

# SPECIAL EDUCATION TEACHER CAREER TRAJECTORIES: PREDICTING PERSISTENCE IN THE PROFESSION



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## Introduction

Teachers are the single most important school-based predictor of student success (e.g., Chetty et al., 2014; Hanushek, 2011; Rivkin, et al. 2005; Rockoff, 2003). This well-established relationship between teacher quality and student outcomes also holds true for special education teachers and special education students (Feng & Sass, 2013; McLeskey & Billingsley, 2008). Yet, the ability of teachers to impact student learning is often negatively impacted by teacher turnover. When teachers transfer or exit the profession, school climate is disrupted, student learning is negatively impacted, and resources must be diverted to recruiting and training replacement teachers (Barnes et al., 2007, Hanushek et al., 2016; Ronfeldt et al., 2013).

It follows then that one promising approach to improving the outcomes of special education students is to build a stable teaching workforce and increase retention among special education teachers. If more special education teachers persist in their positions, school climate, student learning, and available resources will be less likely to suffer. Before steps can be taken to reduce turnover rates among special education teachers, their career pathways must be better understood. To this end, this report presents the results from a longitudinal investigation into special education teachers' career trajectories. Through a research-practice partnership (Coburn & Penuel, 2016) between the Utah Education Policy Center and the Utah State Board of Education, this study used administrative data records to follow special education teachers who began their careers between 2004-05 and 2017-18 for five years to provide a descriptive analysis of Utah educators' pathways, including an examination of the observable teacher and school characteristics associated with mobility (i.e., transfer, exit, return).

The findings from this study are organized around five central research questions:

- 1) Who are Utah's beginning special education teachers?
- 2) Where do Utah's beginning special education teachers start their careers?
- 3) What are the career pathways of beginning special education teachers in Utah?
- 4) How have the career pathways of Utah's beginning special education teachers changed over time?
- 5) How are teacher and school characteristics associated with special education teacher career pathways?

Using Comprehensive Administration of Credentials for Teachers in Utah Schools (CACTUS) data provided by USBE through a data share agreement with the UEPC, this study tracks cohorts of beginning special education teachers in Utah for five years. Teacher characteristics of interest included gender, race, and educational attainment. To account for student demographics, CACTUS data were combined with school characteristics, including Title I status, locale, and student demographics (e.g., race and ethnicity, disability status, and achievement).

## Who are Utah's beginning special education teachers?

### Takeaways:

- ✓ This study follows 1,739 beginning special education teachers who began teaching between 2004-05 and 2017-18.
- ✓ The average cohort of teachers was 124.
- ✓ Beginning special education teachers were primarily women (80%).
- ✓ Just under 6% of beginning special education teachers were individuals of color. This rate increased over time.
- ✓ About one quarter of beginning special education teachers held a graduate degree.

This study examines 14 cohorts of beginning special education teacher for five years each (Figure 1). The earliest cohort of educators began teaching in 2004-05 and was followed through 2008-09. The most recent cohort of educators was tracked from 2017-18 to 2021-22.

As Figure 1 shows, between 2004-05 and 2017-18, 1,739 special education teachers began their teaching careers in Utah.<sup>1</sup> Cohort sizes ranged from 84 to 152 teachers. There were some fluctuations in cohort size over time. In particular, cohort sizes decreased beginning after 2007-08 and later increased again beginning in 2013-14. On average, cohorts were around 124 teachers.

Men and women accounted for approximately 20% and 80% of beginning special education teachers in Utah, respectively (Figure 2). The proportion of male teachers fluctuated between 11% and 24% across cohorts but has remained relatively consistent over time.

On average, 5.5% of beginning special education teachers were individuals of color (Figure 3). Hispanic educators represent the largest share of this group. Despite a drop in 2009-10 through 2011-12, the proportion of special education teachers of color steadily increased over time, as noted by the dotted trend line.

Across cohorts, approximately one quarter of beginning special education teachers held graduate degrees in any field at some point during their first five years of teaching (Figure 4). Rates ranged from 19% to 30% across cohorts.

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<sup>1</sup> In this study, new special education teachers are defined as those who appeared in Utah's CACTUS records for the first time between 2004-05 and 2017-18 in a special education teaching assignment. As this study focuses on *beginning* teachers' career trajectories, individuals who were new to special education but not new to teaching are excluded from these analyses.

