Research Projects Employing Data from
the North Carolina Education Research Data Center

Projects accepted since March 2009 are in bold text.
Projects accepted since March 2010 are in bold text and marked with an *
Projects accepted since March 2011 are in bold text and marked with **.

Minority Achievement Gap
Armor, David. “Black Concentration and the Achievement Gap: Revisiting an Old Question in New Educational Environment.” (George Mason University) Project funded by Smith Richardson Foundation.


Darity, William, Karolyn Tyson, and Domini Castellino. “Effective Schools and Effective Students.” (Duke University) Project funded by the Spencer Foundation.

*Darity, William, Karolyn Tyson, Dorothyjean Cratty, Kara Bonneau, Dania Frank. "The Effects of Racialized Tracking in North Carolina Schools." (Duke University) Project funded by the Smith Richardson Foundation and the Sanford School of Public Policy.

Mickelson, Roslyn Arlin, Linwood Cousins, and Brian Williams. “Closing the Race Gap in Math and Science Achievement through Improving Parental Involvement in the Course Selection and Placement Process.” (University of North Carolina at Charlotte) Project funded by the National Science Foundation.


Teacher Quality and Student Outcomes
Bosworth, Ryan C. “Class Size, Classroom Heterogeneity, and Teacher Incentives.” (North Carolina State University)

Bruegmann. Elias and Kirabo Jackson. “Teaching Students and Teaching Each Other: The Importance of Peer Learning for Teachers.” (Harvard University)


Fodchuk, Katy. “Evaluation of Visiting International Faculty Program Teachers.” (Visiting International Faculty Program, Chapel Hill, NC)


**Goldhaber, Dan. “Using Student Test Scores as a Measure of Teacher Performance: A Simple Idea that Isn’t So Simple.” (University of Washington).**

**Goldhaber, Dan, Walch, Joe, and Gabele, Brian. “Does the Model Matter? Exploring the Relationship Between Different Student Achievement-Based Teacher Assessments” (University of Washington Bothell and Seattle Public Schools).**


Hastings, Justine. “Peers, Schools, Teachers, and Academic Achievement.” (Yale University) Project funded by the US Department of Education.

Hoxby, Caroline and Hanley Chiang. “Rewarding Teachers for Performance: Getting the Design Right.” (Harvard University)

Jacob, Brian. “The Persistence of Teacher Effectiveness.” (University of Michigan) Project funded by the Spencer Foundation.


Jenkins, Scott; Diana Haywood, and Terry Thompson. “Preparing the Quality Teachers for NC: Aligning Higher Education & K -12 Data Marts to Make Data Driven Decisions.” (University of North Carolina, General Administration)

Ladd, Helen F., Charles T. Clotfelter, and Jacob Vigdor. “Teacher Quality and Student Achievement.” (Duke University) Project funded by the Spencer Foundation.


**Petty, Teresa, Wang, Chuang, and Harbaugh, Adam. “Relationships between Student, Teacher, and School Characteristics and Mathematics Achievement.” (University of North Carolina at Charlotte and Missouri State University)**


Tannenbaum, Richard. “The Relationship Between Mathematics Teachers’ Content Knowledge and Students’ Mathematics Achievement.” Project funded by the Institute of Education Sciences.

_School Accountability and Choice_
Ahn, Thomas. “The Impact of School Accountability Sanctions on Student Outcomes” (University of Kentucky) Project funded by the Institute for Education Sciences.

Bifulco, Robert and Helen Ladd. “Can School Choice Promote Racial Integration?” (Duke University)


Goldhaber, Dan. “Inside Charter Schools; Understanding the Mobility of Charter School Teachers and Leaders.” (University of Washington) Project funded by the US Department of Education.

Goldin, Claudia. “Student Achievement and Teacher Quality in North Carolina: 1996 to 2006.” (Harvard University)
Hannaway, Jane, and Zeyu Hu. “Value-Added Analysis of Teachers in Title I and non-Title I Schools.” (The Urban Institute and CALDER)


Jackson, Kirabo. “Do Charter Schools Skim off Good Teachers from Regular Public Schools?” (Cornell University)


Lauen, Douglas. “The Effects of NCLB's Subgroup-Specific Accountability.” (University of North Carolina at Chapel Hill)


**Lauen, Douglas. “Jumping at the Chance: The Effects of Accountability Incentives on Student Achievement.” (University of North Carolina at Chapel Hill)**

Mickelson, Roslyn Arlin and Bobbie Everett. “Pathways to an Equitable Future or to the Stratified Past? Tracking and Occupational Preparation in CMS.” (University of North Carolina at Charlotte)


**Academic Performance of At-Risk Children**
Ahn, Thomas and Jacob Vigdor. “Analysis of the Effectiveness of Alternative Schooling in North Carolina.” (Duke University) Project funded by the NIDA Transdisciplinary Prevention Research Center

Bifulco, Robert and Stephen Ross. “The Effect of Classmates on Student Achievement.” (Syracuse University)

Bowen, Gary T., et al. “Evaluating the Effectiveness of the School Success Profile (SSP) Evidence-Based Practice Strategy on School- and Student-Level Performance.” (University of North Carolina at Chapel Hill) Project funded by the Knight Foundation and WT Grant Foundation.

Cook, Phillip and Clara Muschkin. Schooling and Life-Course Outcomes in Early Adulthood: Involvement in the adult criminal justice system.” (Duke University) Project funded by the Smith Richardson Foundation and the Sanford School of Public Policy.
Duncan, Dean. “Exploring the Outcomes for Youth Aging Out of Foster Care.” (University of North Carolina at Chapel Hill) Project Funded by the North Carolina Department of Social Services.

Duncan, Dean. “Assessing the Academic Performance of Children on Work First.” (University of North Carolina at Chapel Hill) Project funded by the North Carolina Department of Social Services.


**Edmunds, Julie, Bernstein, Lawrence, Unlu, Fatih, Glennie, Elizabeth, and Willse, John. “Expanding the Start of the College Pipeline: Ninth Grade Findings from an Experimental Study of the Impact of the Early College High School Model.” (SERVE, University of North Carolina at Greensboro) Project funded by the Institute of Education Sciences.**

**Edmunds, Julie, Willse, John, Arshavsky, Nina, and Dallas, Andrew. “Mandated Engagement: The Impact of Early College High Schools.” (SERVE, University of North Carolina at Greensboro) Project funded by the Institute of Education Sciences.**


Gibson-Davis, Christina, Elizabeth O. Ananat, and Anna Gassman-Pines. “The Effects of Plant Closings on Children's Educational Achievement.” Project funded by a grant from the Smith Richardson Foundation and the Sanford Institute of Public Policy, Duke University.


Hannaway, Jane. “Identifying Potentially Successful Approaches to Turning Around Chronically Low-Performing Schools.” (Urban Institute)

Hannaway, Jane and Sarah Cohodes. “Student Transience in North Carolina: The Effect of Mobility on Student Outcomes Using Longitudinal Data.” Project funded by the Urban Institute.

Jentleson, Barbara. “Evaluation of Project HOPE.” (Duke University) Project funded by the Kellogg Foundation.

Keller, Lisa A., Stephen G. Sireci, Leslie Babinski. “Evaluating Student Achievement in the Schools Attuned Model.” (University of Massachusetts) Project funded by the All Kinds of Minds Institute.

Ladd, Helen, Kenneth Dodge, and Clara Muschkin. “Combining birth data with longitudinal data on schooling to explore the relationships between children’s birth weight, immigrant status, pre-school experiences, and performance in school.” (Duke University) Project funded by Smith Richardson and CALDER.


Schulte, Ann C. “School-level Outcomes for Children in Special Education.” (North Carolina State University)

**Problem Behavior in Schools**


Copeland, William, Jane Costello, and Elizabeth Gifford. “Growing up Violent in Rural America.” (Duke University). Project funded by Duke University and the National Institute on Drug Abuse

*Dhuey, Elizabeth. “The Effects of Spillovers in the Classroom.” (University of Toronto) Project funded by the SSHRC of Canada.


Glennie, Elizabeth and Joel Rosch. “Retention and Suspension: An Analysis of North Carolina Students and Schools.” (Duke University) Seed grant from NIDA Transdisciplinary Prevention Research Center.

Rabiner, David. “Violence Prevention Study for Middle School Students.” (Duke University). Project funded by the Centers for Disease Control.
Impact of Specific Policies on Student Outcomes

**Arshavsky, Nina, Edmunds, Julie, Miller, Luke C., and Corritore, Matthew. “Success in the College Preparatory Mathematics Pipeline: The Role of Policies and Practices Employed by Three High School Reform Models.” SERVE Center at the University of North Carolina-Greensboro. Project funded by NSF Award from the National Science Foundation of the Urban Institute.**


Bowen, Natasha. “Longitudinal Effects of the Elementary School Success Profile Model of Prevention and Assessment” (University of North Carolina at Chapel Hill) Project funded by Strowd Roses Inc. and Triangle Community Foundation.

Bowen, Natasha. “Phase II Development of ESSP and SSP.” (University of North Carolina at Chapel Hill) Project funded by a Subcontract on National Institute on Drug Abuse (NIDA) Phase II SBIR award to Flying Bridge Technologies

*Dodge, Kenneth and Elizabeth Gifford. “Factors that Affect the HS Graduation Rate America’s Promise.” (Duke University) Project funded by America’s Promise.

Kleiman, Glenn. “Evaluating IMPACT” (North Carolina State University) Project funded by the North Carolina Department of Public Instruction.


*McMillian, Monique. “A Re-Examination of the Wake County School-Assignment Policies.” (Duke University)

**McMillian, Monique, Fuller, Sarah, and Darity, William A. “Did Wake County Public School Redistricting Policies Produce Ethnic Diversity and Reduce Ethnic Achievement Gaps?” (Duke University)

Miranda, Marie Lynn. “Assessing Family Mobility Using Three Administrative Datasets.” (Duke University)

Muschkin, Clara and Kara Bonneau. “Easing the Transition to High School: Effects of a Freshman Academy on Student Success.” (Duke University)

Natkin, Jerry and Steven Jurs. “The Effect of Professional Learning Teams on Middle School Reading Achievement.” (SERVE, University of North Carolina at Greensboro)


Rouse, Katy. “The Impact of Year-Round Schooling on Academic Achievement and Extracurricular Involvement.” (Elon University)

_Schooling and Life-Course Outcomes_

Jackson, Kirabo. “Match Quality, Worker Productivity, and Worker Mobility.” (Cornell University)


Clotfelter, Charles, Helen Ladd, Clara Muschkin, and Jacob Vigdor. (Duke University) “Schooling and Life-Course Outcomes in Early Adulthood: Enrollment and Success in Community Colleges.” Project funded by the Smith Richardson Foundation and the Sanford School of Public Policy.

Cook, Phillip and Clara Muschkin. Schooling and Life-Course Outcomes in Early Adulthood: Youth Involvement in the Adult Criminal Justice System.” (Duke University) Project funded by the Smith Richardson Foundation and the Sanford School of Public Policy.

