Metropolitan Policy Program
at BROOKINGS

Investing in English Skills:
The Limited English Proficient Workforce in U.S. Metropolitan Areas

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"National, state, and regional leaders have an opportunity to enhance the human capital and economic mobility of their current and future workforce by investing in adult English instruction."

Findings

An analysis of the labor market characteristics of the working-age limited English proficient (LEP) population in the United States and its largest metropolitan areas reveals that:

- **Nearly one in 10 working-age U.S. adults—19.2 million persons aged 16 to 64—is considered limited English proficient.** Two-thirds of this population speaks Spanish, but speakers of Asian and Pacific Island languages are most likely to be LEP. The vast majority of working-age LEP adults are immigrants, and those who entered the United States more recently are more likely to be LEP.

- **Working-age LEP adults earn 25 to 40 percent less than their English proficient counterparts.** While less educated overall than English proficient adults, most LEP adults have a high school diploma, and 15 percent hold a college degree. LEP workers concentrate in low-paying jobs and different industries than other workers.

- **Most LEP adults reside in large metropolitan areas, but their numbers are growing fastest in smaller metro areas.** Eighty-two percent of the working-age LEP population lives in 89 large metropolitan areas, and 10 metro areas account for half of this population. Large immigrant gateways and agricultural/border metro areas in California and Texas have the largest LEP shares of their working-age populations. Smaller metro areas such as Cape Coral, Indianapolis, and Omaha experienced the fastest growth in LEP population between 2000 and 2012. Los Angeles was the only metro area to experience a decline.

- **Educational attainment and the native languages of LEP adults vary considerably across metro areas.** The share who have completed high school ranges from 33 percent in Bakersfield to 85 percent in Jacksonville. Spanish is the most commonly spoken non-English language among LEP adults in 81 of the 89 large metro areas, but the share varies from a low of 5 percent in Honolulu to 99 percent in McAllen.

- **Most working-age LEP people are in the labor force.** A majority across all 89 large metro areas is working or looking for work, and in 19 metro areas, at least 70 percent are employed. Workers proficient in English earn anywhere from 17 percent to 135 percent more than LEP workers depending on their metro location.

English proficiency is an essential gateway to economic opportunity for immigrant workers in the United States. Yet access to acquiring these skills is persistently limited by a lack of resources and attention. Increasing investment in adult English instruction—through more funding, targeted outreach, and instructional innovations—would enhance the human capital of immigrants that could lead to more productive work and better outcomes for their children. Given the large number of LEP workers in the United States and the fact that virtually all of the growth in the U.S. labor force over the next four decades is projected to come from immigrants and their children, it is in our collective interest to tackle this challenge head on.

Introduction

The United States is a polyglot nation and has been for most of its history.[1] More than one in five working-age adults in the United States—some 45 million people—speak a language other than English at home. More than half of them also speak English very well. But 19.2 million are considered limited English proficient (LEP), comprising almost 10 percent of the working-age population.

English proficiency is a strong predictor of economic standing among immigrants regardless of educational attainment. Numerous studies have shown that immigrants who are proficient in English earn more than those who lack proficiency, with higher skilled immigrants reaping the greatest advantage.[2] Conversely, high-skilled immigrants who are not proficient in English are twice as likely to work in "unskilled" jobs (i.e. those requiring low levels of education or training) as those who are proficient in English.[3] This underemployment represents a loss of productivity that yields lower wages for individuals and families and lower tax revenues and consumer spending for local areas. LEP immigrants also have higher rates of unemployment and poverty than their English proficient counterparts.[4] Moreover, higher proficiency in English among immigrants is associated with the greater academic and economic success of their children.[5] English skills also contribute to immigrants' civic involvement and social connection to their new home.[6]

Immigrants who arrive in the United States without knowing English do, by and large, improve their proficiency over time; those who arrive at younger ages learn English faster than those whose age at arrival is higher, and the children of immigrants fare even better.[7] But mastering a new language—especially without formal instruction—takes years. Assuming that immigrants will "pick up the language," while proving true in the long run, is not an efficient strategy for improving labor market outcomes in the shorter term. Rather, increasing the investment in adult English instruction now would enhance the human capital of immigrants that could lead to more productive work, and benefit their children, sooner. Given the high number of LEP workers in the United States and the fact that virtually all of the growth in the U.S. labor force over the next four decades is projected to come from immigrants and their children, it is in our collective interest to tackle this challenge head on.[8]

National, state, and regional leaders have an opportunity to enhance the human capital and economic mobility of their current and future workforce by investing in adult English instruction.[9] A 2011 report by the McGraw-Hill Research Foundation quantified the return on investment in adult education for the nation and for some states. It found that not only do adult education and workforce development programs boost human capital and individual employment prospects, but they also reduce spending on healthcare, public assistance, and incarceration.[10] Scholars at the Migration Policy Institute point to the potential improvements in labor market outcomes as a result of investments in English instruction for immigrants: higher productivity, earnings, and income tax payments; lower poverty and use of public benefits; and better educational and labor market outcomes for the children of immigrants.[11] They also acknowledge the need for improvements in the quality of instruction and programming to enhance outcomes.[12]

High levels of immigration to the United States during the 1990s and early 2000s boosted the size of the LEP population. Between 1990 and 2000, the number of working-age LEP individuals grew 57 percent, slowing in the 2000s to a growth rate of 20 percent. Because not all immigrants are LEP and because English proficiency often improves over time, the LEP population has not grown as quickly as the overall foreign-born population (Figure 1). In fact, as the share of the working-age population that is foreign-born continued to climb from 1980 (7 percent) to 2012 (16 percent), the LEP share plateaued after 2005, remaining under 10 percent. Nevertheless, the size of the working-age LEP population is more than two-and-a-half times what it was in 1980, and the LEP share of the U.S. working-age population has increased from 4.8 to 9.3 percent.

Infrastructure and public funding for adult English instruction has not kept pace with this growth.[13] The Adult Education and Family Literacy Act (AEFLA), enacted as Title II of the Workforce Investment Act (WIA) of 1998, is the primary source of federal funding for adult English for Speakers of Other Languages (ESOL) instruction. Although it technically expired in 2003, Congress continues to appropriate funds for WIA Title II ($575 million in FY2013 with a $71 million set-aside for English language and civics training).[14] Since 2000, funding from the U.S. Department of Education for adult ESOL

instruction has hovered at around $250 million per year, with another $700 million provided by states.[15] The number of adults served by programs receiving federal funding dropped from about 1.1 million earlier in the decade to about 700,000 in 2011, a tiny fraction—about one-half of a percent—of the adult LEP population in the United States.[16] Meanwhile, states, which have typically contributed about three quarters of the funding for adult ESOL instruction, faced growing deficits after the recession and many slashed adult education and ESOL budgets.[17]

This decline in funding was not accompanied by a decline in the adult LEP population. It is not surprising, then, that individuals wishing to enroll in English classes face access difficulties. A 2006 study of 187 providers across the country found that 57 percent had waiting lists, with wait times ranging from a few weeks to over three years.[18] In 2007, the National Adult Education Professional Development Consortium estimated that nationwide, there were 93,480 people on waiting lists for adult education and literacy classes, including adult ESOL.[19] A 2010 survey of 1,368 adult education providers found that 72 percent (in all 50 states) had waiting lists, representing some 160,000 individuals who had a desire to access services but could not. Moreover, wait times had doubled since the survey two years prior.[20]

Over the past two decades, the growth in the LEP population has been felt most acutely in places without a recent history of receiving newcomers from abroad. The new geography of immigration means that many cities and suburbs across the country are facing the challenges of a sizeable LEP population for the first time, both in their schools and in the workforce. Insufficient funding, combined with a lack of infrastructure and experience working with LEP populations in more recent destinations, has resulted in uneven and inadequate access to adult English instruction.

Adding to the challenge is the diversity of this population. While 65 percent of the U.S. LEP population speaks Spanish, this proportion varies greatly in different parts of the country. Likewise, in some regions, a high proportion of LEP speakers have low levels of literacy in any language, whereas in other areas, many have college degrees. Workers without full proficiency in English are found in a variety of occupations and industries, represent a wide swath of origin countries and cultures, and have varying levels of income. These factors shape whether and how LEP workers succeed in increasing their English proficiency over time and how this impacts their labor force trajectories. These characteristics should also inform the policies and programs designed to help LEP workers enhance their English skills.

This report examines the metropolitan geography of the working-age limited English proficient population and their labor force characteristics. It offers evidence for the economic benefits of investing in adult English instruction and presents data useful for tailoring interventions to the specific characteristics of an area's LEP population. It concludes with some options for enhancing investment in adult English instruction through increased funding, targeted outreach, and instructional innovations.

Methodology

The main data source for this report is the U.S. Census Bureau's 2012 American Community Survey (ACS). The ACS is an ongoing survey of approximately 3 million U.S. households. Data are released annually covering demographic, social, economic, and housing topics, including language use and English ability. This analysis makes use of the ACS Public Use Microdata Sample (PUMS), accessed via the Integrated Public Use Microdata Series (IPUMS) website.[21] PUMS data allow for customized cross-tabulations which provide detailed characteristics of the LEP population including country of birth, age, period of entry to the United States (for immigrants), language spoken at home, educational attainment, labor force participation, occupation, industry, and earnings. In addition to the ACS, data from the 1980, 1990, and 2000 censuses are used to examine broad changes over time, including growth in the working-age LEP population.

This analysis focuses on the working-age limited English proficient (LEP) population, defined as persons aged 16–64 who speak English less than "very well."[22] (See sidebar, "Defining the LEP Population.") Of the almost 25 million LEP individuals (aged 5 and older) counted in the United States in 2012, the vast majority—77 percent—were of working age (16–64). Almost 9 percent were children

between the ages of 5 and 15, and 15 percent were 65 and older. Immigrants make up the vast majority (87 percent) of the working-age LEP population, but 13 percent are native born. In this analysis, the terms "immigrant" and "foreign born" are used interchangeably to refer to anyone born outside the United States to non-U.S.-citizen parents. Educational attainment data are for those aged 25-64.

The Census Bureau collects data on language spoken at home for the population who do not speak English at home (see sidebar, "Defining the Limited English Proficient Population.") Respondents write in their home language, and the Census categorizes these responses into 382 single languages or language families.[23] (See Sidebar, "Language Classifications.") Due to small sample size and confidentiality concerns, however, Census does not regularly tabulate data for all 382 categories; rather, they collapse them into 39 groups and, more broadly, into four groups (Spanish, other Indo-European languages, Asian and Pacific Island languages, and Other languages). This paper presents data on languages spoken at home using the four broad categories and, in some instances, the most detailed categories, which are available from the PUMS. (See sidebar, "Language Classifications," for which languages fall into which categories.)

This report provides data on industry and occupation for persons aged 16–64 who had worked in the previous five years. Industry data were recoded from the 2007 Census industry classification scheme to closely align with the North American Industry Classification System (NAICS) 2-digit categories. A few exceptions were made to isolate the private households sector (where LEP workers are concentrated) and to collapse real estate with finance, and management of companies with professional, scientific, and technical services (where very few LEP workers concentrate). For the occupation variable, data were recoded into 25 occupational categories following the 2010 ACS classification system. Data on earnings are for persons who worked at least 35 hours/week and at least 50 weeks over the last 12 months, and include wage income and income earned from a person's own business or farm.

This report presents data both at the national level and for 89 metropolitan areas. These 89 metro areas were selected because they were among the 100 most populous metropolitan areas in the United States and had a working-age LEP population sample size of at least 100 in the PUMS.[24] The Census Bureau provides summary data at the metropolitan level, but some manipulation is necessary to use microdata for this geography. The lowest level of geography for PUMS data is the Public Use Microdata Area (PUMA) which is built from census tracts and counties and contains roughly 100,000 people. Because PUMAs do not necessarily align precisely with metro area boundaries, this analysis uses PUMA-based metropolitan area definitions for much of the data on characteristics of the LEP population. These definitions were created by allocating a PUMA to a metro area if more than 50 percent of its 2010 population fell within the metro-area boundary. Likewise, PUMAs that overlap metro areas but in which less than 50 percent of the population fell within a metropolitan area's boundaries were not included in the PUMA-based metro area definition.

Limited English Proficiency or "LEP" is defined as speaking English less than "very well," i.e. "well," "not well," or "not at all." "Not LEP" or "English proficient" are those who speak English "very well" or who speak it at home.

This definition is not perfect. For one thing, it is subjective and self-reported (or, reported by the head of household for other members of the household). It is also limited to speaking ability and does not address the ability to read, write, or listen in English. A less conservative definition counts those who speak English "well" among the English proficient population, but most researchers and policymakers follow the Census practice of categorizing the lower three levels as LEP. This practice grew out of a study done by the Census Bureau in 1982 for which respondents' abilities to read, understand, and produce English were tested and compared to their responses on English ability. Those who categorized their ability as less than "very well" had difficulty with the English test while those who responded "very well" performed on par with native English speakers.[26] Census tests have also revealed a tendency among respondents to over-report their English ability, so using the lowest three categories of response serves as a more valid estimate of the LEP population.[27] Despite the limitations, the ACS data remain the chief source of current information about the LEP population in the United States, especially comparable data at the sub-national level.

DEFINING THE LIMITED ENGLISH PROFICIENT POPULATION

The Census Bureau began collecting data on language use in the United States in 1890. Questions about "mother tongue," language spoken at home, and ability to speak English were asked, in various forms, once a decade until 2000. With the advent of the American Community Survey (ACS) in the mid-2000s, data on language use are now available on an annual basis. These data are used by the government for compliance with the Voting Rights Act of 1965 (providing for bilingual election materials), the allocation of funds to school districts for educating LEP children, the distribution of grant money to states and localities for adult education and job training, and compliance with an executive order signed in 2000 for federal agencies to provide language assistance services.[25]

Today, the American Community Survey provides annual data on language spoken at home and the ability to speak English for the population aged 5 and older. Translation assistance is available for those who need help filling out the questionnaire. The questions used to collect this information have remained the same since 1980:

Source: U.S. Census Bureau, 2013 American Community Survey

LANGUAGE CLASSIFICATIONS

For data on language spoken at home, the Census Bureau classifies languages into four major groups:

Spanish includes Spanish, Spanish Creole, and Ladino.

Other Indo-European Languages include most languages of Europe and the Indic languages of India. These include the Germanic languages, such as German, Yiddish, and Dutch; the Scandinavian languages, such as Swedish and Norwegian; the Romance languages, such as French, Italian, and Portuguese; the Slavic languages, such as Russian, Polish, and Serbo-Croatian; the Indic languages, such as Hindi, Gujarati, Punjabi, and Urdu; Celtic languages; Greek; Baltic languages; and Iranian languages.

Asian and Pacific Island Languages include Chinese; Korean; Japanese; Vietnamese; Hmong; Khmer; Lao; Thai; Tagalog or Pilipino; the Dravidian languages of India, such as Telugu, Tamil, and Malayalam; and other languages of Asia and the Pacific, including the Philippine, Polynesian, and Micronesian languages.

Other languages include Uralic languages, such as Hungarian; the Semitic languages, such as Arabic and Hebrew; languages of Africa; native North American languages, including the American Indian and Alaska native languages; and indigenous languages of Central and South America.

Source: Camille Ryan, "Language Use in the United States: 2011" (Washington: U.S. Census Bureau, 2013).

Findings

A. Nearly one in 10 working-age U.S. adults—19.2 million persons aged 16–64—is considered limited English proficient.

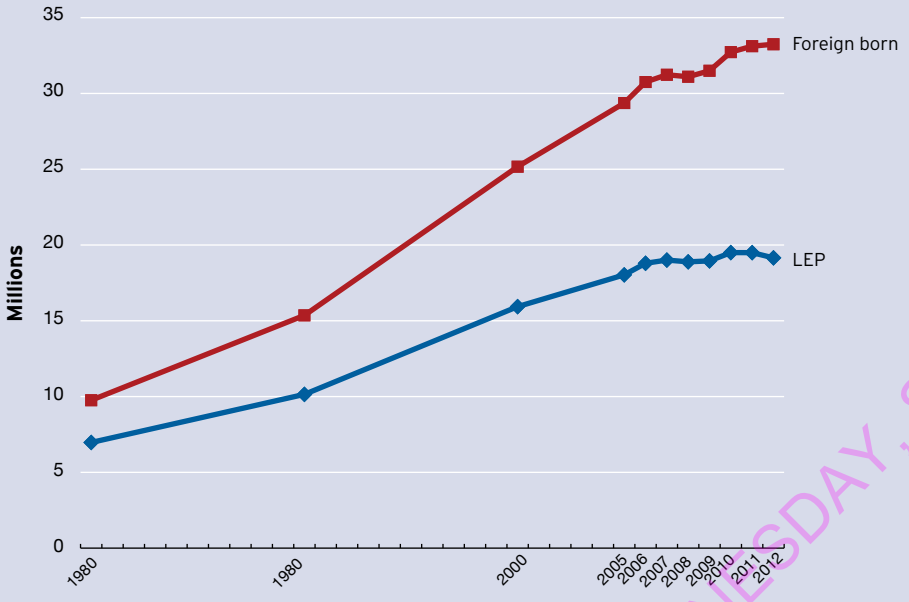
Numbers and growth

Twenty-two (22) percent of working-age adults in the United States— 45.4 million people—speak a language other than English at home. More than half of them (58 percent) also speak English very well and thus are considered proficient. These individuals have better labor market outcomes than the 19.2 million people of limited English proficiency who comprise 9.3 percent of the working-age population.

