NC Governor's School: Attendance, Demographics & Tuition

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POLICY QUESTION: How did the implementation of tuition, beginning in 2010, impact the representation of low wealth students at the North Carolina Governor's School?

EXECUTIVE SUMMARY

North Carolina's Governor's School program, a residential summer program for gifted and talented students, introduced a $500 tuition fee for the first time in 2010 after a reduction in funds from the North Carolina General Assembly. Using descriptive statistics and regression models, we show that the introduction of tuition adversely impacted the number of students from low-wealth LEAs who were nominated for and attended Governor's School. We find that uncertainty over the program's survival and an administrative change in the nomination process made necessary by budget cuts likely exacerbated these trends for the 2012 Governor's School session. In light of these findings, we recommend the state remove the tuition charge or expand scholarship programs for students from low-wealth LEAs.

INTRODUCTION

BACKGROUND

The North Carolina Governor's School (GSNC) was founded in 1963 by then Governor Terry Sanford. Governor Sanford had envisioned a summer program for both academically and artistically gifted students to thrive in an open learning environment. Sanford's program was the first Governor's School in the nation, with 23 other states following his model to create their own versions of Governor's Schools (National Conference on Governor's Schools 2012). GSNC has operated every year since 1963, and with the exception of the 2012 session has been funded by the North Carolina General Assembly.

GSNC is open to rising high school seniors (as well as juniors for particular subject areas) from all public and non-public schools in the state.[1] The majority of nominees are placed in a competitive pool and selected based on essays, academic achievement or artistic auditions. Each LEA or charter, private, or home school may make a certain number of nominations to this pool in both academics and the arts, depending on their number of high school juniors and seniors.

In traditional LEAs, teachers, principals and counselors nominate students at the individual school level. Schools then send their nominations to their LEA superintendent, who selects nominations to submit to the state. Private, home and charter school superintendents or administrators also submit nominations in accordance with their allocated number.

[1] *For a full explanation of the nomination process, please see the 2012 Governor's School Nomination Packet (Department of Public Instruction 2011a).*

In addition to the number of nominations allocated based on LEA size, superintendents of traditional public LEAs have historically been allowed two "Superintendent Choice" nominees in academics. (The number of Superintendents Choice nominees was reduced to one per LEA in 2012.) Nominees designated as Superintendent Choice are guaranteed acceptance, without having to be placed in the competitive pool of academic candidates.

In 2009, due to state-wide pressure for budget cuts, the NC General Assembly reduced funding for the GSNC from approximately $1.33 million to $850,000 – a $480,000 reduction (Fiscal Research Division 2009). In order to make up this deficit, the NC General Assembly added a provision in the budget mandating that it was the duty of the State Board of Education to implement a $500 tuition charge for students attending GSNC starting with the 2010 session and continuing through future sessions.

The North Carolina Department of Public Instruction (NCDPI), administrator of GSNC, made several changes to the program in order to accommodate the funding loss. GSNC traditionally operated for six weeks at two college campuses in NC, serving a total of 800 students per summer. Even with the tuition charge, the state was forced to limit the number of attendees to 600 students in both 2010 and 2011.

Though the responsibility for paying tuition costs fell to LEAs (or schools, in the case of charter and non-public schools), many LEAs passed the costs on to students and their families. An informal NCDPI survey of LEAs found, for the 2010 GSNC session, 49 out of 66 responding LEAs (74 percent) paid tuition fees on behalf of students. In 2011, that number decreased to 33 out of 64, just over 50 percent.

In 2011, the General Assembly cut all funding for the 2012 GSNC (Fiscal Research Division 2011), which resulted in widespread uncertainty about the survival of the program and inspired a grassroots fundraising movement among GSNC alumni to fund the 2012 session. In fact, the majority of the funds to operate GSNC in 2012 were raised by the Governor's School Foundation. This not-for-profit foundation, led by a volunteer Board of Directors, was incorporated in 1990 to supplement the funding provided by the NC General Assembly and secure the future of GSNC.

To address the additional funding shortage for 2012, GSNC only admitted 560 students and shortened the session from six weeks to five. With the added budget saving measures and money from tuition, the $702,000 raised by the Governor's School Foundation allowed the GSNC to survive into 2012. However, the reduction of available slots for attendees also impacted the structure of the nomination process. If NCDPI had continued to allocate two Superintendent Choice nominations to every public LEA, the 560 available slots would have been too small to admit an adequate number of students in the arts (a certain number of students are necessary to form an orchestra, for example), as well as an equitable number of charter and non-public school students. Consequently, NCDPI chose to reduce the number of Superintendent Choice slots to one per LEA for 2012.

The Governor's School Foundation also gathered funds to provide need-based scholarships for the 2012 GSNC session. Using grants from the Golden Leaf Trust, Heisman Trophy Trust and Florence Rogers Charitable Trust, the Foundation was able to fund 78 full scholarships for students demonstrating financial need. Unfortunately, however, the scholarship funds did not

become available until February 2012, three months after the nomination deadline for GSNC's 2012 session. The Foundation ultimately awarded scholarships to 33 students, 31 of which attended GSNC during the summer of 2012.

In the most recent legislative budget, the General Assembly allocated approximately $800,000 to restore state funding for the GSNC 2013 session (Fiscal Research Division 2012).

GIFTED PROGRAMS IN NC AND THE UNITED STATES

Twenty-three states, including Alabama, Arkansas, California, Delaware, Florida, Georgia, Iowa, Kentucky, Louisiana, Mississippi, Missouri, New Jersey, New York, North Dakota, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, West Virginia, and Wyoming, have modeled programs for gifted high school students based on Terry Sanford's design (National Conference on Governor's School 2012). These states have various requirements for the number of students enrolled, the duration of the program, the cost to students, and type of curriculum. Many offer their programs to students free of charge, with the exception of California, Iowa, Louisiana, Mississippi, Missouri, South Dakota and Vermont.

