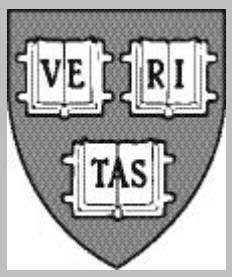

State Merit Scholarship Programs and Racial Inequality

Edited by Donald E. Heller and Patricia Marin
Foreword by Gary Orfield

THE CIVIL RIGHTS PROJECT
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Donald E. Heller
Patricia Marin

Cambridge, MA
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FOREWORD BY GARY ORFIELD

A central dream of American parents is sending their kids to college. What used to be unusual has now become a necessity if young people are to have a secure life in the middle class in a post-industrial economy. As such, one basic goal of higher education policy should be to make certain that this opportunity is not foreclosed by a family's income or wealth. In a society where 40 percent of students are non-White, it is more important than ever to be sure that minority students can go to college. In a society that does not believe in welfare or social supports, and where fairness rests on supposedly equal access to the education needed for economic success, these should be basic principles. In a society where the cost of college is soaring, affordability is a basic dimension of fairness. Unfortunately, it is being lost in too many state policy changes.

Many of our states have been cutting the share of state income going to college education and allocating a larger share of it to relatively new but very rapidly growing programs of "merit" aid. At the same time there has been a huge expansion of federal aid to middle class families and students, mostly in the form of loan subsidies and tax subsidies, which are now far larger than federal aid provided to poor students. In contrast to the period of the l970s, when public four-year college tuitions were low and aid for poor students to go to college was rapidly rising, we have seen a quarter century of tuitions rising much faster than family incomes, family incomes becoming more unequal, huge disparities of wealth and savings by class and race, and a dramatic shrinkage in the proportion of college costs funded by need-based student aid.

In this situation it is surprising that states with relatively weak and unusually expensive public higher education, with severe problems of access for minority students (who are driving the nation's population growth), would choose not to fund access but to provide aid to students extremely likely to go to college without aid—students who have little or no financial need—while not covering access for low income students. Rapidly accumulating research on merit aid programs shows that this is what is happening in most state "merit aid" policies. Since this policy began with the Georgia HOPE Scholarship, there has been a lot of experience and a growing body of analysis. The authors in this report are at the forefront of that work, accounting for a great deal of the serious research showing the racial and ethnic consequences of these policies.

This research, as well as the projected impact of the Massachusetts policies (as shown in Chapter 2), suggests that funding the Adams scholarships in Massachusetts would be a decision to disproportionately aid affluent White students, with little scholarship money available for the state's African American and Latino young people or for students living in poverty. In a state that is resegregating in highly unequal schools, has clear discrimination in its housing markets, has been raising barriers of tests for high school exit and college entry, loses a large share of its minority students before high school graduation, and refuses to adequately fund voluntary transfer policies for students wanting access to suburban schools with good college prep curricula, this use of college subsidies adds to existing racial inequality.

As a teacher of very high achieving students, I would certainly be in favor of giving high achieving students grants if the other, more basic, requirement of assuring that the state's public higher education not be reserved for families with money had been met first. It has not. In these

circumstances I believe that the leaders of higher education should strongly object to a policy that uses public funds in a way that intensifies already serious inequality.

Gary Orfield
Professor, Harvard Graduate School of Education
Director, The Civil Rights Project at Harvard University

CHAPTER 1

STATE MERIT SCHOLARSHIP PROGRAMS: AN OVERVIEW

Donald E. Heller

Two years ago, The Civil Rights Project at Harvard University issued its first report on state-funded merit scholarship programs. *Who Should We Help? The Negative Social Consequences of Merit Scholarships* (Heller & Marin, 2002) examined four of the nation's largest merit programs in Georgia, Florida, New Mexico, and Michigan.[1] In that study, we reported that the dozen states in the nation that awarded broad-based merit scholarships without consideration of financial need spent $863 million on these programs in the 2000-01 academic year.

Since our last report, spending on merit scholarships has continued to grow in these states. The most recent data, from 2002-03, show that the 12 states spent $1.175 billion on their merit aid programs, an increase of 36 percent from just two years ago (National Association of State Student Grant & Aid Programs, 2004). In contrast, these states spent only $349 million on grants awarded based on the financial need of the student and her family, an increase of only 7 percent in the last two years. These need-based grants represented less than a third of what the dozen states spent on merit aid.

Unmet financial need – the gap between the costs of attending college and the resources available to students from their families and from all sources of financial aid – presents a major barrier to college for students from lower-income families. The federal Advisory Committee on Student Financial Assistance found that unmet need is a barrier both to students' initial enrollment in college and to their ability to persist through and earn a degree. The Committee's 2002 report documented the average unmet need facing college students in the mid-1990s. For students from families with incomes below $25,000 annually, unmet need averaged $3,200 for community college students, and $3,800 for those attending a public four-year institution. With the large increases in tuition prices since then and the growth of merit aid, it is likely that these amounts have grown to much higher levels today.

Two more states have announced the creation of merit scholarship programs since we last studied this topic. Table 1-1 summarizes these two new programs, along with the existing 12. The Tennessee Lottery Scholarship program made its first awards this fall, and the first John and Abigail Adams Scholarships are set to be awarded in Massachusetts next fall. Tennessee's program, which will use students' high school grades or students' SAT or ACT scores for awarding the scholarships, is expected to cost $240 million when it is fully implemented in four years (Ness & Noland, 2003). The Adams Scholarships in Massachusetts, which are expected to be awarded using students' scores on the Massachusetts Comprehensive Assessment System tests, will total $50 million when fully implemented in 2008 (see Chapter 2 for an analysis of the Adams Scholarship program). These two programs alone will increase total spending on merit aid by 25 percent above the 2002 level.

A major issue facing many of the states with existing merit aid programs has been a concern about funding sources for the programs. In some states debates have developed over the ability of general fund revenues and lottery sales to continue to grow fast enough to meet the demand for the merit scholarships. In Georgia, projections of lottery sales showed that the funds required to meet the demand for HOPE Scholarships would in the near future outstrip net lottery

[1] *Who Should We Help?* can be found on The Civil Rights Project website at http://www.civilrightsproject.harvard.edu/research/meritaid/fullreport.php

Table 1-1: State Merit Scholarship Programs

Program (year implemented)	Funding Source	Award Criteria	Award Amount
Alaska Scholars Award (1999)	Land leases & sales	Class rank	$2,750 per year at the University of Alaska
Florida Bright Futures Scholarship (1997)	Lottery	GPA and SAT/ACT	Up to full tuition and fees at a FL public institution plus $300, or a comparable amount at a FL private institution
Georgia Helping Outstanding Pupils Educationally (HOPE) Scholarship (1993)	Lottery	GPA	Full tuition and fees at a GA public institution plus $300, or up to $3,000 at a GA private institution
Kentucky Educational Excellence Scholarship (1999)	Lottery	GPA and SAT/ACT	Up to $1,000 per year at a KY public or private institution
Louisiana Tuition Opportunity Program for Students (TOPS) (1998)	General revenues	GPA and ACT	Full tuition and fees at a LA public institution plus up to $800, or a comparable amount at a LA private institution
Massachusetts John and Abigail Adams Scholarship Program (2005)	General revenues	State curricular framework test (MCAS)	Tuition (but not mandatory fees) at any public institution in Massachusetts
Michigan Merit Award Scholarship (2000)	Tobacco settlement	State curricular framework test (MEAP)	One-time award up to $2,500 at a MI public or private institution; $1,000 out of state
Mississippi Eminent Scholars Program (1996)	General revenues	GPA and SAT/ACT	$2,500 at a MS public or private institution
Missouri Higher Education Academic Scholarship Program ("Bright Flight") (1997)	General revenues	SAT/ACT	$2,000 at a MO public or private institution
Nevada Millennium Scholarship (2000)	Tobacco settlement	GPA	$80 per credit hour at a NV four-year public or private institution or $40/$60 per credit hour (lower division/upper division) at a NV community college
New Mexico Lottery Success Scholarship (1997)	Lottery	College GPA	Full tuition and fees at a NM public institution
South Carolina Legislative Incentive for Future Excellence (LIFE) Scholarship (1998)	General revenues and lottery	GPA, SAT/ACT, and class rank	Up to $6,700 at a public SC institution; comparable amount at a SC private institution (award amount cannot exceed tuition charges)
Palmetto Fellows (1998) HOPE Scholarship (2001)			
Tennessee Education Lottery Scholarship Program (2004)	Lottery	GPA or SAT/ACT	Up to $4,000 at a TN four-year public or private institution and $2,500 at a TN two-year institution (see Table 1-2 for more information)
West Virginia Providing Real Opportunities for Maximizing In-State Student Excellence (PROMISE) Scholarship (2002)	Lottery and taxes on amusement devices	GPA and SAT/ACT	Full tuition at a WV public institution or comparable amount at a WV private institution

Sources: (Krueger, 2001; Selingo, 2001), and state program websites.

revenues. The demand growth has come from two sources: 1) increases in the number of students eligible for the awards, and 2) rapidly increasing tuition prices in the state's public institutions of higher education. In the ten years since the formation of the HOPE Scholarship Program in 1993, tuition and fees at the University of Georgia, the state's flagship institution, have increased 81 percent (Washington Higher Education Coordinating Board, 2004). Tuition and fees at Georgia's comprehensive institutions increased approximately 68 percent. Because the HOPE Scholarships provide full tuition and fees (as well as a $300 book allowance), as tuition increases so does the funding required for the program.

After some debate over how best to control the growth in the costs of the HOPE Scholarship Program, the Georgia Legislature enacted a series of reforms earlier in 2004.[2] It tightened the high school GPA eligibility requirements and froze the award for student fees (Georgia Student Finance Commission, 2004). The changes also placed a limit on the number of credit hours a student could earn in college and still remain eligible for the scholarships, and increased the number of "checkpoints" during the student's college career when her GPA would be examined to ensure that she still met eligibility requirements. In addition, the Legislature enacted a series of triggers that would cut the value of the book allowance to students if there is a drop in lottery revenues in future years.

One provision that never received serious consideration by the legislature was the imposition of an income cap on the program. While the HOPE Scholarship program had an income ceiling of $66,000 when it was first implemented in 1993, the cap was raised to $100,000 the second year and eliminated entirely in 1995. A poll of Georgians conducted by the University of Georgia in 2003 found that 51 percent of respondents were in favor of returning to the original income cap of $60,000, and 60 percent would support returning to the $100,000 cap (Carl Vinson Institute of Government, 2003). The legislature refused to enact a cap, however, even though the idea received popular support and the limit would exclude only 15 percent of Georgia families (United States Bureau of the Census, 2004b).

Concerns about funding for merit scholarship programs have been raised in other states as well. In Florida, a projected shortage of lottery revenues and the growth of the Bright Futures Scholarship Program in that state have led to discussions about the structure of the scholarship program.[3] A recent report from the Florida Council of 100 (2003), an influential organization comprised of the heads of many of the state's leading businesses and higher education institutions, recommended tightening the eligibility criteria for the Bright Futures scholarships and turning the savings over to the state's need-based grant program. A key rationale articulated in the report was that much of the money spent on the Bright Futures program was being wasted on students without financial need. Using data from the Florida Council for Education Policy Research and Improvement, a legislatively-appointed panel, the Council of 100 reported that of the 63,000 students across the state who received Bright Futures scholarships in 2000, only 29 percent had financial need. In contrast, 78 percent of the college students who did *not* receive Bright Futures scholarships had financial need that year.

The Council of 100 report also questioned the definition of "merit" used by the state in awarding Bright Futures scholarships:

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[2] See Chapter 4 for more on the recent changes to the Georgia HOPE program.

[3] See Chapter 3 for more on the Florida Bright Futures program.

> In 2001-02, of the programs administered by the Office of Student Financial Assistance, $81.2 million was disbursed to need-based programs, while $174.9 million was disbursed to merit-based programs. We must not allow this out-of-balance trend to continue . . . . Today's Bright Futures program awards academic scholarships to students with SAT averages less than the Florida or national averages! As such, it does not reward excellence, nor does it ensure need-based aid. (p. 6)

Yet even with this support from the business community for changing the Bright Futures program, the Florida legislature refused to tighten the eligibility requirements. One newspaper reported, "Pointing a finger at state lawmakers whom he accused of showing 'a faltering commitment to public education,' State Sen. Ken Pruitt brought his signature yellow school bus and populist campaign to protect Florida's Bright Futures scholarship program to the University of South Florida" (Haber, 2003). Pruitt, chairman of Florida's Senate Appropriations Committee, accused other lawmakers of "breaking a promise to students 'who have worked hard and played by the rules'" (Haber, 2003). Senate president Jim King, at another rally, told the crowd that the Senate would not scale back the program: "It's doing exactly what it was intended to do when we started it and it should never be screwed around with" (Dunkelberger, 2004). Other states, including Kentucky, New Mexico, South Carolina, and Louisiana, have wrestled in recent years with the problem of generating enough funds for merit scholarships (Arnone, 2003; Schmidt, 2004; Shoichet, 2002). None of these states has implemented income caps on the merit aid programs in order to help control program costs. Instead, most have considered or implemented a tightening of the merit criteria, an action that makes it even more difficult for lower-income and underrepresented minority students to qualify for the aid.

Who Should We Help? (Heller & Marin, 2002) examined the impact state merit scholarship programs were having on college participation, with a particular focus on whether these programs help to close the gaps in participation between racial majority and minority students and between rich and poor students. The report concluded by stating:

> Overall, the studies in this report make it clear that the students least likely to be awarded a merit scholarship come from populations that have traditionally been underrepresented in higher education. This hinders the potential to increase college access among minority and low-income students, especially if these scholarship programs continue to overshadow need-based programs. (Marin, 2002, p. 114)

There are indications that some states have taken heed of the conclusions in our earlier report and the research of others that has confirmed our findings. In Tennessee, there was near unanimous agreement on the desire to create some type of merit scholarships in the state after voters passed a ballot referendum in 2002 to allow a lottery for the first time. There was a fierce battle in the legislature, however, over the criteria to be used in awarding the Education Lottery Scholarships.[4] A primary motivation for the scholarship program was the need and desire in the state to increase college participation, particularly among underrepresented youth in Tennessee. After reviewing much of the research on merit scholarships and listening to testimony from

[4] See Ness and Noland (2003) for a description and analysis of this battle.

experts (including some of the authors of the studies in *Who Should We Help?*), the Tennessee legislature debated a number of different proposals for awarding the scholarships.

In the end, the legislature agreed upon a compromise set of eligibility criteria that would minimize the gaps in scholarship qualification rates between rich and poor students and between White and African American students.[5] The criteria ultimately accepted created four types of awards (summarized in Table 1-2). The primary award, the Tennessee HOPE Scholarship, allows students to qualify using their high school grades *or* an ACT or SAT test score (Tennessee Student Assistance Corporation, 2004). Students who qualify for this base award, and come from families with an adjusted gross income of $36,000 or less (the median household income in the state in the 2000 census), can receive an additional $1,000 supplemental award. Similarly, students who are the highest achievers can also receive a General Assembly Merit Scholarship, which also provides an additional $1,000. And students who do not have the academic scores to qualify for the HOPE Scholarship can still qualify for a lesser award (the HOPE Access Grant) with lower grades and ACT or SAT Scores.

Table 1-2: Tennessee Education Lottery Scholarship Program

Category of Award	Eligibility Criteria	Award Amount	Income Cap
HOPE Scholarship	3.0 high school GPA *or* 21 ACT (980 SAT)	$3,000 at four-year inst.; $1,500 at two-year inst.	None
HOPE Access Grant	2.75 high school GPA *and* 18 ACT (860 SAT)	$2,000 at four-year inst.; $1,250 at two-year inst.	$36,000
General Assembly Merit Scholarship	3.75 high school GPA *and* 29 ACT (1280 SAT)	$1,000 supplement to HOPE Scholarship	None
Need-based Supplemental Award	Eligible for HOPE scholarship	$1,000 supplement to HOPE Scholarship	$36,000

Note: Students can qualify for a General Assembly Merit Scholarship or a Need-based Supplemental Award, but not both.
Source: Tennessee Student Assistance Corporation (2004)

The Tennessee program is unique among the states with broad-based merit scholarship programs in combining a means-tested supplemental award with the merit criteria. While Tennessee does have a need-based grant program (which received funding of $46 million in 2002), the legislature recognized that lower-income students (who are disproportionately African American in the state) required extra financial support from the Lottery scholarships in order to afford college (National Association of State Student Grant & Aid Programs, 2004). In a political compromise aimed at gathering broader support for the program in the state, the same $1,000 supplement was offered for the highest-achieving students.

Spurred by these developments in state merit scholarship programs since our last report – including concerns about the viability of funding and the creation of new programs – in this report we continue our research begun in *Who Should We Help?* Following this introduction, the report presents a study I conducted of the nation's newest state-funded scholarship program in Massachusetts. This study includes an examination of how differing criteria for the award of the scholarships will impact who receives the aid. Chapter 3, by Patricia Farrell of Michigan State University, looks at merit scholarship programs in Alaska, Florida, Kentucky, Michigan, and

[5] Whites and African Americans dominate the population in the state. The two groups combined represented 97 percent of the population in the state in the 2000 census (United States Bureau of the Census, 2004a).

New Mexico to analyze whether merit scholarship recipients are representative of the general population of high school graduates in each state.

The next two chapters present new studies of merit scholarship programs that were analyzed in our first report. Chapter 4, by Christopher Cornwell and David Mustard of the University of Georgia, takes a new look at the Georgia HOPE Scholarship program utilizing updated data and includes a projection of the impact of the changes agreed upon by the Georgia Legislature. Melissa Binder and Philip Ganderton of the University of New Mexico then provide a new analysis of data from the New Mexico Lottery Scholarship program, with a focus on the impact of the program on student retention in college.

Finally, the report closes with a study by Edward P. St. John of Indiana University. St. John provides a summary of merit scholarship programs in Indiana and Washington, programs that use very different measures of merit and have differing program structures than those in the rest of the nation.

The studies in this report shed light on the intricacies of merit aid programs and some of the positive benefits they may bring to states and their students. In general, however, the studies here confirm what was found in our earlier report, that traditional measures of merit – including grades, standardized test scores, and curricular framework test scores – result in scholarships that are awarded disproportionately to students who were likely to attend college even without the public assistance. In contrast to need-based aid programs, which have been demonstrated to have an important role in promoting college access and attainment for underrepresented students, these merit aid programs do little to help close the gaps in college participation in the states.[6] This continues to raise the question of whether merit scholarship programs, as they have been implemented in most states, are an efficient, effective, and equitable use of public funds, particularly in an era when state budgets are so greatly constrained. We believe that this report provides further evidence that the answer to this question remains "no."

At a time when there is a severe shortage of state funding for higher education, when tuition prices have been rising rapidly and neither the federal nor the state need-based programs have kept pace with price increases, many fully-qualified minority and low-income students are not going to college, not having the opportunity to attend a four-year institution, or not completing college because of financial barriers. The first priority of a financial aid system must be to make sure that we do not allocate access to college in a way that perpetuates racial and class inequality of opportunity.

This priority is best stated by the opening section of Title IV of the Higher Education Act of 1965, which authorizes the federal student financial assistance programs:

> It is the purpose of this part to provide, through institutions of higher education, educational opportunity grants to assist in making available benefits of higher education to qualified high school graduates *of exceptional financial need, who for lack of financial means of their own or of their families would be unable to obtain such benefits without such aid* (emphasis added).

Financial aid in the nation must return to this purpose.

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[6] See Heller (1997), Jackson and Weathersby (1975), and Leslie and Brinkman (1988) for reviews of the literature on financial aid and college access.

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CHAPTER 2

THE DEVIL IS IN THE DETAILS: AN ANALYSIS OF ELIGIBILITY CRITERIA FOR MERIT SCHOLARSHIPS IN MASSACHUSETTS

Donald E. Heller

Introduction

In 1647, the Massachusetts General Court passed the Old Deluder Satan Act. Under this law, towns in the Massachusetts Bay Colony with at least 50 households were required to provide a tutor in reading and writing, and towns with at least 100 households were required to operate a grammar school (Heck, 2004). With this act, Massachusetts became the first colony to mandate publicly-provided education at the local level.

Three hundred and fifty-seven years later, on January 15, Republican Governor Mitt Romney of Massachusetts presented his State of the State Address to the Massachusetts legislature. Among the new initiatives the governor announced was the John and Abigail Adams Scholarship Program, named after the second president of the United States and his wife, two of Massachusetts's most distinguished citizens. In the governor's words:

> I want our best and brightest to stay right here in Massachusetts… . Students who score among the top one-quarter of those who take the MCAS [the Massachusetts Comprehensive Assessment System] will be given four years at the University of Massachusetts or any state or community college, tuition free.
>
> There's more. Any student who scores in the top 10 percent will be given four years of free tuition and a $2,000 annual payment to help pay for fees. This Adams Scholarship Program will cost about $50 million a year by year four.
>
> And it's worth every dime (Romney, 2004b, pp. 3-4).

With this, Massachusetts became the latest state to either offer or propose a merit-based scholarship program similar to those described in Chapter 1 of this report. After first proposing the program in the State of the State address, Romney provided more details about his proposal (Romney, 2004a). The program would apply only to graduates of public high schools in the Commonwealth. To receive free tuition every year while in college, students would have to maintain a 3.0 grade point average and a 3.3 grade point average to receive the tuition plus $2,000 bonus annually. Students could maintain the scholarships for only four years.

The Massachusetts Comprehensive Assessment System, or MCAS, examinations are the state's curricular frameworks tests. The MCAS is administered to students in the following grades and subject areas:

- 3 – reading
- 4 – English language arts and math
- 6 – math
- 7 – English language arts
- 8 – English language arts, math, and history/social science
- 10 – English language arts and math

Students' raw scores on each test are converted to a scale score, and the scale scores are converted to one of four performance levels: Advanced, Proficient, Needs Improvement, and Failing. Students must achieve a performance level of needs improvement or better on both the 10th grade English and math tests to graduate and receive a diploma from a public high school. If students do not achieve this level in the 10th grade, they have four more opportunities to retake the test in 11th and 12th grade.

Less than a week after the governor first proposed the Adams Scholarship Program, he appeared at Everett High School, a school in a working-class suburb of Boston, to push the scholarship program. There he stated that "The new Adams scholarship will make the dream of obtaining a college education a reality for thousands of Bay State students and keep our most talented students right here in Massachusetts" (Romney, 2004a).

Romney's proposal, however, was met with little enthusiasm from the Democratically-controlled Massachusetts legislature and others. In March, *The Boston Globe* published a story based on an analysis of MCAS data, claiming in a front-page headline that "Romney's scholarship plan favors richer school districts; suburban Whites would largely be tuition winners" (Vaishnav & Dedman, 2004). Critics raised concerns about both the fairness of the program and the source of the funds to pay for it (Greenberger, 2004). State representative Peter Larkin, vice chairman of the House Ways and Means Committee, derided Romney's proposal, calling it the "Wellesley education relief fund," making reference to a suburban Boston community with high MCAS scores and the third-highest median income of any high school in the state (Vaishnav, 2004b). The chairman of the state's Board of Higher Education, Stephen Tocco, praised the proposal, however, claiming "We do need to focus on young people and reward them on good scholarship" (Vaishnav, 2004b), and "I don't believe you can achieve greatness without rewarding merit" (Vaishnav, 2004a).

The Massachusetts legislature did not include the Adams Scholarship Program in its fiscal year 2005 budget, but the Board of Higher Education was more accommodating. Because the Board has the authority to offer tuition vouchers to any category of students it chooses, at its June 15th meeting it approved the scholarship program by a vote of 8 to 2.[1] As approved by the Board, the program would award the first scholarships to students graduating from high school in 2005.

The Board does not have the authority, however, to waive mandatory fees that students pay, which in Massachusetts public colleges and universities have come to dwarf tuition costs. For example, in the 2003-2004 academic year, tuition at the University of Massachusetts at Amherst, the Commonwealth's flagship institution, was $1,714 but fees were $7,294. The Board of Higher Education also could not enact the additional $2,000 scholarship to students scoring in the top 10 percent on the MCAS tests, because this would require an appropriation of funds from the legislature.[2]

A recent report titled *Measuring Up 2004*, conducted by the National Center for Public Policy and Higher Education (2004), graded every state in the nation on a number of measures related

[1] The Board members are appointed by the governor.

[2] Neither the governor nor the Board of Higher Education has proposed scholarships for students attending out-of-state institutions or private colleges in Massachusetts.

to higher education. Massachusetts fared very well in this report card, receiving "A" grades in four of five categories. However, Massachusetts received an "F" in the fifth category, affordability. The report includes a set of questions for policymakers in each state, and two of the questions for Massachusetts were:

- Can the state use financial aid programs more effectively to meet the needs of students from low-income families?
- Can the state close the gaps in preparation and college enrollment between whites and minority ethnic students, and between high- and low-income students? (p. 4)

This chapter will model the potential distribution of the Adams Scholarships to students in Massachusetts, using data from the 2002 cohort of 10th grade students who took the MCAS tests. Data from the 2002 10th grade cohort are the most recent available from the Massachusetts Department of Education. The analysis will examine the distribution of scholarships (both the tuition scholarships and the proposed $2,000 bonus) based on a number of school characteristics – including median family income in the school district and percentage of minority students in the school – and student characteristics – including race, disability status, eligibility for free or reduced lunch, and parental education levels. The analysis will use three different methodologies for calculating students' rank among the top 25 percent and top 10, and analyze the scholarship eligibility of students using these methodologies.[3] The goal of this study is to examine the likely distribution of the scholarships in Massachusetts, and to help determine whether the Adams Scholarship Program is likely to address the two questions raised in *Measuring Up 2004*.

Data and Research Methods

The 2002 MCAS research files were obtained from the Massachusetts Department of Education (MDOE). These files are student-record datasets with the MCAS scores of all 10th graders in public schools in the Commonwealth. The MDOE provides two separate files, both with the test score data – including each student's responses on every test item, as well as the student's raw score, calculated scale score, and calculated performance level – as well as the student's answers to the MCAS student questionnaire, administered with the MCAS tests. The first file provides information about the student, including race, gender, disability status, free or reduced lunch eligibility, and limited English proficiency status, but no information about which school the student attended. The second file provides the school and district the student attended, but no student demographic data.

The district information for each student was used to merge the MCAS files with school district data from the National Center for Education Statistics (NCES). Data from NCES were used to

[3] The Board of Higher Education has not approved a top 10 percent bonus award, as described earlier. However, because the Governor has expressed an interest in implementing the bonus award, this study does examine the potential distribution of such an award if it is implemented.

obtain the median family income in 1999 for each school district in Massachusetts, along with the percentage of students in each school in 2002 who were from minority families (African American, Hispanic, and Native American) (National Center for Education Statistics, 2004a, 2004b).

Table 2-1 provides descriptive information about the students in the 2002 10th grade cohort of test-takers. The MCAS datafiles yielded a total of 68,662 students attending 393 public schools in 317 districts (including charter schools, alternative schools, etc.) in the Commonwealth. White students are the majority of students in Massachusetts, comprising 72 percent of all students.

Underrepresented minorities – African Americans, Hispanics, and Native Americans – totaled 14 percent of students in the state. Three percent of students were identified as limited English proficient, and 11 percent as having some form of disability.[4] Just under 15 percent of students were enrolled in the federal free or reduced lunch programs in their schools.[5]

Almost a quarter of the 10th graders did not have a parent or guardian with any college degree, while 37 percent had at least one parent with a bachelor's degree or higher level of education. Median family income in the school district attended by students in the cohort was $62,095, very close to the overall median family income of $61,664 in Massachusetts in 1999 (United States Bureau of the Census, 2003). The median percentage of underrepresented minorities in each school was 6 percent.

The Massachusetts Board of Higher Education has not yet established the criteria that will be used to award the scholarships to the first recipients, those graduating from high school in the spring of 2005. The language used to describe the scholarship recipients generally says "top 25 percent *statewide*," but it is unclear exactly how this would be calculated. It is fair to assume, however, that the state will use some combination of the students' scores on the English and math MCAS tests, which are required of all public school students in order to graduate with a high school diploma (and the great majority of students take the test at the first required administration in the 10th grade).

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[4] A limited English proficient student is defined as "a student whose first language is a language other than English who is unable to perform ordinary classroom work in English" (Massachusetts Department of Education, 2003, p. 2). Disabilities include such categories as learning, visual impairment, hearing impairment, emotional disturbance, physical, autism, and developmental delay. Approximately two-thirds of all disabled students were categorized as learning disabled.

[5] Eligibility for free and reduced lunches is based on federal poverty guidelines. Students eligible for free lunch must come from families with incomes at or below 130 percent of the federal poverty level; those eligible for reduced price lunches must have incomes at or below 185 percent of poverty level. In the 2001-2002 school year, the income cutoffs for a family of four were $22,945 for free lunch and $32,653 for reduced price lunch (U.S. Department of Agriculture Food and Nutrition Service, 2001).

Table 2-1: Descriptive Statistics for MCAS 2002 10th Grade Cohort

Category	Distribution
Number of usable observations	68,662
Race	
Asian or Pacific Islander	4.2%
African American	6.6
Hispanic	7.2
Native American	0.3
White	71.9
More than one race	4.1
Other race	2.6
Missing	3.1
Gender	
Female	48.7%
Male	50.0
Missing	1.3
Educational status	
Not disabled or LEP	85.7%
Disabled	11.4
Limited English proficiency	2.9
Enrolled in free or reduced lunch program	14.6%
Highest education level of parent or guardian	
Did not finish high school	4.7%
Graduated from high school	19.8
Graduated from a two-year college, business school or technical school	12.3
Graduated from a four-year college	20.4
Has an advanced degree	16.8
Don't know/missing	26.0

	Mean	Median	SD	Minimum	Maximum
Median family income in district	$65,950	$62,095	$21,934	$31,809	$181,041
Percentage underrepresented minorities in school	18.0%	6.4%	24.6%	0.0%	100.0%
Math scale score	236.7	234	19.3	200	280
English scale score	241.7	242	17.6	200	280
Sum of math and English scale scores	478.0	478.9	34.4	400	560

Source: Author's calculations from Massachusetts Department of Education (2004) and National Center for Education Statistics (2004a, 2004b)

To examine how different scholarship eligibility rules would affect the distribution of scholarships, three different methods of calculating eligibility were modeled. All three methods use the sum of the student's scale scores on the math and English MCAS tests to determine their ranking, using the data from the spring 2002 cohort of 10th grade test-takers. The three methodologies used to determine the top 25 percent of students who would be eligible for the scholarship are:

1. State: All 10th grade public school students in the state who took both MCAS tests were ranked from highest score (sum of the English and math scale scores) to lowest, and the score of the student at the 75th percentile was determined. All 10th grade students across the state who scored at or above this cutoff score are eligible for the scholarships.

2. District: All 10th grade students in a public school district who took both MCAS tests were ranked from highest score to lowest, and the score of the student at the 75th percentile in each district was determined. All 10th grade students in the district who scored at or above this cutoff score are eligible for the scholarships.

3. School: All 10th grade students in each public school who took both MCAS tests were ranked from highest score to lowest, and the score of the student at the 75th percentile in each school was determined. All 10th grade students in that school who scored at or above this cutoff score are eligible for the scholarships.

The scholarship qualification rates were calculated including students who were missing a math and/or English score, using the formula

$$Qualification\ rate = \frac{\#\ of\ students\ scoring\ at\ or\ above\ scale\ score\ cutoff}{total\ \#\ of\ students,\ including\ those\ without\ one\ or\ two\ tests}$$

Thus, for a given group and for all students, the percentage qualifying for the scholarships could be less than 25 percent because of the inclusion of students with missing scores in the denominator of the calculation.[6] Conversely, the percentage qualifying could also exceed 25 percent, because of the inclusion of all students who were at the cutoff score.

There are some limitations to this analysis. Under current MCAS rules, students retake the test(s) in the 11th and/or 12th grade only if they did not pass one or both tests. Thus, they could only improve their chance at gaining a scholarship if they initially failed the test(s), but not if

[6] Students who had not taken both tests in the 10th grade, or students who failed either test, would have the opportunity to retake the test(s). The percentages of students who had taken both tests as 10th graders were not consistent among the racial groups; for example, while 94 percent of Asian American students and 98 percent of White students had taken both as 10th graders, only 89 percent of African Americans and 85 percent of Hispanics had done so. This indicates the presence of existing inequities across racial/ethnic groups when using the MCAS. Students who had not taken both tests are included in the denominator of the qualification rate calculation in order to get an accurate picture of the proportion of qualifiers among the *entire* population group, rather than just the proportion that had taken both tests in the 10th grade.

they passed the test(s) in the 10th grade but did not qualify for the scholarship. It is unclear how the Board of Higher Education will treat re-test scores.[7]

Also, *qualification* for a scholarship does not imply that a student will *use* a scholarship. Unlike the merit scholarship programs in Florida and Michigan (as well as other states), where students can receive at least a partial award if they attend a private institution in state, recipients of the Adams Scholarships can use them only at a public institution in the state under the program approved at the June meeting of the Board of Higher Education. As Governor Romney and other defenders of the program have pointed out, many of the students who score high enough on the MCAS to qualify for a scholarship are likely to enroll in a private institution (in Massachusetts or another state) or an out-of-state public institution, thus foregoing the scholarship. The governor is probably correct that few of these students are likely to be induced to attend a public institution because of a scholarship that is worth at most less than $2,000 per year, in the face of college costs well in excess of $10,000 at a public four-year institution in the Commonwealth. Nonetheless, it is the governor himself who in his State of the State address pitched the program because "I want our best and brightest to stay right here in Massachusetts."

Adams Tuition Scholarship Qualifiers

Table 2-2 shows the percentage of students who would qualify for the Adams scholarships, by race, for each ranking methodology. Selecting the top 25 percent of students across the state provides the largest gap in qualification rates between White and Asian American students, and minority students. While 28 percent and 34 percent of White and Asian American students qualify for the scholarships, respectively, only 5 percent of African American and 4 percent of Hispanic students would qualify.[8] White students are five times more likely to qualify for a scholarship than African American students, and six times more likely than Hispanic students.

