

FINAL REPORT

Understanding Educational Resilience

*Evidence from Phase One of the Success Study of the
Horatio Alger Association Scholarship Program*

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Summary of Key Findings

Family Backgrounds

- Across every measure of demographics and socioeconomics, Scholars and particularly National Scholars, come from more disadvantaged backgrounds than their Non-recipient HAA Applicant counterparts. These disadvantages take the form of lower average family incomes, more dependents in their households, and higher rates of parental unemployment and receiving state assistance.
- Compared to a nationally representative sample of high school seniors, HAA Applicants and particularly Scholarship Recipients came from lower income families with more dependents, and were more likely to be faced with a physical or mental disability.

Academic Achievement, Involvement, and High School Conditions

- Despite their disadvantaged backgrounds, Awarded Scholars were more likely than Non-recipients Applicants to be ranked towards the top of their high school classes, and to engage in work, community, and extracurricular activities. Scholars also more often assumed leadership roles during their school and community service activities.
- Compared to their national counterparts, HAA Applicants were more likely to have achieved high ACT or SAT scores, and more often participated in community service activities.
- Compared to Non-recipients Applicants, Awarded Scholars attended schools with less student diversity, fewer students per teacher, and smaller proportions of students meeting the eligibility criteria to receive free or reduced-price lunches.
- Compared to their national counterparts, HAA Applicants attended schools with fewer students per teacher, larger concentrations of minority students, and were more likely to attend high school in rural settings.

Adversity

- Scholarship Recipients experienced more adversity than Non-recipients Applicants, and National Scholars experienced more adversity than State Scholars.

- Nearly all Scholarship Recipients have critical financial need, roughly half had experienced the death, incarceration, or abandonment of a parent or guardian, more than one-third had been exposed to addiction in their home, and roughly one-fourth had suffered abuse.

Resilience

- The need to “survive” among Scholars may be acting as a prompting mechanism for immediate action: employment, succeeding in school, and engaging in community activities provide tangible means for efficiently dealing with everyday financial and emotional challenges.
- Elements of resilience are strengthened by a very strong desire to altruistically help others or give back to the community, which may act as the means to recast oneself within a larger community circle. Engagement in community service and extracurricular activities provide the opportunity to be regarded by others as a well-respected, active, positive member or role model; attributes that may not be afforded by Applicants’ immediate family environments. School and larger social networks thus become other environments that allow Scholars to enjoy life beyond the dysfunction and vicious cycle of adversity.
- The fact that the majority of HAA Scholarship Recipients came from families earning less than \$15,000 per year places these students at risk of following national trends which show the disadvantages that students from low-income families confront in realizing postsecondary success. Yet Scholars’ academic achievement and frequent participation in community service activities counter these trends, improving their position to enroll in more selective four-year colleges and attend school on a full-time basis, thereby countering the disadvantages presented by their family circumstances.
- Academic achievement provides the means to a long term end, but at the same time life at school offers an alternate reality. Applicants seem to focus on school work to help steer clear of the siren calls of their immediate environments (drugs, abuse, gangs) and to find a clear path towards a permanent escape from hardship.
- HAA Applicants who demonstrated moderate to high levels of resilience can be distinguished by their actions to improve their present situations, their willingness to sacrifice immediate gratification to ensure future success, and their ability to mentally reframe adverse circumstances to view hardship as an advantage that sets them apart.

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Introduction

The Success Study of the Horatio Alger Association (HAA) Scholarship Program is organized around the assumption that a discernible combination of individual attributes, support structures, and educational experiences increase the ability of individuals to overcome adversity and to achieve educational and life success. The main question we propose to address is one of the relative importance of these factors in determining success. To address this question, the Success Study will consist of three phases of analysis that provide new information on the broad social issues in the HAA seeks to investigate.

NORC at the University of Chicago conducted Phase 1 of the Success Study on behalf of HAA by following a mixed-methods design. The first phase consisted of a comprehensive set of quantitative and qualitative analyses of HAA Application data, along with national comparisons based on the U.S. Department of Education's Education Longitudinal Study of 2002 (ELS:2002), the most recent nationally-representative data available on U.S. high school students and early college enrollees. Together, these data sources supported analyses that identified areas of disadvantage, and describe why certain students were able to succeed academically despite disadvantages. With the second phase of the Success Study we will examine aspects of the HAA program that determine educational, occupational, and life success among HAA Scholarship Award Recipients. With the third and final phase of the Success Study we hope to address the overall effectiveness of the HAA Scholarship Program by evaluating differences between HAA Scholars and comparable non-recipients (i.e., program applicants who were ultimately not selected as HAA Scholars as well as a non-applicant population) across a range of outcomes encompassing numerous measures of success and spanning both personal and professional domains. Individually, each phase of the Success Study will contribute new information on the confluence of individual and environmental factors that encourage success, broadly defined. Collectively, these three phases will improve our understanding of how success unfolds over the life course at multiple points in time, from the students' lives prior to applying for the program to the years following college graduation.