Gibson-Davis, Christina, Elizabeth O. Ananat, and Anna Gassman-Pines. “The Effects of Plant Closings on Children's Educational Achievement.” Project funded by the Smith Richardson Foundation and the Sanford Institute of Public Policy, Duke University.
Other Studies

**Altonji, Joseph G. “The Contribution of Family, School and Community Characteristics to Inequality in Education and Labor Market Outcomes.” (Yale University)

Bowen, William. “Expanded College and Beyond Database.” Project funded by the Mellon Foundation.


*Cox, Robynn. “The Obama Effect: Test of Competing Theories.” (Duke University)


Gipson, Debbie. “Statewide Assessment of Educational Achievement: CKD vs. Population.” (University of North Carolina at Chapel Hill) Project funded by the UNC Kidney Center/ Renal Research Institute.


Jacob, Brian and Jacob Vigdor. “Measuring the Impact of Peer Influence on Student Outcomes.” (University of Michigan) Project funded by National Institute on Drug Abuse.

*Ladd, Helen. “School and residential segregation in Charlotte-Mecklenburg and Wake County.” (Duke University)

Matthews, Michael. “Gifted Students Dropping Out: Recent Findings from a Southeastern State.” Project funded by Duke University Talent Identification Program.

*Miranda, Marie Lynn. “Environmental Justice and Air Toxics Exposure in North Carolina Schools.” (Duke University)


Smerdon, Rebecca and Jennifer Cohen. “North Carolina Math and Science Pipeline Study.” (Urban Institute) Project funded by the National Science Foundation.

**Solomon, Pantelis. “Do Schools Learn: Response to North Carolina’s School Accountability Program.” (Brown University)

**Solomon, Pantelis. “How Mean Reversion Varies with Socioeconomic Status and the Implications for School Accountability Systems.” (Brown University)


**Zajonc, Tristan. “Bayesian Inference for Dynamic Treatment Regimes: Mobility, Equity, and Efficiency in Student Tracking.” (Harvard University)

Abstracts of Recently Approved Projects

**Altonji, Joseph G. “The Contribution of Family, School and Community Characteristics to Inequality in Education and Labor Market Outcomes.” (Yale University)

This paper examines the impact of high school quality on high school graduation, college enrollment, and adult wages. We isolate the causal impact of school/neighborhood combinations...
from student sorting among schools by exploiting panel data from three national longitudinal surveys. We decompose each of our three outcomes into the within- and between-school contributions of both observed and unobserved student and family characteristics, as well as the contributions of observed and unobserved school and neighborhood variables that vary only across schools. Instead of attempting to disentangle school averages of individual-level unobservable inputs from school-level unobservable inputs, we estimate upper and lower bounds on the contribution of school quality to student outcomes. On the one hand, the vast majority of the variation in students' outcomes can be attributed to some combination of student inputs, parent inputs, and quality of schooling prior to high school. On the other hand, the small fraction of the variance attributable to differences in school quality translates into large impacts on high school graduation and college enrollment, since large numbers of students seem to be near the decision margin. Our lower bound estimates of the average increase in the probability of graduation from moving a student from a school at the 10th percentile of the quality distribution to a school at the 90th percentile range from .06 to .13, with the corresponding lower bound estimates for college enrollment ranging from .14 to .23. The upper bound estimates are a few points higher. We also find a substantial effect of schools on adult wage rates. Finally, we find that the impact of attending a high quality school on college enrollment increased between 1972 and 1988, but remained stable between 1988 and 2000.

Ahn, Thomas. “The Impact of School Accountability Sanctions on Student Outcomes” (University of Kentucky) Project funded by the Institute for Education Sciences.

We propose to use regression-discontinuity and instrumental variable methods to examine the impact of No Child Left Behind (NCLB) and state-level accountability sanctions on student academic and behavioral outcomes in North Carolina, with particular attention to traditionally underperforming, disadvantaged students.


This paper examines the relationship of the policies and practices employed by three high school reform models – Early College High School, Redesigned High Schools, and High Schools That Work – with student success in college preparatory mathematics courses by the end of the 10th grade. Data policies and practices collected through a survey of school principals in North Carolina are combined with administrative data on student course-taking and performance. The examined policies include course-taking requirements, rigorous instruction, academic support, personalization, and relevance. Results show that implementation of these policies varies across models and that higher levels of implementation of combinations of these policies are associated with improved outcomes.

Bifulco, Robert and Stephen Ross. “The Effect of Classmates on Student Achievement.” (Syracuse University)
Using data provided by the Data Center, the proposed project will exploit a recent school rezoning in Durham, North Carolina to estimate the impact of classmates on individual student achievement. Specifically, the study will estimate the effect of variation in classmate composition by gender, race, parental education, and educational achievement on student math and reading achievement of elementary and middle school students. By exploiting variation in the composition of different cohorts within schools that is driven by a school rezoning, the study will address the primary methodological challenges to estimating the effect of classmate composition on individual outcomes. Also, by estimating the effects of students who remain in the same school as the composition of classmates in that school changes separately from the effect of changes in classmate composition for students who change schools, the study will help to sort out the effects of peer composition, dislocation and the interactions of those two factors that have been conflated in other studies of peer effects.

Bowen, Natasha. “Longitudinal Effects of the Elementary School Success Profile Model of Prevention and Assessment” (University of North Carolina at Chapel Hill) Project funded by Strowd Roses Inc. and Triangle Community Foundation.

The Longitudinal Effects of the ESSP MAP is a three-year quasi-experimental intervention study designed to improve the school performance of the 2007 cohort of third graders in four (initially three, then four) elementary schools in the Chapel Hill-Carrboro City School district. The study is beginning its third and final year of following students from third to fifth grade. Funding provided by the Strowd Roses Foundation and the Triangle Community Foundation is used by schools to pay for intervention costs. Post-test ESSP data are examined annually for changes in scores related to targeted areas. EOG data from the NCERDC will be used for quasi-experimental analyses of the longitudinal effects of the ESSP MAP on student performance. Comparisons of EOG trajectories will be made with previous cohorts at the target schools and with concurrent cohorts at other elementary schools in the district.

Bowen, Natasha. “Phase II Development of ESSP and SSP.” (University of North Carolina at Chapel Hill) Project funded by a Subcontract on National Institute on Drug Abuse (NIDA) Phase II SBIR award to Flying Bridge Technologies

The 2008-2009 intervention study component of the two-year NIDA funded project focused on the implementation of the ESSP MAP in 5 randomly selected low performing elementary schools in Durham, NC. School staff in the 5 low performing schools collected data on a random sample of low performing students in grades 3 through 5 using the ESSP. Funding provided by the NIDA subcontract helped pay for intervention costs. Intermediate outcomes are scores on ESSP scales related to students’ social environments, well-being, and teacher-reported school performance. EOG data from the NCERDC will be used for experimental and regression discontinuity analyses of the effects of the ESSP MAP on the ultimate outcomes of standardized test score trajectories. Experimental comparisons will be made of the EOG trajectories of study participants and non-participants in the 5 targeted schools, and of study participants and students in 5 matched low performing schools that were assigned to the control group. In addition, regression discontinuity analyses will be used to compare EOG trajectories of low performing students in and outside of the participating schools with those of non-low performing students within and outside of the participating schools (in the other elementary schools in the district).
It is widely acknowledged that charter schools tend to have less experienced teachers and higher teacher turnover, but to date, little effort has been made to identify the contribution of faculty experience and retention to overall charter effectiveness. I do so using a twelve-year panel of charter and mainstream student achievement in North Carolina, focusing on the state’s middle schools. Indeed, new charter schools had twice the rate of new teachers as new mainstream schools, as well as lower rates of faculty retention. Consistent with past research, I find significant returns to charter school age in terms of math and reading achievement, and I rule out the possibility that charter maturation was driven by higher-achieving students selecting into older schools. Faculty development explains, at best, a small share of the observed maturation over the initial years of charter schools’ operation. Charters of all ages were relatively ineffective at improving math achievement, but were on par with mainstream schools at improving reading achievement by their sixth year of operation.

Do charter schools draw good teachers from traditional, mainstream public schools? Using a thirteen-year panel of North Carolina public school teachers, I find that less qualified and less effective teachers move to charter schools, particularly if they move to urban schools, low performing schools, or schools with higher shares of nonwhite students. It is unclear whether these findings reflect lower demand for teachers’ credentials and value added or resource constraints unique to charter schools, but the inability to recruit teachers who are at least as effective as those in traditional public schools will likely hinder charter student achievement.

This project examines factors within the school experience of NC students that are predictive of conviction, incarceration, or probation status in the adult criminal justice system. We will link these outcomes to prior educational outcomes for students, through linking of student records from the NCERDC with individual records from the NC Department of Correction. The linked database will permit us to examine predictive factors that include: 1) demographic characteristics such as race, age for grade, and SES; 2) educational characteristics, such as grade retention, LEP status, exceptionality, prior test scores; and 3) contextual factors, such as the density of “future felons” as classmates, school SES, school race and ethnic composition, grade configuration of the middle school attended.
The purpose of this research project is to evaluate if there exist an “Obama Effect”: the positive effect of the presence of a black President of the United States on the test score performance of black students. There are two theories that motivate our research: 1) stereotype threat and 2) Mickelson’s (1990) attitude-achievement paradox. Stereotype threat is the adverse or depressing effect on task performance resulting from generally held negative beliefs about the group with whom an individual belongs. Indeed, in controlled experiments the individual in reaction to cueing stereotypes, responds in a manner to avoid confirming the stereotype. The attitude-achievement paradox is the perplexing finding that while blacks have high regard for education they still have low academic performance. This is known as the attitude-achievement paradox. Mickelson (1990) finds in her research that all students regardless of race hold two sets of beliefs about education: abstract and concrete. Abstract attitudes are the widely held notion that education can be used as a tool for success and upward mobility. Concrete attitudes are those that are shaped by the opportunities and success of those around you. Therefore, this theory helps to explain why black students may hold education in high esteem and still have subpar academic achievement. We will explore whether, in the face of stereotype threat and the attitude achievement paradox, the Obama election produced a bounce or lift effect on black student test performance. In particular, if the Obama effect works through the concrete attitudes/expectations of the students, then they will perform better due to their belief that they can achieve and do in fact have greater opportunity to do so through the education system. However, if the Obama effect works through stereotype threat, then students will have higher academic achievement because they will feel less pressure to succeed.

Clotfelter, Charles, Helen Ladd, Clara Muschkin, and Jacob Vigdor. (Duke University) “Schooling and Life-Course Outcomes in Early Adulthood: Enrollment and Success in Community Colleges.” Project funded by the Smith Richardson Foundation and the Sanford School of Public Policy.