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[7] Another problem with the re-test process is that the fall re-test for 11th and 12th grade students who failed the MCAS is conceptually different from the Spring administration given to all students. The fall re-test only uses "easier" questions that allow students to qualify as "Failing" and "Needs Improvement," but not achieve the levels of "Proficient" and "Advanced" that would most likely be necessary to qualify for the top 25 percent. How such differences would be taken into account by the Adams Scholarships is unclear; one option could be that students could qualify for a high school diploma by passing the fall re-test, but then take the spring administration to qualify for the Adams scholarship.

[8] In all tables in this report showing scholarship qualification rates for different groups, a Pearson chi^2 test was conducted to test the null hypothesis that the proportion of students qualifying in each group (race, socioeconomic status indicator, etc.) and in each ranking method was unrelated to group membership. In each case, this null hypothesis was rejected at a level $p \leq 0.001$.

Table 2-2: Percentage of Students Qualifying for Adams Scholarships, by Race, 2002

	State	District	School
Asian or Pacific Islander	34.2%	35.7%	31.8%
African American	5.0	11.3	15.4
Hispanic	4.3	11.2	14.2
Native American	9.8	14.2	14.8
White	28.2	28.0	27.6
Other race	17.8	18.0	17.7
More than one race	22.5	26.2	26.1
Race missing	2.6	5.0	8.0
Total – all races	23.9	24.9	25.1

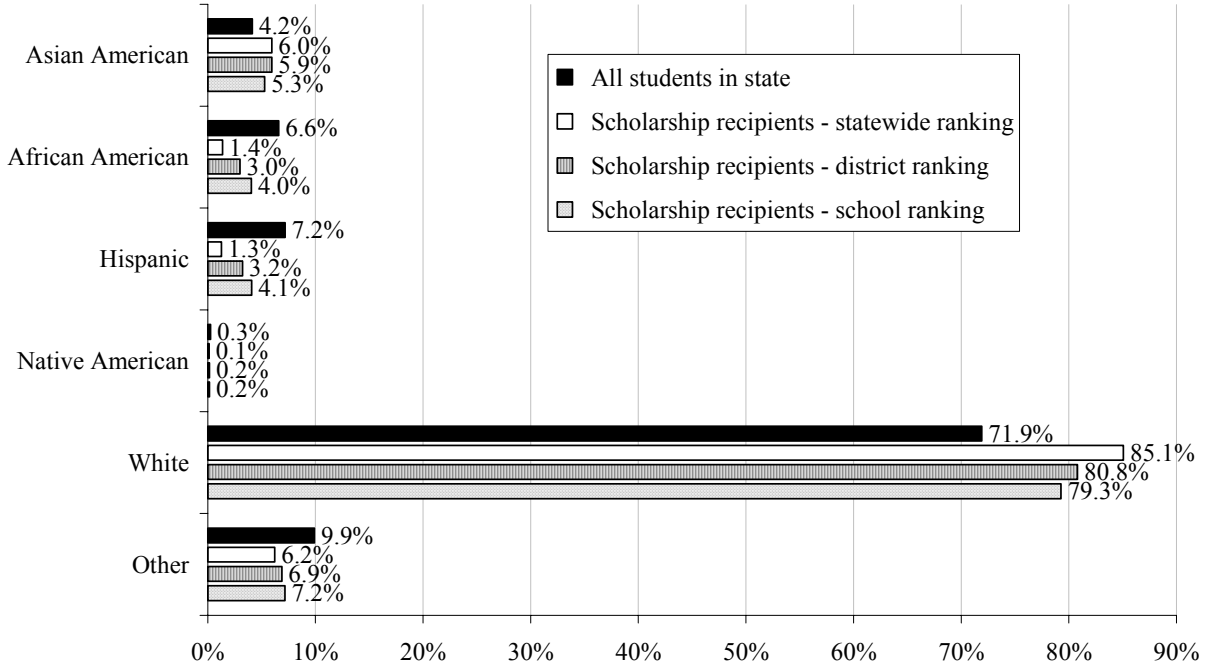
Source: Author's calculations from Massachusetts Department of Education (2004)

Because Massachusetts high schools tend to be segregated by race (see, for example, Lee, 2004), especially within the larger cities in the state, minority students fare better when the rankings are accomplished by district or by school. Ranking within district would increase the qualification rate for African American and Hispanic students to 11 percent each, with only a 0.2 percentage point reduction in the rate at which White students would qualify for the scholarships (compared to the statewide ranking). Ranking students within schools would increase the qualification rates of African American and Hispanic students even further, to approximately three times the rate at which they would qualify under a statewide ranking.

Using the statewide methodology, a total of 454 underrepresented minority students would qualify for the scholarships. This would increase to 1,089 by ranking all students within each district, and 1,425 African American, Hispanic, and Native American students by ranking students within each school. The almost 1,000 additional qualifiers between the statewide and school ranking methods represent potentially $1.7 million in extra scholarship assistance for minority students in the state.

The disproportionate distribution of the scholarships can best be seen when examining the proportion of students from each race in each category. Figure 2-1 shows the proportion of each group among all 68,662 students, along with the proportion in each of the three methodologies for awarding the scholarships. African Americans represent 6.6 percent of all 10th grade students in the 2002 MCAS files, but would receive only 1.4 percent of the scholarships under a statewide ranking. This indicates that their representation among all 10th grade students was more than four times their representation among scholarship qualifiers. Hispanics, who compose more than 7 percent of all students, receive only 1.3 percent of the scholarships using statewide ranking; their representation among 10th graders is more than five times their representation of scholarship qualifiers. In contrast, Whites would receive 85 percent of the scholarships, much greater than

the 72 percent of all students they represent. Under a district or school ranking method, African American and Hispanic students would see an increase in their representation, but under all three methods the representation of minority students among scholarship qualifiers would still fall well short of their representation among all 10th grade test-takers.



Source: Author's calculations from Massachusetts Department of Education (2004)

Figure 2-1: Proportion of Total Students in Each Category, by Race, 2002

Table 2-3 shows the proportion of students who would qualify for the scholarships under each ranking methodology for two different measures of socioeconomic status: 1) whether the student was enrolled in the federal free or reduced lunch programs (15 percent of students across the state were enrolled); and 2) the level of education of the student's parent or guardian. If the education levels of both parents or guardians were reported, the highest was used. Fewer than 7 percent of students enrolled in the free or reduced lunch program, indicating they were from a family with income below $32,653 (for a family of four people – see footnote 5), would qualify for a scholarship under the statewide ranking method, compared to 27 percent of students not enrolled in the free or reduced lunch program.

Table 2-3 also shows that there is a strong relationship between parental education and the chances a student would qualify for a scholarship. Statewide, the proportion of students qualifying for the scholarships who had at least one parent with an advanced degree was almost four times that of students whose parent or guardian possessed only a high school diploma. The socioeconomic segregation in the state causes students whose parents have lower levels of education to fare slightly better when the rankings are conducted within schools or districts, but

even these methodologies still provide a large advantage for students whose parents are more educated.

Table 2-3: Percentage of Students Qualifying for Adams Scholarships, by Socioeconomic Status, 2002

Category	State	District	School
Free/reduced lunch program			
Not enrolled	26.9%	26.4%	26.3%
Enrolled	6.6	15.8	17.7
Highest level of parental education			
Not a high school graduate	5.2%	13.3%	15.2%
High school graduate	12.8	20.2	20.3
Graduated from a two-year college, business school or technical school	17.6	23.9	23.7
Graduated from a four-year college	35.8	33.2	32.4
Advanced degree	48.7	38.7	37.6
Don't know/missing	13.5	15.6	17.1

Source: Author's calculations from Massachusetts Department of Education (2004)

Students with a disability or with limited English proficiency (LEP) are also much less likely to qualify for the scholarships, compared to other students. Table 2-4 shows that even under a school ranking system, fewer than 6 percent of disabled students and fewer than 5 percent of LEP students would qualify for a scholarship.

Table 2-4: Percentage of Students Qualifying for Adams Scholarships, by Educational Status, 2002

Category	State	District	School
Disabled	2.9%	5.0%	5.5%
Limited English proficiency	1.4	2.9	4.7
Not disabled or LEP	27.5	28.3	28.3

Source: Author's calculations from Massachusetts Department of Education (2004)

The relationship between school and district characteristics and scholarship qualification can be seen in Table 2-5. Under a system ranking all students across the state, the average student qualifying for a scholarship was in a district with a median family income of $77,634 and a school with a population of underrepresented minority students (African American, Hispanic, and Native American) of only 9 percent, while the average non-qualifier was in a district with a median income more than $15,000 less and in a school with underrepresented minority students comprising over one-fifth of all 10th graders.[9] Changing the methodology to one that awards the scholarships based on a ranking of students within districts, or within schools, closes the gap in these school and district characteristics between scholarship qualifiers and non-qualifiers.

Table 2-5: Average Income and Percentage of Minority Students in Districts and Schools of Scholarship Qualifiers and Non-Qualifiers, 2002

Category	State	District	School
Average median family income in district			
Scholarship qualifiers	$77,634	$66,996	$66,852
Non-qualifiers	61,714	65,604	65,648
Average % underrepresented minorities in school			
Scholarship qualifiers	9.0%	14.6%	16.9%
Non-qualifiers	20.9	19.1	18.4

Source: Author's calculations from Massachusetts Department of Education (2004) and National Center for Education Statistics (2004a, 2004b)

The relationship between median incomes in a school district and the rate at which students qualify for the scholarships can further be seen in Table 2-6. All the students in the state were ranked according to the median family income in their district and then divided into five quintiles. For school districts in the lowest income quintile, median incomes ranged from a low of $31,809 (Lawrence) to $45,309 (Gill-Montague). The scholarship qualification rate for students in these school districts would be 9.9 percent using a statewide ranking system. In contrast, the school districts in the highest income quintile range from a median income of $82,676 (Chelmsford) to $181,041 (Weston), with an average of just over $100,000. Over 50 percent of students in these wealthiest school districts would qualify for the scholarships under a statewide ranking system. There is a strong relationship between median income in the district and scholarship qualification rates; as district median incomes rise, so do qualification rates.

Changing to a district or school ranking method greatly closes the gap in qualification rates between rich and poor districts. While qualification rates still increase as income increases, the

[9] It is important to note here that the median income data from the U.S. Department of Education represent the weighted median income of *all* families in the district, not just those families with children enrolled in the public schools.

gap between the richest and poorest districts is much smaller under either of these ranking methods than when using statewide ranking.

Table 2-6: Scholarship Qualification Rates by Income Quintile, 2002

	District median income			Scholarship qualification rates		
Quintile	Lower limit	Average	Upper limit	State	District	School
Bottom	$31,809	$41,111	$45,309	9.9%	22.6%	23.3%
Second	45,505	51,953	59,088	18.6	24.5	24.7
Third	59,112	62,275	66,486	22.3	25.0	25.1
Fourth	66,553	73,079	82,190	31.6	25.8	25.8
Top	82,676	100,427	181,041	50.1	26.3	26.3

Source: Author's calculations from Massachusetts Department of Education (2004) and National Center for Education Statistics (2004a, 2004b)

Adams $2,000 Bonus Qualifiers

The $2,000 bonus awards proposed by Governor Romney would be awarded to students scoring in the top 10 percent on the MCAS. While at first glance this amount may seem like a small add-on to the primary Adams Scholarships, one must remember that at current tuition rates in Massachusetts's public colleges and universities, the $2,000 bonus would exceed the value of the Adams Scholarship itself.

To determine eligibility for the bonus awards, a similar methodology was used as in the analysis of the top 25 percent group. Rather than establishing the cutoff for each group – state, district, and school – at the 75th percentile, the cutoff score at the 90th percentile was calculated. All students with a summed English and math scale score at or above this cutoff were deemed eligible for the bonus award.

Table 2-7 shows the percentage of students under each methodology who would qualify for the $2,000 bonus award in each racial group. Under a statewide calculation, only 1 percent each of African American and Hispanic students would qualify for the bonus awards, while 12 percent of White students and 17 percent of Asian American students would qualify. Calculating the top 10 percent within each district or school, rather than statewide, increases the proportion of African Americans and Hispanics qualifying for the awards, but there would still be a large gap in qualification rates between racial minority and White students.

Table 2-7: Percentage of Students Qualifying for $2,000 Bonus Awards, by Race, 2002

	State	District	School
Asian or Pacific Islander	16.9%	17.0%	15.3%
African American	1.2	3.1	5.3
Hispanic	1.1	3.2	4.6
Native American	1.6	4.9	6.0
White	11.9	12.1	11.8
Other race	7.7	7.9	7.4
More than one race	9.5	10.7	11.1
Race missing	0.8	1.8	3.3
Total – all races	10.0	10.6	10.5

Source: Author's calculations from Massachusetts Department of Education (2004)

Table 2-8 shows that students in lower socioeconomic classes are also much less likely to qualify for the bonus awards. For example, under a statewide ranking system, only 1.6 percent of students enrolled in the free or reduced lunch program would qualify for the $2,000 bonus awards, as compared to 11.4 percent of students not enrolled in this program. Moving to a district or school ranking system would close the gap between these two groups, but a large gap would still exist.

For students whose parents had not graduated from high school, only 1.1 percent would qualify for the bonus awards under a statewide ranking, as contrasted with one-quarter of students with one or more parents holding an advanced degree. The relationship between parental education and award qualification is consistent under any of the three methodologies for calculating eligibility, but the gaps are lessened under a district- or school-based system.

No matter which ranking methodology was used, no more than 2 percent of disabled or LEP students would qualify for awards, as compared to over 11 percent of students who were not disabled or LEP.

Table 2-8: Percentage of Students Qualifying for $2,000 Bonus Awards, by Socioeconomic and Educational Status, 2002

Category	State	District	School
Free/reduced lunch program			
Not enrolled	11.4%	11.4%	11.2%
Enrolled	1.6	5.7	6.8%
Highest level of parental education			
Not a high school graduate	1.1	3.9	5.1
High school graduate	3.4	7.6	7.6
Graduated from a two-year college, business school or technical school	5.2	8.8	8.7
Graduated from a four-year college	14.9	14.6	14.1
Advanced degree	25.0	19.3	18.1
Don't know/missing	5.4	6.0	7.0
Educational status			
Disabled	0.7	1.9	2.0
Limited English proficiency	0.2	0.5	1.5
Not disabled or LEP	11.6	12.0	12.0

Source: Author's calculations from Massachusetts Department of Education (2004)

Table 2-9 shows the relationship between the median income in the district and qualification for the bonus awards. Under a statewide ranking system, only 3 percent of students in districts in the bottom median family income quintile would qualify for the bonus awards. Over one-quarter of students in districts with the highest 20 percent of family incomes would qualify for the bonus awards. A district- or school-based ranking methodology would almost entirely eliminate these gaps in qualification rates.

Table 2-9: $2,000 Bonus Qualification Rates by Income Quintile, 2002

	District median income			Scholarship qualification rates		
Quintile	Lower limit	Average	Upper limit	State	District	School
Bottom	$31,809	$41,111	$45,309	3.0%	9.7%	9.6%
Second	45,505	51,953	59,088	6.3	12.3	10.3
Third	59,112	62,275	66,486	8.4	10.6	10.6
Fourth	66,553	73,079	82,190	12.9	10.9	10.9
Top	82,676	100,427	181,041	25.5	11.4	11.4

Source: Author's calculations from Massachusetts Department of Education (2004) and National Center for Education Statistics (2004a, 2004b)

Discussion and Recommendations

While the Massachusetts Board of Higher Education is still debating how to structure the Adams Scholarship program, the analysis here has demonstrated that the way the program is structured can have a large impact on the distribution of the scholarships. While none of the three ranking methodologies would allow 25 percent of minority students to qualify for the scholarships – the proportion established by the scholarship program – more than three times as many African American and Hispanic students would qualify for the scholarships if students are ranked within schools, rather than statewide. But even a school-wide ranking results in a disproportionately small share of awards going to minority students. The same pattern is evident when other student characteristics are examined. Students from poorer families, educationally disadvantaged students, students whose parents or guardians are less educated, and those attending schools in poorer districts or with higher percentages of minority students – all are much less likely to qualify for the scholarships. But their chances are all improved if rankings are conducted within schools or districts, rather than statewide.

There is little doubt that the Adams Scholarship program, as currently envisioned, is unlikely to help the Commonwealth raise its "F" grade for affordability in the *Measuring Up 2004* report. The program is unlikely to effectively meet the financial needs of low-income students, nor is it likely to close the gaps in college enrollment noted in that report. The reasons for this are two-fold. First, as this study shows, proportionally few of the scholarships are likely to be awarded to students from lower-income and minority families. Second, for many poor students, the scholarship – even if they are able to qualify for it – is unlikely to make the difference in their college attendance in light of college costs, including tuition, fees, room, and board, that exceed $10,000 at most of the public four-year institutions in Massachusetts.

In an earlier study conducted for The Civil Rights Project (Heller & Rasmussen, 2002), I examined the qualification rates for state-sponsored merit scholarships of students in Florida and Michigan. Table 2-10 compares the results from those two states with the findings here. In 1998, 26 percent of high school graduates in Florida qualified for a Bright Futures Scholarship through a combination of high school grades and SAT or ACT scores, a rate very close to that of the proposed program in Massachusetts. African Americans and Hispanics in Florida fared better than would their counterparts in Massachusetts under a statewide ranking system, both in absolute terms as well as in comparison to White students. Ranking students by district or school would improve the lot of Massachusetts's African American students compared to those in Florida, but the qualification rate of Hispanic students in the Commonwealth would still fall below that of Florida's Hispanics.

Table 2-10: Comparison of Florida, Michigan, and Massachusetts Merit Grant Programs

			Massachusetts		
	Florida	Michigan	Statewide	District	School
Overall qualification rate	26%	31%	24%	25%	25%
White qualification rate	32	34	28	28	28
African American qualification rate	9	8	5	11	15
Hispanic qualification rate	18	25	4	11	14
Ratio of White to African American rate	3.6 to 1	4.3 to 1	5.6 to 1	2.5 to 1	1.9 to 1
Ratio of White to Hispanic rate	1.8 to 1	1.4 to 1	7.0 to 1	2.5 to 1	2.0 to 1

Source: Author's calculations from Massachusetts Department of Education (2004) and Heller & Rasmussen (2002)

Approximately 31 percent of 11th graders in 1999 qualified for a Michigan Merit Award, which bases the scholarship on a state curricular frameworks test similar in structure to that of the MCAS.[10] The ratio of the qualification rate for White students in Michigan was approximately four times that of African Americans, a smaller gap than a statewide ranking in Massachusetts would produce for the Adams scholarships. Hispanics in Michigan, similar to those in Florida, had a qualification rate much closer to Whites than would Hispanics in Massachusetts under the statewide ranking. Moving to a district- or school-based ranking in Massachusetts would close the gap between African Americans and Whites to a ratio less than in Michigan, but Hispanics in Massachusetts would still be disadvantaged compared to those in Michigan.

The analysis in this study has found that the John and Abigail Adams Scholarship Program – no matter which method is used for ranking the students based on their MCAS scores – will result in

[10] The Michigan test, the Michigan Educational Assessment Program, has four subtests in math, science, reading, and writing. Students qualify for the scholarship by scoring at a proficiency level of one or two (out of four levels) on all four tests.

a highly inequitable distribution of the scholarships. Underrepresented minority students, students from lower socioeconomic status families, and educationally-disadvantaged students – all will qualify for the scholarships at much lower rates than will more advantaged students. While using a district- or school-based ranking method to determine the top 25 percent of students helps to shrink the gap in qualification rates, the use of the MCAS test for awarding the scholarships causes fundamental inequities in their distribution.

The distribution of the Adams Scholarships (and bonus awards) is of particular concern when examined in light of the research on college access and financial aid. Nationwide, over 95 percent of students graduating from high school in 1992 from families in the top socioeconomic quartile attended college, compared to only 50 percent of students from the bottom socioeconomic quartile (Ingels, Curtin, Kaufman, Alt, & Chen, 2002). Sixty percent of the upper quartile students went on to earn a bachelor's or advanced degree, while less than 8 percent of their counterparts from the bottom socioeconomic quartile were able to attain this level of education. Similar gaps exist in the educational attainment of underrepresented minority students compared to White and Asian American students.

Research on financial aid has consistently shown that need-based grants are the best mechanism for promoting the college access of students who historically have been underrepresented in higher education.[11] In our earlier study on state merit scholarships, we concluded that:

> The studies in this report make it clear that the students least likely to be awarded a merit scholarship come from populations that have traditionally been underrepresented in higher education. This hinders the potential to increase college access among minority and low-income students, especially if these scholarship programs continue to overshadow need-based programs (Marin, 2002, p. 114).

Governor Romney has projected that spending on the Adams Scholarship program will reach $50 million per year by the fourth year, or almost 60 percent of what the state spent on need-based grants in fiscal year 2004 (The Chronicle of Higher Education, 2004).

Massachusetts can learn from the experiences of other states that have implemented merit scholarship programs. Not only do these programs target their awards at the wrong students, but there is no evidence that this approach to addressing a state's brain drain problem – using public money to encourage students to attend college in-state – results in students staying in the state to contribute to the economy after graduating from college (Heller & Rogers, 2004). In fact, states are likely spending more money to subsidize the college attendance of students who will leave the state after graduation anyway.

In order to make the most effective use of the state's limited resources, there are a number of steps the Board of Higher Education should consider in establishing the regulations for the Adams Scholarships. First, the Board should consider implementing an income cap on the program. Students from upper-income families in the Commonwealth largely benefit from attending the most well-funded public schools in the state, and if they attend a public college or

[11] See Heller (1997), Jackson and Weathersby (1975), and Leslie and Brinkman (1988) for reviews of this literature.

university, benefit from the subsidy provided through the state appropriation. There is little economic or educational justification for the further subsidy of these students' postsecondary educations at public expense through the Adams Scholarships. In order to have an impact on the college participation of underrepresented students in the Commonwealth, the Board should consider using an income cap to focus scholarships on students who truly need the assistance to be able to afford to attend a public institution in the state. The reduced number of scholarships would then allow the board to increase the amount of each scholarship, thus making it more valuable to students from poorer families.

Second, the Board should reconsider the exclusive use of the MCAS test as the sole criterion for awarding the scholarships. The inequities in MCAS scores pointed out in this study have been well documented by other researchers (Brennan, Kim, Wenz-Gross, & Siperstein, 2001). The MCAS test was not designed nor has it been validated for use as a mechanism to award college scholarships. Guidelines of organizations such as the American Educational Research Association and the American Psychological Association recommend that a single test not be used for "high-stakes" decisions (Heubert & Hauser, 1999).

As we pointed out in our earlier report on merit scholarships, "Colleges already understand the importance of using a variety of criteria in making admissions decisions – including high school grades, test scores, recommendations, essays, and extracurricular activities" (Marin, 2002, p. 115). The Board of Higher Education should consider a broader measure of merit than just MCAS test scores in awarding the Adams Scholarships. As described earlier, even under the best case scenario, using MCAS scores for determining scholarship eligibility will result in a mis-targeting of the awards.

Third, in order to enable students to retain their scholarships once enrolled in college (which under Governor Romney's proposal would require a 3.0 grade point average), the Commonwealth's public institutions of higher education should ensure that necessary support programs are in place for students who may not have received the best academic preparation in the K-12 schools. It will do little good to use the Adams Scholarships to encourage students to enroll in college if they are unable to persist through to a degree due to academic (and financial) hardships.

There is one aspect of the Adams Scholarship proposal that is an improvement over the way that financial aid is currently awarded by the state and its public institutions of higher education. At present, students generally do not get notified of their eligibility for financial aid (federal, state, or institutional) until the spring of their senior year of high school, after they have applied to and been accepted by a college. For students who are concerned about the cost of college, finding out eligibility for financial aid *after* they have already applied makes little sense. By providing notification of scholarship eligibility as early as the beginning of the 11th grade, students would have more time to prepare themselves academically – and for their families to prepare themselves financially – to attend college.

Earlier notification of financial aid eligibility is certainly not commonplace, but also is not unknown. The Indiana 21st Century Scholars program notifies students of their eligibility for financial aid during the middle school years, and has been found to be effective in increasing college participation rates in that state (St. John, Musoba, Simmons, & Chung, 2002). In

addition, the federal Advisory Committee on Student Financial Assistance has endorsed earlier notification of eligibility for federal financial aid in a study it conducted for Congress (Cotton, 2004).

The evidence presented in this study should encourage the Board of Higher Education to advance cautiously in establishing the rules and regulations for the Adams Scholarship program. While the goal of using public funds to provide financial aid is noble, the decisions made by the Board will determine whether the Adams Scholarship will, in the end, improve the Commonwealth or whether these decisions will only enrich the pocketbooks of students who are likely to attend college even without public assistance.

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CHAPTER 3

WHO ARE THE STUDENTS RECEIVING MERIT SCHOLARSHIPS?

Patricia L. Farrell

This study was part of Patricia Farrell's dissertation, *An Evaluation of State Non-Needs, Merit-Based Scholarship Programs*. She completed her dissertation in 2004 at Michigan State University under Dr. James Fairweather.

INTRODUCTION

Higher education has become the threshold for access to good jobs for individuals and, in turn, is vital to the future of a strong state economy (Advisory Committee on Student Financial Assistance [ACSFA], 2001; Carnevale & Fry, 2001). To balance the interests of society and higher education, the states have been exploring ways to provide access, keep their brightest students in-state for college, and encourage and reward students who excel academically (Heller, 2002; Linn, 1998; Parsons, 1997). One mechanism states use to achieve these goals is non-need, merit-based scholarship programs. Since 1993, 14 states have implemented broad-based merit-based scholarship programs that award grants without consideration of financial need.

The champions of the state merit scholarships claim that the programs keep their brightest students in-state for college and allow institutions to draw from and admit a broader range of students. They suggest that this effort increases diversity and access (Krueger, 2001). Because these programs are relatively new, little research has been conducted to determine whether the programs can be structured in a manner that better meets the needs of low-income and minority students (Heller, 2002).

Critics argue that these merit-based scholarship programs are not helping the students they were set-up to serve (Creech, 1998; Krueger, 2001). Of the few studies conducted thus far, Heller and Rasmussen (2001) found that the Florida and Michigan merit-based scholarship programs benefited students from high schools that had a high college-participation rate before implementation of the program. They also state, "…college access among lower income students will suffer. Merit scholarships are likely to exacerbate, rather than help remedy, college enrollment gaps in the United States" (p. 21-22). Binder, Ganderton, and Hutchens (2002) found that Hispanics, Blacks and Native Americans, and males receive the New Mexico Lottery Success Scholarship less than female and White students. In a 2002 report from The Civil Rights Project, Marin asserts that federal and state "policymakers have lost the focus of expanding access to higher education and have replaced it, albeit indirectly, with increasing inequity" (p. 113).

The merit-based scholarship program goals are "not substantially different from the social and economic benefit rationale associated with need-based aid; it is just a bit more targeted and perhaps a bit lazier and crass, because it focuses on those most likely to succeed rather than on those most in need of support to succeed" (Longanecker, 2002, p. 34). Access to higher education has been the focus of policy makers in previous decades. Now merit and middle-income affordability have begun to replace access in state priorities.

This study answers the following research question: How do merit-based scholarship recipients compare with the population of high school graduates in each state based on race, as well as the school district or county poverty level?

RESEARCH DESIGN

Between 1993 and 2000, eleven states implemented merit scholarship programs. This study analyzes five states that collect race data on their scholarship recipients: Alaska, Florida, Kentucky, Michigan, and New Mexico. The states that either do not collect race data or would not provide the race data were Georgia, Louisiana, Mississippi, Missouri, Nevada, and South Carolina.

To answer the research question, I compared the aggregate percentages of high school graduates to merit scholarship recipients by race, and school district or county poverty levels.

For each state, data were analyzed using paired t-tests. Paired t-tests were used to compare the group of high school graduates to scholarship recipients for specified years because the composition of the high school graduates was related to the composition of the scholarship recipients for each state. By comparing the average scores of the two groups, I would expect the scores to be correlated (Avry, Jacobs, & Razavieh, 2002).

The data were obtained from state and federal governments. Percentages were calculated by the author using (see Appendix for more information):

a) National Center on Education Statistics (NCES) Common Core Data (CCD)—number of high school diploma recipients by race in each school district or county, and the metropolitan status (central city, suburban area, and rural area) of each school district or county;
b) U.S. Census Bureau Small Area Income and Poverty Estimates (SAIPE)—school district or county poverty level for people under 18 years of age;[1] and
c) State scholarship program offices or higher education commissions/authorities—number of scholarship recipients by race and school district or county.

STATE FINDINGS

The findings for each state are presented in alphabetical order. The first part of each section describes the state's merit scholarship program. The second part includes the findings of the comparison between the state high school graduate population to the scholarship recipients for race, and school district or county poverty level.

Alaska Scholars

The University of Alaska System, which encompasses all Alaska public higher education institutions, implemented the Alaska Scholars Program in 1999.[2] The goals of the Program are to encourage public and private middle and high school students to achieve academic excellence, to promote K-12 schools to provide quality education, and to encourage students to stay in Alaska for college. Scholarship funding is obtained from land-lease agreements (University of Alaska [UAlaska], 2001).

Recipients of the scholarship are determined by their high school ranking; the student must be in the top 10 percent of his or her graduating class. The first Alaska high school graduates participating in the program were from the class of 1999. To receive the scholarship, students must enroll full time in one of the University of Alaska system colleges and maintain satisfactory progress. A Scholar receives up to four-years of tuition ($11,000 maximum) depending on the type of institution and degree program (UAlaska, 2001).

In 1999, the first year of the Alaska Scholars program, 33.4 percent of the eligible Scholars enrolled in a UAlaska institution (see Table 3-1). By 2002 the percentage of UA Scholars enrolled in a UAlaska institution increased slightly to 39.5 percent.

[1] For "poverty level for people under 18 years of age" author uses "students."
[2] The University of Alaska System consists of all public four- and two-year higher education institutions in the state. There are three main universities within the System—Anchorage, Fairbanks, and Southeast—and the other four- and two-year colleges report to one of the three universities.

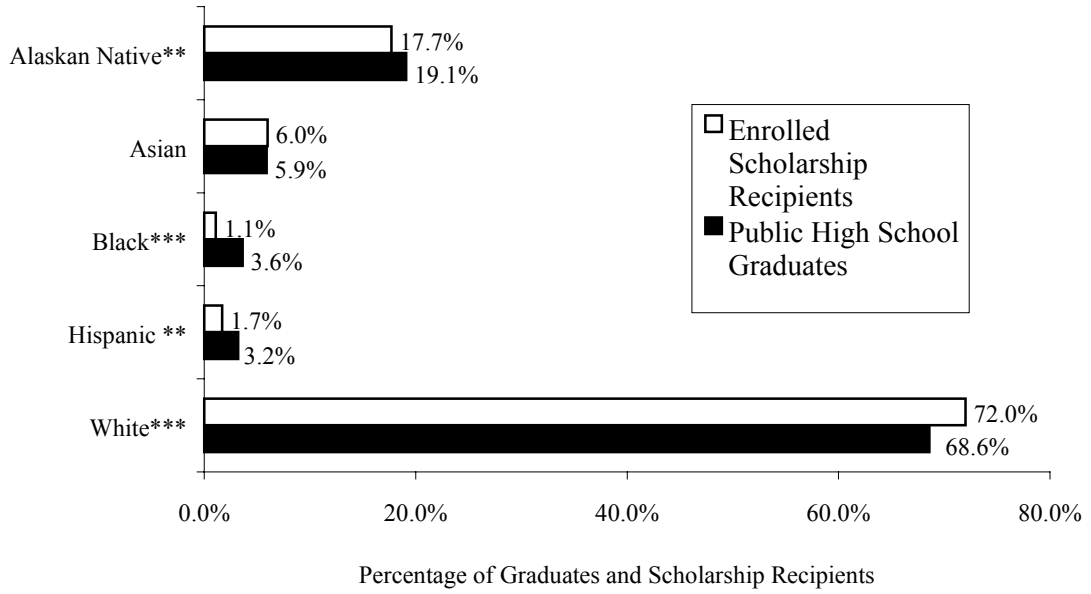
Table 3-1: Eligible and Enrolled Alaska Scholar Recipients, 1999-2002

	Number of			Percent of
Year	Public High School Graduates	Public & Private High School Graduates Eligible for Scholarship	Scholarship Recipients Enrolled	Eligible Scholarship Recipients Enrolled
1999	6,810	811	271	33.4
2000	6,630	881	352	40.0
2001	6,812	897	371	41.4
2002	6,945	920	363	39.5

Source: Author's calculations. Data obtained from University of Alaska Statewide Budget & Institutional Research Office and included only fall semester enrollments. Public high school data obtained from NCES CCD. Availability of private high school graduate data from the NCES Private School Survey occurs in even years, and the latest data was for 2000. Private high school graduate data were not available from the Alaska Department of Education.

Who are the Alaska Scholars in comparison to the high school graduate population? I analyzed the data using paired t-tests to determine whether there were differences by race of enrolled scholarship recipients to Alaska public high school graduates for the years 1999 to 2002. As shown in Figure 3-1, there are significant differences by race between the high school graduates and UA Scholars. Between 1999 and 2002, the percentage of White high school graduates was 68.6 percent and White Alaska Scholars was 72.0 percent (t = -17.531, $p < .001$). Native American/Alaskan Natives comprised 19.1 percent of the graduating class, but only17.7 percent of the Alaska Scholars (t = 14.919, $p < .01$). Black and Hispanic students, combined, comprised less than seven percent of the public high school graduates and less than three percent of the Alaska Scholars. Over the four years, Black graduates averaged 3.6 percent of Alaska public high school graduates and only 1.1 percent of the Alaska Scholars (t = 18.979, $p < .001$). Hispanic graduates averaged 3.2 percent of the public high school graduates and 1.7 percent of the Scholars (t = 9.697, $p < .01$).

Figure 3-1: Comparison between the Percentages of Alaska Public High School Graduates and Enrolled Alaska Scholar Recipients by Race, 1999-2002[a]



Note: ** $p < .01$. *** $p < .001$.