Between 2000 and 2012, the working-age LEP population increased by 3.2 million, a growth rate of 20 percent. In spite of the larger number of LEP individuals in 2012, their share of the total working-age population did not increase much over the same time period: from 8.7 to 9.3 percent. By comparison, the foreign-born share of the working-age population increased from 14 percent in 2000 to 16 percent in 2012.

Although immigration drives growth in the LEP population, newly arriving immigrants vary in their English skills, and those who have lived in the United States for a number of years often improve their English ability over time. Thus, the growth in the LEP population over the last two decades coincides with—but does not precisely mirror—growth in the foreign-born population (Figure 1). The growth in the LEP population has lagged behind the increase in the foreign-born population, and a smaller share of working-age immigrants in 2012 were LEP (50 percent) than in 2000 (52 percent). Between 2000 and 2012, the nation's working-age foreign-born population grew 32 percent. Over the same period, the working-age LEP population increased by 20 percent (Figure 1). As the share of the working-age population that is foreign-born climbed steadily from 1980 (6.7 percent) to 2012 (16 percent), the LEP share rose from 1980 (4.8 percent) through 2005 (9.5 percent), but plateaued after that, remaining under 10 percent (Figure 1).

Fig. 1. Foreign-Born Versus Limited English Proficient Population in the U.S., Ages 16-64, 1980-2012



Source: Author's analysis of data from the 1980, 1990, and 2000 decennial census PUMS and the 2005 through 2012 ACS PUMS

Home language

Spanish is the dominant non-English language spoken in the United States today, but a variety of other languages have significant numbers of speakers residing in this country, and their English skills vary. Two-thirds of the working-age LEP adults in the United States (12.7 million) speak Spanish at home (Table 1). Most of them (9.7 million) were born in Mexico. Additionally, El Salvador, the Dominican Republic, Guatemala, Cuba, and Colombia are the birthplaces of at least 500,000 Spanish-speaking LEP adults each.

As a broad linguistic group, speakers of Asian and Pacific Island languages make up 18 percent of the working-age LEP population. The most commonly reported language among this group is Chinese (4.4 percent of the working-age LEP population), with another 1 percent each who reported speaking Mandarin or Cantonese at home.[28] Vietnamese (3.4 percent), Korean (2.4) and Filipino/Tagalog (1.9) are the other top Asian/Pacific Island languages spoken among LEP adults (Table 1).

Speakers of Indo-European languages (other than Spanish) make up almost 12 percent of the working-age LEP population, including those who speak Russian (1.4 percent), French or Haitian Creole (1.3), Portuguese (1.0), and French (1.0). Arabic is the most commonly spoken language that falls into the catch-all "other" category (which also includes African and Native American languages and together accounts for 3.4 percent of working-age LEP persons). Arabic speakers make up 1.5 percent of working-age LEP adults.

Among the four broad language categories, speakers of Asian and Pacific Island languages are most likely to be LEP (47 percent), followed by Spanish speakers (45 percent) (Table 1). The Asian and Pacific Island category includes speakers of languages with some of the lowest rates of English proficiency: Uzbek/Uighur, Burmese/ Lisu/Lolo, Trukese, Nepali, and Vietnamese (all with over 60 percent of working-age speakers who are LEP). In fact, 13 of the 15 detailed languages/language groupings with a majority of speakers who are LEP are Asian or Pacific Island languages. Several of these groups have arrived recently under the U.S. refugee resettlement program or come from countries with low

levels of education and have had very limited opportunities to learn English either before or after resettlement in the United States.[29]

Those whose home language falls into the broad "other" category are less likely to be LEP overall (31 percent), though this group includes the other two detailed language groupings whose speakers are majority LEP: South/Central American Indian languages (70 percent LEP) and Cushite/Beja/Somali (56 percent LEP). Speakers of Indo-European languages (other than Spanish) are least likely to be LEP (30 percent), and no detailed language in this group has a majority of its working-age speakers who are LEP. (See sidebar "Language Classifications.")

Table 1. Language Spoken at Home among the LEP Population, Ages 16-64, 2012

Language	# of speakers	% of working-age LEP population	% of speakers who are LEP
Spanish	12,705,412	66.3	45.2
Asian and Pacific Island languages	3,524,709	18.4	47.0
Chinese	833,276	4.4	58.1
Vietnamese	651,786	3.4	60.2
Korean	462,168	2.4	53.4
Filipino, Tagalog	366,900	1.9	29.2
Mandarin	196,809	1.0	47.4
Cantonese	184,911	1.0	51.5
Other API	828,859	4.3	39.9
Other Indo-European languages	2,278,667	11.9	29.5
Russian	266,833	1.4	41.5
French or Haitian Creole	247,635	1.3	42.2
Portuguese	190,078	1.0	36.1
French	183,174	1.0	20.6
Other Indo-European	1,390,947	7.3	27.4
Other languages	642,996	3.4	31.1
Arabic	289,393	1.5	38.8
Other "other"	353,603	1.8	26.7
Total	**19,151,784**	**100.0**	**100.0**

Source: Author's analysis of ACS 2012 PUMS data

Nativity and period of immigration

An individual's place of birth and immigration status is a factor in their access to publicly funded programs aimed at improving English proficiency and employment prospects. The American Community Survey does not inquire about legal status, but does ask about place of birth and citizenship. Independent estimates of the unauthorized immigrant population estimate that about 55 percent do not have the ability to pass an English test similar to the U.S. citizenship exam.[30] Based on that estimate, upward of one-third of the working-age LEP population could be unauthorized. The rest are either native-born residents of the U.S., naturalized citizens, legal permanent residents, or legal temporary residents. Unauthorized immigrants are not barred from accessing services provided through Title II of the Workforce Investment Act, but are not permitted to access WIA Title I funding.

While the vast majority of the working-age LEP population is foreign-born, 13 percent is native-born.

Seventy-seven (77) percent of native-born working-age LEP adults speak Spanish, with another 3 percent each who speak French and German. Among these native-born adults, half were born in California, Texas, or Puerto Rico. It is unknown whether they grew up in the United States and attended U.S. schools. Given the high rates of migration between Mexico and the Southwestern U.S., it is likely that some of this population born in Border States spent at least part of their school-age years in Mexico or Central America before returning to the United States. Puerto Rico's status as a U.S. territory means that people born there are counted as U.S. natives, but Spanish is the language of instruction in public schools and is dominant in all aspects of business and daily life on the island. Accordingly, over 80 percent of residents of Puerto Rico are considered limited English proficient.[31]

Prior research shows that time spent in the United States is a key determinant of English proficiency among immigrants.[32] Among the foreign-born population of working age, those who immigrated recently are more likely to be LEP. Fifty-seven (57) percent of those who came to live in the United States in 2000 or later are LEP, compared to 48 percent and 44 percent of those who entered in the 1990s and 1980s, respectively. Just 28 percent of those who immigrated to the United States before 1980 are LEP. In addition to the fact that those who arrived earlier have had a longer period of time in the United States to learn English, the composition (language and country of origin, educational attainment, age at entry, linguistic isolation, etc.) of different immigrant cohorts also influences their proficiency trajectories.[33] Death and outmigration can also change how the proficiency of one cohort stacks up to the others. Regardless of these intervening factors, these data are consistent with others' findings that immigrants do learn English over time, but not, on the whole, at a fast pace.[34] Rather, these data reveal plenty of opportunity for accelerating proficiency gains.

Because recent arrivals are less likely to be English proficient and because those who entered after 1999 make up the largest share (36 percent) of working-age immigrants in the United States, newcomers also make up the largest share of the working-age LEP population. Among the 17 million working-age LEP immigrants, 7.6 million (44 percent) came to live in the United States in 2000 or later; 29 percent entered in the 1990s, 18 percent in the 1980s, and 9 percent before 1980. Efforts to provide English instruction must take into account that recent arrivals may be less likely than more established immigrants to know about opportunities for adult English instruction and to afford them. They may also be less likely to have access to transportation and child care, two of the foremost practical barriers for adults learning English.

B. Working-age LEP adults earn 25 to 40 percent less than their English proficient counterparts.

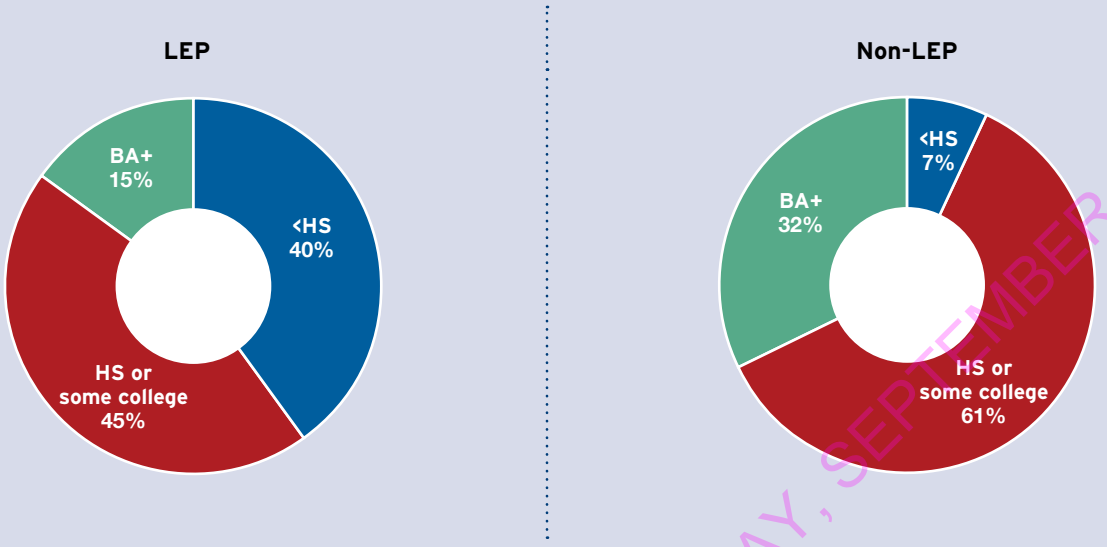
In general, LEP individuals experience worse labor market outcomes than those who are proficient in English. While lower educational attainment among LEP adults accounts for some of this difference, English proficiency is correlated with better outcomes at all levels of education.

Educational attainment

Most LEP adults (60 percent) are high school graduates, including 15 percent who hold a college degree. While these numbers may be higher than conventional wisdom suggests, working-age LEP adults are significantly less educated than their non-LEP counterparts. Ninety-three percent of the working-age population that is proficient in English has completed high school, including 32 percent who hold a college degree (Figure 2).

As noted in the previous finding, time in the United States is correlated with higher English proficiency among immigrants. But educational attainment is a stronger predictor of English skills.[35] Working-age adults (regardless of nativity) who have completed high school are much less likely than their less educated counterparts to be LEP. Only 5 percent of college graduates and 7.9 percent of those with a high school diploma or some college are LEP, compared to 40 percent of those without a high school diploma.

Fig. 2a and 2b. Educational Attainment by LEP status, Ages 25-64, 2012



Source: Author's analysis of ACS 2012 PUMS data

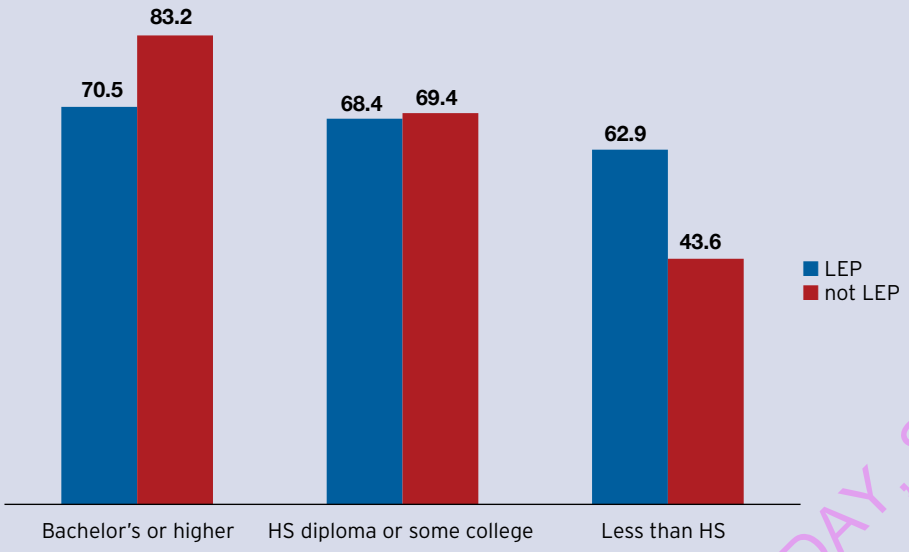
Labor force status and employment

Working-age adults who are proficient in English are somewhat more likely to be in the labor force (74 percent) than their LEP counterparts (71 percent), and their employment rates are likewise higher: 67 percent versus 64 percent for the LEP population. However, the difference in employment rates between LEP and non-LEP adults varies by educational attainment. Among those (age 25-64) with a bachelor's degree or more , LEP individuals are 13 percentage points less likely to be employed than their English proficient counterparts; conversely, those without a high school diploma are 19 percentage points *more* likely to be employed than those who are not LEP (Figure 3).

A number of factors could contribute to the higher employment rate among the LEP population without a high school diploma compared to their English proficient counterparts. Overall, immigrants have higher employment rates than natives. For many immigrants, especially low-skilled ones, the primary motive for migration to the United States is the need to earn money to support themselves and their families (either in the United States or back home), and they might return home if they are unable to find work. Immigrants are more likely to be of working age, able-bodied, and willing to work in dirty, dangerous, or demeaning occupations for wages that may be low by U.S. standards but higher than what they could earn in their home countries.[36] For their part, U.S.-born workers are eligible for more social safety net services than immigrants (especially those who lack legal status), and therefore have more options for income other than employment.

Thus, high proficiency in English appears to be helpful for boosting the employability of those with a bachelor's degree, but not, on average, for those without such a degree. Indeed, a lack of English proficiency does not, by and large, prevent low-skilled workers from obtaining employment. However, for those who are working, the advantage of English proficiency is evident in their income levels.

Fig. 3. Employment-to-Population Ratio by Educational Attainment and English Proficiency, Ages 25-64, 2012



Source: Author's analysis of ACS 2012 PUMS data

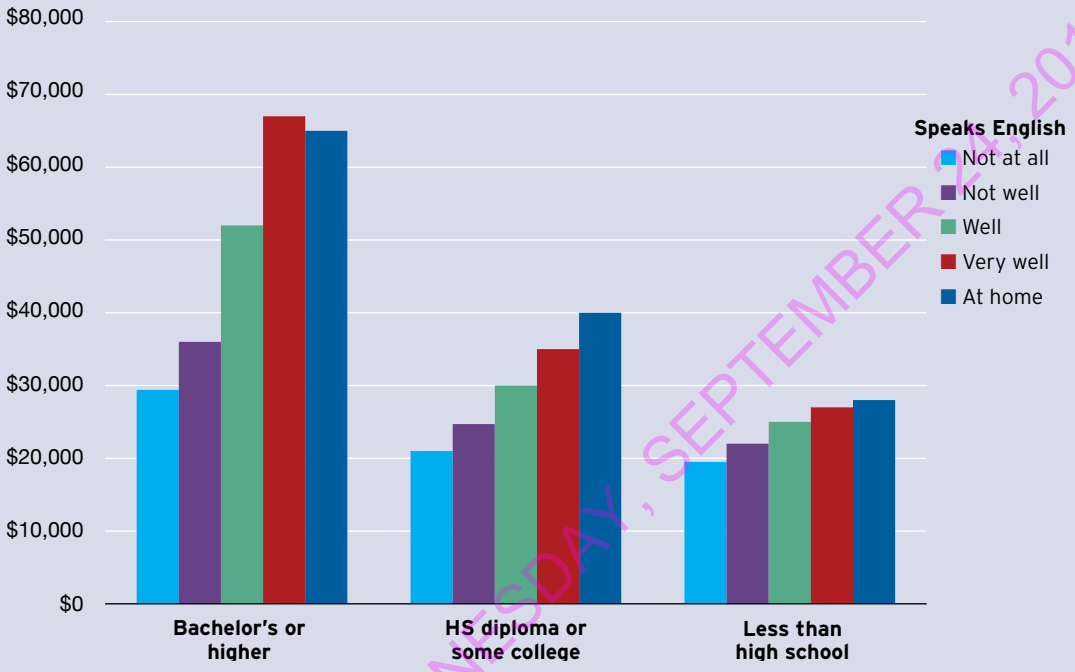
Earnings and poverty

Among full-time, year-round workers, English proficiency is associated with an earnings advantage at all levels of educational attainment. Proficiency in English makes the greatest percent difference in earnings for those in the middle of the educational attainment range (high school diploma or some college). Their median earnings are 39 percent higher if they are English proficient ($40,000) than not ($28,700). Among those with a bachelor's degree, non-LEP individuals earn $65,000 annually compared to $50,000 for LEP individuals, a 30 percent difference. English proficiency makes the least difference in earnings for those with the lowest levels of education, a sign of the poor labor market for those who have not completed high school. LEP persons with less than a high school diploma earn 24 percent less ($22,600) than their non-LEP counterparts ($28,000).