Duke University’s Beyond Test Scores Working Group is funded by a two-year grant from the Smith Richardson Foundation. Its purpose is to explore important youth transitions beyond the public schools using data that link students’ school experience with later choices and outcomes. The comparative advantage this project brings to evaluation of education policy lies in our ability to link together previously separate data sets, which allows us to follow individuals over time. We requested data from the North Carolina Community College System (NCCCS) in hope of linking records for community college students to their public school records. We hope to address two main questions. First, who attends community colleges? Second, what factors are associated with the rate of progress through a community college and obtaining an associate’s degree?

*Copeland, William, Jane Costello, and Elizabeth Gifford. “Growing up Violent in Rural America.” (Duke University). Project funded by Duke University and the National Institute on Drug Abuse
The bioecological model views the individual as existing in, and in many respects as the product of, a series of nested environments or systems, each contained within the next. Using this model, the initiation of substance use and the progression to impairing substance use is seen as the result of complex interactions between the individual (personality, genetic vulnerability, regulatory processes, endocrine function etc.), their family (parenting, marital relations), and their community (school, neighborhood). We propose to add school and student-related information to two representative, longitudinal studies through collaboration with the North Carolina Education Research Data Center (NCERDC). This will allow us to test a full bioecological model for the development of substance problems.


Though many studies have investigated whether the racial, socioeconomic, and academic composition of charter schools differs from traditional schools, no studies have examined whether charters enroll and/or retain students differently by gender. Understanding the gender balance of charter schools is critical to evaluating their effectiveness and distributional consequences, given strong evidence of female peer effects, gender gaps in achievement and attainment, and a high correlation between gender and non-cognitive skills relevant for student and school performance.

In Part 1 of this project, we will use longitudinal data to examine whether differential rates of retention and attrition explain the gender gap in charter attendance. Relying primarily on student level “masterbuild” data (for grades 3-12) and end-of-grade testing data (for grades 3-8), we will explore: (1) whether boys or (girls) are less likely to enroll in—or transfer into—charters and (2) conditional on enrollment, whether boys (or girls) are less likely to remain.

One plausible explanation for the gender imbalance noted in Part 1 is that the returns to charter attendance vary by gender. In Part 2 of this project, we will use end-of-grade and end-of-course data to examine whether the academic returns to charter school attendance differ by gender. Our methodological approach will draw on that used by Bifulco and Ladd (2006), who analyzed the impact of charter attendance on math and reading achievement.


Math requirements for both graduation and college admission dictate that the course of study in mathematics is crucial to students’ academic outcomes. The progression through the mathematics curriculum often is determined as early as middle school, and not all students are on a path to attain the level of study required for graduation and college admission. This study patterns and determinants of advanced course taking among high school students in North Carolina schools. The results demonstrate that black students begin the needed math progression later than white students and subsequently are underrepresented in advanced math courses as juniors and seniors. We also find that not only are students who have been labeled Academically/Intellectually Gifted (AIG) during the elementary years significantly more likely to take advanced math courses, but this designation reduces the black-white gap in advanced course taking.
*Dhuey, Elizabeth. “The Effects of Spillovers in the Classroom.” (University of Toronto) Project funded by the SSHRC of Canada.

In this project we will estimate whether a student’s classroom peer makeup spills over to affect academic achievement. We will focus specifically on whether the inclusion of students who are disruptive, or students who are classified as special education, affect the academic achievement of their peers in the classroom. This research has two related, but slightly different, main goals. First, we want to quantify whether “bad apples” are disruptive enough to affect the achievement of other students in the classroom. Second, we want to know if the inclusion of special education students in regular classrooms has an effect on the academic performance of their peers. We will also be able to explore whether different types of exceptional child affect their peers differently.


The rise in immigrants, particularly from Latin America, has sparked debates on immigration and created a backlash against immigrants among certain groups. The influx of immigrants has shifted the ethnic composition of public schools in many states. Given the perceived negative impact of significant immigrant inflows, we are interested in investigating four important questions that could capture potential educational impacts. First, do significant immigrant inflows into a school affect the academic performance of native students? Second, are these effects distributed evenly or do they differ by race and socioeconomic status? Third, do significant immigrant inflows into a school lead to increased teacher turnover? Finally, do significant immigrant inflows into a school lead to native student flight?

*Dodge, Kenneth and Elizabeth Gifford. “Factors that Affect the HS Graduation Rate America's Promise.” (Duke University) Project funded by America’s Promise.

The America’s Promise Alliance is scheduled to announce a national goal of a 90% high school graduation rate by 2020. This study proposes to use a developmental perspective to develop indicators that will help measure whether communities, states and the nation is on track to achieve this goal. This study will use a dataset developed by the Beyond Test Scores group to conduct a series of simulations that will identify how various factors interrelate to affect the national high school graduation rate. This study is funded by the America’s Promise Alliance.

**Edmunds, Julie, Bernstein, Lawrence, Unlu, Fatih, Glennie, Elizabeth, and Willse, John. “Expanding the Start of the College Pipeline: Ninth Grade Findings from an Experimental Study of the Impact of the Early College High School Model.” (SERVE, University of North Carolina at Greensboro) Project funded by the Institute of Education Sciences.

Early college high schools are a new and rapidly spreading model that merges the high school and college experiences and that is designed to increase the number of students who graduate from high school and enroll and succeed in postsecondary education. This article presents results from a federally funded experimental study of the impact of the early college model on grade 9 outcomes. Results show that, as compared to control group students, a statistically significant and substantively higher proportion of treatment group students are taking core college
preparatory courses and succeeding in them. Students in the treatment group also have statistically significantly higher attendance and lower suspension rates than students in the control group.

**Edmunds, Julie, Wille, John, Arshavsky, Nina, and Dallas, Andrew. “Mandated Engagement: The Impact of Early College High Schools.” (SERVE, University of North Carolina at Greensboro) Project funded by the Institute of Education Sciences.**

Overview sentence: This study uses an experimental design to determine that early college high schools have a positive impact on indicators and facilitators of engagement. The report uses qualitative data to suggest that these schools create an environment that essentially requires students’ active participation in school.

**Fitzpatrick, Maria. “Teacher Incentive Programs.” (Stanford University) Project funded by the Stanford Institute for Economic Policy Research.**

Though clear evidence exists about the sizeable impacts teachers can have on student achievement, relatively little is known about the ability of incentive mechanisms to attract, retain and reward good teachers. The current project proposes examining three incentive programs: the federal Teacher Loan Forgiveness Program, the ABC’s Pilot Program¹ in North Carolina and the Pilot Pay for Performance Program in the Charlotte-Mecklenberg School District. This project will examine the effectiveness of the incentive programs at improving the following outcomes: i) attracting teachers, specifically high-quality teachers, to high-poverty/low-performing schools; ii) retaining teachers, specifically high-quality teachers, in high-poverty/low-performing schools and iii) increasing student achievement as measured by value-added on end of grade exams. Understanding the effects of such programs is crucial many states and local school districts are considering similar policies and because an incentive program that induces the most effective teachers to enter and remain in low-performing schools has potential to close the achievement gap.


In this paper we report on work estimating the stability of value-added estimates of teacher effects, an important area of investigation given public interest in workforce policies that implicitly assume effectiveness is a stable attribute within teachers. The results strongly reject the hypothesis that teacher performance is completely stable within teachers over long periods of time, but estimates suggest that a component of performance appears to persist within teachers, even over a ten-year panel. We estimate one standard deviation of this permanent component of teacher effectiveness to be approximately 0.13 student standard deviation units in math for grade 5 teachers in North Carolina. We also find that little of the changes in teacher effectiveness estimates within teachers can be explained by observable characteristics.

¹ The ABC's Accountability Program was discontinued by the state of North Carolina but subsequently continued in the Charlotte-Mecklenberg School District under the name the Local Accountability Bonus Program.
Policymakers are now using student growth-based measures of teacher effectiveness for a number of high-stakes personnel decisions. This policy direction is supported by research showing that teacher effectiveness varies widely and the variation has educationally meaningful consequences for student test achievement (Aaronson et al., 2007; Nye et al., 2004; Rivkin et al., 2005). Some research cautions about the use of value added, raising issues as to the validity (Rothstein, 2009) and stability (McCaffrey et al., 2009) of effectiveness measures, as well as the possibility that teacher value-added effects “fade out” over time (Jacob et al., 2010; Konstantopoulos, 2007). But, recent research (Chetty et al., 2011) provides a measure of external validity to value-added estimates, showing that value-added estimates of the impact of individual elementary and middle school teachers are statistically significant predictors of such later life student outcomes as college attendance and labor market earnings.

Measures of students’ test-based achievement growth are either being used, or are slated to be used, as a component of teacher job performance in at least 12 states. This policy direction has been spurred on by the federal government’s Teacher Incentive Fund (TIF) and Race to the Top (RttT) grant programs which offer states and localities incentives to base teacher compensation, renewal, and tenure on measures of teacher performance. The motivation behind this push is that current teacher evaluation systems in most school districts appear to be far from rigorous. Evaluations in most school systems award nearly all teachers top-tier ratings, leading Secretary of Education Arne Duncan to sarcastically conclude, “Today in our country, 99 percent of our teachers are above average” (Gabriel, 2010).

The uniformity of teacher job performance measures stands in contrast to the considerable empirical evidence that teachers differ substantially from each other in terms of their value-added effectiveness. Uniformly positive evaluations also fail to reflect the assessment of the quality of the teacher workforce by administrators or other teachers. The bottom line is that it is tantamount to impossible in the public sector to act on differences between teachers when documented records show them all to be the same.
renewal, and tenure. There are good reasons for this: current teacher evaluation systems in most school districts appear to be far from rigorous. Those currently utilized in the vast majority of school systems in the country find nearly all teachers to be ranked in the top performance category. A recent study (Weisburg et al., 2009), for instance, showed that more than 99 percent of teachers in districts using binary ratings were rated satisfactory. As Secretary of Education Arne Duncan put it, “Today in our country, 99 percent of our teachers are above average” (Gabriel, 2010).

Hannaway, Jane. “Identifying Potentially Successful Approaches to Turning Around Chronically Low-Performing Schools.” (Urban Institute)

The planned study seeks to identify schools that have achieved rapid improvements in student outcomes in a short period of time; illuminate the complex range of policies, programs, and practices (PPP) used by these turnaround schools; and compare them to strategies employed by not improving, chronically low performing schools. The ultimate goal is to specify replicable PPP and combinations of PPP that hold greatest promise for further rigorous analysis. Achieving this goal requires a singular combination of substantive knowledge, methodological sophistication, and operational efficiency and execution.


The Center for Research on Education Outcomes (CREDO), a nonpartisan policy and program evaluation group at Stanford University, is currently conducting The National Charter School Study to learn more about the effectiveness of charter schools; our aim is to evaluate the impact of charter school attendance on student academic progress. The charter schools participating in our study have agreed to submit student-level data to CREDO for three years. In order to compose statistically sound answers to many of the questions regarding the effects of charter schools, we are asking the Data Center to provide corresponding student-level data for students attending a number of traditional public schools in North Carolina. We believe that the project will make a significant contribution to the field of knowledge regarding the impact of charter schools on student academic achievement and growth towards state graduation standards and qualification for post-secondary education.

