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The Geography of the New Teacher Pipeline

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Introduction

Research has shown that teachers significantly contribute to the success of students and schools (see, e.g, Rivkin, Hanushek, & Kain, 2005). As a result, a great deal of attention is being paid to understanding how to attract, allocate, and retain high-quality educators. Of particular concern is the equitable distribution of high-quality educators, as a number of studies show that teachers are sorted across schools and districts in a way that significantly disadvantages urban schools and schools with higher proportions of non-White, low-income, and low-performing students (see, e.g., DeAngelis, White, & Presley, 2010; Lankford, Loeb, & Wyckoff, 2002; Loeb, Kalogrides, & Horng, 2010). This is echoed in recent policy developments, particularly the U.S. Department of Education's "Excellent Educators for All," 50-state teacher equity initiative.[1]

Recent studies focusing on the spatial geography of teacher labor markets in New York State (Boyd, Lankford, Loeb, & Wyckoff, 2005) and nationally (Reininger, 2012) demonstrate that inequities in teacher distribution stem largely from the initial match of teachers to their first teaching assignment. Specifically, these studies show that teachers appear to have strong preferences for working in schools that are in close proximity to where they grew up or in settings (e.g., urban, suburban) similar to that of the K-12 schools they attended. For example, Boyd et al. (2005) found that 61% of first-year public school teachers in New York State worked in schools within 15 miles of their hometown and 85% worked within 40 miles. Similarly, Engel, Jacob, and Curran (2014) found that teachers were 40% less likely to apply to a school for every three mile increment further the school was from their home. Reininger (2012) confirmed these results for teachers using national data and also showed that geographic size of new teacher labor markets tend to be more limited than those of similarly-aged college graduates in non-teaching occupations. Martin (2000) notes that workers across many non-education occupations also tend to demonstrate a strong attachment to place, thereby creating geographically limited, segmented labor markets.

Furthermore, Boyd et al. (2005) and Reininger (2012) found that urban teachers, non-White teachers, and teachers with weaker academic qualifications tend to be even less mobile than their non-urban, White, and more academically skilled peers. Similar studies from other professions (Eliasson, Lindgren, & Westerlund, 2003) have also found differences by education level, with more educated workers showing more geographic mobility than less educated workers. While studies of other occupations have shown that gender is also a contributing factor to the geographic size of labor markets (with women having somewhat less mobility relative to men; Reininger, 2012), neither Boyd et al. (2005) nor Reininger (2012) found any evidence of gender differences in the geographic size of the labor market for teachers. Some studies from non-teaching professions have also reported differences by age, with younger workers showing more geographic mobility than older workers (Eliasson et al., 2003) and that individuals from lower socioeconomic groups experience geographically smaller labor markets and are more likely to switch employment within the same market instead of moving (Martin, 2000; Reininger, 2012).

[1] See http://www.ed.gov/news/press-releases/new-initiative-provide-all-students-access-great-educators

Cannata (2010) and Engel et al. (2014) find evidence that new teachers tend to choose schools with high proportions of students sharing their own race or socioeconomic background. Other research has shown that more academically skilled teachers tend to choose higher performing schools with smaller proportions of minority students (DeAngelis et al., 2010; Reichardt, 2000; Scafidi, Sjoquist, & Stinebrickner, 2007). Consequently, teachers' preferences tend to disadvantage urban schools, which must depend on non-urban school graduates to help fill their demand for teachers. This potentially results in a cycle in which better academically qualified teachers are more likely to work in schools that are already performing at a relatively high level, whereas underperforming schools tend to attract teachers who are less academically qualified.

In this study, we build on Boyd et al.'s (2005) and Reininger's (2012) research by descriptively exploring the association between new teacher characteristics and the distance between their home area (defined throughout this paper as where one graduated from high school) and the location of their first teaching employment. We consider the distance from one's home area to the location of their first teaching assignment to be an indicator of the geographic size of new teacher labor markets. Shorter distances are reflective of geographically smaller labor markets, whereas longer distances are reflective of geographically larger labor markets. We explore four primary research questions:

1. Is there regional variation in the new teacher pipeline in Illinois?
2. What does the geographic scope of new teacher labor markets look like in Illinois?
3. Does the geographic scope of new teacher labor markets differ by the teachers' demographic and academic characteristics?
4. What are the relationships between the demographics of teachers and the schools they attended and the schools where they initially teach?

This study builds on the existing spatial geography studies of teacher labor markets in two ways. First, we utilize a more recent, state-level dataset with complete information on both high school and baccalaureate college attendance to examine the spatial geography of the labor market for new teachers. Second, we expand beyond the geographic setting to determine how similar (or not) the characteristics of teachers' first schools are to those of the high schools from which they graduated. Studies show that schools across settings in the U.S., suburban schools in particular, are becoming increasingly diverse in terms of students' racial/ethnic, socioeconomic, and language characteristics (Aud, Fox, & KewalRamani, 2010; Frankenberg, 2012). To the extent that teachers' preferences for similar settings reflect their preferences for serving students with familiar characteristics, we consider the extent to which changing student demographics are affecting new teachers across settings, including those who started their careers in what they perceived to be familiar ones, such as teaching within the same district as their high school or a feeder school district.

Methodology

This study builds on a prior IERC study (White, DeAngelis, & Lichtenberger, 2013), which connects data from the Illinois State Board of Education (ISBE), the Illinois Board of Higher Education (IBHE), and the National Student Clearinghouse (NSC) for two cohorts of Illinois students, the public high school classes of 2002 and 2003 (N= 225,196). This unique, longitudinal state database tracks students through five distinct stages of the new teacher supply pipeline: college entry, enrollment in a four-year college, completion of a bachelor's degree, teacher certification, and employment as a teacher in an Illinois public school (see Figure 1).[2]

Figure 1. Illustrates the conceptual model of the stages in the new Illinois teacher pipeline. Adapted from *The student has become the teacher: Tracking the racial diversity and academic composition of the teacher supply pipeline* (IERC 2013-3), by White, B. R., DeAngelis, K. J., and Lichtenberger, E. J., 2013, Illinois Education Research Council at Southern Illinois University Edwardsville.

To address the first research question concerning regional variation in the new teacher pipeline, we track changes in the proportion of students from each geographic region of the state who progress to each stage in this pipeline. To address the remaining research questions regarding the role that geography plays in where new teachers obtain their first teaching employment, we focus our analyses on the 7,209 new teachers who emerged from the two Illinois high school cohorts.

Click to read a Summary of "The Student Becomes the Teacher"

Our longitudinal dataset allows us to identify the high school from which each teacher graduated (a proxy for his or her hometown), the college from which he or she earned a bachelor's degree, and the Illinois public school at which he or she began his or her teaching career. To explore the geographic size of new teacher labor markets, latitude and longitude coordinates for each teacher's high school and initial teaching assignment were obtained from the Common Core of Data maintained by the U.S. Department of Education's National Center for Education Statistics.[3] Geographic coordinates for each bachelor's degree-

[2] See White, DeAngelis, & Lichtenberger, 2013 for further details on the data and methodologies utilized in this study.

[3] Not all new teachers could be assigned to a single school location, as some held itinerate positions within a school district (serving multiple schools), and some new teachers served schools across an entire regional office of education. For these individuals, we used the geographic coordinates of the main administrative building for the educational entity—school district or regional office of education.

granting institution were obtained from the Integrated Postsecondary Education Data System, also maintained by U.S. Department of Education's National Center for Education Statistics. This set of coordinates allowed us to calculate distances between three points for each new teacher:

- high school to bachelor's granting institution;
- bachelor's granting institution to first teaching assignment; and
- high school to first teaching assignment.

As a measure of academic qualifications in this study, we use each individual's ACT composite score that was recorded as part of the State-required 11th grade Prairie State Achievement Examination (PSAE). For analytic purposes, we break the ACT distribution into thirds with those scoring 22 or above in the top third, those scoring 18 to 21 (inclusive) in the middle third, and those scoring 17 or below in the bottom third (see White et al., 2013 for more information). For race/ethnicity, we use separate racial/ethnic categories where possible, but collapsed categories (i.e., Minority) when needed due to small sample sizes. Data on college competitiveness were derived from Barron's (2003). As in other IERC publications (see, e.g., Smalley, Lichtenberger, & Brown, 2010), this study divides the state of Illinois into seven distinct geographic regions based, in part, on the Regional Offices of Education for which the corresponding high school was located. The seven geographic regions used in this study—Chicago, Northeast, Northwest, West Central, East Central, Southwest, and Southeast—are displayed in Figure 2.

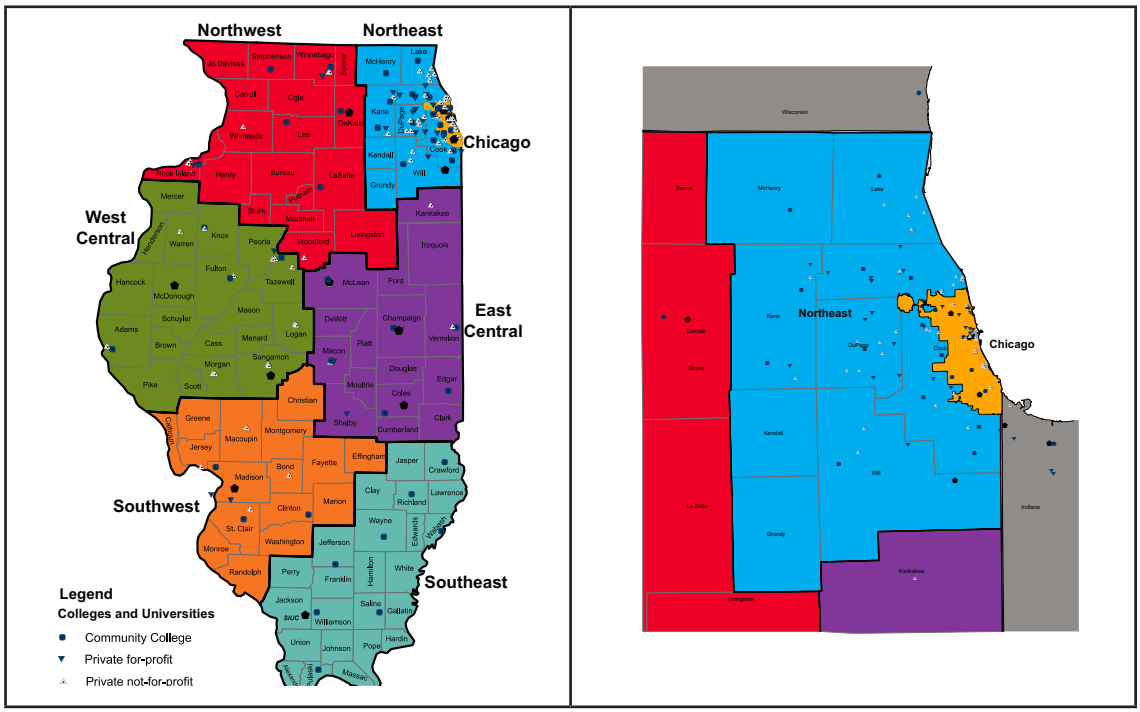

Figure 2. Maps indicating the seven geographic regions in Illinois, along with all postsecondary institutions by type, with Chicagoland area detail (adapted from *A longitudinal study of the Illinois high school class of 2002: A six-year analysis of postsecondary enrollment and completion* (IERC 2010-3), by Smalley, D., Lichtenberger, E.J., and Brown, K.S., 2000, Illinois Education Research Council at Southern Illinois University Edwardsville).

The data used in this study provides some advantages over the datasets used in existing studies. Our dataset contains 7,209 first-time teachers, a large enough sample to examine differences by teacher characteristics, namely race/ethnicity and academic qualifications, and among more localized geographic areas within Illinois. Further, all of the teachers started teaching in an Illinois public school between 2006 and 2012, so the study provides a needed update to existing research on the spatial geography of new teacher labor markets. In addition, complete location information for high school and baccalaureate college allows us to fully consider the influence of each location on teachers' initial location of employment.[4] Because the teachers in our dataset represent the population of first-time public school teachers from the 2002 and 2003 cohorts of Illinois high school students, inferential tests of differences are not necessary (Evans & Rosenthal, 2010; Wehrly, 2010). Thus, we use descriptive statistics to address the research questions. For the sake of simplicity and due to the fact that there were no substantial trend differences between the two cohorts involved in this study, we show combined statistics for the cohorts throughout this report.

[4] In contrast, Boyd et al. (2005) were missing hometown information for 41% of the individuals in their dataset and used college attended instead for those cases.

Results

In the first section of results, we examine the progress of *all* 225,196 Illinois students from the 2002 and 2003 high school cohorts through the new teacher pipeline by geographic region in Illinois. In the remainder of the paper (sections II through V of the results), we *focus solely on the 7,209 teachers* who emerged from these cohorts. Section two describes the distances these teachers travelled between their high school, college, and first teaching employment, and associations between these distances and other teacher and school characteristics. The next section of results describes the flow of teachers between their their high school, college, and first teaching employment. There, we move beyond the distance travelled to consider more deeply the direction and patterns of teachers movement among regions in Illinois. The final section considers the relationship between teacher demographics, the characteristics of the high schools they attended, and the characteristics of the schools where they entered teaching.

