

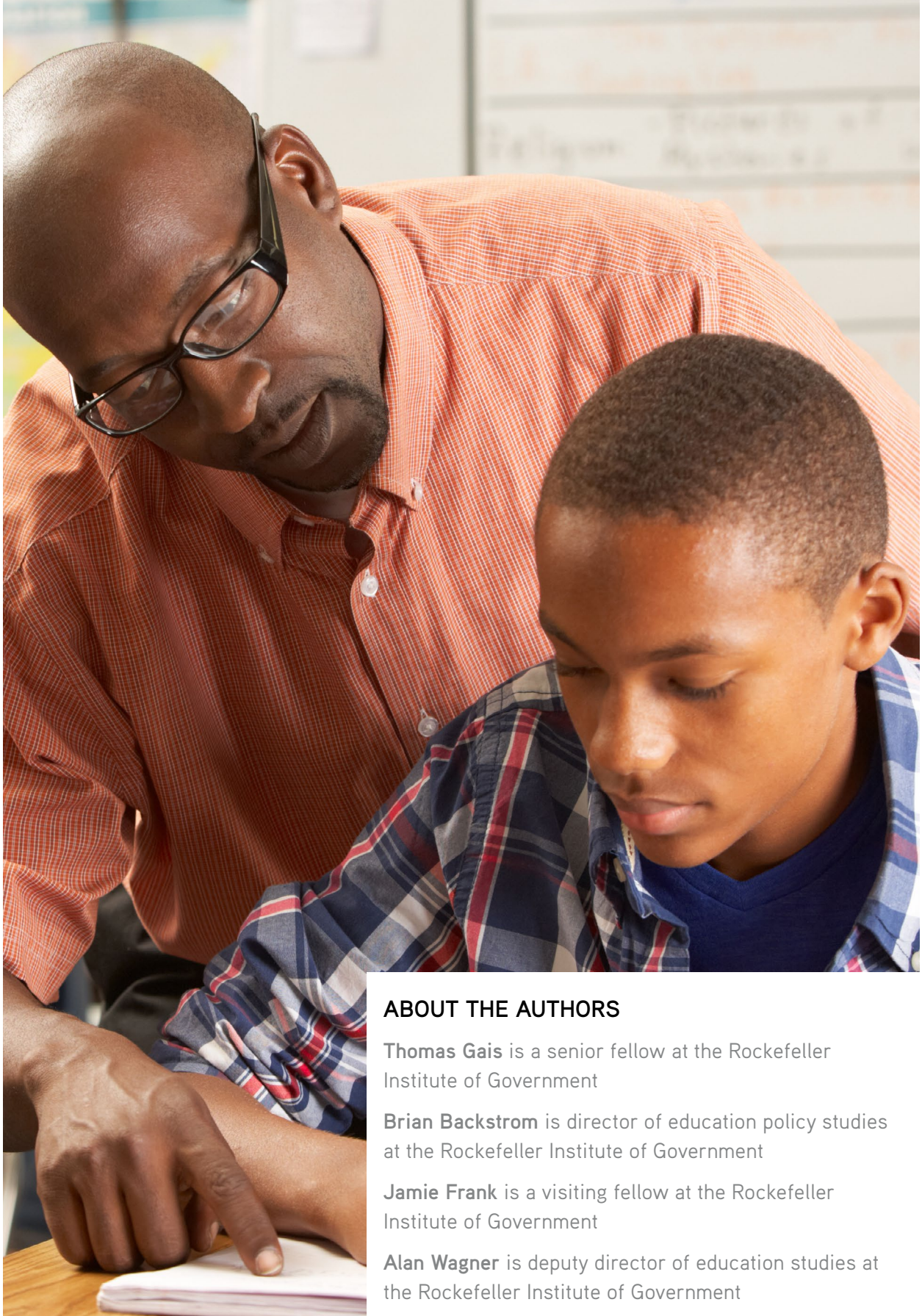
# The State of the Connecticut Teacher Workforce

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*August 2019*

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## The State of the Connecticut Teacher Workforce

There has been an ongoing dialogue among education stakeholders across the nation about impending teacher shortages, and individual states have been grappling with how to properly detect and deal with potential gaps. But are there really shortages? If so, in what regions of the country or in states and to what degree of severity? What type of schools, subject matter areas, or socioeconomic characteristics are more prone to face shortages? Is this an emerging problem, a persistent problem in certain schools, or both? Do states have an adequate pipeline of teachers in preparation programs to meet future demand?

The Rockefeller Institute of Government, the public policy think tank of the State University of New York, is analyzing data and trends in states across the nation to provide clarity and objective data to determine whether states are facing teaching shortages and the characteristics of any gaps.

The Rockefeller Institute found a complicated and diverse picture of gaps in teacher supply and demand, one affected by individual circumstances that often vary by state — and even within individual states. This report is the fourth in a series of state studies by the Rockefeller Institute of P-12 teacher demand and supply. Three prior studies analyzed teacher workforces in South Dakota, New York, and Virginia. The analyses have been supported by a grant from the Council of Chief State School Officers and in partnership with the College Football Playoff Foundation's Extra Yard for Teachers Program.

Overall, Connecticut shows little evidence of a current shortage of primary and secondary public school teachers. The state invests heavily in education by spending more than \$19,000 per pupil in public schools, which ranks below levels only in New York and Washington, DC.<sup>1</sup> Its average annual salaries of teachers in public elementary and secondary schools are also near the top: \$77,717 in 2017, a level exceeded only by New York, California, and the District of Columbia. Connecticut is also one of the few states where average teacher salaries are roughly on par with the mean personal incomes of all state residents with at least a bachelor's degree.<sup>2</sup>

The state's demand for new teachers also seems modest, helping to curtail any emerging shortage. Connecticut has experienced a decline in public elementary and secondary school enrollment of 4 percent between the fall terms of 2010 and 2015, the fourth largest decline in the nation.<sup>3</sup> Yet despite falling enrollment, the state's schools have expanded their teaching workforce in recent years, leading to a state-level decline in student-teacher ratios, down to a ratio of 12.3 in fall 2015.<sup>4</sup> During declines in student enrollment, some states struggle to adequately staff high-poverty rural schools since such schools typically have fewer resources, yet still need teachers who can cover the entire curriculum despite falling enrollments; Connecticut, however, has little rural poverty.<sup>5</sup>

Nonetheless, Connecticut does show imbalances between the supply and demand for public school teachers in geographic, subject-area, and diversity measures, and some imbalances are getting worse. Signs of a growing scarcity of teachers in Connecticut exist also because of falling enrollment in teacher education programs, too. Based largely on data supplied by the Connecticut State Department of Education, Rockefeller Institute of Government researchers found:

- **Declining enrollment in teacher preparation programs.** There have been sharp declines in persons enrolled in and graduating from Connecticut's 14 traditional and four alternate teacher education programs, declines that greatly exceed the national average. Moreover, initial certifications of Connecticut teachers prepared by the state's own teacher education programs have also declined since the last recession.
- **More teachers are leaving education in Connecticut.** An increasing number of Connecticut teachers are leaving the state's teaching workforce, reflected in an increase in open teaching positions that school districts seek to fill. As these trends came together, indications of scarcity in the teacher labor market in Connecticut have emerged since 2010-11, such as increases in the number of open teaching positions not filled by October 1, and a decline in the average number of applicants per open position.
- **The socioeconomic backgrounds of students are changing.** Despite a general decline in public school enrollment in Connecticut, increases have occurred in the number of students in poverty, in English learners, in students with Individual Education Plans, in urban districts, and in students with Hispanic and Asian ethnic backgrounds. These changes in the characteristics, educational needs, and settings of Connecticut pupils all have implications for the kinds of teachers the state requires.
- **There are persistent shortages in key specializations.** Connecticut school districts have reported persistent teacher shortages in certain specializations or "endorsements," including Special Education, Mathematics, Science, World Languages, Bilingual Education and Teachers of English to Speakers of Other Languages (TESOL), School Library/Media Specialists, and Speech and Language Pathologists. A large majority of new graduates from Connecticut's own teacher education programs have not been prepared to meet these needs. Partly in consequence, greater proportions of teachers prepared in other states'

programs, along with Connecticut teachers who change their endorsement during their careers, secure endorsements in these priority shortage areas.

- **Some shortages are compounded by co-occurring challenges.** Multiple needs are often concentrated in a few high-poverty urban districts that already face difficulties in attracting and retaining teachers. Difficulties among high-poverty districts in recruiting and retaining teachers are evidenced by the proportion of teachers leaving the district, the number of open positions, the number of applications per position, the number of job vacancies, and other measures. Difficulties in staffing also may be reflected in the much higher student-teacher ratios in subject and service areas that are typically hard to fill, such as teachers in special education, sciences, mathematics, world languages, as well as librarians and speech and language pathologists.

Despite these challenges, Connecticut has succeeded in ensuring that high-poverty districts have teachers with the appropriate certifications and endorsements for the classes they teach. That said, the state has not been able to recruit a teacher workforce that is as racially and ethnically diverse as its students.

In sum, even though Connecticut has expanded its teacher workforce in recent years and provided appropriately qualified teachers in nearly all of its districts, recent trends suggest a potential shortage of teachers in the future, driven in part by the drop in graduates from teacher education programs and the increasing number of exits by Connecticut teachers. In addition, Connecticut has a distributional problem. The demand for more teachers, for certain specializations, and for increasing diversity in the teacher workforce is concentrated in a few urban, high-poverty districts that are already challenged in recruiting and retaining teachers.

Connecticut leaders have recognized these issues and have established policies aimed at addressing them in recent years, especially in reforms enacted in 2018. The state has created financial incentives to attract teachers to critical shortage subject areas and struggling school districts, and it has made it easier for some teachers who have worked out of state to secure certification in Connecticut. Connecticut has also created new ways by which current teachers may obtain endorsements in subject areas where key shortages exist. In addition, the Connecticut State Board of Education has approved alternative pathways for teacher certification, including opportunities for midcareer professionals and noncertified school staff, and the state has enacted several reforms aimed at recruiting more minority teachers.

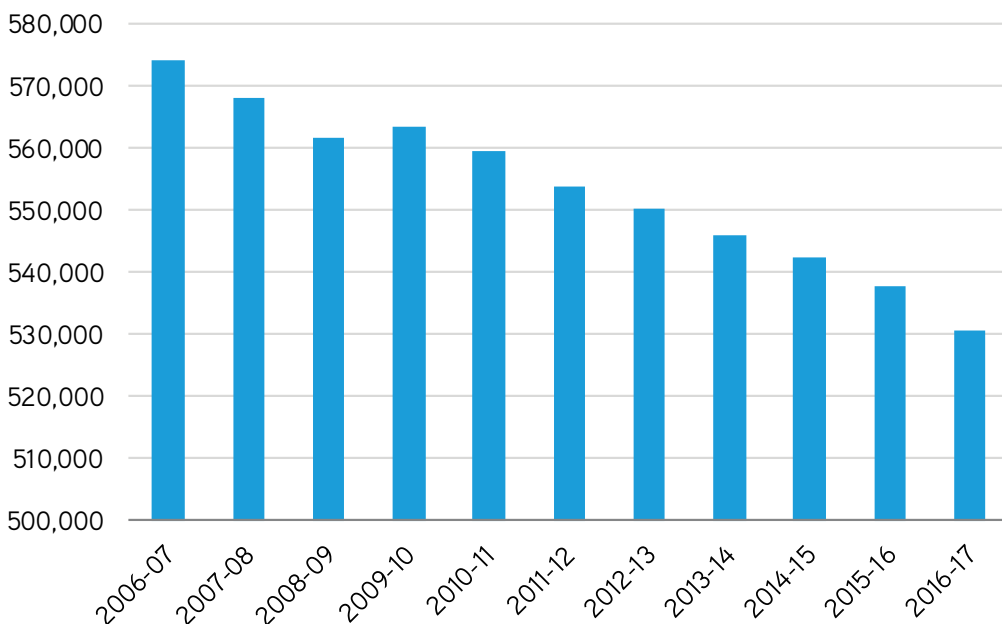
## State-Level Demand and Change

At an aggregate level, Connecticut appears to have a declining demand for teachers. Unlike the slow growth in P-12 student enrollment in the United States as a whole, Connecticut's enrollment has dropped in the last decade, by a total of about 45,000 students, or 7.6 percent, in the 10 years from the 2006-07 to the 2016-17 school years (see [Figure 1](#)).<sup>6</sup> Based on demographic projections, P-8 public school enrollment in the state is expected to decline well into the next decade — by 10.9 percent, or more than another 40,000 students, between 2015 and 2027.<sup>7</sup>

Much of the demand for teachers and the education challenges the state faces is concentrated in a few urban districts with high rates of poverty.

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FIGURE 1. Connecticut's P-12 Student Enrollment, 2006-07 — 2016-17



SOURCE: Rockefeller Institute of Government analysis of Connecticut State Department of Education (CSDE) District Files.