Hastings, Justine. “Peers, Schools, Teachers, and Academic Achievement.” (Yale University) Project funded by the US Department of Education.

Understanding the factors that influence both short- and long-run student academic outcomes is central to education policy. With the recent growth in the labor-market returns to college education, academics and policymakers have become increasingly interested in the impact that childhood education might have on long-run achievement, such as college attendance and degree completion. Our research exploits exogenous changes in school assignments under a busing for integration program in the Charlotte-Mecklenburg Public School District during the late 1990s to examine the impact that school, peer, and teacher characteristics have on both immediate and long-run academic performance. The redistricting led to large variation in peer groups for both students reassigned to different schools and students who remained at their prior year’s schools, thus allowing us to convincingly estimate and separate the effects that schools, peers, and
teachers have on subsequent student academic achievement. We examine impacts on math and reading exam scores for the two years subsequent to reassignment (short run), as well as college degree completion (long run).

Jackson, Kirabo. “Match Quality, Worker Productivity, and Worker Mobility.” (Cornell University)

The efficacy of using charter school as a way to improve student outcomes has been fiercely debated. Proponents of charter schools argue that, in addition to the benefits to attending such schools, the increased school choice leads to greater competition that could improve outcomes of students in all schools. However, opponents of such policies argue that charter schools will skim off the most highly motivated peers, the best teachers, and drain resources away from traditional public schools. While the empirical evidence of the effect of charter school on traditional public school students is mixed, there is no evidence on these underlying mechanisms. I aim to use data from North Carolina, to determine if charter schools attract the most qualified teachers, or the most effective teachers away from traditional public schools. Since there is no consensus on the effect of charter schools on traditional public school students, investigating this particular mechanisms should help focus this debate, by identifying one mechanisms through which this could happen. The findings would also have direct policy implications, since the way in which charters are staffed could have a direct effect on whether they are likely to have deleterious effects on traditional public school students.


This paper presents evidence from a regression-discontinuity analysis of North Carolina's school accountability program, in which teachers are rewarded with cash bonuses for improving their students' achievement. Results show that schools where teachers did not receive bonuses performed significantly better in the following year than schools where teachers did. Such impact, however, disappeared once the state government repealed the pay scheme: another indication that teachers are responsive to monetary incentives but not to school ratings. Bonus non-qualified schools also improved student-teacher ratio and increased the proportion of teachers with advanced degrees. These findings suggest that financial incentives in effect improved school quality and induced additional efforts from teachers at low-performing schools, while high-achieving schools maintained their high standard.


Despite the nationwide debate on the effectiveness of fast-growing charter schools in the United States, their impact on student achievement remains unclear. This paper addresses the spillover effects of charter schools (CH) on student achievement at neighboring traditional public schools (TPS). This study overcomes self-selection of students into CH, which confounded previous studies, by focusing on indirect competition between different grades across two types of schools, and distinguishes the spillover effects from the impact of student sorting. This study also classifies schools into five groups by their
performance, considering the large heterogeneity in CH quality. The estimation results of a value-added model using student-level panel data from North Carolina for 1997-2005 show that the spillover effects are not significant in total, but are significant under the competition among high-performing schools. The negative estimates suggest that TPS allocate their resources to the grades that directly compete with CH at the cost of students at other grades.

Kleiman, Glenn. “Evaluating IMPACT” (North Carolina State University) Project funded by the North Carolina Department of Public Instruction.

The goal of this project is to evaluate an initiative by North Carolina Department of Public Instruction (NC DPI) that assists teachers with integrating instructional technology into their routine classroom teaching. We are contracted to evaluate this program, which will run for two years (August 2008-June 2010). There will be three major areas we will examine while evaluating this program: a) student outcomes, such as achievement and behaviors such as absenteeism, b) teacher outcomes, such as level of technology integration in classroom teaching and technology skills, and c) administrator outcomes, such as technology skills. Data from the North Carolina Research Data Center will enable us to conduct analyses examining the relationships between multiple outcomes and involvement with the IMPACT model.

Ladd, Helen, Kenneth Dodge, and Clara Muschkin. “Combining birth data with longitudinal data on schooling to explore the relationships between children’s birth weight, immigrant status, pre-school experiences, and performance in school.” (Duke University) Project funded by Smith Richardson and CALDER.

The goal of this research is to examine the consequences for children’s performance in school of a variety of health and education related variables that affect their development from birth through their entry into school. We plan to examine the effects of two sets of such variables on the subsequent performance of individual children in elementary school, with particular attention to their interactions. One set of variables will be drawn from birth record information. These factors include the characteristics of the children at birth, such as birth weight or time to gestation; characteristics of their parents, such as education level, age, and country-of-origin; and indicators of the mother’s health behaviors, such as prenatal care and substance use during pregnancy. The second important set of variables includes a variety of programmatic interventions at the county level directed toward children between birth and age five designed to improve children’s health, well-being, and readiness to enter and to succeed in school. Our primary goal is to explore how these various measures interact with exposure to the policies and programs targeting child development in the NC county or district where the family resides. The outcomes that we will examine include various measures of school performance: age of entry, grade retention, absenteeism, participation in special education programs, and test scores.

Lauen, Douglas. “The Effects of NCLB’s Subgroup-Specific Accountability.” (University of North Carolina at Chapel Hill)

Recent federal education policy as represented by NCLB puts pressure on schools to focus on racially, economically, and educationally disadvantaged subgroups in an effort to close test score
gaps. The theory of action behind NCLB is based on the presumption that “shining a light” on subgroup performance will increase the test score gains of disadvantaged students. Institutional theory from both sociology and economics suggests that possibility of negative and unintended consequences of NCLB policy. This study plans to use administrative data from multiple cohorts of all elementary and middle school aged children in North Carolina between 2001 and 2007. Using an empirical approach to estimate the effects of subgroup-specific accountability pressure, using school fixed effects to compare students within the same schools over time to eliminate between-school confounding and controlling for regression to the mean, preliminary results indicate positive gains in the years following subgroup failure for the four most numerically significant subgroups in North Carolina (blacks, Hispanics, special education, and economically disadvantaged students) and whites. Moreover, these preliminary positive effects are stronger in Title I eligible schools than non-Title I eligible schools. Together these findings provide some empirical support for retaining subgroup accountability in the reauthorization of NCLB.

**Macartney, Hugh. “The Dynamic Effects of Educational Accountability.”** 2010. (University of Toronto)

Holding educators more accountable for the academic achievement of their students has been a central feature of recent education reforms. In several prominent instances, accountability schemes have set pecuniary performance targets that condition on prior scores as a means of controlling for student heterogeneity. Yet doing so introduces a potential dynamic distortion in incentives: teachers may be less responsive to the reform today in an effort to avoid more onerous targets in future - an instance of the so-called ‘ratchet effect.’ In order to determine whether such behaviour is important in practice, I first extend the theoretical ratchet effect literature by developing a model of finite-horizon dynamic gaming. Given an environment where school-level targets depend on student prior scores, I show that the dynamic effect depends crucially on variation in the horizon, with teachers distorting their effort less when their decision affects fewer future scores within the same school. I then exploit variation in the grade span of schools to identify this effect, making use of rich educational data from North Carolina that tracks students, teachers and schools over time. I find compelling evidence of dynamic distortions using a difference-in-differences approach.

**Maloney, Alan. “NC Integrated Mathematics Project.”** (North Carolina State University) Project funded by U.S. Department of Education MSP Funds through the North Carolina Department of Public Instruction.

The goals of this project are to study and evaluate the effectiveness of a currently implemented professional development model that supports the implementation of integrated mathematics curriculum. The data gathered are used to inform and modify the professional development model. The second aim is to describe and examine the effectiveness of the modified professional development model. This second phase seeks to determine what, if any, observable and documentable changes occur in teachers’ content knowledge and instructional practices while participating in the professional development.

The role of the NCERDC data will be to provide the researchers with supplementary data for comparison purposes both internally and externally to current work with the North Carolina Integrated Math project. In this stage of the project we will collect archival student data using the
NCERDC database from the 7 North Carolina STEM schools participating in the project, along with parallel data from comparable non-participating schools in the state. The importance of this part of the project is to determine whether students receiving instruction from teachers participating in the NCIM project professional development program show evidence of improved success on end-of-course state assessments, relative to students of teachers not participating in the professional development program.

*McMillian, Monique. “A Re-Examination of the Wake County School-Assignment Policies.” (Duke University)

The purpose of this study is three-fold. First, the investigators will explore how Wake County Public School System school-assignment policies affect racial and ethnic disparities in health outcomes, specifically risk taking behavior among adolescents who are students in the school system. Second, the investigators will explore how Wake County Public School System school-assignment policies influence racial, and ethnic disparities in academic performance. Third, the investigators will develop procedures to report these findings to Wake County Public School System students, parents, other stakeholders and the general public in a clear, accessible, and ethical manner.

**McMillian, Monique, Fuller, Sarah, and Darity, William A. “Did Wake County Public School Redistricting Policies Produce Ethnic Diversity and Reduce Ethnic Achievement Gaps?” (Duke University)

Even though black students’ test scores have improved significantly in the last forty years, there still is a substantial black-white test score gap (Barton & Coley, 2010; Harris, 2010). Social scientists have argued that race-conscious desegregation policies are necessary to produce ethnically diverse schools and to close achievement gaps, and desegregation policies (e.g., income-based race-blind desegregation) that ignore race are insufficient (Orfield, Frankenberg, & Garces, 2008). The purpose of this paper is to examine whether Wake County Public Schools’ race-conscious desegregation policies are necessary to produce ethnically diverse schools and to close achievement gaps.

Miranda, Marie Lynn. “Assessing Family Mobility Using Three Administrative Datasets.” (Duke University)

We are interested in investigating the mobility of families during early childhood. This issue has been much discussed in the literature, but little data exists to systematically evaluate overall mobility, as well as the relationship between mobility and potential explanatory variables (e.g., socioeconomic status, family size). We already have access to two identified administrative datasets: the North Carolina Detailed Birth Record and the North Carolina Childhood Blood Lead Surveillance Registry. Both datasets include a residential address and will be linked at the individual child level. We are interested in further linking these data to the NCERDC data in order to obtain a third snapshot on residential address for the linked children.

*Miranda, Marie Lynn. “Environmental Justice and Air Toxics Exposure in North Carolina Schools.” (Duke University)
The Children’s Environmental Health Initiative (CEHI) respectfully requests school-level data on demographic and socioeconomic composition, resources, and academic performance from the North Carolina Education Research Data Center. Our proposed research project, entitled “Environmental Justice and Air Toxics Exposure in North Carolina Schools,” seeks to explore the environmental justice dimensions of childhood exposure to air toxics. We will link school-level data with data on population health risk estimates from the US Environmental Protection Agency’s 2002 National-Scale Air Toxics Assessment via a spatial data architecture. These combined data will allow us to explore whether minority and low-income students are disproportionately exposed to high levels of air toxics, and if schools with fewer resources and below-average academic performance are located in areas where the students are also experiencing higher exposure to air toxics.


