 28 |
| 9610 |  | Cleaners of Vehicles and Equipment | 10 |
| 9620 |  | Laborers and Freight, Stock, and Material Movers, Hand | 21 |
| 9630 |  | Machine Feeders and Offbearers | 21 |
| 9640 |  | Packers and Packagers, Hand | 12 |
| 9650 |  | Pumping Station Operators | 53 |
| 9720 |  | Refuse and Recyclable Material Collectors | 16 |
| 9750 |  | Miscellaneous material moving workers including shuttle car operators, and tank car, truck, and ship loaders | 32 |
| Source: Calculated by the authors from the 2010-2012 ACS, Ruggles et. al. 2010. | | |  |



|  |  |
| --- | --- |
| Table 2: Average Nam-Powers-Boyd Occupational Scores by Sex, Age, Region of | |
| Residence and Type of Household, Age 16 and Older, USA 2010-2012 | |
| **Sex** | 50 |
| Male | 50 |
| Female | 51 |
|  |  |
| **Age** |  |
| 16-24 | 33 |
| 25-44 | 52 |
| 45-64 | 54 |
| 65 plus | 53 |
|  |  |
| **Region of residence** |  |
| New England and Atlantic | 52 |
| North Central | 49 |
| South Atlantic | 51 |
| South Central | 49 |
| Mountain | 50 |
| Pacific | 50 |
|  |  |
| **Type of Household** |  |
| Non-group quarters households | 50 |
| Institutions | 29 |
| Non-institutional Group Quarters | 35 |
| Other non-institutional GQ and unknown | 32 |
| Source: Produced by the authors from the 2010-2012 American Community Surveys, | |
| available from Ruggles et. al. 2010. |  |

|  |  |
| --- | --- |
| Table 3: Average Nam-Powers-Boyd Occupational Scores by Hispanic, Race and | |
| Immigration Characteristics, Age 16 and Older, USA 2010-2012 |  |
| **Hispanic Status** |  |
| Not Hispanic | 52 |
| Cuban | 36 |
| Colombian | 45 |
| Puerto Rican | 48 |
| Dominican | 38 |
| Mexican | 28 |
| Salvadoran | 31 |
| Guatemalan | 47 |
| Other Hispanic | 44 |
|  |  |
| **Race** |  |
| White | 52 |
| Asian Indian | 69 |
| Japanese | 62 |
| Chinese | 60 |
| Korean | 57 |
| Filipino | 53 |
| Other Asian or Pacific Islander | 47 |
| Vietnamese | 46 |
| Black | 44 |
| American Indian or Alaska Native | 42 |
| Other race, nec | 34 |
| Two or more major races | 46 |
|  |  |
| **Citizenship status** |  |
| Not Applicable | 51 |
| Born abroad of American parents | 54 |
| Naturalized citizen | 52 |
| Not a citizen | 36 |
| Table 3 continues |  |



|  |  |
| --- | --- |
| Table 4: Average Nam-Powers-Boyd Occupational Scores by Science, Technology | |
| Engineering and Mathematics (STEM) Occupations and Fields of Bachelor's | |
| Degrees, Age 16 and Older, USA 2010-2012 |  |
| **STEM and Non-STEM occupations** | 50 |
| STEM occupations | 86 |
| STEM related | 81 |
| Non-STEM | 46 |
|  |  |
| **Major for First Listed Bachelor's Degree** |  |
| STEM major | 75 |
| Non-STEM | 71 |
| No bachelor's degree | 41 |
|  |  |
| **STEM Field of Degree, First Listed Bachelor's Degree** | 75 |
| Engineering | 80 |
| Computer and Information Sciences | 79 |
| Biology and Life Sciences | 78 |
| Physical Sciences | 78 |
| Mathematics and Statistics | 77 |
| Architecture | 75 |
| Social Sciences | 73 |
| Engineering Technologies | 72 |
| Nuclear, Industrial Radiology & Biological Technologies | 71 |
| Psychology | 71 |
| Environment and Natural Resources | 69 |
| Interdisciplinary and Multi-Disciplinary Studies | 69 |
| Agriculture | 63 |
|  |  |
| **Social Science Fields of Study, First Bachelor's Degree** | |
| Political Science and Government | 76 |
| Economics | 75 |
| International Relations | 73 |
| Miscellaneous Social Sciences | 71 |
| Geography | 69 |
| General Social Sciences | 69 |
| Anthropology and Archeology | 68 |
| Sociology | 68 |
| Criminology | 66 |
| Source: Produced by the authors from the 2010-2012 American Community Surveys, | |
| available from Ruggles et. al. 2010. |  |

|  |  |
| --- | --- |
| Table 5: Average Nam-Powers-Boyd Occupational Scores by Difficulty in Independent | |
| Living, Self-Care, Vision, Hearing, Ambulation, and Cognition, Age 16 and | |
| Older, USA 2010-2012 |  |
| Independent living difficulty(a) |  |
| No independent living difficulty | 50 |
| Has independent living difficulty | 41 |
|  |  |
| Self-care difficulty(b) |  |
| No | 50 |
| Yes | 44 |
|  |  |
| Vision difficulty (c) |  |
| No | 50 |
| Yes | 41 |
|  |  |
| Hearing difficulty(d) |  |
| No | 50 |
| Yes | 47 |
|  |  |
| Ambulatory difficulty (e) |  |
| No ambulatory difficulty | 50 |
| Has ambulatory difficulty | 44 |
|  |  |
| Cognitive difficulty(f) |  |
| No cognitive difficulty | 50 |
| Has cognitive difficulty | 37 |
| a) Response to the question "Because of a physical, mental, or emotional condition, | |
| does this person have difficulty doing errands alone such as visiting a doctor's | |
| office or shopping?" |  |
| b) Response to the question "Does this person have difficulty dressing or bathing?" | |
| c) Response to the question "Is this person blind or does he/she have serious | |
| difficulty seeing even when wearing glasses?" |  |
| d) Response to the question "Is this person deaf or does he/she have serious | |
| difficulty hearing?" |  |
| e) Response to the question "Does this person have serious difficulty walking or | |
| climbing stairs?" |  |
| f) Response to the question "Because of a physical, mental, or emotional condition, | |
| does this person have serious difficulty concentrating, remembering, or making | |
| decisions?" |  |
| Source: Produced by the authors from the 2010-2012 American Community Surveys, | |
| available from Ruggles et. al. 2010. |  |