

17TH ANNUAL CALDER RESEARCH CONFERENCE SUMMARY

March 2, 2026 | Arlington, VA



About CALDER at AIR

The Center for the Analysis of Longitudinal Data in Education Research (CALDER) is a joint project of the American Institutes for Research and scholars at 12 universities. CALDER aims to inform policy and research with objective, evidence-based insights that can contribute to a better, more equitable public education system.

CALDER's commitment to high-quality, empirical research and objectivity makes it a trusted voice in important K-12 policy debates. Our researchers and affiliated scholars are national experts on a range of critical issues—including educator labor markets, teacher education, and academic interventions. With data-sharing agreements in over 10 states, CALDER leverages statewide longitudinal data systems (SLDS) to develop systematic, quantitative evidence on how teachers and schools impact student learning and success.

CALDER's work is supported by public and private grants. Past and present funders include the Institute of Education Sciences, Arnold Ventures, the Carnegie Corporation of New York, the Charles and Lynn Schusterman Family Philanthropies, the Gates Foundation, the Joyce Foundation, the Spencer Foundation, and the Walton Family Foundation.

About the CALDER Research Conference

Each year, CALDER and its affiliates present new research* at an in-person meeting at AIR's headquarters in Arlington, VA. This year's meeting included paper sessions about:

1. [Teacher Working Conditions](#)
2. [What Makes Teachers Stay](#)
3. [Who Becomes a Teacher](#)

The meeting is open to the public. After each paper session, a policymaker or practitioner discusses the papers and what they make of them. The full set of conference slides are available at the link below. This slide deck presents an edited summary of the day's presentations.

This year's conference is made possible thanks to support from the Institute of Education Sciences (IES) (Grant R305C240007 to the American Institutes for Research) and the Walton Family Foundation. The opinions expressed in the meeting are those of the authors and do not represent the views of the sponsors.

Links: [full slide deck](#); [agenda with links to working papers](#)
For more on CALDER: <https://caldercenter.org/>

*This year's meeting also included a roundtable discussion about the future of education research and education policy, which is not included in this summary document.

SESSION I: EVIDENCE ABOUT TEACHER WORKING CONDITIONS

Prior research suggests schools with better working conditions have higher achievement growth—even among similar schools.

There’s also evidence that teachers value working conditions over other parts of their jobs, including compensation and student demographics.

The presentations in this session take stock of teacher working conditions using national survey data and explore two possible levers for improvement: school leadership and labor action.

PRESENTERS

Elizabeth Steiner, RAND, CALDER R&R

Elizabeth D. Steiner, Ashley Woo, and Sy Doan (2025). [*To Make Teaching Sustainable, Help Teachers Balance Work and Personal Demands. Findings from the 2025 State of the American Teacher Survey.*](#) RAND.

Cory Koedel, University of Missouri, CALDER

Ataur Rahaman and Cory Koedel (2026). [*Principal Effects on Teacher Working Conditions.*](#) CALDER Working Paper No. 335-0226.

Melissa (Mimi) Arnold Lyon, University of Albany, SUNY, CALDER R&R

Melissa (Mimi) Arnold Lyon, Matthew A. Kraft, and Matthew Steinberg (2026). [*The Effects of Teacher Strikes on Compensation, Working Conditions, and Productivity.*](#) CALDER Working Paper No. 334-0226.

TO MAKE TEACHING SUSTAINABLE, HELP TEACHERS BALANCE WORK AND PERSONAL DEMANDS

Elizabeth Steiner, RAND, CALDER R&R

QUESTIONS

- What do teachers say about their working conditions?
- How does it compare to other workers?

FINDINGS

Teachers report worse well-being and worse work-life balance than similar working adults.

Differences in work-life balance between male and female teachers are largely explained by female teachers with children.

Poor work-life balance is highly correlated with poor well-being.

Fewer than one-half of teachers say their school or district made efforts to help teachers balance work and life.

IMPLICATIONS

Allow teachers to flexibly use paid leave and provide classroom coverage to support instructional quality.

Consider flexible job options: team teaching or job-sharing opportunities.

Provide teachers with benefits that could alleviate household responsibilities.