I develop and estimate an equilibrium model of charter school entry, student sorting, and endogenous school inputs in public school markets using administrative student- and school-level data from North Carolina for 1998-2001. In the model, students differ by ability, and both charter and public schools make input decisions to test score production functions to affect the ability distribution of attendant students. The model fits key endogenous outcomes: 1) charter schools enter in larger markets and markets where they have higher per-pupil resources, 2) charter and public schools both choose higher input levels in markets where there is charter school entry, when compared with non-entry markets, and 3) charter schools have the highest average test scores, followed by public schools in markets with charter school entry, followed by public schools in non-entry markets. I use the estimated model to simulate changes in the test score distribution for three counterfactual scenarios: 1) ban charter schools from entering any markets, 2) lift the currently binding statewide cap on the number of charter schools, and 3) equate charter and public school per-pupil resources. In the first and second counterfactuals, charter school entry increases test scores for students who would attend charters by 19% and 20% of a standard deviation, respectively. Test scores for public school students in markets charter schools enter increase marginally. Equating charter and public school capital triples the fraction of markets with charters and increases the test scores of students attending charters by 23% of a standard deviation and the overall average test score by 6% of a standard deviation.


The High Schools That Work school improvement initiative is the nation’s largest comprehensive school reform model with over a thousand schools adopting its framework. The initiative’s premise is that all students can meet the demands of a college preparatory curriculum if provided the right supports. Analyzing over a decade of data on student course taking and performance, we employ a rigorous interrupted time series difference-in-difference strategy to assess the extent to which HSTW meets its goal by increasing students’ successful progression
through the mathematics and science pipelines. Each pipeline consists of three college preparatory courses: algebra 1, geometry, and algebra 2 in mathematics and biology plus two physical science courses in science. The results show no effect on pipeline progression for the average student and some evidence of increased gaps in course taking between more advantaged and disadvantaged students.


The creation of small schools has long been a popular reform strategy. The current study evaluates an initiative in North Carolina that converts conventional high schools into small schools-within-schools. Analyzing thirteen years of student-level data, we employ an interrupted time series difference-in-difference strategy to assess reform’s impact on students’ progression through mathematics and science courses. Results show the small schools significantly increased students’ likelihood of taking of the sequence of mathematics (and to a lesser extent science) courses; however, schools were unable to produce a corresponding improvement in student mastery of content. Results are consistent across student subgroups with some evidence the reform differentially improved the course-taking patterns of students who performed poorly on their eighth grade state math exams


There is a renewed focus on ensuring students graduate from high school having completed a specific sequence of coursework to equip them with the skills and knowledge needed to succeed in college and the workplace. We examine longitudinal data from North Carolina to analyze student progression through the mathematics and science pipelines – each consisting of three college-preparatory courses. Between 1998 and 2008, the percent of students demonstrating mastery in each of the three mathematics pipeline courses by the end of the 11th grade increased to 40 percent (up from 32 percent). Conversely, the share of students demonstrating mastery in three science pipeline courses by the end of the 12th grade decreased to 20 percent (down from 27 percent). These trends across all students also apply to student subgroups. Group differences have tended to narrow over successive cohorts however several at-risk student groups have fallen farther behind their peers. Underlying these trends is the shifting downward of the mathematics pipeline courses as students take the courses in earlier grades and the shifting outwards of the science pipeline courses as students take the courses later or not at all. We draw several implications for policymakers seeking to increase the share of students graduating college- and career-ready.

Early College High Schools are small, innovative public schools that offer students the opportunity to earn both a high school diploma and two years of college credit in four or five years free-of-charge. The model has been replicated more than 230 times in 28 states and the District of Columbia. We study 33 Early Colleges in North Carolina to measure their effect on student progression through the mathematics and science pipelines each of which consist of three college-preparatory courses. The pipeline concept stresses the importance of \textit{when} a student takes a course, not just \textit{if} she does. Our analysis of student-level longitudinal data comparing Early College students to carefully matched non-ECHS students within the same district finds positive effects on mathematics course-taking and performance but nil to negative effect in science. Early Colleges are also found to narrow differences in successful mathematics pipeline progression between student subgroups defined by parental education and 8th grade mathematics achievement.

\textbf{Muschkin, Clara and Kara Bonneau. “Easing the Transition to High School: Effects of a Freshman Academy on Student Success.” (Duke University)}

This research focuses on the effects of participating in a high school transition program on multiple educational outcomes for individual students. Prior studies present mixed findings on the effectiveness of ninth grade academies for student success, measured primarily in terms of standardized test scores. Our study takes an innovative approach, by using an experimental design to examine the effects of the program during the pilot year of a high school’s freshman academy. Other methodological innovations include: use of disaggregated student-level information; analysis of multiple student outcomes; and a longitudinal design that tracks outcomes for individual students over time. The findings should inform policy decisions regarding the implementation of Freshman Academies as a means for improving educational outcomes.

\textbf{Peisner-Feinberg, Ellen. “Evaluation of the NC More at Four Program.” (University of North Carolina at Chapel Hill) Project funded by the North Carolina Office of School Readiness.}

More at Four is North Carolina’s state-funded pre-kindergarten initiative, designed to prepare at-risk four-year-olds for success in school. The FPG Child Development Institute More at Four Evaluation Team at UNC-Chapel Hill has conducted the statewide evaluation of the More at Four Program each year since the program’s inception in 2001, with funding from the Office of School Readiness, NC Department of Public Instruction.

\textbf{**Petty, Teresa, Wang, Chuang, and Harbaugh, Adam. “Relationships between Student, Teacher, and School Characteristics and Mathematics Achievement.” (University of North Carolina at Charlotte and Missouri State University)}

A variety of factors contribute to student achievement in mathematics, including but not limited to student behaviors and student, teacher, and school characteristics. The purpose of this study was to explore which of these factors have an impact on student mathematics achievement. The target population for this study was North Carolina Algebra II students. Analysis of Variance models were examined for group differences and a Three-level Hierarchical Linear Modeling
method was employed to examine individual predictors of student achievement in mathematics. Statistically significant differences were found between students of different ethnicities, socioeconomic statuses (SES), and parental education levels. No gender effects were statistically significant. All teacher-level variables investigated were found to be statistically significant, impacting student achievement in mathematics. School size and SES were not found to significantly contribute to student achievement. More research on the relationships between these factors shown to make statistically significant differences on mathematics achievement is needed to further explain several phenomena that this research reveals.


The proposed research project will link data from the Girls’ Friendship Project, a comprehensive, longitudinal study of preadolescent girls’ peer relationships, with student-level data from the North Carolina Education Research Data Center (NCERDC). Given that the goal of the Girls’ Friendship Project is to investigate psychological, social, behavioral, and academic consequences of early peer experiences, we are interested in collaborating with the NCERDC to obtain a more comprehensive picture of participants’ academic performance and achievement. By providing student-level data on test scores, disciplinary issues, exceptionality, and dropout for Girls’ Friendship Project participants, the NCERDC will allow us to understand how friendship and peer relationships processes are linked to objective school outcomes both concurrently and longitudinally.


This project, which is funded by the Economic Research Service of the U.S. Department of Agriculture (USDA), makes use of a natural experiment occasioned by changes in policy in the Guilford County Schools in North Carolina. These changes resulted in three elementary and one middle school moving from offering free breakfasts to all students (universal free) through the USDA School Breakfast Program (SBP) to an eligibility-based program in which breakfasts were only free or reduced-price for students meeting standard eligibility criteria. At the same time, one elementary school moved from an eligibility-based SBP to a universal-free program. This project is examining the impacts of changes in the SBPs on students’ attendance and academic achievement by comparing outcomes across schools that did and did not experience changes in their SBPs.

Rouse, Katy. “The Impact of Year-Round Schooling on Academic Achievement and Extracurricular Involvement.” (Elon University)

The growing popularity of year-round academic calendars has spurred heated education policy debates across the country. Interestingly, there is currently little quality economic or education evidence to lend support for either side of the debate. Moreover, data limitations have prevented other researchers from addressing these questions in a way that properly controls for unobserved student, classroom, and school characteristics that can otherwise bias results. In this project, we
use data from the NCERDC to evaluate the impact of year-round schooling on student achievement and extracurricular involvement, with particular emphasis on the impact of such calendars on at-risk students.

*Schulze, Sharon. “Impact of Student and Teacher Programs of The Science House.” (North Carolina State University)

The three programs being examined in this study are Imhotep, Photonics-Xplorers and Photonics-Leaders. The programs have been running in The Science House since 1992 (Imhotep), 2004 (Photonics-Xplorers), 2005 (Photonics-Leaders), each targeting different age group students from across North Carolina. The primary focus of our programs is supporting, retaining and educating underrepresented minority (URM) students to matriculate on to college or university. The mission of our programs is to increase student awareness and enthusiasm for learning mathematics and science using hands-on learning activities and educational technologies in mathematics and sciences.


Family courts are being employed in 26 states, however there is little evidence as to whether or not family courts are producing better outcomes than the traditional court system. In theory, family courts are (a) more specialized and thus more efficient at dealing with abuse cases and (b) better equipped to link families to the appropriate services such as drug treatment, social service agencies and various types of health providers. Opponents of family courts argue that the traditional adversarial system with a jury of lay persons and judges who do not specialize in particular content areas leads to a more accurate portrayal of the underlying facts, particularly relevant non-technical facts. This study aims to improve our understanding of how family courts operate and to examine whether the women and children in communities with family courts fare better than they would without the family court system. We expect the study to offer more general lessons such as how to implement other types of specialty courts, such as health courts.

**Solomon, Pantelis. “Do Schools Learn: Response to North Carolina’s School Accountability Program.” (Brown University)

The paper tests the predictions of a Bayesian model of learning by doing in North Carolina’s school accountability program. The program aims to provide incentives for higher performance by offering monetary rewards if schools meet a specified test score target. Schools are assumed to exert effort based on their expectations of reaching the target. At the end of each year, they can observe how they performed relative to the target and draw inference on the optimal level of effort needed to reach the target. To test the model’s predictions, I use test score data from grades 3 and 4 from before the program started and exploit the fact that, while schools were tested prior to the program, they were not informed of their test score performance. The schools’ difference in performance before and after they receive the new information is partially consistent with learning by doing. In particular, I find that the highest gains in performance come from schools who performed poorly the year before. However, I
also find that schools which passed the target the year before experience an additional gain in performance, which rejects the predictions of the learning model. This finding suggests that there may be an additional effect on incentives if schools meet the target, consistent with a decrease in the disutility of effort following a successful year. Finally, I test for the differential effect of the program across different parts of the test score distribution, and find that the schools’ response benefited low achieving students the most.