While GSNC remains the first program founded in North Carolina for academically gifted high school students, the state is also the home of another leading gifted program, the Duke University Talent Identification Program, or Duke TIP. Duke TIP began in 1980 to identify academically gifted students and provide programs to help gifted students achieve their optimal educational potential. However, NCGS differs from the Duke TIP in several ways. The Duke TIP Summer Studies Experience is open to students in 7th through 12th grades and lasts for three weeks. The program fee for each term ranges from $3500 to $3800, and while financial aid is available for qualifying students, need-based aid only covers up to 45 percent of the program fee. The two programs differ greatly in terms of mission as well, serving different educational purposes as well as reaching out to different student demographics.

METHODOLOGY

NOMINEE DATA

The NCDPI Exceptional Children Division keeps data on all students nominated for GSNC. Using their database, we obtained a list of each student nominated during the 2005-2006 through 2011-2012 school years, the student's proposed area of study, whether the student attended GSNC, and student demographic information. Demographic information included age, race, gender, LEA (or school, for private school students), and home address. Unfortunately, because the GSNC database does not include a unique ID for nominees, we were unable to obtain student-level information on socioeconomic status.

LEA DATA

To compensate for the lack of socioeconomic data for GSNC nominees, we obtained LEA level economic information. We gathered data on the economic characteristics of North Carolina LEAs between 2006 and 2010 from the US Census Bureau's Small Area Income and Poverty Estimates (SAIPE) program (Census Bureau 2012). The data provided estimated figures of school-aged children living in each LEA, as well as an estimated number of children living in poverty. Because the SAIPE program did not have data available for 2011 and 2012, we used the 2010 figures for those years. Although using 2010 numbers for later years undoubtedly introduced a minimal amount of statistical error into our research, we have no reason to believe that the introduction of purely random error would bias our results.

To facilitate further analysis, we grouped counties into tiers based on the percentage of school-aged children in poverty. Keeping with the structure of the North Carolina Department of Commerce's County Tier Designations (Department of Commerce 2012), we designated the 46 poorest LEAs as "low-wealth," the 46 middle LEAs as "mid-wealth," and the 23 wealthiest LEAs as "high-wealth," for each year. The table below shows the breakdown of tiers for 2012, along with approximate end points for poverty rates in each tier. Tier assignments for each LEA, broken down by year, are available in Appendix A.

2012 Tier	High-wealth	Mid-wealth	Low-wealth
N	23	46	46
Poverty Rates	11%-20%	21%-27%	28%-46%

ASSIGNING STUDENTS TO LEAS

For comparisons at the LEA level, we needed to determine in which LEA each nominee lived. For students attending traditional public schools, we used the LEA code in the NCDPI Exceptional Children database. For private, home, and charter school students, we determined their traditional public LEA by geocoding the physical location of their home address and comparing that location to LEA boundaries designated by Census TIGER lines (Census Bureau 2010). For private, home, and charter school students whose home address was listed as a PO Box or an invalid street address (less than 2 percent of all nominees), we assigned an LEA using the physical location of their local post office.

The number of students nominated for and attending GSNC from each LEA, broken down by year, is available in Appendix B.

FACILITATING COMPARISON

To examine the impact of the introduction of tuition for GSNC, we analyzed the number of students coming from low, medium, and high-wealth LEAs between 2006 and 2012. Two unique factors presented a challenge for completing this type of analysis:

1. The number of students attending GSNC was restricted significantly in 2010. Therefore, the raw number of attendees coming from LEAs of any poverty level dropped in 2010.
2. Several LEAs moved to different poverty tier designations from year to year, and populations within LEAs changed. Therefore, the overall population of the LEAs designated to any particular tier was subject to dramatic change from year to year.

Consequently, we could not compare raw numbers of applicants or attendees on a yearly basis. To overcome this problem, we developed a ratio metric to account for variations in populations, tier designations, and number of attendees. Two forms of the formula for this metric are shown below, one for applicant data and the other for attendee data.

$$\left(\frac{\%\text{ of applicants from LEA (or Tier)}}{\%\text{ of state school aged population from LEA (or Tier)}} \right) -1$$

or

$$\left(\frac{\%\text{ of attendees from LEA (or Tier)}}{\%\text{ of state school aged population from LEA (or Tier)}} \right) -1$$

As we based our metric on a ratio of the percentage of students coming from a location to that same location's percentage of the school-aged population, we were able to obtain a percentage figure for how over – or under – represented that location was in the GSNC data. As an example, if mid-wealth counties represented 40 percent of the state school-aged population, but had 44 percent of the GSNC attendees, our metric would assign mid-wealth counties a rating of 10 percent, because their representation in GSNC was 10 percent higher than their population representation. These percentage figures represent different numbers of students in different LEAs. For example, a large LEA may have to nominate an additional 15 or 20 students to GSNC in order to be over-represented by 10 percent, while a small LEA may only need to nominate 1 or 2 additional students to be over-represented by the same percentage.

REGRESSION MODELING

In order to conduct statistical tests of the impact of tuition, we gathered additional data on LEA level factors. We obtained information on SAT participation rates, average SAT scores, per pupil expenditures, and racial composition from the North Carolina School Report Card database (Department of Public Instruction 2011b) so that we could control for the effects of these factors on GSNC representation. Because information for 2011-2012 was not yet available, we used data from the 2010-2011 school year.

For our regression model, we created a tuition dummy variable, coded to represent whether tuition was collected in a given year. We then created an interaction term by multiplying our tuition dummy variable by the percentage of school-aged students living in poverty in each LEA. The interaction term represented poverty in an LEA only for years after tuition was introduced, and therefore enabled us to see if the introduction of tuition altered the effects of poverty on GSNC representation.