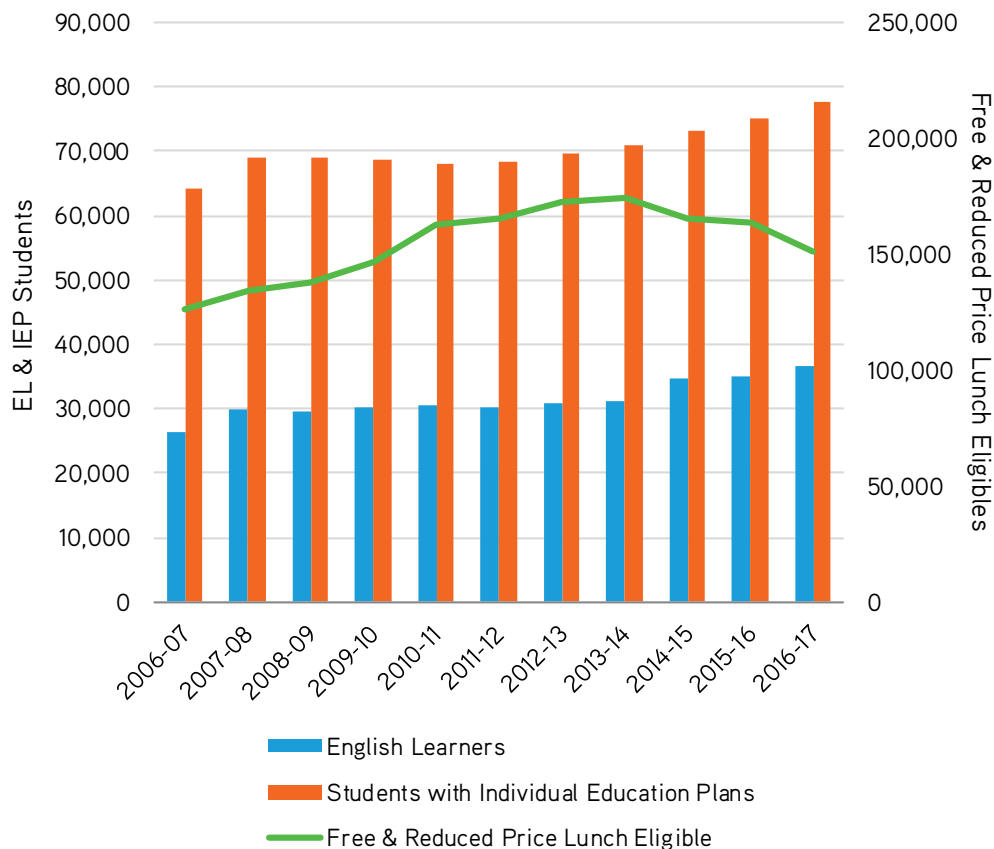
At the same time, certain characteristics of the Connecticut student body have changed. A growing number of P-12 students are English learners (ELs), more students require special education services, and a growing proportion of Connecticut students are from low-income families. [Figure 2](#) illustrates these trends. The number of economically disadvantaged students, measured by eligibility for free or reduced price school lunches (FRPL), increased substantially between 2006-07 and 2013-14 and then declined afterwards, though the number of eligible students remains higher than prerecession levels. The number of students with Individualized Education Plans (IEPs), plans established to ensure that children with an identified disability

receive appropriate instruction and services, has grown by nearly 22 percent, from more than 64,000 in 2006-07 to nearly 78,000 in 2016-17. ELs also grew in number over this decade, from about 26,000 to about 37,000, an increase of 39 percent. Spanish was by far the most common language of EL students, yet there was great diversity: in the 2015-16 school year, 20 or more languages were represented in 39 different school districts.<sup>8</sup>

Connecticut’s elementary and secondary students have also become increasingly diverse in terms of ethnicity and race. As [Figure 3](#) indicates, while the number of white, non-Hispanic students fell by 24 percent between 2006-07 and 2016-17, Hispanic pupils increased in number by over 36 percent, Asian student enrollment grew by 12 percent, and the number of black students fell by 17 percent. Some of the decline in both the black and white student counts after 2011 may have resulted from students being given the option of identifying themselves as multiracial in that year and thereafter, however.

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FIGURE 2. Connecticut Enrollment among English Language Learning Students, Students Eligible for Special Education, and Students from Low-Income Households, 2006-07 – 2016-17

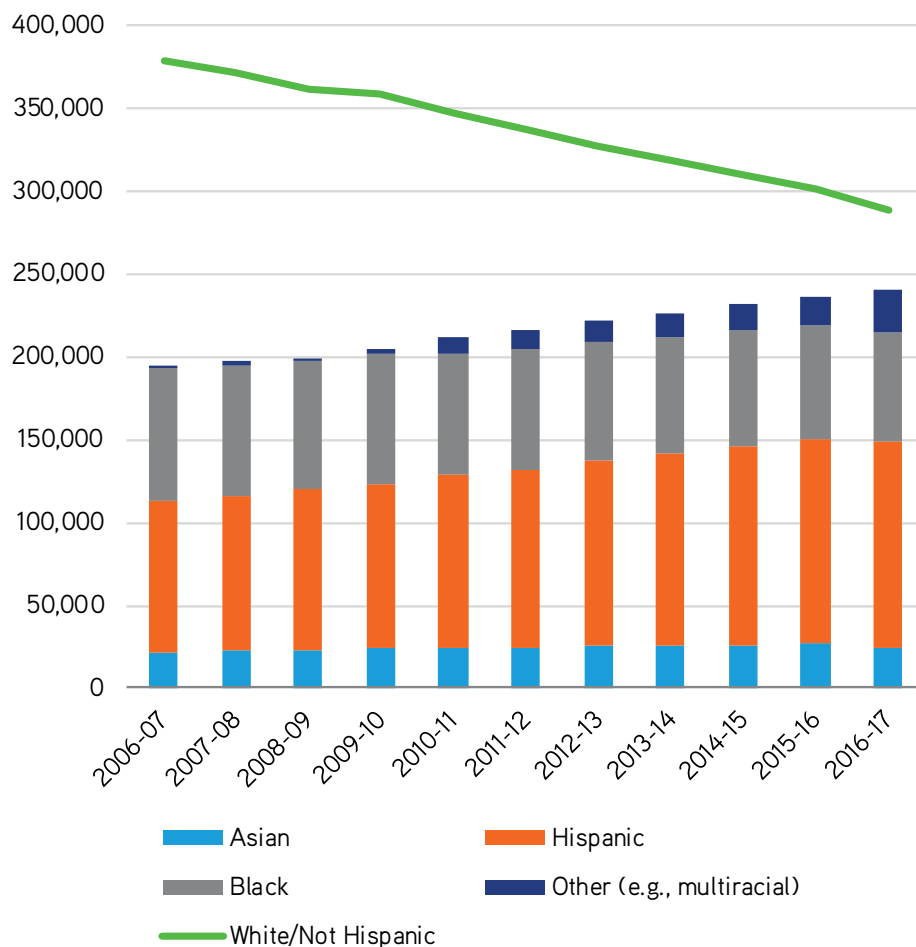


SOURCE: Rockefeller Institute of Government analysis of CSDE District Files.

Finally, the geography of Connecticut’s student population has shifted in recent years. Enrollment in rural school districts has dropped steeply, while the number of students in suburban districts has declined somewhat and enrollment in urban districts has grown (see [Table 1](#)). Taken together, these trends have shifted the distribution of pupils from suburban, town, and rural school districts to cities — a change that has implications for where Connecticut’s teachers are most needed.

In sum, while the aggregate demand for teachers in Connecticut may have declined in recent years as the number of P-12 students fell, there have been significant increases in EL and special education students, in ethnically and racially diverse students, in pupils from low-income families, and in students residing in urban areas. These changes in the characteristics, needs, and locations of pupils do not suggest that the state needs more teachers, but they do indicate a need for teachers with different preparations and diverse skills and characteristics, as well as teachers who want to work in different communities.

**FIGURE 3. Changes in the Ethnic and Racial Characteristics of Connecticut’s P-12 Students, 2006-07 – 2016-17**



SOURCE: Rockefeller Institute of Government analysis of CSDE District Files.



TABLE 1. Change in the P-12 Enrollment, by School District Locality and Year, 2006-07 — 2016-17

Locality of School District	2006-07	2011-12	2016-17	Change, 2006-07 — 2016-17
City	153,533	156,883	155,544	1.3%
Suburb	311,365	291,906	293,041	-5.9%
Town	31,279	25,993	16,115	-48.5%
Rural	66,931	67,349	54,922	-17.9%
<b>Total</b>	<b>563,108</b>	<b>542,131</b>	<b>519,622</b>	<b>-7.7%</b>

NOTE: The definitions of, and data on, city, suburb, town, and rural school districts come from the National Center for Education Statistics’ “urban-centric” locale code for schools and districts. The code essentially refers to a district’s location relative to a populous area. There are 12 urban-centric locale codes, divided into four main types. A “city” includes a principal city, which contains a primary population and economic center within a metropolitan statistical area. A “suburb” is outside the principal city yet inside an urbanized area, which is a densely settled area integrated economically or socially with the city. A “town” is inside an urban cluster, which is also densely settled though not within an urbanized area. A “rural” territory is neither within an urbanized area nor an urban cluster. NCES classifies all schools according to this code and assigns the districts based on the localities of the schools, weighted by the number of students in each locale type.<sup>9</sup>

SOURCES: Rockefeller Institute of Government analysis of CSDE District Files; CCD (Locality).

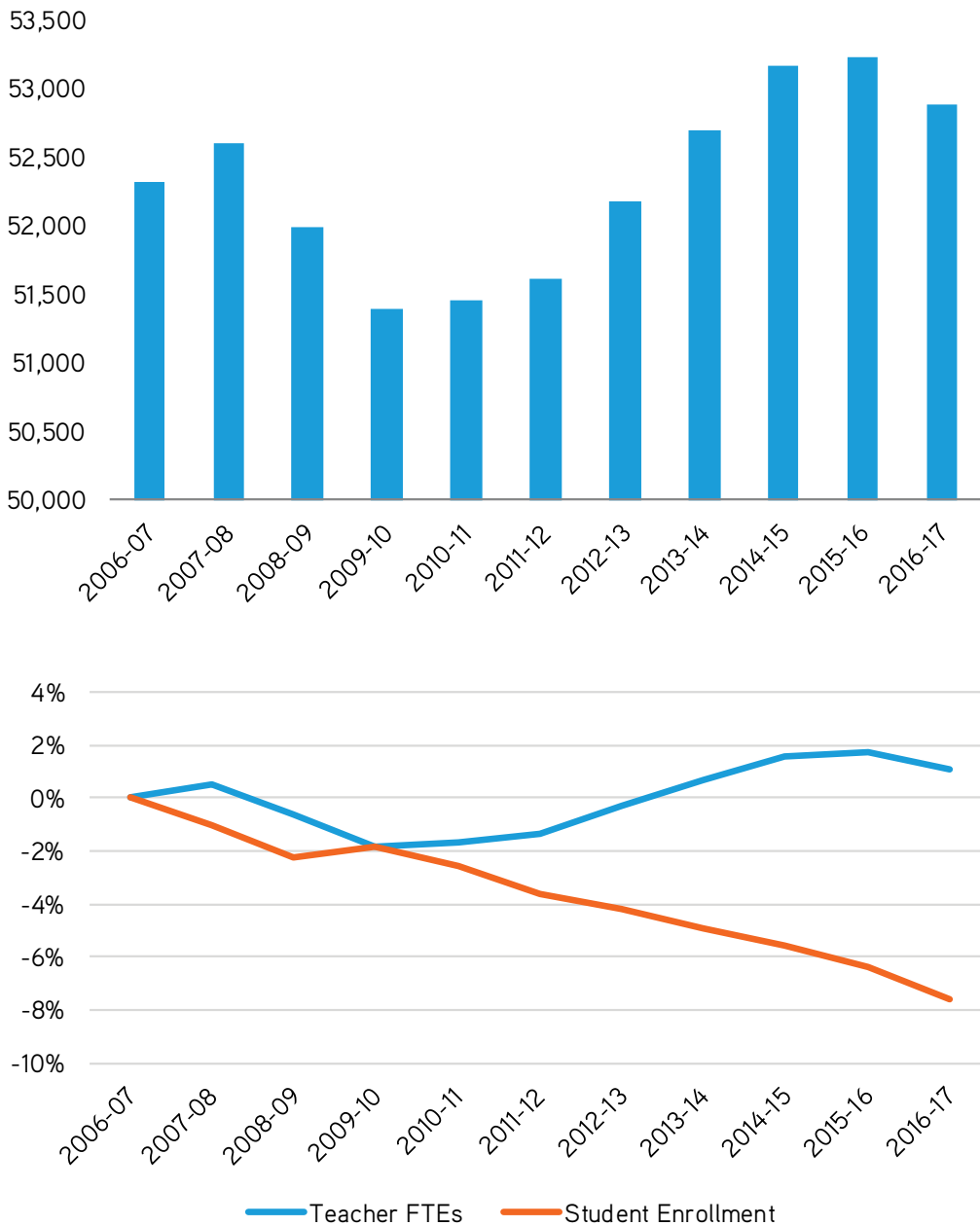
## Teacher Supply

Even while Connecticut’s student enrollment fell in recent years, its teacher workforce has grown (see [Figure 4](#)). Despite a short-term drop in the number of teachers in the aftermath of the 2007-08 recession, by 2014-15 the total workforce exceeded its prerecession levels. One consequence of these diverging trends is a decline in the median pupil-teacher ratios among the state’s school districts, from 14.6 students per teacher in 2006-07, down to 12.0 in 2016-17.

The growth in Connecticut’s teacher workforce has occurred while the state’s teacher education programs have experienced large declines in enrollments and graduates. Connecticut has 14 traditional teacher education programs, along with four alternate programs.<sup>10</sup> The six largest programs — the University of Connecticut; Sacred Heart University; the University of Bridgeport; and Central, Southern, and Eastern Connecticut State — account for over two-thirds of all enrollees in the state.<sup>11</sup>

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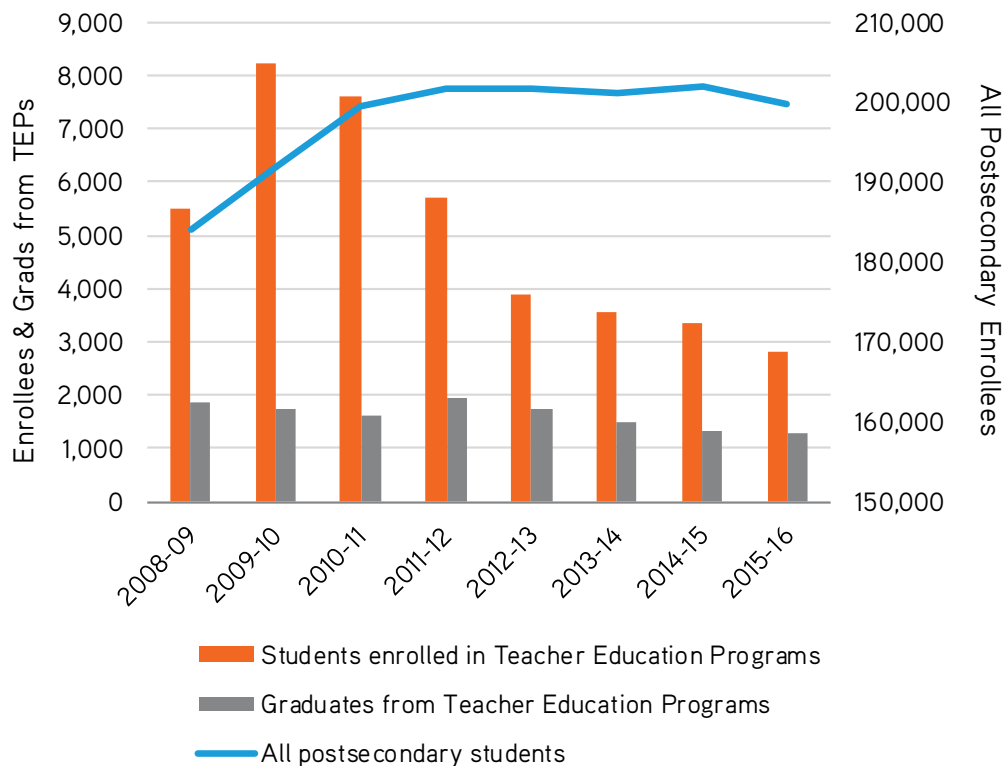
FIGURE 4. The Number of P-12 Teacher Full-Time Equivalents (FTEs) in Connecticut Public Schools; and Percentage Changes in Teacher FTEs and Student Enrollment, 2006-07 — 2016-17



SOURCE: Rockefeller Institute of Government analysis of CCD District Files.