**Solomon, Pantelis. “How Mean Reversion Varies with Socioeconomic Status and the Implications for School Accountability Systems.” (Brown University)**

Accountability programs that base their assessments on the schools’ growth rates, expect all schools to be equally capable of meeting their target. However, schools of low Socioeconomic Status have been less successful in these programs than more affluent schools. Using data from North Carolina’s accountability program, I find that the mean reversion pattern differs substantially between high and low poverty schools. In particular, I find that schools of low Socioeconomic Status have on average lower scores, conditional on the school’s prior scores. This in turn suggests that a linear target formula will tend to overestimate the predicted scores for low Socioeconomic Status schools and underestimate that for high Socioeconomic Status schools.

*Stearns, Elizabeth. “Success of Women and Minorities in STEM Majors.” (University of North Carolina at Charlotte) Project funded by NSF.

Our two-phased study will illuminate the structural and individual factors that contribute to women’s being less likely to complete a STEM major than men. The initial phase of the two-phase design focuses on the longitudinal impact of structural opportunities and constraints to post secondary math and science learning that have roots in students’ middle and high school educational experiences, their individual characteristics, and family backgrounds. To do this we will develop a unique data set specifically for this study. The NC 8-16 Roots data set will have information about middle school, high school, and college characteristics and educational experiences for each individual in the sample. The first portion of the data will capture college experiences of all 2004 entering freshmen in the UNC system who also attended North Carolina public high schools. The second part of the Roots dataset is students’ secondary school experiences provided by the North Carolina Department of Public Instruction. The North Carolina Education Research Data Center will merge these two datasets to create the NC 8-16 Roots data in ways that protect student confidentiality. The NC 8-16 Roots data set will allow us to expand the body of knowledge regarding the links among middle school, high school, and college characteristics and experiences.


This study directly addresses goal four of the IES Teacher Quality Research Grant, investigating the predictive validity of an existing measure of teacher middle-school mathematics content
knowledge and content pedagogical knowledge. ETS will use this data to create a Value-Added Statistical Model and will report on Teacher-Effectiveness Models, contributing to the ongoing debate and concern regarding the role of teacher testing in teacher quality. The outcomes will shed light on the extent to which teacher's content knowledge directly impacts student content achievement and will have implications for teacher certification requirements, preparation and development. The study will also contribute to the value-added research base, as we propose to build and apply an enhanced value-added model that explicitly accounts for covariate information and attenuation of teacher effects over time. NCERDC has previously supplied ETS with student data matched to teachers from Wake County, NC, for years 2002, 2003, and 2004.


Taking Algebra I by the end of 9th grade is a “gateway” to college preparedness. Programs such as Early College High School have focused on preparing students for college by encouraging or requiring them to take this course by the end of 9th grade. This paper presents findings from an experimental evaluation of North Carolina’s Early College High Schools (Early College) Initiative, in which applicants were randomly selected to attend the Early College. A higher percentage of Early College students advanced in Algebra I in 9th grade (66 percent) compared to the control group (58 percent). Using propensity score matching, we distinguished 9th grade students who would have taken Algebra I without the program (the “Always-takers”) from those who were induced to take it (the “Compliers”). The Algebra I pass rate for the Always-takers in the Early Colleges (79 percent) does not differ from that of the control group students (83 percent). The Compliers’ average pass rate (44 percent), suggests that the failure rate was higher for students who would not have taken the course otherwise. However, about half of them did pass, and these students advanced in college preparatory math when they otherwise would not have.

**Zajonc, Tristan. “Bayesian Inference for Dynamic Treatment Regimes: Mobility, Equity, and Efficiency in Student Tracking.” (Harvard University)**

Policies in health, education, and economics often unfold sequentially and adapt to changing conditions. Such time-varying treatments pose problems for standard program evaluation methods because intermediate outcomes are simultaneously pre-treatment confounders and post-treatment outcomes. This paper extends the Bayesian perspective on causal inference and optimal treatment to these types of dynamic treatment regimes. A unifying idea remains ignorable treatment assignment, which now sequentially includes selection on intermediate outcomes. I present methods to estimate the causal effect of arbitrary regimes, recover the optimal regime, and characterize the set of feasible outcomes under different regimes. I demonstrate these methods through an application to optimal student tracking in ninth and tenth grade mathematics. For the sample considered, student mobility under the status-quo regime is significantly below the optimal rate and existing policies reinforce between student inequality. An easy to implement optimal dynamic tracking regime, which promotes more students to honors in tenth grade, increases average final achievement 0.07 standard deviations above the status quo while
lowering inequality; there is no binding equity-efficiency tradeoff. The proposed methods provide a flexible and principled approach to causal inference for time-varying treatments and optimal treatment choice under uncertainty.
PROJECTS approved or completed since March 2008 are indicated in bold text.
PROJECTS approved since March 2009 are in bold text and marked with an *. 
PROJECTS approved since March 2010 are in bold text and marked with **.

**Minority Achievement Gap**


**Teacher Quality and Student Outcomes**

*Aucejo, Esteban. “Student-Teacher Complementarities and the Effect of Incentive Programs.” (Duke University)*


*Mahler, Patten. “Incentives for Teacher Retention and Retirement.” (University of Virginia)*


**Mansfield, Richard. “Teacher Quality and Student Inequality.” (Yale University) (see abstract below for “Dynamic Model of the Impact of School and Teacher Inputs”)**


*Ost, Benjamin. “Teacher Absences and Attrition.” (Cornell University)


Turner, Hollyene Celeste. “Predictors of Teachers’ Job Satisfaction in Urban Middle Schools.”


*Academic Performance of At-Risk Children

*Agostino, Rebecca. “The Impact of HOPE VI Demolitions on Children in North Carolina.” (Duke University)


Problem Behavior in Schools


School Accountability and Choice


**Impact of Specific Policies on Student Outcomes**


*McFarland, Joel. “Student U Program Evaluation.” (Duke University)*


*Nowell, Dana. “Student Engagement in Early College: Mediating Academic Achievement.” (University of Virginia)*

*Pilzer, Sara. “Causes and Consequences of school attendance boundary changes.” (Duke University)*


**Other Studies**
*Craig-Reamer, Amy. “Building a Foundation of Mathematical Knowledge: An Application of a Partially Observable Markov Decision Process to the K-7 Mathematics Education System.” (North Carolina State University)*


*Schweig, Jon. “A Multilevel Confirmatory Factor Analysis of the WCS.” (UCLA)*


**Tan, Poh Lin. “Negative socioeconomic selection and positive health selection in U.S. teenage fertility: Evidence from North Carolina linked birth certificate data.” (Duke University)*


Abstracts of Recently Approved Student Projects

*Agostino, Rebecca. “The Impact of HOPE VI Demolitions on Children in North Carolina.” (Duke University)

State and federal governments have traditionally addressed issues of affordable housing by providing housing facilities, or “projects,” for residents in need. However, these units are often characterized by high rates of crime, violence and drug use, and in turn, Congress charged the Commission on Severely Distressed Public Housing to distribute “HOPE VI” grants for local housing authorities to either demolish or revitalize these communities. The aim of my study is to explore how HOPE VI has affected children who live near to demolished neighborhoods in North Carolina. I will first look to neighborhood changes: average test scores, average income, and racial make-up. I will then look to individual effects, and compare how those of different gender, race, language learner status, free/reduced lunch status, and performance quartile respond to the demolitions. All students will be compared to those in control communities: census tracts in the same cities with public housing units that were not demolished.

*Aucejo, Esteban. “Student-Teacher Complementarities and the Effect of Incentive Programs.” (Duke University)

This research proposal will try to give answer to two central questions. First, I will study the relevance that complementarities between students and teachers may have for the learning process (i.e. how teachers’ efficacy in transmitting knowledge to their students depends on the student characteristics and the “type” of teacher). Second, I aim to analyze how the introduction of incentive programs (such as the ABCs and the NCLB) affects the distribution of teachers within schools. The allocation of teachers within schools requires a very delicate equilibrium between equity and efficiency due to substantial heterogeneity on student’s performance. For instance, if test scores returns to teacher attributes are higher for more advantaged students; then efforts to increase achievement of low-performing students (i.e. pursue of equity) by assigning them better teachers could reduce the school average test scores (i.e. pursue of efficiency). In this context, the introduction of any scheme of incentives may modify the existing equity-efficiency equilibrium, leading to possible concerns about their convenience. The detailed longitudinal information about students, teachers, and schools available in the NCRDC database and the possibility to link teachers with their students, provides an excellent opportunity to examine the policy questions that I have just described.

*Craig-Reamer, Amy. “Building a Foundation of Mathematical Knowledge: An Application of a Partially Observable Markov Decision Process to the K-7 Mathematics Education System.” (North Carolina State University)

According to the National Science Board (2007), there is “little or no alignment of Science, Technology, Engineering and Mathematics (STEM) learning during students’ progression through school. Students do not always obtain a mastery of key concepts at the elementary and middle school levels, thus limiting academic success at the high school level”. The proposed
research involves the application of optimization techniques to the North Carolina K-8 education system in an effort to optimize the process of learning mathematics over time.

The proposed research is important to advancing knowledge of the vertical alignment of STEM learning, specifically ensuring that students systematically acquire a foundation of mathematic understanding that can propel them to higher-order cognitive thinking. From our review of the literature, it appears that Markovian optimization techniques have not been applied in the study of learning theory since the 1970’s. This research constitutes a contribution to education literature and MDP literature at large. To the best of our knowledge, this would be one of the first stochastic models of the K-8 education system.


The study of peer effects in education is common in the current economic literature, with the majority of these studies focusing on the effects of current peer groups on individual achievement. Little discussion is given to the conceptual composition of these groups, other than race and gender. The relevant psychology literature recognizes that relative academic self-concept of students has an influence on motivation and academic outcomes. Early in grade school students are able to make academic comparisons and develop a concept of ranking amongst current peers. These comparisons may affect their concept of their own potential. This in turn may affect motivation and effort in school. The results from these studies suggest that peers with whom a student has previous shared academic experiences may have stronger influence on the current outcomes of students than other peer groups. My research will examine how the academic outcomes of current peers with whom a student has had prior academic experiences affect the current academic outcomes for the student. I will use existing data from the NCERDC to identify current classmates with whom a student has shared previous classes.