This Main Findings Report focuses on Phase 1 of the Success Study, and concentrates on identifying factors that have been instrumental in the lives of students up to the point of applying for the HAA Scholarship. The remaining sections of this Main Findings Report include the motivation of the study and research questions addressed, the methods used, and the results. The report concludes with a discussion of key findings and implications.

Motivation of the Study and Research Questions

The primary aim of Phase 1 of the Success Study is to understand the factors associated with individuals' abilities to overcome adversity, which we achieve by comparing the HAA applicant pool to national populations of high school students. The research comprising Phase 1 builds on the academic literature focusing on pathways to college among at-risk students, as well as the concept of resilience in overcoming adversity.

Past studies suggest that resilience serves as an important mechanism for overcoming adversity and ultimately achieving greater educational opportunities, though this notion has rarely been examined among college-going student populations, and there exists relatively little research on the opportunities available to at-risk students (Wang & Gordon, 1994). Studies of high school seniors and entering college students have shown the importance of student and family characteristics, as well as measures of the high school context in shaping the opportunities, and perceptions of opportunities, related to college enrollment (e.g., Engberg & Wolniak, 2010; Paulsen & St. John, 2002; Perna, 2006, Perna & Titus, 2005), and policy reports have focused on risk factors and support mechanisms for students preparing for and transitioning into college (e.g., Domina, 2009; Horn, Chen, & Adelman, 1998; IHEP, 2011; Kaufman & Bradbury, 1992). Evidence indicates several factors related to socioeconomic position, family structure, academic achievement, and school contexts determine postsecondary educational opportunity, particularly for students from the most disadvantaged backgrounds (e.g., Baker & Siryk, 1984; Banyard & Cantor, 2004; Grodsky & Jackson, 2009; Horn, 1997; Wolniak & Engberg, 2011). Despite considerable attention among researchers and policymakers on improving pathways to college for students from *all* backgrounds (e.g., Perna, 2006; Obama, 2009; U.S. Department of Education, 2010), there exists relatively little research on the interactions between opportunity structures and the characteristics of at-risk students. Studies of at-risk students show resilience to be an important mechanism for overcoming adversity and achieving greater educational outcomes, though this notion has rarely been examined among college-going student populations (Banyard & Cantor, 2004).

Phase 1 of the Success Study begins to fill this gap by studying a group of at-risk students who have experienced adversity and situating them in the national context of high school students and early college enrollees. Drawing on nationally representative ELS:2002 data in combination with information from year 2009 and 2010 HAA Scholarship Applicants, our mixed-methods analyses identify the unique characteristics of HAA applicant population within the national context, the differences between Scholarship Recipients and Non-recipients, and evidence of resilience among HAA applicants. Results provide new information for understanding the unique and resilient population of HAA applicants and

respond to calls to draw on “existing national databases and make creative use of them...to examine the concept of resilience” (Peng, 1994, p.74).

The analysis plan for Phase 1 of the Success Study was designed to address the following research questions:

Question 1

What are the background characteristics and educational and life experiences among HAA Scholarship Applicants, and how do these differ between Scholarship Award Recipients and Non-recipients?

Question 2

How does the population of HAA Scholarship Applicants and Scholarship Award Recipients compare to the general U.S. sample of high school students and early college enrollees?

Question 3

What personal attributes and motivational characteristics have enabled applicants to overcome past obstacles in achieving educational and life success at the point of applying to the HAA Scholarship program? In other words, what attributes and characteristics are associated with individual resilience in the face of adversity.

Data and Analysis

Summary of Data

The main data source for Phase 1 of the Success Study consisted of the full population of applicants to the 2009 and 2010 HAA Scholarship Program, which was complemented by and compared against additional external data sources. In total, data came from the three sources described below:

2009–2010 Applicant Records from the HAA Scholarship Program

HAA Application Data contain information on applicants' demographics, socioeconomics, academic preparation and achievement, in- and out-of-school engagement, and experiences with adversity. The combined two-year 2009–2010 HAA Applicant file contains roughly 17,000 students, 10% (1,690) of whom were awarded an HAA scholarship. The HAA Applicant file included a range of measures related to applicants' demographic and socioeconomic characteristics, education, engagement, and work experiences, the degree and type of adversity experienced, and final National or State Scholarship award status. In addition to these variables, the applicant data included information from open-ended personal narratives pertaining to exposure to adversity, aspirations, and expressions of resilience.