As [Figure 5](#) shows, the number of graduates from teacher education programs (TEPs) in Connecticut fell in recent years, from 1,991 in the academic year 2009-10, to 1,394 in 2015-16, a 30 percent decline in just six years. Enrollment in teacher education programs dropped even more steeply, from 8,215 in 2009-10 to 2,827 in 2015-16, a 66 percent decrease, which may augur further declines in graduates. The declines in enrollees and graduates at teacher education programs reflect a shift away from such programs by Connecticut college students, as overall college enrollment in the state has not decreased (see line in [Figure 5](#)).

FIGURE 5. Declines in the Number of Graduates and Enrollees in Connecticut’s Teacher Education Programs (with Comparison to Higher Education Enrollment in Connecticut), 2009-10 — 2015-16



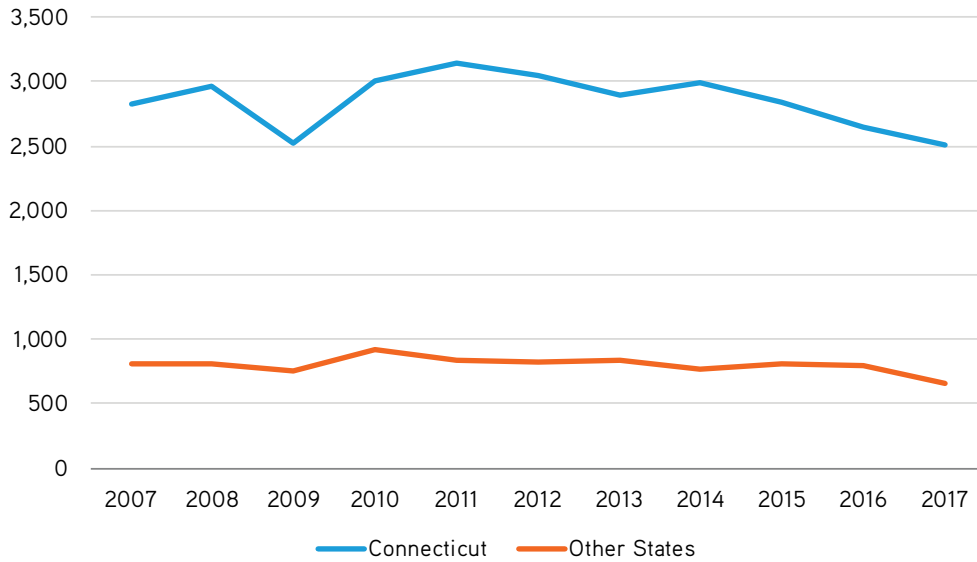
SOURCE: Rockefeller Institute of Government analysis of U.S. Department of Education (USDE), Title II Data; National Center for Education Statistics (NCES), *Digest* (Postsecondary Enrollment).

The effect of these declines on the supply of certified teachers was mitigated as more than one out of every five new teachers of academic subjects working in public schools in Connecticut were trained by out-of-state programs, primarily those in New York and Massachusetts. [Figure 6](#) shows the institutional pathways by which new teachers in Connecticut obtained certification as “Initial Educators” in academic subjects.<sup>12</sup> The number of teachers securing their initial certification through Connecticut TEPs has been falling since shortly after the Great Recession. Teachers getting their initial certification in Connecticut after completing TEPs in other states also declined in number after 2010.

The shrinking supply of graduates from teacher education programs may be contributing to a tighter labor market. [Figure 7](#) compares measures of trends in teacher demand, supply, and an indicator of imbalance between the two (namely, whether an available teaching position remained unfilled after October 1st). Two measures of demand —

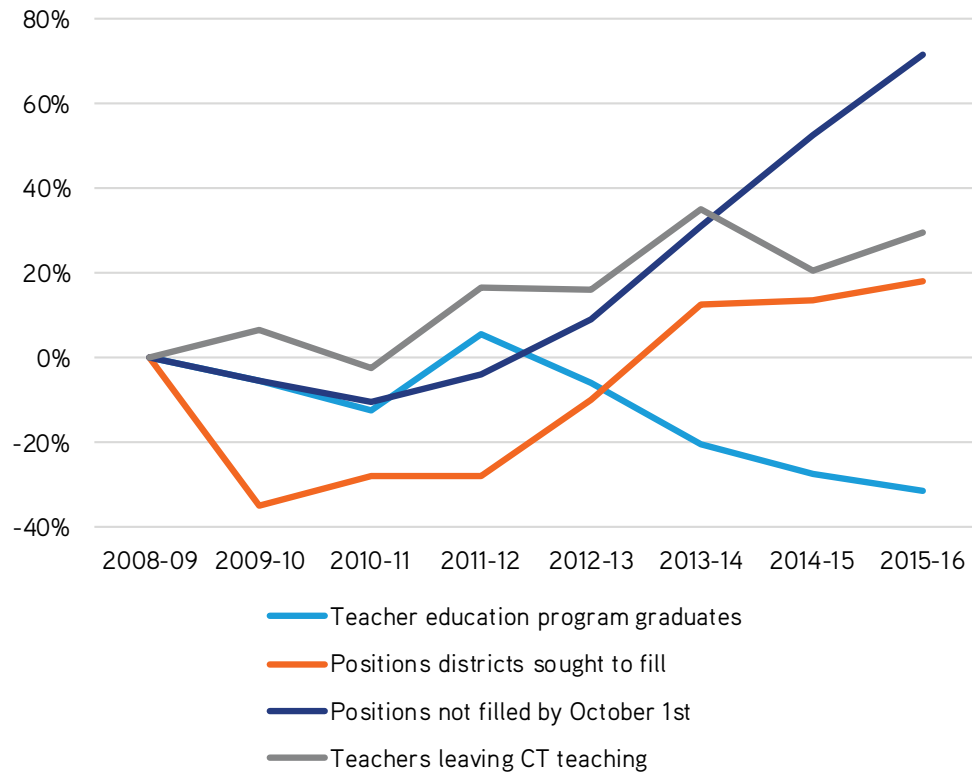
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**FIGURE 6. Sources of Teachers Obtaining Connecticut Certification as Initial Instructors in Academic Subjects, Connecticut vs. Other States' Teacher Education Programs, 2007-17**



SOURCE: Rockefeller Institute of Government analysis of CSDE Teacher Files.

**FIGURE 7. Percent Changes in Teacher Demand, Supply, and Vacancies, 2008-09 – 2015-16**



SOURCE: Rockefeller Institute of Government analysis of USDE, Title II Data; CSDE Hiring Statistics; CSDE Teacher Files.

the number of teachers who leave the state's teaching workforce and the number of teaching positions that districts seek to fill — have both increased since the 2009-10 school year.<sup>13</sup> On the supply side, the number of graduates from Connecticut's teacher education programs has dropped since 2011-12. When these demand and supply trends diverged after 2011-12, an indicator of imbalance in the labor market — the number of teaching positions not filled by October 1st — began to rise steadily through 2015-16. In addition, another indicator of a tightening teacher labor market also showed a similar trend, as the median number of applicants per open position declined from 25 in 2011-12 down to 15 in 2015-16.<sup>14</sup>

These trends and their timing seem to suggest that Connecticut has a growing shortage of teachers, and the shortage may be driven in part by a combination of teacher exits and a declining number of prospective teachers. The increase in exits may stem in part from an increase in teacher retirements, as Connecticut has a somewhat older population of teachers. In 2016-17, 11.2 percent of Connecticut teachers were over 60 years of age, and 32.3 percent were over 50; in comparison, in the US as a whole, 10.5 percent of teachers were over 60, while 30.1 percent were more than 50 years of age.<sup>15</sup> Yet other dynamics may also be at work. As discussed below, open teaching positions are increasingly concentrated in urban, high-poverty districts where the recruitment and retention of teachers is generally difficult, and the difficulties may be compounded by the need in those districts to fill positions where shortages exist, such as EL and special education assignments.

## Supply and Shortages by Subject Area

In addition to aggregate trends in the teacher labor market, it is essential to know whether the supply of teachers with appropriate expertise is meeting subject area demands of the schools and districts. Each year the Connecticut State Department of Education identifies teacher certification shortage areas based on the vacancies in teaching positions reported by public school districts.<sup>16</sup> [Table 2](#) shows these shortage areas, which have been fairly stable, for the past five years. The most consistent shortage areas include classroom teachers in bilingual education and TESOL, comprehensive special education, mathematics, science, technology education, world languages, and vocational/technical education. Other school professionals are also regularly in short supply, including school library/media specialists, speech and language pathologists, and intermediate administrators. One question is whether recent cohorts of new teachers are responding to these persistent shortages — whether the labor market may be in the process of correcting these gaps.

**TABLE 2. Teacher Shortages in Connecticut by Subject Area, 2014-15 to 2018-19**

Shaded cells represent years in which these areas were designated as critical teacher shortage areas.

	2014-15	2015-16	2016-17	2017-18	2018-19
Bilingual Education (K-12)	Shaded	Shaded	Shaded	Shaded	Shaded
Comprehensive Special Ed (K-12)	Shaded	Shaded	Shaded	Shaded	Shaded
Mathematics (7-12)	Shaded	Shaded	Shaded	Shaded	Shaded
Science (7-12)	Shaded	Shaded	Shaded	Shaded	Shaded
Technology Education (P-12)	Shaded	Shaded	Shaded	Shaded	Shaded
World Languages (7-12)	Shaded	Shaded	Shaded	Shaded	Shaded
School Library/Media	Shaded	Shaded	Shaded	Shaded	Shaded
Speech and Language Pathologist	Shaded	Shaded	Shaded	Shaded	Shaded
TESOL (P-12)	Shaded	Shaded	White	Shaded	Shaded
Vocational/Technical (9-12)	White	Shaded	White	Shaded	Shaded
School Psychologist	White	White	Shaded	White	White
Intermediate Administrator	Shaded	Shaded	Shaded	White	White

SOURCE: CSDE: Teacher Shortage Area Files.

To answer this question, we examined overall patterns and recent trends in certifications and subject area endorsements. Because endorsement areas are so numerous and involve many types of professionals, the analysis focuses on newly certified classroom teachers in core academic subject areas: Are these newer teachers responding to state-reported needs? The answer is mixed. [Table 3](#) shows the average annual endorsements awarded by Connecticut to individuals who meet the requirements for initial educators in core academic fields.<sup>17</sup> Averages within recent three-year periods — 2011-13 and 2015-17 — are calculated in order to smooth over the considerable volatility in the annual numbers. The endorsement areas are sorted in descending order according to their counts in the most recent period, 2015-17. The table also calculates the changes in endorsements between these two periods. To see whether endorsements respond to state priorities, the rows in [Table 3](#) that represent “Priority Subject Areas” according to CSDE are shown in bold type. They include special education, mathematics, world languages, various sciences, and TESOL. At the bottom of [Table 3](#), the total endorsements in these priority areas are summed, as are the total endorsements in non-priority areas.



As expected, endorsements in most of the subject areas have declined in number between 2011-13 and 2015-17. Trends in specific endorsements may be responding to state priorities, though largely expressed in smaller declines. Three of the five most numerous endorsements in both time periods are for non-priority subject areas: elementary and kindergarten grades, history and social studies, and English. Of the priority fields, only two special education endorsements are within this group. Also, as the bottom of [Table 3](#) shows, total endorsements in non-priority subject areas vastly outnumber priority areas. The greater volume of the non-priority endorsements is not unexpected, given the large number of teaching positions in these areas. The trends, however, show a relative shift toward priority areas. Endorsements in the shortage areas declined by 6 percent between 2011-13 and 2015-17, while endorsements in the non-priority areas fell 14 percent. Endorsements in low-priority subjects such as elementary/kindergarten, history/social studies, and English declined significantly, while special education, math, most of the sciences, and TESOL experienced smaller declines or even increases in endorsements. Teacher candidates may be influenced by market needs, although the general decline in endorsements may limit the effects of such changes on efforts to overcome subject area shortages.

An important step in developing policy responses to teacher shortages is determining *which* sources of teacher certifications and endorsements are more likely to fill priority areas. In addition to educator preparation programs in Connecticut, teachers may respond to the state's subject area needs in two other ways: teachers prepared by programs in other states may have priority endorsements and then acquire certification and teaching positions in Connecticut; or current Connecticut teachers may secure new endorsements in high-priority areas. Each of these pathways highlights different policy levers. For example, is the state more likely to reduce its subject area shortages by providing financial support for students in Connecticut educator preparation programs, or by encouraging the recruitment of teachers from other states, or by promoting opportunities for current teachers in Connecticut to change endorsements?

**TABLE 3. Average Annual Endorsements in Connecticut and Changes, Areas Compared 2011-13 — 2015-17; Priority Shortage Areas and Non-Priority**

Priority shortage areas for Connecticut (2017), are in bold type. Each endorsement is a primary endorsement; one teacher is associated with one and only one endorsement.

	2011-13	2015-17	Change, 2011-13 to 2015-17	Percent Change, 2011-13 to 2015-17
Elementary - Kindergarten through Grade 6	1,591	1,361	-230	-14%
History and Social Studies, Grades 7 - 12	391	339	-52	-13%
<b>Special Education: Comprehensive, Grades K-12</b>	<b>349</b>	<b>324</b>	<b>-26</b>	<b>-7%</b>
English, Grades 7 - 12	358	307	-51	-14%
<b>Early Childhood/Special Ed., Birth, K, 1-3</b>	<b>191</b>	<b>214</b>	<b>23</b>	<b>12%</b>
<b>Mathematics, Grades 7-12</b>	<b>212</b>	<b>187</b>	<b>-25</b>	<b>-12%</b>
Music, P-12	129	113	-16	-12%
<b>Biology</b>	<b>125</b>	<b>110</b>	<b>-15</b>	<b>-12%</b>
<b>World Languages</b>	<b>121</b>	<b>103</b>	<b>-18</b>	<b>-15%</b>
Art, P-12	125	97	-28	-22%
Reading and Language Arts, P-12	65	82	17	26%
<b>General Science, Grades 7-12</b>	<b>52</b>	<b>50</b>	<b>-2</b>	<b>-4%</b>
<b>Chemistry, Grades 7-12</b>	<b>31</b>	<b>28</b>	<b>-4</b>	<b>-12%</b>
TESOL, Grades P-12	24	27	3	14%
<b>Earth Science</b>	<b>13</b>	<b>15</b>	<b>2</b>	<b>13%</b>
<b>Mathematics, Middle School</b>	<b>19</b>	<b>12</b>	<b>-7</b>	<b>-36%</b>
History and Social Studies, Middle School	14	12	-2	-16%
<b>Physics, Grades 7-12</b>	<b>16</b>	<b>12</b>	<b>-4</b>	<b>-25%</b>
English, Middle School	19	11	-8	-41%
Other (Non-Priority)	16	20	4	25%
<b>Priority Shortage Areas</b>	<b>1,154</b>	<b>1,082</b>	<b>-72</b>	<b>-6%</b>
<b>Non-Priority Areas</b>	<b>2,708</b>	<b>2,342</b>	<b>-366</b>	<b>-14%</b>
<b>Percent Priority Shortage Areas</b>	<b>29.9%</b>	<b>31.6%</b>	<b>—</b>	<b>—</b>
<b>Total</b>	<b>3,861</b>	<b>3,424</b>	<b>-437</b>	<b>-11%</b>

SOURCE: Rockefeller Institute of Government analysis of CSDE Teacher Files.