The purpose of the study is to determine how placement of middle school students into tracks impacts their academic achievement. The study will be limited to middle school students in North Carolina, and academic achievement will be measured using End of Grade test scores. My strategy for inferring the impact of tracking will be to compare students in tracked schools to those in untracked schools using a tracking index. The SAR student count and activity directory dataset will be used primarily to identify schools and classes where tracking is taking place, and to create a tracking index. Data from this dataset will also be used in the initial stages of my project to examine whether tracked and untracked schools appear to differ from each other on certain measurable characteristics, such as percentage of students receiving free and reduced lunch, parental education, urban/rural location, racial makeup, etc. I will use student EOG test score files primarily to measure student achievement in grades 6-8. I will look primarily at scores in reading and math, as data on both of these subjects are available for all grades.
Recent research has evaluated different policy interventions aimed at reducing TEACHER turnover. However, much less work has tried to understand underlying causes of teacher turnover. My research aims to fill this gap by using traditional economic structural models of learning and careers. Another important question for education policy and social policy is the explosive growth of the United States prison population. The United States currently has the highest rate of per capita imprisonment in the world. This rate has risen almost 400% since the 1970s (Raphael and Stoll 2007). In the economic literature, research on incarceration has focused mostly on causes in the growth of incarceration and on consequences for reducing crime. Recent work has only begin to explore the consequences of this enormous growth in incarceration, for example, in how it affects marriage patterns (Charles and Luoh 2007). The question of how mass incarceration affects families and ultimately child educational achievement has been largely unexplored. Thus, the second question for my research looks at how regional patterns in incarceration affect educational outcomes in North Carolina.


The goal of the proposed project is to measure the effects of peer groups in student behavior in the presence of multiple types of peer groups. Two types of peer groups are defined based on classroom assignment and residential locations, and the impact each type of peer group has on academic performance and deviant behaviors are jointly estimated. The project extends the existing literature on peer effects by making two important contributions. First, it demonstrates how some of the common difficulties in identification of peer effects can be resolved by introducing multiple reference groups. Second, it aims to present a rich model of youth behavior by incorporating two major sources of the youth peer effects, namely, social interactions in classrooms and neighborhoods into a unified modeling framework. The outcome measures include academic performance, measured by end-of-year test scores, and deviant behaviors such as absence, offenses, and dropout.

King, Geoff. “Did North Carolina Local Education Agencies (LEAs) that offered students the option to attend at least one Learn and Earn High School improve overall student outcomes?” Masters Thesis. 2009.

North Carolina’s Learn and Earn Program, which was started in 2005, authorized community colleges, some four-year institutions, and local school boards to jointly establish innovative new high schools on college campuses. These new schools, modeled after others in the United States known as Early College High Schools (ECHSs), blend high school and college curriculum. There are currently a nation-leading 60 ECHSs in North Carolina, which are part of over 160 in 24 states nationwide. ECHSs provide a challenging curriculum, with a goal of having all students obtain both a high school diploma and two years of university transfer credit or an associate’s degree. Students enter ECHSs in 9th grade, are expected to complete coursework in 4-5 years, and are provided with a tuition free education. The program focuses on non-exceptional students, prioritizing those from disadvantaged backgrounds.
Despite promising objectives and innovative methods, there is little empirical evidence available to determine how these schools are performing. My research looks to provide a preliminary performance indicator for the program, which can help inform state officials and other researchers conducting more thorough long-term analyses. My analyses will attempt to assess the effects of offering the option to apply for admission to at least one Learn and Earn ECHS on overall LEA outcomes for 9th graders, utilizing a difference in difference model for statewide English I End of Course test scores. These outcomes will be assessed utilizing NCERDC data to run multiple regression analyses.


I examine the allocative efficiency of principal and teacher matches to schools, and study how schools and school districts can determine which principals are likely to be a good fit and how they can modify their wage contracts to attract those principals and teachers. Specifically, I would like access to NCERDC data in order to:
1. Estimate the value-added of principals and teachers for various school and student outcomes using principal-school and teacher-student matched data, respectively. 2. Estimate a discrete-choice model of teacher and principal preferences for school qualities using data on principal, teacher, and school characteristics. 3. Examine the effect of accountability policies such as No Child Left Behind on the preferences of school staff. 4. Simulate contract structures that would encourage high performing principals and teachers to self-select into poorly performing schools by using the parameters estimated in parts (1) and (2) above. There have been several studies of principal and teacher value added, but to my knowledge, none have extended these studies to valuations of school characteristics and contract design.

*Mahler, Patten. “Incentives for Teacher Retention and Retirement.” (University of Virginia)

Retaining good teachers is essential for a high-quality education system. Institutional aspects over which districts or states have control, including the generosity and timing of pension benefits and the assignment of teachers to classrooms, may impact teacher retention, and consequently, student learning. North Carolina teachers are eligible for a defined-benefit pension plan that creates abrupt changes in incentives as teachers approach retirement age. I will use the nonlinear accrual of pension wealth to identify if teachers respond to retirement incentives, and whether teacher responses vary by prior teaching performance or other teacher characteristics. I will also analyze whether pension incentives influence a teacher’s decision to stay or leave following dramatic changes in classroom assignments. To do this, I will study teacher retirement following the end of integration-related busing in Charlotte-Mecklenburg Schools in 2002. Teachers with considerable pension wealth have a lower cost to exiting teaching, and will likely leave if they are dissatisfied with working conditions. I will examine whether the impact of school reform on teacher retention varies with incentives generated by pension structures, allowing me to identify teachers who are negatively affected by school reform. These studies will generate a better understanding of how teachers respond to financial incentives and inform institutional decisions on how to best retain quality teachers.
This paper examines the extent to which the allocation of teachers within and across public high schools is contributing to inequality in student test score performance. Using ten years of administrative data from North Carolina public high schools, I estimate a flexible education production function in which student achievement reflects student inputs, teacher quality, school quality, and a school-specific scaling factor that allows the impact of teaching quality to vary across schools. The existence of nearly 3,000 teacher transfers, combined with an exogenous mobility assumption, allows separate identification of each teacher's quality from both school quality and school sensitivity to teacher quality. A test of exogenous mobility finds scant evidence that teachers systematically transfer to schools where they are relatively effective. I find that teaching quality is surprisingly equitably distributed both within and across high schools. Schools predominantly serving underprivileged students employ teachers who are only slightly below average, and most students receive a mix of their school's good and bad teachers. Overall, I find that teacher and school inputs contribute only 4% to the achievement gap between the top and bottom deciles of an index of student background. Finally, I find that schools that disproportionately serve disadvantaged students tend to be more sensitive to teacher quality.

For years state of North Carolina has made student test score and other measures of school quality available to the general public. These other measures include two specific reports on school quality. One, a measure based on academic growth, gives a distinct title of recognition under the state's The ABCs of Public Education. The other, a performance based measure, is recognition of having met Adequate Yearly Progress and the result of George W. Bush's education initiative. In purchasing a home individuals also purchase a set of local public goods. These goods include public schools and parks, among other local amenities. Information related to the quality of these goods would undoubtedly be reflected in the house price.

This project seeks to determine whether or not the market values distinctions in performance (AYP) over growth (ABC) or vice-versa. Previous studies have shown that test scores are strongly reflected in house prices however little research investigates the effect of additional state provided information on school quality. Furthermore, North Carolina's dual school quality evaluation system allows for the opportunity to explore whether the housing market further responds to one signal of school quality above another.

Since the 1980s states began using school accountability systems to improve student performance. North Carolina's primary school improvement program, the ABCs, was established in 1997 and provided the state's first school-level accountability system. The system employs a value-added based approach to determine student test score growth. Incentives are provided by awarding salary bonuses to teachers in schools meeting specific targets for test score growth in their student body. The state's accountability
system was elevated through the federal No Child Left Behind Act of 2001. The No Child Left Behind Act of 2001 substantially increases the testing requirements for states and sets demanding accountability standards for schools, districts, and states with measurable adequate yearly progress (AYP) objectives for all students and subgroups of students defined by socioeconomic background, race-ethnicity, English language proficiency, and disability. Success under this system is determined by each subgroup within a school achieving some predefined threshold level of proficiency. Unlike the bonus reinforcement under the ABCs of Public Education, the use of threat of strict sanctions, compels schools to raise achievement each year in math and reading and to eliminate the achievement gap by race, ethnicity, language, and special education status.


Since the passing of the No Child Left Behind Act of 2001, each state is required to publicly report school quality measures and student test performance. Many states, including North Carolina, were already reporting their own quality measure and since 2002 have included an additional quality measure to meet the newer federal requirements. There has been extensive research documenting the relationship between housing prices and test scores at local public schools. Given the research, one may presume additional information about school quality to also influence the housing market. This paper examines whether state reported school quality measures influence household sorting decisions, using a regression discontinuity approach and comprehensive data on real estate transactions over the period 2003-2007. The results suggest that even when taking into account student performance on test scores and other variables the market’s response to the release of information related to school quality provided by the state’s recognition system is significant.

*McFarland, Joel. “Student U Program Evaluation.” (Duke University)*

Student U is a local nonprofit that provides summer and after-school programming for 200 students in Durham Public Schools. The goal of this research is to assess the program’s effects on student achievement, behavior, and attitudes. This research will serve two purposes: 1) improve Student U programming by providing outcomes-based feedback, and 2) fulfill the master’s project requirement for the Master of Public Policy degree at Duke University. This research is intended for use by Student U staff and will not be published. I have obtained demographic, survey, and academic data on all Student U participants. Access to NCERDC data on non-participants will allow me estimate the program’s impact on student outcomes. I will use quasi-experimental methods, including nearest neighbor matching, to compare observed Student U participant outcomes with those of highly similar non-participants.


I plan to develop and estimate an equilibrium model of competition in public school districts in order to quantify the long-term effects of charter school entry on student test scores. Existing studies evaluate the effectiveness of charter schools at their currently small market share, and do...
not address how their effectiveness and the overall education market may change in the long run. They also do not explain who is most affected by their entry. By explicitly modeling the decisions of schools and parents, I can understand where charter schools choose to enter, how traditional public schools (TPS) react to this entry, and how parental demand for charter schools changes as they expand. North Carolina is an excellent focus for this project due to its large number of charter schools and the existence of the NCERDC data that covers all students attending both types of public schools. I will estimate the model using student, teacher, school, and district level data from the NCERDC. After estimating the model, I will use it to perform counterfactual policy experiments, such as predicting what would happen were the statutory 100-school cap removed and measuring the effects of charter school subsidies.


Grouping students by ability level is one of the more controversial issues in the American educational system. Tracking is the school practice, widely used in high school, of grouping students into classes by ability (or prior achievement) and organize curriculum by its level of difficulty. Arguments about placement policies –alternatively called tracking, streaming or ability grouping- focus on the trade-off between equity and efficiency. While efficiency arguments rely on the gains derived from teaching to homogenous groups, equity defenders highlight the reduction in the positive spillover effect for low achievers of more able peers. The objective of this research is to assess the effect of high school placement policies on student’s outcomes. Two outcomes will be considered: graduation/drop-out status and test scores in the North Carolina High School Comprehensive Test (HSCT). The research aims to provide insights on a practice that may affect student’s achievement gap as well as graduation rates.