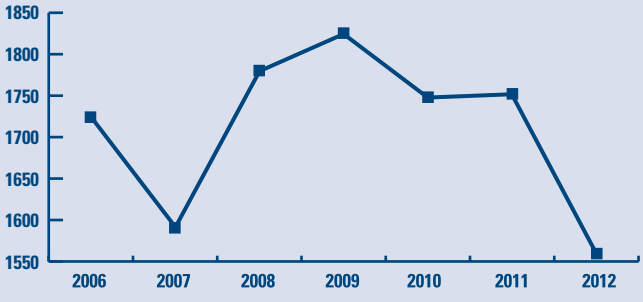
Finally, once our data were complete, we created random effects regression models to test for statistical relationships. For our dependent variables, we used the percentage of GSNC nominees and attendees coming from the various LEAs. Our independent variables included percentage of the state population coming from the LEAs, the tuition dummy variable, interaction term, and other relevant information collected about the LEAs.

ANALYSIS

TRENDS IN NOMINATIONS

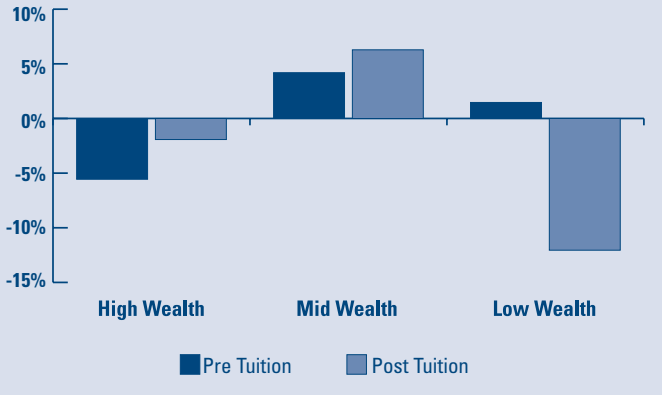
In considering nominations, we first looked to see if the introduction of tuition for GSNC impacted student nominations. The data show an upward trend in the number of nominations from 2007 through 2009, with a nomination decline beginning in 2010. Given the limited number of observations, we cannot say for certain tuition was responsible for the decline; however, we believe it is the most likely cause.

TOTAL NUMBER OF NOMINEES



We next looked for trends in the representation metrics for LEAs by tier. The results, displayed in the graph below, showed a modest increase in representation amongst high-wealth and mid-wealth LEAs after the introduction of GSNC tuition. Low-wealth LEAs, mildly over-represented in GSNC nominees before the introduction of tuition, experienced a dramatic decrease in their representation.

TIER REPRESENTATION BEFORE/AFTER TUITION (ALL NOMINEES)

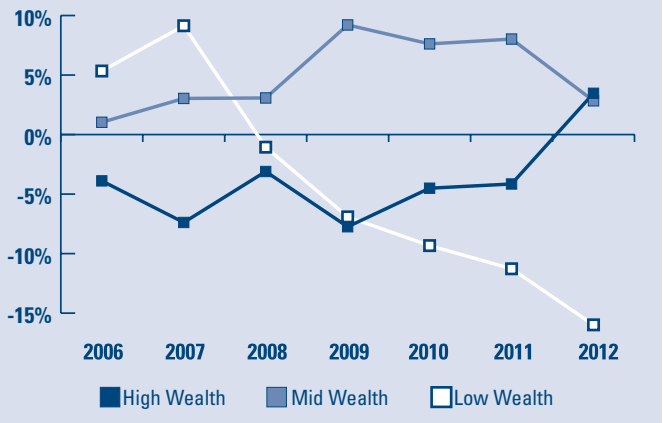


A year-by-year examination of the data gave us additional information about the changing trends in LEA representation. The results, displayed below, showed a steady decline in the representation of low-wealth LEAs starting in 2008 and continuing through 2012. Mid-wealth LEA representation climbed until 2009, but declined in 2010-2012. High-wealth representation began increasing in 2010.

The observed tradeoff between mid-wealth and high-wealth LEAs, beginning in 2010, suggests a detrimental impact of tuition on the number of economically disadvantaged students considering attendance at GSNC. Furthermore, the continued downward trend in low-wealth representation after the institution of tuition gives at least mild evidence that tuition was harming their nomination rates.

An analysis of the data on public school students alone showed a nearly identical pattern for all economic tiers.

TIER REPRESENTATION BY YEAR (ALL NOMINEES)



MODELING NOMINATIONS

Although our descriptive analysis showed several interesting trends in GSNC nominations, the low number of available data points (three tiers over seven years) prevented us from drawing any certain conclusions from the data. We therefore used a regression model to test for statistical evidence that tuition was adversely impacting low-wealth LEAs. LEA level analysis resulted in a much higher number of data points (805 instead of 21) and, consequently, a greater amount of statistical certainty.

Our analysis showed no relationship between poverty and GSNC nominee representation before 2010. However, after tuition was introduced, every 1 percentage point increase in the poverty rate resulted in an average .007 percentage point decrease in an LEA's share of GSNC nominees. Though the relationship seems small, one must remember that most small and moderately sized LEAs average well below a 1 percent share of GSNC nominees.

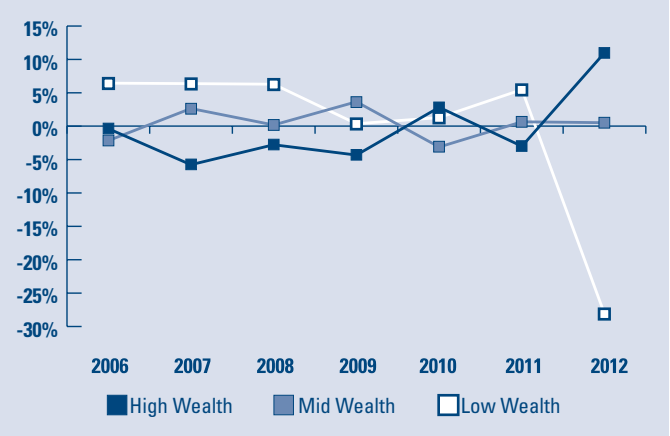
To put this in perspective, Person County (a moderately sized LEA) submitted 0.40 percent of GSNC nominees in 2012. If Person County's poverty rate had been 10 percentage points higher in 2012, our model predicts that they would have submitted only 0.33 percent of the nominees, a 17.5 percent reduction in their overall number of nominations. This should not, however, be interpreted as an exact relationship between poverty and share of nominations. Both variables are subject to fluctuations based on many external factors. Rather, our model demonstrates an average negative statewide impact of poverty on GSNC nominations after the introduction of tuition.