I. Illinois' New Teacher Pipeline by Region

Because college enrollment and completion patterns in Illinois differ widely by geographic region (Lichtenberger & Dietrich, 2012; Smalley et al., 2010) and because research shows that many teachers obtain positions in close proximity to where they attended high school (Boyd et al., 2005), we begin our study by investigating the regional nature of the teacher pipeline described in Figure 3 above. Table 1 provides descriptive statistics for all high school graduates from these cohorts by region. Note that students from the Northeast region (suburban Chicago) made up almost half (49.0%) of all high schoolers at the onset of this study. Demographically, students in the Northwest, East Central, West Central, Southeast, and Southwest regions were each more than 80% White, whereas the Northeast region had about 35% non-White students, led by Latinos at 10.1% and followed closely by African Americans and Asians at 8.5% and 6.3%, respectively. Students from Chicago, on the other hand, were predominantly non-White, with 44.9% African American, 30.7% Latino, and 8.3% White. Students in the Northeast region were strongest academically, with 44.3% of students scoring in the top ACT third and only 29.5% scoring in the ACT bottom third, whereas students from Chicago had the lowest ACT scores, with only 13.0% in the top third and 65.6% in the bottom third. Across the remaining regions of the state, ACT scores were somewhat more equally distributed between the top, middle, and bottom thirds, with roughly 30-40% of students in each region in each group. Among those emanating from regions outside of Chicago and the surrounding suburbs (Northeast region), students from the Southeast region were somewhat weaker academically with proportionally more students from the bottom third and proportionally fewer from the top third in terms of performance on the ACT. The vast majority (81.7%) of Chicago students were racial/ethnic minorities from the bottom two-thirds of the ACT distribution, but Chicago also had the highest concentration (9.5%) of non-White students from the top academic tier, with the Northeast region following closely behind (8.1%). The remaining regions were each composed of roughly 50-60% White students from the bottom two-thirds of the ACT distribution and about 30-35% White students from the top third of ACT, 10% non-White students from the bottom two-thirds, and less than 3% racial/ethnic minority students from the top third of ACT.

Table 1. *Characteristics of the High School Students, by Region*

	Overall	Chicago	Northeast (non-CPS)	Northwest	East Central	West Central	Southeast	Southwest
N	225,196	31,339	110,324	21,068	17,098	17,227	9,166	18,950
% Overall	100.0	13.9	49.0	9.4	7.6	7.7	4.1	8.4
Race								
% African American	12.5	44.9	8.5	3.6	5.8	5.9	3.9	8.7
% Asian American	4.3	5.9	6.3	1.4	1.3	1.0	1.1	1
% Latino	10.2	30.7	10.1	5.4	2.2	1.8	1.5	1.7
% Multi-racial	3.5	4.1	4.2	2.7	2.7	2.3	2.0	2.2
% Native American	0.5	0.5	0.4	0.6	0.5	0.7	0.6	0.8
% White	63.7	8.3	63.9	82.8	84.1	85.6	89.0	81.9
% Missing	5.2	5.7	6.7	3.5	3.4	2.7	1.9	3.6
ACT Composite								
% Top 1/3 (ACT ≥ 22)	36.4	13.0	44.3	34.8	38.1	35.2	29.2	33.8
% Middle 1/3	26.8	21.4	26.2	29.6	29.9	29.4	30.1	29.1
% Bottom 1/3 (ACT ≤ 17)	36.8	65.6	29.5	35.6	32.0	35.5	40.7	37.2
ACT & Race*								
% Minority, ACT Top 1/3	6.0	9.5	8.1	2.4	2.5	2.0	1.4	2.1
% White, ACT Top 1/3	30.7	3.4	36.8	32.8	35.8	33.6	27.9	32.0
% Minority, ACT Bottom 2/3	26.8	81.7	23.4	11.9	10.5	10.1	7.8	12.9
% White, ACT Bottom 2/3	36.5	5.4	31.7	53.0	51.2	54.4	62.8	53.0

* Includes only those with valid (i.e., non-missing) race and ACT data.

Next, we explore differential rates of progress through the new teacher pipeline by region. As shown in Table 2, students from Chicago enrolled in college at lower rates relative to students from the other regions. This was not unexpected given the region's overall academic profile, as displayed in Table 1. Relatively fewer students from the Southeast region took the four-year pathway (conditional upon enrollment in any college), whereas substantially more students from the Northeast region enrolled in a four-year college (again, conditional upon enrollment in any college). Considering only those students who enrolled at four-year institutions, there was significant variation in bachelor's degree completion rates between these regions, ranging from 51.5% for students from the Northeast (non-Chicago) region to 26.5% for students who attended Chicago high schools.[5] There was also some regional variation in the proportions of baccalaureate degree recipients who earned teaching certification, with a high of 29.9% in the Southeast and a low of 16.1% in Chicago. The Chicago portion of the pipeline is even further narrowed in the final stage, where its students

Table 2. *Conditional Rates of Progress Between Each Stage in the Pipeline, by Student's High School Region*

Geographic Region	% of High Schoolers Enrolling in Any College	% of College-Attendees Enrolling in 4-Year College	% of 4-Year College-Attendees Completing a Bachelor's	% of Bachelor's Recipients Certified to Teach in IPS	% of Certificants Becoming a Teacher in IPS
Chicago	61.3	63.6	26.5	16.1	38.4
Northeast (non-CPS)	78.2	74.1	51.5	20.6	47.8
Northwest	71.5	60.5	40.0	24.1	46.6
East Central	75.0	61.9	41.0	22.6	41.9
West Central	73.0	64.2	42.6	23.2	43.4
Southeast	78.5	54.2	32.6	29.9	40.1
Southwest	75.2	61.6	37.4	24.3	40.2

[5] These regional college-going and completion phenomena in Illinois have been discussed in considerable depth elsewhere, Lichtenberger & Dietrich (2012) and Smalley et al. (2010).

experienced the lowest transition rate from certification to teaching in Illinois public schools (IPS). Only 38.4% of the certificants from Chicago transitioned to become an Illinois public school teacher, compared to more than 40% in all other regions.

Figure 3 shows how the regional differences in rates of progress change the composition of the teacher pipeline, with a particular emphasis on students from the Northeast region and Chicago at each stage. As indicated in Figure 3, at the first stage, 49.0% of students were from high schools in the Northeast region and 13.9% were from Chicago Public Schools (CPS). At each of the next three stages in the pipeline (enrollment at any college, enrollment at a four-year college, and completion of a bachelor's degree), the proportion of students from the Northeast region increased while the proportion from CPS declined, such that, by the end of the bachelor's completion stage, 60.2% of baccalaureate recipients originated from the Northeast region compared to only 6.9% from Chicago. This trend stopped at the certification stage, however, where both regions were somewhat underrepresented among teacher certificants—57.7% of certificants were from the Northeast region compared to 5.2% who attended high school in Chicago. Again this was due to differential regional rates of progress between the bachelor's degree and teacher certification stages as described in Table 2. Nonetheless, by the time these students arrived at the employment stage, 60.6% of the new teacher supply pipeline was composed of students who were initially from high schools in the Northeast region, compared to only 4.4% who attended Chicago high schools. CPS produced the fewest number of new teachers with the exception of the Southeast region (4.4% to 3.9%) despite that fact that Chicago had the second greatest number of high school graduates by a considerable margin (at least 10,000 high school graduates). Many of the

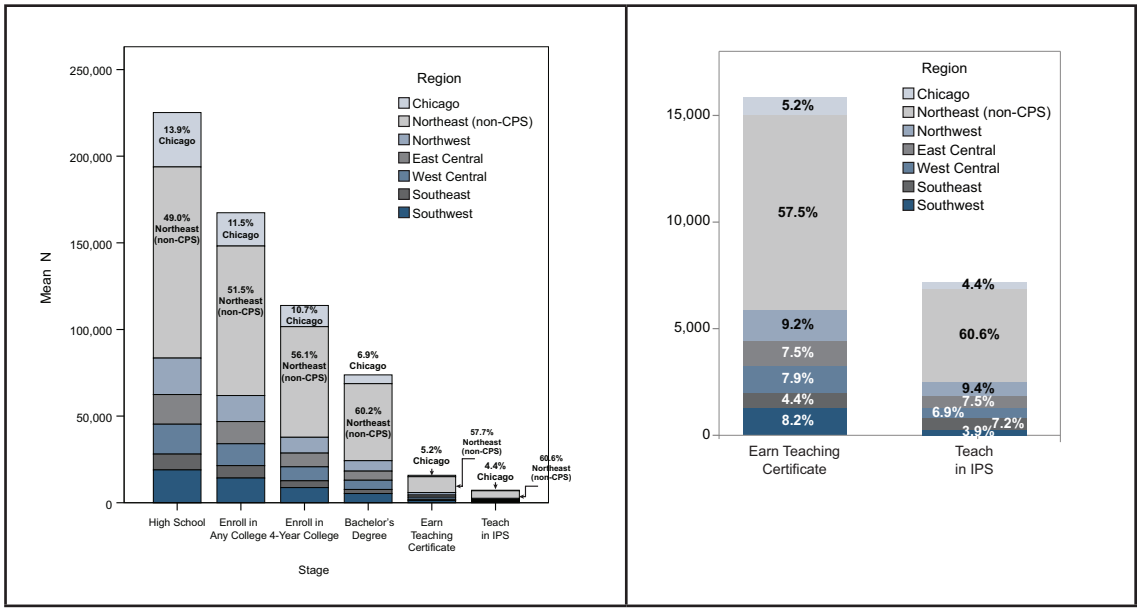

Figure 3. Illustrates the changes in the composition at each stage of the new teacher pipeline for each region based on high school location and provides a detailed graphic emphasizing the last two stages.

smaller downstate regions produced more teachers in actual numbers and proportionally relative to CPS. Therefore, to a certain extent, the regional nature of the new teacher pipeline can largely be explained by the disproportional loss of students emanating from Chicago throughout the pipeline, and the disproportional increase of students from the Northeast region at all stages with the exception of one (certification).

As depicted in Table 3, we also found substantial regional differences in the racial/ethnic and academic background characteristics of the new teachers from these cohorts. First, note that there were too few teachers to display (<10 individuals) from many of the race-region combinations, indicating a dearth of newly minted non-White teachers across many areas of the state. Next, it is clear that White students constituted large swaths of the pipeline throughout most of the state, constituting at least 84% of those who became teachers from all regions except Chicago. Teachers who started in Chicago high schools were considerably more diverse than teachers who started in other regions of the state, but still not representative of the racial/ethnic demographics of Chicago high school students in these cohorts as a whole. That is, from the original regional cohort that was 8.3% White, 44.9% African American, and 30.7% Latino (see Table 1), the portion of the pipeline flowing from Chicago high schools produced a group of new teachers that was 16.3% White, 30.4% African American, and 38.9% Latino, over-representing Whites and Latinos, while substantially under-representing African Americans.

When academic background is taken into consideration, we find that between a half and two-thirds of the teachers emerging from each region except Chicago came from the top ACT third, and no more than 11.1% from any region except Chicago came from the bottom ACT third. For teachers emerging from Chicago, on the other hand, about half (47.0%) were from the middle third of the ACT distribution and just over a third (36.1%) were from the top third by ACT. It should be noted that the teachers emerging from CPS had

Table 3. *Racial/Ethnic and Academic Composition of Those Who Became Teachers, by Student's High School Region*

Background Characteristics	Overall	CPS	Northeast (not CPS)	Northwest	East Central	West Central	Southeast	Southwest
	7,209	319	4,371	678	498	540	282	521
Race/Ethnicity (%)								
% African American	3.3	30.4	2.5	—	2.0	2.2	—	—
% Asian American	2.4	7.2	3.1	—	—	—	—	—
% Latino	4.9	38.9	4.5	2.8	—	—	—	—
% Multi-racial	1.9	—	—	—	—	—	—	—
% Native American	0.2	—	—	—	—	—	—	—
% White	84.7	16.3	84.3	92.6	93.2	94.6	98.2	93.9
% Missing	2.6	—	—	—	—	—	—	—
ACT Composite								
% Top 1/3 (ACT ≥ 22)	61.0	36.1	66.0	55.2	60.6	53.5	50.3	56.4
% Middle 1/3	31.3	47.0	27.5	36.4	34.9	37.6	40.1	32.4
% Bottom 1/3 (ACT ≤ 17)	7.6	16.9	6.5	8.4	4.4	8.9	9.6	11.1
Race and ACT*								
% Minority, ACT Top 1/3	5.6	25.2	6.3	2.6	—	1.9	—	2.5
% White, ACT Top 1/3	31.8	10.5	59.4	52.6	58.5	51.9	49.5	53.7
% Minority, ACT Bottom 2/3	7.4	57.8	6.5	3.0	3.3	3.2	—	2.7
% White, ACT Bottom 2/3	55.2	6.5	27.8	41.8	36.4	43.1	49.1	41.1

* Includes only those with valid (i.e., non-missing) race and ACT data.
— Indicates cells with fewer than 10 individuals.

noticeably stronger academic qualifications relative to CPS graduates as a whole (see Table 1), as did the teachers emerging from the other regions.

Examining these cohorts by racial/ethnic and academic categories combined, the bottom section of Table 3 shows that there are some regions with insufficient numbers of minority teachers from these cohorts to report, even after collapsing across all non-White racial/ethnic categories. For all of the regions with the exception of Chicago and the Northeast, White students from the bottom two-thirds by ACT constituted about 40-50% of new teachers, White students from the top ACT third represented 50-60% of new teachers, with only limited representation of minorities regardless of academic preparation (usually less than 5%). Teachers from the Northeast region were somewhat more diverse (compared to teachers from the other regions except Chicago) and stronger academically (relative to the rest of the state). A quarter (25.2%) of the teachers who emerged from Chicago were non-Whites from the top third academically—by far the largest proportion from any of the regions—whereas more than half were racial/ethnic minorities from the bottom two-thirds of the ACT distribution—also, the largest proportion by far of all the regions.

