

Online Appendix

Two Years Later: How COVID-19 has Shaped the Teacher Workforce

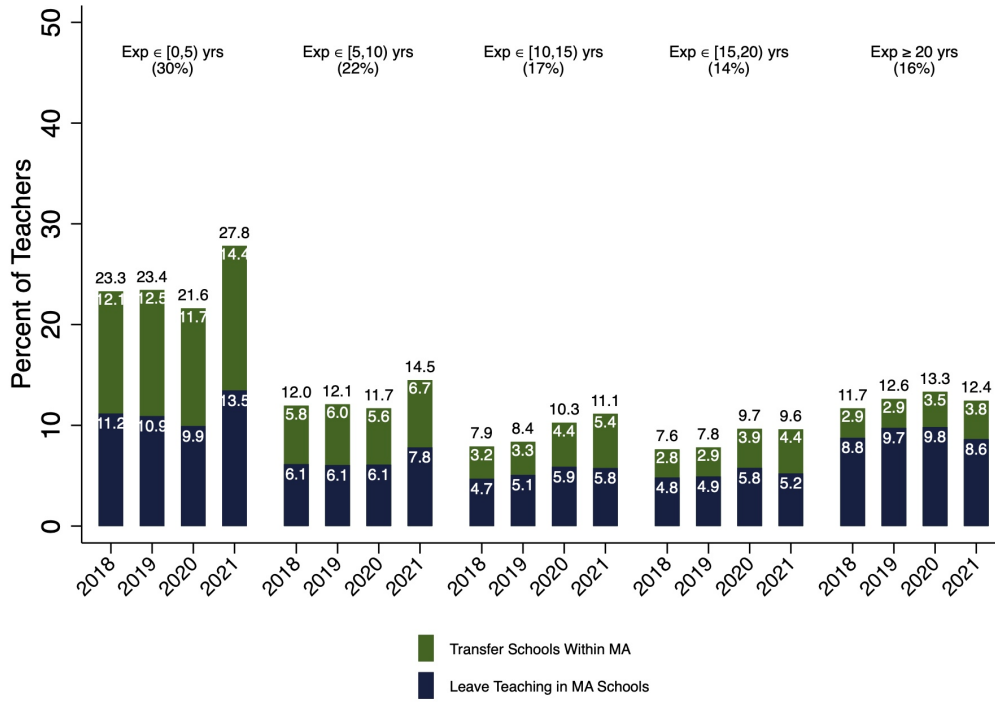
Andrew Bacher-Hicks
(Boston University)

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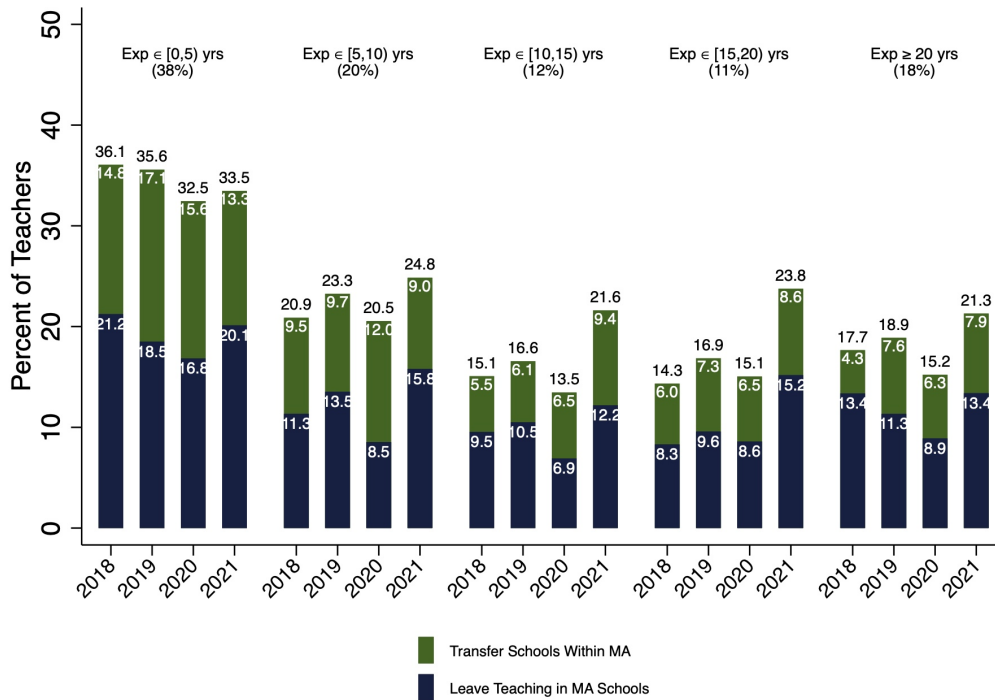
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(Boston University)