Message and expect work-life balance and set work boundaries.

DATA

State of the American Teacher Survey

- National sample of K12 public school teachers (2021-2025).
- Companion survey of similar working adults.

PRINCIPAL EFFECTS ON TEACHER WORKING CONDITIONS

Cory Koedel, University of Missouri, CALDER

QUESTION

- How much do school principals affect working conditions?

FINDINGS

Principals have large effects on teacher perceptions of teacher-principal trust and instructional leadership.

But they have small-to-moderate effects on teacher perceptions of the professional work environment and interactions with students and families.

IMPLICATIONS

Principal-focused interventions can help—but they're only part of the solution.

Most working conditions are shaped by other factors.

The areas principals influence least—student and family interactions—are the same conditions that, by some measures, have worsened the most since the pandemic.

DATA

Merged teacher survey data (5E) in Illinois with administrative personnel data to construct a school-by-year data panel of teacher working conditions, principals between 2019 and 2024.

NB: Analyses of a subsample of data from 2022 to 2024 suggest the findings aren't driven by the pandemic.

THE EFFECTS OF TEACHER STRIKES ON COMPENSATION, WORKING CONDITIONS, AND PRODUCTIVITY

Melissa (Mimi) Arnold Lyon, University of Albany, SUNY, CALDER R&R

QUESTIONS

- How common are US teacher strikes?
- How do they affect working conditions, compensation, and achievement?

FINDINGS

Teacher strikes are common, but often brief (median 2 days).

Strikes result in smaller class sizes, more non-instructional staff.

They also lead to large, sustained compensation increases (6%), funded by new revenues.

On average, strikes don't have achievement effects, but long strikes (more than 10 days) harm math achievement.

Strike effects are larger in low spending districts and states where strikes are illegal.

IMPLICATIONS

Strikes can be an effective tactic—especially short strikes—for pay gains. They send a signal to policymakers to invest in education.

Policies that prohibit strikes are often ineffective—71% of strikes happen where they're illegal.

Longer strikes are more harmful, so policy could target strike length with graduated enforcement or compulsory mediation.

DATA

Original database on teacher strikes between 2007 and 2024 based on reviewing 90,000 news articles and union websites that was merged with data on compensation and working conditions from the National Center for Education Statistics (NCES) Common Core of Data (CCD) and achievement data from the Stanford Education Data Archive (SEDA).

SESSION II: EVIDENCE ABOUT WHAT MAKES TEACHERS STAY

Teacher turnover can undermine student achievement and create costs for school districts who must recruit and hire new staff. Turnover problems are especially acute in some places (e.g., rural districts) and subjects (e.g., special education).

The presentations in this session look at three possible solutions to reducing teacher turnover: a reduced work week; higher compensation; and school leaders with special education backgrounds.

PRESENTERS

Andrew Camp, Brown University

Andrew M. Camp, J. Cameron Anglum, Cory Koedel, Se Woong Lee, Tuan D. Nguyen (2026). [*The Effects of the Four-Day School Week on Teacher Recruitment and Retention*](#). CALDER Working Paper No. 320-0226-2

Gema Zamarro, University of Arkansas, CALDER R&R

Gema Zamarro, Andrew M. Camp, Josh McGee, Taylor Wilson, Miranda Vernon (2026). [*Raising the Floor: Teacher Retention Effects of a Statewide Minimum Salary Increase*](#). CALDER Working Paper No. 336-0226

Roddy Theobald, CALDER/AIR, SPARC

Principals with Special Education Experience and Special Education Teacher Attrition. (forthcoming) SPARC Working Paper

THE EFFECTS OF THE FOUR-DAY SCHOOL WEEK ON TEACHER RECRUITMENT AND RETENTION

Andrew Camp, Brown University

QUESTIONS

- Why do districts adopt a four-day school week (4DSW)?
- Does the 4DSW help improve teacher retention and recruitment?

FINDINGS

Districts primarily adopt the 4DSW to address retention and recruitment—and to compete with other 4DSW districts.

But the 4DSW doesn't reduce turnover, mobility between districts, or overall retention in the workforce.