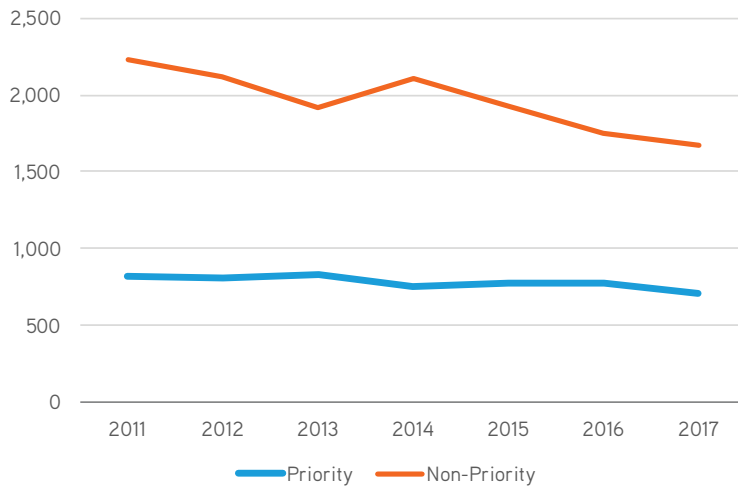
The data series shown in [Figure 8](#) suggest that the latter two pathways have been more responsive to Connecticut’s subject area needs than have teacher education programs within the state. [Figure 8A](#) shows the number of Initial Educators with priority and non-priority endorsements, where teachers were prepared by Connecticut teacher education programs (the years indicate when the teachers were first certified). Among these endorsements, non-priority subject areas persistently outnumbered those in priority areas.

[Figure 8B](#) shows the number of Initial Educators prepared by teacher education programs in other states. New teachers with endorsements in non-priority areas dropped by about half over this six-year period, while those with endorsements in priority areas held steady. Among new teachers from out-of-state programs, non-priority endorsements still were more numerous in 2017, but the gap between priority and non-priority areas has shrunk substantially in recent years.

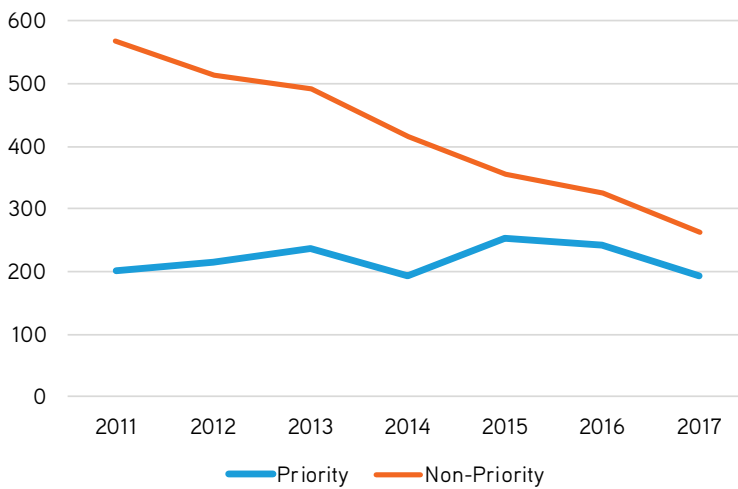
[Figure 8C](#) shows a different source of change — changes in endorsements by individuals already teaching in Connecticut. These include teachers who already were certified to be Initial, Provisional, or Professional Educators but who changed or added endorsements. Not only has there been an increase in the number of endorsement changes among Connecticut teachers, most of the changes have been toward priority subject areas. Encouraging such changes within the current teacher workforce may thus be a promising avenue for addressing shortages.

**FIGURE 8. Priority vs. Non-Priority Endorsements by Source, 2011-17**

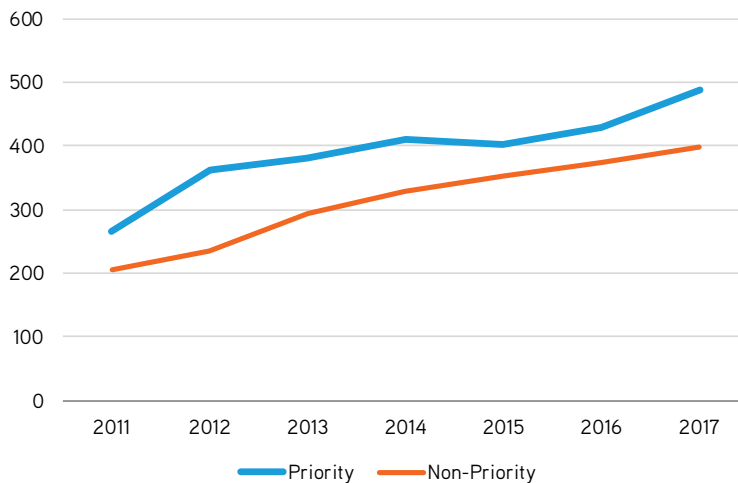
**A. Endorsements of Initial Educators Prepared by Connecticut Programs**



**B. Endorsements of Initial Educators Prepared by Programs in Other States**



**C. Changes in Endorsements Obtained by Current Connecticut Teachers (includes Initial, Provisional, and Professional Educators; All Teacher Education Programs)**



SOURCE: Rockefeller Institute of Government analysis of CSDE District Files.

# Poverty and Change

Despite Connecticut’s affluence, about one-third (32.4 percent) of its P-12 students qualified for free or reduced price lunches in 2016-17. To see whether and how student poverty rates may be associated with teacher demand and supply, Connecticut’s school districts were classified into three categories based on their mean percentage of students eligible for free or reduced price lunches over the past decade (i.e., 2006-07 through 2016-17).<sup>18</sup> Districts whose average percentage of students eligible for free or reduced price lunch (FRPL) were less than 10 percent were defined as having low rates of poverty; districts with an average percentage of FRPL-eligible students between 10 and 40 percent were classified as having moderate rates of poverty; and districts with an average percentage greater than 40 percent were defined as having high rates of poverty. As [Table 4](#) indicates, most high-poverty districts were in cities. Students in moderate-poverty districts were largely in suburban areas, as were students in low-poverty districts. Few students in rural areas lived in high-poverty districts.

**TABLE 4. Number of Students in Connecticut School Districts by Student Poverty Rates and Type of Locality (Urban, Suburban, and Rural/Town), 2016-17**

	Low (<10% FRPL)	Moderate (10-40% FRPL)	High (>40% FRPL)
No. of students in cities, thousands (2016-17)	0.0	30.9	124.7
No. of students in suburbs, thousands (2016-17)	97.8	123.1	72.1
No. of students in rural/towns, thousands (2016-17)	29.4	31.1	10.6
<b>Total number of students, thousands (2016-17)</b>	<b>127.2</b>	<b>185.1</b>	<b>206.6</b>
<b>Number of districts</b>	<b>55</b>	<b>100</b>	<b>47</b>

SOURCE: Rockefeller Institute of Government analysis of CSDE District Files; CCD Data.

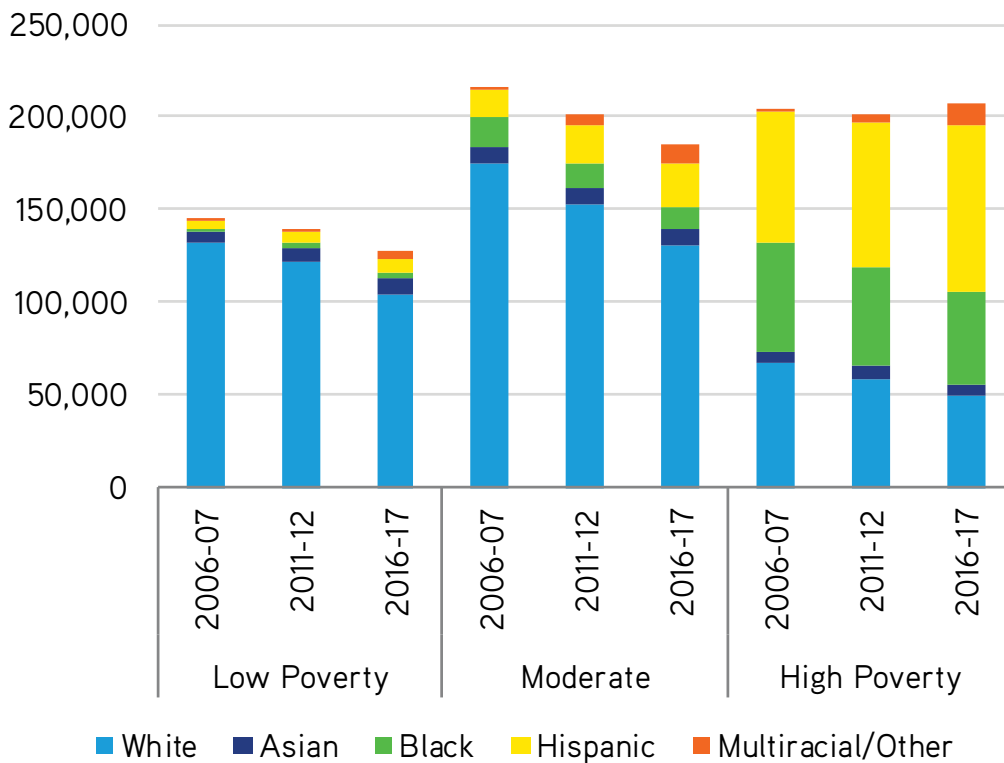
Districts with different student poverty rates varied in other respects as well, including factors that can affect teacher demand. Some of these differences are displayed in [Figure 9](#). Between 2006-07 and 2016-17, total enrollment shrank in districts with low and moderate poverty levels, while the number of students increased, albeit slightly, in high-poverty districts. Districts also varied in the racial and ethnic characteristics of their pupils. Low-poverty districts were overwhelmingly white and non-Hispanic, and though the numbers were small, their enrollment of Asian students grew.

Districts with moderate rates of student poverty were predominantly white yet showed greater numbers and increases in Hispanic and multiracial/other students. High-poverty districts were quite different: white students were a shrinking minority, as were black students, while Hispanic and multiracial pupils increased substantially in numbers during this period.

District poverty rates were also associated with other student trends. [Figure 10](#) shows the changing number of students who were English learners in each of these three groups of districts. ELs increased in all three categories, though the greatest growth occurred in the high-poverty districts, which saw an increase of nearly 9,000 EL students between 2006-07 and 2016-17. Students with IEPs also increased in all three poverty groupings, but especially among the high-poverty districts.

**Connecticut’s teacher workforce has reflected trends in the state’s student enrollment, which has shifted toward more urban and large suburban districts with high rates of student poverty.**

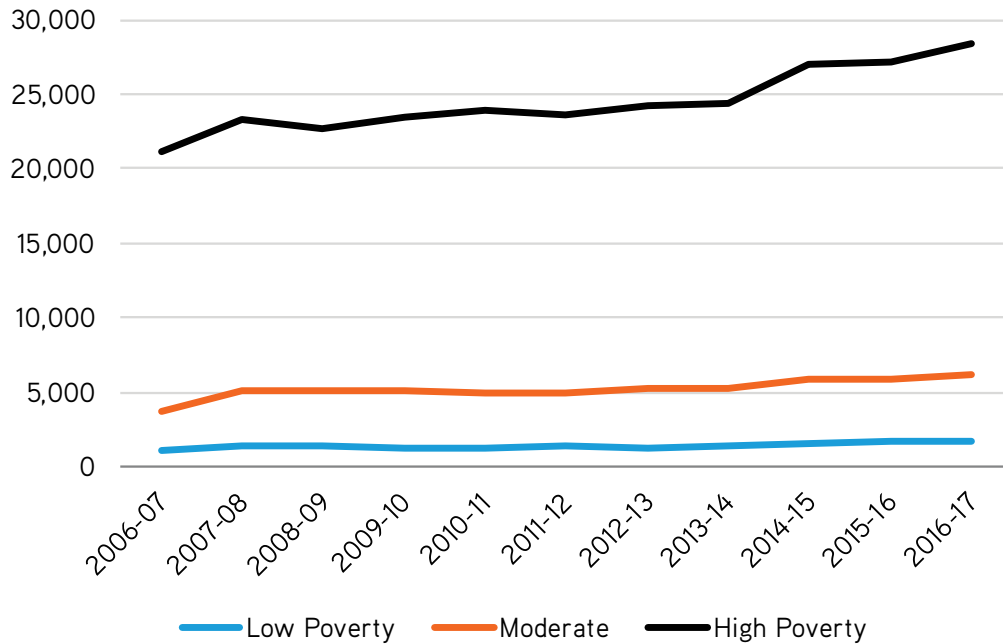
FIGURE 9. Connecticut Enrollment and Race/Ethnicity of Students, by District Poverty Rates and Year, 2006-07, 2011-12, and 2016-17



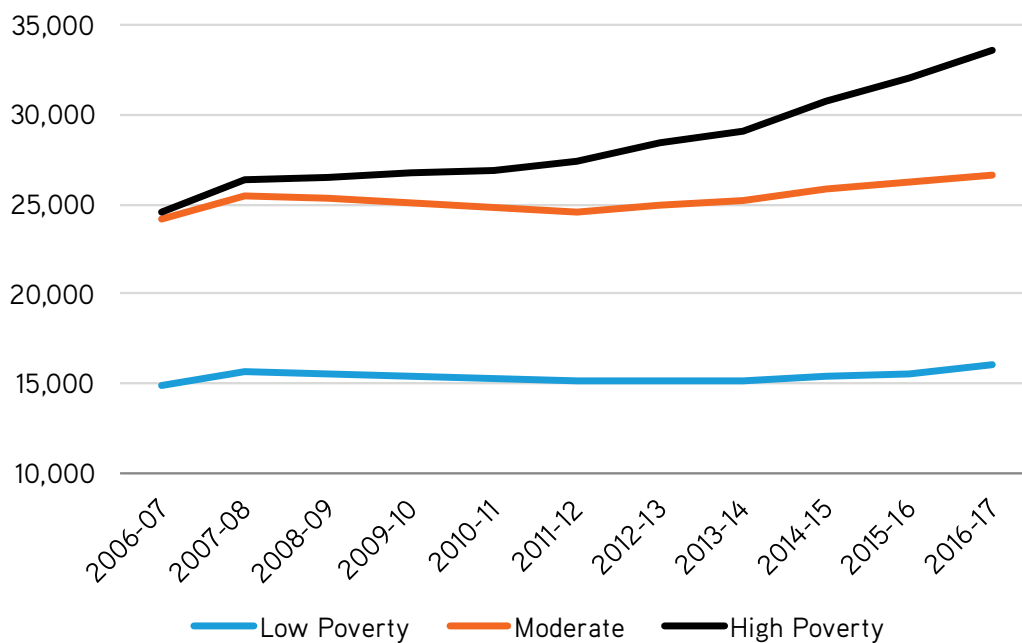
SOURCE: Rockefeller Institute of Government analysis of CSDE District Files.