To support the Phase 1 analysis, several variables from the HAA Applicant file were constructed to facilitate reporting on the population of HAA applicants, and comparing applicants across a variety of dimensions. Several variables were also created as modified versions of variables contained in the original HAA Application data set. For example, the measure of family household income (adjusted gross income) contained a collection of values that were established as out of range, and had to be removed prior to analysis. As a further example, we combined ACT and SAT scores into a single, standardized variable based on concordance tables (see ACT, Inc., 2008). Full summaries of the HAA Applicant variables contained in the study can be found in Appendix A, Table A.1.

Common Core of Data & Private School Survey

The HAA Applicant file contained high school identifiers based on College Entrance Examination Board (CEEB) codes. In order to incorporate nationally comparable indicators of the high school context, a crosswalk was developed for this study, effectively linking the high schools contained in the HAA Applicant Data to national indicators found within the Common Core of Data (CCD) and Private School Survey (PSS) databases (<http://nces.ed.gov/ccd/>; <http://nces.ed.gov/surveys/pss/>). In total, information on

4,901 high schools¹ was matched to school-level indicators from the Common Core of Data (CCD) and Private School Universe Survey (PSS) using the constructed CEEB-NCES ID crosswalk. Appendix B provides additional information on the data-matching procedures used for developing the CEEB-NCES ID crosswalk and match results.

Education Longitudinal Study of 2002

ELS:2002 is a survey research project funded by U.S. Department of Education designed to explore students' transitions from secondary school into postsecondary education or the workforce and is the most recent nationally-representative data available on U.S. high school students and early college enrollees. The analytic sample for this study is based on the 2002 panel of students who were seniors in high school in 2004 and followed up in 2006 and includes more than 16,100 students. Applying longitudinal panel weights² resulted in a weighted sample of approximately 3.3 million students generalizable to the 2002 U.S. population of high school sophomores as they advanced through high school and into postsecondary education and/or the world of work. The ELS:2002 data were used to compare the characteristics of the HAA Applicants and Scholars against a nationally representative sample of high school students, in terms of family and socioeconomic characteristics, academic achievement and involvement during high school, and the conditions of high schools attended. ELS:2002 data were also used to examine the importance of these characteristics in determining critical postsecondary outcomes, including two- and four-year enrollment rates, rates of part-time and full-time enrollment, and the selectivity of institution attended. For more information on ELS:2002 data, see <http://nces.ed.gov/surveys/els2002/>.

Analysis

To answer the study's research questions, we employed a mixed-methods approach involving bivariate and multivariate quantitative analyses of HAA Applicant and ELS:2002 data, as well as a qualitative analysis of a sample of applicants' personal narratives contained in the HAA Application Data.

Stage 1

Research Question 1 was addressed in the first stage of analysis. Descriptive analytic techniques were used to examine the population means among HAA applicants. HAA Application Data and matched CCD and PSS school-level indicators were drawn upon to make a series of comparisons of Scholarship Recipient and Non-recipient applicants. Among Scholarship Recipients, comparisons were also performed on National and State award winners. Key comparisons included average (mean) measures of

¹ 4,901 high schools represents 62% of the total number of high schools listed in the HAA Applicant data, and 63% of Applicants for whom CEEB-NCES ID matches were found.

² The longitudinal panel weight used in the analyses was ELS:2002 variable *F2BYWT*.

applicants' demographic and socioeconomic characteristics; education and employment outcomes; and engagement and leadership in school and community activities. Comparisons were also made between Scholars and Non-recipients in terms of the type and extent of adversities experienced, as well as the characteristics of high schools attended. All mean differences were tested for statistical significance based on a two-sided *t*-test with at least a 99% confidence level (Gall, Gall, & Borg, 2003)³.

The first analytic stage also included a multivariate examination to identify if mean differences found between Scholarship Recipients and Non-recipients across engagement and leadership measures remain statistically significant *after* statistically controlling for differences in background characteristics and adversity experiences. The purpose of this multivariate approach was to provide a more thorough understanding of Scholar and Non-recipient differences by assessing if backgrounds and exposure to adversity explain such observed differences in engagement. Significant differences that remain in this stage of analysis after controlling for background characteristics and adversity experiences may indicate if involvement in work, school, and community activities represents expressions of resilience among Scholarship Recipients relative to Non-recipients.