Interestingly, we also observed that the presence of a large Asian population in an LEA tended to increase their numbers of nominees. The full results of our statistical model are available in Appendix C.

ATTENDANCE

We next examined the trends amongst GSNC attendees over time. Our analysis indicated that the number of attending students coming from each economic tier remained fairly consistent over time, except for a dramatic shift of attendance from low-wealth to high-wealth LEAs in 2012. Though the introduction of tuition has discouraged the nomination of students from economically disadvantaged LEAs to GSNC, these results suggest the selection process maintained a fairly even balance in the representation of attendees from low-wealth and high-wealth LEAs until 2012.

TIER REPRESENTATION BY YEAR (ALL ATTENDEES)



Three factors related to the loss of funding for Governor's School likely explain the dramatic shift in representation from low-wealth to high-wealth LEAs in 2012. First, informal NCDPI surveys in 2010 and 2011 showed a downward trend in the number of LEAs paying GSNC tuition for their students. It is quite possible that this trend continued into that 2012, shifting the burden of tuition even further onto the shoulders of students and their families. LEAs also may have been less likely to budget for GSNC tuition in the 2011-2012 school year due to the widespread uncertainty surrounding the program's survival. One can reasonably surmise that if LEAs were less likely to pay tuition on behalf of their students, those LEAs with high concentrations of economically disadvantaged students would be less represented at GSNC.

A second factor that may have contributed to the dramatic shift in 2012 was the lack of recruitment for the GSNC program. NCDPI usually conducts informational sessions for GSNC throughout the fall semester. However, faced with uncertainty over the program's existence, NCDPI chose not to go forward with its usual efforts to encourage GSNC participation. Decreased recruitment efforts might have led to reduced levels of interest in low-wealth LEAs. The relative number of nominations coming from low-wealth LEAs declined from 2011 to 2012, and the same decline could have carried through into attendee representation.

Finally, the 2012 reduction of Superintendent Choice selections might have adversely impacted low-wealth LEAs. In 2012, students nominated from high-wealth LEAs outnumbered students nominated from low-wealth LEAs in the competitive pool by a ratio of three to one. Given this composition, it is obvious that the majority of students selected from the competitive pool would be from high-wealth LEAs.

Overall, our results for years 2006-2011 suggest that students unable to afford tuition self-selected out of the nomination process. The continued presence of students from all economic tiers at GSNC in 2010 and 2011 likely reflects the attendance of students who could privately afford tuition, or whose tuition was paid by their LEA. Unfortunately, however, many factors stemming from the 2012 defunding of GSNC upset the historically equitable distribution of attendees between the various levels of wealth.

Again, isolating data for students in public schools showed a very similar trend for all economic tiers.

MODELING ATTENDANCE

Although our descriptive statistics showed interesting trends, the small sample size prevented us from drawing any strong conclusions based solely on this information. Therefore, we used regression analysis with LEA data to test for statistical evidence that tuition was adversely impacting the representation of low-wealth LEAs in the attendee pool.

Our analysis showed that after tuition was introduced, every 1 percentage point increase in an LEA's poverty rate resulted in a .009 percentage point decrease in its share of GSNC attendees. Again, there was no relationship before tuition was introduced. This relationship gave us strong statistical evidence that attendance rates decreased for low-wealth LEAs after tuition was introduced – and at an even faster rate than the decrease in nominations.

We again observed that the presence of a large Asian population in an LEA tended to increase its numbers of nominees. The full results of our statistical model are available in Appendix C.

THE ROLE OF SCHOLARSHIPS

The availability of scholarships for the 2012 GSNC session does not seem to have alleviated the adverse effects of tuition. We believe the fact that scholarships were not publicized until well after the nomination process ended largely explains this relationship. By the time information about scholarships was disseminated, many economically disadvantaged students had already elected not to participate in the application process. In fact, we believe the low rates of scholarship participation (the Governor's School Foundation only awarded 33 out of 78 available scholarships) are further evidence that students with financial needs had dropped out of the process long before the scholarships were made available.

To further analyze the role of scholarships, we examined the number of scholarship recipients coming from each of our wealth tiers. Approximately 52 percent of scholarship recipients attended school in high-wealth LEAs during the

2011-2012 school year, yet high-wealth LEAs represented only 38 percent of the state school-aged population. Mid-wealth LEAs made up only 32 percent of scholarship recipients despite having 46 percent of the state school-aged population. Finally, low-wealth LEAs had 16 percent of scholarship recipients and 17 percent of the state's school-age population.

Given that the number of students from low-wealth families is, by our definition, higher in the low-wealth and mid-wealth LEAs, we would have expected those LEAs to have a larger number of need-based scholarship recipients. The fact that a disproportionately high number of scholarships went to students in *high-wealth* LEAs is further evidence that disadvantaged students from low-wealth LEAs had already dropped out of the process.

We believe the availability of future need-based scholarships could help restore the representation of economically disadvantaged students and LEAs, if the availability of those scholarships is publicized before the nomination deadline.

OTHER FACTORS

In addition to economic factors, we also considered whether the introduction of tuition influenced the representation of various other groups. We looked for trends in the representation of males and females, racial groups, and non-public school students among GSNC applicants and attendees. Though the representation of each group fluctuated randomly throughout the years of our study, there was no discernable pattern indicating a relationship in these areas.

CONCLUSION

Our results ultimately show that the introduction of tuition for GSNC has adversely impacted rates of nominations and attendance in low-wealth LEAs. After the introduction of tuition, we observed a shift in the share of nominations from middle-wealth to high-wealth LEAs, while low-wealth LEAs continued a steady decline that began in 2008. We believe this is strong evidence that students unable to afford tuition are self-selecting out of the GSNC nomination process. Moreover, we also observed that the introduction of tuition had a detrimental impact on rates of attendance at GSNC for low-wealth LEAs. This trend was particularly pronounced in 2012, when the complete loss of funding led to several unfortunate complications during the nomination process including uncertainty about the continued existence of the program, a lack of recruitment, and a reduction in the number of Superintendent Choice slots.