[a] The percentage of Scholars not reporting race or reporting Other was 7.78% in 1999, 8.26% in 2000, 8.69% in 2001, and 6.19% in 2002. Author calculated percentages based on each race categories' proportion of the total number of Scholars for which data were available. NCES CCD only collects students' race data by the five categories.

Source: University of Alaska Statewide Budget & Institutional Research Office and NCES CCD.

Access to higher education through the UAlaska scholarship program is less for Alaskan Native, Black, and Hispanic public high school graduates than White or Asian public high school graduates. Approximately 74 percent of the White high school graduate population lives in one of the five largest school districts (Anchorage Borough, Fairbanks North Star Borough, Juneau Borough, Kenai Peninsula Borough, and Matanuska-Susitna Borough). These students are in close proximity to a UAlaska institution, and have more resources to prepare for postsecondary education. Alaskan Native students are primarily from smaller, rural school districts, including Lower Kuskokwim, North Slope, and Northwest Artic.[3] Northwest Artic graduated 10 percent of the Alaska public high school graduates between 1999 and 2002; however, scholarship recipients from this school district comprised only 1.5 percent of the UA Scholars. In addition, in 2000 over 15 percent of the students were in poverty in the Northwest Artic. On the other hand, students in poverty in the large school districts were less than 10 percent.

[3] School district analyses by race were unable to be conducted because race data for UA Scholars were provided in aggregate for the state.

Florida Bright Futures Scholarship

The Florida Bright Futures Scholarship Program was established in 1997. Statute 1009.53 reads that the Bright Futures Scholarship Program is to reward any[4] Florida high school graduate deserving recognition of superior academic achievement. Scholarship recipients have to enroll in a degree, certificate, or applied technology program at an eligible Florida public or private postsecondary education institution within three years of graduation from high school (Florida Department of Education [FDE], 1997). The program is funded through a state lottery.

The scholarship program has a three-tier award system based on a student's high school academic achievement and college entrance tests: Academic, Medallion, and Gold Seal. Students must apply for the program. The Academic Scholarship requires a 3.5-weighted high school GPA, including 15 credits of college preparatory courses. In addition, the student has to serve the community for a minimum of 75 hours, and score a 1270 SAT or 28 ACT. The Medallion Scholarship requires a 3.0-weighted GPA in high school, 15 credits of college preparatory courses, and a score of 970 on the SAT or 20 on the ACT. The Gold Seal Vocational Scholarship requires a 3.0-weighted GPA, 15.5 core credits required for high school graduation, and a 3.5-unweighted GPA in a minimum of 3 vocational credits. In addition, an eligible student must earn a minimum score on each subsection of the CPT, SAT or ACT (FDE, 1997).

Since the implementation of the Bright Futures Scholarship, the population of public high school students has increased, resulting in an increase in the number of eligible and enrolled scholarship recipients (see Table 3-2). In 2002, approximately one out of every three high school graduates was eligible for one of the Bright Futures Scholarships.

Table 3-2: Florida Public High School Bright Futures Scholarship Recipients, 1997-2002

	Number of		
Year	Public High School Graduates	Eligible Public High School Scholarship Recipients	Percent of Eligible Public High School Scholarship Recipients
1997	92,430	27,367	29.6
1998	95,539	27,618	28.9
2000	102,621	33,753	32.9
2001	106,407	34,297	32.2
2002	113,836	36,878	32.4

Source: Author's calculations. Data obtained from NCES CCD and Florida Department of Education Bright Futures Program Office.

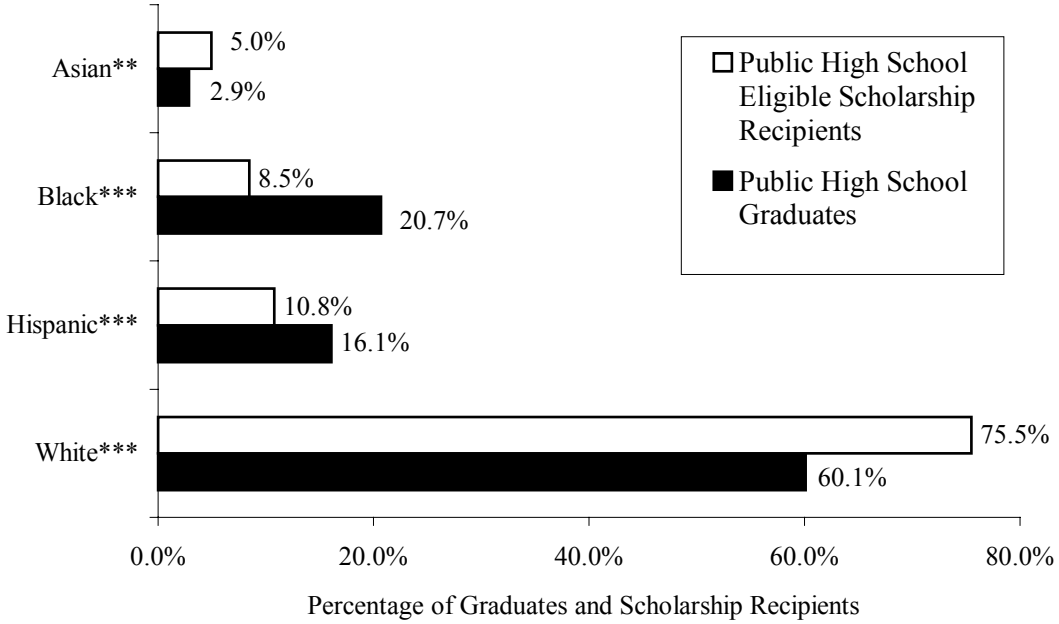
In addition to the increasing number of public school students, Florida has been undergoing demographic changes. The 1997 public high school graduating class' profile

[4] Bright Futures Scholarships are awarded to both public and private Florida high school graduates. NCES CCD only includes public high school data and, therefore, this study only analyzed public high school graduates receiving Bright Futures Scholarships.

included 14.3 percent Hispanic, 21.4 percent Black, and 61.3 percent White students. In 2002, the percentage of Hispanic graduates increased to 16.8, while the percentages of Black and White graduates decreased to 19.9 and 59.5, respectively.

Who are the Florida Bright Futures Scholarship recipients in comparison to the Florida public high school graduate population? For the years, 1999 to 2002, paired t-tests were conducted to determine whether there were differences by race between Bright Futures Scholarship recipients and Florida's public high school graduates. There are clear differences ($p < .05$) between Florida's White, Black, Hispanic, and Asian high school graduates and eligible Bright Futures scholarship recipients.[5] As shown in Figure 3-2, high school graduates who are either Asian or White have an increased probability of being eligible for the Bright Futures Scholarship. Over 75 percent of the eligible Bright Futures Scholarship recipients were White, while 60.1 percent of the high school graduate population were White ($t = -33.386$, $p < .001$). Asian students, who comprised only 2.9 percent of the high school graduate population, averaged 5.0 percent of the eligible scholarship recipients ($t = 15.270$, $p < .01$). In contrast, fewer Black and Hispanic graduates received Bright Futures Scholarships. Over the four years, Black students averaged 20.7 percent of the high school graduate population but represented merely 8.5 percent of the eligible scholarship recipients. Hispanic students averaged 16.1 percent of the high school graduates and just 10.8 percent of eligible Bright Futures Scholarship recipients ($t = 21.630$, $p < .001$).

Figure 3-2: Comparison between the Percentages of Florida Public High School Graduates and Eligible Scholarship Recipients by Race, 1999-2002



Note: ** $p < .01$. *** $p < .001$.
Author calculated percentages based on each race categories' proportion of the total number of scholarship recipients. Scholarship recipients checking Other race was less than 2% for each year, 1999 to 2002. NCES CCD only collects and reports high school graduates' race by the five categories.
Source: Florida Department of Education Bright Futures Program Office and NCES CCD.

[5] Native American students were not included in the analysis because they comprised less than one percent of the total graduating class each year.

Where students are from and their race clearly impacts their opportunity for a Bright Futures Scholarship.[6] Florida school districts are county-wide, and the school districts listed in Table 3-3 either graduate a large number of public high school graduates or are located in selected metropolitan areas of Florida (e.g., Tallahassee). Paired t-tests were conducted to determine whether there were differences between public high school graduates and eligible scholarship recipients by race for each school district listed in Table 3-3. The results are shown in Figures 3-3, 3-4, 3-5, and 3-6.

Since the implementation of the Bright Futures Scholarship Program, the school districts listed in Table 3-3 have undergone considerable growth in students. From 1997 to 2002, Broward, Hillsborough, and Orange experienced greater than 20 percent increases in the number of high school students. In 2002, one out of every three graduates in these three school districts was eligible for the Bright Futures Scholarship.

The percentage of Florida's students in poverty in 1997 and 2000 was 22.9 and 17.9 percent, respectively. The poverty level for Dade county or school district, which is a large urban area and encompasses the city of Miami, was considerably higher than the Florida average. The largest numbers of high school graduates were from Dade; however, merely 15.5 percent of the 1997 and 20.2 percent of the 2002 graduates was eligible for the Bright Futures Scholarship.

Table 3-3: Public High School Graduates and Eligible Public High School Scholarship Recipients for Selected School Districts, 1997-2002

		Percent				
		of People Under 18 in Poverty		Change in Number of Public High School Graduates Between 1997 and 2000	of Eligible Public High School Scholarship Recipients	
School District	City(ies)	1997	2000		1997	2002
Alachua	Gainesville	22.1	14.8	17.5	36.3	38.3
Broward	Ft. Lauderdale, Hollywood, N. Miami	15.9	13.1	21.8	28.2	32.7
Dade	Miami	26.1	20.2	16.5	15.5	20.8
Duval	Jacksonville	17.6	13.8	11.7	24.2	29.2
Hillsborough	Tampa	19.7	14.9	21.3	36.1	33.5
Leon	Tallahassee	16.0	14.5	13.8	39.8	40.1
Orange	Orlando	17.6	14.5	27.7	31.3	31.2
Pinellas	St. Petersburg, Clearwater	17.4	12.8	11.8	37.6	42.5

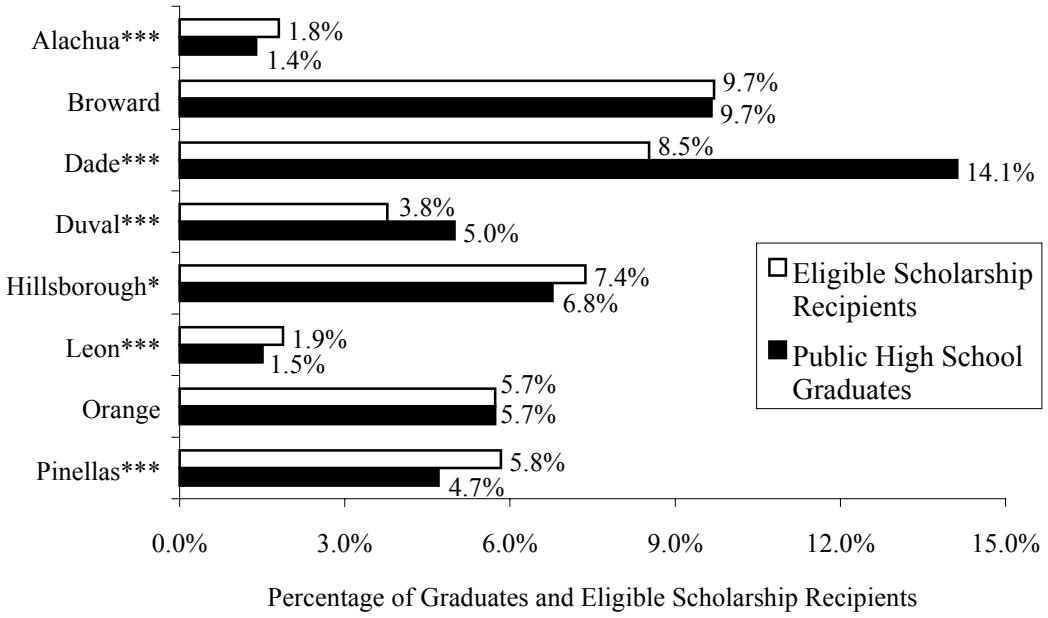
Source: Author's calculations. Data obtained from Florida Bright Futures Program Office, Florida Department of Education, NCES CCD, and U.S. Census Bureau 2000 SAIPE.

[6] Author chose to analyze central city school districts or school districts that are located in selected metropolitan Florida areas.

Figure 3-3 illustrates the differences between the percentage of high school graduates and eligible Bright Futures Scholarship recipients by the selected school districts. Over the six years, Dade school district averaged 14.1 percent of Florida's high school graduates. However, during the same time period only 8.5 percent of Dade's high school graduates were eligible for the Bright Futures scholarship ($t = 18.110$, $p < .001$). The Duval school district, or the Jacksonville area, graduated 5.0 percent of Florida's high school graduates, but only 3.8 percent of the scholarship recipients were from the Jacksonville area ($t = 9.829$, $p < .05$).

In contrast, if a student lives in the Ft. Lauderdale, Gainesville, Tampa, Tallahassee, and St. Petersburg areas, he or she has a higher probability for receiving the scholarship than if he or she lived in the Miami, Jacksonville, Orlando areas. Over the six years, the Hillsborough school district, which encompasses Tampa, produced 7.4 percent of the eligible high school scholarship recipients and graduated 6.8 percent of Florida's high school graduates ($t = -3.134$, $p < .05$). And Leon school district, which includes the city of Tallahassee, produced 1.9 of the eligible Bright Futures Scholarship recipients and graduated 1.5 percent of the high school graduates ($t = -10.687$, $p < .001$).

Figure 3-3: Comparison between the Percentages of Public High School Graduates and Eligible Bright Futures Scholarship Recipients by Selected Florida School Districts, 1997-2002



Note: * $p < .05$. *** $p < .001$.
Source: Author's calculations. Data obtained from Florida Department of Education Bright Futures Program office and NCES CCD.

The findings from the paired t-tests between Florida's public high school graduates and eligible Bright Futures Scholarship recipients by race for selected school districts are shown in Figures 3-4 through 3-6.[7,8] The figures clearly illustrate significant relationships between

[7] Asian students were not analyzed because they represented less than three percent of Florida's public high school graduating classes and five percent of eligible public high school Bright Futures Scholarship recipients.

students' race and where they are from within the state and the likelihood they will be eligible for a Bright Futures Scholarship. The findings exemplify the inequality for Black and Hispanic students compared to White students for being eligible to receive the Bright Futures Scholarship.

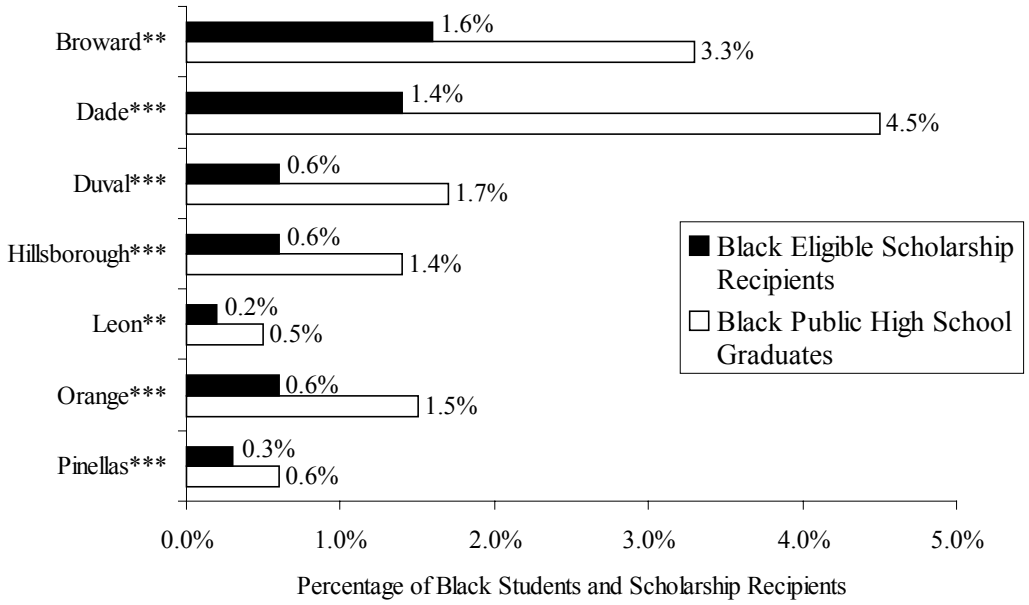
Between 1999 and 2002, 4.5 percent of Florida's high school graduates were from Dade school district and were Black, but only 1.4 percent of the Bright Futures Scholarship recipients were from Dade and were Black ($t = 31.562$ $p < .001$). Fewer Hispanic students from Dade school district were also eligible to receive the scholarship. Only 4.4 percent of the eligible scholarship recipients were Hispanic public high school graduates from Dade, while 7.6 percent of Florida high school graduates were Hispanic Dade students ($t = 79.814$, $p < .001$). In contrast, White students from Dade school district comprised 2.3 percent of Florida's public high school graduating class, and 2.5 percent of the eligible scholarship recipients.

Another example is the Hillsborough school district, which includes the city of Tampa. Over the four years, lower percentages of Black and Hispanic high school graduates were eligible for the Bright Futures Scholarship than White high school graduates. Only 0.6 percent of eligible scholarship recipients were Black and from Hillsborough, while 1.4 percent of the high school graduates were Black and from Hillsborough school district ($t = 22.482$, $p < .001$). Less than one percent of eligible scholarship recipients were Hispanic graduates from Hillsborough, while 1.2 percent of Florida's high school graduates were Hispanic and from Hillsborough ($t = 13.085$, $p < .01$). Quite the opposite, a higher percentage of White high school graduates from Hillsborough were eligible for the scholarship than the percentage of White high school graduates ($t = -14.224$, $p < 01$).

For the years 1999-2002, Orange school district produced equal percentages of Florida's high school graduates and eligible scholarship recipients. However, inequities were found between high school graduates and eligible scholarship recipients by race. Over the four years, Black graduates from Orange comprised 1.5 percent of Florida's high school graduates and only .6 percent of the eligible scholarship recipients ($t = 36.842$, $p < .001$). Hispanic graduates from Orange comprised 1.2 percent of Florida's high school graduates and only .6 percent of the scholarship recipients ($t = 20.450$, $p < .001$). Alternatively, White students from the Orlando area, or the Orange school district, had a greater probability for receiving the scholarship. White public high school graduates comprised 3.2 percent of Florida's high school graduates, and 3.8 percent of eligible scholarship recipients ($t = -9.557$, $p < 01$).

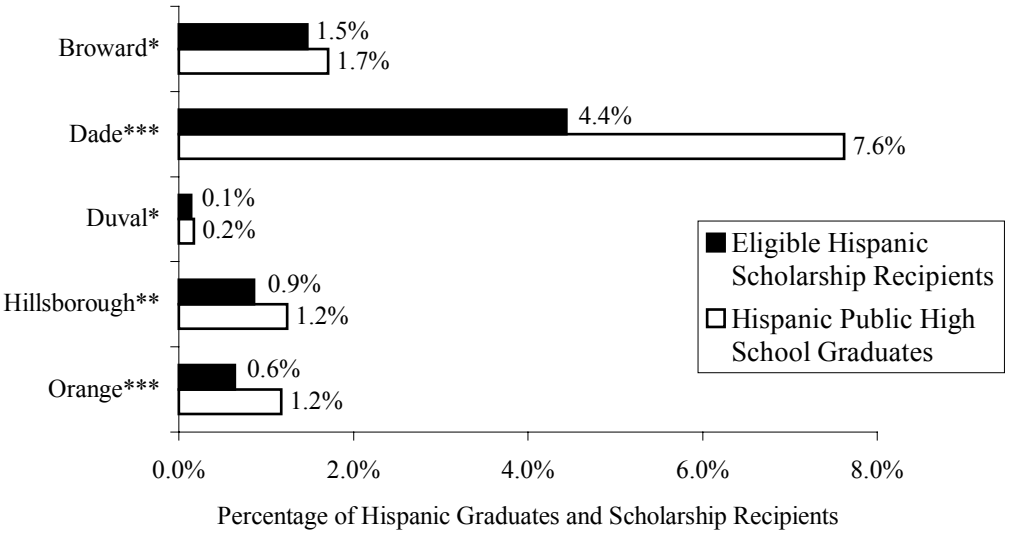
[8] Data on the race of eligible Bright Futures Scholarship recipients were only available for the years 1999-2002.

Figure 3-4: Comparison between the Percentages of Black Public High School Graduates and Black Eligible Bright Futures Scholarship Recipients by Selected Florida School Districts, 1999-2002



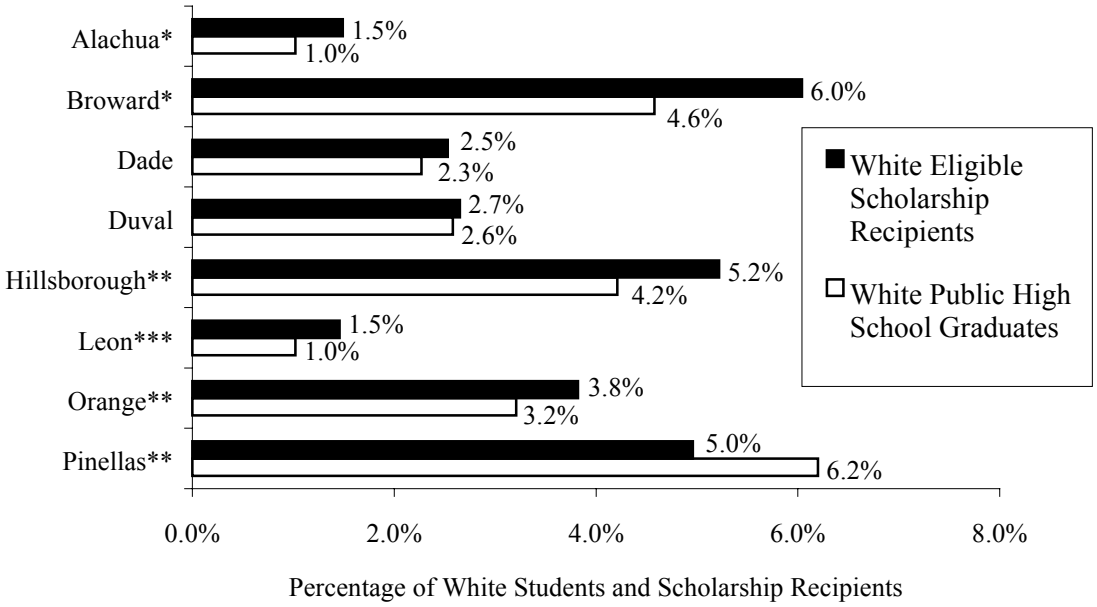
Note: ** $p < .01$. *** $p < .001$.
Source: Author's calculations. Data obtained from Florida Department of Education Bright Futures Program Office and NCES CCD.

Figure 3-5: Comparison between the Percentages of Hispanic Public High School Graduates and Hispanic Eligible Bright Futures Scholarship Recipients by Selected Florida School District, 1999-2002



Note: * $p < .05$. **$p < .01$. *** $p < .001$.
Source: Author's calculations. Data obtained from Florida Department of Education Bright Futures Program Office and NCES CCD.

Figure 3-6: Comparison between the Percentages of White Public High School Graduates and White Eligible Bright Futures Scholarship Recipients by Selected Florida School District, 1999-2002



Note: * $p < .05$. ** $p < .01$. *** $p < .001$.
Source: Author's calculations. Data obtained from Florida Department of Education Bright Futures Program Office and NCES CCD.

Kentucky Educational Excellence Scholarship

The Kentucky Legislature was able to observe and evaluate other southern states' merit scholarship programs before implementing their own scholarship program. In 1999, the Kentucky Educational Excellence Scholarship (KEES) was born, established by the legislature in 1998 through Senate Bill 21. The goal of KEES is to encourage Kentucky students to get the most from public or private high school by studying hard and achieving good grades (Kentucky Higher Education Assistance Authority [KHEAA], 1999). The KEES was created to address poor college preparation, low college participation, loss of first-time freshmen to out of state institutions, and low college completion rates (Callan, 2001; Southern Regional Education Board [SREB], 2001). The fundamental purpose of the program is to increase the human capital of Kentucky citizens. The Kentucky Legislature views KEES as one route to fulfilling this purpose. A portion of the net profits from the state lottery is set aside for the scholarship (KHEAA, 1999).

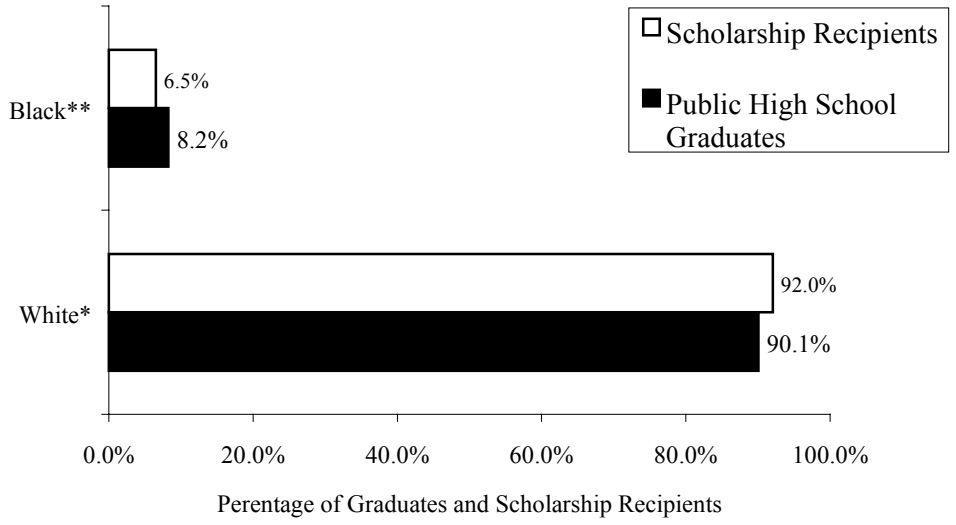
Eligibility for KEES is based on a yearly GPA beginning the freshman year of high school. The GPA is based on a required high school graduation curriculum, and students must take at least five courses a year from this required subject list. Bonus awards are given based on ACT or SAT score. Scholarship recipients can earn from $125 to $500 a year based on their GPA, and the bonus awards ranged from $21 to $300 in 1999, and $36 to $500 thereafter. The maximum amount students can earn each year of high school is $2,500 (KHEAA, 1999).

If a student receives the award each of the four years at the minimum 2.5 GPA and scores the Kentucky median on the ACT, then the student receives a total of $814 per year for college. If a student receives the award each year at the maximum 4.0 GPA and scores a 28 on the ACT,

then the student receives a total of $2,500 per year for college. In 2000, approximately 85 percent of high school graduates were eligible for the Educational Excellence Scholarship. In addition, 60 percent of the graduates received the bonus award (author's calculations).

Who are the KEES recipients in comparison to the Kentucky public high school graduate population? First, paired t-tests were conducted to determine if there were differences by race comparing KEES recipients to Kentucky high school graduates for the years 2000 to 2002.[9] Over the four years, there was a higher percentage of White high school graduates qualified for the KEES base awards than the percentage of White high school graduates (Figure 3-7). Ninety-two percent of the White high school graduates qualified for the KEES base awards while White high school graduates comprised 90.1 percent of the high school diploma recipients (t = -5.722, p < .05). In contrast, Black high school graduates have not achieved as well academically in high school. Only 6.5 percent of eligible KEES recipients were Black, while 8.2 percent of Kentucky's high school graduates were Black (t = 16.375, p < .01).

Figure 3-7: Comparison between the Percentages of Kentucky High School Graduates and Kentucky KEES Scholarship Recipients by Race, 2000-2002



Note: * p < .05. ** p < .01.
Source: Kentucky Higher Education Assistance Authority (1999) and NCES CCD.

The amount of scholarship funding students can earn each year of high school is based on their GPA. In 2000, the average award for a senior student was $310 (Table 3-4). The financial award decreased slightly by 2002, to $304. KEES financial awards for Black recipients have been considerably lower than the awards for White recipients. In 2000 and 2002, Black recipients averaged $267 and $232 awards in their senior year, respectively. In 2000, White KEES recipients averaged $327 for their senior year award, and in 2002 the award averaged $309.

[9] Asian, Native American, and Hispanic students were not included in the analysis because each group totaled less than one percent of the graduating class each year. Race data for 1999 KEES recipients were not available for analyses.

Table 3-4: Earned Senior Year KEES Awards for Total, White, and Black Scholarship Recipients, 2000-2002

	Year	Number of Scholars	Cumulative Base Awards Amount	Average Dollar Award Amount
Kentucky Scholarship Recipients	2000	33,370	$10,364,208	$310
	2001	33,640	10,458,000	311
	2002	35,037	10,651,248	304
White Scholarship Recipients	2000	29,201	9,545,427	327
	2001	31,026	9,706,278	313
	2002	31,764	9,816,228	309
Black Scholarship Recipients	2000	1,893	505,284	267
	2001	2,186	540,195	247
	2002	2,457	571,213	232

Source: Author's calculations. Data obtained from Kentucky Higher Education Assistance Authority (1999).

Table 3-5, also illustrates that Black KEES recipients have received lower bonus award amounts than White KEES recipients. The KEES bonus award is based on a student's ACT score, and the financial award is added onto the student's base award. In 2002, White students bonus award averaged $261, while Black students bonus award averaged $166. The average bonus award across the 23,937 recipients was $256.

Table 3-5: Average KEES Bonus Award Amount by Total, White, and Black Scholarship Recipients, 2000-2002

	Year	Number of Bonus Award Recipients	Average Dollar Bonus Award Amount
All Kentucky Scholarship Recipients	2000	22,035	$263
	2001	23,091	260
	2002	23,937	256
White Scholarship Recipients	2000	20,302	266
	2001	21,458	264
	2002	22,032	261
Black Scholarship Recipients	2000	1,090	175
	2001	1,186	169
	2002	1,311	166

Source: Author's calculations. Data obtained from Kentucky Higher Education Assistance Authority (1999). The amount of the bonus awards are subject to change with subsequent higher test scores.

Comparisons between KEES recipients and public high school graduates by school district were not analyzed because of the complexity of the KEES award—students begin earning their financial award in the ninth grade. Thus, the KEES data reports that many

Kentucky school districts have higher numbers of eligible scholarship recipients than the number of graduates.

Michigan Merit Award Scholarship

The Michigan Merit Award Scholarship was created in 1999 and implemented in 2000. The purpose is to increase access to postsecondary education and reward Michigan high school graduates who have demonstrated academic achievement through the Michigan Educational Assessment Program (MEAP) (Michigan Department of Treasury, 1999).

To qualify for a Merit Award, a student must take the MEAP high school tests in mathematics, reading, science, and writing, and score a Level I (exceeded Michigan standards) or Level II (met Michigan standards) on the four tests and meet all other eligibility requirements, such as being a public or private high school graduate or acquiring the GED. If a student takes all four of the MEAP tests and meets or exceeds state standards on at least two, he or she can also qualify through an ACT or SAT score, or ACT Work Keys job skills assessment test score (Michigan Department of Treasury, 1999).

For the years 2000 to 2002, award recipients received a $2,500 lump sum payment or two payments paid in consecutive school years. Starting in 2003, recipients received $2,500 paid over two consecutive school years. Merit Award recipients can use the award at any approved Michigan postsecondary institution (Michigan Department of Treasury, 1999).

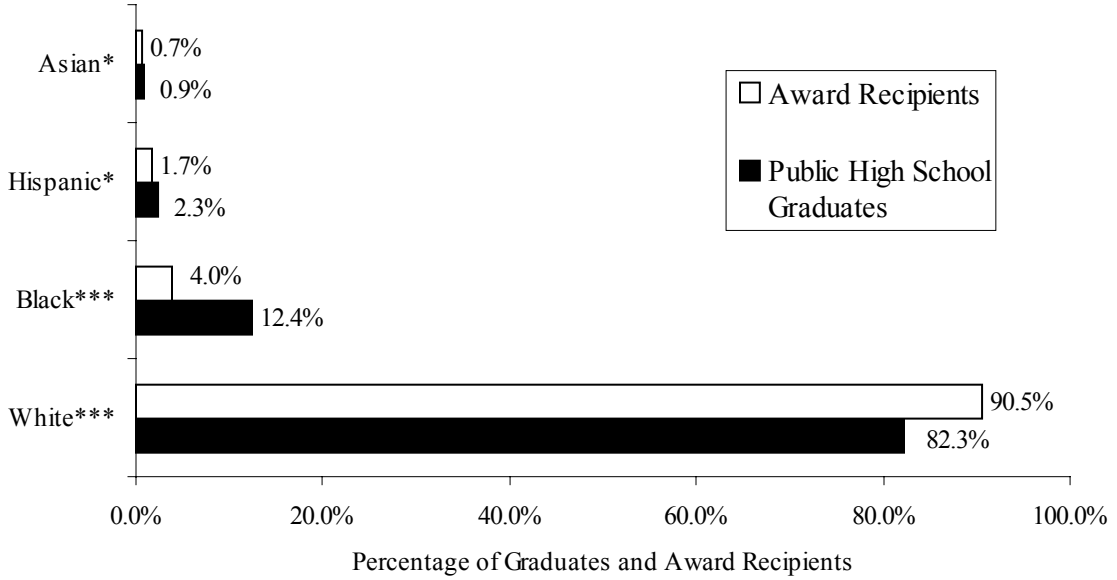
High school graduates who are eligible for the Merit Award are notified and then must apply for the award. The percentage and number of eligible scholarship students has increased since the program was implemented. However, the number of students accepting the scholarship and enrolling in postsecondary institutions decreased over the three years. In the first year of the program, 45.6 percent of Michigan public and private high school graduates were eligible for the Merit Award. Of the graduates eligible, 93.2 percent enrolled in college in Michigan. By 2002, 52.2 percent of Michigan public and private high school graduates were eligible for the award, but only 76.2 percent of the recipients eligible for the Merit Award went on to accept the scholarship and enroll in college in Michigan.