Higher earnings are evident not just for those who transition from LEP to non-LEP status, but also for each incremental increase in proficiency. That is, median earnings are higher with each level of English proficiency, at all levels of educational attainment (Figure 4). In some cases, better English proficiency is associated with more of a difference in earnings than is higher educational attainment. For example, those without a HS diploma who are not LEP (i.e. speak English very well or only) earn more than those with a high school diploma or some college who don't speak English well or at all.

One anomaly is for those who have a bachelor's degree or higher and speak English very well (that is, they speak a language other than English at home but are not LEP). These individuals have higher median earnings than college educated workers who speak English at home. This could indicate a wage premium for bilingualism (at least among the college educated).[37] It could also be that highly educated bilinguals (mostly immigrants) are in higher paying jobs because they are more likely to work in STEM fields or other higher-paying occupations or to have advanced degrees than those who speak English at home.[38]

Fig. 4. Median Earnings by English Proficiency and Educational Attainment, Ages 25-64



Source: Author's analysis of ACS 2012 PUMS data; earnings are calculated for those who worked at least 35 hours per week and at least 50 weeks over the previous 12 months

Given the wage premium for English proficiency, it is not surprising that the working-age LEP population is more likely to be poor (25 percent) than those who are not LEP (14 percent). Another 31 percent of LEP persons have incomes that put them between 100 and200 percent of the poverty threshold compared to 16 percent of non-LEP adults. Likewise, LEP individuals are over-represented among the poor, comprising 16 percent of the working-age poor population compared to 9.3 percent of the total working-age population. These are the LEP adults least likely to be able to afford private English instruction and most in need of publically provided services. Governments at all levels spend a lot of money serving low-income populations, and the literacy needs of these LEP adults should be taken into consideration.

Occupation

The distribution of LEP workers across occupations and industries is relevant for determining what types of English skills would benefit them most in the workplace and how to engage these workers and their employers in improving their language skills.

LEP workers are concentrated in low-paying jobs for which high levels of English are not a requirement. Seven occupational groups (out of 25) each have over one million LEP workers, and in five of these, more than 10 percent of workers are LEP (Table 2). The largest number work in building and grounds cleaning and maintenance. More than one quarter (26 percent) of workers in this occupational category are LEP, the highest rate with the exception of the much smaller farming, fishing, and forestry category (556,000 workers, 40 percent of whom are LEP). Besides the five large occupational categories in which at least 10 percent of the workforce is LEP, two other categories have high LEP proportions: personal care and service occupations (12 percent) and the aforementioned farming, fishing, and forestry occupations (40 percent). All seven of these occupational groups have annual mean wages in the lowest two quintiles of the wage distribution.[39]

Table 2. Occupations with at Least 1 Million LEP Workers, 2012

Occupation Type	# LEP	% LEP	Share of LEP workers
Building and Grounds Cleaning and Maintenance	1,936,079	26.1	12.8
Production	1,791,108	17.2	11.8
Construction and Extraction	1,598,962	17.6	10.5
Food Preparation and Serving	1,597,171	14.4	10.5
Transportation and Material Moving	1,368,872	12.6	9.0
Sales and Related	1,135,482	6.0	7.5
Office and Administrative Support	1,063,015	4.6	7.0

Source: Author's analysis of ACS 2012 PUMS data

Industry

LEP workers can be found in every industry, but two-thirds of working-age LEP adults are concentrated in six industry categories (out of 20), each with at least 1 million LEP workers (Figure 5). Manufacturing and accommodations/food services each have just over 2 million LEP workers, accounting for almost 14 percent each of the working-age LEP population. Between 1 million and 2 million LEP workers each are in construction, retail trade, health/social services and administrative/waste management services. Among the 20 broad industry categories, seven have at least 10 percent of their workforce that is LEP. The private households category has the highest share (33 percent), followed by agriculture (27 percent).

Within the broader industry categories, more detailed sectors stand out for their high numbers of LEP workers. In the manufacturing sector, animal slaughtering/processing and cut and sew apparel manufacturing account for the largest number of LEP workers, 8 and 6 percent, respectively, of LEP manufacturing workers. Among all detailed industry categories, cut and sew apparel manufacturing has the highest share of its workforce who are LEP (42 percent). Within the accommodations and food services sector, 81 percent of LEP workers are employed in restaurants and other food services. One quarter of LEP persons working in the retail trade sector work in grocery stores. Within health/social services sector, 17 percent of LEP workers are employed in child day care services, and another 13 percent in individual and family services. Over seventy percent of LEP workers in the administrative/waste management services sector work in janitorial services (37 percent) and landscaping (35 percent).

LEP workers tend to concentrate in industries that non-LEP workers do not, and vice versa, suggesting complementarity. Figure 6 shows the location quotient (LQ) for each industry (calculated as the share of LEP workers in each industry divided by the share of non-LEP workers in that industry; an LQ greater than one indicates that LEP workers are disproportionately found in that industry). There are two outliers for LEP concentration: private households (with an LQ of more than five, meaning that a LEP worker is five times more likely than a non-LEP worker to work in a private household), and agriculture, forestry, fishing and hunting (with an LQ of 3.8). A LEP worker is almost twice as likely to work in administrative and waste management industry (which includes landscaping and janitorial services). Construction and accommodation and food services are two other industries in which LEP workers are concentrated. At the other end of the spectrum, non-LEP workers are five times more likely to be in the armed forces than LEP workers, and more than three times as likely to work in utilities or public administration. Transportation and warehousing is closest to balanced (1.0), followed by retail trade, with an LQ of 0.8 (Figure 6).

Fig. 5. LEP Workers by Industry
(red bars indicate sectors in which more than 10 percent of workers are LEP)

Source: Author's analysis of ACS 2012 PUMS data

Fig. 6. LEP/Non-LEP Concentration by Industry (LQs)

Source: Author's analysis of ACS 2012 PUMS data

These patterns of occupation and industry suggest opportunities to tailor interventions to specific jobs, career paths, and workplaces where LEP workers are employed (See *Discussion and Policy Implications*, below).

C. Most LEP adults reside in large metropolitan areas, but their numbers are growing fastest in smaller metro areas.

Distribution

Mirroring the dispersal of immigrants over the last two decades to newer destinations in cities and suburbs across the country, the LEP population is found in places large and small, in all corners of the country. Like the foreign-born population on the whole, the LEP workforce is over-represented in large urban areas. The 89 large metropolitan areas included in this analysis are home to 64 percent of the total working-age population but 82 percent of those who are LEP. This is not surprising, given that most LEP workers are immigrants and that 84 percent of working-age immigrants in the United States reside in these 89 metro areas. While LEP individuals make up 9.3 percent of the national working-age population, in the 89 metro areas, they comprise a larger share: 12 percent.

The largest immigrant gateways are home to the greatest number of working-age LEP residents (Table 3). New York and Los Angeles each account for about 12 percent of this population nationally, each with 2.3 million LEP residents of working age. Miami and Chicago have over 800,000 each, followed by Houston, Dallas, San Francisco, Riverside, Washington, and San Diego. Together, these 10 metro areas account for half of the nation's working-age LEP population. All but one is also among the 10 metro areas with the largest working-age foreign-born populations; San Diego takes the place of Boston, which has more immigrants than San Diego but fewer working-age LEP adults.

Table 3. Top Ten Metro Areas for LEP Population, Ages 16-64, 2012

	Metropolitan Area	# LEP	% LEP
1	New York-Northern New Jersey-Long Island, NY-NJ-PA	2,330,496	18.3
2	Los Angeles-Long Beach-Santa Ana, CA	2,264,513	25.7
3	Miami-Fort Lauderdale-Pompano Beach, FL	865,905	23.2
4	Chicago-Joliet-Naperville, IL-IN-WI	820,012	13.0
5	Houston-Sugar Land-Baytown, TX	721,872	17.8
6	Dallas-Fort Worth-Arlington, TX	640,695	14.7
7	San Francisco-Oakland-Fremont, CA	557,878	18.4
8	Riverside-San Bernardino-Ontario, CA	498,001	17.8
9	Washington-Arlington-Alexandria, DC-VA-MD-WV	456,972	11.9
10	San Diego-Carlsbad-San Marcos, CA	350,998	16.3

Source: Author's analysis of ACS 2012 PUMS data

Seventeen metro areas have at least 200,000 working-age LEP individuals and thereby account for at least 1 percent of the U.S. LEP population each. These include (in addition to those listed above): Boston, Atlanta, Phoenix, San Jose, Philadelphia, Seattle, and Las Vegas. All of these metro areas are immigrant gateways, with varying histories of receiving large numbers of immigrants over the long or shorter term.[40]

Concentration

Metro areas with high concentrations of immigrants—especially metro areas in California and Texas—dominate the list of places with the highest share of their working-age population that is LEP (Table 4). Among the top 10, Miami is the only metro area not in California or Texas, and among the top 15, 10 are California metro areas. McAllen and El Paso, TX are both on the Mexican border and rank highest for the share of their working-age population that is LEP, almost one third. They each have about 150,000 working-age LEP individuals.

Table 4. Top and Bottom 10 Metro Areas for LEP Percent of Working-Age Population, 2012

	Metropolitan Area	% LEP
1	McAllen-Edinburg-Mission, TX	32.0
2	El Paso, TX	29.8
3	Los Angeles-Long Beach-Santa Ana, CA	25.7
4	Miami-Fort Lauderdale-Pompano Beach, FL	23.2
5	Fresno, CA	22.8
6	San Jose-Sunnyvale-Santa Clara, CA	22.6
7	Bakersfield-Delano, CA	20.4
8	Stockton, CA	19.3
9	Modesto, CA	18.6
10	San Francisco-Oakland-Fremont, CA	18.4
	Metropolitan Area	**% LEP**
80	Louisville/Jefferson County, KY-IN	3.2
81	Charleston-North Charleston-Summerville, SC	2.9
82	Albany-Schenectady-Troy, NY	2.9
83	Columbia, SC	2.9
84	Birmingham-Hoover, AL	2.9
85	Syracuse, NY	2.8
86	St. Louis, MO-IL	2.7
87	Virginia Beach-Norfolk-Newport News, VA-NC	2.5
88	Cincinnati-Middletown, OH-KY-IN	2.5
89	Pittsburgh, PA	1.6

Source: Author's analysis of ACS 2012 PUMS data

Miami and Los Angeles stand out for both their number and share of population that is LEP (See Tables 3 and 4). Not only do they each have more than 800,000 working-age LEP individuals, but in each metro area, the LEP population represents about a quarter of the working age population (23 percent in Miami, and 26 percent in Los Angeles). San Francisco is the only other metro area that ranks among the top 10 for both the number and percent of its working-age population that is LEP.

The next six metro areas in rank for their percent LEP (fifth through 10th) are in California: Fresno, San Jose, Bakersfield, Stockton, Modesto, and San Francisco. New York—where 2.3 million LEP individuals make up 18 percent of the working-age population—ranks 11th.

In seven metro areas, at least one in five working-age adults are LEP, and 27 of the 89 large metro areas have a LEP share of over 10 percent. These are mostly metro areas in border states, especially California, Texas, and Florida, but also include New York, Honolulu, Las Vegas, Bridgeport, Chicago, and Washington, places where at least 20 percent of the working-age population is foreign born.

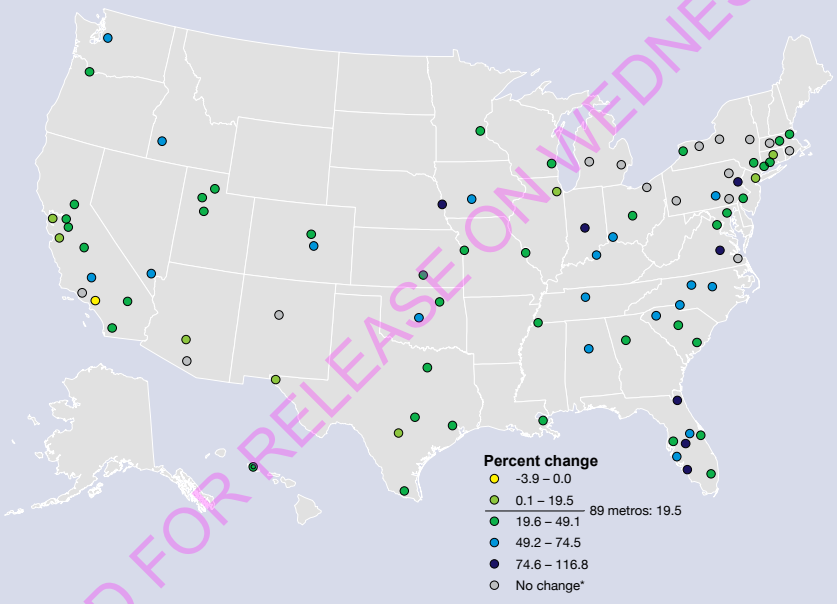
By contrast, in 29 of the 89 large metro areas less than 5 percent of the working-age population is LEP. Not surprisingly, many of these places are former immigrant gateways that attracted large number of immigrants in the early 1900s but have seen relatively little recent immigration (such as Detroit, Cleveland, and Pittsburgh). But they also include metro areas with fast-growing immigrant populations: eight of the nine metro areas whose total foreign-born population doubled between 2000 and 2010 (Table 4).[41] In these places, the LEP population, while still relatively small, grew at a faster-than-average rate.

Change since 2000

Between 2000 and 2012, the total growth in the working-age LEP population in the 89 large metro areas matched that for the nation as a whole: almost 20 percent. The *average* growth rate for these 89 areas, however, was much higher (44 percent) than the total rate because many of the smaller metropolitan areas witnessed very high rates of growth. Cape Coral more than doubled its working-age LEP population between 2000 and 2012, and Lakeland, Indianapolis, and Omaha each saw between 95 and 99 percent growth. While the size of the working-age LEP population remained relatively low in these places (only Indianapolis had over 50,000), it is often the fast pace of change that is felt most acutely on the ground. Among the metro areas with over 100,000 working-age LEP population in 2012, four saw rates of growth above 50 percent: Orlando (71), Las Vegas (61), Bakersfield (59), and Seattle (55) (Map 1).

Fifteen metro areas did not experience statistically significant change in their working-age LEP populations between 2000 and 2012. Three metro areas grew at a rate of lower than 10 percent: New York, Chicago, and San Jose. Los Angeles was the only metro area to experience a statistically significant decline in its working-age LEP population, decreasing by some 91,000 people (a 3.9 percent decline) (See Appendix). While the data do not allow a distinction between what proportion of the decline was due to outmigration from the metro area and what is attributable to a change from LEP to non-LEP status (or an aging out of working age), this decrease coincides with a small increase (0.7 percent) in the working-age foreign-born population in Los Angeles over the same time period.

Map 1. Percent Change in the LEP Population, Ages 16-64, 89 Metro Areas, 2000-2012



Source: Author's analysis of ACS 2012 PUMS data
**at the 90 percent confidence level*

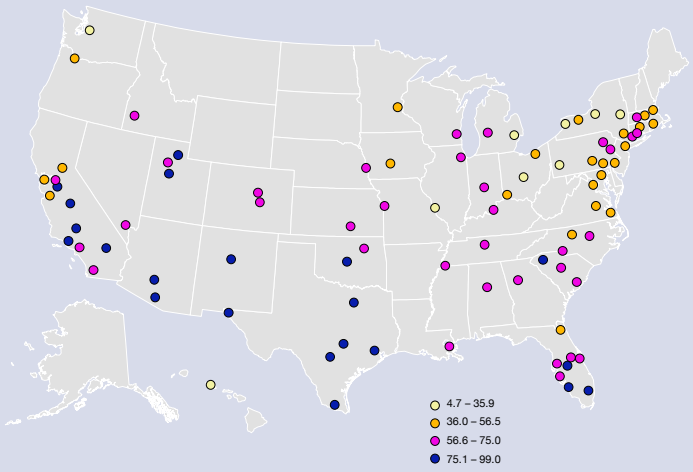
D. Educational attainment and the native languages of LEP adults vary considerably across metro areas.

The linguistic and labor force characteristics of LEP workers vary across the country, and these differences have implications for outreach and service provision.