Historically, GSNC has differentiated itself from privately-funded summer programs (e.g., TIP at Duke) by providing equal opportunities for academic and artistic growth to gifted students from all income levels. If North Carolina cannot find a way to keep the path to GSNC open to low-income students, the program will stray from this purpose.

POLICY RECOMMENDATIONS

1. **Fund the GSNC program and abolish tuition.** In order to fully restore the representation of economically disadvantaged students in attendance, we recommend that the General Assembly fully fund the GSNC program and abolish the tuition requirement.
2. **Expand scholarship programs.** If financial constraints preclude fully funding the GSNC program, we encourage the state to work with the Governor's School Foundation to develop a more permanent scholarship program to assist low-wealth students.
3. **Work to restore the number of Superintendent Choice nominations.** We recommend that the state work to restore Superintendent Choice nominations to two per LEA. This action should not be taken until increases in funding and attendance slots make it possible to do so without upsetting the delicate balances between academics and the arts and between public and non-public students.

APPENDIX A – LEA WEALTH TIER ASSIGNMENTS

District	2006	2007	2008	2009	2010	2011	2012
Alamance-Burlington	Mid	High	Mid	High	Mid	Mid	Mid
Alexander	High	High	High	Mid	Mid	Mid	Mid
Alleghany	Low	Low	Low	Low	Low	Low	Low
Anson	Low	Low	Low	Low	Low	Low	Low
Ashe	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Asheboro	Low	Low	Low	Low	Low	Low	Low
Asheville	Low	Low	Low	Low	Low	Low	Low
Avery	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Beaufort	Low	Low	Low	Low	Low	Low	Low
Bertie	Low	Low	Low	Low	Low	Low	Low
Bladen	Low	Low	Low	Low	Low	Low	Low
Brunswick	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Buncombe	High	Mid	High	Mid	High	High	High
Burke	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Cabarrus	High	High	High	High	High	High	High
Caldwell	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Camden	High	High	High	High	High	High	High
Carteret	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Caswell	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Catawba	High	High	High	High	High	High	High
Chapel Hill-Carrboro	High	High	High	High	High	High	High
Charlotte-Mecklenburg	High	High	High	High	High	High	High
Chatham	High	High	High	High	High	High	High
Cherokee	Low	Low	Low	Low	Low	Low	Low
Clay	Mid	Mid	Mid	Mid	Low	Low	Low
Cleveland	Mid	Low	Mid	Mid	Low	Low	Low
Clinton	Low	Low	Low	Low	Low	Low	Low
Columbus	Low	Low	Low	Low	Low	Low	Low
Craven	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Cumberland	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Currituck	High	High	High	High	High	High	High
Dare	High	High	High	High	High	High	High
Davidson	High	High	High	High	High	High	High
Davie	High	High	High	High	High	High	High
Duplin	Low	Low	Low	Low	Low	Low	Low
Durham	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Edenton-Chowan	Low	Low	Low	Low	Low	Low	Low
Edgecombe	Low	Low	Low	Mid	Low	Low	Low
Elkin	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Forsyth	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Franklin	Mid	Mid	Mid	High	High	High	High
Gaston	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Gates	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Graham	Low	Low	Low	Low	Low	Low	Low
Granville	High	Mid	High	High	High	High	High
Greene	Low	Low	Low	Low	Low	Low	Low
Guilford	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Halifax	Low	Low	Low	Low	Low	Low	Low
Harnett	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Haywood	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Henderson	Mid	High	Mid	Mid	Mid	Mid	Mid
Hertford	Low	Low	Low	Low	Low	Low	Low
Hickory	Low	Mid	Low	Low	Low	Low	Low
Hoke	Low	Mid	Low	Low	Mid	Mid	Mid
Hyde	Low	Low	Low	Low	Low	Low	Low
Iredell-Statesville	High	High	High	High	High	High	High
Jackson	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Johnston	Mid	High	High	Mid	High	High	High

District	2006	2007	2008	2009	2010	2011	2012
Jones	Low	Low	Mid	Mid	Low	Low	Low
Kannapolis	Low	Low	Mid	Low	Low	Low	Low
Lee	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Lenoir	Low	Low	Low	Low	Low	Low	Low
Lexington	Low	Low	Low	Low	Low	Low	Low
Lincoln	High	High	Mid	High	High	High	High
Macon	Mid	Mid	Mid	Low	Mid	Mid	Mid
Madison	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Martin	Low	Low	Low	Low	Low	Low	Low
McDowell	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Mitchell	Low	Mid	Low	Mid	Mid	Mid	Mid
Montgomery	Low	Mid	Low	Low	Low	Low	Low
Moore	Mid	Mid	High	High	Mid	Mid	Mid
Mooresville	High	High	High	High	High	High	High
Mount Airy	Low	Low	Low	Low	Low	Low	Low
Nash-Rocky Mount	Low	Low	Mid	Mid	Mid	Mid	Mid
New Hanover	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Newton-Conover	Low	Low	Low	Low	Mid	Mid	Mid
Northampton	Low	Low	Low	Low	Low	Low	Low
Onslow	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Orange	High	High	High	High	High	High	High
Pamlico	Low	Low	Low	Low	Low	Low	Low
Pasquotank	Mid	Low	Mid	Mid	Low	Low	Low
Pender	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Perquimans	Low	Low	Low	Low	Mid	Mid	Mid
Person	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Pitt	Low	Mid	Mid	Mid	Mid	Mid	Mid
Polk	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Randolph	High	Mid	High	High	Mid	Mid	Mid
Richmond	Low	Low	Low	Low	Low	Low	Low
Roanoke Rapids	Mid	Low	Low	Mid	Mid	Mid	Mid
Robeson	Low	Low	Low	Low	Low	Low	Low
Rockingham	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Rowan-Salisbury	Mid	High	Mid	Mid	Mid	Mid	Mid
Rutherford	Mid	Low	Mid	Low	Low	Low	Low
Sampson	Mid	Low	Low	Mid	Low	Low	Low
Scotland	Low	Low	Low	Low	Low	Low	Low
Stanly	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Stokes	High	High	Mid	High	High	High	High
Surry	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Swain	Mid	Mid	Mid	Mid	Mid	Mid	Mid
Thomasville	Low	Low	Low	Low	Low	Low	Low
Transylvania	Mid	Mid	Mid	Low	Mid	Mid	Mid
Tyrrell	Low	Low	Low	Low	Low	Low	Low
Union	High	High	High	High	High	High	High
Vance	Low	Low	Low	Low	Low	Low	Low
Wake	High	High	High	High	High	High	High
Warren	Low	Low	Low	Low	Low	Low	Low
Washington	Low	Low	Low	Low	Low	Low	Low
Watauga	High	High	High	High	High	High	High
Wayne	Mid	Mid	Low	Low	Low	Low	Low
Weldon	Low	Low	Low	Low	Low	Low	Low
Whiteville	Low	Low	Low	Low	Low	Low	Low
Wilkes	Mid	Mid	Low	Low	Mid	Mid	Mid
Wilson	Low	Low	Low	Low	Low	Low	Low
Yadkin	High	Mid	High	Mid	High	High	High
Yancey	Low	Low	Low	Low	Low	Low	Low