The percentage and number of public high school graduates eligible for the Merit Award increased between 2000 and 2002.[10] Approximately 40.8 percent of the 2000 graduating class were eligible and by 2002, 46.6 percent of the 2002 public high school graduating class were eligible for the Merit Award.

Who are the Merit Award recipients in comparison to the Michigan public high school graduate population? Of the 95,001 public high school graduates in 2002, over 82 percent were White. This percentage has increased since 1996, when 74.0 percent of the Michigan public high school graduates were White. For the years 2000 to 2002, however, White graduates comprised 90.5 percent of the enrolled Merit Award recipients (t = -43.810, $p < .001$). As shown in Figure 3-8, the story is not the same for Black and Hispanic graduates. Blacks comprised 12.4 percent of the high school graduating classes, but only represent 4.0 percent of the enrolled MEAP award recipients (t = 26.696, $p < .01$). Hispanic graduates comprised 2.3 percent of the graduating class but only 1.7 percent of the enrolled scholarship recipients (t = 23.434, $p < .01$).

[10] Only public high school graduate data were analyzed for this study because NCES CCD provides public high school graduate data by race yearly, and the private high school data is only gathered in the even years through the NCES Private School Survey.

Figure 3-8: Comparison between the Percentages of Michigan Public High School Graduates and Michigan Merit Award Recipients by Race, 2000-2002



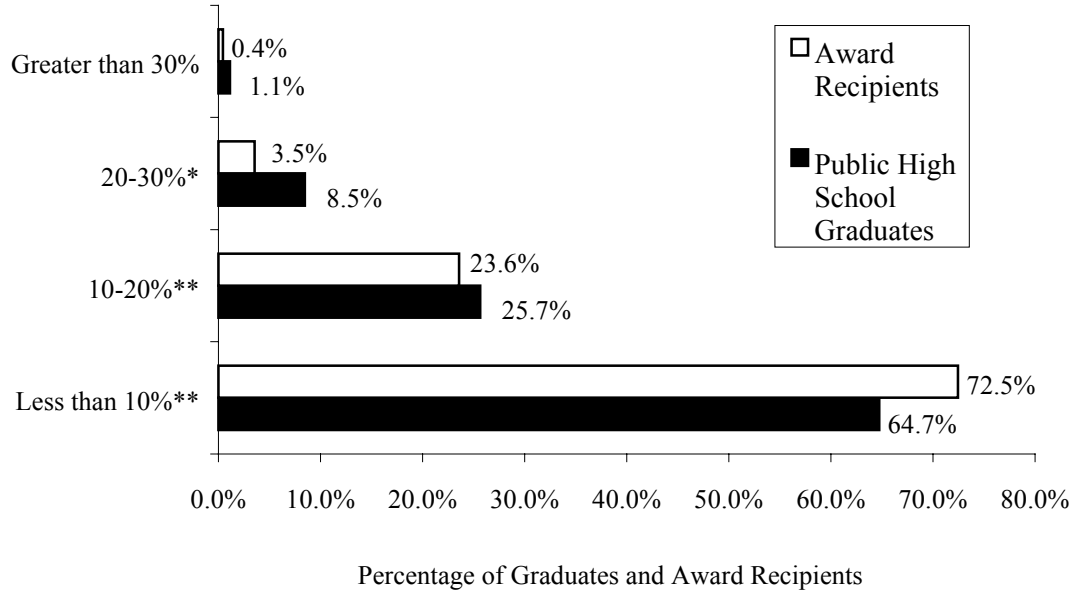
Note: * $p < .01$.
Native American high school graduates and Merit Award recipients totaled less than 1 percent each year and, therefore, were not included in the analyses.
Source: Michigan Department of Treasury and NCES CCD.

Taking into consideration the percentage of students in poverty for each Michigan public school district, substantial differences were found between the population of high school graduates and the students receiving the Merit Award (see Figure 3-9). First, a higher percentage of scholarship recipients was from school districts with less than 10 percent of the students in poverty. As shown in Table 3-6, students from the school districts of Rochester and Utica, which are prosperous suburbs outside of Detroit, receive the scholarship at higher rates than graduates from school districts with large percentages of students in poverty. Seventy-two percent of the award recipients were from school districts with low percentages of students in poverty while 64.7 percent of the high school graduates were from the same school districts ($t = -10.196$, $p < .01$). In contrast, fewer scholarship recipients were from school districts that had above ten percent of its students in poverty. Between 2000 and 2002, 23.6 percent of the Merit Award Recipients were from school districts with 10-20 percent of the students in poverty. During the same time, these same school districts graduated 25.7 percent of the state's high school students ($t = 15.984$, $p < .001$). In addition, 3.5 percent of the award recipients were from school districts with 20-30 percent of the students in poverty, but these same school districts graduated 8.5 percent of Michigan's high school graduates ($t = 4.897$, $p < .05$). The Flint, Detroit,[11] Pontiac and Saginaw City school districts are located in areas with greater than 24 percent of the students in poverty. There were significant differences between the percentage of high school graduates and Merit Award recipients for Flint ($t = 10.964$, $p < .01$) and Pontiac ($t = 23.203$, $p < .01$). As seen in Table 3-6, students from these school districts generally do not

[11] The 2000 high school graduate data were unavailable for Detroit.

have the same opportunity of access to higher education through the Merit Award compared to the students located in the less poverty stricken school districts.

Figure 3-9: Comparison between Michigan Public High School Graduates and Michigan Merit Award Recipients by the Percentage of Students in Poverty by School District, 2000-2002



Note: * $p < .05$. ** $p < .01$.
Source: Michigan Department of Treasury, NCES CCD, and U.S. Census Bureau SAIPE.

Table 3-6: Michigan Public High School Graduates and Merit Award Recipients from Large School Districts or School Districts Located in Selected Metropolitan Areas

School District	Percentage of 2000 School District Poverty Level for People Under 18	2000 Public High School Graduates	Percentage of 2000 Graduates Receiving the MEAP Award	2002 Public High School Graduates	Percentage of 2002 Graduates Receiving the MEAP Award
Ann Arbor~	6.8	1,094	58.0	1,141	65.9
Detroit City~	27.0	-	-	5,540	12.9
Flint City**	31.0	847	17.7	714	17.6
Grand Rapids	18.9	826	36.1	708	42.9
Kalamazoo	21.3	448	46.9	434	47.7
Lansing	20.0	-	-	778	48.6
Pontiac**	24.9	399	15.3	416	9.9
Rochester	3.3	948	43.2	1,009	56.8
Saginaw City	29.7	503	21.3	462	32.9
Utica Community	4.0	1,863	44.0	1,867	55.1

Note: ~ $p < 1.0$. ** $p < .01$.
2000 high school graduate data for Detroit and Lansing Public School Districts were unavailable through NCES CCD or the Michigan Department of Education.
Source: Author's calculations. Data obtained from U.S. Census SAIPE and NCES CCD.

New Mexico Lottery Success Scholarship

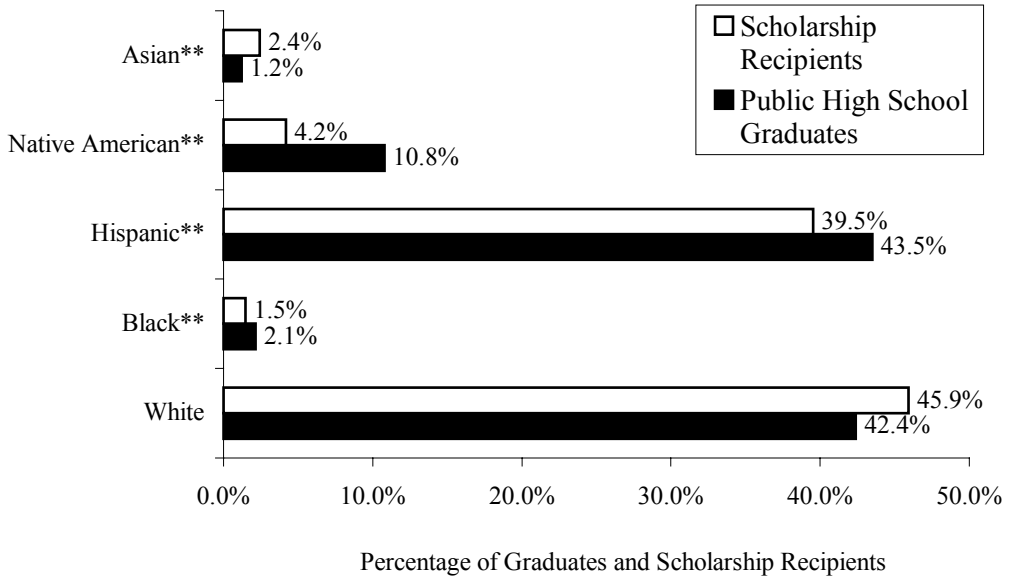
The New Mexico Lottery Success Scholarship was implemented in 1997 through statute § 21-1-4.3 as a means of providing New Mexico high school graduates with "a level of financial support needed to continue their education at the college level" (New Mexico Commission on Higher Education [NMCHE], 1997, p. 1). The funding for the scholarship comes from the New Mexico lottery, which was created in 1995 to aid pre-school through higher education institutions and students. The scholarship pays full tuition at New Mexico public higher education institutions and is disbursed when students enroll in their second semester of college. To be eligible for the scholarship, a student has to obtain a 2.5 GPA in her first semester of college (NMCHE, 1997).

Public higher education institutions offer tuition scholarships to students for their first semester of college as a bridge to the Lottery Success Scholarship. A New Mexico high school graduate may be eligible for the one-semester scholarship if he or she has met the institution's eligibility requirements. Students do not have to apply for the Lottery Success Scholarship as long as they are enrolled in a New Mexico public higher education institution.

Eligibility for the New Mexico Lottery Success Scholarship is different from the other 14 state scholarship programs listed in Chapter 1 of this report. To receive the scholarship, students must enroll full-time in a New Mexico public higher education institution and obtain a 2.5 GPA in their first semester. Therefore, no matter how well students performed academically during high school they start with a clean slate when enrolled in a New Mexico public higher education institution. In addition, there are no curriculum eligibility requirements for them during the first semester of college.

Who are the Lottery Success Scholarship recipients in comparison to the New Mexico public high school graduate population? Data were analyzed using paired t-tests to identify whether or not there were differences between New Mexico public high school graduates and Lottery Success Scholarship recipients by race. As shown in Figure 3-10, among Black, Hispanic, and Native American students there were significant differences between the rates students received the Lottery Success Scholarships and their representation among high school graduates. Between 1998 and 2001, Hispanics comprised 43.5 percent of the public high school graduating class, but only 39.5 percent of the scholarship recipients ($t = 6.866$, $p < .01$). Native Americans comprised 10.8 percent of the public high school graduates, but only 4.2 percent of the scholarship recipients ($t = 7.756$, $p < .01$). Lastly, Black high school graduates comprised 2.1 percent of the diploma recipients and 1.5 percent of the scholarship recipients ($t = 5.617$, $p. < .01$).

Figure 3-10: Comparison of New Mexico High School Graduates and Lottery Success Scholarship by Race, 1998-2001

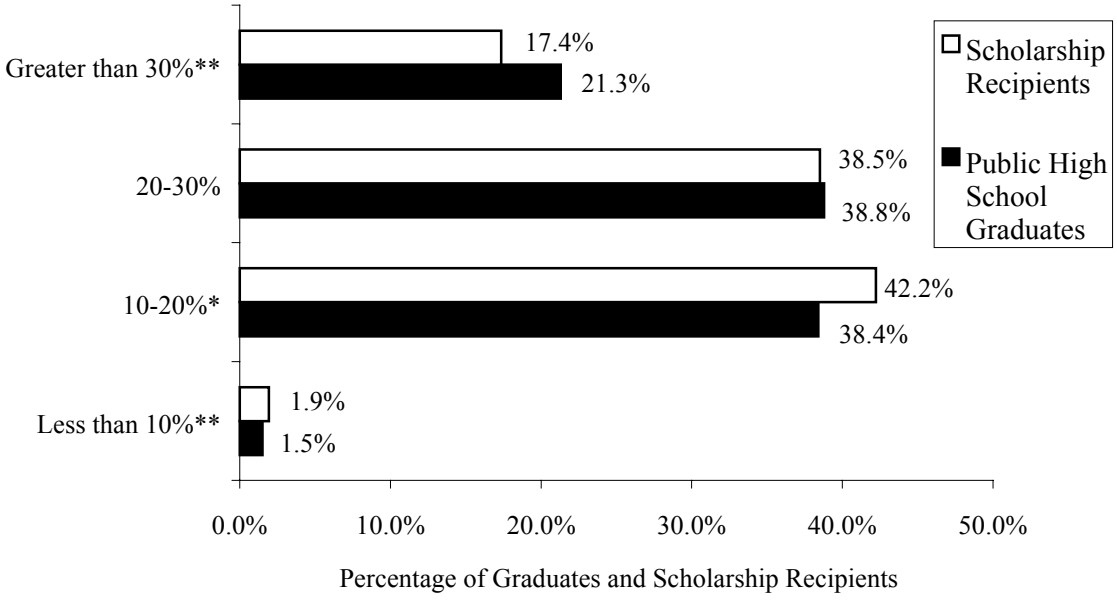


Note: ** $p < .01$.
Source: New Mexico Commission on Higher Education (NMCHE) and NCES CCD.

A comparison between the percentages of high school graduates and scholarship recipients by county was conducted.[12] There are between one to four school districts within each of the 33 counties. In 2000, only one county, Los Alamos, was experiencing less than 10 percent of its students in poverty (see Figure 3-11). In fact, in 2000 the percentage of students in poverty for Los Alamos was 2.4 percent. Between 1998 and 2002, Los Alamos averaged 84 percent White and only 15 percent Hispanic students. Approximately 1.5 percent of New Mexico's high school graduates and 1.9 percent of the scholarship recipients were from Los Alamos ($t = -6.617$, $p < .01$).

High school graduates from counties with 10 percent to 20 percent of the students in poverty averaged 38.4 percent, while scholarship recipients from the same counties averaged 42.2 percent ($t = -3.252$, $p < .05$). In 2000, ten of New Mexico's counties experienced having greater than 30 percent of their students in poverty. Over 21 percent of the high school graduates were from those high poverty counties, while only 17.4 percent of the Lottery Success Scholarship recipients were from those 10 counties ($t = 10.076$, $p < .01$). The findings clearly illustrate a relationship between a student's race and where he or she is from and the likelihood he or she will obtain a Lottery Success Scholarship.

Figure 3-11: Comparison between the Percentages of New Mexico Public High School Graduates and Lottery Scholarship Recipients in Poverty by County, 1998-2001



Note: * $p < .05$. ** $p < .01$.
Source: New Mexico Commission on Higher Education (NMCHE), NCES CCD, and SAIPE.

[12] New Mexico Higher Education Commission (NMHEC) provided scholarship recipient data by county, and only provided state level race data.

Next, I took a closer look at four counties that have the largest graduating classes, or as in the case of Los Alamos, is an outlier amongst the other 33 counties because of its low poverty and predominantly White student population.

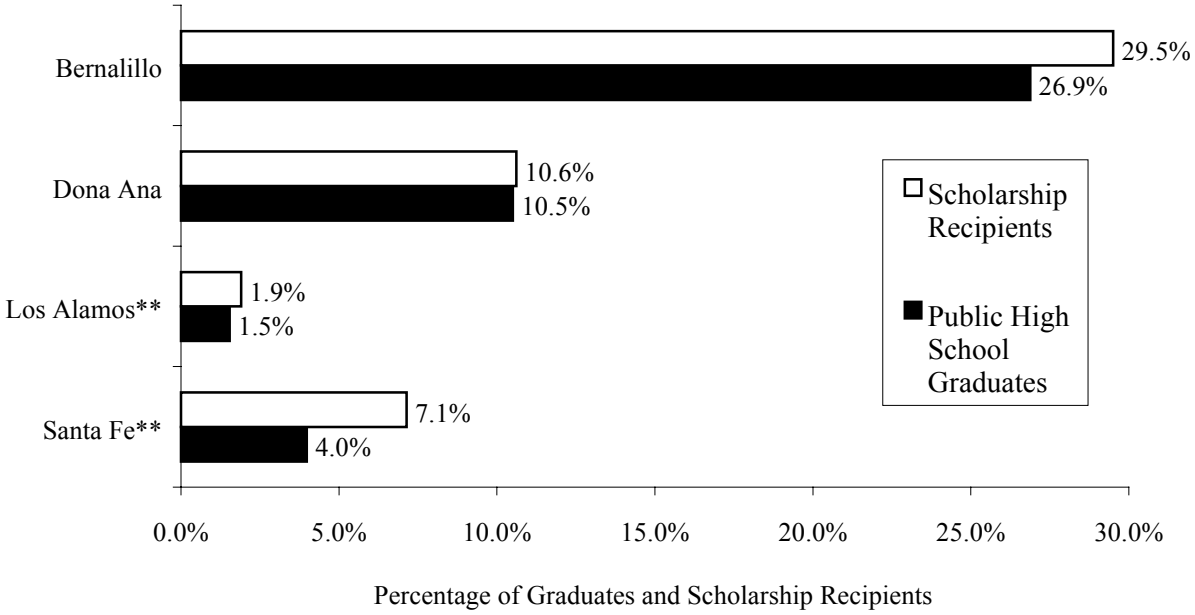
As shown in Figure 3-12, a higher percentage of Lottery Success Scholarship recipients than high school graduates was from Bernalillo, Dona Ana, and Los Alamos counties. Albuquerque school district is the only school district located in Bernalillo county. In 2000, 16.3 percent of Bernalillo county students were in poverty. Hispanic and White students comprised approximately 43 and 49 percent of Bernalillo county high school graduates, respectively. Approximately 30 percent of the scholarship recipients are from the Albuquerque area, but the district only graduates 27 percent of New Mexico's students.

Dona Ana county incorporates three school districts, and approximately 70 percent of its high school graduates were Hispanic between 1998 and 2001. In 2000 two of the school districts, Gadsden and Hatch, were experiencing high poverty; greater than 40 percent of their students were in poverty. Las Cruces, the other school district, houses New Mexico State University, and 25.6 percent of its students were in poverty. Between 1998 and 2001, the three school districts have produced approximately the same percentage of high school graduates and Lottery Success Scholarship recipients.

Lastly, only four percent of the Lottery Scholarship recipients were from Santa Fe county, the capital of New Mexico ($t = -6.620$, $p < .01$), but Santa Fe produced seven percent of New Mexico's high school graduates. Santa Fe county includes three school districts—Espanola, Pojoaque, and Santa Fe—and the percentage of students in poverty were 14.5 in Pojoaque, 17.1 in Santa Fe, and 22.1 in Espanola. Fifty-six percent of Santa Fe county's graduates were Hispanic and 38 percent were White.

The findings confirm a noticeable relationship between being a White student and obtaining a Lottery Success Scholarship. In addition, poverty level also factors into the equation on whether or not a student will have access to higher education and a Lottery Success Scholarship.

Figure 3-12: Comparison Between the Percentages of New Mexico Public High School Graduates and Lottery Success Scholarship Recipients by Selected Counties, 1998-2001



Note: $p < .01$
Source: Author's calculations. Data obtained from NMCHE and NCES CCD

DISCUSSION

This study's findings illustrate that there are inequities among merit scholarship recipients and high school graduates in Alaska, Florida, Kentucky, Michigan, and New Mexico. The inequities impact access to higher education for minority and low-income students.

The ability to pay for college by household income became a powerful influence when policy makers altered their focus from low-income students and access toward students whose attendance was already assured (ACSFA, 2001). The increase in merit-based financial aid programs was a sudden shift in state public policy – a shift from concentrating on serving the most economically disadvantaged through need-based financial aid to rewarding and alluring exceptional students through merit-based financial aid (Longanecker, 2002). ACSFA (2001) argues that these policy shifts have produced a significant change for low-income students and for society. For students, the consequence has been financial barriers higher in constant dollars than three decades ago. They claim that these policies are not only inequitable but also economically inefficient.

This study's findings continue the argument that the non-need, merit-based scholarship programs are enhancing access for students who would probably attend college anyway. This study found that White students, even if they are from urban and high poverty areas, have a greater opportunity to receive a non-need, merit scholarship than Black and Hispanic students. For the most part, states have created the non-need, merit scholarship programs to increase the state's human capital. Using the scholarships as enticement, states hope students will be high achievers academically in high school and college, stay in-state for college, and stay in-state for

employment after college. The evidence from this study proves the inequities of these non-needs, merit scholarship programs. How can a state increase its human capital if the state is not working with and insuring that minority and high poverty students have a fair and equal opportunity for access to higher education?

Specific findings from this study include:

- Alaska Scholars—a higher percentage of White high school graduates accept the scholarship and enroll in college than Black, Hispanic, and Native American graduates.
- Florida Bright Futures Scholarship—a higher percentage of White and Asian high school graduates receive the Bright Futures Scholarship than Black and Hispanic graduates; and fewer students, specifically minorities, from large and high poverty school districts received the scholarship.
- Kentucky Educational Excellence Scholarship—fewer Black high school graduates earn the KEES awards, and the financial amount of their awards are considerably lower than White students' financial awards. It is the same story for Black students and the KEES bonus awards.
- Michigan Merit Award—White and Asian students are more likely to receive the Merit Award than Black and Hispanic students. The Award is disproportionately attained by high school graduates from suburban and low poverty school districts.
- New Mexico Lottery Success Scholarship—a lower rate of Black, Hispanic, and Native American freshmen receives the Lottery Scholarship than White freshmen, and a lower percentage of freshmen from high poverty school districts received the scholarship.

It is important to note that Florida, Kentucky, and New Mexico rely on state lotteries for funding their merit scholarship programs, and this study found that fewer students from high poverty school districts received scholarships in Florida and New Mexico. Studies on lottery buyers have established that "the less educated that low-income people are, the more likely they are to spend a high percentage of their income on lottery tickets." Thus, the middle- and upper-income people are reaping the greatest benefits of the lottery (Cornwell & Mustard, 2002; Selingo, 2000, April 16).

These types of scholarship incentives are biased toward school districts in middle-income to wealthy areas where student resources (e.g., tutoring, instructional systems, counseling, teacher professional development) are more abundant than in rural or inner city and/or high poverty areas. The student has to take the required courses and achieve a minimum GPA (Florida, Kentucky, and New Mexico), receive a minimum score on the SAT or ACT (Florida, Kentucky), rank in the top percentile of their graduating class (Alaska), or obtain a certain score on the state proficiency exam (Michigan) to be eligible for the scholarship.

CONCLUSION

Even though the states with merit scholarship programs are experiencing increased participation in college (Farrell, 2004), several of these states are encountering issues with access, both economic and sociological. Whether or not the goal of the state is to increase its human capital with the merit scholarship program, state policymakers need to reevaluate the eligibility and family financial requirements. If this does not occur, the lasting effect will not

only be a more stratified statewide higher education system but also a more stratified economic and social system.

Taking into consideration this study's findings on the merit scholarship programs in Alaska, Florida, Kentucky, Michigan, and New Mexico, my specific recommendations for the states follow.

Family financial requirements. Include a financial need component in the eligibility criteria for the scholarship. To provide access to higher education for all high school graduates, a state needs to use a sliding financial scale for the amount of the scholarship based on family income. Require high school graduates to complete a FAFSA and then the state can use the financial data, along with the academic eligibility requirements, to determine the amount of the scholarship.

Scholarship Eligibility Requirements. Requiring students to meet one eligibility requirement, such as test score or GPA, is biased towards White students and students from low poverty school districts. Specific findings from this study clarify how critical it is for states to evaluate the eligibility requirements for the state merit scholarship.

- Alaska provides a full tuition scholarship to a UAlaska institution if the student is in the top ten percent of their high school graduating class. This study found that a lower percentage of Alaskan Natives, Blacks, and Hispanics become Alaska Scholars than White and Asian students. How does Alaska know if the top ten percent of each high school's graduating class are high academic achievers? Some of Alaska school districts graduate less than ten students a year and others, such as Anchorage, graduate over 2,000 students. The Alaska Scholar eligibility requirements are not equitable to all races, especially taking into consideration where a student is from within the state.
- Kentucky offers a sliding scale for the amount of the KEES award based on high school GPA each year, ninth through twelfth grades. This study found that Black students earned lower KEES awards, including bonus awards, than White students. The bonus awards are based on a student's ACT score. Studies have found that there are significant achievement gaps on standardized tests by the race, specifically impacting Black students (as cited in Heller & Rasmussen, 2002).
- Florida offers a three tier-award system based on a student's GPA, SAT/ACT score, and community service contribution. This study analyzed all three awards and despite the varying eligibility requirements, Black and Hispanic students are not receiving the scholarship at a rate equal to White students. Again, studies have found that Black students do not fare as well as White students on standardized tests (as cited in Heller & Rasmussen, 2002).
- Michigan's Merit Award program is based on a student's high stakes test score. Once again, this award is biased against low-income, and Black and Hispanic students because there is a clear relationship between students' socioeconomic status and race and their probability of qualifying for the award (Heller & Rasmussen, 2001); Heller & Shapiro, 2000). In addition, Michigan only offers a $2,500 award rather than a full tuition award and, again, this impacts access for low income and minority students (ACSFA, 2001; St. John, 1990).
- New Mexico's eligibility requirement for the Lottery Success Scholarship is quite different from the other states. Eligibility for scholarship does not occur until after a student's first semester of college. Students have to take 12 credits and receive a 2.5 GPA. However, minority students are not receiving the scholarship at the rate of White

students and, therefore, many drop out of college after the first semester of college (Binder, Ganderton, & Hutchens, 2002).

Therefore, it is imperative that the state programs evaluate and change their scholarship eligibility requirements to increase access to higher education for all races.

State financial need-based scholarships. Of the five states analyzed in this study, only Alaska has discontinued offering needs-based grant aid. As found in this study, high poverty and minority students are not receiving the non-needs merit-based scholarships. Therefore, it is critical for states to offer alternative methods for students to finance their postsecondary education that do not include loans if the states want to increase access and improve the state's human capital.

Middle and high school resources. Redirect funding for resources to aid middle and high school students, especially minority and high-poverty students, through to high school graduation and college preparation. Resources may include career and academic counseling, college preparation courses, social services, and technological resources.

College preparation. State program offices need to ask the higher education community to help prepare students for higher education. This includes educating middle school students, families, teachers, and administrators about college access, preparation, and the importance, both economically and socially, of attending college.

In conclusion, if states want to increase their human and social capital, the different state agencies, school districts, and higher education institutions need to work together to ensure a non-stratified socio-economic system. Currently, the non-need, merit-based scholarship programs are not increasing access to higher education for minorities and high poverty students, resulting in fewer opportunities for those students, economically and socially. And this could potentially further intensify divisions between high and low-income areas and between urban and suburban areas.

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APPENDIX

Table 3A-1: State Scholarship Data Obtained From:

State	State Merit-Based Scholarship Program Offices	Location	Data Obtained
Alaska	University of Alaska Statewide Budget & Institutional Research	http://www.alaska.edu/oh/index.html	Aggregate number of eligible Alaska Scholars Enrolled Alaska Scholars, 1999-2002, by school district Race data for enrolled Alaska Scholars, 1999-2002
Florida	Florida Department of Education Bright Futures Scholarship Program	http://www.firn.edu/doe/osfa	Eligible and enrolled Bright Futures Scholarship recipients by school districts, 1997-2002 Race data by eligible scholarship recipients and school district, 1999-2002
Kentucky	Kentucky Higher Education Assistance Authority (KHEAA)	http://www.kheaa.com	Earned awards by school district, 2000-2002 Race data by school district, 2000-2002 Earned bonus awards by school district, 2000-2002
Michigan	Michigan Department of Treasury	http://treas-secure.state.mi.us/meritaward/meritindex.htm	Merit Award recipients by school district, 2000-2002 Race data by award recipients and school district, 2000-2002
New Mexico	New Mexico Commission on Higher Education	http://www.nmche.org	Cumulative Lottery Success Scholarship recipients, 1998-2001 Cumulative race data for recipients and school districts, 1998-2002

State High School Graduate and School District or County Data Obtained From:

Data Source	Location	Data Collected
NCES Common Core Data (CCD)	http://www.nces.ed.gov/ccd	State and school district data for each one of the 12 states: Public high school graduates Ethnicity of Graduates (available from 1995 and beyond)
U.S. Census Bureau Small Area Income & Poverty Estimates	http://www.census.gov/hhes/www/saipe/index.html	School District and County Income and Poverty Estimates (SAIPE) by school district for people under 18.

CHAPTER 4

GEORGIA'S HOPE SCHOLARSHIP AND MINORITY AND LOW-INCOME STUDENTS: PROGRAM EFFECTS AND PROPOSED REFORMS

Christopher Cornwell

David B. Mustard

Introduction

This chapter examines Georgia's HOPE (Helping Outstanding Students Educationally) Program and its effects on underrepresented minorities and low-income students, building on our earlier work (Cornwell & Mustard, 2002). Our previous study concluded that, in the first five years of the program since its founding in 1993, HOPE raised the enrollment rate (the ratio of first-time freshmen to recent high-school graduates) in Georgia colleges eight percent relative to the average enrollment rate in other member states of the Southern Regional Education Board (SREB). This gain was realized primarily at four-year institutions, a pattern that held for both Whites and Blacks, although the percentage increase for Blacks was higher. The relatively large increase for Blacks is explained in large part by the presence of several relatively large Historically-Black Colleges and Universities (HBCUs) in Georgia.

We also argued that the lottery financing causes the program's costs to be disproportionately borne by lower-income and Black families who spend a larger share of their incomes on lottery play than more affluent and White families. Also, because high school academic achievement and family income are positively correlated, the HOPE Scholarship tends to benefit students from middle- and upper-income households.

Here, we introduce new findings on how scholarship receipt varies by race. We review and update our study of HOPE's effect on enrollment and analyze how retention rules influence course-taking behavior in college. In addition, we give an extended account of HOPE's legislative history and assess the numerous recent proposals to reform the program. The reform proposals are motivated by a concern that the ever-increasing popularity of the scholarship will soon cause demand to outstrip lottery revenues. Many of the proposals, like adding a minimum-SAT requirement, will have disparate impacts by race. Although few of the proposals have been enacted to date, continued pressure on the funding source will certainly lead to their reconsideration in the future.

Since its inception in 1993, the HOPE program has distributed over 2.0 billion dollars to about 625,000 students. Its impact extends far beyond the borders of the state, however, as HOPE has been the model in the rapid increase in state-sponsored merit scholarships during the last ten years. Cornwell, Leidner, and Mustard (2004) indicate that in the past fifteen years, nearly 30 state-sponsored merit scholarships have been started, 14 of which are explicitly "HOPE-like," with multi-year coverage, no limit on the number of qualifiers, and awards distributed as entitlements for those who meet specified criteria.

Georgia's HOPE Program

We first outline the history of Georgia's HOPE Program and its basic features. HOPE is the brainchild of Zell Miller, who was elected Georgia's 79th governor in 1990. Miller came from a low-income family and attended the University of Georgia on the GI Bill. His stated goal in introducing HOPE was to enable Georgians to further their education the way he had done. Miller's philosophical basis for the program was that of a broad-based merit scholarship, similar to the GI Bill. "You give something, you get something—that's the premise of HOPE," he said (Seligman, Milford, O'Looney, & Ledbetter, 2004, p.1). High school students must "give"

achievement in the form of a "B" average in exchange for free tuition and fees in college as long as they maintain a "B" average.[1]

Miller proposed funding HOPE from a state lottery, which at that time was constitutionally prohibited. However, in November 1992, Georgia voters passed the lottery amendment by less than 100,000 votes (1,146,340 to 1,050,674), clearing the last significant political hurdle for HOPE to be implemented. The initial legislation indicated that 51 percent of lottery revenues should be returned to players in winnings, 7 percent should cover administrative costs, 7 percent should be allocated for advertising and in-store promotion, and the remaining 35 percent should be spent on education. The education expenditures would be divided among four new educational programs—HOPE, universal pre-kindergarten programs, technology, and buildings and infrastructure. As we discuss below, the explosive growth in HOPE awards has essentially reduced lottery funding of technology, building, and infrastructure to zero.

The HOPE program distributes two types of awards—the merit-based scholarship and a non-merit-based grant. To qualify for the scholarship, which can be applied to 103 public and private colleges and universities in Georgia, high-school students must graduate with a "B" average. The scholarship pays all tuition and fees, and $300 of book expenses to Georgia citizens who attend degree-granting public institutions. For the 2003-2004 academic year the value of the award was about $4,400 at the state's flagship institutions.[2] The value of the award for HOPE Scholars in private, degree-granting institutions was originally set at $1000, but was raised to $3000 by 1996. Once in college, students need to maintain a "B" average with a minimum number of credits to retain the award. The award had an initial household income cap of $66,000 and included a Pell offset, which reduced the HOPE payment dollar-for-dollar for any federal Pell Grant aid received by the student. The income cap was raised to $100,000 in 1994 and removed entirely in 1995.

In contrast, the HOPE Grant is essentially an entitlement with no merit requirements. It applies only to non-degree programs at two-year and technical schools. The grant covers tuition and mandatory fees, and students may receive it for all coursework required for a certificate or diploma. Thus, the incentives related to scholarship eligibility and retention do not apply to grant recipients.

Table 4-1 provides a breakdown of program disbursements in terms of the number of awards and dollars of aid from 1993-2002.[3] Degree-granting institutions accounted for 55 percent of all awards and 78 percent of total aid during this period, with four-year colleges and universities representing 44 and 60 percent of these totals, respectively. Thus, the lion's share of program resources is devoted to the merit-based scholarship—in particular, to high-school

[1] Some contend that his HOPE proposal was an appeal to middle-class voters in his 1994 re-election campaign. In early 1993, Miller angered many rural Whites, who with Blacks comprised his core constituency in the 1990 election, by suggesting that Georgia remove the Confederate emblem from its state flag. "So Miller changed his political strategy, abandoning his coalition of blacks and poor rural Whites in favor of a new alliance between blacks and middle-class, traditionally Republican White suburbanites. … [H]e curried favor among middle-class voters with the HOPE Scholarship, one of the education initiatives funded by the new state lottery" (Zengerle, 2001).