Home language

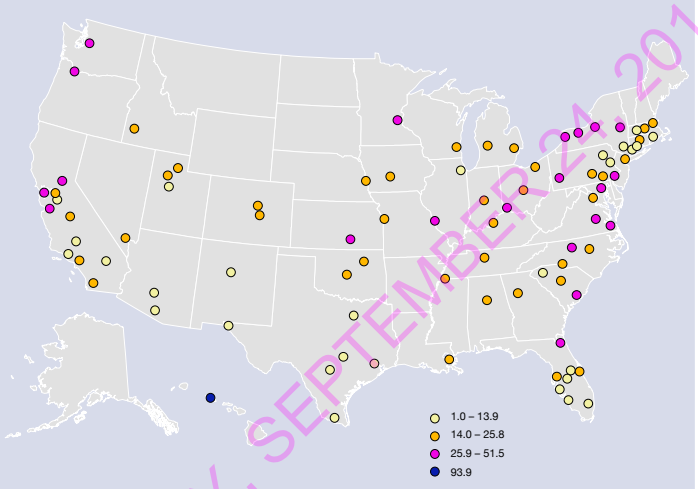
The mosaic of languages spoken by the LEP population can be quite different from region to region and reflects immigrant origins. The linguistic mix is important for localities to understand as they seek

Map 2. Percent of LEP Population who Speaks Spanish, Ages 16-64, 89 Metro Areas, 2012



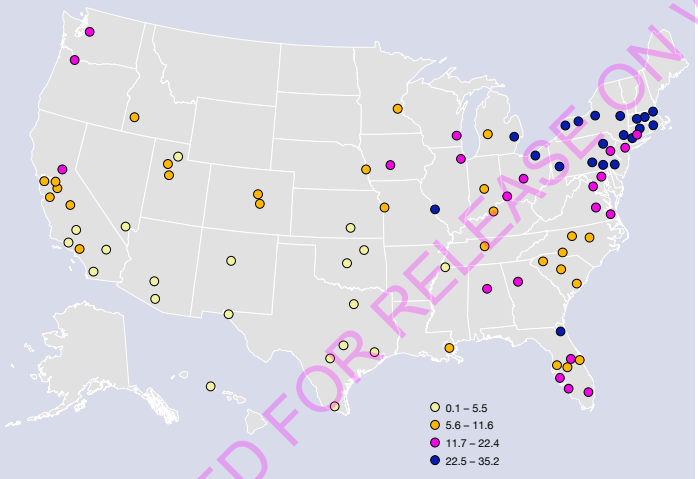
Source: Author's analysis of ACS 2012 PUMS data

Map 3. Percent of LEP Population who Speaks Asian and Pacific Island Languages, Ages 16-64, 89 Metro Areas, 2012



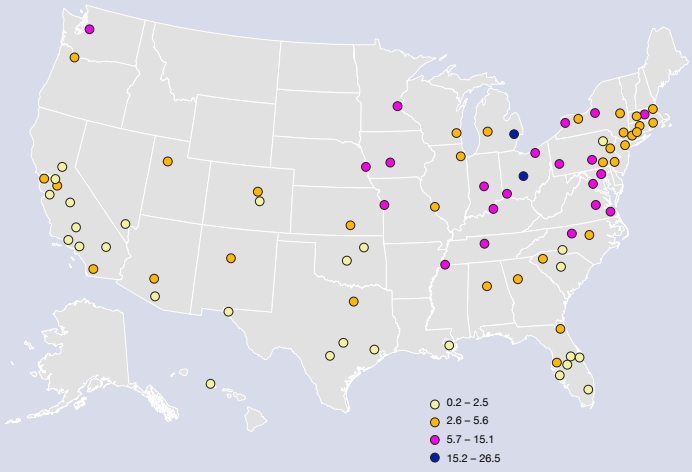
Source: Author's analysis of ACS 2012 PUMS data

Map 4. Percent of LEP Population who Speaks Other Indo-European Languages, Ages 16-64, 89 Metro Areas, 2012



Source: Author's analysis of ACS 2012 PUMS data

Map 5. Percent of LEP Population who Speaks Other Languages, Ages 16-64, 89 Metro Areas, 2012



Source: Author's analysis of ACS 2012 PUMS data

to meet the needs of residents not yet proficient in English.[42] A federal executive order from 2000 requires that LEP individuals have meaningful access to federally funded programs and activities. Recipients of federal aid—which includes virtually every locality in the country—are expected to take reasonable steps to provide access to LEP individuals without unduly burdening their mission. To do so, they are expected to take into account the number, proportion, and frequency with which LEP individuals interact with their agency or program and the importance of the program's mission to people's lives. This includes translation of vital documents into languages commonly spoken by LEP individuals likely to be served in that location.[43]

While almost two-thirds (65 percent) of the LEP workforce in the 89 large metropolitan areas overall speaks Spanish, this proportion varies from a low of 4.7 in Honolulu to 99 percent in McAllen. Generally, metro areas in the Southwestern and Western U.S.– destinations closest to Mexico and Central America– have the highest shares of Spanish speakers, but some metro areas in the Southeast whose immigrant populations grew quickly over the past decade also have higher-than-average Spanish shares (Map 2). In 81 of the 89 large metro areas, Spanish is the most commonly spoken language among the working-age LEP population.

Overall, 20 percent of the working-age LEP population in the 89 large metropolitan areas speaks an Asian or Pacific Island (API) language. The share is significantly higher in some West Coast metro areas whose proximity to Asia has facilitated large inflows of migrants from that part of the world (Map 3). Honolulu, the closest metro area to Asia, has a significant number of speakers of Tagalog/Filipino, Chinese, Japanese, and Native Hawaiian. Thus, it stands out on this measure with 94 percent of its working-age LEP population speaking an Asian or Pacific Island language. More than half (52 percent) of San Jose's working-age LEP population speaks an Asian or Pacific Island language at home, and in San Francisco and Seattle, more than 40 percent do. In San Jose, LEP Vietnamese speakers outnumber LEP Chinese speakers, while in Seattle the reverse is true. Most of San Francisco's LEP speakers of API languages speak Chinese (including Mandarin and Cantonese), with Filipino and Vietnamese speakers making up 15 and 10 percent, respectively, of the metro area's LEP API speakers. In total, in seven of the 89 largest metro areas, a plurality of the working-age LEP population speaks an Asian or Pacific Island language: Honolulu, San Jose, Seattle, Pittsburgh, Syracuse, Albany, and Buffalo. (See Appendix for data on all 89 metro areas.) In Pittsburgh, a former immigrant gateway that now attracts relatively few immigrants, LEP Chinese speakers account for more than half of LEP API speakers. Refugees from Southeast Asia have boosted the LEP API population in Syracuse, Albany, and Buffalo.[44]

Indo-European languages (other than Spanish) are spoken by 13 percent of the working-age LEP population in the 89 large metropolitan areas. Seven of the 10 metropolitan areas with the highest shares of other Indo-European language speakers (between 30 and 35 percent) are located in Pennsylvania (Harrisburg, Lancaster, and Pittsburgh) and upstate New York (Syracuse, Albany, Poughkeepsie, and Buffalo) in metro areas with relatively small immigrant populations. Detroit and Providence also rank among the top 10 metro areas on this measure, and Detroit is the only metro area in which a plurality (33 percent) of its working-age LEP population speaks an Indo-European language (Map 4). The assortment of Indo-European languages across and within these metro areas is very diverse: from Portuguese in Providence to Albanian in Detroit, from Serbo-Croatian in Harrisburg to Russian in Buffalo, from Pennsylvania Dutch in Lancaster to Yiddish in Poughkeepsie, each metro area has its own story to tell.[45]

Most metro areas have small shares of their working-age LEP population who speak languages not included in the Spanish, Asian and Pacific Island, or Other Indo-European categories (3.3 percent overall). In only six metro areas do LEP speakers of "other" languages make up at least 10 percent of the working-age LEP population, and they are most likely to speak Arabic or African languages.[46] In Detroit and Columbus, about one quarter speak an "other" language, and in four more metro areas (Minneapolis, Buffalo, Worcester, and Louisville) between 11 and 15 percent do (Map 5). Arabic speakers account for three quarters of LEP "other" language speakers in Detroit and Buffalo, while those who speak Somali/Cushite/Beja account for the largest shares in Minneapolis and Columbus. In Worcester, where a large number of Liberians have settled, 63 percent speak Kru.

Period of entry

As discussed in finding A, immigrants who have been living in the United States for a shorter length of time are more likely to be LEP. Among the 89 large metro areas, 45 percent of the working-age LEP population are immigrants who came to live in the United States in 2000 or later, but this proportion ranges from less than a third in El Paso, Riverside, and Lancaster to over 70 percent in Richmond, Scranton, Pittsburgh, Columbia, and Louisville. The metro areas with the lowest shares of newcomers among their working-age LEP populations tend to be less diverse in terms of the languages spoken, consistent with prior literature demonstrating that in places where a large number of people speak the same non-English language, it is more feasible to remain limited English proficient for a longer period of time than in places with a greater mix of languages.[47]

Educational attainment

When it comes to building English skills, the educational background of the learner is a key factor in designing effective instruction. Those who have completed more years of schooling and can read and write in their own language will benefit from different interventions than those who require basic literacy instruction. Among the LEP population age 25-64 in the 89 large metro areas, 16 percent hold a college degree. In two metropolitan areas, the rate is more than double that. In Pittsburgh and Albany 39 and 33 percent, respectively, of the LEP population have attained a bachelor's degree or higher. Pittsburgh is the only metro area in which a plurality of LEP adults (39 percent) hold a bachelor's degree or higher. In 21 metro areas, at least one in five LEP adults holds a college degree. In contrast, there are 16 metro areas in which fewer than one in 10 LEP adults do. (See Appendix for data for 89 metro areas.)

In the middle of the educational attainment spectrum, 46 percent of working-age LEP adults hold a high school diploma or have attended some college. In most of the large metro areas (61 of the 89 in this analysis), more working-age LEP adults fall into this middle category than the highest or lowest categories, and in 28 metro areas, a majority of the working-age LEP population is mid-skilled.

At the low end of the educational spectrum, 38 percent of the LEP population between the ages of 25 and 64 living in the 89 large metro areas has not completed high school. In nine metro areas, those without a high school diploma make up a majority of the working-age LEP population. These include four California metro areas in which agricultural workers are concentrated (Bakersfield, Modesto, Fresno, and Oxnard), two Texas metro areas (McAllen and Dallas), two metro areas in Oklahoma (Oklahoma City and Tulsa), and Omaha. In 27 metro areas, a plurality of LEP adults has not completed high school. In these and other places where high shares of the LEP population have not graduated from high school, workers may require basic educational and literacy services along with English language instruction in order to make substantial gains in proficiency.

E. Most working-age LEP people are in the labor force.

Labor force status and employment

A majority of the working-age LEP population in each of the 89 large metro areas is in the labor force. Overall, labor force participation in these 89 metro areas is 72 percent, but it ranges from 52 percent in Syracuse to 82 percent in Des Moines. Among the working-age LEP population in the 89 large metro areas, 65 percent is employed. In three metro areas, employment rates for the LEP population are 75 percent or higher: Des Moines, Cincinnati, and Palm Bay. In another 16 metro areas, the ratio of employed LEP workers to working-age LEP population reaches at least 70 percent. By contrast, in Syracuse and Buffalo less than half of working-age LEP individuals are employed (See Appendix).

Earnings

As described in Finding B, workers proficient in English have substantially higher earnings than those who are LEP. Among full-time, year-round workers in the 89 large metro areas, median earnings for the working-age LEP population range from a low of $19,500 in Columbia to a high of $45,000 in Albany (See Appendix). On average, LEP workers in the 89 metro areas earn 85 percent less than those who are English proficient.

The income premium for English proficiency is higher in some metro areas than in others. In 11 metro areas, median earnings for the English proficient working-age population are at least double that for the LEP population: Bridgeport, Washington, San Jose, Columbia, Bakersfield, Raleigh, New York, Los Angeles, Denver, Charlotte, and Nashville. And in 79 of the 89 large metro areas, median incomes are at least 50 percent higher for English proficient workers than LEP workers.[48]

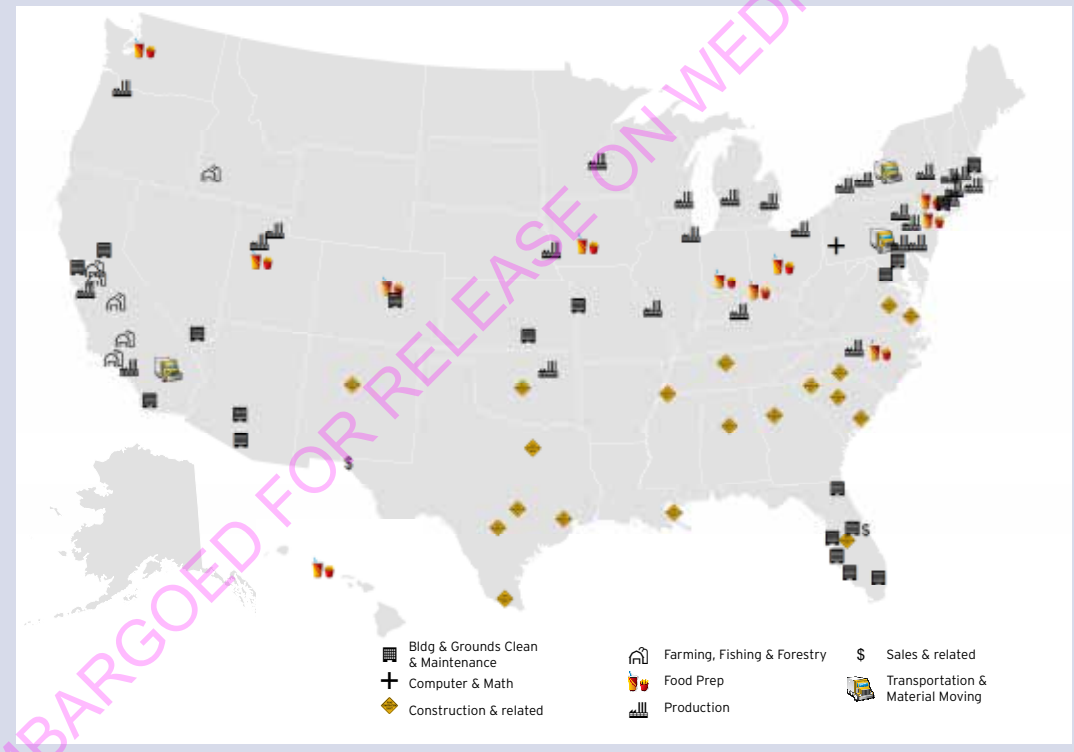
Poverty

Almost one quarter (24 percent) of working-age LEP adults in the 89 largest metropolitan areas live below the federal poverty line; their English proficient counterparts have a poverty rate of 13 percent. More than one third of the working-age LEP population is poor in 10 metro areas.[49] By contrast, the highest non-LEP poverty rate among the 89 metro areas is 24 percent (McAllen). Washington stands out for its low LEP poverty rate– 13 percent–though this is still almost double the rate of the working-age non-LEP population there. In all, 14 metro areas have LEP poverty rates lower than 20 percent, compared to 87 out of 89 metro areas in which non-LEP poverty rates are this low (See Appendix).

Occupation

Taken together, LEP workers in the 89 large metro areas have very similar occupational profiles as the nation as a whole with the top five occupations (building and grounds cleaning and maintenance, production, construction, food preparation and serving, and transportation and material moving) each accounting for between nine and 13 percent of LEP workers.

Map 6. Top Occupation for LEP Workers, Ages 16-64, 89 Metropolitan Areas



Source: Author's analysis of ACS 2012 PUMS data

Among the 89 metro areas, however, occupational patterns show more variety. In 28 metropolitan areas, production is the largest occupational category, accounting for an average of 20 percent of LEP workers in these metro areas (Map 6 and Appendix). Construction ranks highest in another 19 metro

areas (representing 20 percent of LEP workers on average in these places). In 19 metro areas, building and grounds cleaning and maintenance workers account for the largest share of the LEP population, 18 percent on average. And food preparation and serving workers is the largest category in 11 metro areas, accounting for an average of 16 percent of LEP workers in these metro areas. Only four other occupational categories rank highest in at least one metro area: farming, fishing, forestry, and hunting (Bakersfield, Fresno, Stockton, Boise City, Modesto, and Oxnard); transportation and material moving (Harrisburg, Modesto, Syracuse, and Riverside); sales and related (El Paso and Palm Bay); and computer and math (Pittsburgh).