Click to read Supply and Demand for Teachers in Chicago

II. The Distance between High School, College, and First Teaching Position among New Teachers

In the following sections we transition from examining *all 225,196 students from the cohorts* to focus solely on the *7,209 teachers who emerged from these cohorts*. In this section we analyze the distance between teachers' high school, college, and first teaching location and whether teacher characteristics are related to the geographic range of these labor markets. Our analyses confirm previous findings (Boyd et al., 2005; Reininger, 2012) that teachers tend to begin their careers working relatively close to where they attended high school. Of the 7,209 new teachers in the study, nearly half (3,573) were teaching in the same county as the high school from which they graduated and slightly more than one-in-five (1,610) were in the same district or a feeder district as where they graduated high school.[6]

As illustrated in Figure 4, the median distance between a new teacher's high school and their first teaching employment was roughly 13 miles. Roughly two-thirds of new teachers in our study gained employment within 20 miles of the high school from which they graduated, and four in every five new teachers were employed within 30 miles of their high school. The vast majority of new teachers—nearly nine in ten—began their career within 60 miles of their previous high school.

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[6] The state of Illinois has the greatest number of school districts in the country—there were 863 during academic year 2013-2014 (http://nces.ed.gov/surveys/ruraled/TablesHTML/5localedistricts.asp, Illinois State Board of Education, n.d.b.). Some school districts are comprised of both high schools and elementary schools and are known as unit or consolidated districts. Other districts, aptly named high school districts, are comprised of a single high school or multiple high schools. Nested within the high school districts are one or more elementary school districts that 'feed' into the high school district. We considered teaching in the 'same district' as being employed in the district in which they graduated high school, or in one of feeder elementary districts if they were from a high school district.

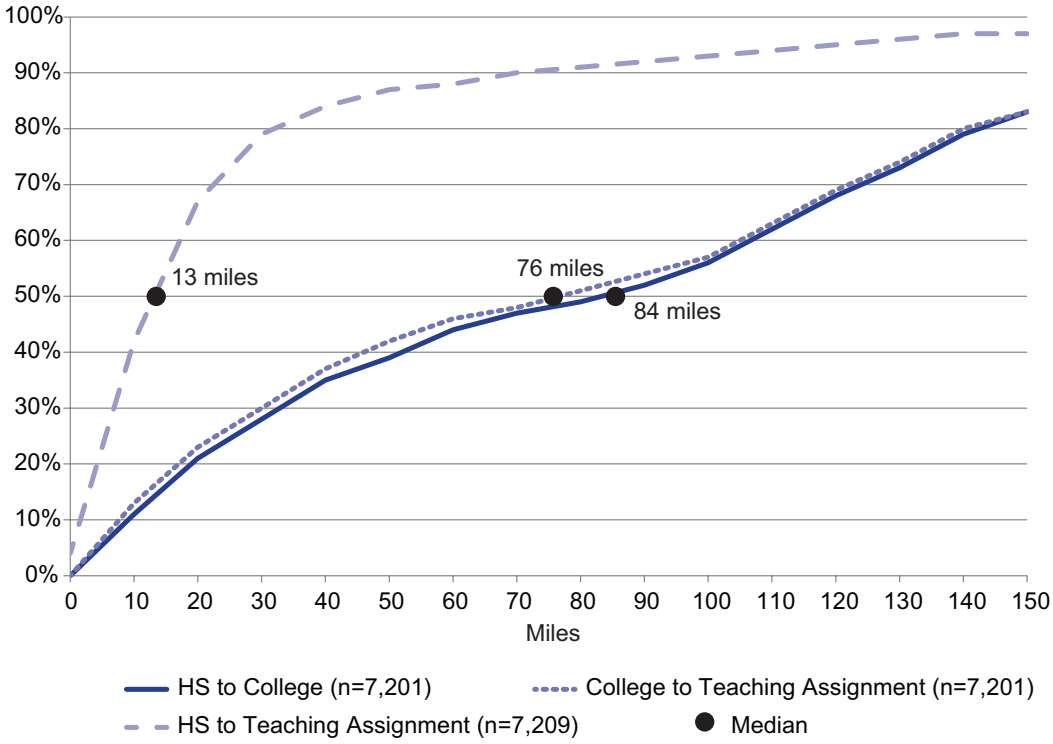


Figure 4. The cumulative proportion of new Illinois teachers attending college within select distances from their high school, obtaining their first teaching assignment with select distances from their college, and obtaining their first teaching assignment with select distances from their graduating high school.

Figure 4 also shows that new teachers in our study tended to start their careers substantially closer to home than to where they attended college. The median distance between a new teacher's high school and their bachelor's granting institution was 84 miles—more than six times the median distance between their high school and their first teaching employment. Similarly, about 80% of new teachers attended college within 140 miles of home, whereas 80% of new teachers began their careers within 30 miles of home. The median distance between one's college and their first teaching employment was 76 miles, or slightly less than the median distance between their high school and where they went to college. This suggests that a small portion of new teachers may also be drawn into a geographic labor market near their college, and is reinforced by recent research showing that about 15% of new teachers performed their student teaching in the same school where they were initially hired (Goldhaber, Kreig, & Theobold, 2014).

Next, we examine whether there is any relationship between teacher characteristics and the geographic size of the labor markets for their initial teaching positions (see Table 4). Similar to Boyd et al. (2005) and Reininger (2012), we find that new teachers with higher ACT scores tended to be more mobile than their counterparts with lower ACT scores. Students from the top third of the ACT distribution travelled, on average, about 3.5 miles further from home for their first teaching position compared to students from the bottom third of the ACT distribution. It is also important to note here that students from the top third of the ACT distribution also tended to travel further for college than students from the bottom third by ACT and the between group differences were substantially larger than what we found for high school to first teaching assignment.

Table 4. *Median Distance in Miles by ACT Category*

ACT	HS to College	HS to First Teaching Assignment	College to First Teaching Assignment
Top 1/3 ≥ 22	99.8	13.6	92.5
Middle 1/3	57.2	11.4	54.9
Bottom 1/3 ≤ 17	40.6	10.2	42.7

Next, we examine the median distances between high school, college, and first teaching assignment across race/ethnicity categories. As shown in Table 5, new Latino teachers were the least mobile in terms of both the distance from their high school to college and their high school to first teaching employment. New African American teachers were among the most mobile in terms of college location (median distance of 93.7 miles), but among the least mobile in terms of the location of their first teaching assignment (median distance of 8.1 miles). New Asian teachers, on the other hand, had the opposite pattern—they were among the least mobile groups in terms of college location (30.7 miles), but among the most mobile in terms of their first teaching employment (13.6 miles). New teachers who were White were among the most mobile race/ethnicity group in terms of both college location (88.7 miles) and first teaching position (13.3 miles). These findings generally confirm those from previous studies (Boyd et al., 2005; Reininger, 2012), indicating that Latino and African American teachers tend to have geographically smaller labor markets than White teachers.

Table 5. *Median Distance in Miles by Race/Ethnicity*

Race/Ethnicity	HS to College	HS to First Teaching Assignment	College to First Teaching Assignment
African American	93.7	8.1	61.5
Asian American	30.7	13.6	25.1
Latino	22.7	6.4	24.1
Multi-Racial	57.2	11.4	54.5
Native American	50.9	15.9	57.6
White	88.7	13.3	81.8
Missing	96.3	8.6	83.4

We also examine the distances between high school, college, and first teaching position by each new teacher's region of origin (that is, where they attended high school). As shown in Table 6, teachers who emanated from Chicago were the most homebound by a considerable degree with regard to all three of the distance measures. New teachers originating from the Northeast region traveled the farthest for college, but on average, still taught fairly close to home (median distance of 11.1 miles). New teachers emanating from the Southwest and Southeast regions had nearly identical distance patterns across all three measures, which suggests the geographic size of the labor markets for new teachers in the southern regions of the state are fairly similar.

Table 6. *Median Distance in Miles by Region of Origin*

HS Region	HS to College	HS to First Teaching Assignment	College to First Teaching Assignment
Chicago	9.2	5.4	10.7
Northeast	108.9	11.1	105.5
Northwest	71.8	20.2	59.7
West Central	52.5	17.6	47.9
East Central	46.3	24.2	52.5
Southwest	41.7	16.6	44.5
Southeast	42.0	16.6	41.7

Because research suggests that teacher characteristics influence the geographic size of labor markets (Reininger, 2012), we also wanted to investigate whether a teacher's prior school context played a role in the geographic scope and whether this potential influence was homogeneous across regions. To do this, we compared labor market sizes for teachers who attended high minority (≥ 75% non-White) high schools to those for teachers who graduated from a lower minority school (<75% non-White) and for teachers who attended high poverty (≥50% free- or reduced price-lunch [FRL]) high schools to those who graduated from lower poverty (<50% FRL) high schools.7 As shown in Figure 5, almost two-thirds (65%) of teachers who graduated from a high-minority high school began teaching in the same school or district from which they graduated, compared to only 20% of teachers who did not graduate from a high-minority high school. As shown in Figure 6, we also find that teachers emanating from high schools with high proportions of economically disadvantaged students tend to have somewhat smaller geographic labor markets than those who graduated from high schools with fewer economically disadvantaged students. Although, the difference shown in Figure 6 is much less pronounced than the difference associated with minority status shown in Figure 5.

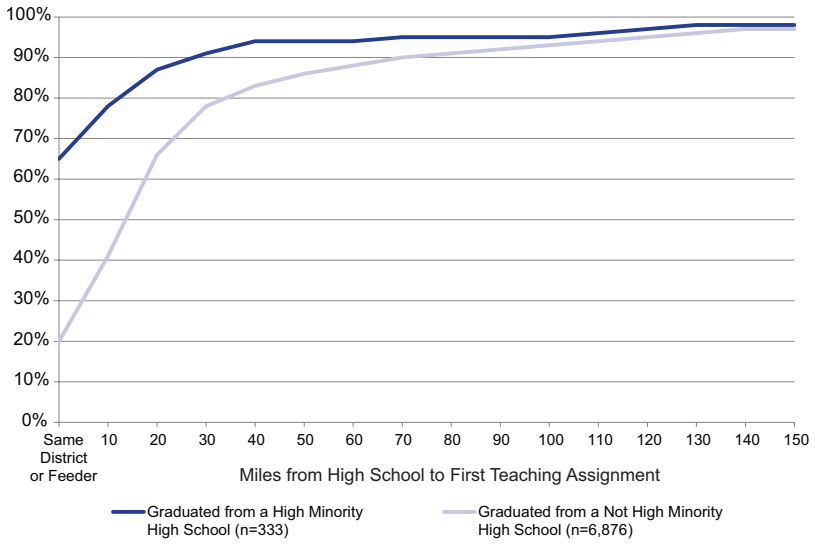


Figure 5. Percentage of new teachers within same district or feeder school district and cumulative proportion for out-of-district teachers within select distances by graduating high school racial composition status.

[7] These designations for "high poverty" and "high minority" schools are borrowed from Reininger (2012).

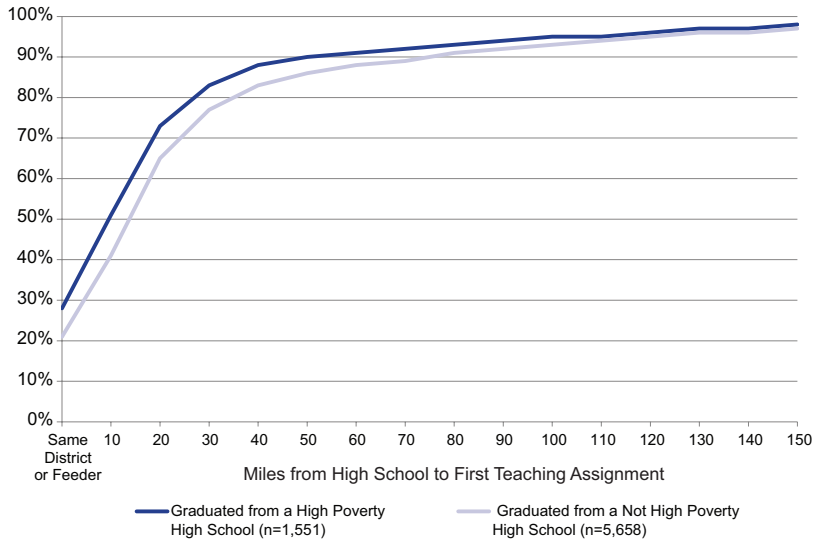


Figure 6. Percentage of new teachers within same district or feeder school district and cumulative proportion for out-of-district teachers within select distances by graduating high school poverty composition status.

To see whether the differences in Figures 5 and 6 were skewed solely by high-minority schools in Chicago, we performed a similar analysis by region. As shown in Figure 7, the within-group difference based on high school context existed primarily for teachers originating from non-Chicago schools, whereas teachers originating from Chicago have much smaller labor markets regardless of the demographics of the school from which they graduated. Therefore, there was a great deal of regional variation in examining high school poverty status and its relationship with the distance between high school and one's first teaching assignment.