[2] For example, the tuition and fees were $3,208 and $870 at the University of Georgia during the 2003-2004 academic year. While tuition and fee charges vary widely at the state's public institutions, the book allowance is the same, $300 per year, at each.

[3] "Awards" do not equal "recipients" because a single recipient receives an award each year she qualifies and, in the case of the grant, she can receive multiple awards within the same year, depending on the nature of the vocational training program.

graduates matriculating at four-year schools. The other 45 percent of awards flowed to technical schools in the form of grants, but these institutions receive a relatively small proportion of total aid due to their low tuition.

Table 4-1: Numbers of HOPE Awards & Dollars of Aid, by Institution Type, 1993-2002

Institution Type	Number of Awards (% of Total)	Aid in Millions of Dollars (% of Total)
4-Year Schools	526,033	942.00
Public	389,452	840.09
	(32.0)	(53.7)
Private[a]	136,581	101.91
	(11.2)	(6.5)
2-Year Schools	144,061	279.43
Public	109,362	237.48
	(9.0)	(15.2)
Private[a]	34,699	41.95
	(2.8)	(2.7)
Technical Schools[b]	547,078	342.86
	(44.9)	(21.9)
HOPE Program Total	1,217,172	1564.3

Notes: [a] Private two-year and four-year schools were eligible to participate only from 1996.
[b] Of the 34 HOPE-eligible technical schools, 13 offer Associate's Degrees, and therefore can award both the scholarship and grant.
Source: Cornwell & Mustard (2003, Fall)

Until the eligibility criteria for the scholarship were stiffened in 2000,[4] the share of HOPE funds allocated to the scholarship component of the program grew steadily. Between 1993 and 1999, the number of HOPE-eligible high-school graduates rose over 50 percent, from 29,840 to 45,149, and the proportion of high-school graduates satisfying the merit requirements increased from 48 percent to almost 65 percent. Even after the rule change in 2000, the fraction of high-school graduates qualifying for the scholarship has approached 60 percent.

The age, scale and scope of Georgia's HOPE program make it an attractive laboratory for examining the effects of state-sponsored merit scholarships. In the next three sections, we discuss our findings concerning the role of race and school quality in determining HOPE eligibility, HOPE's effect on college enrollments, and the scholarship's influence on academic choices in college.

[4] Scholarship requirements changed for high-school classes that graduated in 2000 and later. Previously, the GPA requirement was defined in terms of college preparatory courses. Now, to receive HOPE, high-school students must have a "B" average in the strictly academic courses that make up the "core curriculum."

Scholarship Receipt and Race

To what extent is HOPE eligibility affected by the racial composition and quality of high schools? To answer this question we analyze Georgia Department of Education (2002) data from all 337 Georgia public high schools on the 2002 graduating class. We limit our attention to White and Black students, because these two groups comprise over 93 percent of the 2002 graduating class. In contrast, Asians and Hispanics together accounted for less than 5 percent. The results of two regressions—a baseline model that includes only racial composition variables and fuller specification that adds a variety of other controls—are reported in Appendix 4-A1.

The estimates from the simple model suggest that a one percentage-point increase in the fraction of Black students is associated with a reduction in the share of HOPE-eligible students by 0.18 percentage points, which is statistically significant at the 0.01 level. In contrast, larger shares of Asian students are associated with larger fractions of students who are HOPE eligible. For an additional one percent of Asian student enrollment, the HOPE receipt rate is 0.76 percentage points higher. The fractions of Hispanic and Native American students have no statistically significant effect on the percentage of the class that is HOPE eligible.

The second column adds variables that control for the quality of schools (teacher experience and percent of teachers with at least a BA degree), peers (SAT scores, AP tests taken, AP pass rate, and high-school completion rate), and family background (proxied by the percentage of the student body receiving a free or reduced-price lunch). When these variables are introduced the effect of race is eliminated—none of the race variables is statistically significant. However, the quality of schools, peers, and family background are very important. All but three of the other control variables (average math SAT score, average years of teacher experience, and the fraction of teachers with more than a BA degree) are statistically significant. Two characteristics reduce the fraction of a high-school class with HOPE eligibility. An increase of 100 students in the graduating class reduces the fraction of students who receive HOPE by 2.6 percent and a one-percentage point increase in the fraction of students eligible for free or reduced lunch results in a 0.11 percentage point drop. An increase of 100 in the average verbal SAT score raises the fraction of HOPE-eligible students by 11.8 percentage points, while a one-percentage point increase in the high-school completion rate (the fraction of 9^{th} graders that complete 12^{th} grade) expands HOPE eligibility by 0.31 of a percentage point. Both of the Advanced Placement (AP) test variables are associated with higher fractions of HOPE-eligible students. Increasing AP tests taken by 100 and the AP pass rate by one-percentage point increases HOPE-eligible students by 2.8 and 0.07 of a percent, respectively. Interestingly, neither teacher experience nor teacher education has a statistically significant affect on HOPE eligibility.

To summarize, on average high schools with a greater share of Blacks receive fewer HOPE Scholarships while institutions with a larger share of Asians receive more awards. These differences in award receipt are due, in part, to differences in preparation that may be generated by differences in families, peers, and quality of schools. Unfortunately these differences in preparation are often long-term, building up over the entire first eighteen years of a student's life.

HOPE's Effect on Enrollment in Georgia Colleges by Race

Cornwell, Mustard, and Sridhar (2004) compare college enrollments in Georgia with those in the other member states of the SREB and show that HOPE increased total freshmen enrollment in Georgia colleges and universities by 5.9 percent, with the gains concentrated in

four-year public and private schools. From a policy perspective, if the objective is to retain high-quality students in state for college, then HOPE accomplishes this to some degree. Cornwell, Mustard, and Sridhar (2004) find that HOPE reduced the number of first-time freshmen in four-year schools who recently graduated from high school leaving Georgia by an average of 560 per year between 1993 and 1997, accounting for roughly two-thirds of the total enrollment gain for this group. However, recent-graduate freshmen represent only about 40 percent the total four-year-school enrollment increase.

Separately analyzing HOPE's effects by race, Cornwell, Mustard, and Sridhar (2004) report that the scholarship increased White enrollment by about 3.6 percent and Black enrollment by about 15 percent. Correspondingly, they find a significant 2.7 percentage-point rise in the Black share of total (White + Black) enrollment in Georgia. Georgia's HBCUs account for much of the increased enrollment of Blacks, as their enrollments rose 23 percent during the same period because of HOPE (Cornwell, Mustard, & Sridhar, 2004). Their presence clearly enhances the scholarship's incentive for Blacks to choose an in-state college. In the first place, Blacks are likely more price sensitive, because the typical Black household (nationally and in Georgia) has less wealth (even holding income constant). To this price sensitivity, the HBCUs add the opportunity of attending a college with a high concentration of similar peers. HOPE's influence on the HBCU enrollments could also reflect rising admission standards at the state's flagship universities. In contrast to the University of Georgia and Georgia Tech, the 2001 *Barron's Guide to Colleges* (*Profiles of American Colleges*, 2001) rated all but one Georgia HBCU as "less competitive," the fifth highest category (out of six).

Extrapolating from Georgia's experience with HOPE to other states contemplating merit scholarship programs, there are several things to keep in mind. It will be easier to retain academically accomplished high-school graduates if selective colleges are located within the state. Over the last five years, Georgia (with Georgia Tech and the University of Georgia) is one of only four states that have at least two universities in the top 20 of the *U.S. News and World Report* rankings of national public universities (U.S. News & World Report, 2002). In contrast, The University of Massachusetts-Amherst, Massachusetts' flagship public institution, is ranked 48th. In Massachusetts' case, this situation would be mitigated if the scholarship could be used at private schools (as in Georgia), as there are more selective private institutions in the northeast than the southeast.

The retention of Black students will depend on the size of the Black population and number of predominately Black institutions in the state. In 2002, 28.8 percent of Georgia's population was Black, compared to only 6.6 percent in Massachusetts (U.S. Census Bureau, 2004), and Massachusetts has no HBCUs.

HOPE and Academic Behavior of Students in College

Three papers have examined whether HOPE generates differences by race or ethnicity in student outcomes in college. Dee and Jackson (1999) studied the likelihood of HOPE loss among all the HOPE Scholars who enrolled at the Georgia Institute of Technology in 1995, the year the income cap was removed. They concluded that those who enroll in science, computing, and engineering are significantly more likely to lose HOPE. However, there are no racial or ethnic differences in HOPE loss.

A common justification for HOPE is to promote and reward academic achievement. Henry, Rubenstein, and Bugler (forthcoming) contrast the behavior of 1,915 "borderline HOPE

scholars" with a matched group of 1,817 students who graduated in 1995 with the same high-school core-course GPA and matriculated at the same type of postsecondary institution, but who did not receive HOPE. They found that students in the first group had higher college GPAs and probabilities of graduating in four years, and completed more college credits. Further, their results show no statistically significant difference between Black and White HOPE scholars in these outcomes. However, it is difficult to construe the Henry, Rubenstein, and Bugler (forthcoming) findings as scholarship effects because both groups are affected by the program—qualifiers can become non-qualifiers and vice versa.

The last paper, Cornwell, Lee, and Mustard (2004), argues that while the GPA requirements for HOPE eligibility and retention may promote academic achievement, they also encourage other behavioral responses like enrolling in fewer classes per term, withdrawing from classes when performing unsatisfactorily, and choosing less challenging courses. Using data from the longitudinal records of all undergraduates who enrolled at the University of Georgia (UGA) between 1989 and 1997, they estimated the effects of HOPE on course enrollment, withdrawal, and completion. They identify the scholarship's influence by comparing the behavior of in-state students before and after HOPE was implemented with the behavior of out-of-state students, who are ineligible for the award.

They find that HOPE decreased full-load enrollments and increased course withdrawals among resident freshmen. The combination of these responses is a 9.3 percent lower probability of full-load completion and an almost one-credit reduction in annual course credits completed. Further, the scholarship's influence on course-taking behavior is concentrated on students whose GPAs place them on or below the scholarship-retention margin and increased as the income cap was lifted and more students received the award.

Appendix 4-A2 reports how HOPE affects course-taking behavior of first-year UGA students by race and ethnicity. All regressions include controls for race, gender, Georgia residency, and high school fixed effects.[5] Six outcomes are evaluated—the likelihood of enrolling in a full load, withdrawing from a class, and completing a full load, and the number of credit hours enrolled, withdrawn, and completed—and HOPE effects estimated for Asians, Blacks and Hispanics (with Whites being the referent group). There is no evidence that HOPE has influenced the course-taking decisions of Asians; none of the coefficient estimates is statistically significant. For Blacks, however, the data indicate that the scholarship has had some effect along the "extensive margin." HOPE reduced the likelihood of enrolling in a full load by 7.8 percentage points and completing a full load by 6.8 percentage points, while increasing the likelihood of course withdrawal by 3.7 percentage points. Although the results are qualitatively similar for the "intensive margin," the evidence is weaker. The strongest finding emerges for withdrawn credits, where Blacks are shown to drop about 0.3 more credits on average than Whites because of HOPE. Overall, Hispanics appear to respond to the scholarship incentives similarly to Blacks, but only one of the estimated HOPE effects is statistically significant—that pertaining to the probability of enrolling in a full load. HOPE reduced the full-load enrollment probability for Hispanics by 8.8 percentage points.

The UGA data show that HOPE's GPA requirements lead to choices that partially undermine its objective of promoting academic achievement by encouraging greater effort. However, the results show little difference by race and ethnicity. HOPE's effect on course taking

[5] In regressions that are not reported we also included controls for measures of pre-college performance like SAT math, SAT verbal, the number of AP credits, and high school grade point average. Including these additional control variables did not affect the qualitative results.

is generally not statistically significant for Asian and Hispanic students. The evidence is mixed for Blacks, which generally exhibited statistically significant effects towards slowing academic progress for the likelihood of enrolling, withdrawing, and completing courses, but no statistically significant effects on variables measuring the number of credit hours.

One of the important policy decisions regarding merit aid is how to structure checkpoints for scholarship renewal in college. This was one of the major rule changes made to Georgia's HOPE in 2004 that will be discussed later in this chapter. Providing more frequent checkpoints or limiting the number of semesters that a student can receive the award may give some students incentives to progress through college more quickly and also result in others losing their scholarships earlier than they otherwise would have.

Program Expansion and Reform

Because HOPE has served as the model for so many state-sponsored merit programs and is older than these programs, understanding Georgia's legislative reforms may provide insight for future reforms in other states. Since 1993 the Georgia legislature has made numerous changes to HOPE. The 1990s exhibited unexpectedly high lottery revenue growth and prosperous state finance. During this time the legislature generally expanded the eligibility and generosity of HOPE and also funded new programs with lottery resources. More recently—when lottery growth slowed and state finances weakened—the legislature pursued a sharply different strategy and typically restricted eligibility and eliminated some programs from lottery funding due to growing concerns about the program's long-term financial stability.

Early Changes

Because lottery revenues initially far outpaced all initial projections, the legislature broadened the eligibility and generosity of the scholarship. The household income cap was increased from $66,000 to $100,000 in 1994, and entirely eliminated in 1995. Also in 1995, HOPE increased its allocation to private institution college students from $1,000 to $1,500, which was raised to $3,000 the following year. In 1996 and 1997, legislation was passed that increased the eligibility of nontraditional students, and in 1998, home school students were allowed to qualify retroactively for their freshmen years if they met the collegiate grade point criterion.

During this prosperous period the legislature also voted to use the lottery to fund other scholarships. Examples include the Public Safety Memorial Grant (1994), the Georgia Military College Scholarship (1995),[6] the PROMISE Teacher Scholarship,[7] the HOPE Teacher Scholarship (1996),[8] and the Scholarship for Engineering Education (SEE) (1998).[9] Two features distinguish these "add-on" programs from HOPE. One is the increased use of service-cancelable

[6] In return for the scholarship, recipients must serve for two years following graduation in the Georgia National Guard.

[7] Students who received the PROMISE Teacher Scholarships agreed to teach after graduation in a Georgia public school up to a maximum of four years.

[8] The HOPE Teacher Scholarship provides forgivable loans to recipients who teach in a Georgia public school in critical shortage fields.

[9] The SEE provided service-cancelable loans for a maximum of $17,500 for a student's program of study and required students to work in an engineering-related field in Georgia after graduation.

loans instead of direct payments. The second is a requirement to work or serve in Georgia after graduation.

Eliminating the Pell Offset and Assistance to Low-Income Students

The last significant legislative expansion of HOPE was the removal of the Pell offset, which applies to students who graduated from high school in 2001. One of the most significant criticisms of the original HOPE Program was that if a student was eligible for both a Pell Grant and HOPE, the student's HOPE scholarship was reduced dollar-for-dollar by the value of the Pell Grant. Consequently, low-income students who received the Pell Grant prior to HOPE received very few additional resources from HOPE.

The effects of removing the Pell offset differed significantly by the type of institution attended. Table 4-2 reports financial aid receipt by class of institution for first-year students in the fall of 2001. It provides the number and fraction of Pell recipients and shows a number of interesting things. First, there are very few low-income students enrolled in the three research universities (row 1, columns 2 and 4). Less than 16 percent of entering students in this institutional category qualified for Pell. Only 0.39 percent qualified for Pell and not HOPE (column 2) and 15.29 percent qualified for both Pell and HOPE (column 4). These entries for Pell qualification are the lowest for any of the five institution classes. Second, although not separately reported in the table, low-income students comprise an even smaller share at the two flagship institutions (Georgia and Georgia Tech), where only slightly more than 10 percent of their students qualified for Pell. Third, the last column shows those who receive both Pell and HOPE and are most affected by the removal of the Pell offset, which affected about 18.5 percent of the 27,210 first-time freshmen in the fall of 2001.

Although those affected by the removal of the Pell offset represented almost one-fifth of all first-year students in 2001, it is surprising that the numbers are very similar to those of the year before the offset. In 2000, 4,749 (18.1 percent) of the incoming first-year students received both Pell and HOPE, compared to 5,029 (18.5 percent) in 2001, the first year after the offset was removed. This has led some to question whether the removal of the Pell Grant offset increased enrollment by decreasing the cost of postsecondary education for students who qualify for the Pell Grant. Seligman, Milford, O'Looney, and Ledbetter (2004) show that the total number of students and Pell Grant-eligible students registered in technical colleges increased between 2000 and 2003. However, Pell/HOPE grantees as a percentage of all technical college students changed little. They contend that a substantial link between the increased benefits for Pell/HOPE recipients and increased technical college enrollments may be because the removal of the offset was not advertised widely. They also cite college administrators who reported that most new applicants for financial aid were not aware of changes in financial aid policies like the Pell Grant offset removal.

Table 4-2: Financial Aid for First-Time Freshmen, Fall 2001

Class of Institution	(1) First-Time Freshmen from Georgia	(2) No HOPE/Pell		(3) HOPE/No Pell		(4) HOPE and Pell	
		No.	%	No.	%	No.	%
Research Universities	6,836	27	0.39	5,617	82.17	1,045	15.29
Regional Universities	3,880	116	2.99	2,547	65.64	820	21.13
State Universities	8,067	454	5.63	4,915	60.93	1,728	21.42
State Colleges	1,069	140	13.10	501	46.87	196	18.33
Two-Year Colleges	7,358	1,023	13.90	2,855	38.80	1,240	16.85
System Total	27,210	1,760	6.47	16,435	60.40	5,029	18.48

Note: First-Time Freshmen from Georgia is defined as the subset of first-time freshmen who graduated from Georgia High School since 1993 plus freshmen receiving HOPE according to Georgia Student Finance Commission records.

Source: Data are from the Georgia Department of Education (2002).

The state estimated that removing the Pell Grant offset would require approximately $23 million in additional funds to provide Pell grantees with HOPE Scholarships. However, that grew quickly so that in 2002, $87.8 million in HOPE Scholarships was awarded to 56,879 students who qualified for a Pell Grant (Seligman, Milford, O'Looney, & Ledbetter, 2004). By 2002, approximately 30 percent of HOPE scholarships and a little over 27 percent of HOPE dollars were awarded to students who met the federal definition for receipt of a Pell Grant.

To what extent do merit-aid programs affect the college attendance of low-income students? First, a common criticism of merit aid is that it reduces a state's commitment to need-based assistance, thus compromising the ability of needy students to succeed in college. In Georgia's case, in the year prior to HOPE, the state provided $4.9 million of strictly need-based grants, and $26.0 million of total aid (National Association of State Scholarship and Grant Programs 1993, Table 1, p. 40). By 2002-2003 Georgia's total aid had grown to $397 million annually while its need-based grants declined to $1.5 million (National Association of State Student Grant and Aid Programs, 2003, Table 3, p. 8). By 1997-1998, Georgia provided more aid per full-time undergraduate and had a larger fraction of undergraduates who received aid than any other state in the nation (National Association of State Student Grant and Aid Programs, 1998, Tables 12-13). So in a state like Georgia that never had a strong commitment to need-based aid and where substantially increasing need-based assistance is unlikely to be politically feasible, a large-scale merit-aid program may significantly increase the total funding available to low-income students. The same may not be true, however, in a state that has had a long history of strong support for need-based aid.

Singell, Waddell, and Curs (2004) examined this relationship between need and merit aid for low-income students. They used panel data on Pell awards with institutional data from the National Center of Educational Statistics and concluded that large increases in Georgia's merit aid improved college access of needy students relative to those of other southern states. The results indicated that most institution-specific increases in the enrollment of students with Pell

Grants are in two-year and less-selective four-year institutions and that Pell students are not crowded out of more selective institutions.

Furthermore, although not strictly need-based, much of Georgia's HOPE program was targeted to low-income students through the HOPE Grant. In 2003-2004 the grant alone allocated $103.7 million. Although we are unaware of data that directly link the HOPE Grant to the household income of its recipients, anecdotal evidence indicates that a large fraction of this aid is used by people who would have qualified for need-based grants. Also, since students were permitted to stack HOPE and Pell, Georgia schools with large Black enrollment have a larger fraction of students with HOPE who are Pell eligible than do institutions with large White enrollments. Furthermore, the fraction of students in HBCUs who receive Pell and HOPE is even larger, at over 65 percent (Cornwell, Mustard, & Sridhar 2004).

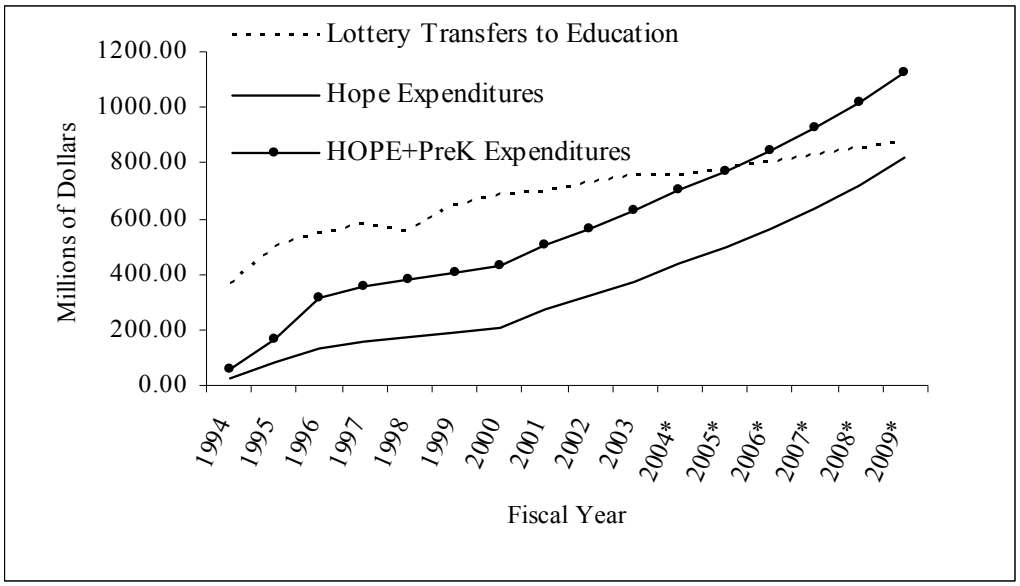
Whether a state's merit scholarship program delivers more aid to needy students may depend importantly on the state's commitment to need-based assistance. In 2002-2003, Massachusetts distributed $86.7 million in need-based grants, which comprised nearly all of its $87.7 million allocation to college students (National Association of State Student Grant and Aid Programs, 2003, Table 3, p. 8). When a state steadfastly provides need-based funding there is a greater likelihood for its total aid to needy students to decrease with the advent of a large merit program, as noted above.

Limiting the HOPE Program

Recently Georgia realized that the demand for educational expenditures was likely to exceed the ability of the lottery to pay for them. Figure 4-1, which compares the growth in the lottery transfers to education with the expenditures for the HOPE and pre-K programs, illustrates the fundamental change in the ability of the lottery to fund all of its educational commitments. The dotted line shows that lottery transfers to education grew rapidly since the lottery's inception. In its first year the lottery recorded $1.12 billion in revenue and transferred $363 million to education. Georgia's lottery has been one of the most successful in the nation as its revenues grew over 200 percent in its first ten years and was the first state lottery to increase revenue for its first seven years.

However, this unprecedented lottery success was insufficient to meet the even faster growth in educational expenditures. Figure 4-1 also plots HOPE expenditures and the sum of HOPE and pre-K expenditures. Although the Georgia lottery was one of the most successful lotteries in the nation and grew much faster than anticipated, educational expenditures driven primarily by the growth of HOPE grew even faster. The sum of HOPE and pre-K expenses was projected to soon exceed the lottery allocations to education. Although there is currently a reserve fund for financial emergencies, the projections indicate that the reserves would extend the day of reckoning for only about two years.

Figure 4-1: Lottery Allocations to Education vs. Educational Expenditures, FY 1994-2009



Notes: 1994 fiscal year runs from July 1, 1993 - June 30, 1994. The values for 2004 and following are projections. The lottery projections listed here include a 3.2 percent growth rate, which was the most favorable growth rate the Commission considered. The educational projections were based on the number of students who are expected to utilize the resources.

Source: Seligman (2003).

The state started to take steps to restore HOPE's financial stability. First, it reduced, and eventually eliminated, expenditures for two of the four original funding areas—technology and infrastructure. In its first year, the lottery transferred $363 million for educational purposes. HOPE and pre-K accounted for only $58 million of the lottery resources while technology and infrastructure comprised the largest share of resources, which continued for the first few years. However, over time the state increased funding for HOPE and pre-K and reduced funding for infrastructure and technology.

The need to increase the financial stability of the program also turned the political debate in favor of those who believed that previous changes were too expansive and weakened the original objective of HOPE to provide aid based on merit. Some maintained that an award earned by about two-thirds of high school graduates had significantly lost its merit component. In an effort to increase the merit standards and restore financial strength the legislature required that after the class of 2000, high-school grade-point average must be calculated only from core college preparatory courses. Because earning an "A" or "B" in a core course is typically thought to be more difficult than earning a high grade in an elective course, this change was anticipated to create significant savings by reducing the number of qualifying high school graduates—perhaps by about 30 percent. Despite the change to core classes, HOPE program enrollments in public colleges increased. For example, total enrollment of HOPE recipients in university system institutions rose from 70,623 in 2000 to 76,436 in 2002, representing a larger increase than in the years prior to the toughening of academic standards (Seligman, Milford, O'Looney, & Ledbetter,

2004). The failure to restore long-term financial stability to the program led the state to establish the HOPE Scholarship Joint Study Commission, which met in 2003 on the 10th anniversary of the program.

2004 Reforms

To address the problem of educational expenditures increasing substantially faster than lottery-generated revenues, the legislature passed Senate Resolution 220 in 2003 to create the Improvement of the HOPE Scholarship Joint Study Commission. The Commission's purpose was to "undertake a study of the conditions, needs, and issues" related to the HOPE scholarship program and "recommend any action or legislation which the commission deems necessary or appropriate to improve the HOPE scholarship program for the future," thereby assuring the "continuing and future availability of sufficient funds for HOPE scholarships," (Seligman, Millford, O'Looney, & Ledbetter, 2004, p. 16). The Commission considered the potential short- and long-term financial impacts of all options. Generally, short-term savings result from changes to the level of benefit, and long-term savings from changes in eligibility requirements.

The Commission started meeting in August 2003 near the 10th anniversary of the first HOPE distributions. The Commission posted on a website (http://www.cviog.uga.edu/hope/) all of the testimony it received and reports it issued during its six months of work. In January 2004 it issued its final report (Seligman, Milford, O'Looney, & Ledbetter, 2004). Its broad recommendations were to preserve the merit-based focus of the HOPE Scholarship, ensure compliance with the 3.0 grade-point requirement, improve data collection and management, create a commission to study the pre-kindergarten program, implement a uniform grading system for public K-12 education, discontinue funding for future capital and technology projects, and create contingency plans to guide future allocation decisions in the event of funding difficulty.

During the spring of 2004 the state legislature used the Commission's proposals as the basis of its discussions on HOPE reform. By the end of the spring session the legislature approved the most comprehensive changes to the program since it was established. The highlights of those changes are as follows (Georgia Student Finance Commission, 2004).

1. Mandatory fees. The amount HOPE will pay for mandatory fees is capped at the amount paid at each institution for the 2003-2004 award (though it still will pay full tuition).
2. New checkpoints. Since HOPE's inception, students were evaluated at the 30-semester-hour mark to determine whether they had a 3.0 college GPA. If one earned a 3.0, existing HOPE scholars maintained their awards and students who previously had not qualified earned an award until the 60-semester-hour checkpoint. However, the rules produced some unintended consequences by leading students to enroll in fewer classes and withdraw from more classes to try to maintain their HOPE eligibility (Cornwell, Lee, & Mustard, 2004). To try to keep students from slowing their academic progress the legislature implemented two new types of checkpoints.
    a. The End-of-Spring Checkpoint applies to all HOPE Scholars except freshmen who enrolled for less than 12 hours for each of their first three terms (see Three-term Checkpoint below). As of 2005, all HOPE Scholarship recipients must have a 3.0 college GPA at the end of each spring to keep their awards—regardless of how many credits they have earned. The HOPE Scholarship can be lost at an End-of-Spring Checkpoint, but cannot be gained until a credit-hour checkpoint (30, 60, or 90).

   b. The Three-term Checkpoint applies only to freshmen who enrolled for less than 12 hours for each of their first three terms. After their first three terms (starting in the spring 2005) HOPE scholars must have a 3.0 cumulative college GPA to maintain their awards. Once the three-term checkpoint has been applied to a student, the End-of-Spring checkpoint must be applied to that student in the future, regardless of the number of hours enrolled each term.

3. Book and fee triggers. Estimates indicated that the elimination of book and fee payments provided the greatest short-term savings. The legislature decided that if certain conditions were met, book and fee payments would be reduced as follows.
   a. If the lottery's year-end balance is less than the previous year's balance for one year, the book allowance will be reduced to $150 per academic year. Pell Grant recipients will continue to receive a $300 annual book allowance.
   b. If the lottery's year-end balance is less than the previous year's balance for two consecutive years, the book allowance will be eliminated. Pell Grant recipients will continue to receive a $300 annual book allowance.
   c. If the lottery's year-end balance is less than the previous year's balance for three years, fees will be eliminated for all students.
4. High school grades. Effective with the high school class of 2007, the high school requirement for the HOPE Scholarship will be a true "B average" of a 3.0 cumulative GPA on a 4.0 scale, rather than an 80 numeric average for all core curriculum courses. Seligman, Milford, O'Looney, and Ledbetter (2004) estimated that this would save $42.9 million in the first year it is implemented.

To our knowledge, there is no systematic analysis of how minority or low-income students will be affected by the first two rule changes. The change on book allowances that protects Pell grant recipients during times of financial difficulty will certainly assist low-income students. However, the maximum benefit will be a relatively small $300 per year per person.

The last change is the most significant because it may substantially reduce the number of high school students who receive HOPE to begin their college careers. Previously, high-school grades were calculated differently across the state, which allowed many students to qualify for HOPE who may not qualify under the new rule. Astonishingly, 6,638 students (32.3 percent of the scholarship recipients from the high school class of 2000) had a high-school GPA that would not have met the new standard (Ledbetter & Seligman, 2003). Table 4-3 gives an example of this situation. Over a quarter of HOPE Scholarship recipients earned between a 2.5 and 2.99 grade point average, 6.3 percent were between 2.0 and 2.49, and 0.25 percent earned 1.5-1.99. A handful of HOPE Scholars actually had GPAs of close to 1.0. These findings generated many concerns about lack of fairness. The legislature's decision on grades makes two important changes.

Table 4-3: Contrasting the Old and New HOPE GPA Eligibility Rules

Class	(1) Old Policy	(2) New Policy
English	79	C (2.0)
Foreign Language	79	C (2.0)
Math	79	C (2.0)
Science	79	C (2.0)
Social Science	84	B (3.0)
Grade Point Average	80	2.20
Overall Letter Grade	B	C
Hope Eligible?	Yes	No

Note: The scale used in Georgia translated scores between 70-79 into a "C," scores between 80 and 89 into a "B," and scores above 90 into an "A."

First, all core courses must count towards the overall grade point average. Previously, if a student received a "D" and retook the course for a "B," some schools counted only the higher grade for purposes of HOPE determination.

Second, high schools must adhere to a common set of rules to calculate grade point averages. Table 4-3, which provides the grades of a hypothetical high school student, illustrates the differences between the old and new standards. Column 1 shows that under the previous rule a school could calculate the numerical average of grades before converting it into a letter grade. So a student, who earned grades of 79 in four courses and an 84 in a fifth course, had an overall average of 80, which translated into a "B."[10] Therefore, by allowing the overall average to be calculated before assigning the letter grade, a student could offset four high "C" grades with one medium grade of "B", and the overall average would still earn a "B."

The new policy, outlined in Column 2 of Table 4-3, assigns letter grades to each class grade, and then averages the letter grades for an overall grade. Consequently, under the new policy our hypothetical student has an overall grade point average of 2.40, which translates into a grade of "C" and precludes him from earning the Scholarship.

Table 4-4 shows that the new HSGPA eligibility requirement would affect classes of institutions in different manners. Research universities (Georgia Institute of Technology, Georgia State University, and the University of Georgia) would be least affected; only 9.1 percent of their students fall below the cutoff. Even fewer of the students at the two flagship institutions (Georgia and Georgia Tech) scored below the new standard. About 40 percent of the students at regional and state universities and about half of the students in state and two-year colleges would fall below the cutoff.

[10] The scale used in Georgia translated scores between 70-79 into a "C," scores between 80 and 89 into a "B," and scores above 90 into an "A."

Table 4-4: High-School Class of 2000 Students Whose GPA Would Not Meet the New Criterion, by Class of Institution

Class	Number of Students	Percent of Students
Total	6,638	32.3
Research Universities	600	9.1
Regional Universities	1,304	40.1
State Universities	2,630	40.1
State Colleges	352	50.7
Two-year Colleges	3,583	48.9

Source: Ledbetter and Seligman (2003).

Table 4-5, which shows the differences by race, indicates that 44.4 percent of the Black HOPE Scholars had HSGPAs below the line compared to 29.7 percent of Whites and 24.2 percent of students from other races. These statistics show only those whose current grades would not meet the new standards, but they do not mean that future students with these characteristics will not qualify for HOPE. The legislature delayed the implementation of this policy change for a number of years so that students will have ample time to raise their grades to meet the new standards.

Table 4-5: High-School Class of 2000 Students Whose GPA Would Not Meet the New Criterion, by Race

Class	Number of Students	Percent of Students
Total	6,638	32.3
Black	1,747	44.4
White	4,483	29.7
All Other	408	24.2

Source: Ledbetter and Seligman (2003).