Figure 1. Beginning Special Education Teacher Cohort Sizes over Time

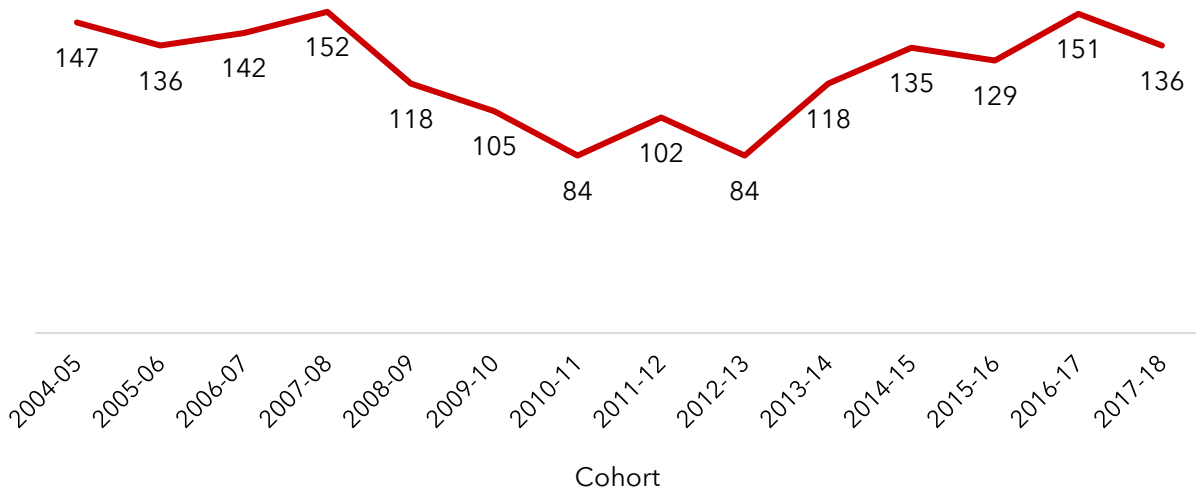


Figure 2. Beginning Special Education Teachers' Gender over Time

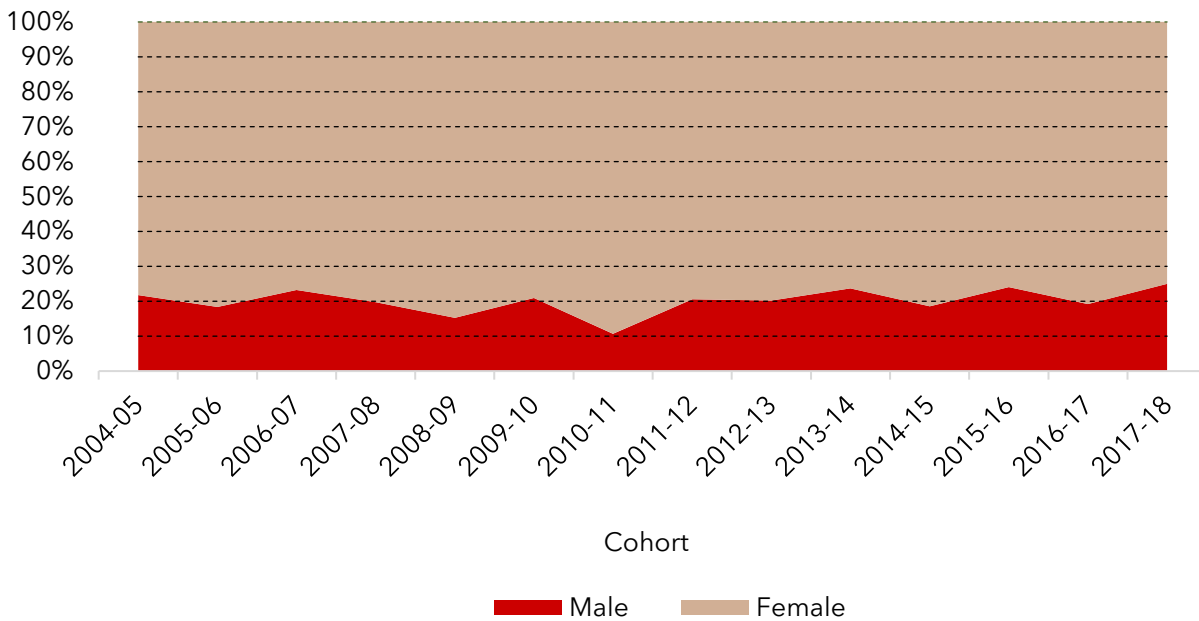


Figure 3. Beginning Special Education Teachers' Race/Ethnicity over Time

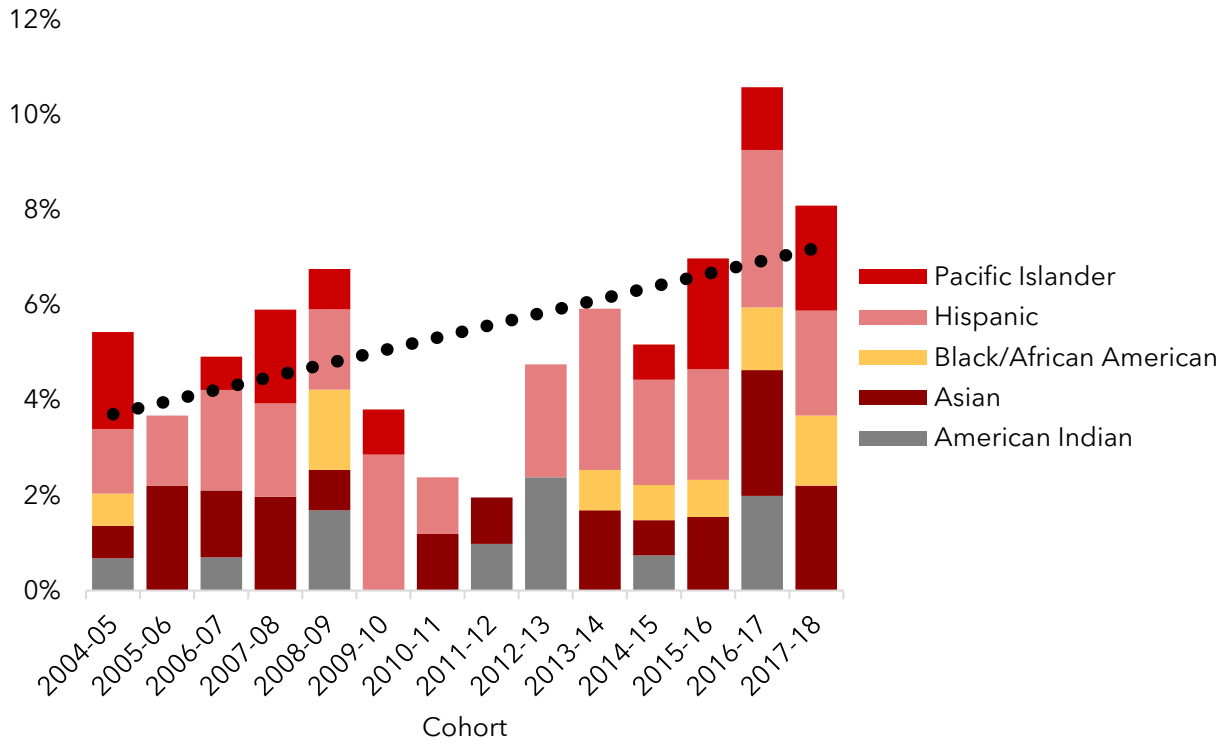
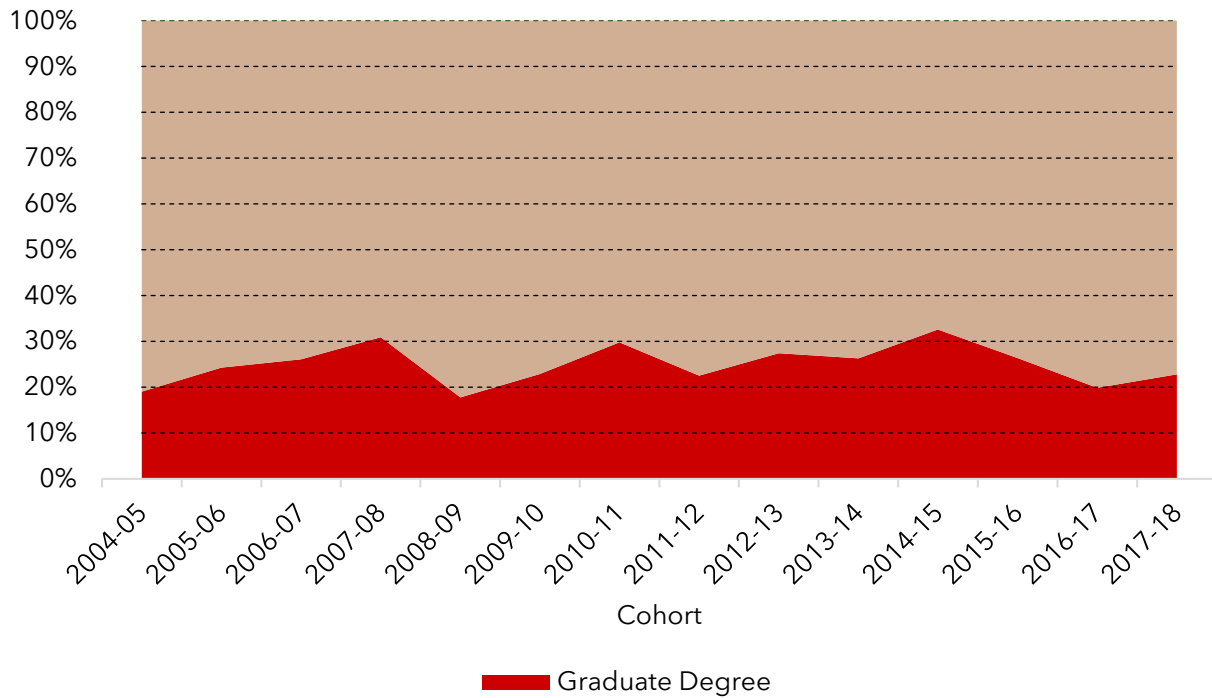


Figure 4. Beginning Special Education Teachers' Graduate Degree Status over Time



## Where do Utah's beginning special education teachers start their careers?

### Takeaways:

- ✓ Student racial/ethnic diversity has increased over time in beginning special education teachers' first teaching assignments.
- ✓ Approximately 15% of beginning special education teachers began teaching in Title I schools.
- ✓ Approximately 18% of students received special education services in beginning special education teachers' first positions.
- ✓ Mathematics proficiency rates decreased over time in beginning special education teachers' first assignments.
- ✓ About two-thirds of beginning special education teachers first taught in suburban schools.