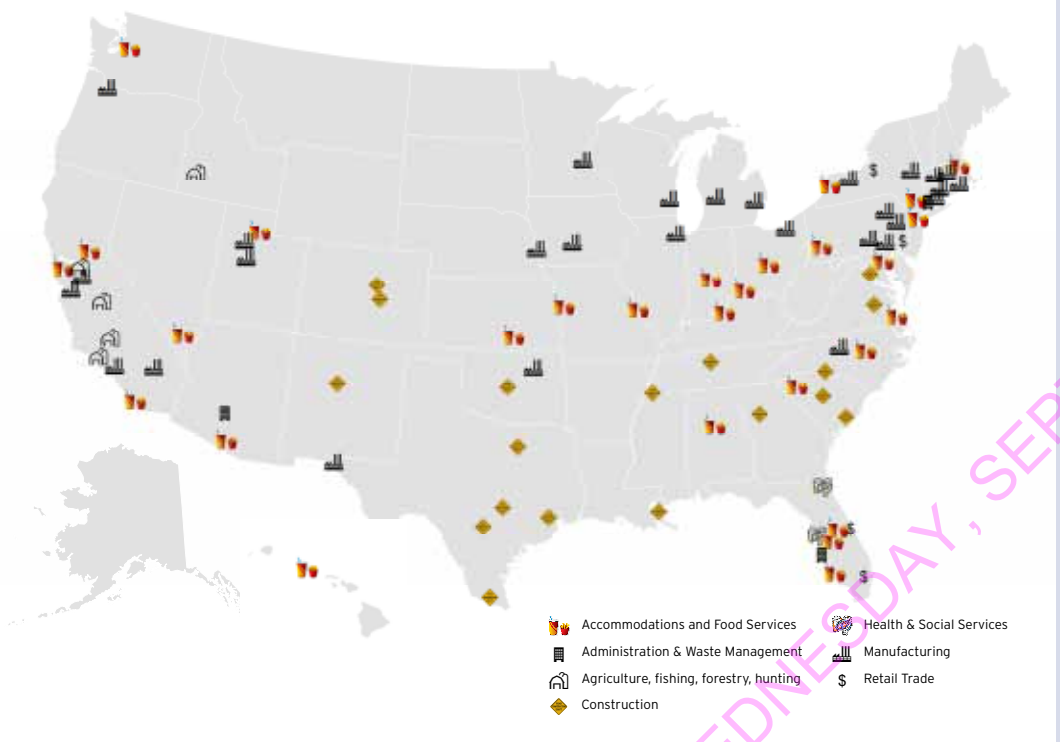
The extent to which LEP workers are concentrated in the top occupations versus a wide dispersal across a range of jobs within a metro area also varies. In general, LEP workers are less concentrated occupationally than they are by industry. There are only two metro areas in which more than one third of LEP workers have jobs in the top occupational group: Grand Rapids (39 percent in production) and Bakersfield (38 percent in farming, fishing, forestry, and hunting). At the other end of the spectrum, in 15 metro areas the largest occupational group accounts for less than 15 percent of LEP workers. Metro areas in which the largest number of LEP workers performs farming, fishing, forestry and hunting jobs have the highest concentrations of workers in their top occupational group: 27 percent on average. In metro areas where LEP workers are highly concentrated in similar jobs, it may be easier for workers to persist with low levels of English proficiency, especially if their co-workers speak their native language. On the other hand, in such places, there is a clearer target for outreach, especially that involving vocational training.

Industry

The same two industry sectors that account for the highest shares of LEP workers nationwide—accommodations and food services, and manufacturing—also account for the highest shares in the 89 large metropolitan areas: about 14 percent each. Twelve percent of LEP workers in the 89 large metro areas work in construction, with another 11 percent working in retail trade. More of the 89 large metro areas (29) have manufacturing as their top industry for LEP workers than any other industry. In 28 metro areas, accommodations and food services account for the highest share of LEP workers, and construction ranks highest in 18 metro areas (Map 7). Agriculture (including forestry, fishing and hunting), retail trade, administration and waste management, and health and social services employ the most LEP workers in between two and five metro areas each (Map 7 and Appendix).

In different metro areas, LEP workers concentrate in different industries, depending on the industrial mix of the region. Agricultural workers in Bakersfield, Fresno, Boise City, Oxnard, and Stockton account for the highest share of LEP workers in these metro areas (between 20 and 45 percent). Retail trade ranks highest in Syracuse, Palm Bay, Philadelphia, and Miami, accounting for between 14 and 18 percent of LEP workers in these metro areas. In North Port, Bridgeport, and Phoenix, administrative and waste management services account for the greatest share of LEP workers, between 16 and 19 percent. Only in Tampa and Jacksonville do health and social services account for the highest share of the metro area's LEP workers, about 13 percent.

Map 7. Top Industry for LEP Workers, Ages 16-64, 89 Metropolitan Areas



Source: Author's analysis of ACS 2012 PUMS data

Metro areas also differ in the extent to which LEP workers concentrate in the top industries versus dispersing across a broader set of industries. In four metro areas, for example, more than one third of LEP workers are concentrated in one industry: Bakersfield (45 percent in agriculture, forestry, fishing, and hunting), Grand Rapids (43 percent in manufacturing), Fresno (41 percent in agriculture, forestry, fishing, and hunting), and Las Vegas (34 percent in accommodations and food services). At the other end of the spectrum, in six metro areas, the largest industry for LEP workers accounts for a smaller-than-16-percent share: Jacksonville (13 percent in health and social services), El Paso (13 percent in manufacturing), Tampa (13 percent in health and social services), Baltimore (14 percent in accommodations and food services), Miami (14 percent in retail trade), and San Diego (15 percent in accommodations and food services). Like occupational concentration, concentration of LEP workers in an industry may serve as an advantage and a disadvantage for the improvement of English skills. More workers in an industry who speak the same non-English language may encourage LEP workers to stay that way since they are able to communicate with co-workers in their native tongue; yet, having a high concentration of LEP workers in one industry eases the way for targeted outreach to LEP workers, especially via employers.

Discussion and Policy Implications

Immigrants (and their children) have become an increasingly important part of the U.S. labor force and are projected to account for almost all of its growth through 2050.[50] Limits to their economic opportunity today threaten collective well-being tomorrow. English proficiency is the most essential means of opening doors to economic opportunity for immigrant workers in the United States.[51] And yet access to acquiring these skills is persistently limited by a lack of resources and attention.

This analysis calls attention to the size, scope, and geographical variation in the need for English instruction at the national and metropolitan levels. By providing metro-level characteristics of the working-age LEP population, it provides regional decision makers with data they need to tailor their outreach depending on the languages spoken, educational attainment, employment status, income, and other characteristics of their LEP population. It also provides federal policymakers with a better understanding of the demand for and gaps in adult English instruction.

This research can also help prepare for the possibility of federal changes to our immigration system. If an opportunity for either temporary or permanent legal status is made available to those living in the United States without legal status, some level of English proficiency could be a prerequisite. In such a case, the demand for English (and civics) instruction would climb sharply, and state and local institutions would have a key role to play in meeting this educational requirement.[52] Furthermore, successful implementation of a legalization program would require federal, state, and local actors to coordinate their efforts well in advance.[53]

Even at the status quo, the need for English instruction is dwarfed by current efforts to address it, thereby limiting the economic, civic, and social well-being of individuals, families, metropolitan regions, and the nation. Innovation—in funding, outreach, and instructional methods— is necessary in order to bridge the gap. While the data analysis presented in this report does not address many of the policy and programmatic aspects of improving the adult educational system for English learners, it lends support for additional and smarter investments in three arenas.

Funding

Practitioners in the adult education and workforce development arena speak of the chronic lack of funding that prevents them from being able to meet the demand for their services.[54] This analysis confirms that the need for one type of those services—adult English instruction—is not only large and growing, but also geographically dispersed around the country. While the data presented here support other research demonstrating that immigrants do, by and large, improve their English skills as their time living in the United States increases, this analysis also points to the slow pace of progress. Waiting for adult immigrants to "pick up the language" delays their economic (not to mention social and civic) integration. Investment in adult English instruction should be increased to allow more workers to enhance their human capital and boost their productivity more quickly.

An increase in funding for adult English instruction could come from a number of sources:

- **A reformed Workforce Investment Act.** Title II of the Workforce Investment Act (AEFLA)—the main source of federal funding for adult education including English instruction—is severely underfunded, serving a small fraction of the nation's low-skilled adults.[55] Not only is it important to raise the level of overall funding, but funds should be distributed to better meet the needs of English language learners. LEP adults are eligible for Title II services regardless of their educational attainment, but the current formula for distributing funds to states is based only on the number of adults without a high school diploma. The analysis presented in this report shows that such a formula takes into account only 40 percent of the working-age LEP population. The state distribution formula should be changed to take into account the 60 percent of the LEP population with a high school diploma.[56]

  In addition to increasing and more equitably distributing Title II funding, WIA Title I funding could be better utilized for LEP adults. The purpose of Title I is to connect job seekers with employment and training services, implemented through a nationwide network of one-stop centers. Title I's funding level ($2.97 billion in FY2010) is more than four times that of Title II. While Title I funding is sometimes used for connecting LEP adults with language training, its

requirement that individuals progress through other tiers of service before being able to access the training tier delays or prevents access to English instruction for many.[57] Moreover, many one-stop centers are not prepared—with bilingual staff, cultural competency, or familiarity with immigrant-serving organizations—to serve a LEP population.

In Montgomery County, Maryland, where 15 percent of residents are LEP, the local workforce investment board (MontgomeryWorks) and literacy coalition (Montgomery Coalition for Adult English Literacy) collaborate to help bridge the gap between the ESOL and workforce development systems. Together they created an employment readiness toolkit for providers working with LEP adults to help increase the number of students being referred between ESOL classes and workforce programs.

- **States and localities.** Most public funding for adult education does not come from the federal government. Under AEFLA, states must ensure that at least 25 percent of total adult education funding comes from non-federal sources—state, local, private, etc.—in order to receive a federal grant. In 2010, the average non-federal contribution to adult education was about 73 percent. Some states, like California, Connecticut, and Minnesota, contributed more than average while other states, like Texas, Tennessee, and Nevada, contributed much less than the average.[58] However, as state finances suffered in the recession, some states dramatically reduced or even eliminated their adult education contributions. California, typically a leader in adult education funding contributions, adjusted its policy during its state budget crisis. Beginning in 2008-2009, the state reduced adult education funding and allowed school districts to redirect adult education funding to other programs. As a result, the state's Legislative Analyst's Office found that only 40 to 50 percent of adult education funding was actually spent on adult education.[59]

  Conversely, some states with a history of contributing little or nothing to adult education are now adopting new measures to support adult education. Colorado recently enacted legislation that directs state funding to adult education for the first time. Although these state funds will not go toward the 25 percent contribution requirement because they are earmarked for programs not covered under the Workforce Investment Act—direct student services, employment preparation, job placement activities, and skills training—this is a step in the right direction for a state that has historically not allocated funds to adult education.[60] Other states including Arizona, Iowa, Minnesota, and New Hampshire have reenacted or increased their funding. This trend is promising, but more will need to be done to meet the high demand for adult English instruction.

  In addition to state funding, some localities provide money to fund adult education. Montgomery County funds the Montgomery Coalition for Adult English Literacy (MCAEL). MCAEL promotes adult education and English literacy instruction through grants, workshops, instructor training, learning and teaching tools, public outreach, and advocacy. Local funding is an important part of the adult education equation, as local organizations are better equipped to gauge the needs of the community.

- **Employers (and employees).** Employers stand to benefit from workers who have the English skills to perform their work safely and productively. And employees stand to benefit by improving their confidence and access to better pay or working conditions. Therefore, it is reasonable that employers and employees should be called upon to contribute to the investment in English skills. This analysis provides data on the industries and occupations in which LEP workers concentrate and can be used to enlist employer and employee participation.

  One example comes from the food services industry where a large number of LEP workers are concentrated (see Finding B). McDonald's created a program called "English under the Arches" to help shift managers improve their English skills and confidence in working with employees and customers. Using community college ESOL instructors and web-conferencing technology, McDonald's is able to provide instruction at multiple sites at low cost. Instruction takes place during working hours, allowing students to maintain work and family commitments. Five hundred (500) students participated during the first three years of the program, and the vast majority graduated, received pay increases, and continued working for McDonald's, which has a history of promoting from within.[61]

  Another promising example comes from King County in Seattle where the local workforce investment board partnered with employers from small and medium-sized businesses where

many immigrants and refugees were employed. In addition to federal (WIA Title I) and foundation funding, Literacy Works relied on employers to provide at last half-time pay to employees during instructional time. In turn, employees were expected to commit their time and efforts to succeeding. In its first two years, Literacy Works served 307 employees at 25 companies. A range of industries were represented, but most were manufacturing firms, the sector with the highest number of LEP workers nationally. Employees reported increased confidence and ability to perform their jobs, and employers reported improvements in morale, productivity, absenteeism, turnover, labor-management relations, and the health and safety records of participants.[62]

- **Philanthropy.** Improving the adult English instruction services available to the LEP population will require a multifaceted approach in which philanthropic contribution can play a vital role. Foundations and other private donors interested in immigrants, workforce development, and equality of opportunity should consider investing more in the English skills of the LEP workforce. Donors should consider several factors before contributing funds, including community needs, existing resources, promising practices of English instruction and/or naturalization programs, and opportunities for collaboration.[63] Considering each of these factors will help determine the specific educational and occupational areas in need of philanthropic support and the most effective strategies for improvement.

  In some cases, philanthropic funding of adult English education will not involve the establishment of a brand new program. Rather, funding may be more effectively used to expand and improve the capabilities of existing community organizations. In 2013, the Silicon Valley Community Foundation, an organization that manages philanthropic giving in the region, provided over $800,000 in grants to existing adult English instructional programs in Santa Clara and San Mateo counties in California. The programs seeking grants undergo an application and review process, which ensures that philanthropic donations to SVCF are reaching promising programs.

  In other cases, collaboration between philanthropic foundations, private donors, and government entities can create new, effective adult English education programs. The Tucson-based Literacy Connects Infusion Project is funded through a partnership of Pima County, the mayor's office, the Stocker Foundation, the Helios Education Foundation, and individual donors. This program integrates literacy instruction for both children and adults. Parents in the Sunnyside Unified School District in Tucson can receive English, GED and citizenship instruction, while their children receive reading, writing, and homework help.

  Both of these methods of philanthropic funding rely on community support and engagement to thrive. Oftentimes, regional literacy coalitions serve as facilitators of the relationship between English instruction providers and philanthropic donors. There are dozens of such organizations across the country that link community stakeholders and provide resources to promote English literacy.[64] Philanthropic funding from foundations and individual donors can afford literacy coalitions the opportunity to more effectively assist the LEP population, especially considering that the presence of a literacy council in an area has been found to increase funding for all service providers there.[65]

- **Charter schools.** A potential source of public funding for adult education often overlooked is charter schools, which typically serve a K-12 population. Charter schools operate independently of public school systems but receive public funding on a per-pupil basis, allowing students to attend tuition-free. The relative stability of charter funding allows adult education providers to build their programmatic and staff capacity to serve more students with high quality offerings in a way that is difficult to achieve with more uncertain or fluctuating revenue sources, such as grants and contracts. State laws on charter schools vary greatly, but almost all states currently prohibit using per-pupil funding for adults in order to avoid taking funding away from K-12 education.

  The District of Columbia is unique in its approval of public charter funds for adult education, and there are currently eleven such schools in operation there. The oldest and perhaps most well-known adult education program in the District is Carlos Rosario International Public Charter School. Founded 40 years ago, it has received national and international attention as a model in adult education and workforce development and has been able to meet and exceed standards for charter school status. (See "Targeted Outreach" and "Instructional Innovations" below for more

about this model.) Other states should consider revising their charter school statutes to allow funds to be used for adult education.

Targeted Outreach

While the need for more funding is clear, existing and future approaches must be wisely targeted to make the most of limited resources. By taking into account the characteristics of an area's LEP population, interventions can be tailored to the specific needs and assets of a region's LEP workforce:

- **Population size, growth, and period of arrival.** Metro areas with small numbers of LEP workers or without a recent history of receiving immigrants may be less likely to have a robust immigrant service infrastructure in place to provide adult English instruction and other assistance to newcomers. These places are often the same ones that have experienced the fastest growth rates in their LEP populations and may be struggling to adapt to the demographic changes happening in their regions. Without a large network of more established immigrants, recent arrivals to these places are less likely to have knowledge about and access to ESOL and vocational training. They may also be more likely to need wrap-around services such as transportation and child care to make participating in English instruction practical as they get their feet on the ground in a new place.

  Even in a metro area with a large and more established immigrant population like Washington, D.C., working-age LEP immigrants can benefit from supportive services. One of the keys to Carlos Rosario School's success has been their Supportive Services Department which addresses many of the barriers to adult student achievement through bilingual counseling, health and child care referrals, college financial aid assistance, life skills workshops, and career/vocational counseling and job placement.
- **Home languages.** Knowing what languages are spoken by the LEP population in any particular metro area is a key first step toward addressing the integration challenges they face. Local governments must have these data in order to provide reasonable access to their services, as outlined in the federal government's language access executive order.[66] Non-profit agencies who work closely with immigrants can also benefit from this information in order to provide translation and interpretation services for their clientele. Oftentimes, these services are provided by someone who speaks a non-English language at home but who has also obtained proficiency in English. Knowing that such a population exists can help service providers tap into these community assets

  A preponderance of one foreign language spoken in a metro area, or a sizeable number of speakers of one language, may prompt municipalities, service providers, and businesses to reach out to that particular group. Indianapolis, for example, established an Office of Latino Affairs to help make the city more accessible to its fast-growing Spanish-speaking population by connecting newcomers to English classes, business seminars, and health and education fairs. In Washington, D.C., where a relatively high share of immigrants were born in Africa, the city council established an Office on African Affairs in 2006, and Amharic (a language of Ethiopia) is one of the six LEP languages covered under the city's 2004 Language Access Act, based on Census Bureau data similar to that analyzed in this report.