APPENDIX B – NOMINATIONS AND ATTENDEES BY LEA

NUMBER OF NOMINATIONS BY LEA (ALL PUBLIC AND NON-PUBLIC STUDENTS)

District	2006	2007	2008	2009	2010	2011	2012
Alamance-Burlington	20	20	24	18	20	32	16
Alexander	6	11	8	9	13	8	9
Alleghany	2	2	3	1	2	2	1
Anson	3	4	5	1	4	2	4
Ashe	3	4	6	4	5	6	3
Asheboro	7	9	8	15	12	12	6
Asheville	6	7	6	8	7	7	8
Avery	1	0	0	2	3	4	1
Beaufort	12	9	9	9	8	6	6
Bertie	6	3	2	1	0	4	2
Bladen	7	6	5	4	4	2	2
Brunswick	11	8	10	12	10	12	10
Buncombe	46	33	44	48	43	39	40
Burke	15	18	19	17	18	15	18
Cabarrus	35	33	38	40	42	39	34
Caldwell	13	11	15	22	18	17	12
Camden	4	3	2	3	3	3	2
Carteret	33	27	37	30	31	12	15
Caswell	2	2	2	2	4	1	2
Catawba	23	24	31	28	23	20	13
Chapel Hill-Carrboro	46	41	43	55	48	55	46
Charlotte-Mecklenburg	80	76	83	95	91	74	93
Chatham	14	14	21	11	23	12	13
Cherokee	4	5	4	4	5	4	5
Clay	0	1	0	3	1	1	1
Cleveland	25	23	26	24	9	8	8
Clinton	13	4	10	10	9	4	3
Columbus	16	15	19	14	11	11	10
Craven	16	11	28	20	23	16	17
Cumberland	60	75	79	88	73	85	57
Currituck	3	3	4	4	4	4	3
Dare	3	2	5	5	4	7	7
Davidson	18	20	18	24	24	28	25
Davie	6	6	7	14	15	15	8
Duplin	6	5	3	9	9	12	8
Durham	53	42	61	68	69	70	76
Edenton-Chowan	5	4	6	5	6	6	3
Edgecombe	9	6	7	10	6	5	3
Elkin	2	4	3	4	3	3	1
Forsyth	79	89	91	85	78	84	73
Franklin	9	9	8	9	10	11	20
Gaston	38	47	37	38	41	45	29
Gates	1	2	1	1	0	0	0
Graham	3	0	2	3	3	3	2
Granville	7	6	2	5	8	8	6
Greene	3	6	6	9	4	4	3
Guilford	68	50	69	74	70	89	82
Halifax	1	3	4	2	3	3	3
Harnett	17	22	21	20	15	24	21
Haywood	8	7	2	9	8	6	8
Henderson	21	19	23	17	23	15	17
Hertford	0	1	1	0	2	4	2
Hickory	8	12	10	9	4	9	12
Hoke	4	4	2	1	8	9	7
Hyde	0	2	0	1	2	0	2
Iredell-Statesville	35	29	31	43	37	34	33
Jackson	1	3	4	1	4	3	1
Johnston	21	25	32	24	28	28	30

District	2006	2007	2008	2009	2010	2011	2012
Jones	2	4	2	1	0	0	1
Kannapolis	1	1	1	3	2	3	1
Lee	12	9	6	8	5	4	6
Lenoir	15	16	15	16	12	20	13
Lexington	2	1	5	4	4	1	1
Lincoln	13	5	10	6	7	11	2
Macon	6	5	4	4	2	3	3
Madison	2	0	2	2	2	1	1
Martin	4	4	8	3	6	2	3
McDowell	5	8	5	6	5	5	3
Mitchell	3	1	2	5	2	3	2
Montgomery	4	3	4	4	4	6	1
Moore	40	24	26	25	34	30	33
Mooresville	4	4	3	6	6	8	5
Mount Airy	5	3	4	4	6	8	6
Nash-Rocky Mount	17	15	25	19	9	14	17
New Hanover	39	32	31	31	35	43	26
Newton-Conover	4	5	4	3	3	4	5
Northampton	4	2	3	1	1	3	0
Onslow	22	21	27	35	36	25	21
Orange	17	12	23	19	18	13	13
Pamlico	5	2	4	5	4	5	3
Pasquotank	6	4	5	6	6	5	2
Pender	16	10	15	18	10	7	6
Perquimans	1	3	0	1	3	2	2
Person	10	7	10	6	3	7	6
Pitt	35	23	41	44	39	36	31
Polk	5	3	3	6	6	4	4
Randolph	16	18	16	17	17	16	11
Richmond	3	3	3	5	10	11	4
Roanoke Rapids	8	5	3	2	3	4	2
Robeson	27	16	15	10	9	6	9
Rockingham	12	10	13	12	15	14	12
Rowan-Salisbury	23	17	16	24	21	18	9
Rutherford	8	6	5	12	8	9	9
Sampson	9	13	10	10	6	7	9
Scotland	10	5	5	4	3	6	2
Stanly	15	14	15	7	8	7	1
Stokes	8	17	11	9	10	10	14
Surry	7	7	7	9	9	6	7
Swain	3	2	1	2	0	1	2
Thomasville	6	7	6	6	9	4	2
Transylvania	5	4	5	4	4	2	3
Tyrrell	2	3	3	2	2	2	2
Union	35	29	41	36	39	43	47
Vance	7	9	3	6	2	2	4
Wake	160	145	167	176	168	188	171
Warren	2	3	2	3	4	2	1
Washington	2	2	0	0	0	1	0
Watauga	12	18	18	13	9	16	14
Wayne	23	18	22	16	20	17	19
Weldon	1	1	1	0	0	2	1
Whiteville	11	6	5	5	4	4	4
Wilkes	17	12	11	15	14	15	13
Wilson	24	34	22	24	23	18	21
Yadkin	8	11	13	10	6	4	5
Yancey	3	2	6	3	4	2	3
STATE TOTAL	**1724**	**1591**	**1780**	**1825**	**1748**	**1752**	**1560**