FIGURE 10. Changes in the Enrollment of English Learners and Students with Individualized Education Plans, by District Poverty Rate, 2006-07 — 2016-17

A. Number of English Learners by District Category



B. Number of Students with Individualized Education Plans by District Category



SOURCE: Rockefeller Institute of Government analysis of CSDE District Files.

As student enrollment in Connecticut shifted toward urban and large suburban districts with high rates of student poverty, the distribution of the teacher workforce has also changed. [Figure 11](#) illustrates this point by showing percentage changes in the number of teachers (FTEs) and total student enrollment between 2006-07 and 2016-17. The teacher workforce declined in the low- and moderate-poverty districts, while the increase in teachers in the high-poverty districts exceeded the increase in students. Connecticut expanded the number of teachers where enrollment grew, while it largely sustained the workforce where enrollment fell. The results were, as [Figure 12](#) illustrates, declines in aggregate student-teacher ratios in all three groups of districts over the decade, though the high-poverty districts did not experience a decline in those ratios after the recession and, by 2016-17, still had student-teacher ratios significantly higher than the lower-poverty groups.

Although the general distribution of teachers has shifted with trends in enrollment, high-poverty districts are experiencing relative teacher shortages with respect to certain specializations. As already noted, the largest increases in the number of special education and EL students occurred in high-poverty districts. As [Table 5](#) indicates, the number of teachers certified to teach special education and EL students grew between 2006-07 and 2016-17, and the increases occurred in all districts. Yet there were differences in the ratio of changes between students and teachers. For example, in the moderate-poverty group, there were about 15 additional English learners for every additional teacher certified to teach bilingual or TESOL classes; in the high-poverty group, the ratio of change was about 91 students for every certified teacher. The ratios for change in special education students and teachers were similar: compared to high-poverty districts, school districts in the low- and moderate-poverty groups increased their special education teachers in response to much smaller numbers of additional students qualifying for services.

**TABLE 5. Changes in the Number of EL and Special Education (SPED) Students and Teachers, 2006-07 – 2016-17**

	Low Poverty	Moderate	High Poverty
Changes in EL students, 2006-07 – 2016-17	680	2,350	7,187
Changes in EL teacher FTEs, 2006-07 – 2016-17	25	157	79
Changes in SPED students, 2006-07 – 2016-17	1,139	2,479	8,973
Changes in SPED teacher FTEs, 2006-07 – 2016-17	80	92	183
EL ratio of change (students:teachers), 2006-07 – 2016-17	27:1	15:1	91:1
SPED ratio of change (students:teachers) 2006-07 – 2016-17	14:1	27:1	49:1

*SOURCES:* Rockefeller Institute of Government analysis of CSDE District Files; CSDE Teacher Files.

FIGURE 11. Percent Changes in Student Enrollment and Teacher FTEs, by District Poverty Rates, 2006-07 — 2016-17

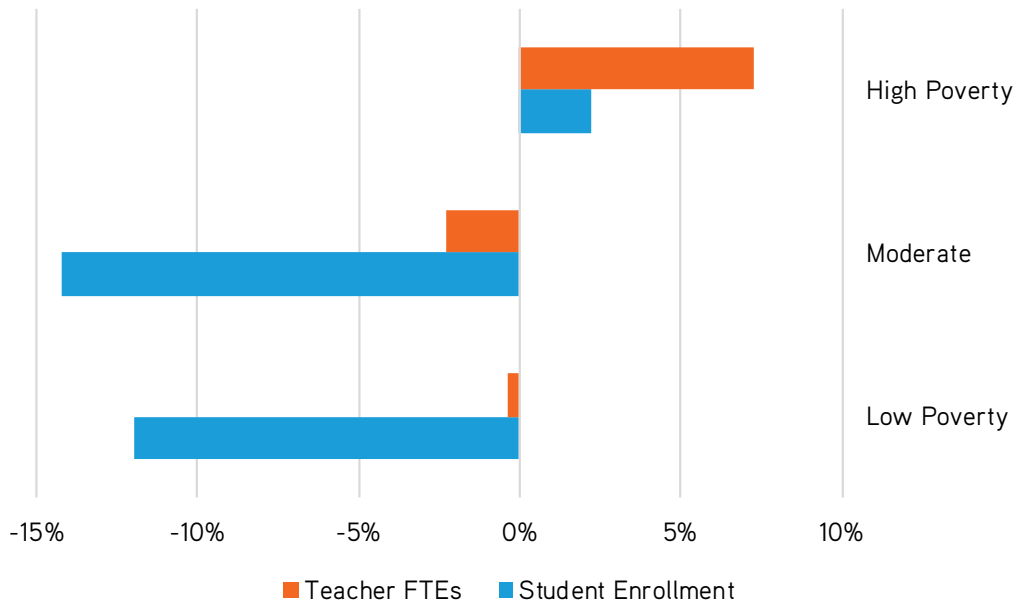
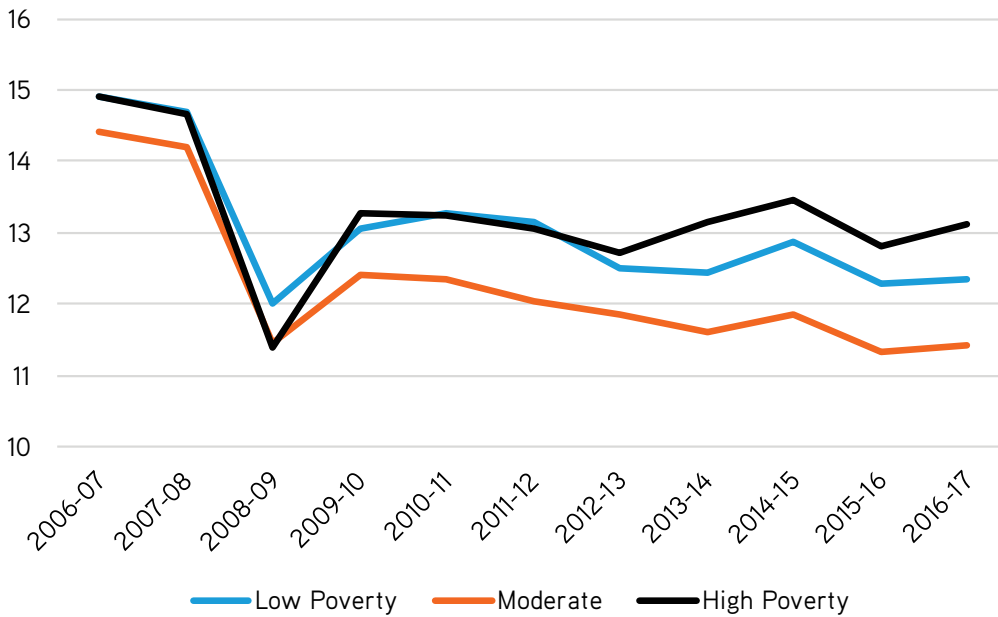


FIGURE 12. Student-Teacher Ratios by District Poverty Rates, 2006-07 — 2016-17



SOURCE: Rockefeller Institute of Government analysis of CSDE District Files; CSDE Teacher Files.



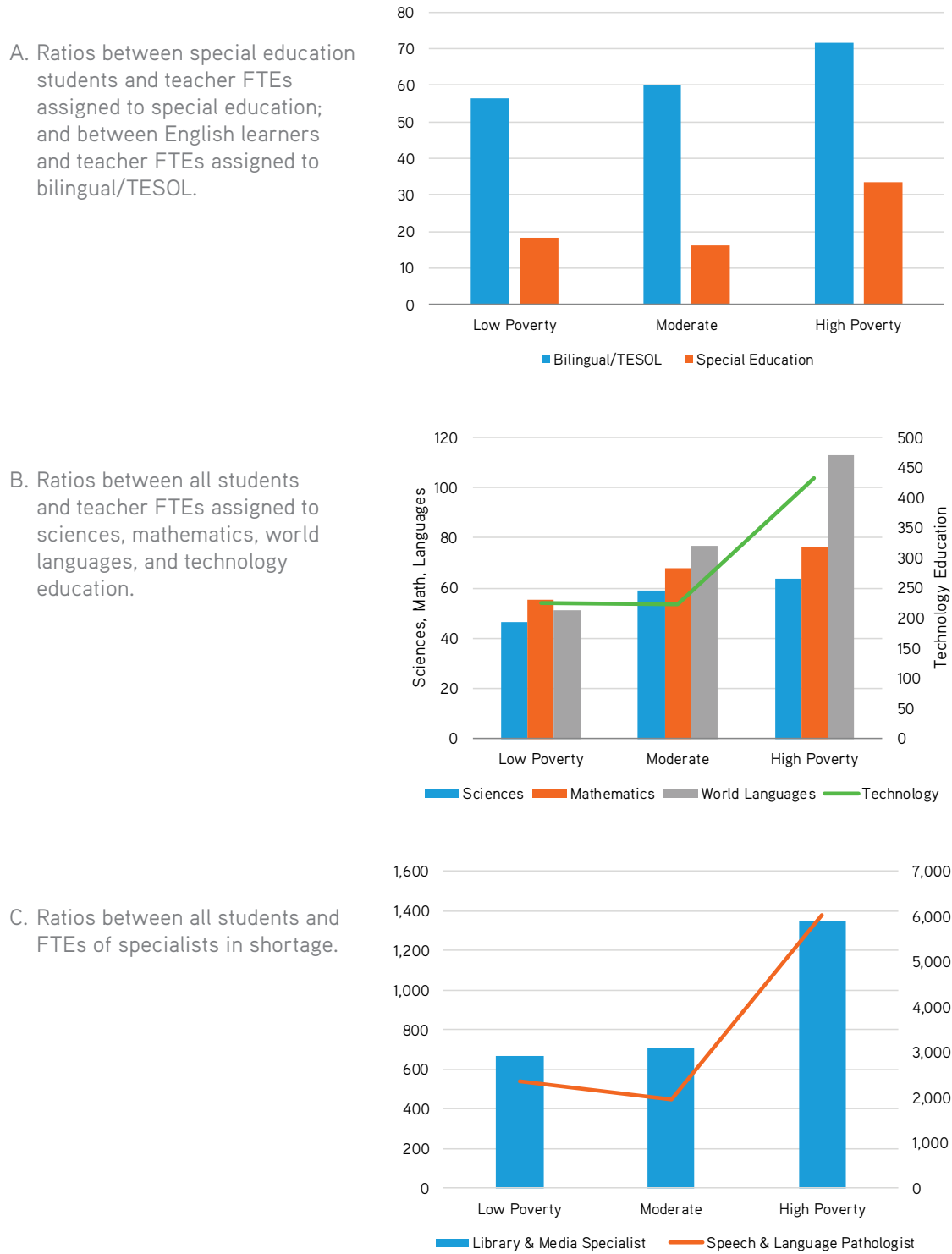
These disproportionate changes in students and teachers across districts with different poverty rates resulted in disparate student-teacher ratios for special education and EL students. [Figure 13A](#) shows these ratios, averaged over the academic years, 2014-15 to 2017-18. High-poverty districts have somewhat higher student-teacher ratio for EL teachers and students, while they have a much higher student-teacher ratio for special education students and teachers. There are 34 special education students for one certified and assigned teacher in the high poverty group, about twice as many students than in the low- and moderate-poverty groups.

Student-teacher ratios also vary with district poverty with respect to other subjects taught and services provided, especially other specializations where statewide shortages exist and competition for teachers is most acute. Large differences in student-teacher ratios are found in the sciences, mathematics, world languages, and technology education (see [Figure 13B](#)). Differences across districts of different poverty rates also exist for world languages and technology education, where student-teacher ratios in the high-poverty districts are more than twice those in the low-poverty group. Mathematics and science (a category that combines all of the natural sciences) also reveal sizable differences associated with poverty rates.

The Connecticut State Department of Education reports that certain specialists — including librarians and speech and language pathologists — also are areas where workforce shortages exist. The availability of services by both librarians and speech/language pathologists appears to be much weaker in the high-poverty districts, as the ratios are again about twice as high as districts with lower poverty rates (see [Figure 13C](#)). (Note, however, that these ratios are based on all students; in the case of speech and language pathologists, the number of students needing such services in low-, moderate-, and high-poverty schools may vary but could not be determined by available data.)



**FIGURE 13. Aggregate Student-Teacher Ratios by Teacher Assignment and District Poverty Rate, In Shortage Areas, 2014-15 – 2017-18**



SOURCE: Rockefeller Institute of Government analysis of CSDE Teacher Files; CSDE District Files.

## Poverty and Teacher Recruitment and Retention

While some district-level changes in teachers and students may stem from trends in student enrollment and characteristics, another set of contributing factors may be differences between high- and low-poverty districts in recruiting and retaining teachers. An imbalance between the supply and demand for teachers may be manifested by greater teacher attrition, more open positions, fewer applications, and more vacancies — leading perhaps to a younger and less experienced faculty.

In analyzing Connecticut’s school districts with high-poverty rates, one complication is the role of public charter school districts. Connecticut has 24 charter school districts: 18 have high-poverty rates among their students, and six are in the moderate category. Their share of total student enrollment is small: only 0.7 percent of students in moderate-poverty districts and 4.0 percent in the high-poverty category. However, because there are so many charter districts in the high-poverty group, and because their teaching staff is so distinctive, it makes sense to separate them in analyses from the 24 traditional public school districts in the high-poverty group.<sup>19</sup>

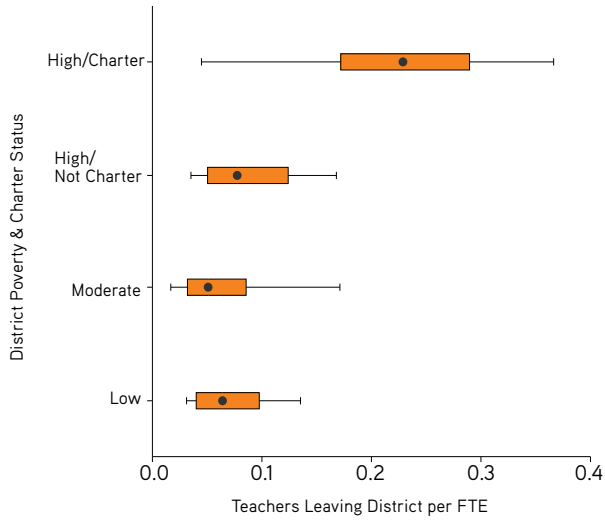
[Figure 14](#) shows several ways in which high-poverty school districts differ from districts with lower rates of poverty, including differences between traditional and charter districts within the high-poverty group. Because the variation within each category is important as well as the average or median value, [Figure 14](#) uses box plots to summarize the distribution. (Each plot shows the median value with a dot within the box; the ends of each box indicate the 25th and 75th percentiles, and the ends of each extended line mark the 10th and 90th percentiles.)