Online Appendix Figure A1: Turnover by Experience and Race/Ethnicity

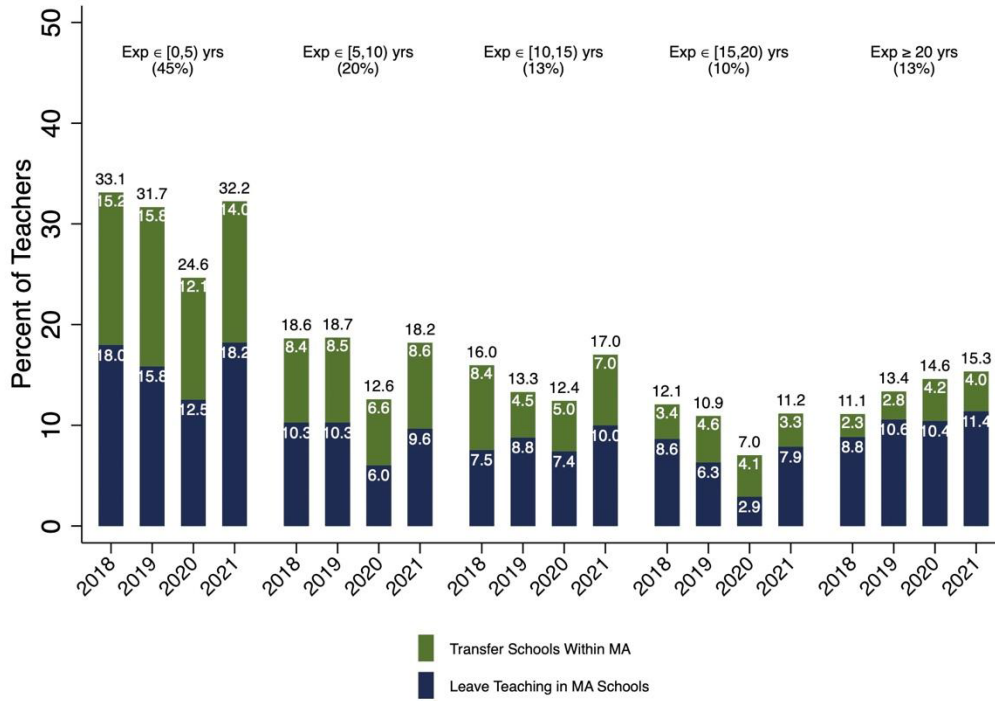
Panel A: White teachers



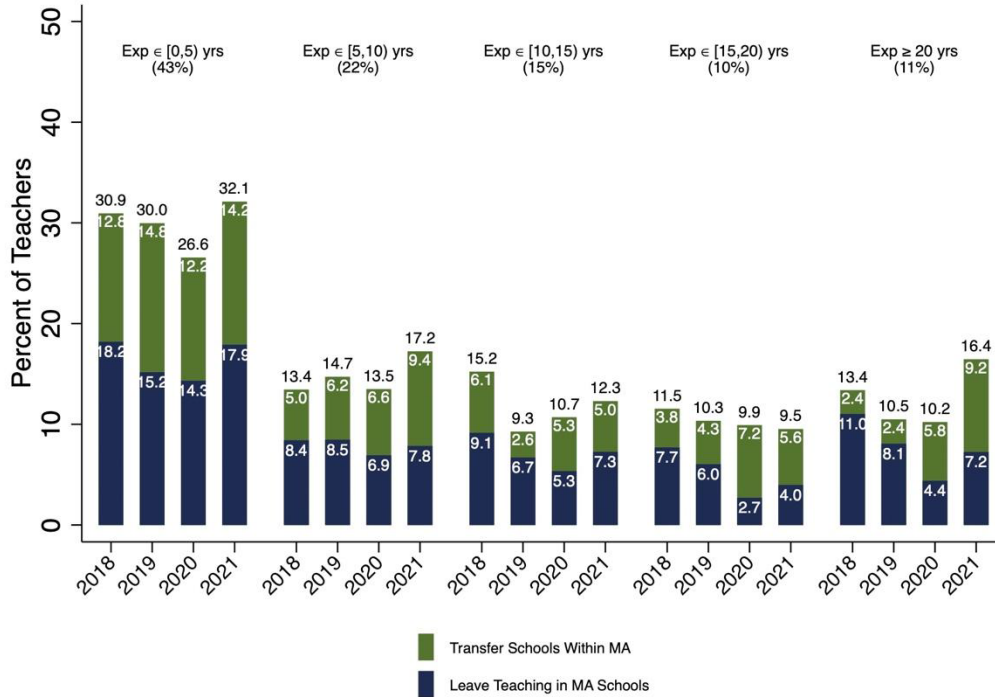
Panel B: Black teachers



Panel C: Hispanic/Latinx teachers

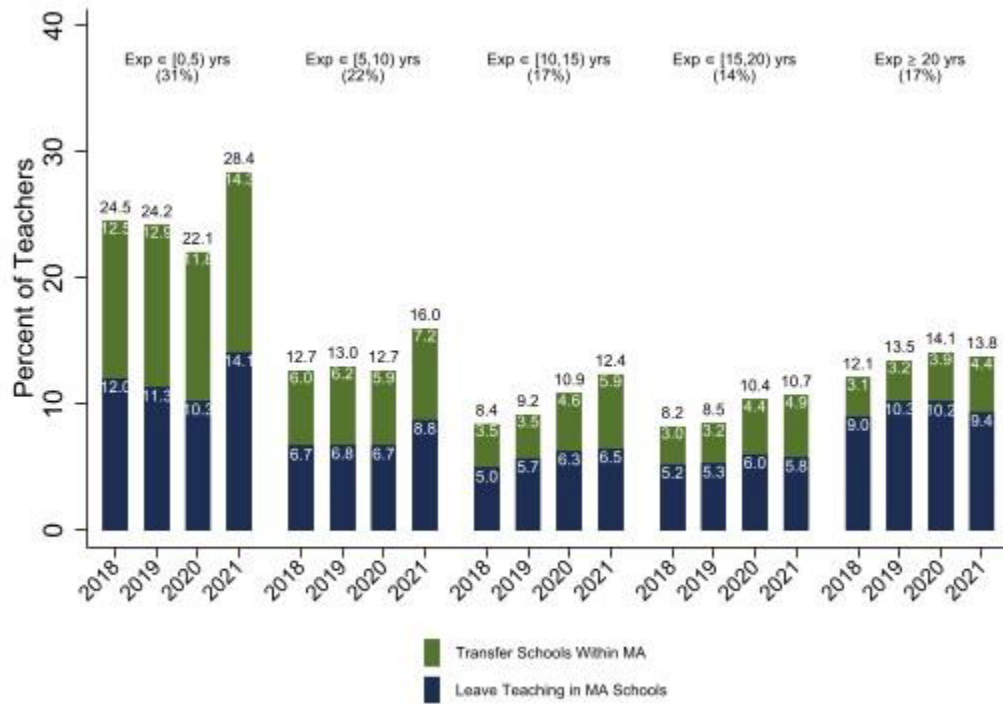


Panel D: Asian teachers

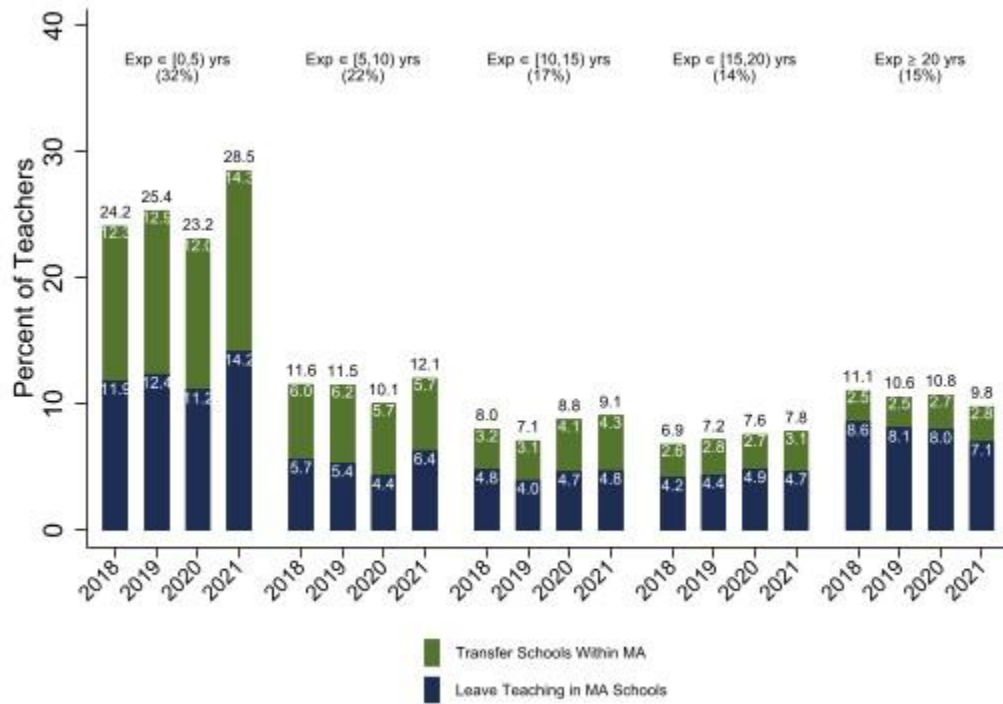


Online Appendix Figure A2: Turnover by Experience and Gender

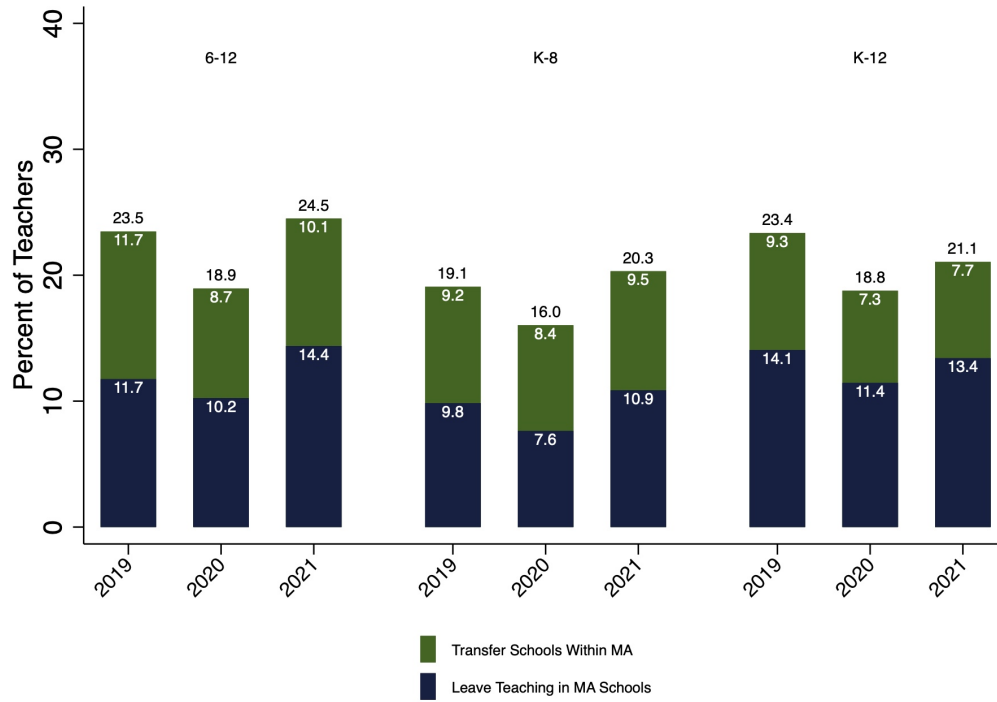
Panel A: Female Teachers



Panel B: Male Teachers



Online Appendix Figure A3: Turnover in Schools Serving Multiple Grade Levels



Online Appendix Table A1: Summary Statistics

Mean Experience (Years)	10.7
Std. Dev. of Experience (Years)	8.2
Newly Hired (%)	9.9
Female (%)	76.3
Black (%)	2.9
Asian (%)	1.5
Hispanic/Latinx (%)	3.2