School characteristics of beginning special education teachers' first teaching assignments<sup>2</sup> were tracked across cohorts. Approximately 15% of beginning special education teachers first taught in a Title I school, a federal designation that serves as a proxy for schools with high proportions of low-income students (Figure 5). This rate fluctuated between 12% and 22% across cohorts.

Turning to student race/ethnicity (Figure 6), special education teachers began their careers in increasingly diverse settings over time, as represented by the dotted trend line. Hispanic students represented the largest share of students of color.

The average beginning special education teacher began their career in a school where 18% of students received special education services (Figure 7). This rate ranged from 13% to 26% and increased over time. In particular, there was a substantial increase in the proportion of special education students in 2011-12.

School-level mathematics proficiency rates (for all general education and special education students) in beginning special education teachers' first positions have declined over time (Figure 8). This drop can be primarily attributed to a change in state testing in 2013-14. On average, teachers began working in schools where 56% of students were proficient in mathematics. This rate varied from 36% to 70% across cohorts.

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<sup>2</sup> If educators were observed teaching in more than one building during their first year, they were attributed to the building in which they held the greatest FTE special education teaching assignment.



Just under two thirds of beginning special education teachers first worked in a suburban school (Figure 9). The remaining one third of teachers work in cities (15%), towns (10%), and rural settings (9%). These rates have remained relatively consistent over time.

Figure 5. Title I Status in Beginning Special Education Teachers' First Teaching Assignments by Cohort

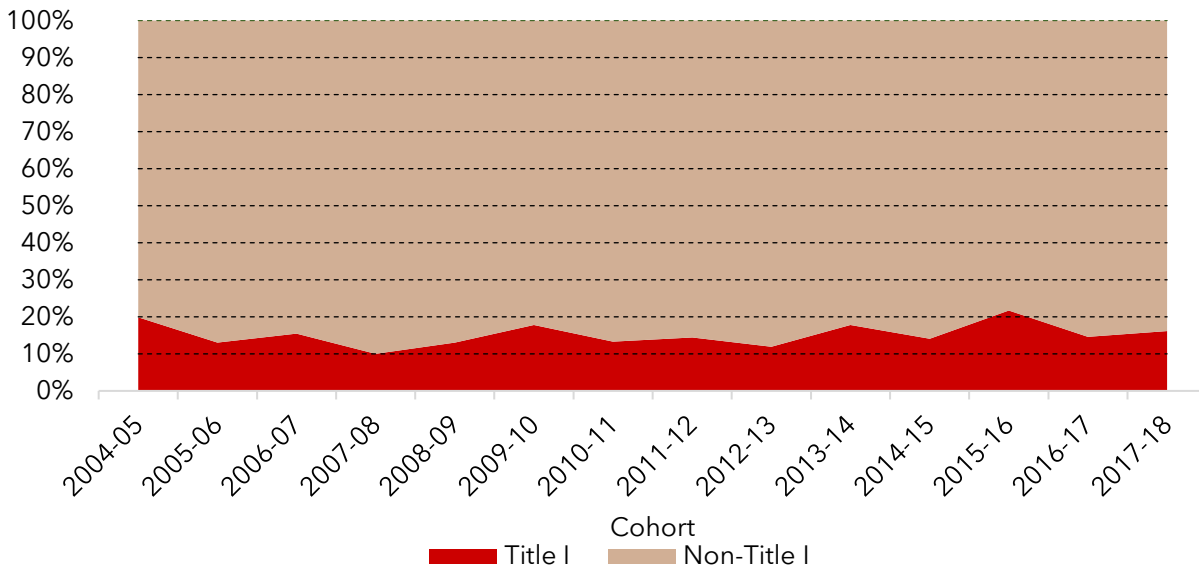


Figure 6. Student Race/Ethnicity in Beginning Special Education Teachers' First Teaching Assignments by Cohort

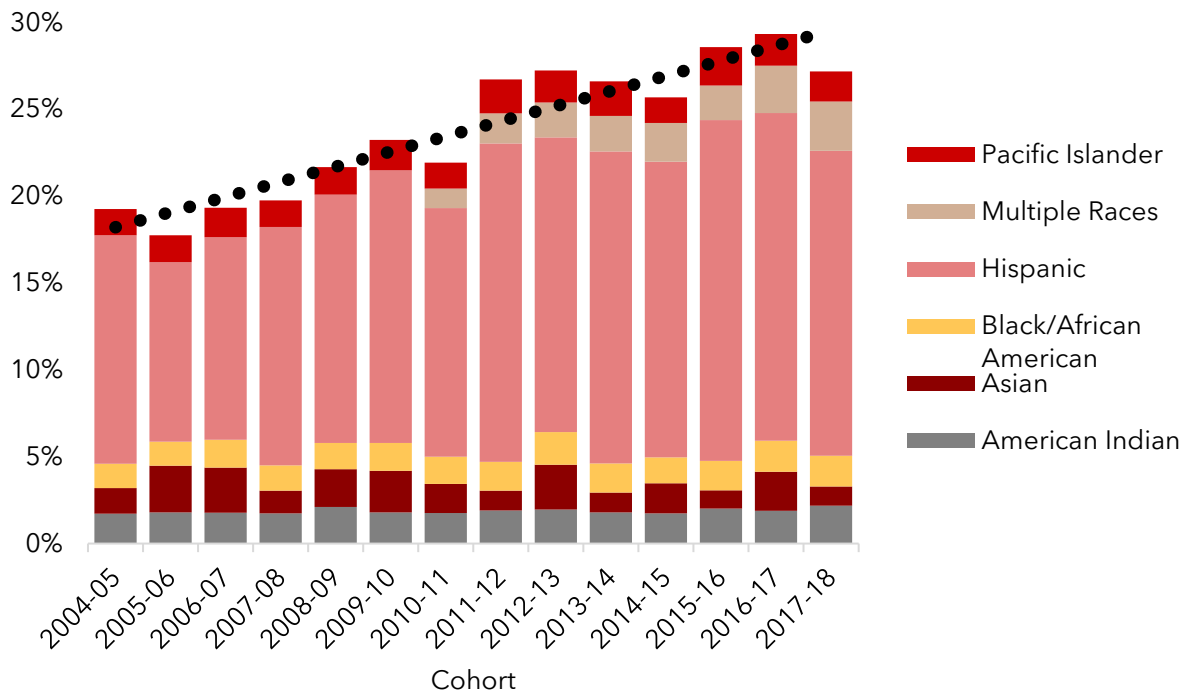


Figure 7. Special Education Rates in Beginning Special Education Teachers' First Teaching Assignments by Cohort