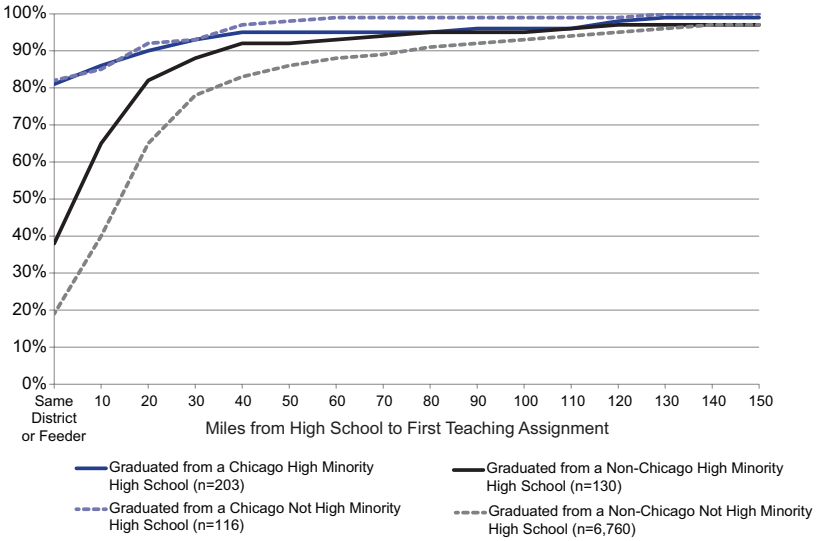


Figure 7. Percentage of new teachers within same district or feeder school district and cumulative proportion for out-of-district teachers within select distances by graduating high school racial composition status and geographic location.

Figure 8 illustrates that, relative to new teachers emanating from other areas of the state, substantially more of the teachers emanating from CPS obtained teaching positions within their high school district, regardless of high school poverty status. Further, the within-region differences based on high school poverty status, demonstrating tighter labor markets for those graduating from high poverty schools, were smaller outside of Chicago than they were for new teachers who graduated from CPS.

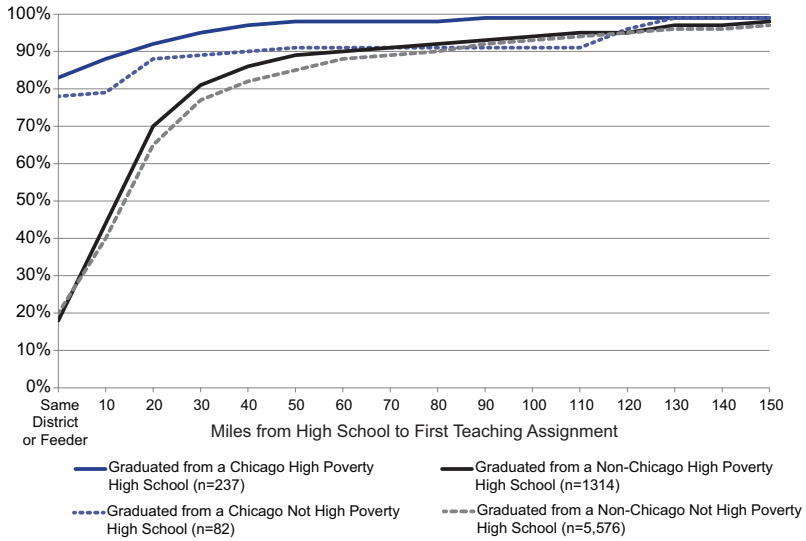
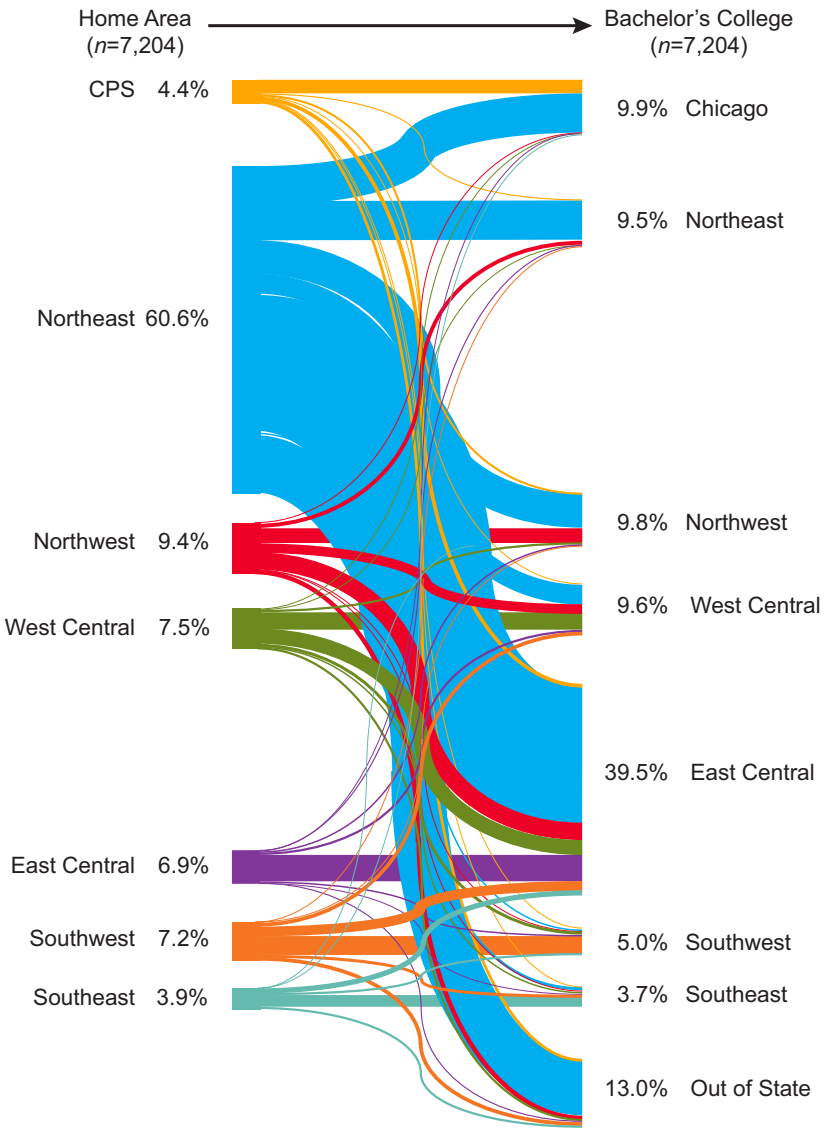


Figure 8. Percentage of new teachers within same district or feeder school district and cumulative proportion for out-of-district teachers within select distances by graduating high school poverty composition status and geographic location.

III. Regional Flow between High School, College, and Initial Teaching Location

Having established how far teachers travel to work and how this differs by teacher and school characteristics, we wanted to examine *where* teachers travel to work. To study this question, we use Sankey diagrams (see Schmidt, 2008) to visually display the flow, or strength of movement, between high school, college, and first teaching regions. Sankey diagrams are helpful in illustrating dominant contributions to an overall flow. In the following Sankey diagrams (Figures 9-11), each geographic region of Illinois (see Figure 2) is color-coded and the width of each line proportionally represents the number of individuals moving sequentially from one region (on the left) to another (on the right) to attend college or obtain a teaching position. As in the previous section, these analyses refer solely to the 7,209 teachers from our dataset, *not* the full cohorts of all students.

A. Flow from High School to College. First, we explore the regional interaction between each teacher's high school (as a proxy for their home area) and the location of their baccalaureate college. As shown in Figure 9, many new teachers earned their bachelor's degrees at colleges located outside of their home region, with 13% of Illinois teachers from these cohorts earning their baccalaureate degrees at an out-of-state institution. However, in terms of college location, teachers from some regions—such as the East Central and



Eric Lichtenberger discusses Figure 9.

Figure 9. The flow or movement of study group members from their region of origin (based on high school location) to the region in which they earned their bachelor's degree.

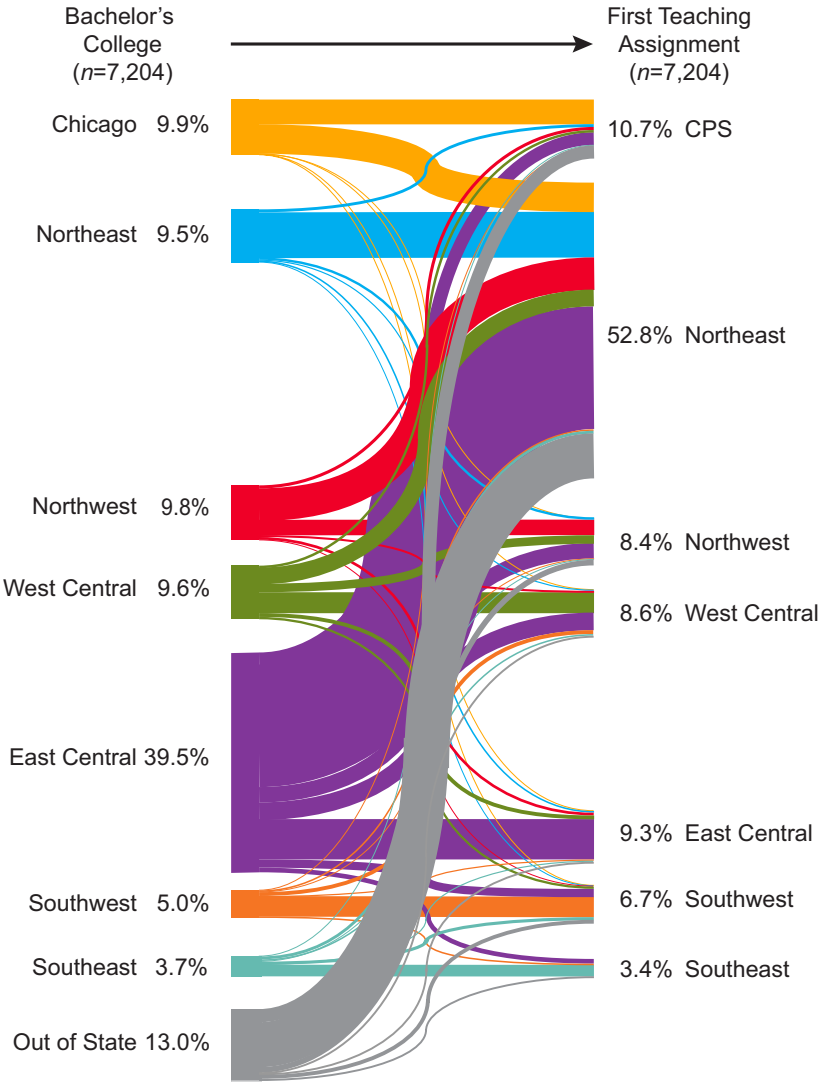
Southeast—demonstrated more homebound tendencies, whereas those from other regions—such as the Northeast and Northwest—showed considerably more movement outside their home region. Whereas three out every five of the new teachers from this study originated in the Northeast region, only 10% graduated from colleges located in that region. Further, new teachers emanating from high schools in the Northeast region constituted a sizable proportion of bachelor's degree recipients within all of the other regions in the state, and in most cases they were the majority (with the exception of the Southeast and Southwest regions). New teachers originally from the Northeast region also constituted the overwhelming majority of out-of-state baccalaureate degree earners in this study.

Figure 9 also shows that nearly two-fifths of Illinois' new teachers from these cohorts attended colleges in the East Central region, even though only about 7% originated from that region. Much of the movement towards the East Central region can be explained by the fact that three of the major producers of teachers in the state—Illinois State University, the University of Illinois at Urbana-Champaign, and Eastern Illinois University—are located in this region. Although most of the new teachers graduating from high schools located in the East Central region attend college in that same region, they only comprise a small proportion of the total number of teachers attending college in the East Central region. The movement towards colleges in the East Central region tended to be strong even for new teachers originating from some of the more homebound regions. For example, even though most teachers originally from the Southwest and Southeast regions remain in their respective regions for college, the second strongest flow is to colleges in the East Central region.

There was limited movement of study group members from high schools located elsewhere to the colleges in the Southeast and Southwest regions. Again, this can be explained in part by the location of higher education institutions within Illinois—as noted in Smalley et al. (2010), only one four-year college, Southern Illinois University Carbondale (SIUC), is located within the Southeast region and the travel distance between SIUC and the state's population centers is relatively large (see Figure 2). The Southwest region is served by slightly more four-year institutions (one public four-year, Southern Illinois University Edwardsville, and three independent colleges), but is also a relatively large distance from the state's population centers.

B. Flow from College to First Teaching Position. As illustrated by the Sankey diagram in Figure 10, there was considerable movement towards the main population center of the state—Chicago and the surrounding suburbs—as study group members moved from their bachelor's granting colleges to their first teaching employment. Some of the movement towards Chicago and particularly its suburbs in the Northeast region stemmed from colleges in the East Central region of the state, but this flow was not limited to graduates from the East Central region alone. Whereas the majority of new teachers in the Northeast region attended colleges in the East Central region, teachers whose first assignment was in the Northeast came in large numbers from colleges within every region—including outside of Illinois—with the exception of the Southeast and Southwest. Most new CPS teachers from our study were graduates of colleges located in Chicago, the East Central region, and outside of Illinois.

Similarly, most of the new teachers who attended college outside the state obtained their first teaching position in the Northeast region or CPS. Most of the study group members graduating from colleges located in Chicago gained teaching positions in the surrounding area, that is within the Northeast region or CPS. Inter-regional movement among graduates from the Northeast, Southwest, and Southeast regions was extremely limited, as most stayed in their college region to begin teaching. A majority of study members who attended college in the East Central and Northwest regions gained their first teaching position in the Northeast region. For those same study group members, the next most popular area for their first teaching position was the region in which they attended college. Overall, those who attended college in the southern regions of the state tended to begin their teaching careers within the same region, with only little movement to the other regions.