  Sometimes it makes sense to conduct instruction in learners' native languages, particularly in situations where workers share the same non-English language. Bilingual vocational training can accelerate student comprehension of difficult concepts and minimize miscommunication.[67] In McAllen, where 99 percent of the working-age LEP population speaks Spanish, South Texas College provides dual language instruction whereby contextualized English classes and classes covering occupational vocabulary in Spanish are pursued together for college credit and occupational certificates. Other programs prepare students to take the GED in Spanish, allowing them to qualify for more jobs as well as Pell Grants to further their education.
- **Educational attainment and earnings.** The educational attainment of a region's LEP workforce is perhaps the most important characteristic to take into account when addressing the English instruction and workforce readiness needs of LEP adults. Working-age LEP adults who lack a high school diploma may need basic education services—especially if they are not literate in their native language—in addition to English instruction. Furthermore, this population has the lowest

median earnings and the highest rates of employment, and thus may be more likely to lack the money and time to commit to conventional, sequential models of instruction.

Programs that integrate ESOL with jobs skills training provide an alternative to the lengthier traditional process. Washington state's Integrated Basic Education and Skills Training (I-BEST) is a nationally recognized model that addresses students' occupational training and basic skills needs simultaneously in order to move them into living wage work faster. Rather than the traditional model of completing a series of basic skills and literacy courses before moving on to job training, I-BEST classes involve two instructors—one for professional content and one for basic skills and ESOL—so that students begin learning job skills immediately. Evaluation of the program has shown that, compared to students in traditional ESOL and basic skills classes, I-BEST students are more likely to earn college credit, obtain a certificate, and improve their basic skills.[68] The model has attracted the attention of the U.S. Department of Labor, which in 2013 embarked on a three-year project to replicate it in Connecticut, Georgia, Maryland, and Texas; many other states and localities are also pursuing this approach to integrated instruction. Accelerate Texas, for example, is a statewide effort to integrate career and technical training with adult education, including ESOL. Students graduate with both a GED and a work training certificate applicable to their regional labor market.

According to this analysis, proficiency in English makes the greatest difference in earnings for those in the middle of the educational attainment range (high school diploma or some college), and most working-age LEP adults fall into this category. In addition to the I-BEST model, which is applicable to mid-skilled workers, "career pathway bridges" is a model which has been developed to assist students who lack a college degree to move more quickly through basic skills and vocational training. Building on the career pathways model, "bridges" extend access to less educated workers by providing targeted basic skills or English language instruction.[69] One example is found in the Minneapolis-St. Paul metro area, where partnership between St. Paul College, the Ramsey County WIB, the St. Paul school district, healthcare employers, and Goodwill allows students to earn a for-credit Medical Records Clerk certificate. Classes are team taught by adult basic education (ABE) and career and technical education (CTE) instructors, and students in need of ABE/ESOL enroll in a pre-program bridge course which includes computer literacy and prepares them to succeed in the career pathways course.[70]

The 15 percent of LEP adults nationwide who hold a college degree—a share which more than doubles in some metro areas— typically qualify for higher level English instruction. But in addition to building their English skills, addressing other factors that contribute to their underemployment is important. Frequently, professional licenses and certifications earned abroad do not transfer easily to the U.S. labor market. Based in New York and Toronto, World Education Services is a non-profit organization that works with professionals, students, employers, and licensing boards to evaluate foreign credentials for the U.S. and Canadian markets. Lack of professional English skills and familiarity with the U.S. job market is another source of underemployment for the highly educated LEP adult. Programs such as Upwardly Global that assist this population with networking, resume writing, job interview skills, and career planning are essential to helping highly educated immigrants advance.[71]

- **Industry and occupation.** The data analyzed in this report show that LEP workers are concentrated in certain industries and occupations that can be targeted for local outreach. In the Washington metropolitan area, Casa de Maryland has partnered with community colleges in Prince George's and Montgomery counties to offer training programs aimed at the industries and occupations in which LEP workers concentrate or would qualify for with further instruction: child care, construction trades, security guards, landscaping, building maintenance, electrical installation, hospitality, and HVAC.

  In order to determine which career training pathways to develop, school leaders at the Carlos Rosario School use a sophisticated, best practices approach which includes environmental scans, regional multi-year workforce projections, living wage statistics, and more. Career training classes are currently offered in the fields of healthcare, culinary arts and information technology. The School recently opened a state-of-the-art facility to provide students with even more hands-on learning opportunities in these three areas. Corporate advisory committees, comprised

of industry professionals, are maintained for each career field to help them focus their training on high-demand fields with upward mobility and family sustaining wages in the Washington, DC region. Local employers from the advisory committees provide up-to-date industry information and expectations so that curriculum can be tailored to the region's industry needs. Committee members also offer field training opportunities such as internships and shadowing, participate in activities such as mock interviews and resume reviews, and present in-class workshops on relevant industry topics.

In San Francisco, the Welcome Back Center connects internationally trained healthcare workers with the need for linguistically and culturally competent health services in underserved communities. Realizing that a lack of English proficiency was one of the biggest barriers to these healthcare professionals applying their skills to the U.S. market, the Welcome Back Center designed English Health Train, a highly specialized, health-focused ESOL program.[72]

Instructional Innovations

Many LEP adults want to learn English (as demonstrated by full enrollments and waiting lists), but do not have access to instruction that is affordable, convenient in terms of time and place, and accessible. New methods and models are needed to more quickly and effectively improve adults' English skills. The following innovations show promise for reaching more students with more effective instruction:

- **Worksite.** Two major barriers to regular attendance of adult English classes is inconvenience of location and time away from work or family obligations. An effective way to combat these barriers is worksite instruction. The worksite location also lends itself to the inclusion of vocational curriculum (Vocational English as a Second Language or VESL), which has well-documented benefits for employees and employers.[73] A handful of workplaces already take advantage of this idea, but it would be advantageous for both employers and employees if more workplaces were to develop worksite English programs.

  Building Skills Partnership (BSP) is a California-based nonprofit collaboration between unions, building owners, employers and community leaders that brings adult English and vocational education to the workplace. Participants, most of whom are janitors, attend class onsite during paid-work time, which bypasses other obstacles such as family obligations, transportation, and child care costs. BSP offers a variety of educational programs, including ADVANCE—an intensive, six-month program that combines VESL and job training. A large majority (80 percent) of initial participants graduates from the program and many consequently receive promotions to more highly-paid positions.

  Private companies can also effectively organize worksite English instruction by utilizing community resources. For example, Burris Logistics, a food distribution operation with locations along the Eastern seaboard, partnered with Orange County Public Schools in Orlando to provide onsite English instruction to employees. There are clear benefits to both the employee and the employer with programs like Burris Logisitics'—the employee improves English skills which are vital to economic prosperity and the employer improves the ability to communicate with workers. Collaborating with existing community educational resources also eliminates the need to hire and train new instructors.
- **Online.** Online instruction has the potential for substantial cost savings over traditional classroom models, and advances in and greater distribution of computer technology in recent years have made this more feasible and affordable. Online instruction has the potential to reach a greater number of students by removing some of the cost and convenience barriers of classroom instruction. Online instruction could be especially helpful in places that have seen rapid recent growth in their LEP populations. Tapping into what others have developed and made available online can fill the gap in places without a well-developed immigrant service infrastructure.

  For students with lower levels of English proficiency and educational attainment, a purely online, independent program may not be successful. Rather, hybrid models that blend online and face-to-face instruction are more promising. Motivated by the huge gap between demand for and supply of adult ESOL instruction, and with funding from the Gates Foundation, OneAmerica in

Washington state developed a pilot project called English Innovations to teach English to adults using a combination of digital technology and classroom instruction. Students were given their own laptops to use both at home and in the classroom. There were three main components: 1) digital literacy, which included how to fill out a job application online, write an email to a child's teacher, or find local employment services; 2) learning English using LiveMocha software, which was also available on mobile devices so it could be used anywhere; and 3) English discussion, including conversing with volunteers over Skype. The pilots were conducted at libraries, community centers (where child care was available), and in workplace settings such as hotels and restaurants. Their results were comparable to community college classes, but at a faster pace. Students made significant gains in English, with the byproduct of increased digital literacy. Now they are working to scale up nationally and have developed a Training of Trainers toolkit – an online workshop to train participants to implement the program in their area. A future expansion will include the use of Xenos, a gaming platform aimed at helping adult Spanish speakers learn English and digital literacy. Developed by the Learning Games Network at MIT, with funding from the Gates Foundation, this program has been used successfully by the Boston and San Francisco public libraries.

In 2008, with funding from federal and state education departments, the Sacramento County Office of Education developed the USA Learns website with technical assistance from the University of Michigan's Institute for Social Research. This website allows users to learn beginning or intermediate English for free by watching videos and completing educational activities. The site features an introduction in Spanish or English, a picture dictionary, quizzes, immediate feedback on comprehension, and simple navigation. It been used by nearly six million people from around the world since its launch. Due to high demand, a mobile application has been developed (see below). Other popular sites for adults learning English include Dave's ESLCafe and ManyThings.

- **Mobile.** Like online instruction, mobile technology has the advantages of lower cost and higher convenience. The rapid adoption of mobile technology—particularly via smartphones—makes this an attractive means of delivering instruction to a wide audience. A 2008 study by the Parthenon Group found that over 75 percent of those who speak English "not at all" have access to mobile phones.[74] Given technological advances and cost reductions since then, it is safe to assume that the current adoption rate among LEP adults is higher. While not directly measuring LEP adults or immigrants, 2014 survey data from the Pew Research Internet Project show that 92 percent of Hispanics own a cell phone and 61 percent own a smartphone, a higher rate than that of whites or blacks.[75]

  For those who have basic cell phones but not smartphones or an internet connection, a new platform called Cell-ED delivers English lessons through a simple phone connection. Users can listen to short audio lessons, read text lessons, text back responses, receive additional help, or continue with the next lesson. Evaluation of a similar Cell-ED program teaching Spanish literacy showed promising results.[76] The New York State Office for New Americans plans to provide this service through the "English on the Go!" campaign for LEP adults, beginning in remote areas where immigrants are less likely to have access to classroom instruction or internet.

  USALearns, the website described in the previous section, recently made available a mobile version of its program: four apps are available for $0.99 each and can be run on all the major mobile platforms. Other programs such as LiveMocha and wlingua (specifically for Spanish speakers) provide a myriad of options for LEP adults to learn English at their own pace, at a place and time that is convenient.

Conclusion

Over the last several decades, the number and share of limited English proficient adults has grown, but efforts to address the need for English instruction have lagged. LEP adults are more likely to be poor, less educated, underemployed, and have lower earnings than adults who are English proficient. These characteristics yield lower wages for individuals and families and lower tax revenues and consumer spending for local areas.

English proficiency is the most essential means of opening doors to economic opportunity for immigrant workers in the United States. Relying on LEP adults to "pick up the language" is not an efficient strategy for improving their labor market outcomes in the near term. Rather, increasing the investment in adult English instruction now would enhance the human capital of immigrants and lead to more productive work—benefiting whole families—sooner. National, state, and regional leaders have an opportunity to enhance the human capital and economic mobility of their current and future workforce by investing in adult English instruction through more funding, targeted outreach, and innovative instruction. Given the large number of LEP workers in the United States and the fact that virtually all of the growth in the U.S. labor force over the next four decades is projected to come from immigrants and their children, it is in our collective interest to tackle this challenge.

Appendix. Limited English Proficient Population, Ages 16-64, 89 Metropolitan Areas, 2012

Metropolitan Area	LEP	% LEP	% Change, 2000-2012*	Language spoken at home (%)				% Recent Immigrants	Educational attain age 25-64 (%	
				Spanish	Other Indo-European lan-guages	Asian and Pacific Island lan-guages	Other lan-guages		<HS	HS or Some College
Albany-Schenectady-Troy, NY	16,599	2.9	-	32.6	30.4	33.4	-	53.1	30.6	36.0
Albuquerque, NM	46,037	7.9	-	81.3	2.5	11.5	4.7	45.2	43.8	48.3
Allentown-Bethlehem-Easton, PA-NJ	39,721	7.4	83.3	68.6	16.6	10.4	4.4	49.9	26.3	55.4
Atlanta-Sandy Springs-Marietta, GA	306,060	8.4	41.8	60.1	14.1	21.0	4.8	56.1	35.6	47.2
Austin-Round Rock-San Marcos, TX	142,338	11.1	40.6	82.6	5.1	9.8	2.5	50.8	45.9	41.4
Bakersfield-Delano, CA	111,633	20.4	58.6	92.0	2.1	4.8	1.1	33.5	66.5	28.8
Baltimore-Towson, MD	78,676	4.3	44.2	42.4	21.9	29.3	6.4	53.0	24.3	46.4
Birmingham-Hoover, AL	21,465	2.9	55.2	66.0	13.5	16.9	-	59.1	27.3	55.4
Boise City-Nampa, ID	21,911	5.2	64.1	73.1	8.5	18.4	-	34.3	49.6	42.0
Boston-Cambridge-Quincy, MA-NH	315,770	9.9	26.1	40.6	29.0	25.1	5.4	55.1	29.0	51.4
Bridgeport-Stamford-Norwalk, CT	86,549	14.3	33.6	63.6	23.0	10.6	2.7	56.5	26.6	53.7
Buffalo-Niagara Falls, NY	26,012	3.5	29.0	24.4	30.1	32.5	12.9	61.8	24.7	46.2
Cape Coral-Fort Myers, FL	39,838	10.6	116.8	80.1	15.2	4.7	-	52.0	42.9	46.5
Charleston-North Charleston-Summerville, SC	13,755	2.9	30.6	66.0	6.6	27.4	-	67.8	33.4	49.3
Charlotte-Gastonia-Rock Hill, NC-SC	88,931	7.5	62.7	72.7	9.1	16.1	2.1	61.2	37.6	47.2
Chicago-Joliet-Naperville, IL-IN-WI	820,012	13.0	5.1	65.3	20.2	11.7	2.8	38.5	37.6	47.4
Cincinnati-Middletown, OH-KY-IN	35,430	2.5	55.1	41.9	15.8	35.2	7.2	62.7	25.7	54.3
Cleveland-Elyria-Mentor, OH	47,434	3.6	-	38.9	32.9	19.5	8.7	45.0	24.0	51.9
Colorado Springs, CO	19,555	4.4	54.8	74.1	8.2	16.0	-	41.1	32.9	52.5
Columbia, SC	15,451	2.9	47.8	68.7	11.6	18.2	-	72.9	37.0	41.8
Columbus, OH	46,116	3.7	36.2	35.0	14.8	25.8	24.4	62.9	26.4	48.1
Dallas-Fort Worth-Arlington, TX	640,695	14.7	34.2	79.2	4.1	13.9	2.7	46.7	52.1	37.1
Denver-Aurora-Broomfield, CO	163,875	8.9	24.2	70.7	7.0	17.0	5.3	48.7	45.6	41.6
Des Moines-West Des Moines, IA	19,379	4.6	69.4	48.9	22.1	20.4	-	48.2	46.1	35.5
Detroit-Warren-Livonia, MI	128,722	4.7	-	24.0	33.0	16.5	26.5	52.9	30.6	45.6
El Paso, TX	156,506	29.8	17.7	97.1	1.4	1.3	-	26.1	38.7	48.6
Fresno, CA	136,712	22.8	22.3	78.8	6.2	14.4	0.6	33.6	65.9	27.7
Grand Rapids-Wyoming, MI	20,687	5.1	-	66.8	11.3	18.4	-	48.6	44.6	42.4
Greensboro-High Point, NC	34,541	6.7	56.1	56.5	9.3	26.9	7.3	63.9	46.7	45.0
Greenville-Mauldin-Easley, SC	20,769	4.4	54.7	76.0	7.5	11.9	-	61.8	46.2	34.0
Harrisburg-Carlisle, PA	15,412	4.3	66.7	39.1	35.2	18.5	-	54.7	36.6	52.2
Hartford-West Hartford-East Hartford, CT	61,152	7.6	10.8	52.6	28.2	15.8	3.4	42.8	25.4	55.4
Honolulu, HI	95,581	14.9	27.8	4.7	1.0	93.9	-	43.4	20.1	62.6
Houston-Sugar Land-Baytown, TX	721,872	17.8	40.1	82.3	4.6	11.4	1.7	43.6	49.8	39.9
Indianapolis-Carmel, IN	53,140	4.5	98.9	66.4	8.7	17.8	7.0	55.1	38.9	41.6
Jacksonville, FL	42,003	4.7	84.7	40.0	26.2	28.8	5.0	55.7	14.9	60.8
Kansas City, MO-KS	55,616	3.9	28.4	62.6	8.9	21.5	7.0	55.5	36.1	45.6
Lakeland-Winter Haven, FL	33,735	9.0	99.2	82.5	9.4	7.4	-	51.4	41.3	43.4
Lancaster, PA	16,506	5.0	-	41.4	34.6	21.2	-	29.0	29.4	65.1