Future Program Changes

Although many additional reforms were discussed and not enacted, we highlight one in particular. A minimum SAT score of 1000 to be eligible to receive HOPE was discussed in detail, but did not generate a sufficient number of votes to pass the legislature. Legislators supported the minimum SAT for four primary reasons. One was to decrease eligibility and improve HOPE's financial standing. A second concern was that HOPE has become too watered down through grade inflation and that instituting an external standard would restore the award's integrity. The third reason was that students who score below this are unlikely to do well in college and will likely lose the award in the future. Last, historically Georgia's average SAT

score has been one of the two or three lowest in the nation, and adopting this standard would provide an incentive for students to score higher on the exam, thus improving state rankings. Critics countered in two ways. First, one's performance over an entire high school career is much more indicative of one's true merit, and an award of this magnitude should not depend on a one-day performance. Second, a minimum SAT score would have disproportionately affected minority students.

Ledbetter and Seligman (2003) examined how HOPE scholars who graduated from high school in 2000 would have been affected by such a requirement. Table 4-6, which shows the impact by class of institution, indicates that research universities would be minimally affected, as only 11.3 percent of their incoming Georgia residents scored below the cutoff. In contrast, the SAT requirement would have large effects on the other four types of institutions. About 45 percent of new students from Georgia at both regional and state universities did not score 1000 on the SAT. Almost 60 percent of students at state colleges and nearly two-thirds of students at two-year institutions had SAT scores below this cutoff.

Table 4-6: High-School Class of 2000 Students Whose SAT Scores Would Not Meet the Proposed Criterion, by Class of Institution

Class	Number of Students	Percent of Students
Total	8,105	39.1
Research Universities	748	11.3
Regional Universities	1,451	44.6
State Universities	3,144	47.9
State Colleges	408	58.8
Two-year Colleges	2,354	65.7

Source: Ledbetter and Seligman (2003).

Table 4-7 lists the differences by race. In total, 39.1 percent of high school graduates in 2000 failed to obtain a score of 1000. Black students fell below this standard at over twice the rate of White students (67.6 compared to 32.4 percent). Well over half of the students from other races did not score 1000. Because reducing the number of eligible students provides the most long-term savings on educational expenditures, this proposal will likely resurface if HOPE has future financial challenges.

Table 4-7: High-School Class of 2000 Students Whose SAT Scores Would Not Meet the Proposed Criterion, by Race

Class	Number of Students	Percent of Students
Total	8,105	39.1
Black	2,660	67.6
White	4,483	32.4
All Other	962	57.1

Source: Ledbetter and Seligman (2003).

Conclusion

Since the early 1990s, nearly 30 state-sponsored merit-aid programs have started, about 14 of which are modeled in whole or part after HOPE. Because Georgia's HOPE is one of the oldest and largest such programs, it is important to understand its effects and critically assess current and proposed reforms. This chapter has attempted to do both, focusing on the program's impact on minorities and low-income students. Our conclusions can be summarized as follows.

First, there is no direct effect of racial or ethnic composition of the high school attended on the likelihood of receiving HOPE Scholarships. However, high-school quality measures are extremely important predictors of earning the scholarship. Because the percentage of students who are Asian is positively correlated and the percentage of students who are Black is negatively correlated with these high school quality measures, on average, high schools with larger shares of Asians receive more HOPE Scholarships and high schools with larger shares of Blacks receive less. However, these differences are explained by differences in school quality, peers, and families.

Second, HOPE has caused many of its best and brightest high-school graduates to remain in state for college. However, this effect may be partially due to two factors that may not apply in all states. Georgia's merit aid can be used for private institutions, and Georgia has two outstanding institutions that would be attractive destinations for students who are considering leaving the state for college.

Third, until recently there has been little evidence about how HOPE affects the academic outcomes of college students. The existing research shows little difference by race and ethnicity along these lines. Georgia Tech students in 1995 exhibited no racial or ethnic differences in the propensity to lose HOPE. At the University of Georgia through 1997 there was no difference in HOPE-induced changes in enrollment, withdrawal, and course completion for Asians and Hispanics. The evidence is mixed for Blacks, which generally exhibited statistically significant effects towards slowing academic progress for the likelihood of enrolling, withdrawing, and completing courses, but no statistically significant effects on variables measuring the number of credit hours. However, because the studies that identify HOPE effects on college outcomes by race and ethnicity examine only the two flagship institutions for a limited number of years, we are uncertain as to the extent to which the results generalize to other institutions. Additional research on different institutions and time periods would provide a much more complete picture.

Last, the Georgia legislature has made significant changes to the program rules, which have important implications. Removing the Pell offset showed little increase in funding for low-

income students between the year prior to the removal of offset (2000) and the first year after (2001). This may be attributed to lack of information about the change. However, the 2002 allocations to students who qualified for both Pell and HOPE increased significantly. The next few years will clarify the extent to which this policy change increases aid to low-income students. In 2004, the uncertainty about HOPE's financial viability led the legislature to make wholesale changes to the program. Protecting the book allowance for Pell recipients will provide $300 per year to low-income students even in the first few years of future funding problems. The change in high school GPA rules is expected to significantly reduce the number of students who initially qualify for the Scholarship. Recent data show that almost one third of students who qualified for HOPE did not meet the new cutoff. This group is disproportionately comprised of Black students and those who do not attend the research institutions. However, these data show those whose current grades would not meet the new standards, which will not be implemented for many years. Therefore, students have ample time to raise their grades to meet the new standards.

Appendix

Table 4-A1: High School Characteristics and HOPE Receipt

Variable	(1) Base Specification		(2) Specification with High School Characteristics	
	Coefficient Estimate	Standard Error	Coefficient Estimate	Standard Error
Race Information				
Percent Black	-0.184 **	0.027	0.037	0.033
Percent Hispanic	-0.322	0.234	-0.096	0.182
Percent Asian	0.761 **	0.193	0.205	0.172
Percent Native American	1.568	2.842	2.558	2.186
High School Characteristics				
Number of graduating students			-0.026 **	0.007
SAT Verbal (Average)			0.118 **	0.037
SAT Math (Average)			-0.038	0.035
Number of AP Tests Taken			0.028 **	0.006
Percent of AP Tests with 3 or Higher			0.071 *	0.031
Percent Completion Rate			0.305 **	0.056
Percent on Free/Reduced Lunch			-0.111 *	0.050
Teacher Experience (Average)			-0.363	0.281
Percent of Teachers with > BA			0.042	0.071
Intercept	58.418 **	1.485	-2.526	12.647
Adjusted R-Square	0.163		0.510	
Sample Size	337		329	

Notes: ** and * designate significant at 0.01 and .10 levels, respectively.
Dependent variable is the percentage of graduating students who receive HOPE.
Source: Data are from the Georgia Department of Education (2002).

Table 4-A2: The Effect of HOPE on Academic Choices at the University of Georgia

	(1) Full-load enrollment		(2) Withdrawal		(3) Full-load completion	
Group	Likelihood	Number of credits	Likelihood	Number of credits	Likelihood	Number of credits
HOPE Effect	-0.024	-0.504*	0.051*	0.529**	-0.052*	-1.033**
	(0.017)	(0.280)	(0.020)	(0.151)	(0.021)	(0.324)
HOPE*Asian	0.016	0.477	-0.045	-0.228	0.039	0.705
	(0.028)	(0.487)	(0.036)	(0.271)	(0.037)	(0.573)
HOPE*Black	-0.078**	-0.140	0.037*	0.286*	-0.068**	-0.426
	(0.017)	(0.242)	(0.021)	(0.152)	(0.021)	(0.291)
HOPE*Hispanic	-0.088*	-1.209	-0.054	-0.693	-0.026	-0.516
	(0.050)	(0.817)	(0.059)	(0.443)	(0.060)	(0.993)
Observations	31,115	31,115	31,115	31,115	31,115	31,115
R^2	0.095	0.110	0.099	0.103	0.109	0.109

Notes: In each cell the first row is the coefficient estimate and the second row contains the robust standard error. All regressions include controls for race, gender, ethnicity, Georgia residency, and high school fixed effects.

** and * designate significant at 0.01 and .10 levels, respectively.

Source: Data are from the University of Georgia (n.d.).

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CHAPTER 5

THE NEW MEXICO LOTTERY SCHOLARSHIP: DOES IT HELP MINORITY AND LOW-INCOME STUDENTS?

Melissa Binder and Philip T. Ganderton

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Introduction

This chapter provides an update on how minority and low-income students have fared under the New Mexico Lottery Scholarship program. Our earlier study (Binder & Ganderton, 2002), based on only two full program years, showed that while there was a substantial increase in enrollments at four-year colleges in New Mexico when the scholarship program was first implemented, much of the effect appeared to be a redistribution of students away from colleges outside the state. We had also found that at the University of New Mexico, the enrollment response was concentrated among wealthier, less academically prepared students and, as a result, retention rates had fallen. In addition to adding five years of data to our original study, this update also reviews new programs introduced at UNM to improve retention for new scholarship students.

To preview our results, we find that in absolute terms the program clearly brought more minority and low-income students to UNM. Nevertheless, the Lottery Scholarship program was not designed to assist minorities and low-income students, and so it is not surprising that for every scholarship paid to a minority student at UNM, another scholarship went to a non-minority student, and for every low-income scholarship, close to three more went to students with higher family incomes. We also find that the initial decline in retention has been reversed in later scholarship program years, as the university introduced new programs to ease the transition to college life. For minority and low-income students, second semester retention was slightly lower in program years, but in subsequent semesters, retention was the same or higher in program and pre-program years. This suggests that those who persisted into the second semester of colleges were more likely to stay enrolled as a result of the scholarship program.

Finally, the update shows a positive overall college enrollment effect for New Mexico high school graduates by six percentage points, which represents a 12 percent gain. However, because New Mexico was experiencing increasing enrollment rates in the six years prior to the program, we consider our estimate to be at best an upper bound of the true program effect. The program also continues to draw students to UNM from smaller colleges in New Mexico.

New Mexico's Merit Scholarship Program

During the political maneuvering to get the "Lottery Success" legislation passed, supporters emphasized the role the scholarship program would play in developing and retaining educated workers in the relatively poor state of New Mexico. Popular support was obtained for the lottery because revenues, after administrative costs and player payouts, would go to fund education in the state, divided between capital improvements in K-12 public education and the Lottery Scholarship program. Legislators later eliminated the dedication of funds to K-12 schooling when it became clear that half the lottery revenues could not pay all the eligible Lottery Scholarships. The legislation establishing the Lottery Tuition Fund and the related scholarship program identifies the goal as assisting all New Mexico high school graduates by deferring the costs of tuition at public postsecondary institutions in New Mexico, thereby keeping New Mexicans "at home" and encouraging students to complete a four-year degree in a timely manner. The program began in the fall of 1997.

Given New Mexico's high minority and low-income populations, a large-scale program of college tuition reduction might produce better outcomes for these target groups than in other states. This chapter evaluates to what extent the program has improved college outcomes for

minority and low-income students. We use highly detailed student data from the University of New Mexico (UNM) to examine enrollment and academic progress for minority and low-income students and college-level data provided by the National Center for Education Statistics (NCES) to calculate the college-going rates for students in New Mexico before and after the program began.

In contrast to similar merit aid programs in other states, the New Mexico Lottery Scholarship is based on college, rather than high school, performance. To qualify, students must enroll in a New Mexico public two- or four-year college immediately following graduation from a New Mexico high school (or GED program). They must then earn at least a 2.5 grade point average (GPA) or more on at least a 12 credit hour course load in the first semester. Qualifying students automatically receive full tuition for their next semester. Students continue to receive the award, provided they enroll full-time, continuously, and maintain a 2.5 GPA. Since students only become eligible in their second semester of the first year of college, most state institutions provide a "bridging" scholarship, using essentially the same criteria for eligibility as the Lottery Scholarship. For example, the University of New Mexico requires a 2.5 high school GPA for its Bridge to Success scholarship (Bridge Scholarship).

The Lottery Tuition Fund currently maintains a positive balance of $37 million dollars. This is due mainly to cost cutting, the elimination of the share of the fund going to K-12 capital improvements, and heavy marketing of lottery and gambling products to help counter the common fall-off in participation that occurs with state-run gambling enterprises. Nowadays, 100 percent of all lottery profits go to the Tuition Fund.

Predicted Student and Institutional Responses

The Lottery Scholarship program clearly sought to boost college attendance at New Mexico institutions by reducing tuition for eligible students. Although the pre-program (1996) academic year tuition and fees at New Mexico's research universities–at more than $2000–were high for many families, costs at two-year colleges were much lower. For example, a community college less than one mile from UNM charged less than $700 in tuition and fees; the New Mexico Junior College in Hobbs charged only $350. These figures suggest that overall the direct cost of entering college in New Mexico was relatively low even before the Lottery Scholarship program began. It is likely, therefore, that the program would have its greatest impact on low-income students, for whom even low tuition posed a barrier to entry.

Another price consideration is the size of tuition costs relative to other direct costs, such as textbooks and, more importantly, the indirect (or opportunity) costs of time spent in school rather than spent working for pay. Assuming that a high school graduate worker can cover the room, board and miscellaneous student expenses, and using UNM Financial Aid Office budgets for these expenditures as an approximation, we find that for the 1996-97 academic year, UNM tuition and fees were only 17 percent of the total cost of books, transportation and opportunity costs. For the neighboring community college, tuition and fees were only seven percent of total college costs. Thus, although tuition was reduced to zero for eligible students, tuition at many New Mexico public institutions was low to begin with, and made up only a small share of total college costs. Given this situation, we would expect the scholarship program to have little effect on college attendance rates. However, the difference in tuition costs between New Mexico institutions was substantial. By eliminating the difference in costs between institutions, the program allowed students to choose among colleges based more on non-financial factors. This

change would presumably increase enrollments at UNM, at the expense of the other, less prestigious, state colleges. This is also facilitated by the near open-enrollment policies at UNM.

Aside from the predicted enrollment effects, the legislated requirements of the Lottery Scholarship program should also induce changes in student attendance and academic performance. In particular, most students forfeit the scholarship if they do not enroll continuously. While this rule aims to encourage students to graduate, an unintended effect might be to hurt low-income students who have trouble enrolling full time while also working full-time jobs. The 2.5 GPA requirement may also disproportionately affect minority and low-income students, who are more likely to be poorly prepared academically (Ganderton & Santos, 1995). The 2.5 minimum is higher than the UNM requirement for remaining in good standing (a 1.7 GPA for freshmen, and a 2.0 GPA for upper classmen).

A final consideration is that the program created incentives for colleges to attract and retain lottery scholars. Public colleges in New Mexico receive funds from the state according to a formula based, in part, on enrollment. Colleges are, therefore, predisposed to policies that boost enrollment. This explains the willingness of colleges to fund the "bridging" scholarships mentioned above: the college pays for one student semester, but gets as many as eight more student semesters in return. Consequently, there appears to be no supply shortage in higher education in New Mexico. As we will document below, the first few years of the program brought enormous enrollment increases to UNM, but the new students tended to have weaker academic preparation and, in consequence, dropped out of college at high rates. UNM responded by creating new programs, described below, to boost retention.

College Access under the Scholarship Program

Racial and Hispanic origin minorities in the U.S. population make up more than half of the New Mexico population: the 2000 Census reports that 42.1 percent of New Mexicans identified themselves as Hispanic origin and 9.5 percent identified themselves as Native American. African Americans and Asians together made up 3.0 percent of the population.[1] Among New Mexico high school graduates in 2000, 41.1 percent were Hispanic and 11.5 percent were Native American. Given the high proportion of minorities in the state and among high school graduates, a broad-based program like the Lottery Scholarship might be expected to have a large positive impact on college-going rates for the minority population. Unfortunately, the U.S. Department of Education does not report freshmen enrollments by race. Nevertheless, by combining our analysis of the college-going rate for all high school graduates in New Mexico with an analysis of the experience of minority and low-income students at UNM, we are able to get a pretty good idea of the broad program effects.

We use the Integrated Postsecondary Education Data System (IPEDS) provided by the National Center for Education Statistics (NCES) to identify freshmen enrollment of recent high school graduates by state of residence in all United States accredited, two-year or higher, degree-granting institutions. IPEDS has collected residence information for recent high school graduates in even years since 1992. We calculate the total enrollment rate by dividing total enrollments of New Mexico residents (who are enrolled in college in any state) by the number of students who graduated from public and private high schools earlier that year as reported by the New Mexico State Department of Education.

[1] U.S. Census Bureau. 1990 and 2000 Censuses. Table DP-1. Profile of General Demographic Characteristics for New Mexico.

Table 5-1: College Enrollment Rates for Recent New Mexico High School Graduates, 1992-2002

	Calculated enrollment rates			Predicted enrollment rates		
	Total	In-State	Out-of-State	Total	In-State	Out-of-State
Pre-program						
1992	0.487	0.386	0.101	0.487	0.386	0.101
1994	0.508	0.396	0.112	0.508	0.397	0.111
1996	0.530	0.409	0.121	0.529	0.408	0.121
Program						
1998	0.576	0.473	0.103	0.550	0.419	0.131
2000	0.555	0.436	0.120	0.571	0.430	0.141
2002	0.570	0.454	0.116	0.592	0.441	0.151
Program mean	0.567	0.454	0.113	0.571	0.430	0.141
Pre-program mean	0.508	0.397	0.111	0.508	0.397	0.111
Difference	0.059	0.057	0.002	0.063	0.033	0.030

Source: IPEDS and UNM Office of Institutional Research.

Table 5-1 shows in-state, out-of-state, and total college enrollment rates for recent high school graduates in even years from1992 to 2002. In program years (1998-2002), the total enrollment rate averaged .57, compared with the pre-program (1992-1996) average of .51. This suggests that the program induced a six-percentage point increase in the college-going rate, an increase of 12 percent. Some of the increase, however, may have occurred even without the program. In fact, had enrollment rates continued their pre-program trends, the total enrollment rate increase would also have been six percentage points, although the increase would have been divided equally between in-state and out-of-state colleges. It is likely, then, that the program did encourage students to stay in New Mexico for college. As for the true program effect on the college-going rate, we can state with certainty that it was *at most* an increase of six percentage points.

Table 5-2: Institutional Distribution of In-State Freshman, 1996 and 2002

	Share of all 1st-time in-state freshmen			Share of recent high school graduates		
	1996	2002	Difference	1996	2002	Difference
University of New Mexico-Main Campus	0.183	0.263	0.080	0.080	0.127	0.047
New Mexico State University-Main Campus	0.155	0.170	0.015	0.068	0.082	0.014
Albuquerque Technical Vocational Institute (TVI)	0.097	0.140	0.043	0.043	0.067	0.024
All In-State Colleges	1.000	1.000	NA	0.401	0.442	0.041

Note: First time freshmen may include those who transferred, or delayed entry to college, or returning students, as distinct from recent high school graduates.

Note: Some in-state institutions lost shares of recent high school graduates, thus the gains made by these three campuses were partially offset by losses at others. This is why the difference in the share of recent high school graduates attending all in-state colleges is lower than the changes at UNM alone.

Source: IPEDS and UNM Office of Institutional Research.

Table 5-2 shows the share of freshmen in 1996 and 2002 who attended the three largest state institutions: UNM, New Mexico State University, and Albuquerque Technical Vocational Institute (TVI, a community college). Together, these institutions increased their share of total freshmen by nearly 14 percentage points; UNM's share alone accounts for more than eight percentage points. UNM also increased its enrollment of recent New Mexico high school graduates from eight percent in 1996 to nearly 13 percent in 2002. This 4.7 percentage point increase absorbed more than the total increase in the enrollment rate over this period. The second largest beneficiary of new students was TVI, with a 2.4 percentage point rise in the enrollment rate of recent high school graduates. The three largest institutions claimed a combined increase of 8.5 percent of recent high school graduates.

These outcomes suggest that the Lottery program induced a redistribution of students among state institutions, with UNM as the main beneficiary. Some redirected students would likely benefit from enrolling in UNM, both because of its prestige compared to other state colleges, and because of greater learning opportunities. Other students, however, might be better served at the regional and community colleges, especially if they are unable to meet the Lottery scholarship GPA requirements at UNM. We suspect that the diversion of students to UNM was an unintended consequence of the program, and that the redistribution of resources in the New Mexico higher education system may have long term effects on college access and student success.

The large enrollment response at UNM has two possible sources. First, students who would not have gone to college without the Lottery Scholarship program, let's call them "new college-goers," may choose to go to UNM. Second, students who would have attended college elsewhere may be induced to enroll at UNM instead, with the new college-goers taking their places at the smaller colleges. Under the first scenario, all the new students at UNM are new college-goers, and our findings of the program effects at UNM would be a good characterization of the total program effects. Under the second scenario, new students at UNM might be more able, or in a better position financially, than the new college-goers who enroll at the smaller colleges, and we cannot generalize our findings of the program effects at UNM to all new

college-goers. In reality, the new UNM students are likely to be drawn from both sources. This means we can generalize our findings to other college-goers. And, given that UNM represents a large proportion of all college students in New Mexico, its program effects are of interest in and of themselves.

Minority and Low-Income Students at UNM

We begin our analysis of the UNM data by tabulating scholarship rates for different groups of students. The extensive coverage of the first semester Bridge Scholarship at UNM is shown in Table 5-3. The scholarship reached 75 percent of White students and 80 percent of minority students.[2] Students with a family income exceeding $40,000 were slightly more likely to receive the scholarship than students with lower family incomes. Although it appears that minorities and higher income students were favored by the program, our data show that many of the other students not receiving the Bridge received other merit and need awards to cover tuition.

Table 5-3: Percent Receiving Merit Scholarship, 1998-2003

	Semester			
	1st	2nd	3rd	4th
ALL	77.2	63.2	51.5	46.0
White	74.5	65.4	53.8	48.7
Minority	79.8	61.0	49.2	43.2
Hispanic	80.4	61.7	50.6	44.5
Native American	79.8	52.6	37.0	29.8
Asian	73.4	67.7	55.7	51.8
African American	80.7	56.5	40.2	34.8
Family Income				
More than $40,000	77.4	65.6	53.9	48.4
Up to $40,000	76.7	56.8	44.8	39.2
Up to $20,000	75.7	57.0	43.6	37.0

Note: Scholarship receipt is calculated as a percent of all who initially enrolled at UNM. For example, 63.2 percent of all those enrolling in the Fall Semester of their first year received the scholarship in their 2nd semester. Students receive the Bridge Scholarship in the 1st semester, and the Lottery Scholarship in subsequent semesters. The figures include all recent New Mexico high school graduates enrolling at UNM between 1998 and 2003 for the 1st and 2nd semester rates, and between 1998 and 2002 for the 3rd and 4th semester rates.
Source: UNM Office of Institutional Research.

Scholarship coverage falls in subsequent semesters. Between the first and second semesters, White students show a 9 percentage point fall in coverage (a 12 percent decline), and minority students show a 19 percentage point (a 24 percent) fall in scholarship take-up, with similar declines for higher and lower income students, respectively. Between the first and fourth semesters, the losses stand at 26 and 37 percentage points for White and minority students (a

[2] Throughout this paper, "White" students refers to White students who are not of Hispanic origin.

change of 35 and 46 percent, respectively), and 39 percentage points for lower income students (a 51 percent change). Among minorities the losses are greatest for Native and African Americans, with first to fourth semester declines of 50 and 46 percentage points, respectively (56 and 63 percent changes), between the first and fourth semesters.

Table 5-4: All Students and Scholarship Recipients Entering UNM Between 1998 and 2003

	All entrants (%)	Scholarship recipients (%)			
	1st Semester	1st Semester	2nd Semester	3rd Semester	4th Semester
Women	57.4	57.2	61.0	61.6	61.8
Men	42.6	42.8	39.0	38.4	38.2
White	50.0	48.2	51.7	52.5	53.3
Minority	50.0	51.8	48.3	47.5	46.7
Hispanic	38.9	40.5	37.9	38.3	37.8
Native American	5.0	5.2	4.2	3.3	3.0
Asian	3.8	3.7	4.1	4.0	4.2
African American	2.4	2.5	2.1	1.9	1.8
Family income					
More than $40,000	72.5	72.7	75.3	76.8	77.3
Up to $40,000	27.5	27.3	24.7	23.2	22.7
Up to $20,000	13.1	12.8	11.8	10.6	10.1

Note: Students receive the Bridge scholarship, sponsored by UNM in the first semester and, if they qualify, the Lottery Scholarship in subsequent semesters. Data for the 3rd and 4th semesters refer to freshmen entering UNM between 1998 and 2002.
Source: UNM Office of Institutional Research.

The distribution of scholarship holders is similar to the distribution of all UNM students in the first semester (Table 5-4). Since more than 70 percent of first semester students (and scholarship recipients) have family incomes exceeding $40,000, and half are minority students, the scholarship program effectively pays 2.7 higher income scholarships for every low-income scholarship, and one non-minority scholarship for every scholarship held by a minority student. Minorities are slightly overrepresented among scholarship holders in the first semester, but over time, their representation falls. The distribution of low-income students among scholarship holders also declines over time. By the fourth semester, 77 percent of the scholarships are held by higher-income students (family income of more than $40,000), and 53 percent are held by White students, both categories higher than the proportions of these groups among all entrants to the university.

Thus the program does not target resources to disadvantaged students efficiently, but neither was it specifically designed to benefit such students. At the same time, the program has induced many low-income and minority students to enroll at UNM. In fact, the program sharply increased the number of both minority and non-minority students at UNM (Figure 5-1). This pre-program to program increase amounted to an enrollment change of 76 percent (Table 5-5). The response for low-income students was more muted, but there is no question that more of

these students came to UNM as a result of the program (Figure 5-2). Because White and higher income students responded to the program more strongly, they increased their representation in the student body (Table 5-5). Compared to trends before the program, minorities lost close to five percentage points of their representation in the student body. The trend adjustment is determined by estimating a trend for the pre-program years, then projecting it into the program years. This is then compared to the actual enrollment during the program years. This comparison shows that lower income students raised their representation by three percentage points, compared to the distribution that would likely have developed without the program.

Figure 5-1: Minority and Non-Minority Enrollments at UNM, 1991-2003
Source: UNM Office of Institutional Research.

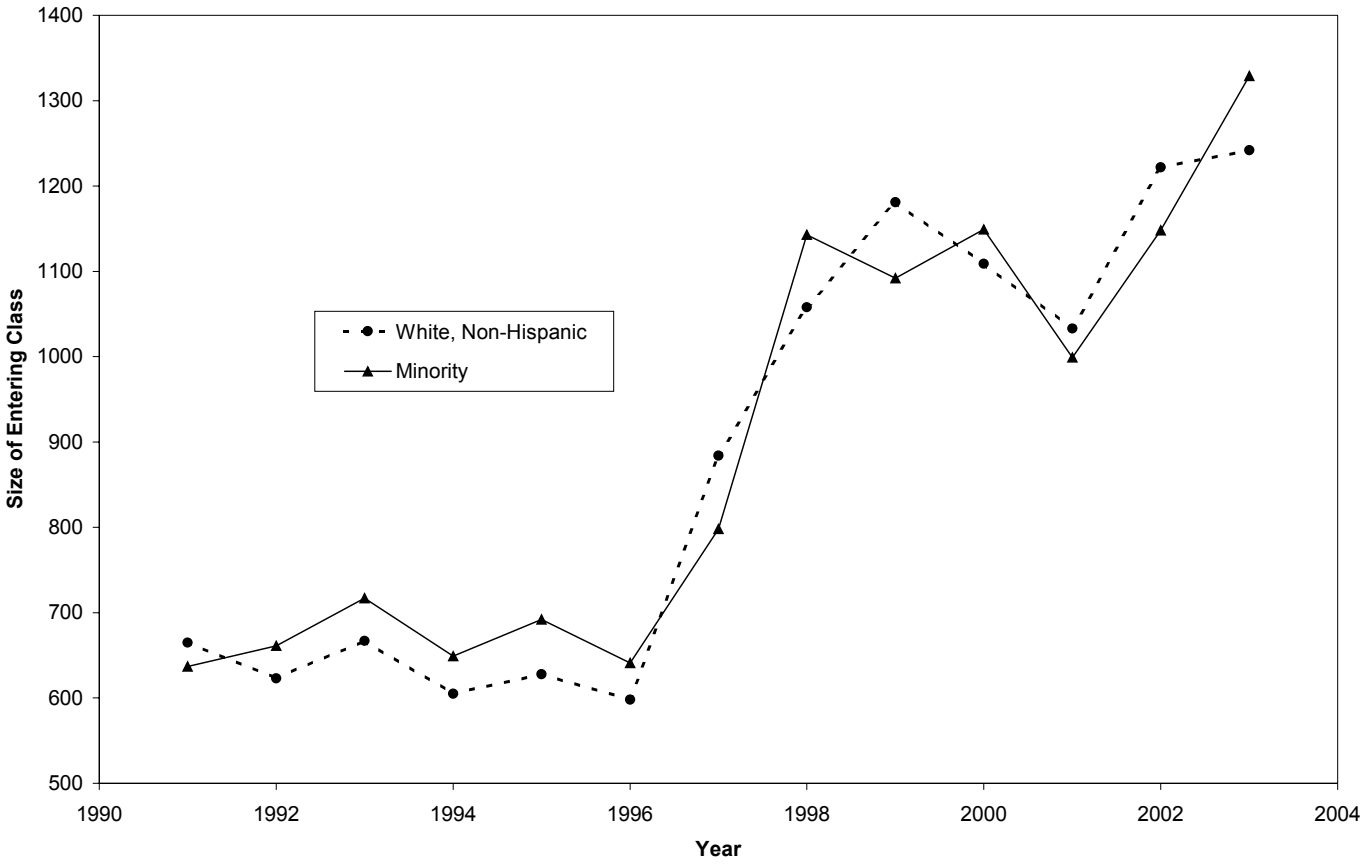


Figure 5-2: UNM Enrollments by Family Income, 1991-2003
Source: UNM Office of Institutional Research.

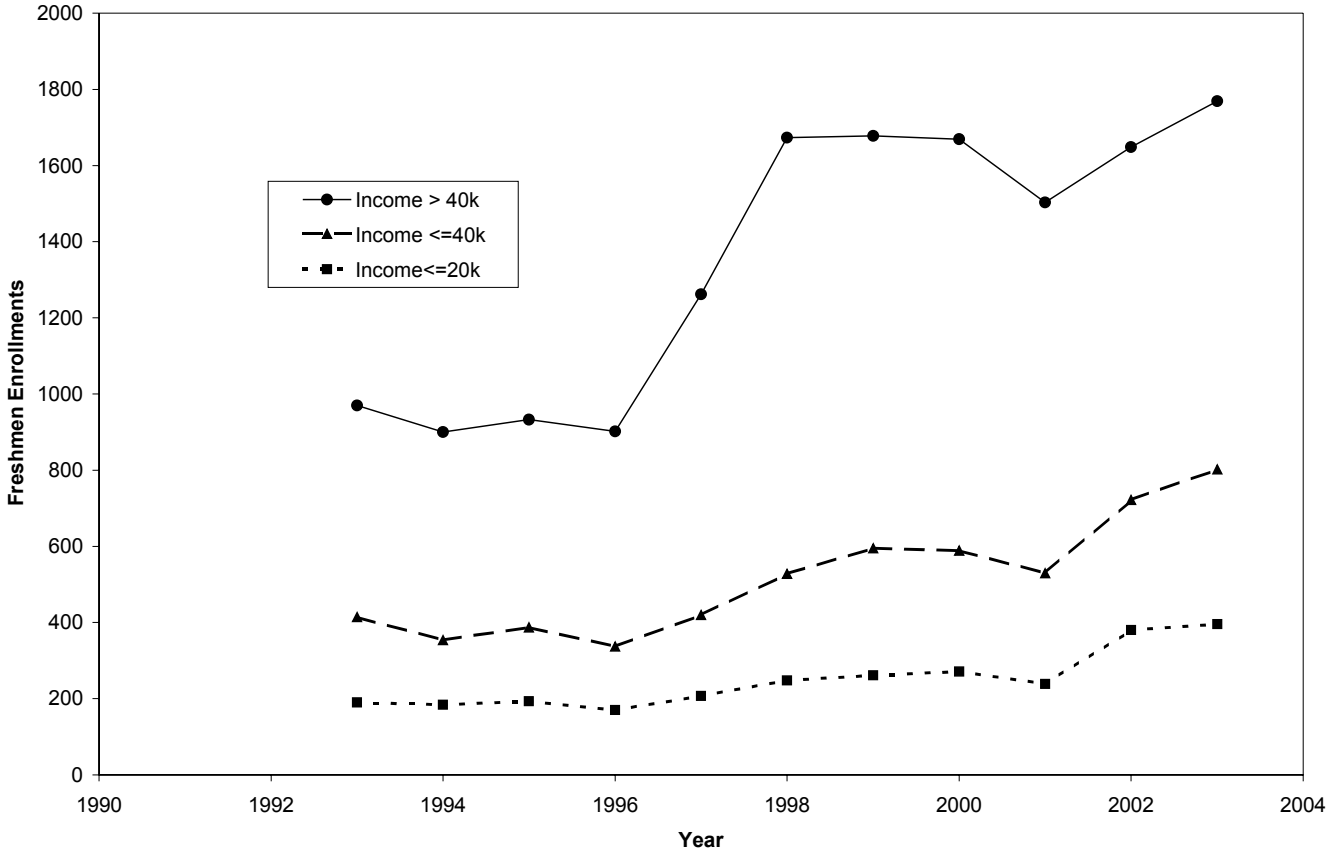


Table 5-5: Enrollments and Composition in Pre-Program and Program Periods

	Enrollments (#)			Composition (%)			
	Pre-program	Program	Difference	Pre-program	Program	Difference	Trend-adjusted difference
Female	747	1312	565*	57.6	57.4	-0.2	NT
Male	551	972	421*	42.4	42.6	0.2	NT
White	631	1140	509*	48.6	49.9	1.3*	4.8*
Minority total	666	1143	477*	51.4	50.1	-1.3*	-4.8*
Hispanic	524	888	364*	40.4	38.9	-1.5*	NT
Native American	65	114	49*	5.0	5.0	0	NT
Asian	55	88	33*	4.2	3.8	-0.4†	-3.2*
African American	23	54	31*	1.8	2.3	0.5*	-1.1*
Family income							
More than $40,000	926	1657	731*	71.3	72.5	1.2*	-3.1*
Up to $40,000	373	628	255*	28.7	27.5	-1.2*	3.1*
Up to $20,000	184	299	115*	14.2	13.1	-1.1*	NT

NT=No significant pre-program trend.
*Difference is significant at the 5% level.
†Difference is significant at the 10% level.
Note: Program students entered UNM between 1998 and 2003 and pre-program students entered between 1991 and 1996. Income data were unavailable before 1993, thus truncating the pre-program period to 1993-1996 for figures relating to the income distribution. We exclude 1997, the year the program started, as a transition period.
Source: UNM Office of Institutional Research.