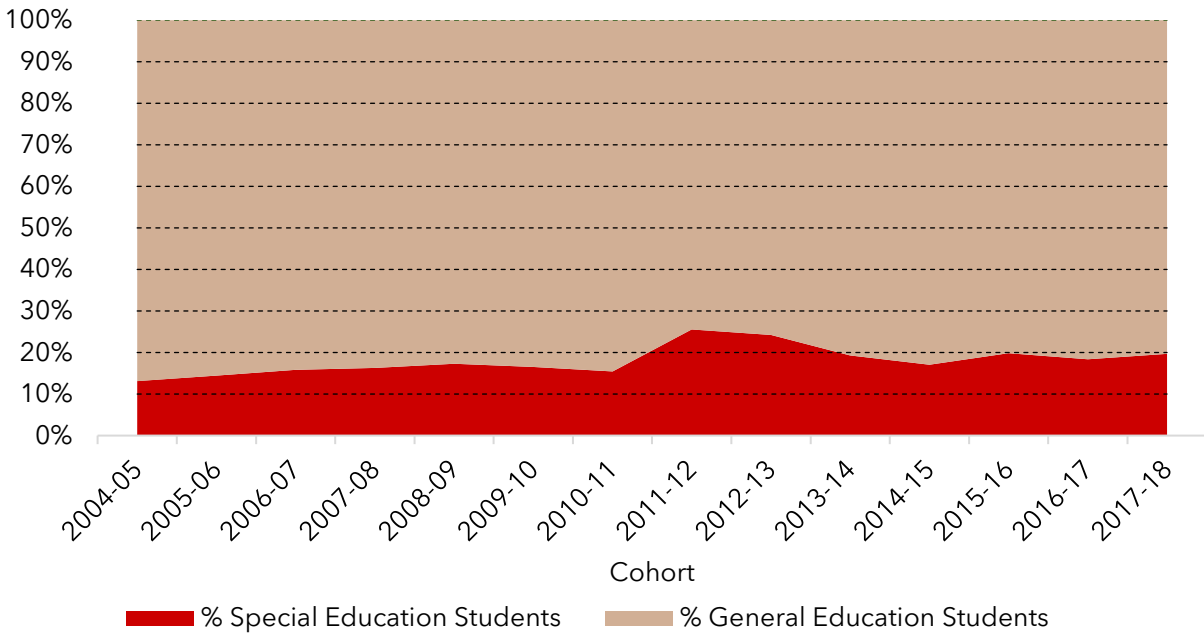


Figure 8. Math Proficiency Rates in Beginning Special Education Teachers' First Teaching Assignments by Cohort

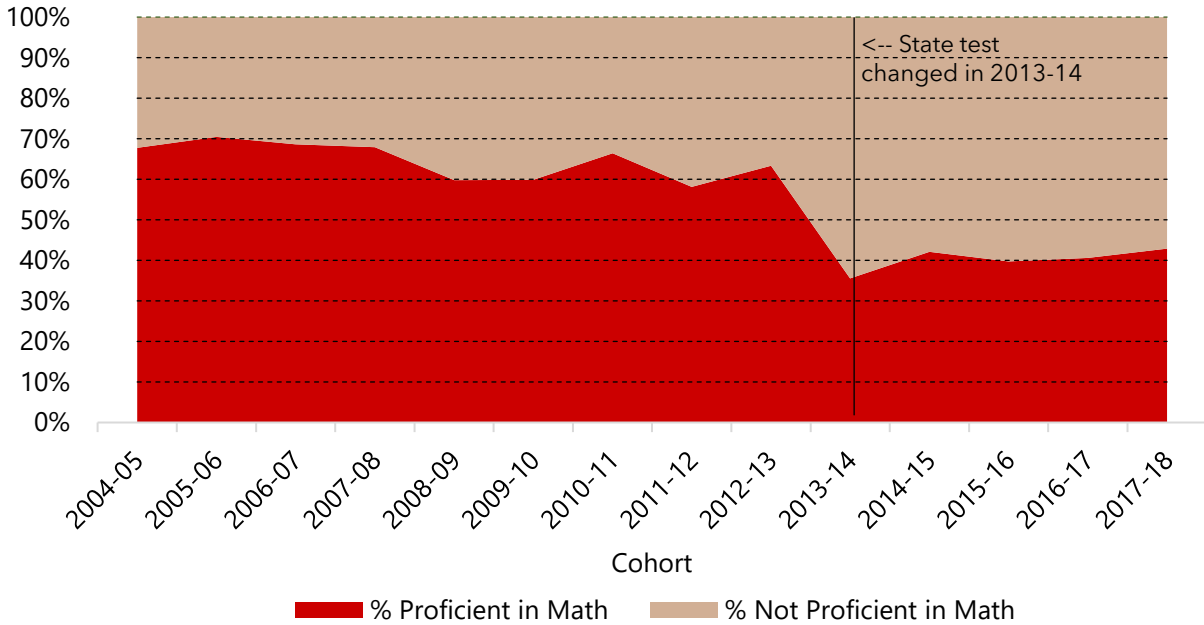
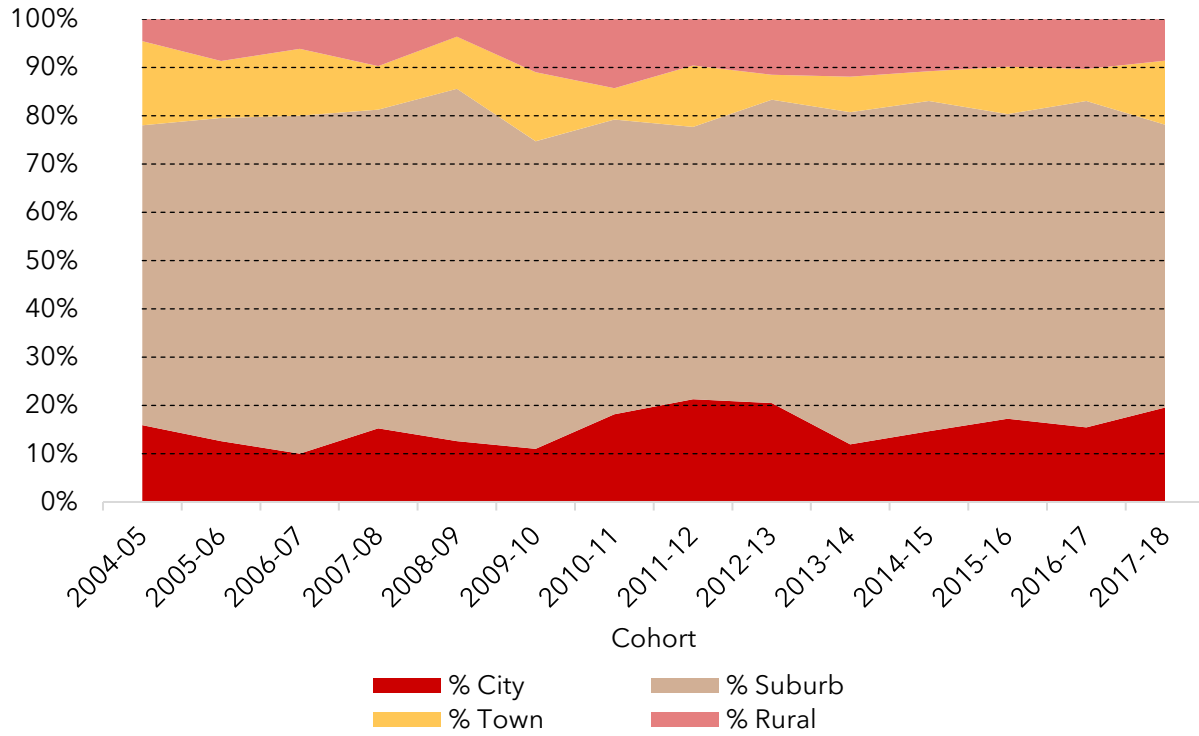


Figure 9. Locale of Beginning Special Education Teachers' First Teaching Assignments by Cohort



## What are the career pathways of beginning special education teachers in Utah?

### Takeaways:

- ✓ Beginning special education teachers took one of 51 unique career pathways during their first five years of teaching.
- ✓ Beginning special education teachers most commonly stayed in the same school for five consecutive years or exited the profession after their first year without returning.
- ✓ By the time they entered their fifth year of teaching, 42% of teachers transferred at least once and 40% exited the profession. Most teachers who exited did not return.
- ✓ Educators fell into four distinct groups: Stayers, Single Movers, Leavers, and Multiple Movers.