The 4DSW also doesn't affect the number of *new* hires—although there is a small positive effect on hires from other districts.

IMPLICATIONS

Given no meaningful effects on recruitment and retention, and early research that suggests the 4DSW may have negative effects on students, leaders should proceed with caution.

4DSW policies are popular, but teachers may just not value them enough to affect retention.

DATA

Interviews with 36 educators in 22 4DSW districts in Missouri.

Individual-level administrative data including teacher job assignments from 2008 to 2023, including 1.1 million teacher-by-year observations that allow us to observe turnover.

RAISING THE FLOOR: TEACHER RETENTION EFFECTS OF A STATEWIDE MINIMUM SALARY INCREASE

Gema Zamarro, University of Arkansas, CALDER R&R

QUESTIONS

- How have school districts' teacher compensation policies changed in response to the LEARNS Act in Arkansas, which increased the state's minimum teacher salary to \$50,000 (among other reforms)?
- How have the relationships between teacher salaries and district characteristics changed?
- How have teachers' salary raises from the LEARNS Act impacted teacher retention?

FINDINGS

The LEARNS Act produced significant across-the-board salary raises for teachers.

These increases had positive effects on teacher retention, with reductions in teacher exits, retirements, and moves outside the districts.

The positive effects appear more concentrated on teachers who received the larger salary increases (\$6,000 plus).

IMPLICATIONS

Maintaining salary increases could help preserve gains in teacher retention.

But only larger increases might have the desirable results.

DATA

District-level data on salaries before (2022-23) and after (2023-24) LEARNS Act implementation and data from Arkansas Department of Education and the National Center for Education Statistics (NCES) Common Core of Data (CCD).

PRINCIPALS WITH SPECIAL EDUCATION EXPERIENCE AND SPECIAL EDUCATION TEACHER ATTRITION

Roddy Theobald, CALDER/AIR, SPARC

QUESTIONS

- Are special education teachers more or less likely than other teachers to transition into school principal positions?
- What percent of school principals have prior experience in special education in recent years?
- Are special educators more likely to stay in their positions when their principal has prior experience in special education?

FINDINGS

Although special education experience among principals has increased in recent years, special education teachers are substantially less likely to become principals than other teachers in Washington state.

About 15% of principals in 2024 were ever a special education teacher prior to becoming a principal.

Unlike a similar study in Texas, we find no relationship between principals' special education experience and retaining special educators.

IMPLICATIONS

These null findings don't imply that principals don't matter for special educator working conditions and retention—indeed, a similar paper in Texas found that principals do matter.

Additional questions call for more study:

- Does it matter if a principal has a special education license? Do the specific settings he or she worked in prior to becoming a school leader matter?
- Do assistant principals play a role shaping the retention of special educators?

DATA

40 years of detailed state administrative data from Washington state covering school personnel from 1984 to 2024.

SESSION III: EVIDENCE ABOUT WHO BECOMES A TEACHER

Who ultimately ends up in the teacher workforce depends on many choices along the teacher pipeline, from initial interest in the profession to hiring to development on the job.

The presentations in this session look at three stages of the pipeline—teacher preparation, hiring, and on-the-job improvement—and how they shape who teaches.

PRESENTERS

John Krieg, Western Washington University

Dan Goldhaber, Roddy Theobald, Amy Roth McDuffie, David Slavit, Jennifer M. Dechaine, John M. Krieg, Vivien Chen, Emma Dewil (2025). [*The Beginning of the Teacher Pipeline: Which College Students Apply to Teacher Education Programs?*](#) CALDER Working Paper No. 328-0925

Ben Backes, CALDER/AIR

Ben Backes, James Cowan, Dan Goldhaber, Roddy Theobald (forthcoming). *Method or Measure? Investigating the Teacher Learning Curve Across Multiple Student Outcomes*. CALDER Working Paper.

Dan Goldhaber, CALDER/AIR

Dan Goldhaber, Cyrus Grout, Constance A. Lindsay, Elton Mykerezi, Aaron Sojourner (2026). [*School System Selection Processes and Workforce Diversity in Schools*](#). CALDER Working Paper No. 333-0226

THE BEGINNING OF THE TEACHER PIPELINE: WHICH COLLEGE STUDENTS APPLY TO TEACHER EDUCATION PROGRAMS?