In sum, many new minority and low-income students enrolled in UNM as a result of the merit scholarship program. And while minority representation in the student body slipped some, especially compared with the distribution predicted by pre-program trends, it appears that lower income students increased their representation in the student body compared with the distribution that would have developed in the absence of the program. Recall, however, that if the new students at UNM were diverted from smaller colleges, then the new college-goers who took their places may be more likely to be minority and low-income students. Our conclusions about the representation of minority and low-income students in program years under this scenario cannot be interpreted as the outcome for non-UNM program students.

We now turn to the question of whether the additional minority and low-income students attracted to UNM were more likely to stay enrolled and to graduate in response to the program requirements. Minority freshmen entering UNM under the program had slightly lower retention rates in the second semester, compared with minority freshmen who had entered prior to the program, as retention rates fell from 90 to 88 percent. Attendance in subsequent semesters, however, is the same in program and pre-program periods. This suggests that the program has succeeded in keeping more of the minority students who persisted into the second semester. For students with family incomes of $40,000 or less, retention is also lower in the program period,

falling from 91 to 88 percent. In subsequent semesters, however, attendance is slightly higher for program students, and in some cases the difference is statistically significant (Table 5-6.) Again, we see an improvement in retaining students who complete their first year. These patterns are also evident in Figures 5-3A and 5-3B. Also striking is the upward trend in retention. The first full year of the program, 1998, marks a low point in retention, followed by sustained improvements. These improvements are likely related to a series of programs initiated by UNM to retain students, which we describe in the next section.

Table 5-6: Attendance and Accumulated Hours by Semester Since Entry for Eligible Minority and Low-Income Students in Pre-Program and Program Years

	Proportion attending				Hours accumulated for those still enrolled			
	Pre-Program	Program	Difference	Adjusted	Pre-Program	Program	Difference	Adjusted
				Minority students				
Semester 1	1.00	1.00			11.03	11.16	.13*	.27
Semester 2	.904	.881	-.023*	-.029*	23.40	23.29	-.11	.05
Semester 3	.739	.737	-.002	-.005	37.44	37.31	-.13	-.11
Semester 4	.698	.688	-.010	-.009	49.78	50.08	.30	.41
Semester 5	.632	.624	-.008	-.014	62.78	63.43	.65†	.96†
Semester 6	.591	.588	-.003	-.008	75.04	76.22	1.18*	1.60*
Semester 7	.563	.557	-.006	-.005	88.34	89.57	1.23*	1.52†
Semester 8	.547	.541	-.006	-.007*	100.44	100.96	.52*	1.07
				Low-income students (family income $40,000 or less)				
Semester 1	1.00	1.00			11.10	11.13	.03*	.32
Semester 2	.910	.882	-.028*	-.030*	23.30	22.96	-.34†	-.03
Semester 3	.717	.729	.012	.013	37.85	36.84	-1.01*	-.36
Semester 4	.662	.681	.019†	.022	50.52	49.38	-1.14*	-.32
Semester 5	.593	.605	.012	.017	62.92	62.84	-.08	.49
Semester 6	.546	.570	.024†	.025	76.20	74.95	-1.25†	-.02
Semester 7	.530	.529	-.001	.006	89.29	88.88	-.41	-.34
Semester 8	.515	.518	.003	.008	101.59	100.30	-1.29	.05

*Difference is significant at the 5% level.

†Difference is significant at the 10% level.

Note: Eligible students are recent New Mexico high school graduates. Adjusted differences take into account students' incoming characteristics.

Source: UNM Office of Institutional Research.

Figure 5-3A: Attendance for Minority Students, 1991-2003
Source: UNM Office of Institutional Research.

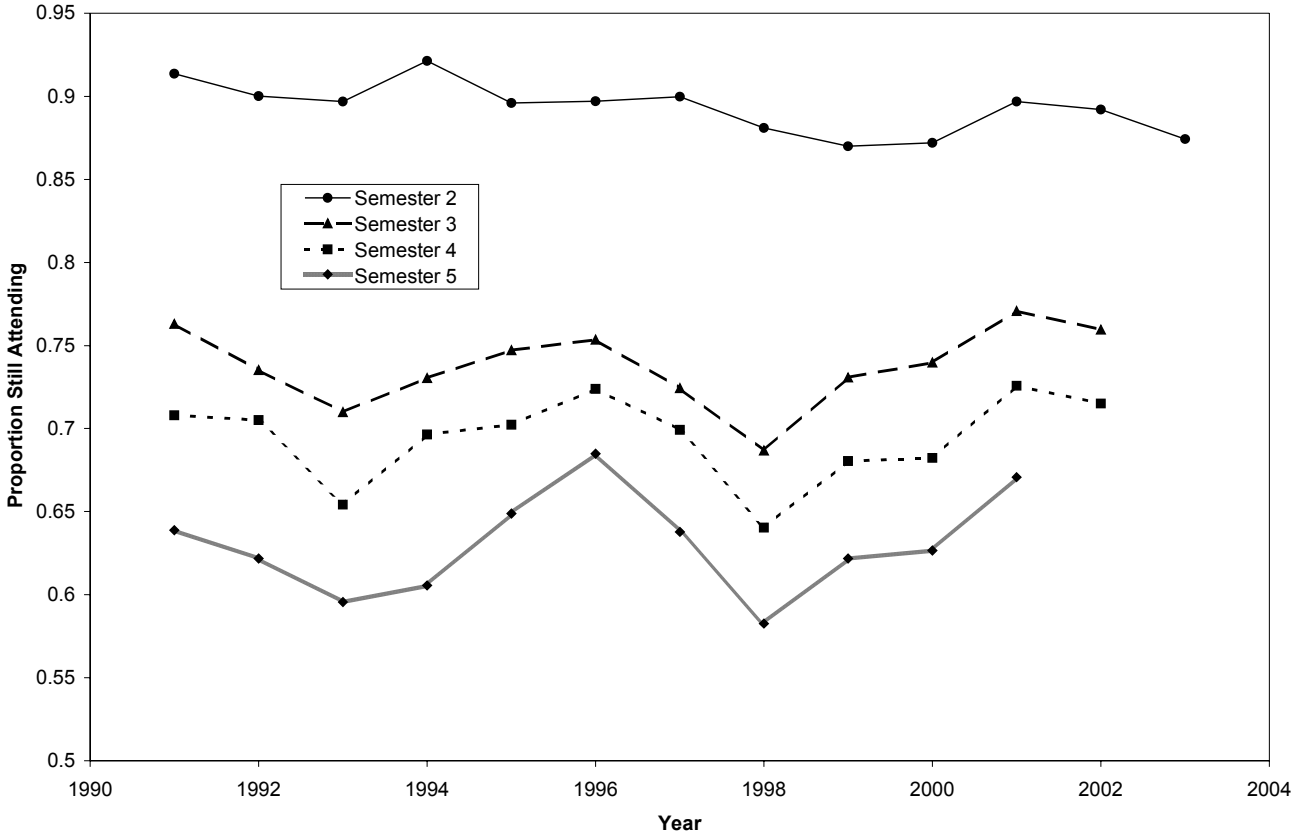
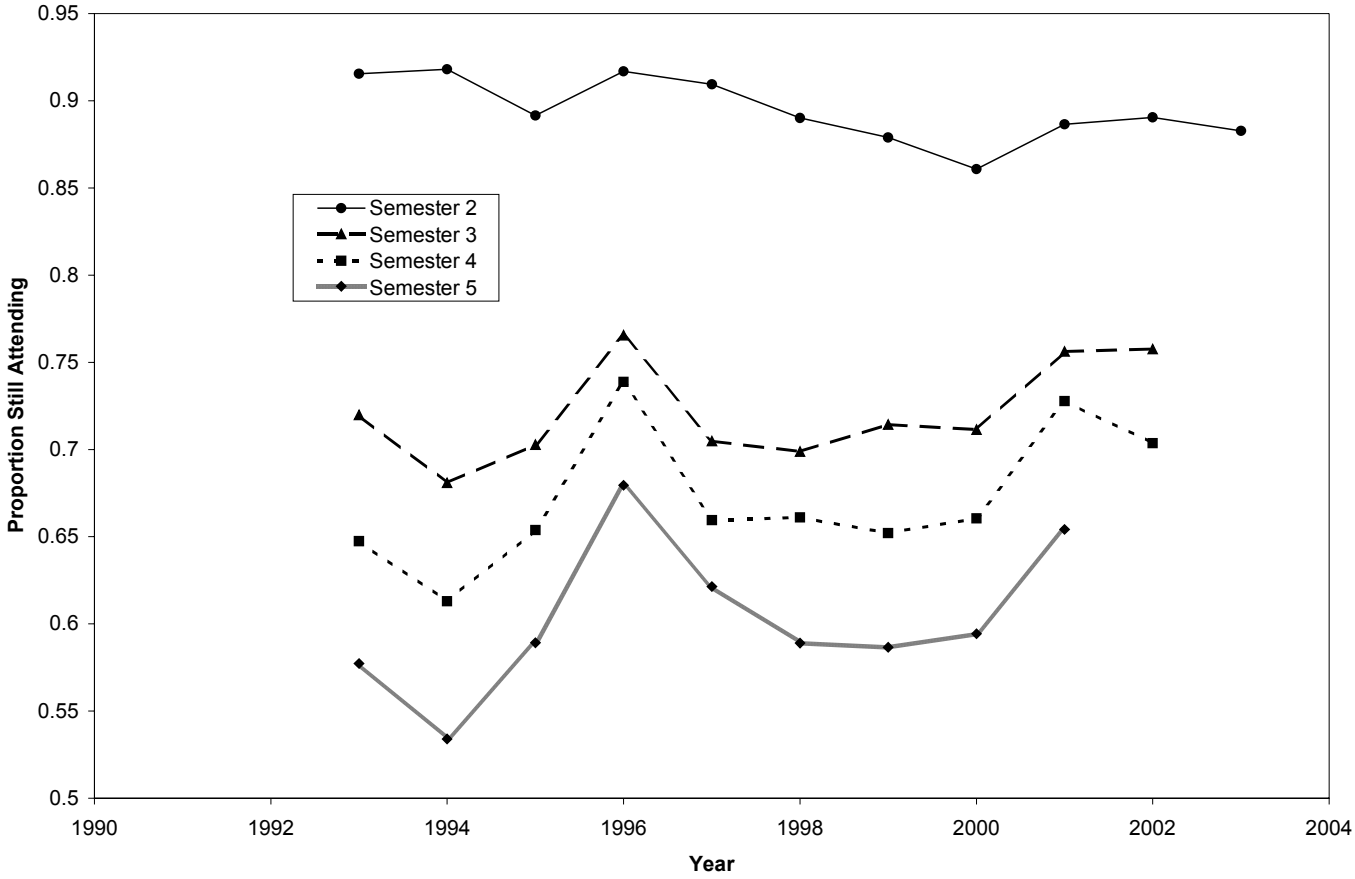


Figure 5-3B: Attendance for Low-Income Students, 1991-2003
Source: UNM Office of Institutional Research.



Compared with the pre-program period, minority students in program years accumulate slightly more hours toward graduation. Although this amounts to only one more hour by the end of the third academic year, the difference appears to be statistically significant, indicating a true program effect. Low-income students, however, accumulate fewer hours, and although the largest difference is slightly more than one hour, again the difference is statistically significant in some semesters. Why did the program not produce greater retention and hours effects? It is possible that students drawn to UNM under the program had less academic preparation than earlier cohorts. If so, the changes in retention and hours compared to pre-program students might be more positive if we compare them to *similarly prepared* pre-program students. A comparison of pre-program and program minority students shows a slight *increase* in high school GPAs for program students (Table 5-7 and Figures 5-4A and 5-4B). The same comparison for low-income students shows no change in GPA. Unfortunately, the absence of income data before 1993 is partially responsible for this discrepancy. ACT scores, on the other hand, show a clear downward trend for both minority and low-income students. These trends in academic preparation are similar for White students (Table 5-7).

Table 5-7: Program and Pre-Program Differences in Academic Preparation

	HSGPA			ACT		
	Pre-Program	Program	Difference	Pre-Program	Program	Difference
White	3.28	3.34	.06*	23.41	22.81	-.60*
Minority total	3.22	3.25	.03*	21.16	20.63	-.53*
Hispanic	3.22	3.25	.03*	21.29	20.59	-.71*
Native American	3.14	3.19	.05*	19.82	20.49	.67*
Asian	3.41	3.40	-.01	21.72	21.30	-.42†
African American	3.06	3.17	.11*	20.64	20.56	-.08
Family income						
More than $40,000	3.29	3.30	.01	22.69	22.07	-.62*
Up to $40,000	3.29	3.28	-.01	21.52	20.75	-.77*
Up to $20,000	3.27	3.26	-.01	21.12	20.51	-.61*

* Indicated difference is statistically significant at 95 percent confidence level.
Source: UNM Office of Institutional Research.

The distinct decline in ACT scores and the rise in high school GPA is likely an indicator of a decline in academic preparation and a concurrent rise in high school grade inflation. The number of students taking the ACT has increased over time, although it has stabilized in the last 3 years (UNM Office of Institutional Research). This could explain the lower ACT scores, but not the rise in GPA. In any case, when we adjust the data on retention and accumulated hours for incoming characteristics, we find no difference in retention, but a slightly better outcome in hours, especially for low-income students (columns (5) and (9) in Table 5-6.) On the whole, however, we conclude that the program did not induce appreciable changes in retention and hours, although it certainly attracted new minority and low-income students to UNM.

The Institutional Response at UNM

Under a general program called Freshman Academic Choices (FAC), UNM initiated a number of programs specifically aimed at increasing retention through better preparation for students early in their college experience (Dennison, Lichtenstein, & Oakes, 2002). Two programs under FAC, the Honors program and Introductory Studies courses, existed before the Lottery Scholarship began. The Honors program is for students with high ACT and/or SAT scores and excellent high school performance, while the Introductory Studies courses are required as remedial courses for students with relatively low ACT scores in Mathematics, English, or both. Starting in 2000, the university administration launched a set of programs targeted at the emerging problems presented by the rapid and large increase in freshmen enrollments caused by the Lottery Scholarship program. These include the Freshman Learning Communities, where students in small groups take two courses together (one being a topic or subject course, the other is usually a freshman English course). Other programs include Freshman Interest Groups for students with common interests and Living and Learning Communities for students in the college dormitories.

Figure 5-4A: Academic Preparation of Minority Students, 1991-2003
Source: UNM Office of Institutional Research.

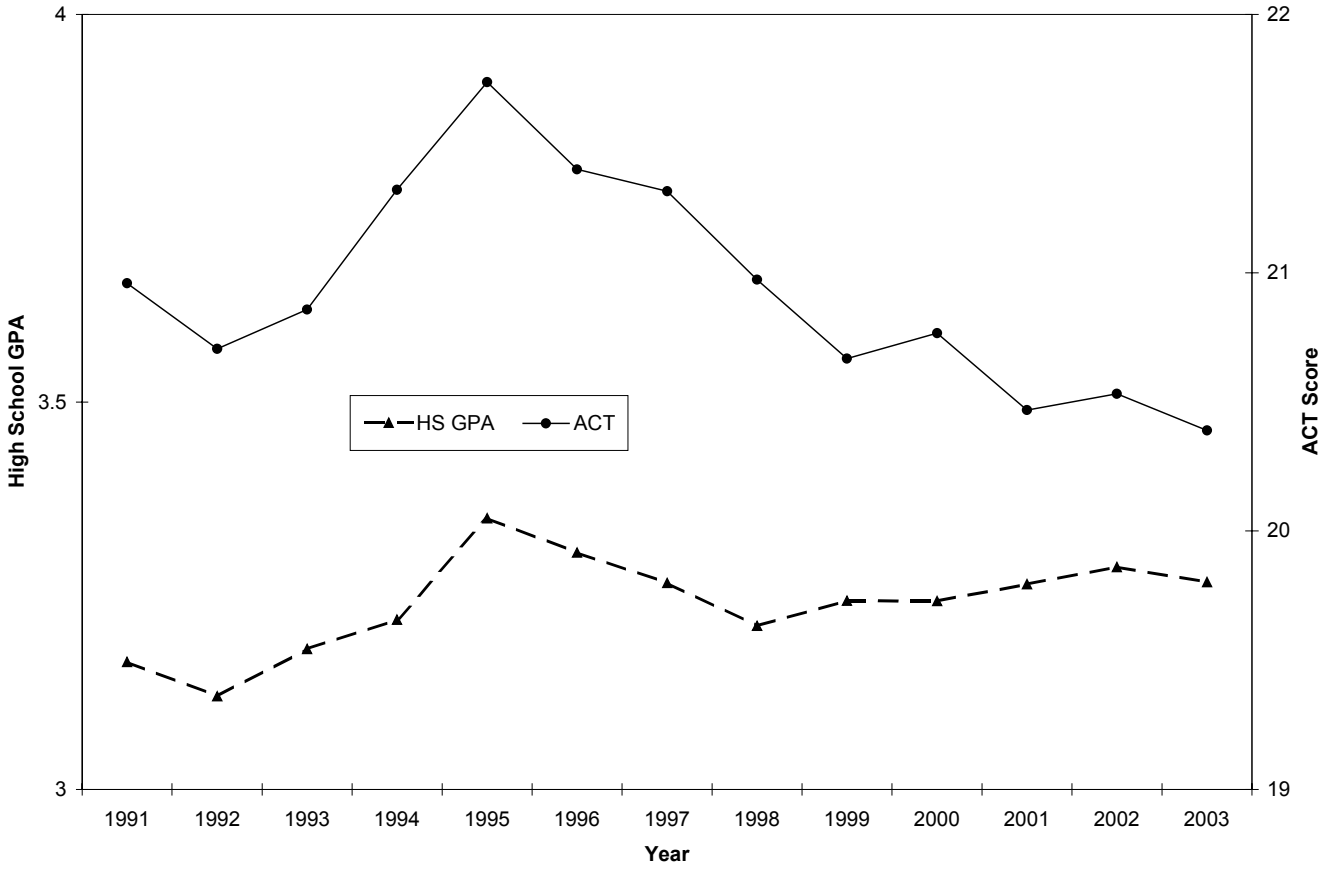
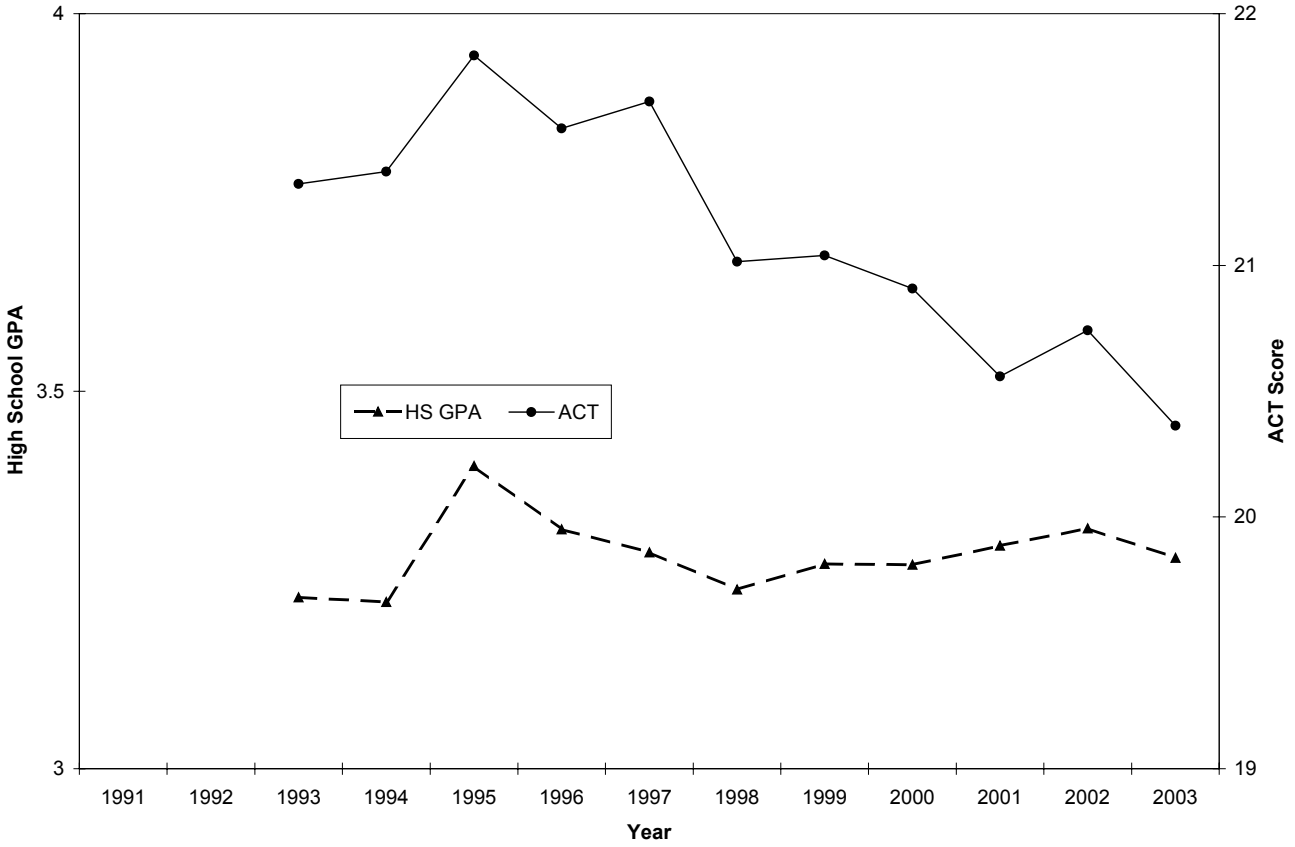


Figure 5-4B: Academic Preparation of Low-Income Students, 1991-2003
Source: UNM Office of Institutional Research.



The longest running of these new programs is the Freshman Learning Communities, which started in 2000 as a relatively small program, enrolling 76 students in 4 classes, essentially as a pilot program. Since then it has enjoyed an average of 19 percent growth each year. The Living and Learning Communities were next to form in 2001, and have shown an average of 51 percent enrollment growth in each of the two years to 2003. The latest program to form has been the Freshman Interest Groups starting in 2002, which showed a 5 percent enrollment growth in 2003. The university, through the University College, the organization responsible for these programs, is adding another program, the Experiential Learning Communities, in spring of 2005.

As noted above, while freshman enrollment jumped with the introduction of the Lottery Scholarship, the early freshman retention experience was worrying. Retention is an obvious goal for university administrators, since not only is it an easily observed measure of productivity for legislators and taxpayers to use in an era of accountability and tight budgets, it is the key to continued existence for the university, for without returning students the university's very existence is threatened. A 25 to 30 percent increase in new freshmen represents a substantial increase in the overall size of the university, and all the corresponding resources needed to instruct and graduate them.

Our data clearly show that the Lottery scholarship attracted the type of student who would be more likely to do poorly at college and stop-out or drop-out without some assistance.

After only a few years, the university appears to have identified this need and responded with innovative programs designed specifically to enhance the college experience, ease the transition, and increase the probability that students would do well academically in order to keep the Lottery Scholarship and graduate in a timely manner.

Two other factors have confounded the university's attempt to deal with the effects of the Lottery Scholarship. For the 2001 academic year, the university increased the eligibility requirements for the Bridge Scholarship, the first semester tuition scholarship that was not covered by the Lottery Scholarship program. Originally, the Bridge program used the same 2.5 GPA requirement as the Lottery program, yet the Lottery program applied to the first semester college GPA whereas the Bridge applied to the high school GPA of the entering student. As there was no formal link between these two measures, and given the fact that the Bridge Scholarship was under the direct control of the university, the university was at liberty to raise the requirement. The policy had the effect of increasing the academic quality of the incoming freshman class, but resulted in an almost nine percent decline in freshman enrollments in 2001. The policy change was also inspired by a change in the Lottery Scholarship funding, which effectively reduced the amount of money the university had to allocate to its Bridge Scholarship program out of its own budget. The lower GPA requirement was restored the following year in response to public pressure to continue the Lottery Scholarship program at full funding levels, and there appeared to be sufficient revenues from the lottery to cover the anticipated need of entering freshmen.

The second factor that has affected the university's policies toward freshmen has been the ever-changing tuition cost, and the consequent pressure it has placed on the Scholarship program. While the Lottery fund has enjoyed surpluses most years and currently has a balance of $37 million dollars, the university Bridge Scholarship program has not been able to keep pace with rising tuition. In early years the Bridge program paid full tuition for the first semester, just as the Lottery paid for tuition in subsequent semesters. Currently the Bridge only pays $1000 toward tuition, leaving each student about $400 of tuition costs unmet and about $500 in fees and books to pay for.

The institutional response appears timely and measured to fit within the financial and resource capacity of the university. Without any direct assessment of the retention policies implemented by the university, we cannot be sure that without them retention would not have remained similar to the pre-program levels, and it might be too early to tell if they will bring about a significant long term increase in retention. But the emphasis on keeping the Scholarship recipients in school to graduate in a timely manner is undeniably correct.

Lessons Learned

The New Mexico Lottery Success Scholarship program was one of the first in the country to be implemented, and has continued to distribute lottery gaming profits to New Mexico high school graduates who attend institutions of higher education in the state. Almost $200 million has been distributed under the program, and the continued sales of lottery tickets by the state will ensure the future success of the program, as there remains strong political and public support for the Scholarships.

With a relatively low 2.5 college GPA requirement for the Scholarship, New Mexico saw improvements of up to six percentage points in the college-going rate. In absolute numbers, the program clearly attracted new minority and low-income students to UNM. Compared to trends

existing before the program, minority representation in the student body has slipped some, but lower income students increased their representation on campus. If new students at UNM moved "up" from smaller colleges, it is likely that the new college-goers replacing them in the smaller colleges are also low-income, since this is the group most likely to have declined to enroll in the pre-program period. This experience shows that a program with a relatively low bar operating in a state with large proportions of low-income and minority families has the potential to help many disadvantaged students go to college.

Full tuition coverage at any state college made UNM an attractive choice for many students, and the biggest three colleges gained enrollments at the expense of the smaller state and community colleges. This was likely an unintended policy effect that may compromise the survival of the smaller schools. The diversion also led to huge increases in freshmen classes at UNM. Although the initial 30 percent increase in freshman enrollments has slowed, the university now instructs a freshman class one-and-a-half times bigger than it did before the program began. One disturbing effect early in the program was a drop in student retention at UNM. University administrators quickly identified this problem, and early efforts to retain these new students appear to be bearing fruit, as retention rates have increased in the last four years of the program. Among minority and low-income students, those persisting into the second semester of college under the program appear to have higher retention rates than in pre-program years. The program does not seem, however, to have induced an appreciable increase in hours accumulated for minority and low-income students, presumably a condition for improving graduation rates.

The lesson we derive from this experience is that programs covering full tuition are likely to change the college choice decision. States should consider whether favoring certain institutions over others is a desirable outcome. Providing a uniform payment across schools would be one way New Mexico could reduce the subsidy to the larger institutions. In states with a more selective college system, one possible outcome is that minority and low-income students, to the extent that they are less academically prepared, may be shunted to less desirable schools. Another lesson is that the colleges receiving new—and perhaps marginal—students may need to develop additional programs to accommodate them.

Finally, we have shown that the program was not a cost-effective way to lure minority and low-income students to UNM, since half of the beneficiaries were non-minority and 70 percent were higher-income. If UNM mainly diverted students from smaller institutions and new college goers at the smaller colleges were more likely to be minority and low-income, then the program as a whole may be more efficient than at UNM. Nevertheless, the large program participation among richer and non-minority students begs the question of whether this kind of need-blind program makes sense. In New Mexico, for example, the pre-program college-going rate among high school graduates was quite high relative to other states. At the same time, however, the high school dropout rate was also quite high. Better targeting of Lottery funds to low-income students may have preserved the original intent of the Lottery law to also fund K-12 needs, arguably a more worthy cause.

Policy makers considering a broad-based merit program like New Mexico's need to weigh the popularity of such programs for those already planning to go to school against the social interest of promoting higher education, and perhaps even better secondary education, for those whose college aspirations may be more tenuous. A sliding scale scholarship that increases with need would offer the advantage of benefiting many families (and thus preserving program popularity), while reserving the capacity to help the needy even more. A program designed this

way, because of its more modest and conditional help for middle class families would cost less, and perhaps more importantly, avoid the long-term problem of creating a potentially unsustainable middle class entitlement.

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U.S. Census Bureau. (1990 and 2000 Censuses). Table DP-1. Profile of General Demographic Characteristics for New Mexico.

CHAPTER 6

THE IMPACT OF FINANCIAL AID GUARANTEES ON ENROLLMENT AND PERSISTENCE: EVIDENCE FROM RESEARCH ON INDIANA'S TWENTY-FIRST CENTURY SCHOLARS AND WASHINGTON STATE ACHIEVERS PROGRAMS

Edward P. St. John

Indiana's Twenty-first Century Scholars Program and the Washington State Achievers Program are important "experiments" of early guarantees of college financial assistance to students in middle schools or high schools. While these programs cannot be characterized as "scientific" experiments because they did not randomly assign treatment (i.e., grant guarantees), they are social experiments in the best sense of the American progressive tradition, consistent with this country's history of using a balanced approach to economic and social development (St. John & Parsons, 2004). These programs are especially important for state policy on higher education finance. Historically, economic research on education has overlooked the influence of guarantees on preparation for college. Further, since federal policy research on student access now frequently ignores the direct effects of finances on access and attainment (e.g., NCES, 1997a, 2001a), it is important to rethink the role of state financial aid in promoting access.

The national policy debates on college access are now dominated by the notion that differences in academic preparation in high school—especially whether students have taken advanced math—explain the college enrollment and persistence gaps for minorities compared to Whites and for low-income students compared to wealthier students (NCES, 1997a, 1997b, 2001a, 2001b; Pelavin & Kane, 1990). Recent reviews of National Center for Education Statistics (NCES) sponsored research on access indicate that these studies made serious and fundamental statistical errors. They showed a consistent pattern of selection bias (i.e., excluding from analyses prepared students who did not apply for college, thus generating false significances) and faulty specification of statistical models (Becker, 2004; Fitzgerald, 2004; Heller, 2004). It is also now evident that these NCES studies misled policymakers by falsely concluding there was not a problem with financial access. Indeed, the statistics reported in these same government studies actually revealed that millions of academically prepared, low-income students were, for financial reasons, denied the opportunity to enroll in four-year colleges in the 1990s (Advisory Committee on Student Financial Assistance, 2002; Fitzgerald, 2004; Lee, 2004; St. John, 2002a).

There was a strong interpretive bias in these reports along with major statistical errors. The NCES research on college enrollment and persistence is not only problematic because it obfuscates economic research on the impact of student financial aid by providing false evidence relative to the centrality of preparation, but also because it encourages policymakers to overlook improvement in need-based grants as part of the solution to the new access challenge. In particular, the failure to consider the role and influence of need-based student financial aid on preparation for and success in higher education may have been a costly one for states. To the extent that states aim to improve college access, they should consider the impact of guaranteeing adequate need-based aid for low-income high school students who take the steps to prepare for college.

Recent research indicates state funding for need-based grants improves access. There is now evidence that state spending on non-need grants and public sector tuition charges during the 1990s was negatively associated with high school graduation rates when public spending during the sophomore year of high school was examined (St. John, Chung, Musoba & Simmons, 2004). That finding indicates that academic success in high school is closely linked to expectations about college affordability. This chapter summarizes evaluations of two state-level programs that provide early guarantees of grants to students with financial need. Trend information is presented for each state using data on state financial indicators (see Appendix 6A-1 for data sources). The research reviewed in this chapter represents the available information to date on program effects but does not represent a comprehensive program evaluation.

Twenty-first Century Scholars Program

Indiana made remarkable progress toward its goal of improving postsecondary access between 1992, when the Twenty-first Century Scholars Program was created, and 2000. Trends in key indicators related to access and financial aid are reviewed for Indiana below, followed by summaries of key features of the program and evaluation results. The evaluation considered effects of college access and persistence during the first year of college, but there are also long-term effects on educational attainment that have not yet been examined.

Key Indicators in Indiana

In 1992 only 50.5 percent of the high school graduates in Indiana enrolled in college the next year (Table 6-1), nearly 4 percentage points below the national average. In 2000, in contrast, 60 percent of high school graduates enrolled in college, exceeding the national average by 3.3 percentage points. During the period high school graduation rates fluctuated from year to year, but they remained higher than the national average.

Table 6-1: Access Indicators for the State of Indiana: Percentages of Cohorts Graduating From High Schools and of Graduates Enrolling in College, Compared to U.S. Averages, 1992-2000

	Percentage					Percentage Point Differential from U.S. Average				
	1992	1994	1996	1998	2000	1992	1994	1996	1998	2000
Public High School Graduation Rate	76.0	71.3	70.1	70.8	68.2	4.8	1.3	2.2	3.0	1.1
College Enrollment Rate (of HS graduates)	50.5	55.0	57.9	60.5	60.0	-3.8	-2.1	-0.6	3.3	3.3

Source: See Appendix 6A-1

During the same period, state appropriations per full-time equivalent (FTE) student enrolled in public higher education slipped in comparison to the national average from slightly higher than this average in 1992 to $438 below the national average in 2000 (Table 6-2). But

Table 6-2: Educational Revenue per FTE in Indiana Public Colleges, Compared to the U.S. Average, 1992-2000 (Constant 2000 $)

	Dollars					Deviation from U.S. Average				
	1992	1994	1996	1998	2000	1992	1994	1996	1998	2000
Adjusted Per FTE State and Local Appropriation for Public System, in 2000 Dollars	6,399	6,397	6,984	6,839	7,057	41	-182	376	-227	-438
Adjusted Per FTE Sum of Tuition and Appropriation for Public System, in 2000 Dollars	9,244	9,535	10,451	10,307	10,553	553	416	1,182	500	330

Source: See Appendix 6A-1

revenue per FTE for educational purposes rose and remained higher than the national average. More than the typical state, Indiana fell into the pattern of shifting the source of funding for public colleges from the state to students and their families.