Beginning special education teachers who started teaching between 2004-05 and 2017-18 were tracked for five years. Each year, teachers either stayed, transferred, exited, or returned:

Stayed:	At least one school in the previous year matched a school in the current year
Transferred:	No schools in the current school year matched any schools in the previous year
Exited:	Not observed teaching during the current year
Returned:	Observed teaching during the current year but not during the previous year

Based on the definitions noted above, teachers included in this study took one of 51 unique pathways. These pathways ranged from simply staying at the same school for five consecutive years to various combinations of multiple transfers, exits, and returns. Despite this variation, some pathways were far more common than others. Figure 10 provides a summary of the 10 most common pathways taken by new special education teachers. These pathways represent 1,401 of 1,739 teachers (80%). The remaining 338 teachers (labeled "Other pathways" in the figure) took more complex pathways typically involving multiple transfers, exits, and in some cases, returns.

Figure 10 shows that the most common pathway for beginning special education teachers was to remain in the same school for five consecutive years (n=505, 29%). The second most common pathway was to exit the profession after teaching for one year without returning at any point during the five-year window (n=221, 13%). From here, pathways become more complex. For instance, of the 224 teachers who transferred after their first year, 162 went on to remain at the same school and 62 exited teaching without returning. Among those who stayed in the same school after their first year of teaching (n=451), some went on to stay for another year (n=249), others transferred and then remained (n=95), and others exited without returning (n=107).

Figure 10. Beginning Special Education Teachers' Most Common Career Pathways (n=1,739)

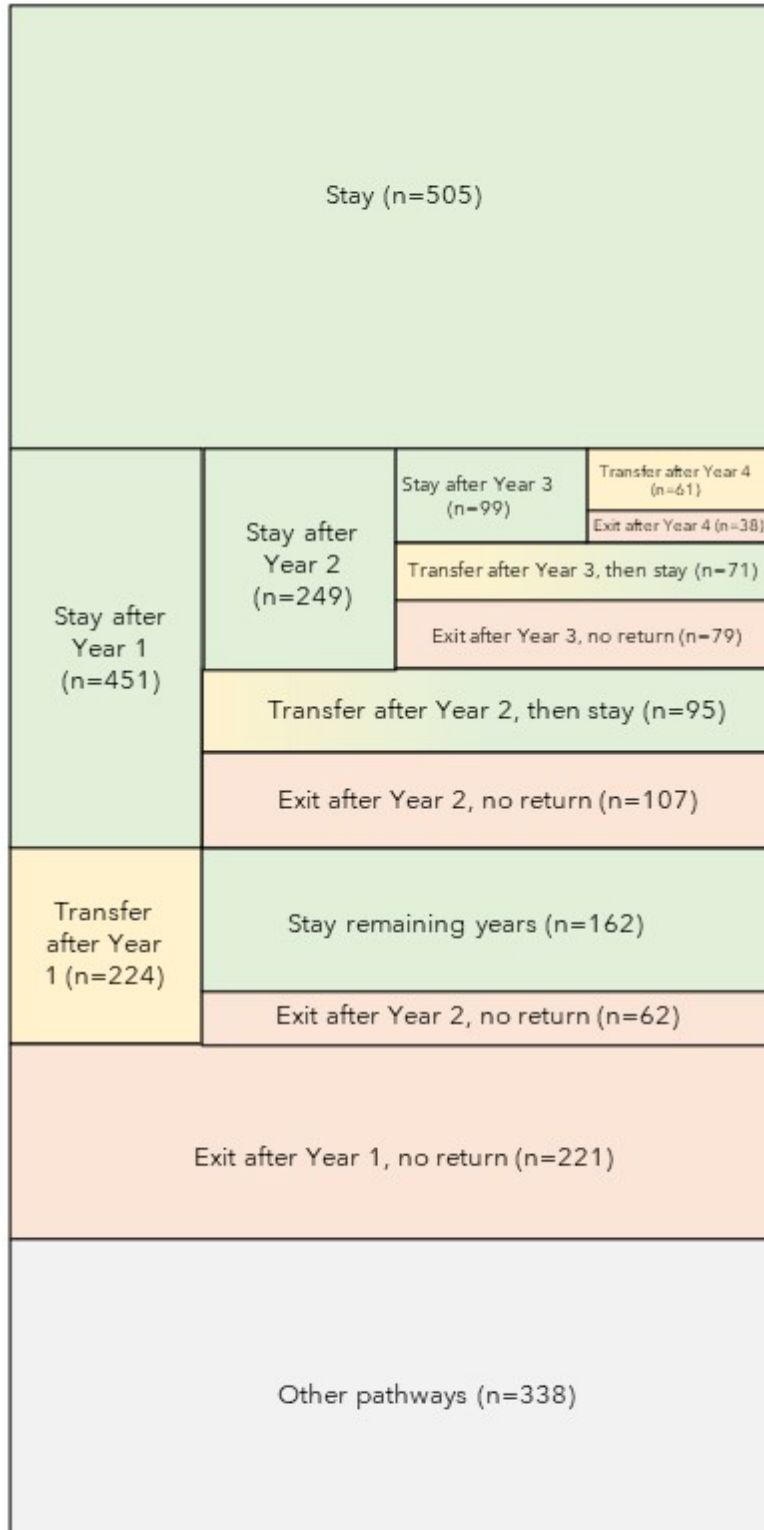


Figure 11 summarizes the timing of teachers' first transfers. Of the 738 beginning special education teachers who transferred at some point during their first five years, 55% did so for the first time at the end of their first year of teaching. First-time transfers became less common as teachers gained more experience.

Mirroring Figure 11, Figure 12 summarizes the timing of teachers' first exits. Of the 690 beginning special education teachers who exited at some point during their first five years, 37% did so for the first time at the end of their first year of teaching. As with first-time transfers, first-time exits became less common as teachers gained more experience.