Eric Lichtenberger discusses Figure 10.

Figure 10. The flow or movement of study group members from the region of their bachelor's granting college to the region in which they began teaching.

C. Flow from High School to First Teaching Position. Finally, we describe the movement from each new teacher's high school region to the region of their first teaching assignment. Note that this graphic does not take college location into consideration. As illustrated by the Sankey diagram in Figure 11, there was a larger proportion of new teachers who graduated from high schools in the Northeast region (60.6%) than who began their teaching careers there (52.8%). As a result, the Northeast region "exports" a sizeable proportion of teachers to most other regions of the state (with the exception of the Southeast and Southwest). Notably, a large contingent of teachers originating in the Northeast began their teaching careers in CPS. In fact, two-thirds of new CPS teachers from this study group graduated from high schools in the Northeast region.

Nonetheless, most new teachers in the Northeast region were high school graduates from the Northeast, and each of the other regions accounted for only a limited proportion of new teachers in the Northeast. Similarly, an overwhelming majority of the new teachers originating in CPS high schools begin their teaching careers within CPS. Further, as hinted earlier in this report, only 4.4% of the all new teachers (n=7,209) in the study were CPS high school graduates, whereas CPS accounted for more than twice that number (10.7%) of the newly hired teachers in the study. Thus, Chicago is a net "importer" of teachers from other regions of the state, primarily the Northeast.

Like CPS, the East Central region, and to a lesser extent the West Central region, accounted for proportionally more of the newly hired teachers than the number of new teachers emanating from the high schools within those regions. Further, most of the study group members originally from the East and West Central regions ended up teaching within those same regions, with only a limited degree of movement outside the given region. Therefore, there was some movement into the West and East Central regions among new teachers emanating from elsewhere to account for the proportional growth.

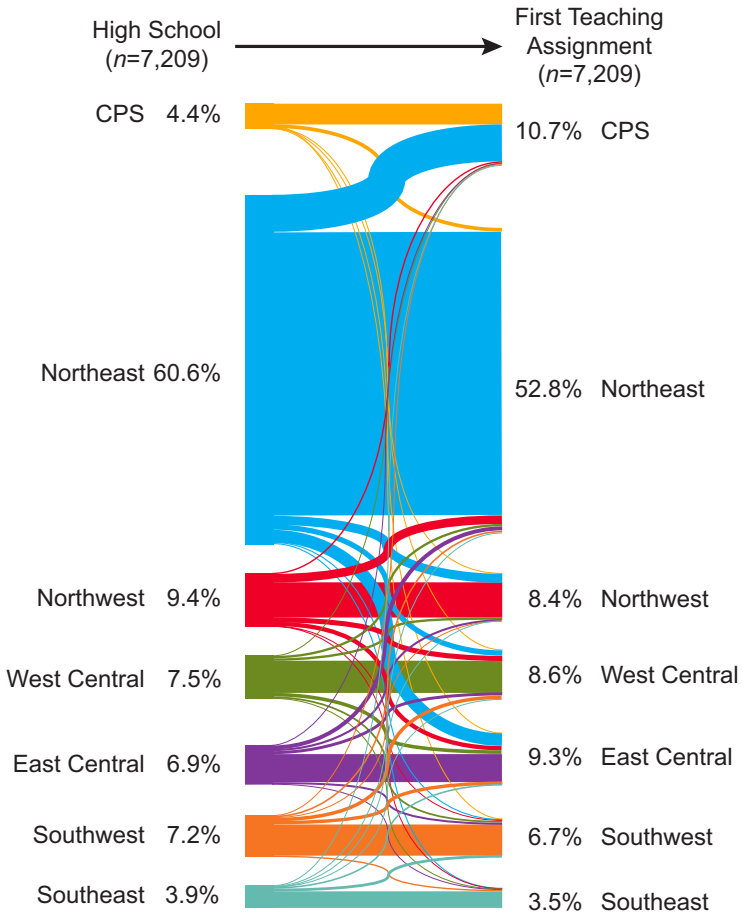


Figure 11. The flow or movement of study group members from their region of origin (based on their high school) to the region in which they began teaching.

D. Flow between High School, College, and First Teaching Employment. As shown in the Sankey diagrams in Figures 9, 10, and 11, an overwhelming majority of all new teachers in this study began teaching in the same region they attended high school or, secondarily, the region in which they attended college. More than three quarters (77.4%) of the new teachers in the study began their career within their region of origin and 85.7% started teaching within their region of origin or the region in which they attended college. However, it should be noted that only 13.3% of the new teachers both attended college and obtained their first job within their region of origin. In this section of the report, we examine the relationship between all three points—high school area, area of college, and location of first teaching employment—to see if any patterns can be discerned. We focus our analyses on the movement into and out of the Northeast and CPS because these two regions exhibited the most inter-region flow and had the largest sample sizes.[8] As described in the first part of this report, much of the variation in the new teacher pipeline can be explained by the proportional gain of graduates from high schools in the Northeast region and the proportional loss of CPS graduates, as the pipeline progresses from high school graduation, to and through college, and ultimately to teaching.

Figure 12 illustrates the flow of new teachers out of Chicago Public School to both their baccalaureate college and their first teaching assignment. This graphic shows that:

- More than four out of every five, or 81.8%, new teachers originally from Chicago also began their teaching career in Chicago; the majority of these new teachers had also graduated from a college located within the city of Chicago (57.5%), with the remainder having graduated from Illinois colleges outside the region (24.9%) or from out-of-state institutions (14.2%);
- Nearly 15% of the new teachers originally from Chicago began teaching in the surrounding suburbs and once again, the overwhelming majority were graduates of Chicago-based colleges (65.2%); and
- Although a third of the new teachers originally from Chicago attended college outside of the city of Chicago, the vast majority of these individuals returned to Chicago to start their teaching career.

[8] Note that some regions are combined for these analyses due to small sample sizes.

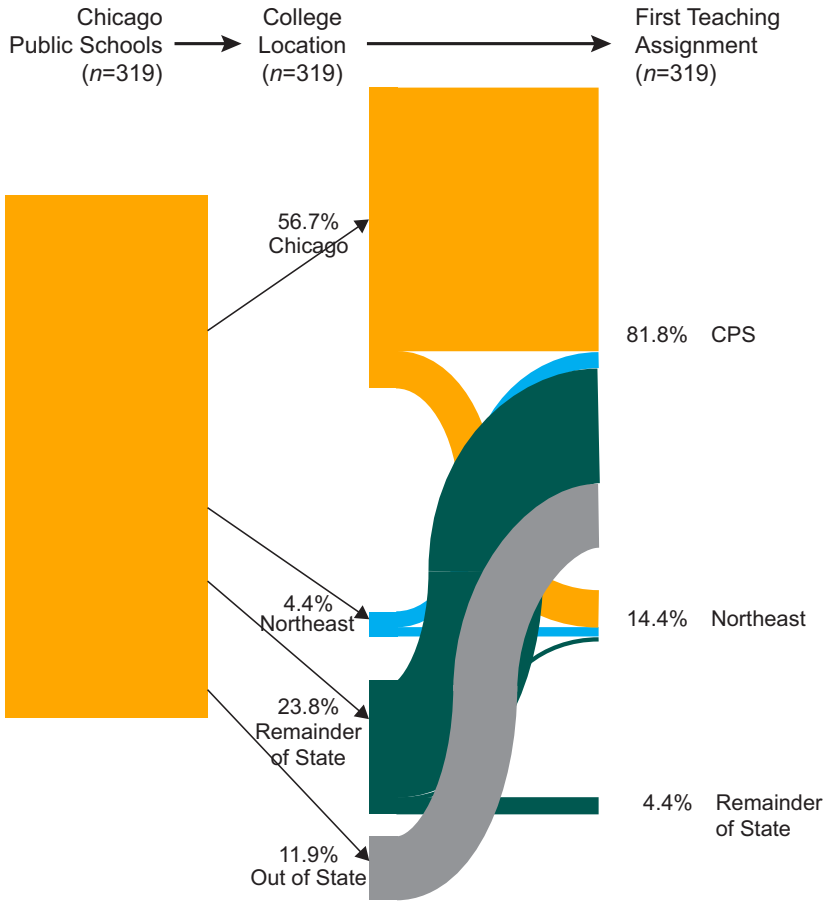


Figure 12. Movement of new teachers who graduated from a CPS high school to college location and first teaching assignment.

Figure 13 illustrates the flow of new teachers out of high schools in the Northeast region to both their baccalaureate college and their first teaching assignment. As shown in Figure 13:

- Two out of every five new teachers originally from the Northeast region attended college in the East Central region and the overwhelming majority of those individuals returned to start their teaching careers in schools within the Northeast region;
- Of all of the regional interactions, the flow from high schools in the Northeast to colleges in the East Central region, and finally back to schools in the Northeast region was the strongest (about a third of the new teachers originally from the Northeast region took that pathway);
- Of the new teachers from the Northeast attending college in the East Central region who did not return home, most either obtained their first teaching job in CPS or stayed in the East Central region;
- A fair number of new teachers from the Northeast region had attended college out-of-state (16.4%), of which an overwhelming majority begin teaching in the Northeast region or CPS; and.
- Nearly all of the new teachers from the Northeast who also attended college in the Northeast, also started teaching within the region.

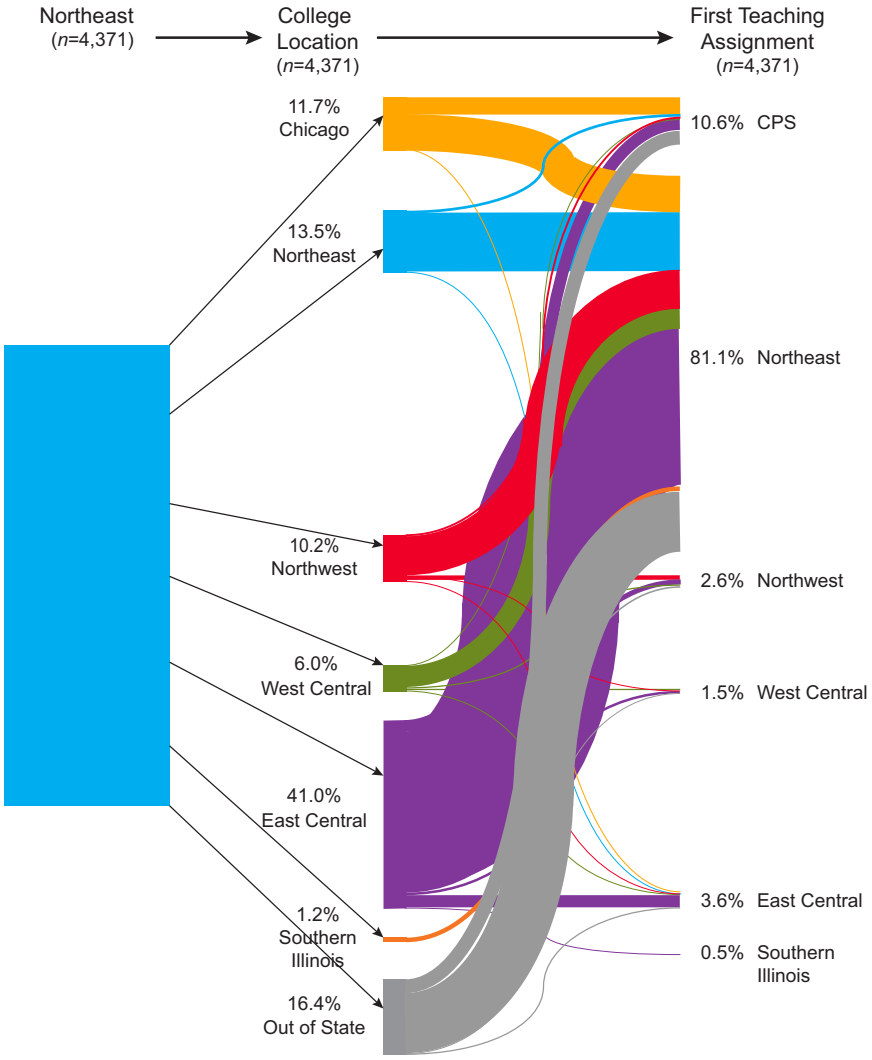


Figure 13. Movement of new teachers out of high schools in the Northeast Region to college and first teaching assignment.

We have previously shown that the majority of new CPS teachers emanate from the Chicago suburbs (60.2%) and only a third of new CPS teachers were CPS graduates (32.2%) (see Figure 12). Figure 14 shows the flow of new teachers into CPS schools from both their baccalaureate college and the high school from which they graduated. The graphic shows that:

- Two out of every five new CPS teachers attended college in Chicago, with about half of those new teachers having graduated from a high school in the Chicago suburbs and the other half from CPS;
- About a third of new CPS teachers had attended an Illinois-based college outside of the Chicago area (remainder of state). The overwhelming majority of these new teachers emanated from high schools located in the Northeast region;
- Most of the new CPS teachers from outside Chicago and its surrounding suburbs had attended an Illinois college outside the Greater Chicago area; and
- More than one out of every five (22%) new CPS teachers had attended college out-of-state and most of those newly hired teachers had graduated from high schools in the Chicago suburbs.