APPENDIX B – NOMINATIONS AND ATTENDEES BY LEA CONTINUED

NUMBER OF ATTENDEES BY LEA (ALL PUBLIC AND NON-PUBLIC STUDENTS)

District	2006	2007	2008	2009	2010	2011	2012
Alamance-Burlington	9	8	11	5	5	6	5
Alexander	1	5	4	5	4	3	2
Alleghany	2	2	2	1	2	2	1
Anson	2	4	2	1	2	1	1
Ashe	1	1	2	2	2	3	3
Asheboro	5	4	3	8	7	4	1
Asheville	4	6	3	5	5	4	3
Avery	0	0	0	1	2	2	1
Beaufort	3	3	2	4	2	2	2
Bertie	3	2	1	1	0	2	1
Bladen	3	3	3	3	2	2	1
Brunswick	3	5	6	5	4	3	5
Buncombe	21	16	20	21	17	20	11
Burke	9	10	8	10	4	4	9
Cabarrus	9	16	15	16	14	10	9
Caldwell	6	9	5	11	4	5	4
Camden	2	3	1	1	2	2	1
Carteret	16	15	19	9	9	5	4
Caswell	2	2	1	2	2	0	2
Catawba	8	11	12	8	7	2	3
Chapel Hill-Carrboro	21	25	24	28	22	23	24
Charlotte-Mecklenburg	41	44	32	44	37	25	33
Chatham	7	6	12	3	9	6	4
Cherokee	1	3	4	2	2	0	1
Clay	0	0	0	2	1	1	1
Cleveland	8	8	9	8	4	2	2
Clinton	3	2	7	3	2	2	2
Columbus	2	5	6	2	2	2	0
Craven	4	7	13	4	4	3	3
Cumberland	24	32	24	37	21	19	17
Currituck	2	2	2	3	1	2	1
Dare	2	1	3	4	3	3	4
Davidson	9	7	9	10	7	6	4
Davie	2	3	4	7	4	3	2
Duplin	3	3	2	2	4	2	2
Durham	26	22	23	30	20	25	26
Edenton-Chowan	2	3	3	4	3	3	1
Edgecombe	4	4	3	2	2	3	2
Elkin	1	4	2	3	2	2	1
Forsyth	40	49	43	36	24	30	34
Franklin	1	3	2	3	2	3	3
Gaston	18	23	21	10	12	14	13
Gates	1	2	1	1	0	0	0
Graham	2	0	2	3	3	2	1
Granville	2	1	2	2	2	1	1
Greene	2	2	3	3	2	3	3
Guilford	27	22	27	31	25	31	28
Halifax	1	1	3	1	2	2	1
Harnett	7	9	7	6	5	2	3
Haywood	1	5	1	5	4	2	2
Henderson	9	8	13	9	7	11	9
Hertford	0	0	1	0	2	2	1
Hickory	4	8	5	6	2	2	6
Hoke	3	2	1	0	4	3	1
Hyde	0	1	0	1	1	0	1
Iredell-Statesville	15	12	16	13	12	8	9
Jackson	0	2	1	1	1	2	1
Johnston	8	9	12	9	5	5	6

District	2006	2007	2008	2009	2010	2011	2012
Jones	2	2	1	1	0	0	1
Kannapolis	1	1	1	2	2	2	1
Lee	8	3	3	3	3	2	2
Lenoir	7	7	5	2	3	5	1
Lexington	0	1	3	3	2	1	1
Lincoln	4	1	4	5	2	2	1
Macon	4	0	3	3	0	2	1
Madison	1	0	2	1	1	1	0
Martin	3	2	4	2	2	2	1
McDowell	3	4	3	2	3	3	1
Mitchell	3	1	2	2	2	2	1
Montgomery	2	3	2	3	2	4	1
Moore	19	9	10	5	13	8	11
Mooresville	4	3	2	6	4	5	2
Mount Airy	3	2	4	2	3	3	4
Nash-Rocky Mount	13	7	7	12	4	3	6
New Hanover	23	14	17	13	8	15	8
Newton-Conover	2	3	3	2	1	2	1
Northampton	2	1	3	0	0	2	0
Onslow	8	8	16	15	10	8	6
Orange	7	2	10	7	4	7	6
Pamlico	3	2	3	3	2	3	2
Pasquotank	2	3	4	3	2	1	1
Pender	8	4	4	5	3	2	3
Perquimans	1	2	0	0	2	1	1
Person	4	2	2	2	2	4	2
Pitt	16	15	18	20	11	15	11
Polk	3	2	2	3	2	3	3
Randolph	7	11	4	6	3	3	1
Richmond	1	2	1	4	3	2	1
Roanoke Rapids	1	4	2	1	2	2	2
Robeson	7	7	5	4	2	2	1
Rockingham	4	8	6	6	3	3	2
Rowan-Salisbury	11	8	7	5	5	5	3
Rutherford	3	3	2	2	2	2	2
Sampson	2	3	4	4	2	2	2
Scotland	6	3	2	2	2	2	1
Stanly	5	3	4	3	4	2	1
Stokes	3	10	5	4	3	3	4
Surry	6	2	3	3	2	1	1
Swain	1	2	1	2	0	1	2
Thomasville	3	4	3	3	3	2	1
Transylvania	2	3	1	3	1	0	1
Tyrrell	2	2	2	1	2	2	1
Union	15	14	20	16	8	9	12
Vance	3	4	2	4	1	1	1
Wake	93	82	79	98	80	85	102
Warren	2	2	1	3	2	2	1
Washington	1	2	0	0	0	1	0
Watauga	6	10	6	4	1	3	5
Wayne	12	10	5	8	2	8	3
Weldon	1	0	1	0	0	1	0
Whiteville	2	2	2	3	2	2	1
Wilkes	9	3	3	7	5	4	3
Wilson	9	11	11	8	5	8	2
Yadkin	4	5	1	3	1	2	1
Yancey	2	2	3	2	2	2	2
STATE TOTAL	**791**	**791**	**787**	**793**	**602**	**607**	**560**