Figure 11. Timing of First Transfer among Beginning Special Education Teachers Who Ever Transferred during Their First Five Years (n=738)

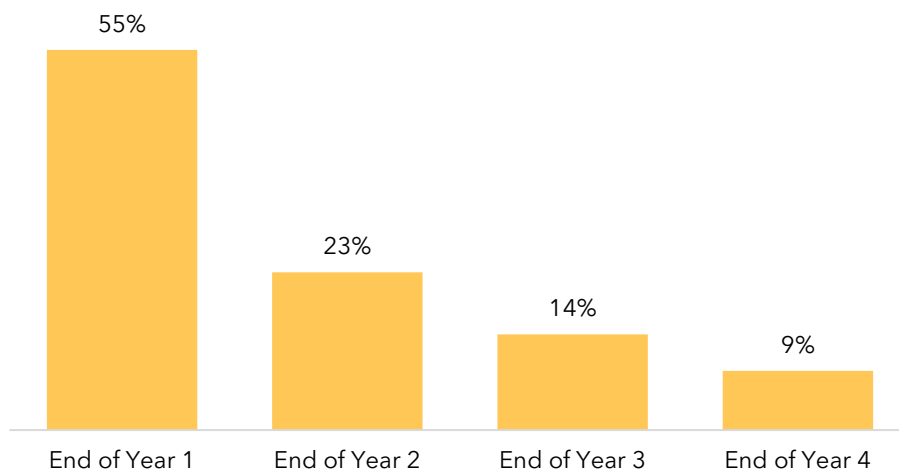
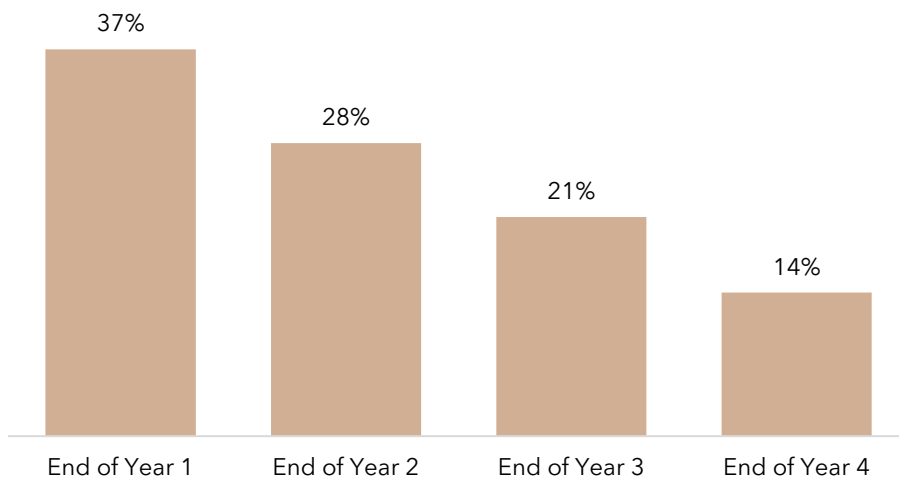


Figure 12. Timing of First Exit among Beginning Special Education Teachers Who Ever Exited during Their First Five Years (n=690)

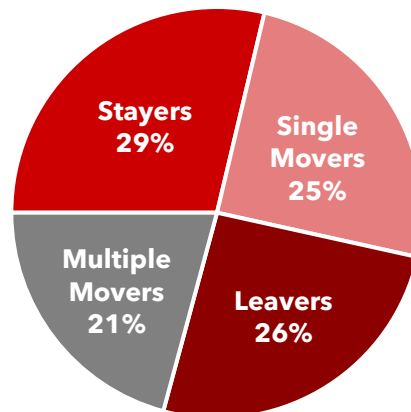


To provide a clearer understanding of the many pathways that beginning special education teachers took, educators were organized into four distinct groups:

 <p><b>Stayers:</b> Those who did not transfer or exit during their first five years.</p>	 <p><b>Single Movers:</b> Those who engaged in one transfer or one exit and return.</p>
 <p><b>Multiple Movers:</b> Those who engaged in more than one transfer and/or exit with or without return.</p>	 <p><b>Leavers:</b> Those who exited the profession without returning or transferring.</p>

The distribution of teachers across these four groups was roughly equal, with approximately one quarter of teachers belonging to each group (Figure 13). Stayers accounted for a slightly larger proportion of teachers (29%), and Multiple Movers accounted for a slightly lower proportion (21%).

Figure 13. Distribution of Beginning Special Education Teachers' Career Pathways



While all 505 Stayers followed the exact same pathway (i.e., remaining in the same school for five consecutive years), there was some variation within the remaining three pathways:

- While most Single Movers (n=430) transferred one time in five years, 10% of this group (n=41) exited for at least one year and returned.
- Among Leavers (n=445), about half (n=221) exited after their first year of teaching without returning. Exit became less common in later years: Another 107 exited without returning after their second year. This number dropped to 79 after the third year and 38 after the fourth year.
- The patterns among Multiple Movers (n=359) were the most varied. Indeed, 36 unique pathways were found among this group of teachers. Most commonly, teachers in this group either transferred after their first year and then exited after their second year (17%) or transferred after both their first and second years (7%).



## How have the career pathways of Utah's beginning special education teachers changed over time?

### Takeaways:

- ✓ More recent cohorts of beginning special education teachers were more likely to be Stayers and Single Movers. They were less likely to be Leavers and Multiple Movers.
- ✓ These patterns suggest that beginning special education teachers experienced increased stability in recent years.

To understand how beginning special education teachers' career pathways have changed over time, data were disaggregated by cohort. Figure 14 illustrates how the proportions of Stayers, Single Movers, Leavers, and Multiple Movers, varied by cohort. For example, while Stayers account for 33% of the 2004-05 cohort, only 22% of the 2005-06 cohort were stayers. The proportion of Leavers steadily increased until 2010-11 before dropping off in 2011-12. In contrast, the proportion of Stayers steadily decreased until 2010-11 before increasing in 2011-12.

To more clearly visualize the trends presented in Figure 14, Figure 15 presents these data in a slightly different format. In this figure, linear trend lines illustrate distinct shifts in career pathways over time. More recent cohorts of beginning special education teachers were less likely to be Leavers or Multiple Movers but more likely to be Stayers and Single Movers. These patterns suggest that beginning special education teachers in Utah experienced increased stability in their careers in recent years.

Figure 14. Distribution of Beginning Special Education Teachers' Career Pathways by Cohort