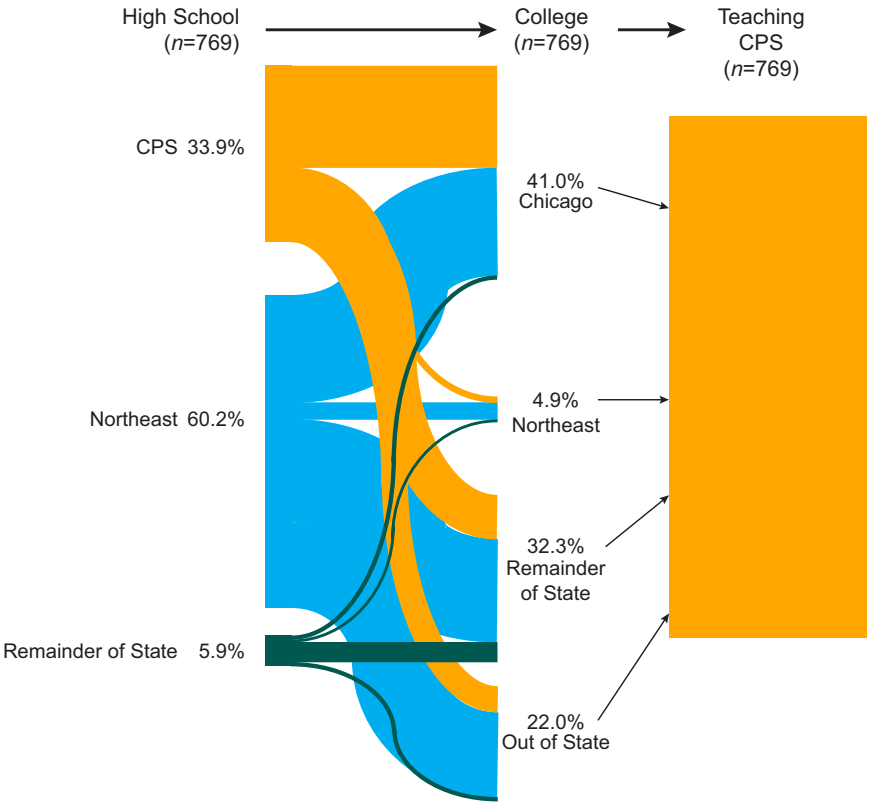


Figure 14. Flow of new CPS teachers from high school through college.

Figure 15 displays the flow of new teachers into schools located in the Northeast region from both their baccalaureate college and the high school from which they graduated. This graphic illustrates that:

- Only one percent of the 3,809 new teachers in the Northeast region were CPS high school graduates. Among that small number, nearly two-thirds had attended college in Chicago;
- There were about five times as many new teachers in the Northeast region who originated from other regions in Illinois outside of Chicago and Northeast region (5.7%), relative to CPS (1.2%);
- The overwhelming majority of these new teachers had attended college outside of the Chicagoland area; therefore, it did not appear that many of the new teachers in the Chicago suburbs originally from outside the region were drawn into the geographic labor market because of the location of their college;
- More than half of the new teachers in the Northeast region (55%) had graduated from a high school within the region and had attended an Illinois college outside the region;
- Around 15% of the new teachers in the Northeast region had gone to both high school and college within the region;
- Another 15% of the new teachers had graduated high school within the Northeast region, but attended college outside the state; and
- Although nearly all of the new teachers in the Northeast region were originally from the region (93%), the overwhelming majority of these new teachers had attended college outside the region (about 85%).

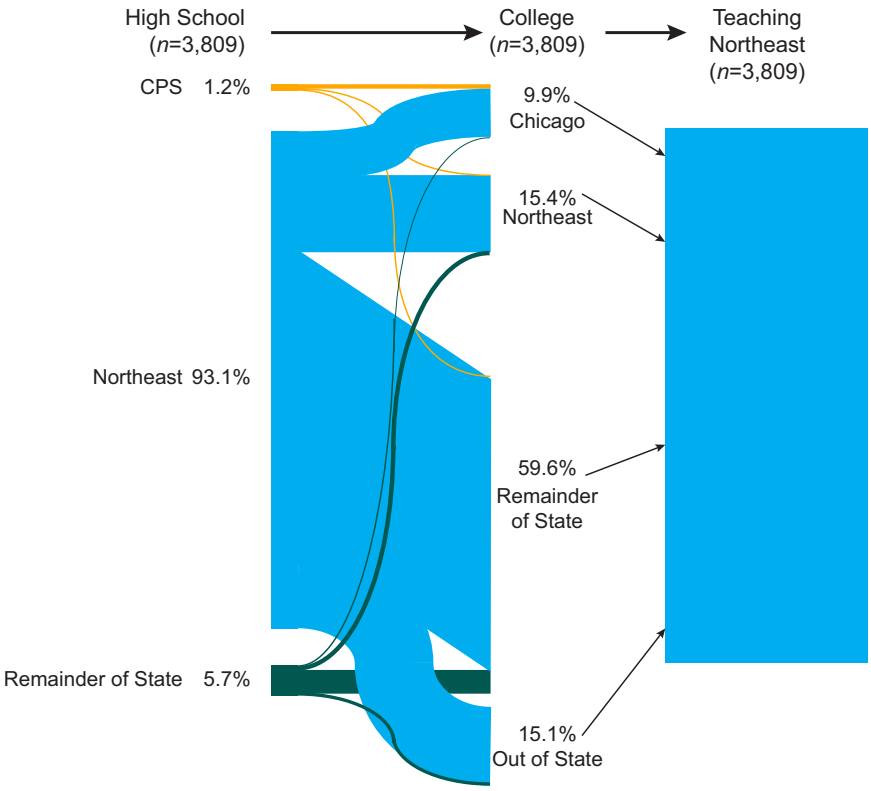


Figure 15. Flow of new teachers into schools in the northeast region from high school and through college (n=3,809).

Noting the sizable flow of teachers from the Northeast region into Chicago (see Figure 14), we wanted to explore the characteristics of these teachers and how they compared to those who stayed in the Northeast and those who graduated from Chicago high schools and began teaching in CPS. As shown in Table 7, this analysis reveals that new CPS teachers from the Northeast region had stronger academic qualifications than their counterparts who stayed in the Northeast region. Additionally, we find that new CPS teachers imported from the Northeast region were more ethnically diverse than their peers who stayed in the Northeast (though not as diverse as those who graduated from CPS). Further, higher proportions of new CPS teachers originally from the Northeast region attended more selective four-year colleges. Well over half of the new CPS teachers from the Northeast region had graduated from a very or highly/most competitive institution (56.6%), as measured by Barron's. This was more than double the rate of their counterparts from the Northeast who started teaching in the Northeast (26.8%) and, surprisingly, only about 10 percentage points higher than CPS graduates who teach in CPS schools (46.4%). These findings run counter to research that has established that urban teachers serving disadvantaged students, on average, tend to have graduated from less competitive colleges and universities than their suburban counterparts (Lankford et al., 2002).

Also, proportionally more of the teachers imported into CPS from the Northeast region were certified via non-traditional routes (22.7%), relative to their counterparts from the Northeast who stayed in the Northeast (9.5%). Looking at race and academics combined, we find that non-White students from the top academic tier represent more than three times the proportion of the pipeline moving from the Northeast to Chicago (14.9%) as they do of Northeast high school graduates who stay in the Northeast to teach (4.7%). Also, White students from the bottom two-thirds of the ACT distribution are proportionally underrepresented among those from the Northeast who begin teaching in Chicago (16.0%) compared to their peers who begin teaching in the Northeast (28.8%).

Table 7. *Characteristics of Teachers by High School Region*

	Northeast to Northeast	Northeast to CPS	CPS to CPS
N	3,547	463	261
ACT			
Top 1/3	64.4	72.6	34.5
Middle 1/3	28.6	21.8	47.1
Bottom 1/3	7.0	5.6	18.4
Mean	23.2	24.0	20.9
Barron's Selectivity			
Highly/Most and Very Competitive	26.8	56.6	46.4
Competitive	66.9	33.9	26.1
Non-Competitive	4.8	7.6	26.1
Other	1.4	1.9	1.5
Race/Ethnicity			
African American	1.9	6.9	30.7
Asian American	2.0	9.1	8.4
Latino	4.5	5.6	37.5
Multi-Racial	2.0	4.1	3.8
Native American	—	—	—
White	86.1	70.6	15.7
Missing	3.4	3.7	3.8
Non-Traditional Certification	9.5	22.7	17.2
Race and Academics			
Non-White, Top 1/3 ACT	4.7	14.9	23.4
White, Top 1/3 ACT	57.3	54.6	10.0
Missing, Top 1/3 ACT	2.4	3.0	—
Non-White, Bottom 2/3 ACT	5.8	10.8	57.1
White, Bottom 2/3 ACT	28.8	16.0	5.7
Missing, Bottom 2/3 ACT	1.0	—	—

IV. The Demographics of Teachers and the Schools Where They Begin Teaching

Finally, we explore the relationships between teacher demographics and the demographic characteristics of the schools in which they began teaching. This analysis is especially important because some studies show that a racial/ethnic match between teachers and students has a positive impact on minority student outcomes such as achievement growth (Dee, 2004; Goldhaber and Hansen, 2010; Hanushek, Kain, O'Brien, & Rivkin, 2005; Villegas & Irvine, 2010). Other research has shown that new teachers tend to choose schools which contain high proportions of students sharing their race and socioeconomic background and that more academically skilled teachers tend work in higher performing schools with smaller proportions of minority students (Cannata, 2010; DeAngelis et al., 2010; Reichardt, 2000; Scafidi et al., 2007).

We begin this analysis by investigating initial school demographics by teacher race. As displayed in Table 8, new teachers tended to begin their careers in schools with higher proportions of same-race students. For example, White teachers began teaching in schools that are, on average, 63.5% White, while African American teachers began teaching in schools that are only 15.8% White, on average. Similarly, African American teachers tended to begin their careers in schools with larger proportions of same-race students, Latino teachers began their careers in schools with larger proportions of Latino students relative to all other teacher racial/ethnic groups.

Table 8. *School Racial Composition of First Teaching Assignment by Teacher Race/Ethnicity**

Teacher Race/Ethnicity	School Racial Composition of First Teaching Assignment			
	Mean % White	Mean % African American	Mean % Latino	Mean % Asian
White (*n*=5,933)	63.5	13.5	16.1	4.0
African American (*n*=237)	15.8	69.5	11.0	1.9
Latino (*n*=351)	27.3	16.2	50.0	4.1
Asian American (*n*=172)	40.1	21.8	28.5	6.9

*Rows do not add up to 100% due to the Illinois State Board of Education's recording of school demographics

Looking at these statistics by teacher ACT category (see Table 9), we see that more of the teachers from the top third of the ACT distribution began teaching in schools with lower proportions of both non-White and economically disadvantaged students as compared with lower achieving teachers. Further, considerably more of the teachers from the bottom third of the ACT distribution began teaching in high minority or high poverty schools relative to high achieving teachers.

Table 9. *School Demographics of First Teaching Assignment by Teacher ACT*

Teacher ACT Composite	School Demographics of First Teaching Assignment			
	Mean % White	Mean % Eligible for Free or Reduced Priced Lunch	% High Minority	% High Poverty
Top 1/3	59.8%	41.0%	19.4%	34.6%
Middle 1/3	58.1%	48.2%	22.3%	43.1%
Bottom 1/3	53.6%	54.0%	27.1%	52.3%

Table 10 shows that teachers who themselves attended high minority schools began their teaching careers at schools with considerably larger proportions of non-White students relative to teachers who graduated from high schools with lower concentrations of non-White students.

Table 10. *School Racial Composition of First Teaching Assignment by Racial Composition of Teacher's High School*

Teacher Attended High Minority High School	Demographics of First Teaching Assignment	
	High Minority	Mean % Non-White
No	17.3%	38.9%
Yes	85.0%	89.8%

Similarly, and as shown in Table 11, substantially more of the teachers who themselves attended high-poverty high schools began teaching in a high poverty school relative to teachers who did not graduate from high-poverty high schools.

Table 11. *School Poverty Composition of First Teaching Assignment by Poverty Composition of Teacher's High School*

Teacher Attended High Poverty High School	School Poverty Composition of First Teaching Assignment	
	% High Poverty	Mean % Eligible for Free or Reduced Price Lunch
No	36.0%	42.4%
Yes	81.6%	73.9%

Next, we analyze these same data using both teacher demographics and the demographics of the schools from which they graduated to see if we could determine which of these factors had a larger influence on the types of schools where new teachers tended to begin their careers. Table 12 shows that both the demographics of the teachers original school and the teacher's own race/ethnicity play a large role in initial teaching placement. Across all racial groups, teachers who graduated from high minority high schools began teaching in a high minority high school at about twice the rate of new teachers who graduated from high schools with less than 75% non-White student populations. At the same time, however, almost half (46%) of African American teachers who graduated from non-high minority high schools began teaching in a high minority school, compared to only about a quarter (24%) of White teachers who graduated from high minority high schools.