ment,) BA+	% in Labor Force	% Employed	% Poor	Median Annual Earnings	Top Industry	Industry Share	Top Occupation	Occupational Share
33.4	57.6	52.0	23.6	$45,000	Manufacturing	22.1	Production	15.9
7.9	65.6	57.7	36.3	$27,000	Construction	22.0	Construction & related	18.2
18.4	72.1	65.2	20.4	$30,000	Manufacturing	21.0	Production	17.1
17.3	73.0	66.2	26.8	$24,000	Construction	20.2	Construction & related	18.0
12.8	72.9	67.8	26.2	$24,000	Construction	26.2	Construction & related	21.4
4.7	71.1	60.8	30.8	$22,000	Agriculture, Fishing, Forestry, and Hunting	44.9	Farming, fishing, forestry	37.9
29.3	75.5	69.6	17.4	$34,000	Accommodations and Food Services	13.9	Bldg & grounds cleaning and maintenance	13.8
17.3	76.1	72.8	25.6	$22,900	Accommodations and Food Services	21.7	Construction & related	18.3
8.4	74.4	68.5	34.2	$25,000	Agriculture, Farming, Fishing, and Hunting	22.1	Farming, fishing, forestry	19.9
19.7	74.9	67.0	20.2	$31,200	Accommodations and Food Services	18.3	Bldg & grounds cleaning and maintenance	15.3
19.7	80.9	71.8	16.8	$29,000	Admin and Waste Mgmt	16.9	Bldg & grounds cleaning and maintenance	24.2
29.1	59.0	49.0	39.7	$25,000	Accommodations and Food Services	17.4	Production	15.4
10.6	77.7	72.6	27.9	$21,800	Accommodations and Food Services	19.0	Bldg & grounds cleaning and maintenance	20.2
17.3	73.3	70.7	19.5	$22,000	Construction	28.7	Construction & related	27.9
15.2	74.5	67.9	24.2	$22,000	Construction	23.5	Construction & related	22.4
15.0	73.7	66.6	19.6	$27,400	Manufacturing	25.4	Production	20.9
20.0	76.3	75.3	18.1	$25,000	Accommodations and Food Services	18.8	Food Prep	14.6
24.1	62.9	55.9	26.0	$30,000	Manufacturing	25.2	Production	18.5
14.6	73.7	70.9	36.4	$25,000	Construction	21.5	Bldg & grounds cleaning and maintenance	22.4
21.2	73.2	68.8	23.1	$19,500	Construction	25.9	Construction & related	20.5
25.5	68.7	63.5	27.9	$25,000	Accommodations and Food Services	18.5	Food Prep	15.8
10.8	72.6	68.3	23.5	$24,000	Construction	20.7	Construction & related	18.4
12.8	73.0	68.5	22.7	$25,000	Construction	18.4	Food Prep	15.5
18.4	82.3	76.2	-	$26,000	Manufacturing	23.3	Food Prep	21.8
23.8	60.2	52.4	31.5	$30,600	Manufacturing	24.4	Production	15.5
12.6	63.0	57.3	33.1	$22,000	Manufacturing	13.2	Sales & related	11.9
6.4	70.0	59.0	36.5	$24,000	Agriculture, Farming, Fishing, and Hunting	40.6	Farming, fishing, forestry	31.0
13.0	72.4	61.8	40.1	$23,000	Manufacturing	42.9	Production	35.5
8.3	73.0	64.8	31.5	$21,000	Manufacturing	27.4	Production	25.8
19.8	77.6	65.9	36.2	$24,000	Accommodations and Food Services	18.5	Construction & related	17.2
11.3	72.2	64.5	23.9	$23,500	Manufacturing	22.5	Transp & Mat Moving	27.4
19.2	68.6	60.8	26.2	$30,000	Manufacturing	24.3	Production	18.1
17.3	72.8	68.6	16.3	$32,000	Accommodations and Food Services	26.7	Food Prep	17.5
10.3	72.7	67.8	26.6	$25,000	Construction	20.6	Construction & related	17.6
19.4	78.2	73.9	30.0	$22,400	Accommodations and Food Services	26.5	Food Prep	16.9
24.3	66.3	61.8	15.7	$26,000	Health & Soc Serv	13.1	Bldg & grounds cleaning and maintenance	13.1
18.2	73.6	68.1	20.8	$24,000	Accommodations and Food Services	17.0	Bldg & grounds cleaning and maintenance	16.6
15.3	73.7	61.1	24.1	$30,000	Accommodations and Food Services	15.5	Construction & related	14.4
-	67.2	60.6	25.0	$30,000	Manufacturing	27.0	Production	24.1

Appendix. Limited English Proficient Population, Ages 16-64, 89 Metropolitan Areas, 2012 (continued)

Metropolitan Area	LEP	% LEP	% Change, 2000-2012*	Language spoken at home (%)				% Recent Immigrants	Educational attain age 25-64 (%	
				Spanish	Other Indo-European lan-guages	Asian and Pacific Island lan-guages	Other lan-guages		<HS	HS or Some College
Las Vegas-Paradise, NV	207,224	15.7	61.2	75.0	4.3	18.3	2.4	46.8	38.4	51.3
Los Angeles-Long Beach-Santa Ana, CA	2,264,513	25.7	-3.9	69.1	6.4	23.0	1.4	34.4	45.3	41.0
Louisville/Jefferson County, KY-IN	26,210	3.2	61.5	60.4	10.2	19.0	10.5	75.2	30.0	57.6
McAllen-Edinburg-Mission, TX	154,012	32.0	20.6	99.0	-	1.0	-	33.8	57.5	34.4
Memphis, TN-MS-AR	30,957	3.8	41.3	67.3	5.5	20.5	6.8	54.2	41.8	45.2
Miami-Fort Lauderdale-Pompano Beach, FL	865,905	23.2	21.7	80.8	16.0	2.6	0.5	58.3	22.4	58.6
Milwaukee-Waukesha-West Allis, WI	61,241	6.0	39.9	60.0	18.3	18.4	3.3	43.5	32.9	49.0
Minneapolis-St. Paul-Bloomington, MN-WI	134,927	5.8	45.7	39.5	9.2	36.1	15.1	62.0	35.7	46.1
Modesto, CA	61,935	18.6	36.1	79.3	6.3	10.4	3.9	39.5	58.9	37.5
Nashville-Davidson--Murfreesboro--Franklin, TN	47,890	4.2	54.6	66.8	9.1	16.6	7.5	66.2	43.7	43.3
New Haven-Milford, CT	51,204	9.0	33.5	65.1	18.5	13.3	3.2	49.3	33.5	49.7
New Orleans-Metairie-Kenner, LA	39,818	4.9	21.0	65.9	10.3	22.1	-	55.3	34.2	53.4
New York-Northern New Jersey-Long Island, NY-NJ-PA	2,330,496	18.3	7.8	55.6	21.4	19.7	3.3	46.2	31.6	49.9
North Port-Bradenton-Sarasota, FL	33,021	8.2	74.5	68.2	17.4	13.4	-	52.4	36.8	42.0
Ogden-Clearfield, UT	16,813	5.0	47.4	80.9	-	16.8	-	53.7	37.7	56.5
Oklahoma City, OK	58,561	6.6	67.7	79.7	3.1	16.0	-	55.1	54.7	38.9
Omaha-Council Bluffs, NE-IA	38,695	6.1	95.1	65.1	10.2	18.4	6.3	63.3	51.0	34.1
Orlando-Kissimmee-Sanford, FL	176,390	12.0	71.3	72.4	16.3	9.5	1.8	49.7	23.9	60.0
Oxnard-Thousand Oaks-Ventura, CA	91,231	16.8	-	85.4	3.2	10.4	-	36.8	57.9	33.5
Palm Bay-Melbourne-Titusville, FL	11,858	3.5	37.2	68.3	9.8	19.9	-	38.5	21.4	61.9
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	265,797	6.6	40.0	45.1	24.0	26.9	4.0	47.9	30.6	47.8
Phoenix-Mesa-Glendale, AZ	304,190	11.0	14.8	83.1	4.8	9.3	2.8	38.9	47.2	43.2
Pittsburgh, PA	23,875	1.6	-	24.1	29.7	36.8	9.5	71.5	23.3	37.5
Portland-Vancouver-Hillsboro, OR-WA	125,611	8.1	22.2	51.1	14.7	30.9	3.3	49.7	35.6	46.6
Poughkeepsie-Newburgh-Middletown, NY	34,785	7.8	47.0	55.0	30.3	11.7	2.9	36.9	29.7	52.6
Providence-New Bedford-Fall River, RI-MA	90,433	8.4	-	53.6	32.7	10.7	3.0	48.2	42.9	46.5
Provo-Orem, UT	17,161	5.2	47.5	83.7	6.2	10.1	-	62.1	36.4	42.9
Raleigh-Cary, NC	53,099	6.3	59.9	66.9	10.9	16.6	5.6	64.9	42.6	41.5
Richmond, VA	35,939	4.4	80.6	50.7	14.6	28.2	6.5	71.0	28.2	50.6
Riverside-San Bernardino-Ontario, CA	498,001	17.8	44.9	83.2	3.2	12.3	1.4	26.6	48.1	43.3
Rochester, NY	26,374	3.6	-	37.7	24.3	33.3	4.7	65.0	26.3	58.2
Sacramento--Arden-Arcade--Roseville, CA	182,651	12.6	46.9	44.4	22.4	31.5	1.8	44.5	35.5	48.5
St. Louis, MO-IL	50,663	2.7	33.9	35.9	27.5	32.1	4.5	49.3	26.9	50.0
Salt Lake City, UT	64,030	8.4	37.1	67.4	9.2	19.2	4.2	45.6	47.2	37.8
San Antonio-New Braunfels, TX	169,292	11.9	12.8	90.5	1.6	7.3	-	35.4	43.4	47.8
San Diego-Carlsbad-San Marcos, CA	350,998	16.3	23.5	68.7	5.5	21.9	3.9	39.2	44.0	41.4
San Francisco-Oakland-Fremont, CA	557,878	18.4	12.5	46.6	8.2	42.4	2.8	47.1	33.0	46.3
San Jose-Sunnyvale-Santa Clara, CA	278,214	22.6	3.7	39.8	7.8	51.5	0.9	45.1	28.9	42.3

ment,)								
BA+	% in Labor Force	% Employed	% Poor	Median Annual Earnings	Top Industry	Industry Share	Top Occupation	Occupational Share
10.2	74.4	67.0	23.0	$28,300	Accommodations and Food Services	34.3	Bldg & grounds cleaning and maintenance	23.9
13.7	71.7	64.8	24.1	$25,000	Manufacturing	19.2	Production	14.9
12.4	71.4	64.1	32.5	$25,000	Accommodations and Food Services	18.6	Production	15.3
8.1	62.7	55.8	43.7	$24,000	Construction	15.2	Construction & related	13.4
12.9	72.6	69.1	29.9	$26,000	Construction	28.8	Construction & related	19.3
19.0	75.4	66.1	23.3	$24,000	Retail Trade	14.0	Bldg & grounds cleaning and maintenance	14.0
18.1	71.6	67.0	21.0	$25,000	Manufacturing	31.6	Production	26.4
18.2	76.7	66.1	27.9	$26,000	Manufacturing	20.9	Production	18.4
3.6	72.8	59.0	33.8	$24,000	Manufacturing	20.3	Farming, fishing, forestry	17.5
13.0	71.5	66.6	31.7	$20,000	Construction	23.4	Construction & related	23.0
16.7	71.5	63.4	21.8	$29,200	Manufacturing	22.4	Production	18.9
12.4	76.0	70.0	29.1	$24,000	Construction	26.5	Construction & related	27.4
18.5	72.0	64.9	23.0	$28,000	Accommodations and Food Services	15.4	Food Prep	11.0
21.2	79.2	69.7	22.8	$23,000	Administration and Waste Management	18.6	Bldg & grounds cleaning and maintenance	26.1
5.9	74.7	70.0	22.7	$24,000	Accommodations and Food Services	24.3	Production	22.0
6.4	76.5	71.3	29.4	$22,000	Construction	25.4	Construction & related	25.1
14.9	74.0	70.1	27.9	$23,000	Manufacturing	29.4	Production	26.8
16.1	73.4	63.2	25.7	$22,500	Accommodations and Food Services	19.9	Bldg & grounds cleaning and maintenance	17.0
8.6	74.1	67.6	21.3	$28,000	Agriculture, Farming, Fishing, and Hunting	20.6	Farming, fishing, forestry	16.7
16.7	78.9	74.5	18.9	$28,700	Retail Trade	15.9	Sales & related	10.6
21.6	70.7	62.3	22.9	$28,000	Retail Trade	15.4	Production	11.5
9.6	65.7	59.5	32.1	$24,000	Admin and Waste Mgmt	15.9	Bldg & grounds cleaning and maintenance	20.1
39.2	62.9	58.5	20.8	$33,800	Accommodations and Food Services	23.8	Computer & Math	11.6
17.8	73.7	65.8	25.1	$29,000	Manufacturing	21.4	Production	13.4
17.7	68.6	65.1	22.4	$30,000	Accommodations and Food Services	21.4	Food Prep	15.7
10.6	70.2	59.8	22.2	$28,000	Manufacturing	29.7	Production	24.6
20.7	72.9	69.6	32.9	$25,000	Manufacturing	18.6	Food Prep	16.2
15.9	73.1	67.7	29.3	$22,800	Accommodations and Food Services	25.2	Food Prep	20.7
21.1	71.2	67.1	16.2	$26,600	Construction	21.2	Construction & related	18.1
8.6	66.8	58.3	24.1	$28,000	Manufacturing	17.4	Transp & Mat Moving	14.0
15.5	63.4	58.3	31.4	$28,000	Manufacturing	23.3	Production	21.7
16.1	68.5	59.5	28.4	$27,000	Accommodations and Food Services	16.0	Bldg & grounds cleaning and maintenance	13.2
23.1	68.4	62.8	24.8	$35,000	Accommodations and Food Services	21.7	Production	16.4
14.9	75.0	66.5	24.3	$28,000	Manufacturing	21.1	Production	18.9
8.9	68.4	64.8	25.0	$23,000	Construction	18.3	Construction & related	15.5
14.7	67.7	61.5	23.2	$24,000	Accommodations and Food Services	14.9	Bldg & grounds cleaning and maintenance	15.6
20.7	72.9	66.2	18.1	$27,000	Accommodations and Food Services	18.2	Bldg & grounds cleaning and maintenance	14.1
28.9	70.4	63.6	17.5	$31,100	Manufacturing	22.9	Production	12.1

Appendix. Limited English Proficient Population, Ages 16-64, 89 Metropolitan Areas, 2012 (continued)

Metropolitan Area	LEP	% LEP	% Change, 2000-2012*	Language spoken at home (%)				% Recent Immigrants	Educational attain age 25-64 (%	
				Spanish	Other Indo-European lan-guages	Asian and Pacific Island lan-guages	Other lan-guages		<HS	HS or Some College
Scranton--Wilkes-Barre, PA	14,723	4.6	-	65.7	23.2	9.3	-	71.1	43.2	42.0
Seattle-Tacoma-Bellevue, WA	238,003	9.8	54.7	31.9	17.2	42.0	8.9	55.8	26.8	52.9
Springfield, MA	35,481	7.6	-	60.7	24.6	11.8	2.9	60.8	38.2	51.2
Stockton, CA	86,094	19.3	32.3	68.0	7.3	23.1	1.6	34.3	47.7	45.4
Syracuse, NY	12,246	2.8	-	29.4	30.5	33.7	6.5	64.1	27.8	48.7
Tampa-St. Petersburg-Clearwater, FL	144,106	7.9	49.1	70.0	11.6	14.5	3.9	51.6	27.0	56.7
Tucson, AZ	55,059	8.7	-	85.0	4.2	9.3	1.5	36.4	37.1	51.5
Tulsa, OK	28,109	5.5	32.4	74.8	4.1	19.4	-	49.0	51.1	39.9
Virginia Beach-Norfolk-Newport News, VA-NC	27,949	2.5	-	45.1	13.1	32.8	9.1	58.3	27.6	49.5
Washington-Arlington-Alexandria, DC-VA-MD-WV	456,972	11.9	35.4	53.5	13.5	23.6	9.4	57.9	30.7	45.1
Wichita, KS	25,316	6.5	45.4	65.8	-	27.1	-	40.6	43.3	41.9
Worcester, MA	36,962	6.9	31.6	45.1	23.5	19.7	11.7	48.2	24.6	57.6
89 Metro Total	**15,749,108**	**12.0**	**19.5**	**64.6**	**12.6**	**19.6**	**3.3**	**45.2**	**38.1**	**46.0**
US Total	**19,151,784**	**9.3**	**19.8**	**66.3**	**11.9**	**18.4**	**3.4**	**44.0**	**40.1**	**45.0**