The plots make clear that high-poverty charter school districts experience teacher demand and supply in ways that differ considerably from other groups. High-poverty districts, though especially charter school districts, have greater rates of teacher attrition, measured as the annual number of teachers leaving the district (though not the state) per teacher FTE. (The average rate across two school years is shown in [Figure 14](#) to reduce the effects of short-run changes.) Charter school districts show much higher and more varied attrition rates than the other categories, though the traditional high-poverty districts are also distinctive: their median proportion of teachers leaving each year, around 8 percent, is about the same as the 75th percentile of the moderate-poverty group.

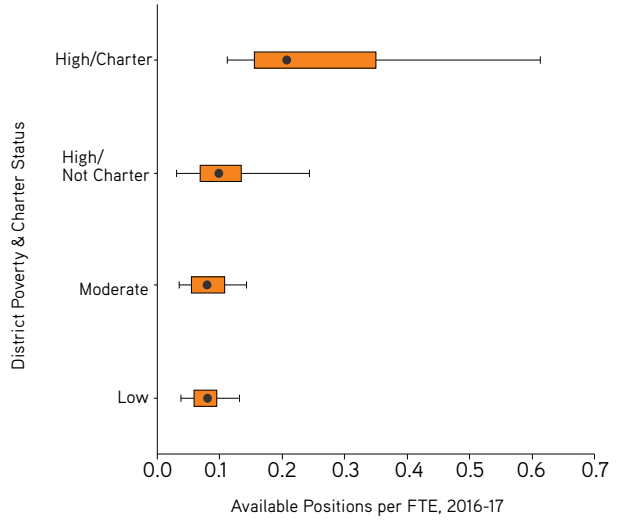
As high-poverty districts deal with greater attrition and add more faculty due to their growing enrollments, they also have more faculty positions to fill. [Figure 14B](#) illustrates those differences by showing the available teaching positions per FTE. (Data were not available for multiple years, so only one school year, 2016-17, is shown.) Again, districts in the high-poverty categories show greater teacher turnover than those in the lower-poverty districts, and charter school districts are especially high in terms of teacher turnover.

FIGURE 14. Indicators of Teacher Demand and Supply in Connecticut School Districts, by Poverty Rate of Students and Traditional/Charter Distinction within High-Poverty Group

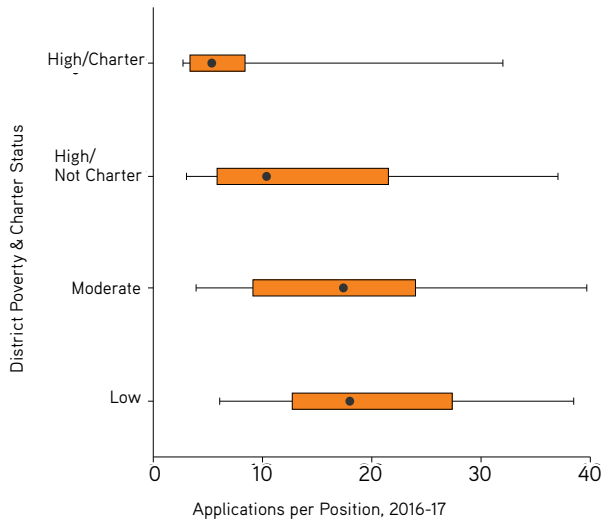
A. Average annual proportion of teachers leaving district per FTE, 2015-16 – 2016-17



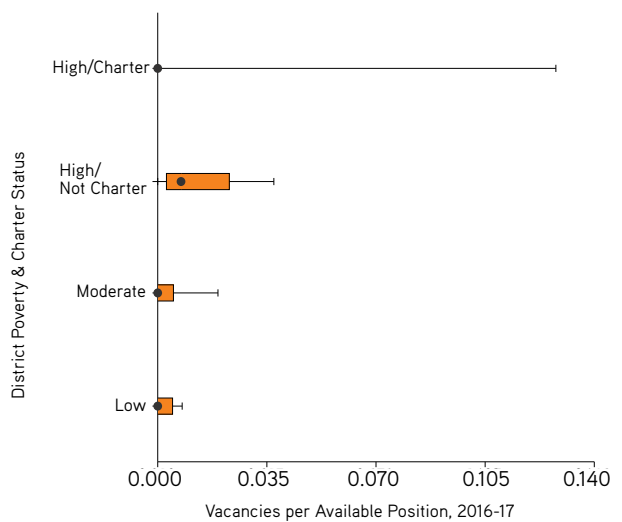
B. Available teaching positions per FTE, 2016-17



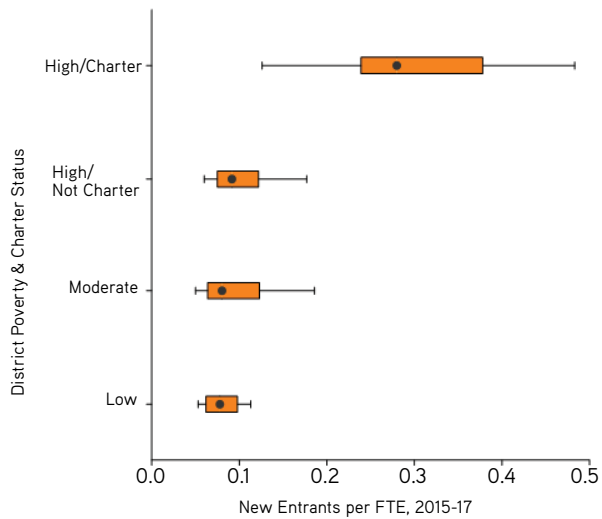
C. Applications per available positions, 2016-17



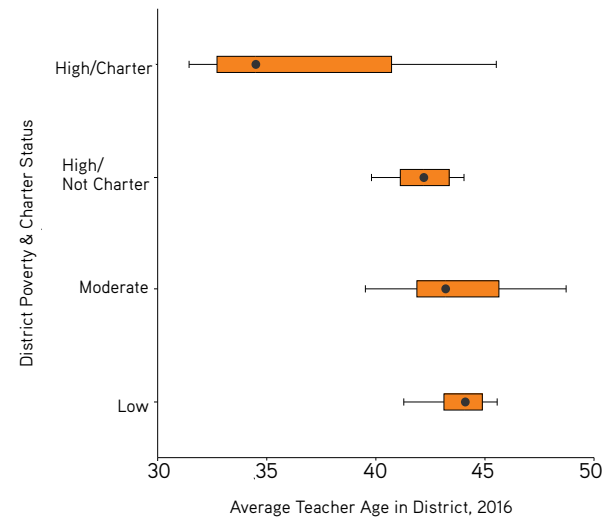
D. Vacancies per available positions, 2016-17



E. New entrants into teaching, 2016-17



F. Average teacher age, 2016-17



SOURCE: Rockefeller Institute of Government analysis of CSDE District Files; CSDE Teacher Files.

[Figure 14C](#) indicates that when teaching positions are advertised, fewer applications are received by high-poverty districts. Charter districts receive very few applications, though traditional high-poverty districts also get fewer applicants than districts with lower student poverty rates. Difficulties in recruiting teachers also are reflected in [Figure 14D](#), which shows the proportion of vacancies districts still have after October 1st of the school year. Vacancies are uncommon and represent dysfunction in the labor market; they are, however, significantly more common among traditional high-poverty districts.

One possible consequence of this lower level of competition for jobs is a greater rate of hiring new entrants into teaching. [Figure 14E](#) displays the differences among districts in the proportion of hired teachers who are new to Connecticut's teaching workforce. In addition to the great difference between the charters and the rest of districts, the most distinctive group is the low-poverty category; affluent districts hire few new entrants, and there is little variation within the group on this measure.

Finally, [Figure 14F](#) suggests that these patterns of turnover, lower competition for teaching jobs, and greater recruitment of new entrants may contribute to a younger teaching workforce in higher-poverty districts. Charter school districts have especially young faculty, with a median age of 34, but teachers in the traditional high-poverty districts are also somewhat young, with a median around 42, compared to 44 in the low-poverty districts. Moderate-poverty districts average between these two groups, though they vary considerably.

In sum, district-level poverty is associated with significant differences in teacher recruitment and stability in the teacher labor market. The greatest differences are found among the charter school districts, while the high-poverty, traditional districts show consistent yet smaller differences with districts having lower rates of student poverty. Problems of recruitment and retention in high-poverty districts may help account for some of the trends noted at the state level, including increases in open positions, exits from teaching, and unfilled or vacant positions (see [Figure 7](#)). As more and more students are enrolled in high-poverty districts, and as a growing number of teaching positions are created in those districts, the state-level challenges of providing an adequate supply of teachers are increasingly affected by what is happening or not happening in the urban, high-poverty districts.

In one important respect, Connecticut has fared better than many states in recruiting and distributing teachers with appropriate credentials. There are two measures for estimating matches between teacher credentials and the classes they teach: one is a measure assigned by the Connecticut State Department of Education on whether a teacher's assignment matches the state's records regarding her or his endorsements; the second is a measure of the percentage of classes in core academic subjects that are taught by "highly qualified teachers," i.e., teachers who are fully certified in the subject areas and grade levels they are teaching.<sup>20</sup> As [Table 6](#) indicates, there are sizeable differences between charter school districts and the other groups. There are also differences between the traditional high-poverty school districts and the districts with lower-poverty rates, but those differences are considerably smaller than those observed in other states.<sup>21</sup>

**TABLE 6. Percentage of Appropriate Matches between Teachers’ Assignments and Their Endorsements; and the Number of Core Academic Classes Taught by Highly Qualified Teachers, 2015-16**

	Percent of Teaching Assignments with Appropriate Matches between Subject and Teacher Endorsement	Percent of Core Academic Subjects Taught by Highly Qualified Teachers
Low-Poverty Districts	99.3	99.3
Moderate-Poverty Districts	97.9	97.6
High-Poverty Districts/Traditional	97.9	98.0
High-Poverty Districts/Charters	84.7	92.2

*NOTE:* Core academic subjects are Art, Elementary, English Language Arts, Kindergarten, Mathematics, Music, Reading, Science, Social Studies, and World Languages, including those classes of these subjects that are taught in a special education or English learner environment. To be considered highly qualified, a teacher must be fully certified in the subject area and grade level they are teaching.

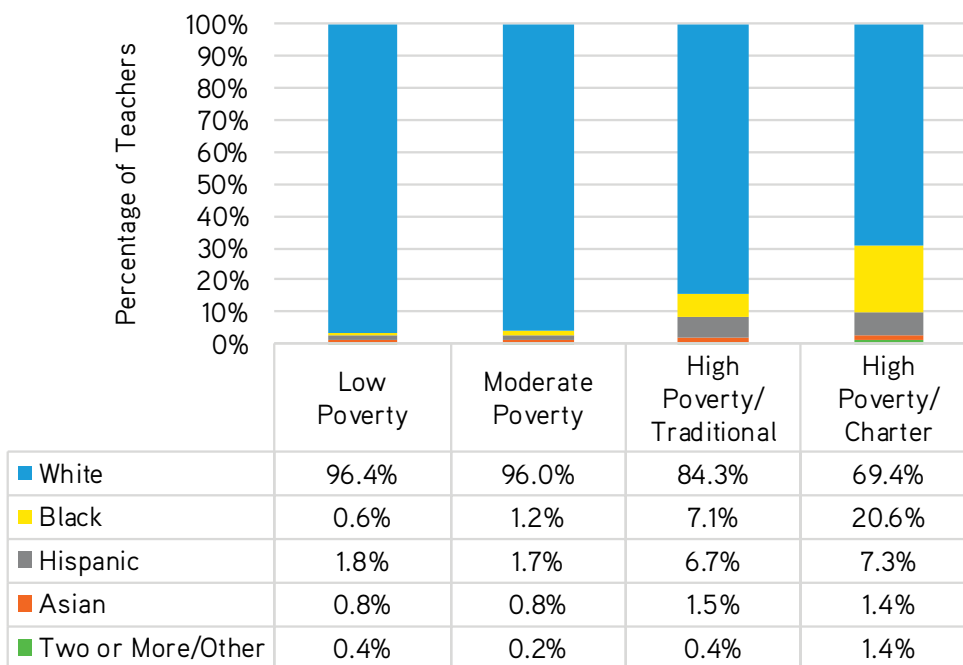
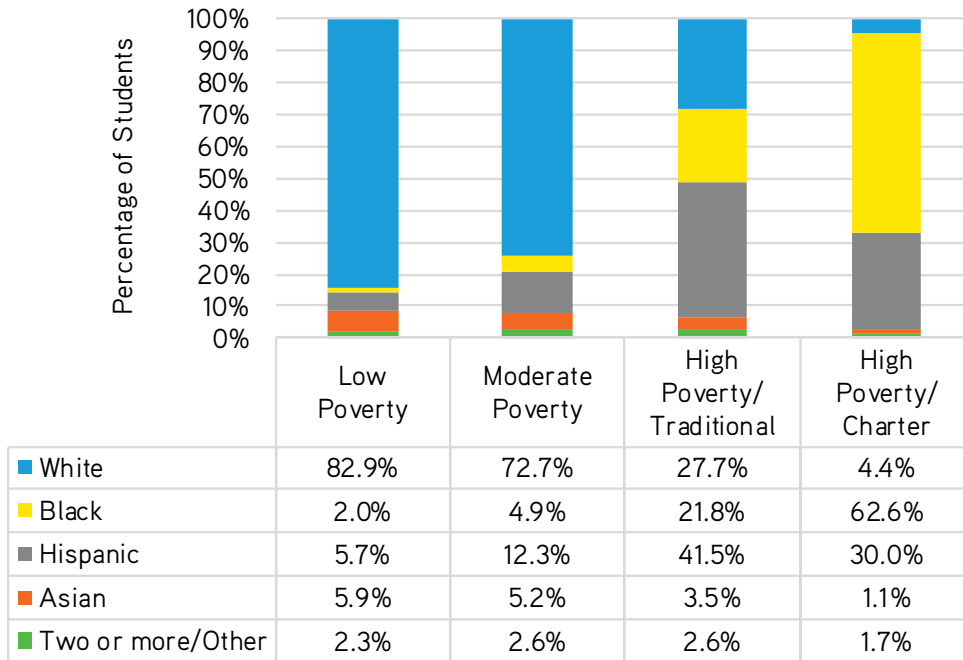
*SOURCE:* Rockefeller Institute of Government analysis of CSDE Teacher Files.