John Krieg, Western Washington University

QUESTIONS

- What pre-college characteristics (gender, race/ethnicity, and SAT scores) predict interest in education at time of university application?
- What pre-college and college course taking variables (e.g., GPA, gateway course performance) predict applying to a teacher preparation program?

FINDINGS

Interest in teaching varies sharply by demographics, mirroring today's teacher workforce.

- White women show higher interest in teaching than other groups.
- Students with higher SAT scores are less likely to express interest in teaching.

These same demographic gaps persist at the application stage—even among students who are interested in education.

Among interested students, differences in application rates by SAT scores and college GPA are small, as are differences in performance in introductory courses.

IMPLICATIONS

College is a key leverage point for shaping who enters the teacher pipeline, given substantial switching in and out of early interest.

Still, differences in initial interest by SAT suggest that improving academic selectivity requires starting earlier than college.

DATA

College applications and enrollment in teacher education programs in three undergraduate programs in Washington State between 2013 and 2018, merged with state administrative data.

Sample of over 250,000 student-year observations and nearly 100,000 unique students across the three universities.

METHOD OR MEASURE? INVESTIGATING THE TEACHER LEARNING CURVE ACROSS MULTIPLE STUDENT OUTCOMES

Ben Backes, CALDER/AIR

QUESTIONS

- How does teacher effectiveness improve with experience across test and non-test outcomes?

FINDINGS

Across nearly all outcomes, teachers show similar improvement patterns over time.

Most growth happens early: rapid gains in the first five years, then slower improvement.

The largest experience gains are seen in test scores and evaluation ratings.

Teachers entering through lower-effectiveness pathways do not close the gap with experience (in math).

IMPLICATIONS

Concentrating inexperienced teachers in high-need schools carries real costs for students.

These students lose out on improvements in both learning *and* productive behaviors as teachers gain experience.

DATA

Individual-level administrative data on math and English teachers in Massachusetts in grades 3-8 and 10 between 2012 and 2016.

Outcomes include math and ELA test scores; attendance, discipline, and grades; and teacher evaluation ratings.

SCHOOL SYSTEM SELECTION PROCESSES AND WORKFORCE DIVERSITY IN SCHOOLS

Dan Goldhaber, CALDER/AIR

QUESTIONS

- How does the racial composition of job applicants change as candidates advance through the hiring process?
- Do advancement patterns vary across organizations with different characteristics, such as student demographics?

FINDINGS

Black, Hispanic, and Asian applicants are all significantly less likely than White applicants to have their applications advanced out of central office to school-level personnel

Black and Asian applicants are also less likely than White applicants to be engaged by school-level personnel (e.g., for an interview)

Asian applicants are significantly less likely than any other group to advance at each stage of the hiring process

Black applicants are more likely to receive an offer when applying to a charter organization versus a school district

Black and Hispanic applicants are more likely to receive an offer when applying to organizations serving a high percentage of underrepresented minority students.

IMPLICATIONS

Organizations don't appear to be using hiring decisions to increase workforce diversity. Racial disparities in hiring are larger in districts than in charters.

Disparities are also concentrated in the earlier, resume-based stages of hiring (the Hiring Eligible and School Visible/Active transitions), before any in-person interaction (NB: race/ethnicity is not reported to organizations directly).

These results should be read with caution—we don't have data that would explain why we see these patterns.

DATA

Primary data come from Nimble PBC, an applicant tracking system (ATS) used by K-12 educational institutions to manage hiring from job posting through onboarding for the calendar years 2019 to 2024.

Study focuses exclusively on public K-12 institutions that are paying clients of Nimble, ensuring consistent use of the platform.

Common Core of Data (CCD) records to add organizational-level information on student demographics, free/reduced lunch eligibility, enrollment size, and student-to-teacher ratios.

42 organizations (18 public school districts + 24 charter organizations), 16 states, 3,152 job postings, 10,545 openings, and nearly 70,000 applications from 46,130 unique applicants (~4.4 applicants per opening).