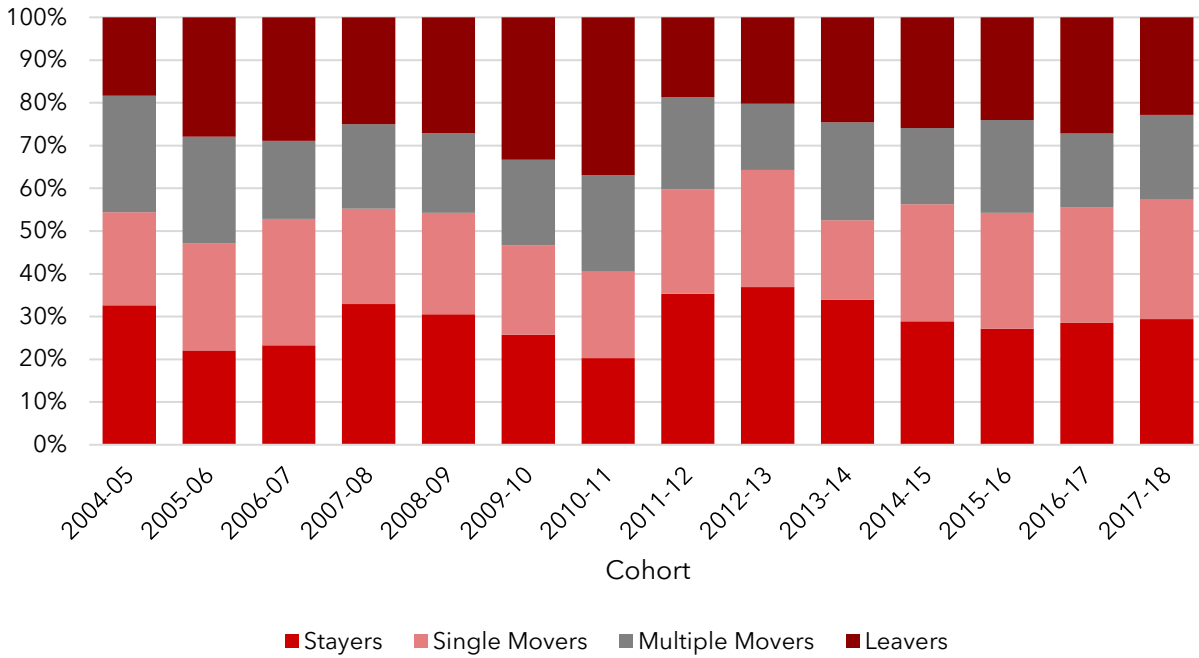
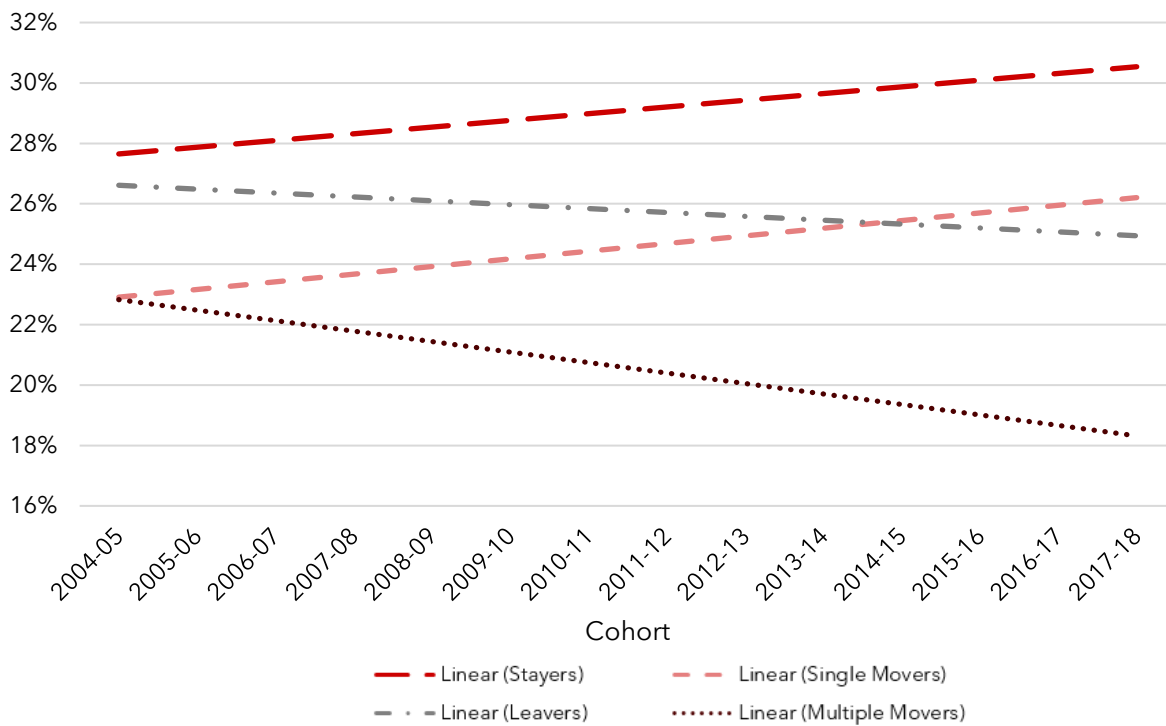


Figure 15. Trends in Beginning Special Education Teachers' Career Pathways by Cohort



## How are teacher and school characteristics associated with special education teacher career pathways?

### Takeaways<sup>3</sup>:

- ✓ Beginning special education teachers with graduate degrees were more likely to be Stayers and less likely to be Leavers.
- ✓ Leavers were more likely to begin teaching in schools with higher proportions of American Indian students while Stayers were less likely to do so.
- ✓ Those who begin teaching in towns were more likely to be Stayers and less likely to be Multiple Movers.

Table 1 disaggregates teacher and school characteristics across four beginning special education teacher career pathways: Stayers, Single Movers, Leavers, and Multiple Movers. Teacher characteristics of interest include gender, race, and educational attainment. School characteristics include Title I status, student race/ethnicity, proportion of students receiving special education services, mathematics proficiency rates, and locale.

As shown in Table 1, differences in teacher and school characteristics across career pathways were minimal. Statistical tests<sup>4</sup> were conducted on all characteristics to determine whether any of these differences were statistically significant. Two characteristics were identified:

- Stayers were more likely to hold a graduate degree than Leavers (37% vs. 27%,  $F=4.76$ ,  $p=.0026$ ).
- Stayers were more likely than other groups to work in towns ( $F=3.47$ ,  $p=.02$ )

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<sup>3</sup> Although some teacher and school characteristics are associated with teachers' career pathways, it is important to note that these findings are not necessarily causal. It is possible that there were other confounding factors that could not be accounted for (e.g., administrative support, school climate, availability of resources) which may contribute to these findings.

<sup>4</sup> One-way ANOVA (Analysis of Variance) tests were conducted to determine whether differences in teacher and school characteristics across career pathways (i.e., Stayers, Single Movers, Leavers, Multiple Movers) were statistically significant. Post-hoc Bonferroni tests were used to determine which specific groups were different from each other.

Table 1. Teacher and School Characteristics Disaggregated by Career Pathway

<b>Teacher Characteristics</b>	<b>Stayers (n=505)</b>	<b>Single Movers (n=430)</b>	<b>Multiple Movers (n=359)</b>	<b>Leavers (n=445)</b>
Female	79%	80%	79%	81%
American Indian	1%	1%	0%	0%
Asian	2%	1%	1%	1%
Black/African American	0%	0%	1%	0%
Hispanic	2%	2%	3%	2%
Pacific Islander	1%	2%	1%	1%
White	90%	88%	84%	84%
Graduate Degree	30%	26%	23%	20%
<b>School Characteristics</b>				
Title I	13%	15%	18%	15%
American Indian	1%	2%	2%	2%
Asian	2%	2%	2%	2%
Black/African American	2%	2%	1%	2%
Hispanic	15%	16%	15%	15%
Multiple Races	1%	1%	1%	1%
Pacific Islander	2%	2%	2%	1%
White	77%	76%	77%	77%
Special Education	19%	16%	18%	18%
Math Proficiency Rate	54%	56%	56%	56%
Urban	15%	15%	18%	14%
Suburban	61%	68%	65%	68%
Town	14%	10%	9%	8%
Rural	11%	7%	7%	11%

To generate a more complete picture of the extent to which the teacher and school characteristics noted in Table 1 were associated with beginning special education teachers' career pathways (i.e., Stayers, Single Movers, Leavers, and Multiple Movers), a multinomial logistic regression model was estimated.

A regression allows for the estimation of the extent to which a particular characteristic (e.g., holding a graduate degree) explains how likely someone is to be a Stayer, for example, while holding all other characteristics constant. For example, if one teacher had a graduate degree and another teacher did not, but they were otherwise exactly the same across all other teacher and school characteristics noted in Table 1, a regression would explain how much more or less likely the graduate degree holder is to be a Stayer.

The full results of these regressions are located in the appendix of this report. The following is a summary of key findings:



Relative to Single Movers, Multiple Movers, and Leavers, Stayers were:

- More likely to hold a graduate degree ( $p < .05$ )
- Less likely to begin teaching in schools with higher proportions of American Indian students ( $p < .05$ ).
- More likely to begin teaching in schools with lower mathematics proficiency rates ( $p < .10$ ).
- More likely to begin teaching in town settings ( $p < .05$ ).