*Nowell, Dana. “Student Engagement in Early College: Mediating Academic Achievement.” (University of Virginia)

This study seeks to understand the impact of dual enrollment on behavioral, cognitive, and emotional engagement and how engagement mediates achievement. To accomplish this, quantitative methods will isolate the treatment effects of dual-enrollment and students’ background characteristics. Through this dual-enrollment initiative, called Early College, high school students enroll in both high school and college courses simultaneously, and most students are attending those courses on a college campus. These students differ from previously-studied dual-enrollment students because of their integration into college culture. Past research on dual-enrollment students focused on post-secondary outcomes, while this research concentrates on the impact dual enrollment has while students are still enrolled in the program.

The SERVE Center at University of North Carolina-Greensboro is currently conducting an experimental design, randomly assigning students to Early College and traditional high school. Data from that study will be used to compare Early College participants to their peers in traditional high school. Using structural equation modeling, the impact of Early College on different aspects of engagement will be isolated. Relationships among demographic variables and engagement will be examined for significance and effect on academic achievement.

Teacher turnover rates in North Carolina have ranged from 10-14% annually over the past decade. With so many teaching positions needing to be filled annually, teacher turnover places a burden on administrators and school systems to find, attract and integrate large numbers of qualified replacements annually without a loss in the quality of services provided. Additionally, turnover leads to a loss of experience and lower returns on investment, in the form of teacher training, recruitment bonuses and mentoring.

The decision to leave a school or the teaching profession is a complex and personal one. Past research has sought to identify factors relating to both individual teachers and schools that can best predict whether a teacher is likely to make the decision to leave. Determining to what extent the influence of student demographic factors, such as race and family income, can be separated from non-pecuniary factors is a critical issue for policymakers and an avenue of much research related to teacher turnover. In 2001, a study found that 30% of teachers that chose to leave the teaching profession and 18% of those teachers who switched schools cited “student discipline problems” as one of their reasons for dissatisfaction (Ingersoll 2001). However, very few studies have examined school safety as a predictor of teacher turnover. The purpose of my research is to conduct secondary analysis of existing education data to determine to what extent changes in school safety conditions predict changes in teacher retention rates in North Carolina public secondary schools.


Much of the recent research analyzing teacher quality has attempted to identify particular observable teacher attributes that correspond to success in the classroom. Among the most consistent finding in this literature is that classroom experience positively impacts teacher quality, especially in the first several years. This study will extend the research on teacher experience by attempting to identify a mechanism through which experience effects operate. In my analysis, I will distinguish between general teaching experience and grade-specific experience and analyze the effects of each type, holding the other type constant. This paper will allow researchers to disentangle the effects of general teaching skills from that of specific curriculum familiarity. In addition, the results will have clear policy implications regarding optimal teacher grade assignment patterns.

*Ost, Benjamin. “Teacher Absences and Attrition.” (Cornell University)

Teacher attrition poses a major challenge for school administrators across the nation. Since teachers improve dramatically in the first several years of teaching, rampant early attrition leaves schools with a perpetually inexperienced, less effective staff. While a large literature exists attempting to understand the determinants of teacher attrition, using a longitudinal administrative database will allow me to investigate this issue in a more nuanced manner than previously possible. Rather than rely solely on district average class sizes or district demographics to characterize working conditions, I will use the micro-level North Carolina data to create a rich description of working conditions for every individual teacher within a school. Using only
within-school comparisons, I will examine the impact of factors such as teaching load, distinct course preparations, student behavior, class size and racial match between student and teachers. In addition to examining the impact of working conditions on teacher attrition, I will also explore whether teacher absences are influenced by working conditions. Since the NCERDC data tracks teachers over time, I can compare teachers to themselves and investigate whether harder work loads are associated with changes in absences.

**Parker, Justin. “The Use of Large Scale Assessment Data to Investigate Special Education.” Doctoral Thesis. Expected 2010.**

Over the past several decades, one of the most contentious issues among researchers and educators has been the effectiveness of special education. Despite decades of special education effectiveness research, methodological shortcomings inherent in special education research have resulted in limited evidence of special education effectiveness. For my doctoral dissertation, I will use two contrasting strategies to examine the achievement outcomes for students who receive special education services. The broad goal of the proposed study is to investigate special education effectiveness in the state of North Carolina by examining the scores of students with and without disabilities on large-scale assessments of academic achievement. The specific aims of the proposed study are two-fold. First, the study will attempt to replicate the special education effectiveness study of Ysseldyke and Bielinski (2002), who found that the achievement gap between special and regular education students does not continue to grow when a stable cohort of students is tracked across academic years. Second, the performance on large-scale assessments of a select group of students who transition in and out of special education will be analyzed using an ABA design. That is, the achievement scores of students who are not in special education in year one (A), then transition into special education in year two (B), and then transition back out of special education in year three (A) will be analyzed. This method will allow students who receive special education services to serve as their own control group as their performance for the year they were in special education is be compared to the years before and after they received services.

*Pilzer, Sara. “Causes and Consequences of school attendance boundary changes.” (Duke University)*

School districts regularly alter school catchment areas. Sometimes they do so in response to population growth or decline, sometimes with the goal of promoting more racially or economically mixed schools, and sometimes as a reaction to or in anticipation of political or legal pressures. Whenever such changes are made, disruptions to students, teachers, and schools occur. These changes affect not only those students who move, but also those who remain in schools that experience largely altered student bodies from rezoning policies. The purpose of this study, “What are the causes and consequences of school attendance boundary changes?” is therefore to examine the causes and consequences of these policy changes.


The proposed research project, “The Effects of Lunch Payment Systems on Participation in the NSLP” will examine the effects of recent innovations in lunch payment methods and their
potential to impact participation in the subsidized lunch participation in the National School Lunch Program. Within innovations in payment systems, full-price paying students can now use automated payment systems to link pre-funded accounts to purchases in the lunch line, therefore eliminating cash transactions at the point of sale for a number of students. As a greater number of students forego cash transactions, there are fewer number of instances in which students eligible for free lunches in the NSLP appear different than their full-price counterparts. Existing literature presents a case as to why peer influences and the stigma associated with participating in subsidized lunch programs may discourage some eligible students from participating in the subsidized lunch program. The purpose of this research project is to examine whether automated payment systems increases participation in subsidized lunch programs, through a mechanism that reduces the presence of stigma in school lunch lines. NCERDC’s assistance in the project, by providing access to available data on North Carolina schools and districts will allow me to account for factors that may otherwise impact subsidized NSLP participation.


Within the education field, researchers often use panel data (i.e., data with multiple observations on schools, teachers, and/or students) to understand the effects of different factors on educational outcomes. The most common regression technique using these panel data is a fixed-effects regression. While such regression techniques are certainly tractable and may overcome some of the inherent biases in statistical analysis such as omitted variables bias, they impose restrictive assumptions. The possibly most troubling of these assumptions is that the effect of factors of interest is constant – that is, the fixed effects estimate may be quite different from the average effect across groups. Using schooling data from North Carolina, we will discuss the relevance of this bias in several important areas of education research. These areas include: teacher quality, classroom characteristics, school choice, and the black-white achievement gap.

*Schweig, Jon. “A Multilevel Confirmatory Factor Analysis of the WCS.” (UCLA)

“A Multilevel Confirmatory Factor Analysis of the North Carolina Working Conditions Survey” is an investigation of the role that the multi-level structure of survey data (with teacher responses nested within schools) plays in determining how that data can be used to analyze differences between schools in school climate. The authors employ a Multi-level Confirmatory Factor Analysis Framework to investigate this question, which may have policy implications for school and district administrators.


The project’s first objective is to examine whether the introduction of dropout rates in the evaluation of schools did indeed have an impact on dropout rates. Competing hypotheses will be explored. First, it is likely that school policies do not have an impact on the student drop out rates; other exogenous factors, such as the student’s socioeconomic background may be far more important in determining the student’s decision to leave school. An alternative hypothesis is that
schools have the ability to influence a student’s decision to drop out and by targeting those students who are most at risk of dropping out, schools are successful in decreasing dropout rates. The second objective is to study the impact of this policy on student test scores. The policy in 2001 is expected to incentivize schools not to push out those students. The research will study whether such a policy has a negative effect on the test scores of other students, and the aggregate test scores of the school.


Whether attending single-sex school or participating in single-sex classrooms leads to better educational outcomes has been of interest to social scientists and policy makers for some time. Since almost every single-sex program in the country was housed in a private school, and since most of these schools were Catholic, it has been very difficult to disentangle the effect of single-sex programs from the Catholic effect, private-school effect, and from issues of selection bias. A provision of the No Child Left Behind Act opened the door for single-sex public schools, and as a result of its passage in 2001 there are over five hundred public schools in America with single-sex programs. The relative proliferation of single-sex programs has sparked fierce debate. Proponents of single-sex programs argue that the programs will enhance educational outcomes by causing increased classroom discipline and by allowing teachers to cater their teaching to the different needs of young boys and girls. Opponents disagree, and are concerned that one sex will benefit at the expense of the other. The effect of these programs on student outcomes has not been credibly isolated, although the findings will be of great interest to social scientists, policy makers, teachers, and parents. I propose to study these effects using data from North Carolina.


This paper contributes to the existing literature on selection into teenage fertility in three ways. First, it is based on a large administrative birth dataset that contains information for not only all births in North Carolina (NC) in 1990-1991 but also information for all births to the cohort before 2010, i.e. before the cohort reaches the age of 20. This represents a departure from previous studies which rely on longitudinal survey datasets. Second, the paper makes use of the information collected on infant health, paternal characteristics at birth and maternal health behavior during pregnancy to examine the less-known impact of these factors on selection into teenage fertility. Third, the paper offers some modifications to the existing theoretical framework by incorporating not only socioeconomic selection but also health selection into teenage fertility. In particular, I present evidence that there is negative socioeconomic selection (as established by previous studies) but positive health selection which excludes the least healthy infants from giving birth as teenagers. I conclude with a discussion of the implications of this expanded framework for a) estimating the effects of maternal socioeconomic characteristics on teenage fertility and b) estimating the consequences of teenage fertility.

Very little empirical research has been conducted on how grading standards impact student achievement despite the potential for large net-gains from such a finding. This paper will contribute to the existing research by examining how test performance is affected by grading standards at the high school level. With the unique dataset from NCERDC I will be able to address the question of how different grading standards within a student’s schedule impact performance in other courses in which the student is concurrently enrolled. Further contributions will come from an examination of the within school variation at the high school level and from an assessment of how test score changes are impacted by the marginal return from course grades.


Ninth graders have the highest failure rate and the highest risk of dropping out due to that academic failure. Due to the critical nature of transition from middle to high school and the long-term implications of maladjustment during ninth grade, it is imperative that education leaders seek solutions to deal with this problem. One strategy that many educators are experimenting with is the use of ninth grade academies, a type of small learning community (SLCs). An SLC is a form of school structure that subdivides a large population of students into smaller autonomous groups of students that share the same group of teachers. The purpose of my research is to determine the effect of ninth grade academies on student achievement and attendance. Specifically, I will try to answer the question: how do ninth grade academies in North Carolina high schools affect English I End of Course test scores and End of Course math test participation rates?