**statistically significant at the 90% confidence level*
-no statistically reliable data
Source: Author's analysis of ACS 2012 PUMS data

ment,)								
BA+	% in Labor Force	% Employed	% Poor	Median Annual Earnings	Top Industry	Industry Share	Top Occupation	Occupational Share
14.8	75.4	68.6	19.2	$40,000	Manufacturing	28.3	Production	25.2
20.3	68.4	63.0	21.6	$24,900	Accommodations and Food Services	17.4	Food Prep	12.2
10.7	60.6	50.1	35.3	$30,000	Manufacturing	17.5	Production	15.0
6.8	68.9	58.0	22.5	$28,000	Agriculture, Farming, Fishing, and Hunting	19.9	Farming, fishing, forestry	20.5
23.5	52.6	47.9	32.0	$23,000	Retail Trade	17.8	Transp & Mat Moving	15.0
16.4	70.4	60.1	26.8	$25,000	Health & Soc Serv	13.4	Bldg & grounds cleaning and maintenance	12.8
11.4	68.7	60.1	28.3	$25,000	Accommodations and Food Services	17.1	Bldg & grounds cleaning and maintenance	22.0
9.0	73.8	70.1	25.9	$24,000	Manufacturing	24.9	Production	25.3
22.9	78.0	73.4	16.4	$24,000	Accommodations and Food Services	22.8	Construction & related	18.5
24.2	79.8	74.3	13.2	$30,000	Construction	17.5	Bldg & grounds cleaning and maintenance	15.3
14.8	69.2	65.7	25.9	$24,000	Accommodations and Food Services	20.5	Bldg & grounds cleaning and maintenance	18.3
17.8	69.2	59.5	22.7	$30,000	Manufacturing	21.0	Production	15.0
15.8	**71.9**	**64.9**	**23.9**	**$26,000**	**Accommodations and Food Services**	**14.6**	**Bldg & grounds cleaning and maintenance**	**12.9**
14.9	**71.3**	**64.4**	**24.6**	**$26,000**	**Manufacturing**	**13.6**	**Bldg & grounds cleaning and maintenance**	**12.8**

Endnotes

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9. Audrey Singer, "Investing in the Human Capital of Immigrants, Strengthening Regional Economies" (Washington: Brookings Institution, 2012).
10. McLendon, Jones, Rosin, "Return on Investment."
11. McHugh, Gellatt, Fix, "Determining Need and Investing Wisely."
12. Ibid.
13. Marcie Foster and Lennox McLendon. "Sinking or Swimming: Findings from a Survey of State Adult Education Tuition and Financing Policies." Center for Law and Social Policy and the National Council of State Directors of Adult Education. Washington, D.C. 2012.
14. The Workforce Innovation and Opportunity Act re-authorizing and streamlining the country's workforce investment system was enacted in July, 2014, occurring too late to be fully reflected in this paper.
15. Department of Education funding was calculated by dividing its annual budget by the share of enrollments that were for Englih Language/ Civics. Data source: **http://www2.ed.gov/about/overview/budget/history/index.html**
16. Enrollment figures come from AEFLA annual reports to Congress, available at **http://www2.ed.gov/about/offices/list/ovae/resource/index.html**

17. In order to receive a federal grant, AEFLA requires that at least 25 percent of a state's total adult education fund come from non-federal sources. This means that state, local, or private funds contributed in cash or in kind all need to sum to at least 25 percent of the total money spent in a state on adult education. While about three quarters of the overall funding (federal plus state) for adult education has typically come from state coffers, states vary widely in the extent to which they match federal funding levels. The highest contributors—Connecticut, Minnesota, and California—funded about 88 percent of their state's total adult education budget in 2010. While the lowest—Nevada, Texas, and Tennessee—only funded about 25 percent of their adult education budgets. California's budget crisis prompted the state legislature to allow school districts to redirect funding from adult education to other programs, and more than half of adult education funding was re-directed in 2011-12, according to California's Legislative Analyst's Office. See also Nicholas Johnson, Phil Oliff, and Erica Williams, "An Update on State Budget Cuts: At Least 46 States Have Imposed Cuts that Hurt Vulnerable Residents and the Economy" (Washington: Center on Budget and Policy Priorities, 2010).; Christopher Connell, "Empty Promises: The Unmet Need for English Instruction across Illinois" (Chicago: Illinois Coalition for Immigrant and Refugee Rights, 2009).
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21. Steven Ruggles and others, "Integrated Public Use Microdata Series: Version 5.0 [Machine-readable database]," (University of Minnesota, 2010).
22. The ACS questionnaire asks respondents to identify whether or not they speak a language other than English at home. If they answer "yes," they are asked what language they speak at home and how well they speak English (very well, well, not well, or not at all). This analysis follows the common practice of categorizing those who speak English "well," "not well," or "not at all" as "limited English proficient," or LEP. See Sidebar "Defining the LEP population."
23. If a respondent writes in more than one language, the first language reported is the only one counted by the Census Bureau. Furthermore, some respondents report a language grouping (e.g. "Chinese") rather than an individual language (e.g. "Mandarin" or "Cantonese"), and the Census Bureau tabulates these separately for its detailed data but aggregates them (i.e. "Chinese") for collapsed tables.
24. This analysis uses the Office of Management and Budget's 2009 metropolitan area delineations and Census 2010 population data to select the 100 most populous metro areas. Unweighted counts of the working-age LEP population were determined for these metropolitan areas using the ACS 2012 1-year Public Use Microdata Sample. Eleven of the 100 most populous metropolitan areas had fewer than 100 unweighted cases (ranging from 5,700 to 17,400 weighted cases) and were eliminated from the analysis: Akron, Augusta, Baton Rouge, Chattanooga, Dayton, Knoxville, Jackson, Little Rock, Madison, Toledo, and Youngstown.
25. See **https://www.census.gov/acs/www/about_the_survey/questions_and_why_we_ask/** for the first three examples and **www.lep.gov** for the last example.
26. U.S. Department of Commerce Bureau of the Census, "English Language Proficiency Study (ELPS), 1982," (Inter-university Consortium for Political and Social Research 1988).
27. Paul Siegel, Elizabeth Martin, and Rosalind Bruno, "Language Use and Linguistic Isolation: Historical Data and Methodological Issues" (Washington: U.S. Census Bureau, 2001).
28. Because home language is a self-reported write-in response, the level of linguistic detail varies. Some respondents report Mandarin or Cantonese as their home language, while others use the more general "Chinese." The Census Bureau tabulates these separately in the microdata files used in this report.
29. Research shows that refugees, compared to migrants motivated by employment or family reunification, have the lowest levels of destination language proficiency. See Barry R. Chiswick, and Paul W. Miller, "Language Skills and Immigrant Adjustment: The Role of Immigration Policy." In Deborah A. Cobb-Clark and Siew-Ean Khoo, eds., Public Policy and Immigrant Settlement. (Cheltenham, United Kingdom: Edward Elgar

Publishing, 2006).; Barry R. Chiswick, and Paul W. Miller, *The Economics of Language: International Analyses* (London: Routledge, 2007)

30. Marc C. Rosenblum, Randy Capps, and Serena Yi-Ying Lin, "Earned Legalization: Effects of Proposed Requirements on Unauthorized Men, Women, and Children" (Washington: Migration Policy Institute, 2011). The authors used Level 4 of the National Reporting System (NRS) scale to calculate this estimate. While there is no precise way to match NRS levels to the self-reported English ability from Census data, it is likely that many individuals who would test at an NRS Level 4 would still be considered LEP by Census standards.
31. The data analyzed in this report are for residents living in the 50 states and the District of Columbia. Residents of Puerto Rico are not included, but people born in Puerto Rico who now reside in the United States (1.6 million including all ages) are included in this analysis.
32. Rumbaut and Massey, "Immigration and Language Diversity in the United States."; Brigitte S. Waldorf and others, "The Role of Human Capital in Language Acquisition among Immigrants in U.S. Metropolitan Areas," *Regional Science Policy & Practice* 2 (1) (2010): 39-49
33. Myers and Pitkin, "Assimilation Today."
34. Ibid.
35. Rumbaut and Massey also found that educational attainment is a key determinant of English proficiency in the U.S. Rumbaut and Massey, "Immigration and Language Diversity in the United States."
36. Elizabeth Dwoskin, "Why Americans Won't Do Dirty Jobs." *Bloomberg Businessweek*, 2011.; Michael A. Clemens, and Lant Pritchett, "Temporary Work Visas: A Four-Way Win for the Middle Class, Low-Skill Workers, Border Security, and Migrants" (Washington: Center for Global Development, 2013).; Gopal A. Singh, and Sue C. Lin, "Marked Ethnic, Nativity, and Socioeconomic Disparities in Disability and Health Insurance among U.S. Children and Adults: The 2008–2010 American Community Survey," *BioMed Research International* (2013)
37. Saiz and Zoido, for example, report a 2-3% wage premium for college graduates in the U.S. who can speak a second language. A 2005 study of registered nurses found that Spanish-speaking RNs earned 5% more than their monolingual colleagues on average, but that the wage premium fell as the Spanish-speaking population in the area grew, suggesting that the larger supply of Spanish-speakers and translators in those areas decreased the wage premium. Using data from 1992, Fry and Lowell found that any wage premium for bilingualism disappeared when educational attainment and visible characteristics of employees were controlled for. See Albert Saiz, and Elena Zoido, "Listening to What the World Says: Bilingualism and Earnings in the United States," *Review of Economics and Statistics* 87 (3) (2005): 523-538 David E. Kalist, "Registered Nurses and the Value of Bilingualism," *Industrial and Labor Relations Review* 59 (1) (2005): 101-118; Richard Fry, and B. Lindsay Lowell, "The Value of Bilingualism in the U.S. Labor Market," *Industrial and Labor Relations Review* 57 (1) (2003): 128-140.
38. Vivek Wadhwa and others, "Skilled Immigration and Economic Growth," *Applied Research in Economic Development* 5 (1) (2008): 6-14; Fry and Lowell, "The Value of Bilingualism."
39. Mark Glassman, "Correlations: Pay and Payrolls." *Bloomberg Businessweek*, April 21-27, 2014, 17.
40. Audrey Singer, "The Rise of Immigrant Gateways" (Washington: Brookings Institution, 2004).
41. Metro areas whose immigrant population doubled between 2000 and 2010 and had lower than 5 percent LEP in 2012 are Scranton, Little Rock, Indianapolis, Birmingham, Nashville, Louisville, Knoxville, and Jackson. Cape Coral also doubled its immigrant population in the 2000s but had a 2012 LEP concentration of 11 percent. Jackson, Knoxville, and Little Rock are not included in the rest of this report because the sample size of working-age LEP adults there was too small (i.e. lower than 100 unweighted cases). For more on foreign-born population change metropolitan areas, see Audrey Singer and Jill H. Wilson, "Immigrants in 2010Metropolitan America: A Decade of Change." (Washington: Brookings Institution, 2011).
42. Ryan Holeywell, "How Language Fits into the Immigration Issue." *Governing*, January, 2012.
43. For more information on Executive Order 13166 see **http://www.lep.gov/faqs/faqs.html.**
44. See Audrey Singer and Jill H. Wilson, "From 'There' to 'Here': Refugee Resettlement in Metropolitan America " (Washington: Brookings Institution, 2006). for more about refugee resettlement patterns in U.S. metropolitan areas, especially the concentration in smaller metro areas such as those in upstate New York and the Rust Belt.
45. Not only are the languages diverse across metro

areas, but also within metro areas. Providence and Lancaster are the only metro areas in which one language accounts for a majority of LEP Indo-European speakers; 69 percent speak Portuguese in Providence, and 51 percent speak Pennsylvania Dutch in Lancaster.

46. Due to small sample sizes, data for LEP speakers of "other" languages are available for only 62 metro areas.
47. Lazear (1999) found that the likelihood that an immigrant would learn English was inversely related to the proportion of the local population that spoke his or her language. Later studies have resulted in similar findings. Building off Lazear's work, a 2010 study of Mexican and Chinese immigrants in U.S. metropolitan areas by Waldorf and others found that those who settled in places with a large number of co-ethnics were less likely to be proficient in English. See Edward P. Lazear, "Culture and Language," *Journal of Political Economy* 107 (S6) (1999): S95-S126 and Waldorf and others, "Role of Human Capital." See also Kristen E. Espinosa and Douglas S. Massey, "Determinants of English Proficiency among Mexican Migrants to the United States," *International Migration Review* 31 (1) (1997): 28-50 and Raymond J. G. M. Florax, Thomas de Graaff, and Brigitte S. Waldorf, "A Spatial Economic Perspective on Language Acquisition: Segregation, Networking, and Assimilation of Immigrants," *Environment and Planning A* 37 (10) (2005): 1877-1897
48. In two metro areas with relatively small LEP populations—Albany and Pittsburgh—there is not a statistically significant difference between LEP and non-LEP median earnings.
49. This analysis does not include Des Moines as an individual metro area due to small sample size, but includes Des Moines in the 89-metro rate.
50. Immigration Task Force, "Immigration: America's Demographic Edge" (Washington: Bipartisan Policy Center, 2014).
51. Heide Spruck Wrigley and others, "The Language of Opportunity: Expanding Employment Prospects for Adults with Limited English Skills" (Washington: The Center for Law and Social Policy and the National Adult Education Professional Development Consortium, 2003).
52. Pew Charitable Trusts, "Immigration and Legalization: Roles and Responsibilities of States and Localities" (Washington: 2014).
53. Donald Kerwin, and Laureen Laglagaron, "Structuring and Implementing an Immigrant Legalization Program: Registration as the First Step" (Washington: Migration Policy Institute, 2010).
54. Foster and McLendon. "Sinking or Swimming."
55. National Skills Coalition, "Workforce Investment Act Policy Recommendations" (Washington: 2012).
56. A 2009 Migration Policy Institute report similarly recommends that the funding formula to states take into account the LEP population with a high school diploma, as well as give greater weight to the population without a high school diploma who require both basic education and ESOL services. That report used 2005-2007 ACS data and found that 52 percent of LEP adults age 16 and over (11.2 million people) had a high school diploma. The numbers in the present analysis differ in that the data are from 2012 and are limited to those aged 25-64. See Randy Capps and others, "Taking Limited English Proficient Adults into Account in the Federal Adult Education Funding Formula" (Washington: Migration Policy Institute, 2009).
57. The Workforce Innovation and Opportunity Act (WIOA) was enacted in July, 2014; WIOA, a replacement for WIA, requires unified state plans and consolidates the core and intensive service tiers into one, somewhat easing the way for LEP adults to access literacy services, particularly as they relate to employability.
58. "State Profiles of the Adult Education Target Population," available at **http://www2.ed.gov/about/offices/list/ovae/pi/AdultEd/state-profiles.html** (June 2014).
59. Mac Taylor, "Restructuring California's Adult Education System" (Sacramento: California Legislative Analyst's Office, 2012).
60. Colorado has met its 25 percent nonfederal funding contribution requirement through local adult education programs. In Colorado, local programs that receive federal grants are required to match a portion of the funding with nonfederal funds. The state then uses these local matches to fulfill its required contribution for WIA.
61. Migration Policy Institute, "Press Release: McDonald's Innovative English Under the Arches Program Honored as an Exceptional Immigrant Integration Initiative" (Washington: 2010).
62. Institute for Work and the Economy and DTI Associates, Inc. "Workplace Education Program Profiles in Adult Education" (2003).
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64. "Literacy Coalitions," available at **www.literacypowerline.com/literacy-coalitions/** (2014 June).
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66. For more information on Executive Order 13166 see **http://www.lep.gov/faqs/faqs.html**.
67. Barbara Tondre-El Zorkani, "Charting a Course: Responding to the Industry-Related Adult Basic Education Needs of the Texas Workforce Handbook Two" (Texas Center for the Advancement of Literacy and Learning, 2006).
68. Matthew Zeidenberg, Sung-Woo Cho, and Davis Jenkins, "CCRC Working Paper No. 20: Washington State's Integrated Basic Education and Skills Training Program (I-BEST): New Evidence of Effectiveness" (New York: Community College Research Center, Columbia University, 2010).
69. Julie Strawn, "Farther, Faster: Six Promising Programs Show How Career Pathway Bridges Help Basic Skills Students Earn Credentials that Matter" (Washington: Center for Law and Social Policy, 2011).
70. Ibid.
71. For more examples of programs and partnerships that help immigrants with various levels of education better connect with and advance in the U.S. labor market, see Audrey Singer, "Investing in the Human Capital of Immigrants, Strengthening Regional Economies" (Washington: Brookings Institution, 2012).
72. "About English Health Train," available at welcomebackinitiative.org/englishhealthtrain.org/about/ (June 2014).
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74. The Parthenon Group, "Innovation in ESL Technology: Mobile Learning Technology" (The Gates Foundation, 2008).
75. "Mobile Technology Fact Sheet," available at **www.pewinternet.org/fact-sheets/mobile-technology-fact-sheet/** (June 2014).
76. "Teach Literacy by Text Message. Really," available at **http://blogs.worldbank.org/impactevaluations/teach-literacy-text-message-really** (July 2014).

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Acknowledgments

The author would like to thank individuals who provided advice and suggestions on drafts of this paper: Audrey Singer, Alan Berube, Martha Ross, Jonathan Rothwell, Neil Ruiz, Nicole Prchal Svajlenka, Julia Gelatt, Flavia Jimenez, and Heide Wrigley. Nicole Prchal Svajlenka, Joanne Zalatoris, Hayley Brown, and Kelly Bies supplied important research assistance, and David Jackson edited the manuscript.

The Metropolitan Policy Program would also like to thank the John D. and Catherine T. MacArthur Foundation, the George Gund Foundation, and the Charles Stewart Mott Foundation for general support for the program's research and policy efforts. We also thank the Metropolitan Leadership Council, a network of individual, corporate, and philanthropic investors that provides us financial support but, more important, a true intellectual and strategic partnership.

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