Table 12. *School Racial Composition of First Teaching Assignment by Racial Composition of Teacher's High School and Teacher Race*

Teacher Attended High Minority High School	School Racial Composition of First Teaching Assignment		
	Teacher Race/Ethnicity	% High Minority	Mean % Non-White
No	African American	46%	64.8%
	Asian American	27%	50.9%
	Latino	33%	56.9%
	Multi-Racial	21%	41.6%
	Native American	(N<10)	(N<10)
	White	13%	32.0%
	Missing	22%	43.4%
Yes	African American	78%	86.4%
	Asian American	52%	68.8%
	Latino	67%	78.9%
	Multi-Racial	43%	64.4%
	Native American	(N<10)	(N<10)
	White	24%	50.5%
	Missing	45%	63.4%

Next, we examine the interaction between teachers' academic backgrounds, their high school demographics, and the demographic characteristics of their initial teaching location. In this instance, as shown in Table 13, we found that teachers' own high school economic contexts tended to trump their ACT scores in terms of their initial teaching location. The between-group differences, based on high school economic context, were much greater than the within-group differences based on ACT scores. For example, substantially more of the top third ACT teachers who graduated from a high poverty high school begin teaching in a high poverty school (74.0%) relative to top third ACT teachers who graduated from a low poverty high school (33.2%) equating to a difference of over 40 percentage points; whereas the difference between the top and bottom third ACT teachers from low and high poverty schools was only 13.2% and 17.4%, respectively.

Table 13. *School Poverty Composition of First Teaching Assignment by Poverty Composition of Teacher's High School and Teacher ACT*

Graduated from a High Poverty HS	ACT Composite	First Teaching Assignment in High Poverty School
No	Top 1/3	33.2%
	Middle 1/3	39.3%
	Bottom 1/3	46.4%
Yes	Top 1/3	74.0%
	Middle 1/3	83.9%
	Bottom 1/3	91.4%

V. Shifting Demographics Over Time

In a previous section of this report, we examined the proportions of teachers who returned to teach in the same (or feeder) districts from which they graduated. However, it is important to note that even when teachers return to their home districts, this does not necessarily mean they are returning to schools that are demographically similar to those they attended prior to college. In fact, student demographics in Illinois and nationally have been changing quite swiftly in recent years—between 2002 and 2012, the proportion of Illinois public school students living in poverty increased from 37.5% to 49.0% and the proportion of non-White students increased from 40.7% to 49.0% (Northern Illinois University, 2014).

Table 14 shows the average differences in student demographics between the high school from which a teacher graduated and the school in which he or she began teaching. Each column describes the location of a teacher's first teaching employment in relation to his or her high school location, and the color-coding in the table's cells indicates whether the differences are indicative of a proportional increase (blue shading) or decrease (black shading) relative to the school from which he or she graduated. The darker the shaded color, the greater the standardized difference. In terms of interpreting standardized differences, any difference (in absolute terms) greater than 20 is considered large (Rosenbaum & Rubin, 1985). This analysis illustrates the degree to which new Illinois teachers across all geographic regions in this study tended to begin teaching in schools with higher proportions of disadvantaged students than the contexts these teachers experienced as students. Though evident across all geographic regions in the State, the change in student demographics was most pronounced for teachers who graduated from and began teaching in schools within CPS and the Chicago suburbs (Northeast region), where the proportion of non-White (especially Latino in the Northeast) and students living in poverty increased most dramatically in the intervening years. But this holds true regardless of region for teachers who began teaching in the same school or district they attended as students; they returned to schools that had become significantly less White and increasingly low income since their graduation.

Table 14. *Average Differences in Characteristics of Students Between First School of Employment and Former High School*

	Overall	Teaching in Same School	Teaching in Same District or Feeder	Teaching in Same Region						
				CPS	Northeast	Northwest	West Central	East Central	Southwest	Southeast
School Demographics	7,003	286	1,609	260	3,473	414	388	330	365	190
% White	**-72.5**	-28.0	-36.3	**-104.7**	**-91.5**	**-62.2**	-54.5	**-69.9**	**-70.0**	-40.1
% African American	**41.6**	10.6	15.1	30.8	38.6	18.1	31.0	49.0	53.5	15.7
% Latino	**49.4**	18.4	24.3	18.3	69.3	48.3	39.0	46.2	28.7	34.3
% Asian American	-11.5	5.8	-6.0	**-61.5**	-6.2	11.7	14.8	27.5	0.0	0.0
% Limited English Proficiency	**60.2**	**26.1**	**60.1**	**82.9**	**71.3**	22.9	**55.9**	**62.5**	**53.7**	**61.1**
% Low Income	**110.5**	**74.4**	**79.1**	**125.1**	**105.5**	**105.1**	**135.9**	**131.3**	**134.2**	**149.0**

Cells are shaded according to their differences from zero. Proportional Decrease Proportional Increase

Click to see demographic characteristics for former High School and First School of Employment

Summary

The regional nature of the new teacher pipeline can largely be explained by the disproportional loss of students emanating from Chicago throughout the pipeline at all stages, and the disproportional increase of students from the Northeast region at all but one stage (certification). Whereas 49.0% of the students in our study started out in high schools in the Northeast region, these students constituted 60.6% of the new teachers in our study. Conversely, 13.9% of the students in our study graduated from Chicago Public Schools (CPS), but these students constituted only 4.4% of the teachers emerging from our study.

The characteristics of teachers emerging from these regions also differed considerably. Teachers from these cohorts who attended high schools in the Northeast region tended to be more diverse (compared to teachers from the other regions except Chicago) and stronger academically (relative to the rest of the state). The large number of racial/ethnic minority teachers emerging from CPS meant that Chicago produced the largest proportion of highly academically qualified minority teachers and the largest proportion of non-White teachers from the bottom two-thirds of the ACT distribution, both by a substantial margin.

Similar to existing studies, we find the geographic size of labor markets for new teachers overall to be quite small and even more limited for non-White teachers and teachers with weaker academic backgrounds. We find that two-thirds of teachers began teaching within 20 miles of the high school from which they graduated, nearly half began teaching in the same county as their prior high school, and more than one fifth (22%) returned to the same school district from which they graduated (or a feeder district). Reininger (2012) found that, among high school graduates, the median distance between one's home area and his or her first job was seven miles, whereas the median distance for non-teaching college graduates was 54 miles. We find that the median distance between a new teacher's home area and his or her first teaching employment was roughly 13 miles, suggesting that the geographic labor markets for new teachers were considerably more similar to those of high school graduates than they were to other college graduates.

We also find that the sorting of new teachers is more closely linked to their home areas than to where they attended college, though we do find some evidence that college location can provide a secondary geographic labor market for new teachers. New teachers in our study tended to start their careers substantially closer to their high schools than to where they attended college—about 80% of new teachers attended college within 140 miles of their previous high school, compared to 80% who began their careers within 30 miles of their high school.

Our findings generally confirm those from previous studies (Boyd et al., 2005; Reininger, 2012) indicating that Latino and African American teachers tend to have geographically smaller labor markets than White teachers. We also find that new teachers with higher ACT scores tended to travel further—for both college and their first teaching position—than their counterparts with lower ACT scores. We find that new teachers who emanated from Chicago were the least mobile, by a considerable degree, with regard to all three of the

distances measured in this study. Further, we find that teachers who graduated from high-minority high schools began teaching in the same district from which they graduated at much higher rates than those who attended majority White high schools.

Looking at the regional flow from home to college, we find that large proportions of new teachers earned their bachelor's degrees at colleges located outside of their high school region, with 13% of Illinois teachers from these cohorts earning their baccalaureate degrees at an out-of-state institution. Whereas three out every five of the new teachers from this study originated from the Northeast region, only 10% graduated from colleges located in that region, and nearly two-fifths of Illinois' new teachers from these cohorts attended colleges in the East Central region, even though only about 7% originated from that region. Much of the movement towards the East Central region can be explained by the fact that three of the major producers of teachers in the state—Illinois State University, the University of Illinois at Urbana-Champaign, and Eastern Illinois University—are located in this region.

Our analysis of the flow from college region to first teaching assignment shows that there was considerable movement towards the main population centers of the state—Chicago and the surrounding suburbs—as new teachers moved from their bachelor's granting colleges to their first teaching assignments. A majority of study members who attended college in the East Central and Northwest regions gained their first teaching position in the Northeast region, and most of the new teachers who attended college outside the state obtained their first teaching assignment in the Northeast region or CPS. However, teachers who attended college in the southern regions of the state tended to begin their teaching careers within the same region.

The flow from home to first teaching assignment showed that there was a larger proportion of new teachers who graduated from high schools in the Northeast region (60.6%) than who began their teaching careers there (52.8%). As a result, the Northeast region tends to "export" a sizeable proportion of teachers—most notably to Chicago. CPS, on the other hand, accounts for more newly hired teachers than it creates with their high school graduates and is thus a net "importer" of teachers from other regions of the state, primarily the Northeast. In fact, two-thirds of new CPS teachers in this study group came from the Northeast region. Further examination of the sizable flow from the Northeast region to Chicago revealed that these new teachers had stronger academic qualifications than their counterparts who stayed in the Northeast region and were more ethnically diverse than their peers who stayed in the Northeast (although not as diverse as those who graduated from CPS). Also, proportionally more of the new CPS teachers emanating from the Northeast region earned their initial teaching certification through alternative routes, relative to both CPS graduates teaching in CPS and in particular those emanating from the Northeast who stay in the Northeast to teach.

Looking across all three points (high school, college, and first teaching assignment), we found that the overwhelming majority of all new teachers in this study began teaching in the same region in which they attended high school or, secondarily, the region in which they attended college. More than three quarters (77.4%) of the new teachers in the study began their career within their region of origin and 85.7% started teaching within their region of

origin or the region in which they attended college. However, it should also be noted that only 13.3% of the new teachers were entirely bound by their region of origin in term of college attendance as well as their first job.

The findings from our analysis of the relationships between teacher demographics and the demographic characteristics of the schools in which they began teaching suggest that geographic size of labor markets are more closely linked to characteristics of a teacher's high school than to their ACT scores. In particular, we find that teachers who graduated from high minority or high poverty high schools were much more likely to return to teach in their home districts than were teachers who did not attend high poverty or high minority schools irrespective of academic qualifications.

Finally, we find that even when teachers return to their home districts or to locales similar to those from which they graduated, they are not necessarily working in schools that are demographically analogous to those they attended prior to college. Illinois teachers across all geographic regions tended to begin teaching in schools with higher proportions of disadvantaged students than the contexts these teachers experienced as students, particularly teachers who graduated from and began teaching in suburban schools, where the proportion of non-White (especially Latino) and poor students increased most dramatically in the intervening years. This holds true even for teachers who began teaching in the same high schools they attended as students; they return to schools that have become less White and increasingly low income since their graduation.

Discussion & Implications

First, an important methodological implication arose from this study. Our results indicate that Illinois students who become teachers, on average, are willing to move much farther away from home for college than they are for their first teaching jobs. In fact, we document considerable movement away from one's home area to attend college in this study. Thus, we question the utility of using college location as a hometown proxy, particularly for new teachers emanating from suburban locales.

As with similar studies (Boyd et al., 2005; Reininger, 2012; Cannata, 2010), we find that new Illinois teachers who entered the profession in recent years have strong preferences for schools that are close in geographic proximity and setting to those they attended as high school students. However, we found substantial regional variation in the movement or flow of new teachers between their high schools, where they attended college, and where they began teaching. Some regions, such as the Northeast region and CPS were more "open" systems at key points and demonstrated a considerable degree of inter-regional movement from high school to college, but there was usually an equally strong movement back towards the region of origin in transitioning from college to teaching. The Southwest and Southeast regions, on the other hand, appeared to be quite "closed" systems at all points, with minimal movement outside the region among study group members emanating from those regions, along with limited movement into those regions from elsewhere in the state, for either college or employment. The East Central and West Central regions were net importers of teachers, thought not to the extent of CPS. As a system, the East Central region was quite open to movement into the region, not only as a large importer of college students from elsewhere in the state, but also for new teachers entering the profession. However, for new teachers originally from the East Central, the region likely appeared quite closed as, generally, new teachers from the East Central region stayed in the region for college and to begin teaching. Therefore, depending on the perspective, a region such as the East Central might be relatively closed for those emanating from the area, while still being somewhat open to outsiders. The opposite seemed to be true for the Northeast region, with a substantially high degree of movement from the area for both college and first teaching assignment, but limited movement into the region for college or teaching for those who grew up outside the Northeast region.

Prior research (Boyd et al., 2005; Reininger, 2012; Cannata, 2010) has noted that teachers' preferences for geographic and social familiarity may make staffing more difficult for schools in areas that do not produce as many teachers as they need, like Chicago. Others (Engel et al., 2014; Caneva, 2015) have argued that Chicago Public Schools' teacher residency requirements—that all CPS teachers live within the city limits—might discourage teachers from the suburbs from applying to work in the city. However, our study reveals that teachers "imported" to Chicago from the neighboring Northeast region were substantially better qualified academically and more racially/ethnically diverse than teachers who remained in the city's suburbs (though less diverse than native Chicago teachers). This partially dispels the notion that traditionally-disadvantaged, hard-to-staff urban schools—at least those

in Chicago—are unable to attract well-qualified candidates from elsewhere (Boyd et al., 2005; Lankford et al., 2002). In fact, we found that more than half of the teachers who were imported into CPS graduated from colleges classified as very competitive or better by Barron's (2003), much higher than the rate of their counterparts from the Northeast who stayed in the Northeast to begin teaching. These findings also support previous IERC research (DeAngelis, White, & Presley, 2010) showing that the academic characteristics of new CPS teachers were on par with experienced teachers throughout the rest of Illinois by the mid-2000s. It is conceivable that the quality and quantity of CPS applicants, particularly from the Northeast suburbs, would be even higher in the absence of CPS residency requirements. However, more research is needed to determine how such a policy change would affect the employment prospects of teacher candidates originally from Chicago (only a third of new CPS teacher were CPS graduates) and consequently the racial/ethnic diversity of new CPS teachers (new teachers originally from CPS are overwhelmingly more diverse than new teachers emanating from all other regions).