Relative to Stayers, Multiple Movers, and Leavers, Single Movers were:

- No teacher or school characteristics associated with this pathway



Relative to Stayers, Single Movers, and Leavers, Multiple Movers were:

- More likely to be Black/African American ( $p < .05$ )
- More likely to begin teaching in schools with higher proportions of American Indian students ( $p < .10$ )
- Less likely to begin teaching in town settings than suburban settings ( $p < .10$ )



Relative to Stayers, Single Movers, and Multiple Movers, Leavers were:

- Less likely to hold a graduate degree ( $p < .05$ )
- More likely to begin teaching in schools with higher proportions of American Indian students ( $p < .10$ )

## Key Takeaways and Implications

#1

Racial/ethnic diversity among beginning special education teachers increased over time.

- Because teachers of color transfer and exit the profession at higher rates than White teachers (e.g., Carver-Thomas, 2018), it is imperative that steps are taken to support this increasingly diverse pool of beginning special education teachers.
- Ensuring that teachers of color have classroom autonomy and a voice in schoolwide decisions may be effective in bolstering retention (Ingersoll & May, 2016).
- It is also critical that administrators attend to teachers' peer relationships, disaggregate school climate data by race when possible, and provide professional learning opportunities that address the unique needs of teachers of color (Bristol, 2020).
- Combating isolation among teachers of color may alleviate turnover. Building cohorts of teachers of color who have the opportunity to work closely together may foster more supportive working environments (Dixon et al., 2019).

#2

More recent cohorts of beginning special education teachers started their careers in increasingly diverse schools.

- Although teacher turnover tends to be higher in schools with high proportions of students of color (e.g., Carver-Thomas & Darling-Hammond, 2017), working conditions can serve as a mediating factor (Geiger & Pivovarova, 2018).
- In particular, teachers are more satisfied and less likely to leave when they work with effective school leaders (Grissom, 2011; Ladd, 2011).
- Teachers also perceive their working conditions more positively when they have the opportunity to select instructional materials, participate in school improvement planning, set grading/assessment practices, and have a voice in hiring decisions (Ladd, 2011).

#3

Beginning teachers most commonly stayed in the same school, but 13% left the profession after their first year and never returned.

- First-year special education teachers would likely benefit from clear communication about their roles and responsibilities and supplemental training when there are gaps between teacher preparation and job assignment (Mastropieri, 2001).
- New special education teachers also need support in understanding special education policies, general school policies, curriculum, behavior management, and available resources (Whitaker, 2000).

#4

Turnover among beginning special education teachers has decreased in recent years.

- However, the COVID-19 pandemic, which began in 2019-20, has put an additional strain on teachers. Teachers are now less certain they will spend their entire careers teaching. In particular, older teachers, those who were required to change instructional modes, and those with health concerns are now more likely to consider leaving the profession (Zamarro et al., 2021).
- It is imperative that trends in beginning special education teacher turnover are closely monitored in the coming years. Schools with particularly high retention rates might serve as models for other settings across the state.

#5

Beginning special education teachers' first jobs were associated with later career pathways.

- These findings suggest that beginning special education teachers must be prepared to work with a diverse range of students, regardless of setting.
- Teacher preparation programs can support special education teachers by ensuring that coursework incorporates diverse perspectives and that field experiences expose candidates to a variety of contexts (Marchitello & Trinidad, 2019).
- Schools can build upon these preparation experiences by supporting professional learning that encourage critical reflection and cultural awareness (Moore, 2018).

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# Appendix

Teacher Characteristics	Stayers			Single Movers			Multiple Movers			Leavers		
	Marginal Effect	Standard Error	p-value	Marginal Effect	Standard Error	p-value	Marginal Effect	Standard Error	p-value	Marginal Effect	Standard Error	p-value
Female	-0.01	0.03	0.72	0.01	0.03	0.77	0.00	0.03	0.87	0.01	0.03	0.83
American Indian	-0.10	0.19	0.61	0.19	0.13	0.14	-0.12	0.19	0.54	0.02	0.16	0.90
Asian	0.02	0.10	0.87	-0.02	0.10	0.86	0.00	0.09	1.00	0.00	0.09	0.99
Black/African American	-0.27	0.22	0.23	-0.01	0.16	0.93	<b>0.26</b>	<b>0.11</b>	<b>0.01</b>	0.02	0.17	0.90
Hispanic	0.03	0.08	0.72	-0.03	0.08	0.73	0.00	0.08	1.00	0.00	0.08	0.99
Pacific Islander	-0.07	0.13	0.60	0.15	0.10	0.13	-0.07	0.13	0.58	-0.01	0.13	0.93
Graduate Degree	<b>0.07</b>	<b>0.03</b>	<b>0.01</b>	0.04	0.03	0.15	-0.02	0.03	0.39	<b>-0.08</b>	<b>0.03</b>	<b>&lt;.01</b>
<b>School Characteristics</b>												
Title I School	-0.03	0.04	0.53	0.01	0.04	0.73	0.04	0.04	0.26	-0.03	0.04	0.51
<b>Student Race Ethnicity*</b>												
% American Indian	<b>-0.08</b>	<b>0.03</b>	<b>0.02</b>	0.02	0.02	0.42	<b>0.03</b>	<b>0.02</b>	<b>0.08</b>	<b>0.04</b>	<b>0.02</b>	<b>0.05</b>
% Asian	0.02	0.08	0.80	0.01	0.08	0.91	-0.07	0.08	0.41	0.04	0.08	0.65
% Black/African American	0.05	0.09	0.59	-0.03	0.09	0.76	-0.14	0.10	0.18	0.12	0.09	0.19
% Hispanic	-0.01	0.01	0.57	0.00	0.01	0.77	-0.01	0.01	0.62	0.01	0.01	0.48
% Pacific Islander	-0.01	0.07	0.87	0.07	0.08	0.37	0.04	0.07	0.58	-0.10	0.08	0.22
% Special Education	0.00	0.01	0.57	-0.01	0.01	0.27	0.01	0.01	0.26	0.01	0.01	0.37
% Proficient in Mathematics	<b>-0.02</b>	<b>0.01</b>	<b>0.05</b>	0.01	0.01	0.47	0.00	0.01	0.85	0.01	0.01	0.29
<b>Locale</b>												
City	0.01	0.04	0.80	-0.02	0.03	0.60	0.05	0.03	0.11	-0.04	0.04	0.27
Town	<b>0.12</b>	<b>0.04</b>	<b>&lt;.01</b>	0.00	0.04	0.97	<b>-0.06</b>	<b>0.04</b>	<b>0.10</b>	-0.06	0.04	0.11
Rural	0.07	0.04	0.11	-0.02	0.04	0.65	-0.07	0.04	0.11	0.02	0.04	0.60

Coefficients from this multinomial logistic regression are displayed as marginal effects for ease of interpretation. Coefficients with  $p < .10$  are bolded. Coefficients with  $p < .05$  are bolded and highlighted. This model controls for cohort year. White is the omitted reference race/ethnicity category. Suburban is the omitted reference locale.

\*Student race/ethnicity is scaled by 10 for ease of interpretation. For example, a 10-percentage point increase in American Indian students is associated with a 9-percentage point decrease in likelihood of being a Stayer relative to other groups.