White (%)	91.8
Other Race/Ethnicity (%)	0.6
Unique teachers	116,760
N (teacher-years)	550,877

Notes: Sample includes MADESE teachers from 2015-16 through 2021-22.

Online Appendix Table A2: Fall to Spring Turnover

	Panel A: All Teachers					
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Transfer Schools Within MA	1.71	1.56	1.56	1.89	1.68	2.17
Leave Teaching in MA Schools	2.60	3.23	2.71	2.06	1.92	2.35
Total	4.31	4.80	4.28	3.94	3.60	4.52
N (teachers)	72,602	77,244	78,507	79,226	80,402	81,438
	Panel B: Newly Hired Teachers					
Transfer Schools Within MA	6.25	5.68	5.37	6.70	6.11	6.61
Leave Teaching in MA Schools	5.60	7.22	5.63	5.23	5.69	4.16
Total	11.85	12.90	11.00	11.94	11.80	10.77
N (teachers)	6,988	7,605	8,754	7,700	7,482	7,838

Online Appendix Table A3: Characteristics of Transferring Teachers' Sending and Receiving Schools

	2016-2019		2020		2021	
	Sending	Receiving	Sending	Receiving	Sending	Receiving
Percent Economically Disadvantaged	39.63	37.15	35.41	34.54	35.54	33.28
Percent Black and Hispanic/Latinx	42.01	38.45	36.59	35.50	36.11	33.08
Average Std. Math Test Scores	-0.16	-0.12	-0.07	-0.06	-0.08	-0.04
Average Std. ELA Test Scores	-0.16	-0.12	-0.08	-0.06	-0.08	-0.04
N (teacher-years)	20,845		5,483		6,607	

Notes: School characteristics are based on schools' 2018-19 characteristics. Transfers are measured between the spring semester and fall semester of each calendar year (e.g., transfers in 2021 are measured from spring 2021 to fall 2021).

Online Appendix Table A4: Characteristics of Newly Hired Teachers

	2015-16 to 2018-19	2019-20	2020-21
<i>Demographics</i>			
Female	77.4	77.8	76.6
Black	5.5	6.0	6.8
Asian	2.4	2.1	2.6
Hispanic/Latinx	5.0	6.2	6.6
White	86.1	84.7	82.8
Other	1.0	1.0	1.1
<i>Licenses</i>			
Initial License	39.7	39.6	37.2
Provisional License	18.0	16.7	12.0
Professional License	20.7	17.6	15.4
Emergency License	0.0	0.0	15.5
Other License	21.6	23.4	19.9
N (teacher-years)	34,714	7,929	8,898

Online Appendix Table A5: School Characteristics of Newly Hired Teachers

	<u>2015-16 to 2018-19</u>	<u>2019-20</u>	<u>2020-21</u>
Percent Economically Disadvantaged	36.51	36.63	34.40
Percent Black and Hispanic/Latinx	39.35	39.35	36.80
Average Std. Math Test Scores	-0.09	-0.10	-0.06
Average Std. ELA Test Scores	-0.09	-0.09	-0.06
N (teacher-years)	34,127	7,813	8,562

Notes: School characteristics are based on schools' 2018-19 characteristics.