Finally, another challenge that states face is recruiting a more racially and ethnically diverse faculty, teachers who more closely resemble the diversity of their P-12 students. Connecticut has a long way to go in that respect, though there is some association between teacher and student diversity across school districts. The top chart in [Figure 15](#) shows that the state’s teacher workforce is overwhelmingly white and non-Hispanic. High-poverty districts, especially charter school districts, have greater proportions of Hispanic and black teachers. If the racial and ethnic profiles of teachers are compared to the race and ethnicity of students in the same types of districts (bottom chart in [Figure 15](#)), the differences revealed are significant. For example, teachers in high-poverty/traditional districts are 84.3 percent white, compared to 27.7 percent of the students in the same districts. The discrepancy between Hispanic teachers and students is also large: 6.7 percent of the teachers in high-poverty/traditional districts are Hispanic, compared to 41.5 percent of the students

Connecticut has, for the most part, recruited a qualified teacher workforce across districts of different poverty levels; and in the aggregate, the total number of teachers is roughly commensurate with the number of students, including recent changes. Some trends, however, raise questions about the sustainability of these patterns and about equity across districts with different rates of child poverty. Teacher preparation programs in Connecticut have diminished greatly in their capacity to prepare an adequate volume of candidate teachers, and that decline may be contributing to an increasingly tight labor market overall. In addition, the state is challenged by the fact that much of the growth in demand factors — including student enrollment, EL and special education needs, and teacher exits — are occurring in a narrow range of urban

districts, where teacher recruitment is generally difficult. If both of these processes are at work, policies aimed at overcoming shortages may need to be wide-ranging, including efforts to increase the general supply of teachers as well as interventions aimed at channeling a greater proportion of teachers to high-need districts.

FIGURE 15. Student and Teacher Race and Ethnicity, by District Poverty Rates, 2016-17



SOURCE: Rockefeller Institute of Government analysis CSDE Hiring Statistics; CSDE Teacher Files.



## Government Policies, Interventions, and Responses to Teacher Shortages

Connecticut's education leaders have recognized many of the issues affecting teacher demand and supply in their state and have taken several steps to address the problems. To recruit and retain teachers for critical shortage subject areas as well as for lower-performing school districts — what the state calls priority or transitional districts — Connecticut instituted two programs that offer significant financial incentives to teachers. The Teacher Mortgage Assistance Program provided a reduction in mortgage rates for teachers who worked and owned a home in a priority or transitional school district; the program was then expanded to offer the same mortgage-rate reduction incentive for teachers in critical shortage subject areas.<sup>22</sup> The second program, the Retirement Waiver, allows retired Connecticut educators to come back to the profession and teach in a shortage area without being subject to retirement income limitations.<sup>23</sup>

In 2018, Connecticut passed several legislative reforms regarding certification with the intent of meeting teacher supply needs by increasing the supply of teachers and expanding the areas in which existing teachers can practice. One change allowed spouses of US military services members to teach if the spouse had at least two years of teaching experience in another state.<sup>24</sup> Another — a single-year initiative — allowed school districts to permit someone certified to teach grades 1-6 to also teach kindergarten,<sup>25</sup> and a third allowed Connecticut certification to be issued to teachers who successfully passed certification exams in other states.<sup>26</sup> The state also allowed teachers holding initial, provisional, or professional certification in a subject area to qualify for cross-certification in the critical-need areas of math, science, world languages, and technical education after passing the associated Praxis II exam.<sup>27</sup> This was designed in part to remove an existing requirement that bilingual teachers be independently certified both in a subject area and bilingual education to address the state's shortage of bilingual educators.<sup>28</sup>

In July 2018, Connecticut also enacted a variety of reforms designed to recruit more minority teachers. These included a mandate to “support new and existing educator preparation programs that commit to enrolling greater numbers of minority teacher candidates in a manner that supports interstate reciprocity,” and to support local districts’ efforts to prioritize minority teacher recruitment and retention.<sup>29</sup>

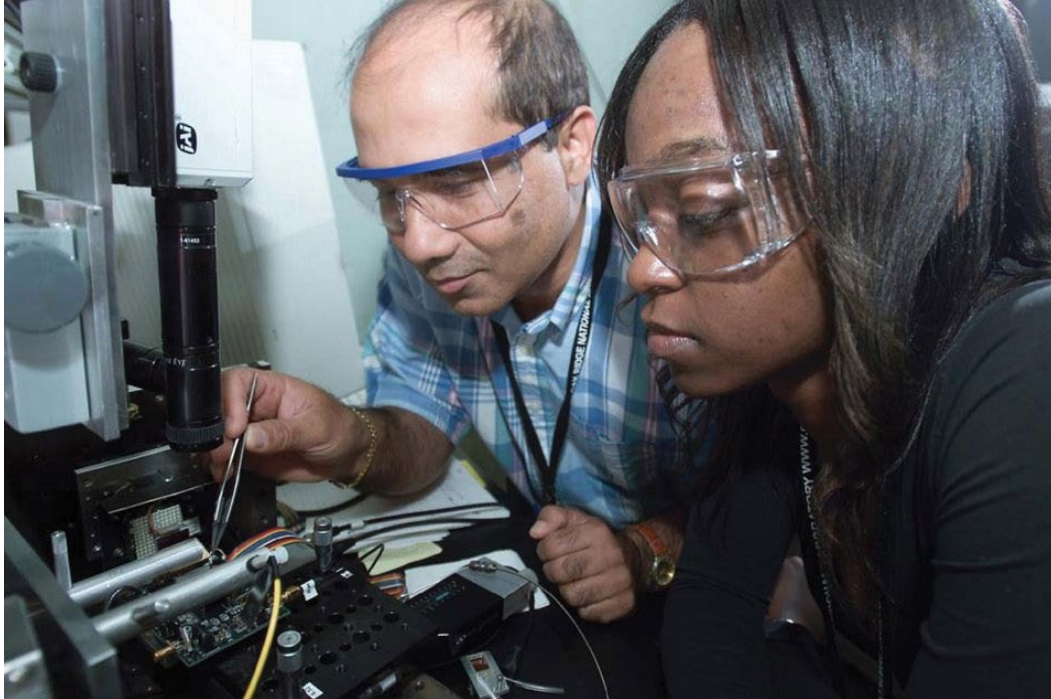
## Alternate Certification

Connecticut’s State Board of Education has approved several alternate certification programs specifically designed to recruit and retain minority teachers and teachers for critical shortage areas. The state-run Alternate Route to Certification (ARC) program allows midcareer professionals and other nontraditionally prepared candidates a path into teaching and is targeted to critical shortage areas. Candidates are required to hold a bachelor’s degree in the subject or to have received a passing score on the Praxis exam, and the state provides training on classroom instruction on weekends for one school year. After completing the training, individuals receive a temporary 90-day teaching certificate, followed by an Initial Educators Certificate. The ARC program reportedly is responsible for educating about half of all new bilingual-certified teachers, as well as half of newly certified foreign-language teachers and new science teachers.<sup>30</sup>

The state also has created alternate certification pathways for traditionally certified teachers to earn cross-endorsement in the designated shortage areas of math, science, world language, and technical education. These pathways allow teachers to earn cross-certification without leaving the classroom. Additionally, alternate certification is approved for Teach for America-trained candidates working in the cities of Hartford, New Haven, and Bridgeport. These alternately certified teachers are still required to pass the Praxis exam and engage in coursework while they are teaching. Approximately 60 new teachers each year are certified through this pathway.

In a move that engendered strong opposition from the state’s teachers union and leaders of traditional schools of education at area universities, in 2016 the Connecticut State Board of Education authorized the private nonprofit Relay Graduate School of Education to offer an alternate certification pathway for noncertified staff currently working in a variety of designated schools.<sup>31</sup> Relay, which grew out of the collaborative work of three national public charter school networks with a presence in Connecticut (Uncommon Schools, KIPP, and Achievement First), would open another route for minority candidates and could train teachers for the classroom in about one-fourth the time, the Board noted. Candidates must be working in designated partner district schools, have a bachelor’s degree from a regionally accredited university, pass state tests, and continue working full-time in their schools as they undergo coursework. Focused on residency placement of candidates with mentor teachers, approximately 40 percent of Relay’s required coursework can be completed online. Trained candidates receive temporary or resident educator certification and, upon completion of their edTPA portfolio that demonstrates their ability to plan, instruct, and assess, are eligible for an Initial Educator Certificate.<sup>32</sup>





## Conclusion

Connecticut's falling P-12 student enrollment, coupled with a statewide increase in the number of teachers, has led to declines in student-teacher ratios across the state, now down to levels well below prerecession marks. Connecticut also fares well, especially in comparison to other states, in ensuring that nearly all of its primary and secondary school teachers have appropriate certifications and endorsements for their specific assignments.

A dwindling supply of graduates from Connecticut teacher education programs, however, combined with a growing number of teacher exits, may tighten the state's labor market for educators. The tightening may be exacerbated by the strong tendency of graduates from Connecticut programs to secure endorsements in subject areas where shortages do *not* exist — such as elementary education, English, history, and social studies — rather than areas where shortages have been persistent, such as special education, TESOL, mathematics, world languages, or science. Teachers coming to Connecticut from out-of-state education programs, as well as Connecticut teachers who add endorsements, have been more responsive to shortage areas, though their smaller numbers to date suggest that these actions are unlikely to greatly reduce subject area shortages anytime soon.

Connecticut also is challenged by the concentration of demand for teachers in the state's urban, low-income, and racially and ethnically diverse districts. It is in these districts where student enrollment has grown, along with EL and special education students, and where a large number of open teaching positions are found.<sup>33</sup> Yet these are also districts where recruiting and retaining teachers are most challenging, as indicated by a lower number of applications for open positions, a larger number of vacancies, and a greater rate of teacher exits.

These two problems may interact, such that general problems of teacher supply may be particularly acute in a small number of urban, economically disadvantaged districts. Although overall student-teacher ratios are not much higher in high-poverty districts compared to others, the ratios there in subject and service areas where statewide shortages exist are much greater, typically by a two-to-one ratio. It is not known whether these differences result from strong competition from more affluent districts for teachers with high-demand qualifications, from district decisions being made about priorities when budgets are tight, or from other factors. What is clear is that subject area shortages are compounded in high-poverty districts.

Connecticut has recognized these basic issues and has enacted several legislative and policy initiatives, including several in 2018, with the intent of stimulating the supply of teachers in designated shortage areas, encouraging teachers to take positions in struggling districts, and increasing the ethnic and racial diversity of its teaching workforce. Most of the measures have added special programs and pathways, reduced regulatory barriers, or combined both approaches to boost the supply of teachers who might fill certain district or subject area needs, such as the Alternate to Certification program, the Relay Graduate School of Education, and the increased flexibility offered to teachers from other states and currently certified teachers who want to qualify for cross-certification in a shortage area.

Less emphasis has been placed on reforming the main pathways into Connecticut teaching, especially the traditional teacher education programs at the state's colleges and universities, which typically prepare about seven out of 10 of the state's Initial Educators. The programs are not only experiencing dramatic drops in enrollment, but the supply of individuals produced by these programs who are prepared to teach in high-priority subject areas is too low to meet demand and they continue to be overwhelmingly white and non-Hispanic (though they are more diverse than the state's current teacher workforce).<sup>34</sup> In its 2018 reforms, the state enacted a mandate to support educator preparation programs that commit to enrolling minority teacher candidates. For the most part, however, the state has elaborated pathways and supports around the traditional, and still primary, institutions for preparing teachers.

How to orient Connecticut's schools of education and other traditional programs to better meet the diversity, subject area, and community placement needs is no easy task. CSDE has produced excellent reports on teacher staffing and shortages from the perspective of districts and schools,<sup>35</sup> but the state's teacher education programs do not have a precise picture of what happens to their graduates and what needs they fill, including how long they remain in teaching, how they change assignments, or how they move among districts or in and out of extended leaves. Recent reforms also have increased complexity within the system by adding pathways into teaching and endorsements. Reporting back to the state's teacher education programs the professional histories of their graduates could help create a tool for continuous improvement for and by the state's educational institutions, and could help indicate further areas that would benefit from policy action.



Connecticut has been innovative in establishing new measures that target specific weaknesses in its teacher workforce, and time, new data, and comprehensive analyses will help the state see which efforts work and which do not, and could give the many institutions involved in the supply of teachers better guidance on where and how educators can best be developed and deployed to help Connecticut students learn and thrive.



# APPENDIX

## Data Sources Used in This Report

Access to most of the data used in this report was generously provided by the Connecticut State Department of Education (CSDE). The following list of data files summarizes their contents and, if they are available online, their hyperlinks. Other data were obtained from federal sources. These too are listed below. The list includes abbreviations (*italics*) used to identify sources at the foot of the report's figures and tables.

*CSDE Teacher Files:* CSDE provided data on teachers at the state and district level, including information regarding their employment dates, assignments, and job classifications; their date of birth and race/ethnicity; their certifications, endorsement areas, and highest degree earned; and the schools and districts where they served and when. Data on most of these fields were provided for the school years 2002-03 through 2017-18, although for this report we relied only on data from the 2006-07 school year and afterwards. Data on teaching assignments were made available for the years 2014-15 through 2017-18.

*CSDE District Files:* CSDE provides state- and district-level data on total student enrollment, plus enrollment by race/ethnicity, gender, special education status, free or reduced price meal eligibility, English learner status, and grade at <http://edsight.ct.gov/SASPortal/main.do> (under the subheading, "Students"). The Department's website also includes information on educators, though most of the analyses relied on the data files accessed directly from CSDE.

*CSDE Hiring Statistics:* Data on available teaching positions, applications, hires, vacancies, and areas of shortage are available in CSDE's annual report, *Shortage Area Data Bulletin*, available at <http://edsight.ct.gov/SASPortal/main.do> under Educators > Staffing Levels > Shortage Area Data Bulletin (left navigation panel). More recent hiring statistics were provided directly by CSDE.

*USDE, Title II Data:* Information on Connecticut's teacher education programs, including programs, enrollments, and graduates, were obtained from the U.S. Department of Education's Title II Reports, available at <https://title2.ed.gov/Public/Report/StateHome.aspx>.

*CSDE:* Shortage Areas: File from CSDE indicating trends in shortage areas.

*CCD Data:* National Center for Education Statistics, Common Core of Data, "Local Education Agency (School District) Universe Survey Data," available at <https://nces.ed.gov/ccd/pubagency.asp>.