Teachers imported to CPS from the Northeast also had higher rates of alternative certification than those who stayed in the Northeast (though similar rates to teachers native to CPS). A previous IERC report using these data showed that alternative certification routes could be a productive source of high achieving, diverse teachers (White et al., 2013). However, alternatively certified teachers also tend to have higher turnover rates than traditionally certified teachers (Boyd, Dunlop, Lankford, Loeb, Mahler, O'Brien, & Wyckoff, 2012) and other previous IERC research (DeAngelis & Presley, 2007) indicates that new Illinois teachers with high academic qualifications teaching in disadvantaged locales tended to leave their initial schools at relatively high rates. It is also important to remember that getting these diverse, academically talented teachers—from Chicago and the rest of the state—into disadvantaged schools is only the first step, and there need to be concerted efforts to retain these high-quality educators in the highest need schools after their initial employment. Therefore, we recommend examining the retention patterns of these teachers as an area of further inquiry.

Adverse selection (Lazear, 2003) suggests that highly qualified individuals from traditionally disadvantaged areas tend to leave their home area to pursue better opportunities elsewhere, arguably leaving their original area further disadvantaged. This idea is not specific to teaching, but can easily be applied to schools—i.e., disadvantaged schools do not produce enough students with strong academic qualifications who make it through the teacher pipeline and students with stronger academic qualifications who do emerge from the pipeline would be likely to seek teaching employment outside their home area. With our findings the opposite held true; we found that nearly all of the new teachers emanating from CPS began teaching in CPS. Further, we found no evidence that the limited number of new teachers who emanated from CPS but began teaching in the Chicago suburbs outpaced their peers who stayed to teach in CPS in terms of academic qualifications. In fact, new teachers from CPS who started in CPS had a slight advantage in terms of performance on the ACT relative to CPS graduates who began teaching in the Chicago suburbs. However, our results showing lower rates of teacher certification and transition into teaching by certificants suggest that selection may occur earlier in the pipeline, as teaching competes with other potential occupations and better academically qualified CPS graduates opt to pursue opportunities outside of teaching.

Further research is needed to determine the reasons why, at least initially, well-qualified candidates from the surrounding suburbs find CPS to be a desirable teaching destination. Beginning teacher salaries in CPS are typically lower than those in the north and west suburbs, but superior to the rest of the metropolitan region, as well as other large, urban districts (see, e.g., Illinois State Board of Education, 2008). Perhaps the reality of the labor market for new teachers—particularly during the economic downturn that many of the study group members experienced as they began their teaching careers—was simply such that more employment opportunities were available at high minority and high poverty schools. Cannata (2010) suggests that new teachers may use student demographics in the job search process merely as proxies for things they really care about (such as administrative support and the professionalism of colleagues) but cannot easily assess. However, prospective Illinois public school teachers now have access to similar data from the Illinois 5Essentials survey, the results of which are widely publicized and readily available via ISBE's state report cards. Thus, another direction for future research could involve assessing new teachers' use of these data and their role in the geographic scope of teacher labor markets.

To the extent that teachers' preferences for proximate school settings reflect their preferences for serving students with familiar characteristics (Cannata, 2010), our results indicate that the new Illinois teachers in this study—including those who returned to teach in the same district, or even the same high school, from which they graduated—may have been somewhat surprised by what they found. Illinois public schools have become significantly more racially/ethnically and socioeconomically diverse now relative to when the study group members graduated from high school back in 2002 and 2003. Much of the shift can be attributed to increases in the Latino and low-income student populations, and corresponding decreases in the proportions of White, higher income public school students. This suggests that all new teachers, not just those in urban environments, will need to be prepared for the possibility of working in substantially different educational settings from what they experienced as students. The numerous accounts presented in Frankenberg and Orfield (2012) suggest that teachers and administrators are not well prepared for the demographic transformation that is taking place in U.S. schools. As the case studies in their book show, efforts within local districts focused on assisting teachers to address the increasing and changing needs of students can be helpful, but are generally not sufficient. While Frankenberg and Orfield focus on the impact of markedly increasing student diversity in suburban schools, our results indicate that new teachers across Illinois regions and locale types need to be prepared to serve a more diverse student body from higher poverty families. Moreover, our results reinforce the recommendation we made in our earlier study (White et al., 2013) regarding the need to continue efforts to diversify the teaching corps in Illinois. Across all regions in Illinois, high school graduates who later became teachers in the public schools were less racially/ethnically diverse than the high school cohorts from which they came, and they started teaching in even more diverse schools. While the growing gap in diversity between teachers and students in Illinois and elsewhere has been well documented (Boser, 2011; NCES, 2009), we demonstrate in this study that the issue has implications for schools statewide, not simply for those in Chicago and the surrounding suburbs.

Given the scope of the changes taking place, it would seem that centralized efforts, such as focused efforts by teacher preparation programs to train all teachers to address issues of

diversity, are warranted. Illinois, like many states, requires prospective teachers to complete coursework on diverse learners (including students with Individualized Education Programs, English language learners, students who are underrepresented in the school population and other at-risk students), and experience field placements in diverse settings and with diverse students (ISBE, n.d.a), and the Illinois Professional Teaching Standards (Illinois State Board of Education, 2013) emphasize teaching and understanding the spectrum of student diversity (e.g., race and ethnicity, socioeconomic status, special education, gifted, English language learners, sexual orientation, gender, gender identity). Further, ISBE and individual institutions have encouraged and established numerous programmatic approaches to increasing the diversity of the teaching force in recent years (see Associated Colleges of Illinois, 2015, for an overview of several of these efforts), but more research is needed to determine the efficacy of these various approaches.

The dependence of urban districts like Chicago on attracting teachers from non-urban settings to help fill their teaching needs has focused attention on the gap in college going and college completion rates between students from urban versus non-urban locales (Reininger, 2012; Vegas, Murnane, & Willett, 2001). While we show in this report that the four-year college completion rate of students from Chicago was indeed significantly lower than that of students from other regions in Illinois, we also demonstrate that graduates of CPS high schools aspired to teach, earned teacher certification upon college graduation, and entered teaching upon certification all at lower rates than graduates of high schools in other regions on Illinois. Thus, our study indicates that there are multiple points in the pipeline from high school through college and into teaching that adversely affect the local supply of teachers within districts like CPS. More research is needed to fully understand the factors associated with these results.

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Summary of *The Student Becomes the Teacher* (White, DeAngelis, & Lichtenberger, 2013)

Our previous study investigated how each stage in the new teacher supply pipeline affected the composition of the K-12 public school teaching force in Illinois, with particular attention to academic skills and racial/ethnic diversity. The substantive findings from this study are summarized below:

Only a small percentage (3.2%) of Illinois public high school students across two high school cohorts became public school teachers in the state by roughly a decade after high school. Somewhat surprisingly, the transition from certification to teaching appeared to be one of the most critical stages in this pipeline. Although more than one in five (21.4%) bachelor's degree completers from these cohorts earned teacher certification, less than half (45.5%) of these certificants actually ended up teaching in Illinois public schools.

T***he students who became teachers differed substantially from those who did not become teachers.*** The teachers who emerged from these cohorts were stronger academically but much less racially/ethnically diverse than their high school peers. Teacher certificants had notably weaker academic qualifications compared to other bachelor's degree earners, but those who actually became teachers were quite similar academically to non-teaching college graduates. However, the teachers from these cohorts were also considerably less racially/ethnically diverse than other four-year college completers.

Aspirations matter. That is, substantially higher proportions of the students who aspired to become teachers while in high school advanced to each successive stage in the teacher pipeline, and more than half of the aspirants who received bachelor's degrees continued on to earn teacher certification (compared to fewer than one in six baccalaureate recipients who did not aspire to teach while in high school). Moreover, these differences continue to emerge even as individuals transitioned from certification to the teaching stage, indicating that high school aspirations play a large role in the development of the teaching force all the way through the employment stage.

The compositional changes to the teacher pipeline by race/ethnicity and academic qualifications occurred to a greater or lesser extent at each stage. College enrollment and bachelor's degree completion also had a negative impact on racial/ethnic minority representation, in part due to the stronger academic preparation required at those stages and the relatively weak academic backgrounds of non-Asian minority high school students from these cohorts.[i] But, regardless of academic preparation, minority high school students still aspired to teach at lower rates, minority bachelor's degree recipients were less likely to have earned teaching certificates, and minorities with teaching certificates were less likely to become teachers in Illinois public schools, compared to Whites—all indicating that factors besides academic preparation also have a large impact on the relatively low representation of minorities among new public school teachers in Illinois.

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[i] Presley, J. B., & Gong, Y. (2005). *The demographics and academics of college readiness in Illinois* (IERC 2005-3). Edwardsville, IL: Illinois Education Research Council.

Supply and Demand for Teachers in Chicago

As previously discussed, students from CPS are less likely than students from all other Illinois regions to enroll in college, graduate from a 4-year college, and earn teacher certification—even conditional upon making it through earlier stages in the pipeline. Our ACT data on student aspirations helps to explain some of these findings. These data allow us to determine which members of the cohorts aspired to enter into teaching as either a career or major as they prepared to graduate high school and they are identified as early teaching aspirants. As shown in Table A, at least as early as their Junior year in high school, students from Chicago were greatly underrepresented among early teacher aspirants, whereas those from the Chicago suburbs (Northeast region) were somewhat overrepresented relative to the distribution in these cohorts overall. All other regions demonstrated near proportional representations of high school graduates to teacher aspirants. Table A also provides a comparison of the regional origin of teachers with the initial distribution of all high schoolers in these cohorts. Note that the Chicago region is considerably underrepresented among teachers (4.3%) relative to their overall composition of students (13.6%). The proportion of teachers emerging from the Northeast (60.6%), on the other hand, substantially overrepresented their high school composition (49.0%).

Viewed another way, not conditional on progressing to preceding stages (See Table B), only 1% of all students who originated from Chicago advanced to the teacher stage of the pipeline, compared to about three to four times as many students (proportionally) from the other regions of the state.

These data—coupled with research showing that teachers prefer to work in close proximity to home or in schools similar to those they attended—would seem to suggest a severe shortage of teachers from Chicago relative to the rest of the state. However, it is interesting to note that students who graduated from CPS high schools were still considerably less likely than teachers from other regions to gain employment in Illinois public schools—as shown in Table 2, only 38.4% of CPS certificants transitioned to employment in Illinois public schools, compared to more than 40% of certificants from each of the other regions. In subsequent sections of this paper we explore the characteristics and origins of CPS teachers in more detail.

Table B. *Number and Proportion of Students Who Became Teachers in Illinois Public Schools, by High School Region*

	Became Teacher in IPS	
	N	%
Overall	7,209	3.2
Region		
Chicago	319	1.0
Northeast	4,371	4.0
Northwest	678	3.2
East Central	498	2.9
West Central	540	3.1
Southeast	282	3.1
Southwest	521	2.7

Table A. *Proportion of Students by Aspirant and Teaching Status, by Region of Origin*

Background Characteristics	Overall	Aspirants	Became IPS Teachers
Geographic Region			
% Chicago	13.6	7.3	4.4
% Northeast (excluding Chicago)	49.0	54.4	60.6
% Northwest	9.4	9.5	9.4
% East Central	7.6	7.7	6.9
% West Central	7.7	7.8	7.5
% Southeast	4.1	4.3	3.9
% Southwest	8.4	8.9	7.2
N	225,196	25,899	
% of High School Graduates Overall		11.5	

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Appendix

Table A. *Average Differences in Characteristics of Students in their Former High School*

	Overall	Teaching in Same School	Teaching in Same District or Feeder	Teaching in Same Region					
				CPS	Northeast	Northwest	West Central	East Central	Southwest	Southeast
N	7,003	286	1,609	260	3,473	414	388	330	365	190
% White	78.90	77.35	68.70	18.1	5.8	88.2	92.2	90.6	90.8	94.1
% African American	7.35	8.45	12.73	37.0	10.5	4.6	5.5	5.9	6.9	4.1
% Latino	8.81	10.47	13.41	36.3	6.5	6.0	1.0	2.1	1.0	0.9
% Asian	4.71	3.36	4.85	8.4	2.9	1.1	0.9	1.0	1.0	0.6
% LEP	2.14	2.26	2.64	4.4	9.2	2.4	0.1	0.2	0.0	0.1
% Low Income	15.08	17.5	23.72	66.0	105.5	17.2	19.4	17.7	16.7	28.2

Table B. *Average Differences in Characteristics of Students in their First School of Employment*

	Overall	Teaching in Same School	Teaching in Same District or Feeder	Teaching in Same Region					
				CPS	Northeast	Northwest	West Central	East Central	Southwest	Southeast
N	7,003	286	1,609	260	3,473	414	388	330	365	190
% White	58.80	70.42	57.30	5.2	55.9	77	82.1	77.1	77.7	89.5
% African American	16.07	10.11	16.39	48.5	12.1	6.5	10.5	13.5	16.5	5.6
% Latino	18.27	13.69	18.90	42.4	22.9	11.1	3.0	4.6	2.0	1.6
% Asian	3.99	3.61	4.45	2.9	6.1	1.3	1.2	1.6	1.0	0.6
% LEP	7.47	3.94	8.55	15.1	9.2	4.7	3.0	2.7	1.9	2.7
% Low Income	44.20	37.11	47.45	88.2	34.9	43.4	48.2	45.8	43.8	54.0

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