APPENDIX C – REGRESSION RESULTS

RANDOM EFFECTS MODEL FOR LEA PERCENT SHARE OF NOMINATIONS

Variable	Coefficient	P-Value
SAT Participation Rate	.003	.054
SAT Average Score	.000	.329
% Native American	-.008	.359
% Asian	.082	.000
% Black	-.000	.994
% Hispanic	.003	.598
Per-Pupil Expenditures (Thousands)	-.021	.214
Poverty Rate	.005	.225
Tuition[2]	.161	.012
Tuition X Poverty Rate	-.007	.004
Population Share	.740	.000

RANDOM EFFECTS MODEL FOR LEA PERCENT SHARE OF ATTENDEES

Variable	Coefficient	P-Value
SAT Participation Rate	.003	.100
SAT Average Score	.001	.088
% Native American	-.007	.530
% Asian	.132	.000
% Black	.000	.895
% Hispanic	-.001	.906
Per-Pupil Expenditures (Thousands)	-.008	.750
Poverty Rate	.011	.093
Tuition	.178	.098
Tuition X Poverty Rate	-.009	.040
Population Share	.764	.000

[2] *It is obviously impossible for tuition to have increased overall representation at GSNC, which must always total 100 percent. We attribute the coefficient on tuition to a mathematical fluke – since an LEA's share of nominees decreased with its poverty rate after tuition was introduced, the "starting point" that the share decreased from needed to be higher than it was previously in order for nominee share to total 100%. Moreover, despite the unexpected coefficient for tuition, our results for the interaction term were robust across several permutations of the model, increasing our confidence in our results. We present the full list of findings, including the coefficient for tuition, in the interest of transparency.*

Works Cited

- Census Bureau. 2012. "School District Data." Small Area Income and Poverty Estimates. Retrieved July 30, 2012 (https://www.census.gov/did/www/saipe/data/schools/index.html).
- Census Bureau. 2010. "2010 TIGER/Line Shape Files." United States Census Bureau. Retrieved July 30, 2012 (http://www.census.gov/cgi-bin/geo/shapefiles2010/main).
- Department of Commerce. 2012. "2012 County Tier Designations." North Carolina Department of Commerce. Retrieved July 30, 2012 (http://www.nccommerce.com/research-publications/incentive-reports/county-tier-designations).
- Department of Public Instruction. 2011a. "Governor's School Nomination Packet 2012." North Carolina Governor's School. Retrieved July 30, 2012 (http://www.ncgovschool.org/docs/nomination/2012/complete-packet.pdf).
- Department of Public Instruction. 2011b. "NC School Report Card Resources." NC School Report Cards. Retrieved July 30, 2012 (http://www.ncreportcards.org/src/resources.jsp?pYear=2010-2011).
- Fiscal Research Division. 2009. "Senate Appropriations Committee Report on the Continuation, Expansion and Capital Budgets – Senate Bill 202." North Carolina General Assembly. Retrieved July 30, 2012 (http://www.ncga.state.nc.us/fiscalresearch/Budget_Legislation/budget_legislation_pdfs/2009_JointConferenceCommitteeReport_SB202_2009_08_03.pdf).
- Fiscal Research Division. 2011. "Senate Appropriations Committee Report on the Continuation, Expansion and Capital Budgets – House Bill 22." North Carolina General Assembly. Retrieved July 30, 2012 (http://www.ncga.state.nc.us/fiscalresearch/Budget_Legislation/budget_legislation_pdfs/2011_Money_Report.pdf).
- Fiscal research Division. 2012. "The Joint Conference Committee Report on the Continuation, Expansion, and Capital Budgets – House Bill 950." North Carolina General Assembly. Retrieved July 30, 2012 (http://ncleg.net/sessions/2011/budget/2012/Conference_Committee_Report_2012-06-20.pdf).
- National Conference of Governor's Schools. 2012. "All Governor's School Programs." National Conference of Governor's Schools. Retrieved July 30, 2012 (http://ncogs.org/web/index.php/View-users-list/All-Governor-s-School-Programs).

By Dayne Batten, Christopher Britt, Jennifer DeNeal, and Lauren Hales

The Financial and Business Services Area is in its sixth year of the Research Intern Program. The Program is designed to help build a quality research program within NCDPI to supplement and supply data for discussions related to procedural, process, and policy changes. This year's program included students from Duke University's Master of Public Policy program, The University of North Carolina at Chapel Hill's Master of Public Administration program, and North Carolina State University's Master of Public Administration program. The intern program is managed by Eric Moore (919-807-3731) and Kayla Siler (919-807-3824) | intern_research@dpi.nc.gov.

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