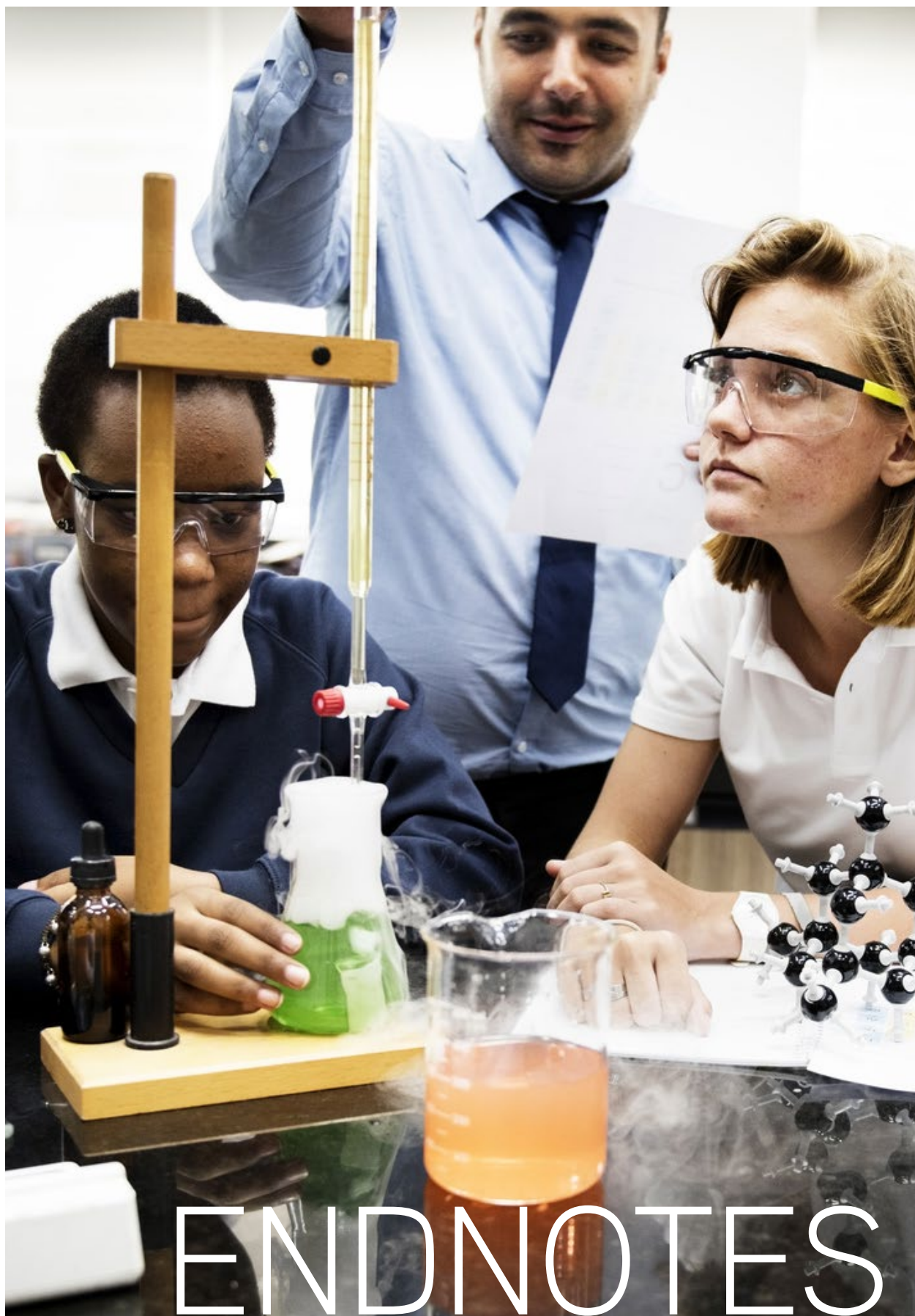
*NCES Digest:* National Center for Education Statistics, Digest of Education Statistics, available at [https://nces.ed.gov/programs/digest/current\\_tables.asp](https://nces.ed.gov/programs/digest/current_tables.asp).

## School Districts in Connecticut

Connecticut has 211 school districts. The organizational types of districts are listed below, along with their numbers in the 2017-18 academic year.

District Type	Number of Districts
Public School Districts	149
Regional School Districts	17
Public Charter School Districts	28
Regional Education Service Center School Districts	6
Endowed and Incorporated Academies Districts	3
Connecticut Technical Education and Career System (CTECS)	1
State Agencies	7
<b>Total</b>	<b>211</b>

Statewide analyses in this report used data from all of the districts. When the districts were classified in terms of their locality (e.g., urban, rural) or their poverty level, state agencies (such as the Department of Social Services, the Department of Mental Health & Addiction, and Judicial Centers) were not included, as the locations of their students and teachers were not available. The Connecticut Technical Education and Career System is headquartered in Middletown but includes 20 schools spread widely within the state and was not included in analyses involving locality.<sup>36</sup>



- 1 Table 236.65, NCES, Digest of Education Statistics, [https://nces.ed.gov/programs/digest/d18/tables/dt18\\_236.65.asp?current=yes](https://nces.ed.gov/programs/digest/d18/tables/dt18_236.65.asp?current=yes).
- 2 “Teacher Salary Trends, 2002-17,” Rockefeller Institute of Government, <https://rockinst.org/issue-areas/education/teacher-salary-trends-2002-17/>.
- 3 The three states with larger declines are New Hampshire, Maine, and Vermont. Table 203.20, NCES, Digest, [https://nces.ed.gov/programs/digest/d17/tables/dt17\\_203.20.asp?current=yes](https://nces.ed.gov/programs/digest/d17/tables/dt17_203.20.asp?current=yes).
- 4 NCES Digest, Table 208.40, NCES, Digest, [https://nces.ed.gov/programs/digest/d17/tables/dt17\\_208.40.asp](https://nces.ed.gov/programs/digest/d17/tables/dt17_208.40.asp).
- 5 Connecticut has the lowest rural poverty rate in the country, at 4.6 percent, and the highest rural median household income, according to the 2015 American Community Survey, [https://www.census.gov/newsroom/blogs/random-samplings/2016/12/a\\_comparison\\_of\\_rura.html](https://www.census.gov/newsroom/blogs/random-samplings/2016/12/a_comparison_of_rura.html).
- 6 On US trends in enrollment, see Table 2013.10, NCES, Digest, [https://nces.ed.gov/programs/digest/d17/tables/dt17\\_2013.10.asp?current=yes](https://nces.ed.gov/programs/digest/d17/tables/dt17_2013.10.asp?current=yes).
- 7 Table 203.25, NCES, Digest, [https://nces.ed.gov/programs/digest/d17/tables/dt17\\_203.25.asp?current=yes](https://nces.ed.gov/programs/digest/d17/tables/dt17_203.25.asp?current=yes).
- 8 *The Condition of Education in Connecticut: 2015-2016* (Middletown: Connecticut State Department of Education, n.d.), <http://edsight.ct.gov/relatedreports/Condition%20of%20Education%202015-16.pdf>.
- 9 “Definitions: School Locale Definitions,” NCES Rural Education in America, <https://nces.ed.gov/surveys/ruraled/definitions.asp>.
- 10 Connecticut State Department of Education, Bureau of Educator Standards and Certification, “Guide to Approved Educator Preparation Programs in Connecticut” (May 2018), [https://portal.ct.gov/-/media/SDE/Certification/guides/ap\\_ed\\_prep\\_prgms.pdf?la=en](https://portal.ct.gov/-/media/SDE/Certification/guides/ap_ed_prep_prgms.pdf?la=en).
- 11 Data obtained from “Connecticut” in “2017 Title II Reports: National Teacher Preparation Data,” Title II Higher Education Act, accessed February 27, 2019, <https://title2.ed.gov/Public/Report/StateHome.aspx>.
- 12 Connecticut has a three-tier system of teacher certification. The first level is the three-year initial educator certificate. It can be obtained by completing a state-approved educator preparation program; by demonstrating competence through a combination of teaching experience, test results, and general academic and professional education; or by completing an out-of-state educator preparation program that is approved by its state and regionally accredited. For information on certification of teachers in Connecticut, see *Obtaining Connecticut Educator Certification* (Hartford: Connecticut State Department of Education Bureau of Educator Standards and Certification, December 2018), <https://portal.ct.gov/-/media/SDE/Certification/guides/obtaining1109aw.pdf>.
- 13 It is unclear why there has been a recent increase in the number of teachers leaving the state’s teaching workforce. It is not a young workforce — about one-third were over 50 years of age in 2017 — but it is also not particularly old compared to other states. Other factors, such as the shift of teaching positions to urban areas, may also contribute to the trend.
- 14 Data on the 2015-16 school year were obtained directly from the Connecticut State Department of Education. Data on prior years’ hiring trends came from the Department’s annual publication, “Data Bulletin: Public School Hiring Trends and Certification Subject Areas,” <http://edsight.ct.gov/SASPortal/main.do>. See [appendix](#) for information about accessing these publications.
- 15 Data on Connecticut teachers from CSDE Teacher Files. Data on US from the *Digest of Education Statistics*, Table 209.27, NCES, Digest, [https://nces.ed.gov/programs/digest/d17/tables/dt17\\_209.27.asp?current=yes](https://nces.ed.gov/programs/digest/d17/tables/dt17_209.27.asp?current=yes).
- 16 “What are shortage areas?,” Connecticut State Department, [https://portal.ct.gov/SDE/Talent\\_Office/Talent-Office-home-page/Shortage-Areas](https://portal.ct.gov/SDE/Talent_Office/Talent-Office-home-page/Shortage-Areas).
- 17 Endorsements refer to demonstrations, typically through subject-specific tests, that a teacher is qualified to teach a particular subject and/or combination of subject and grade level.



Endorsements include such titles as “Special Education: Comprehensive, Grades K through 12” and “Mathematics, Grades 7 through 12.” Certification is qualification to be an educator. Connecticut offers such certifications as initial, provisional, or professional educator. Certification typically requires completion of a state-approved teacher preparation program as well as endorsement in one or more areas. See *Obtaining Connecticut Educator Certification*.

- 18 We averaged poverty rates over the decade in order to compare the same group of districts over time. Student poverty rates (measured as the proportion of students eligible for free or reduced price lunches) increased in most districts between 2006-07 and 2012-13, after which the rates generally declined. However, few districts changed their rough rank-ordering in rates of poverty during this period.
- 19 The 24 traditional public school districts in the high-poverty group enrolled 90.0 percent of the students in 2016-17. Public charter school districts enrolled, as noted, 4.0 percent. Regional Education Service Centers enrolled 5.8 percent, and state agencies, 0.2 percent. Public school districts were also dominant in the low- and moderate-poverty groups, though regional school districts (in rural/town areas) enrolled 16 percent of the students in the low-poverty category.
- 20 *Connecticut’s Equitable Access to Excellent Educators Plan 2015* (Middletown: Connecticut State Department of Education, n.d.), [https://portal.ct.gov/-/media/SDE/Talent\\_Office/ctequityplan.pdf?la=en](https://portal.ct.gov/-/media/SDE/Talent_Office/ctequityplan.pdf?la=en).
- 21 See the reports on New York, Virginia, and South Dakota, all available at <https://rockinst.org/issue-areas/education/>. For national data, see Taslima Rahman et al., *Certification Status and Experience of U.S. Public School Teachers: Variations Across Student Subgroups*, NCES 2017-056 (Washington, DC: Institute of Education Sciences, National Center for Education Statistics, March 2017), <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2017056>.
- 22 “Teachers Mortgage Assistance Program,” Connecticut Housing Finance Authority, accessed February 27, 2019, <https://www.chfa.org/homebuyers/teacher-programs/>.
- 23 Dianna R. Wentzell, Memorandum to Superintendents of Schools et al., Subject: Designation of Certification Shortage Areas, 2018-19 School Year, February 23, 2018, [https://portal.ct.gov/-/media/SDE/Digest/2018-19/Shortage\\_Area\\_Memo\\_to\\_Superintendents\\_2018-2019\\_SY.pdf?la=en](https://portal.ct.gov/-/media/SDE/Digest/2018-19/Shortage_Area_Memo_to_Superintendents_2018-2019_SY.pdf?la=en).
- 24 Substitute Senate Bill No. 232, Public Act No. 18-144: An Act Concerning Teacher Permits for Spouses of Transferred Members of the Armed Forces, approved June 13, 2018, <https://www.cga.ct.gov/2018/act/pa/pdf/2018PA-00144-R00SB-00232-PA.pdf>.
- 25 Substitute Senate Bill No. 183, Public Act No. 18-51: An Act Implementing the Recommendations of the Department of Education, approved May 24, 2018, <https://www.cga.ct.gov/2018/act/pa/2018PA-00051-R00SB-00183-PA.htm>.
- 26 Substitute Senate Bill No. 455, Public Act No. 18-34: An Act Concerning Minority Teacher Recruitment and Retention, approved May 31, 2018, <https://www.cga.ct.gov/2018/act/pa/2018PA-00034-R00SB-00455-PA.htm>.
- 27 Ibid.
- 28 Jacqueline Rabe Thomas, “Facing teacher shortages, state to propose certification overhaul,” *Connecticut Mirror*, August 8, 2017, <https://ctmirror.org/2017/08/08/facing-teacher-shortages-state-to-propose-certification-overhaul/>.
- 29 Substitute Senate Bill No. 455, Public Act No. 18-34: An Act Concerning Minority Teacher Recruitment and Retention.
- 30 Jacqueline Rabe Thomas, “Program that trains teachers for hard-to-fill slots faces big cut,” *Connecticut Mirror*, February 22, 2016, <https://ctmirror.org/2016/02/22/program-that-trains-teachers-for-hard-to-fill-slots-faces-big-cut/>.
- 31 Jacqueline Rabe Thomas, “Turmoil greets new teacher training program in CT,” *Connecticut Mirror*, November 3, 2016, <https://ctmirror.org/2016/11/03/turmoil-greets-new-teacher-training-program-in-ct/>.
- 32 “Connecticut Alternate Route to Certification Program,” Relay/GSE, accessed February 28, 2019, <https://relay.edu/campus/teaching-certification/connecticut-alternate-route-certification-program>.

- 33 Based on data from CSDE's Fall Hiring Survey in 2016-17, of the 10 school districts with the largest number of open teaching positions, eight served urban areas and had large proportions of FRPL-eligible students. Together, they were seeking to fill 25.7 percent of all open teaching positions in the state. The districts included Hartford, New Haven, Stamford, the Capital Region Education Council (Greater Hartford), Learn (East Hartford), Waterbury, Danbury, and New London.
- 34 Based on Connecticut's 2017 Title II report, 75 percent of enrollees in the state's teacher education programs in 2015-16 were white, 8 percent were Hispanic, 3 percent were black, and 2 percent were Asian. In 2017, 91 percent of the current teachers (FTEs) were white, 4 percent were Hispanic, 4 percent were black, and 1 percent were Asian. Data are not available on the racial and ethnic breakdown of graduates from teacher education programs.
- 35 See Connecticut State Department of Education, Performance Office, Bureau of Data Collection, Research and Evaluation, *Data Bulletin: Public School Hiring Trends and Certification Subject Shortage Areas for 2015-16* (October 2015), <http://edsight.ct.gov/relatedreports/Shortage%20Area%20Data%20Bulletin%202015-16v2.pdf>.
- 36 For information on CTECS, see [www.cttech.org/index.html](http://www.cttech.org/index.html).



## ACKNOWLEDGMENTS

The Rockefeller Institute would like to thank the Connecticut State Department of Education for providing data on Connecticut teachers. However, the Department is not responsible for the analyses or conclusions in this report.

Also, special thanks to Hao Sun for his contributions to this report.

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