The weighted average tuition charge in Indiana was consistently higher than the national average during the period, rising from $2,845 ($512 above the national average) to $3,496 ($768 above the national average) (Table 6-3). Need-based grant aid also rose, but only slightly faster than the national average, from $408 per FTE ($64 above the national average) in 1992 to $588 per FTE in 1998 ($169 above the average). In 2000 it dropped slightly to $515 per FTE ($149 above the average). However, non-need grant aid per FTE was substantially below the national average, and the total aid per FTE was only slightly higher than the national average during the decade.

Table 6-3: Tuition Charges and State Grants per FTE in Indiana, Compared to the U.S., 1992-2000 (Constant 2000 $)

	Dollars					Deviation from U.S. Average				
	1992	1994	1996	1998	2000	1992	1994	1996	1998	2000
Adjusted Undergrad In-State Tuition and Fees for Public System, in 2000 Dollars	2,845	3,138	3,467	3,468	3,496	512	598	806	727	768
Adjusted Per FTE Need-Based Undergrad State Grant Amount, in 2000 Dollars	408	466	503	588	515	64	62	106	169	149
Adjusted Per FTE Non-Need-Based Undergrad State Grant Amount, in 2000 Dollars	3	3	8	8	7	-35	-57	-62	-87	-107
Adjusted Per FTE Need & Non-Need-Based Undergrad State Grant Amount, in 2000 Dollars	410	468	511	596	522	29	5	44	82	42

Source: See Appendix 6A-1

By targeting state funding on need-based aid rather than merit-grants, Indiana was able to substantially expand access while spending less per FTE than most other states. The reader is reminded that the appropriations for FTE in 2000 were $438 dollars below the national average, and student aid was nearly equal to the national average, indicating a net savings for taxpayers. In addition to targeting funding for grants in need-based programs, Indiana took the additional step of creating a state program that guaranteed students eligible for free and reduced lunch a need-based grant that equaled the tuition charge in public colleges.

Features of the Twenty-first Century Scholars Program

Indiana's Twenty-first Century Scholars Program was implemented in the early 1990s. Then Governor Evan Bayh modeled the program after the "I Have a Dream" program[1] (St. John, Musoba, Simmons & Chung, 2002). The state guaranteed that students taking the Scholars'

[1] The I Have a Dream Program helps children from low-income areas reach their education and career goals by providing a long-term program of mentoring, tutoring, and enrichment with an assured opportunity for higher education (www.ihad.org).

pledge would receive grants equaling tuition at an in-state public college or university (the award amount would depend on tuition charges when students enrolled). Students who enrolled in private colleges in state received slightly larger grants, equaling tuition plus an additional amount to compensate for the subsidies they might have received in a public college. The state had a formula for maximum grant award for students in colleges that included a portion for tuition and a portion for public subsidy for the student. The portion of the maximum awarded depends on need, although Scholars were guaranteed the maximum. In public colleges students received an award equaling current year tuition and fees, while students receiving other need-based grants received an amount indexed to the prior year's tuition.

The state requires students entering the program to take a pledge to complete high school; remain free of illegal drugs, alcohol, and criminal behavior; maintain at least a 2.0 grade point average (GPA); and apply on time for state and federal student aid and college admission.

Initially, ninth graders who qualified for the federal free or reduced lunch program could apply.[2] Currently, participating students must take the pledge in eighth grade. The state inaugurated the program before funding had been secured, but there was a commitment to the program. After some start-up subsidies for the program from the Lilly Endowment, the state took on the full cost of the program. The guaranteed grant is only slightly higher than the grant students would have received without the program, so the additional grant program costs are relatively modest and are included in the trends in student aid (Table 6-3). Indiana was able to implement the Twenty-first Century Scholars Program **and** spend less per FTE than the average for states in the U.S.

In addition to providing extra support for student financial aid, the program provides additional support to Scholars and their parents, including:

- Support with homework, including a hot line and advising help;
- Opportunities for students and parents to visit colleges in state;
- Support groups for students and parents;
- Opportunities to attend support sessions for completing student aid forms; and
- Frequent information on college preparation, career options, and college opportunities.

At the present time the Twenty-first Century Scholars Program is supported by the state GEAR-UP[3] grant, and many of the services are also available to other students in the state. The grant, administered by the Indiana Career and Postsecondary Advancement Center (ICPAC),[4] has become a national model for postsecondary encouragement (Hossler, Schmit & Vesper, 1999). Student services are provided through regional centers located across the state.

In addition to the Twenty-first Century Scholars Program, Indiana had a comprehensive set of need-based state grant programs. The award levels for the other state grant programs were based on need and the type of high school diploma completed. Students in the regular grant program with full need received 100 percent of the maximum award if they had completed an

[2] Department of Agriculture guidelines provide that families with annual income up to 185 percent of the federal poverty level can qualify for the reduced lunch program. For the current year, a family of four with income up to $34,873 can qualify (U.S. Department of Agriculture Food and Nutrition Service, 2004).

[3] Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR-UP) is a federal discretionary grant program designed to increase the enrollment and success of low-income students in postsecondary education.

[4] Created in 1986 by the Indiana General Assembly and under the direction of the Indiana Commission for Higher Education, ICPAC's mission is to inform, encourage, and support education and career development in Indiana through services such as its information hotline and web site.

honor diploma, 90 percent of the maximum if they competed a Core 40 (college preparatory) diploma, and 80 percent if they completed a standard diploma. The maximum was set on prior year tuition for public college students and a higher amount (as noted above) for private college students. Students with full need would receive lower amounts for the preparatory (Core 40) curriculum (90 percent of the maximum award) and regular diplomas (80 percent of the maximum). The state also provided incentive funding through the state's K-12 formula for high schools to graduate students with Core 40 and Honors diplomas. These additional features provided a cohesive set of funding incentives for schools and students that were consistently communicated through ICPAC.

Evaluation of the Effects of Grant Guarantees

Research on the Twenty-first Scholars program has received substantial attention at meetings sponsored by the National Governor's Association (NGA). It was the focal point of an invitational NGA meeting on best practices in state financial aid programs, and research results were presented at another NGA national meeting (St. John, 2002b, c).

The first study of the Twenty-first Century Scholars Program examined the impact of receiving Scholars aid on persistence, using a financial impact model with aid packages for freshmen and sophomores enrolled in Indiana public higher education in 1996-97 (St. John, Musoba & Simmons, 2003). This study, which found that Scholars persisted as well as other students, attracted the attention of a foundation, which requested a follow-up study.

The follow-up study examined the impact of receiving the commitment on whether students aspired to enroll, where students enrolled, and whether they persisted in college (Musoba, 2004; St. John, Musoba, Simmons & Chung, 2002; St. John, Musoba, Simmons, Chung, Schmit & Peng, 2004). It used a database of students in the 1999 cohort of 9th graders who responded to a survey in ninth grade and who were eligible to take the Scholars' pledge in eighth grade. The analyses used logistic regressions that controlled for other factors that influenced student outcomes.

Scholars who applied for student aid were more likely to enroll in college than otherwise average ninth-grade students in their cohort. The odds ratios were 4.4 for attending public four-year colleges, 6.1 for attending private colleges, and 6.7 for attending public two-year colleges. Thus, students who took the pledge had between 4.4 and 6.7 times the odds of enrolling in colleges in Indiana, compared to their peers. They were also more likely to enroll out of state (2.5 odds ratio) than not to enroll.[5] These findings show a consistent pattern of improved odds of enrollment for low-income students who took the Scholars' pledge, controlling for other factors that could influence their college choices. (For full results of the regression analyses, see St. John, Musoba, Simmons & Chung, 2002).

Scholars were as likely to persist in college as other students who received aid (including middle-income aid recipients) and more likely to persist than their peers who did not receive student aid. Scholars and students with other forms of aid had nearly equal probabilities of persisting. Both groups persisted better than students who did not receive aid. Thus, the programs improved college access and equalized the opportunity for students who had been at risk of dropping out before completing high schoolcollege.

[5] Even though program participants do not receive grant aid to attend an out-of-state institution, the academic and social support provided them during high school likely had an impact on their decision to attend college, even out-of-state.

Given the novelty of this research, it was crucial to examine thoroughly the linkages between the pledge and the subsequent decisions to apply for college and the choice of where to enroll. Since the database combined surveys of ninth graders by the Indiana Career and Postsecondary Advancement Center with college records provided by the state higher education agencies, it was important to test further the direct and indirect effects of the program. To further test the effects of the program, we used hierarchical logistic regression analyses to control for school level effect. The follow-up indicated that eighth-grade students who participated in the program were more likely to apply to college than their peers, further substantiating that the guarantee had a modest direct influence on preparation (St. John, et al., 2004). Receiving grant aid had a substantial and significant influence on enrollment, indicating adequate aid is an important aspect of a comprehensive postsecondary encouragement program.

Another follow-up study examined the impact of the Twenty-first Century Scholars Program on enrollment and persistence by African Americans and Whites, using the multi-level models (Musoba, 2004). By separate analyses of the two racial groups, it was possible to examine whether the relationships between individual-level variables and college-going were different between White and African American students. Parents' education was significant for White students but not significant for African American students, calling into question the importance of parent education for the education path of African American students (e.g., NCES, 2001b). Considering the weight some reports place on parent education, this should be explored further.

These analyses illustrate that results for the majority population should not automatically be assumed to be true for minority students. African American Scholars were six times more likely to enroll in college than non-Scholars, while White Scholars were four times more likely. This illustrates that underrepresented groups benefited more substantially from aid guarantees, giving the state the biggest return on its investment. These findings further illustrate that policymakers should be cautious about the notion that parents' education is a primary determinant of college-going (e.g., Choy, 2002; NCES, 2001b), especially if our concern is minority student access. Considering that African American students generally attend lower quality high schools (Haycock, 1998) and attend college at lower rates than White students, postsecondary encouragement programs, such as the Scholars Program, that include adequate financial aid and information about colleges are important factors in equalizing access between racial groups.

In combination, these findings indicate that the early guarantee of financial aid—a feature of the pre-application process of the student aid delivery system—had a sustained effect on preparation, enrollment, and persistence. By taking a pledge and fulfilling their commitments, these low-income students were more likely to enroll in colleges than their peers and as likely to persist as other students who enrolled and received aid.

Washington State Achievers Program

The state of Washington has tried to maintain a commitment to both need-based financial aid and low tuition, a strategy that has proven difficult in recent decades. The electorate's decision to eliminate affirmative action also had an apparent affect on college admissions after 2000. In theory at least, holding everything else neutral, the policy shift could have influenced the composition of enrollment in some public colleges, but it should not have influenced the overall enrollment rate for high school graduates. However, practice often does not follow

theory, as illustrated in the Washington key indicators review below. The story of affirmative action is germane to the Washington State Achievers (WSA) Program because the Bill & Melinda Gates Foundation, the funding agency for WSA, is committed to expanding access for low-income students in Washington and the United States.

Key Indicators in Washington

College access eroded in the state of Washington during the 1990s (Table 6-4). Nearly six tenths of high school graduates enrolled in college in 1992 (58.4 percent, or 4.1 percentage points above the national average). However, in 1998 only 52.2 percent of the high school class enrolled, and this rate dropped substantially by 2000 to 44.6 percent, or 12.1 percentage points below the national average. The big drop in 2000 may have been related, at least in part, to the electorate's vote passing Initiative 200, which banned the use of affirmative action in college admissions, but the gradual decline in the earlier part of the decade is unrelated to voter preferences on affirmative action.

Table 6-4: Access Indicators for Washington: Percentages of Cohorts Graduating From High Schools and of Graduates Enrolling in College, Compared to U.S. Averages, 1992-2000

	Percentage					Percentage Point Differential from U.S. Average				
	1992	1994	1996	1998	2000	1992	1994	1996	1998	2000
Public High School Graduation Rate	76.1	76.7	72.2	70.9	70.8	4.9	6.7	4.3	3.1	3.7
College Enrollment Rate	58.4	57.4	58.1	52.2	44.6	4.1	0.3	-0.4	-5.0	-12.1

Source: See Appendix 6A-1

While the high school graduation rate fell in Washington, from 76.1 percent in 1992 to 70.8 percent in 2000, the state continued to have a higher rate of graduation than the U.S. average. However, when examined in relation to college enrollment rates for each cohort, there was substantial reduction in access. While about four tenths (45 percent) of the ninth graders[6] in the class of 1992 went on to college in that year (.584 multiplied by .761), this rate dropped to about one-third for ninth graders in the class of 2000 (.708 multiplied by .446).

Not only did college enrollment rates drop, but education revenue per FTE also dropped in Washington (Table 6-5). State appropriations per FTE in public colleges were actually lower in 2000 ($6,074) than in 1992 ($6,452). However, while appropriations dropped substantially compared to the national average, revenue from tuition also fell compared to the national average. In 2000, for public colleges in the state of Washington, total education revenues per FTE were $1,688 below the national average.

[6] The graduation rates apply to a cohort of students starting in 9th grade. The drop out rate is the percentage of students who dropped out during the four years of high school.

Table 6-5: Educational Revenue per FTE for Washington Public Colleges, Compared to the U.S. Average, 1992-2000 (constant 2000 $)

	Dollars					Deviation from U.S. Average				
	1992	1994	1996	1998	2000	1992	1994	1996	1998	2000
Adjusted per FTE State and Local Appropriation for Public System, in 2000 Dollars	6,452	5,574	5,544	5,813	6,074	94	-1,005	-1,065	-1,253	-1,421
Adjusted per FTE Sum of Tuition and Appropriation for Public System, in 2000 Dollars	8,197	7,687	7,722	8,114	8,536	-493	-1,432	-1,547	-1,693	-1,688

Source: See Appendix 6A-1

While the state did not fund public colleges well, compared to other states it did make an effort to support need-based grant aid. In 1992 Washington's funding for need-based grant aid had fallen below the national average. Recognizing this shortfall, the state substantially improved spending of state need-based grants, commissioning a study of the impact of state grants on persistence. The study found that grants had a positive association with persistence in 1993-94 and 1994-95 than in 1992-93, the year before the increase; and minority students were more likely than Whites to drop out in 1992-93 than in the subsequent two academic years (St. John, 1999). The trends in funding in-state grants illustrate this change in state investment strategy (Table 6-6).

Table 6-6: Tuition Charges and State Grants per FTE in Washington, Compared to the U.S., 1992-2000 (constant 2000 $)

	Dollars					Deviation from U.S. Average				
	1992	1994	1996	1998	2000	1992	1994	1996	1998	2000
Adjusted Undergrad In-State Tuition & Fees for Public System, in 2000 dollars	1,745	2,113	2,178	2,301	2,461	-587	-428	-482	-440	-267
Adjusted per FTE Need-Based Undergrad State Grant Amount, in 2000 dollars	210	430	402	464	420	-134	26	5	44	54
Adjusted per FTE Non-Need-Based Undergrad State Grant Amount, in 2000 dollars	0	7	10	10	37	-38	-53	-60	-86	-77
Adjusted per FTE Need- & Non-Need-Based Undergrad State Grant Amount, in 2000 dollars	210	437	412	473	457	-172	-26	-55	-41	-23

Source: See Appendix 6A-1

In 1992 the state spent only $210 per FTE on need-based grants, $134 below the national average for states. In 1994, in contrast, Washington exceeded the average state funding per FTE

for such grants. However, non-need grants were consistently below the national average, as was total state funding for grants. Washington managed to constrain tuition increases and continued to spend on grants, but public colleges were consistently underfunded, compared to other states, during that decade.

Features of the Washington State Achievers Program

The Washington State Achievers (WSA) Program was implemented in 2000 in four Tacoma area high schools. Schools with substantial percentages of low-income students were selected for the WSA program. In subsequent years the program was expanded to fifteen high schools in the state. Schools selected for the program receive funding for school restructuring, a process that had not yet been implemented. Future graduates from the WSA high schools would have the benefit of the schools' reforms (i.e., smaller high schools) as well as from additional student aid.

Students from the four Tacoma area WSA high schools were selected for scholarships during their junior year. Noncognitive criteria (Sedlacek, 2004) used for selection include positive self-concept, realistic self-appraisal, negotiating the system, long-range goals, strong support person, leadership, community service, and nontraditional knowledge. These criteria did not consider achievement or race, but did consider indicators normally considered important in college admission. As noted below, the selection procedure yielded a diverse pool of recipients.

The scholarships provided through WSA guaranteed a total grant amount, with the Bill & Melinda Gates Foundation providing funds capping the total grant after state grants, Pell grants and other federal grants, and institutional grants, providing they attended in-state colleges and universities. The WSA program provided the difference between the guaranteed award and the other financial aid students received. While the guaranteed award amount rose slightly each year, the guaranteed award amounts for 2002 were:

- $6,400 for independent colleges and universities,
- $5,400 for public four-year colleges and universities, and
- $3,600 for public community colleges.

The total amount of aid guaranteed more than the weighted average tuition charged. For example, the average tuition charge in 2000 was $2,461 (see Table 6-6) a rate substantially below the total award. Thus, the WSA program guaranteed support at a level that covered a substantial portion of costs of attending college in state and could have reduced debt burden for the WSA recipients. WSA students did not have to maintain a minimum college GPA.

Evaluation of the Effects of Grant Guarantees

The Washington State Achievers Program establishes agreements with high schools, providing funding for school restructuring as well as providing financial guarantees for some students in WSA schools. Students from families with incomes below $60,000 were eligible in 2002. Given these program features, the analyses need to control for application and selection by WSA as well as for the school attended.

Fortunately, Charles Hirschman, a sociologist at the University of Washington, had collected a survey of high school seniors in Tacoma high schools (Hirschman, Lee & Emeka, 2003) which included some WSA high schools and other high schools that were not included in the program (comparison schools). The Gates Foundation funded Hirschman for a follow-up set of interviews to determine whether and where students had enrolled in college.

A study of program effects (St. John & Hu, 2004) used the Hirschman surveys to examine the 2002 cohort. Since the school reforms had not yet been implemented, it was possible in this study to examine the effects of the aid guarantee without examining the effects of change in curriculum. The survey included questions about family background and high school courses, allowing for a more complete analysis of enrollment behavior than was possible in the Indiana study. The response rates on the base surveys and follow-ups yielded about 80 percent the population of twelfth graders. The study found that WSA had a substantial influence on reducing the gap between aspirations to attend college and expectations of doing so as a senior (St. John & Hu, 2004). Receiving the guarantee also substantially improved the odds of enrolling in colleges as well as increased chances of attending a four-year college. Since this study compared survey respondents in comparison and treatment schools, some detail is provided below for illustrative purposes.

The survey design happened to include both WSA schools and non-WSA schools in Tacoma. The sample population (Table 6-7) was ethnically diverse for WSA and non-WSA high schools, but students at the WSA high schools had lower socio-economic status (SES). More than a quarter of the students in comparison schools had fathers with at least some college (28.7 percent), while only 15.5 percent of the fathers of students in WSA schools had this level of attainment. Only 11.2 percent of the WSA recipients had fathers with some college. In addition, the WSA schools and recipients within them had higher percentages of minority students than the comparison population in non-WSA schools. It should also be noted that using the noncognitive variables for selection resulted in ethnic diversity among scholarship recipients.

Table 6-7: Descriptive Statistics for Selected Background Variables for Students in WSA High Schools and Comparison Schools, 2002 Cohort

Variable	Entire Sample	Non WSA Schools	WSA Schools	WSA Schools, Non-Applicants	WSA Applicants, Non-Recipients	WSA Recipients
Gender						
Male	44.1%	44.8%	43.5%	46.0%	58.3%	32.9%
Ethnicity						
African American	17.0%	11.2%	22.4%	21.3%	16.7%	26.6%
Hispanic American	9.8%	7.6%	11.8%	12.6%	13.9%	9.1%
Asian American	18.0%	13.8%	21.8%	17.8%	33.3%	29.4%
Native American	4.6%	4.7%	4.4%	4.1%	8.3%	4.2%
Some College						
Father	22.0%	28.7%	15.5%	19.3%	8.3%	11.2%
Mother	19.8%	25.5%	14.4%	17.0%	0.0%	11.2%
N	1,097	529	568	389	36	143

Source: St. John & Hu, 2004

The WSA study found a substantial positive effect of the WSA program on preparation for college—as measured by effects on aspirations, expectations, and applications—as well as on enrollment behavior (St. John & Hu, 2004). A range of outcomes was considered—enrollment in any college, enrollment in public four-year college, enrollment in private college, and enrollment in two-year college—comparing students in WSA schools to students in comparison schools. The analyses consistently showed the WSA recipients were more likely to enroll in college than students in comparison schools and others in their schools. WSA recipients were also more likely to enroll than comparison students. Students who did not apply for WSA had lower odds of enrolling in college than students in comparison schools, while WSA recipients had substantially higher odds of enrolling in college than did students in comparison schools. Controlling for background and preparation, applicant nonrecipients did not differ significantly from students in comparison schools.

While these initial analyses of WSA did not examine the impact of the school restructuring portion of the program on improvements in academic preparation, it is evident that the financial guarantee provided by the program encouraged students to prepare within the existing curriculum. Thus, the financial guarantee of access provided by comprehensive encouragement programs like WSA and Twenty-first Century Scholars appears to be a critical element of efforts to expand access. It is still to be tested whether the current efforts to improve high school preparation, including the school restructuring component of WSA, actually improve preparation and academic access.

The finding that providing a guarantee of adequate grant aid improves preparation for college enrollment has implications for state policy on higher education finance. This guarantee of support has a substantial and direct effect on enabling students to enroll in in-state institutions, public and private. Low-income students who had the guarantee of future support had higher odds of enrolling in college than their peers at more affluent high schools, even after controlling for the influence of background and high school preparation.

The WSA study further confirms the impact of early interventions on college enrollment, consistent with the findings from the study of the Twenty-first Century Scholars Program. A study of the effects on persistence using a state-level database is also under development, but is not available at this time.

Comparison of the Two Programs

The comparison of the Indiana and Washington programs is revealing with respect to the role of early financial aid guarantees. In combination, the two cases illustrate that a targeted approach to need-based aid, linked to encouragement for academic preparation, can improve college access.

In the Indiana case, the state implemented the Twenty-first Century Scholars program in the 1990s, a period when the state made substantial gains in access, compared to the U.S. average. The program ensured that low-income students who took the steps to prepare would receive a grant equaling tuition in public colleges. The state of Indiana actually funded state grants at a higher level for all students in the late 1990s than in the early half of the decade (St. John, Hu & Weber, 2000, 2001).

In contrast, Washington failed to gain ground in access during the 1990s in spite of raising the level of investment in need-based grants during the decade. The state's failure to

support public colleges adequately, coupled with the electorate's decision on affirmative action, limited capacity. However, Bill & Melinda Gates Foundation's Washington State Achiever's program illustrated, at least in a few schools, that providing early aid guarantees can improve college access for low-income high school students. The two cases, taken together, illustrate that the targeting of aid on low-income students, along with a guarantee that shows a commitment to those students, can overcome the barriers to access.

Conclusions and Implications

The Washington State Achievers Program and Indiana's Twenty-first Century Scholars Program are distinctive among the early access programs in the U.S. These programs encourage academic preparation by providing an early guarantee of student financial aid as well as funding that enables students to enroll in four-year colleges and to persist in higher education. While the methods they use to encourage preparation differ—WSA provides financial support for school restructuring along with supplemental student grants, while the Indiana program uses state incentive funding for schools along with student grants—they both provide strong financial incentives for college preparation along with encouragement (e.g., mentoring).

Using appropriate databases and statistical models, these studies found that aid guarantees had an influence on expanding access for low-income students in Indiana and Washington. Receiving a guarantee appears to increase the odds that students will prepare for and enroll in college. The evidence from Indiana and Washington indicates that taking the steps to enroll—including taking advanced courses in high school, completing a high school diploma, and applying for college—is influenced by early financial commitments to low-income students. In addition, receiving a commitment for adequate financial aid significantly improved the odds of enrollment in four-year colleges, controlling for preparation.

These analyses also have implications for state education policies that seek to improve college enrollment rates. Students from middle- and high-income families currently have access to public higher education in their states, given federal loans and tax credits. Yet there are substantial numbers of potential students who lack the financial opportunity to enroll in college. Improving academic preparation curricula without also providing adequate need-based student aid could increase the number of prepared students who cannot afford to attend. States interested in improving access should consider policies that include guarantees that low-income students will receive adequate grant aid if they take the steps to prepare for college.

Appendix 6A-1

Sources for State Indicators for Demographic and Finance Variables

Annual reports by NCES in the Integrated Postsecondary Education Data System (IPEDS), as well as supplemental analyses provided by Tom Mortenson at Postsecondary Education Opportunity, provided data for state indicators. The indicators related to school outcomes were:

- High school graduation rate, used as an outcome measure (calculated from NCES high school graduation data and enrollment when the cohorts were in ninth grade).
- College enrollment rate, used as an outcome measure (Fall enrollment reports were used to calculate the percentage of high school graduates enrolled in higher education the following fall.).[7]

In addition, we used one indicator related to the size of the K-12 population as a control for population size:

- Size of the ninth grade cohort, used as an independent variable to control for population size (from NCES's Common Core of Data).

IPEDS was the primary data source for the indicators related to tuition and financial aid. Analysis of IPEDS represented a major part of the work required to complete this project, given the complexity of this information system.[8] IPEDS was used for information on:

- College finances (college tuition weighted per FTE).[9]
- State system and college enrollment (Fall enrollment data were used to develop weights[10] for financial indicators and to calculate the percentage of FTE students enrolled in the various sectors of higher education—public four-year, public two-year, and private colleges in the state. These analyses used total FTE rather than college freshman enrollment because this provided a better indicator of capacity.).

The other indicators related to public financing of higher education included:

- Need-based grants adjusted per FTE (Total need-based grants were derived from National Association of State Student Grant and Aid Programs [NASSGAP] Annual Survey Reports and divided by undergraduate FTE in the state.).
- Non-need grants adjusted per FTE (The sum of total merit and other grants, calculated from NASSGAP Annual Survey Reports, divided by undergraduate FTE).

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[7] The study team used IPEDS, along with data reported annually by Tom Mortenson in Postsecondary Education Opportunity newsletter and available from postsecondary.org. Using NCES data, Mortenson calculated college continuation rates by state based on the number of high school graduates from the Current Population Survey of the U.S. Census Bureau and the number of college freshmen from the IPEDS Fall Enrollment.

[8] It was frequently necessary to sum information for campuses and states across different data files in order to develop appropriate indicators.

[9] Education revenues and expenditures as well as state appropriations were considered in preliminary analyses but not included in the final model.

[10] College tuition charges in public colleges were weighted for each state to reflect the actual pattern of enrollment in the state. The number of undergraduates enrolling in each public college was multiplied by the undergraduate in-state tuition charge for the college, then these numbers were summed and divided by the total number of undergraduates enrolling in the state. This weighted tuition charge reflects the composition of enrollment in the state.

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ABOUT THE CONTRIBUTORS

Melissa Binder is an Associate Professor of Economics at the University of New Mexico, where she teaches Labor and Latin American Economics. Her research focuses on health, education, and family economics issues in Latin America and the United States. At present, with collaborator Philip Ganderton, she is investigating equity, efficiency, and political economy effects of lottery-funded merit-based scholarship programs. Dr. Binder received a Ph.D. in Economics from Columbia University and a B.A. in Philosophy from Yale University, and spent several years in between as a community and labor organizer. She can be reached at 505-250-4131.

Christopher Cornwell is a Professor of Economics in the Terry College of Business at the University of Georgia. He has a Ph.D. in Economics from Michigan State University and a B.A. in Economics from the University of North Carolina-Chapel Hill, where he graduated summa cum laude. He has been a visiting professor at Universität Erlangen-Nürnberg in Nürnberg, Monash University in Melbourne, and Central European University in Budapest, as well as a visiting scholar at the Federal Reserve Bank of Cleveland. Dr. Cornwell's research interests include applied econometrics, labor economics, and the economics of education. With his colleague David Mustard, he is currently engaged in a long-term project, funded by the National Science Foundation, examining the economic effects of merit-based financial aid programs modeled after Georgia's HOPE Scholarship. Cornwell is listed in the 4th edition of Who's Who in Economics as one of the 1,200 most frequently cited economists from 1990 to 2000. Contact information: Phone: 706-542-3670; Email: cornwl@terry.uga.edu; Address: Terry College of Business, University of Georgia, Athens, GA 30602.

Patricia L. Farrell earned her Ph.D. in higher, adult, and lifelong education from Michigan State University's (MSU) College of Education this past summer. For her dissertation she conducted an evaluation of state non-need, merit-based scholarship programs. She was one of eight first-time recipients receiving the Lumina Foundation/Association for the Study of Higher Education national dissertation fellowship. She is also an education evaluator for Michigan State University's College of Agriculture and Natural Resources. Her research interests are in program evaluation, educational policy, student assessment, and organizational development. She received her B.A. in economics and M.A. in organizational learning from the University of New Mexico. Previously she worked at Intel as an organizational development and training specialist, and in the Chicago futures markets. Dr. Farrell can be reached at pfarrell@msu.edu.

Philip T. Ganderton is a Professor of Economics at the University of New Mexico, and currently Chair of the department. His research interests include environmental economics, risk assessment, mitigation and insurance, and higher education choice and finance. Dr. Ganderton has published work on the assessment of public policy in the areas of natural resource management, disaster risk mitigation, and education subsidies.

Donald E. Heller is associate professor and senior research associate at the Center for the Study of Higher Education at Penn State. His research centers on higher education economics, public policy, and finance, with a primary focus on issues of access, choice, and persistence in postsecondary education. Dr. Heller earned Ed.M. and Ed.D. degrees from the Harvard Graduate

School of Education, and a B.A. in Economics and Political Science from Tufts University. He received the 2002 Promising Scholar/Early Career Achievement Award from the Association for the Study of Higher Education, and the 2001 Robert P. Huff Golden Quill Award from the National Association of Student Financial Aid Administrators. Dr. Heller is the editor of the books *The States and Public Higher Education Policy: Affordability, Access, and Accountability* (Johns Hopkins University Press, 2001), and *Condition of Access: Higher Education for Lower Income Students* (ACE/Praeger, 2002). With Patricia Marin, he co-edited The Civil Rights Project's last report on merit scholarships, *Who Should We Help? The Negative Social Consequences of State Merit Scholarships.* Dr. Heller can be reached at dheller@psu.edu or 814-865-9756.

Patricia Marin is a Higher Education Research Associate for The Civil Rights Project at Harvard University. Her work focuses on issues of inclusion and equity in higher education, with a particular emphasis on affirmative action and diversity practices. In her efforts she has collaborated with social scientists, higher education administrators, association representatives, researchers, policy experts, attorneys, and government officials. In particular, she co-edited *Who Should We Help? The Negative Social Consequences of State Merit Scholarships* (2002) with Donald Heller. Dr. Marin's Ph.D., from the University of Maryland, is in Higher Education Policy. She received her M.Ed. in Higher Education and Student Affairs Administration from the University of Vermont and her B.A. in Spanish from the University of Pennsylvania. Dr. Marin can be reached at pmarin@law.harvard.edu.

David B. Mustard is an Associate Professor of Economics at the Terry College of Business at the University of Georgia and a Research Fellow with the Institute for the Study of Labor in Bonn, Germany. He earned a Ph.D. in Economics from the University of Chicago (1997), a M.Sc. in International and European Politics from the University of Edinburgh (1992), and a B.A. in Economics and History from the University of Rochester (1990). At Rochester he graduated Phi Beta Kappa and with high honors in both majors. Dr. Mustard's research focuses on microeconomic policy-related questions, especially law and economics, crime, casino gaming, lotteries, gun control, sentencing, labor economics, education, and merit-based aid. The National Science Foundation has awarded him and his colleague Christopher Cornwell grants to pursue research about the impacts of merit-based aid. He has testified about his research before state legislatures and as an expert witness in the courtroom. His research has been featured in National Public Radio's *Talk of the Nation*, the *Wall St. Journal*, the *New York Times*, *USA Today*, *Washington Post*, *The Economist*, and many other national, regional and local media outlets. He currently resides in Athens with his wife, Elizabeth, and sons, David Andrew and Stephen. Contact information: Phone: 706-542-3624; Email: mustard@terry.uga.edu; Address: Terry College of Business, University of Georgia, Athens, GA 30602.

Gary Orfield is Professor of Education and Social Policy at the Harvard Graduate School of Education. Professor Orfield is interested in the study of civil rights, education policy, urban policy, and minority opportunity. He is Co-Founder and Director of The Civil Rights Project at Harvard University, an initiative that is developing and publishing a new generation of research on multiracial civil rights issues. Dr. Orfield's central interest has been the development and implementation of social policy, with a central focus on the impact of policy on equal opportunity for success in American society. Recent works include studies of changing patterns

of school desegregation and the impact of diversity on the educational experiences of law students. In addition to his scholarly work, Dr. Orfield has been involved with development of governmental policy and has served as an expert witness in court cases related to his research. In 1997, Dr. Orfield was awarded the American Political Science Association's Charles Merriam Award for his "contribution to the art of government through the application of social science research." A native Minnesotan, Dr. Orfield received his Ph.D. from the University of Chicago and travels annually to Latin America, where his research work is now expanding. Dr. Orfield can be reached at orfielga@gse.harvard.edu.

Edward P. St. John is a professor in the Department of Educational Leadership and Policy Studies at Indiana University. His research focuses on the impact of public finance and educational policies on education opportunity. He recently published *Refinancing the College Dream: Access, Equal Opportunity and Justice for Taxpayers* (Johns Hopkins University Press, 2003) and co-edited *Public Funding of Higher Education: Changing Contexts and New Rationales* (Johns Hopkins University Press, 2004). He is series editor for *Reading of Equal Education*. Professor St. John can be contacted at estjohn@indiana.edu.