Stage 2

The second analytic stage addressed research Question 2 by examining HAA applicants in relation to the national population of high school seniors in terms of family characteristics, academic achievements, and high school attributes. This analysis built on comparisons of HAA applicants to define comparable sub-populations within the ELS:2002 data for examining rates of two-year, four-year, or no postsecondary enrollment, rates part-time and full-time enrollment, and selectivity of college attended, enabling us to examine major fault lines in postsecondary educational opportunity. A series of cross tabulations were used to examine mean differences, or the probability that two populations are the same with respect to the variable tested. Tests for statistically significant mean differences were based on a Welch's *t*-test for independent samples with unequal variance with at least a 99% confidence level (Welch, 1937, 1947).

Stage 3

The third analytic stage addressed research Question 3 by applying qualitative techniques to understand the extent to which resilience serves as a mechanism for overcoming adversity and ultimately achieving educational success. Through a content analysis of applicants' personal narratives, we focused on the extent and depth of applicants' experiences with adversity and the factors (e.g., experiences, relationships,

³ Tests for statistical significance at the at the 99% level ($p < 0.01$) ensure that differences identified may have been falsely detected, or based on random chance, in less than 1 out of every 100 cases.

resiliency traits) that facilitated or motivated applicants to face and potentially overcome their adversities. Specifically, we analyzed applicants' open-ended responses to two essay questions: (1) *Please describe in detail the adversities you indicated [in the preceding application questions] and explain how the adversities that you have experienced in your life have motivated you to pursue and complete a college degree*, and (2) *Explain your career goal(s) and the importance of a college education in attaining those goals*.

Inherent in these questions is an assumption that individuals' adversities constitute a motivating force, one that the individual has felt after gaining perspective on his or her adverse experiences. Resilient individuals frequently cite their experiences with adversity as factors that motivate their success (Luthar, Cicchetti, & Becker, 2000; Masten, 1994; Masten, Coatsworth, et al., 1995). However, we analyzed the essay questions more broadly, looking for any factors that may have contributed to the individual's ability to face and potentially overcome adversities that he or she has experienced. Such factors may or may not be directly tied to their experiences with adversity. For example, a parent's experiences with drug addiction may have motivated an applicant to avoid drugs and study hard, but this applicant may also have benefited from the presence of a caring adult, who facilitated the applicant's good decision-making when the parent was unavailable. Thus, all references to "facilitating" or "motivating" factors were flagged and coded.

Applying a "grounded theory" approach to the qualitative data (Glaser & Strauss, 1967), the number and type of codes were not determined prior to analysis; rather, the coding scheme was developed inductively by two researchers using an initial sample of 25 applicant essays. Once a basic coding scheme had been developed, the main analysis of Applicants' experiences with adversity and their facility/motivation for overcoming adversity was conducted on a sample of 120 applications randomly drawn from the full population of 2009–2010 HAA Applicants. Each of the two coders analyzed the essays of 80 applicants, 40 of which were analyzed by both coders to establish inter-coder reliability (Bernard & Ryan, 2010; Neuendorf, 2002). The full sample included a subsample of 60 Scholars and a subsample of 60 Non-recipients. The sample was drawn to proportionally mirror the full population of 2009–2010 HAA Applicants in terms of gender composition, family income, award status (National, State, and Non-recipients), and number of adversities experienced. Thus, findings from the qualitative analysis may be generalized to all 2009–2010 HAA Applicants.

The qualitative methods employed in answering Question 3 were carried out in five main steps. A diagram illustrating the five-step analysis plan is presented in Appendix C, Figure C.1.

Results

The following results are presented in three sections, addressing each of the Success Study research questions. The first section provides results from analyses of the backgrounds and educational and life experiences of HAA Scholarship Applicants, including comparisons of Scholarship Recipients and Non-recipients. The second section illustrates how HAA Applicants and Scholarship Recipients compare to the general population of U.S. high school students in order to address the study's second research question. The final section addresses the study's third research question by presenting results from the qualitative examination of personal narratives among HAA Applicants, identifying the attributes and characteristics associated with applicants' abilities to be overcome adversity.

Backgrounds and Experiences of HAA Scholarship Applicants

Analyses of the HAA Application data yielded a variety of results showing background characteristics, education, and life experiences among Scholarship Recipients and Non-recipients. Comparisons highlight differences between HAA Scholarship Recipients and Non-recipients, providing information on the population of students who, in the face of difficult circumstances, were motivated to apply to the HAA Scholars program in hopes of entering college and improving their opportunities for success. To acquire a comprehensive understanding of the population of 2009–2010 HAA Applicants, information is provided on the background characteristics, experiences, educational contexts, and exposure to adversity among all 2009–2010 HAA Scholarship recipients and Non-recipients. Evidence resulting from this line of inquiry addresses the study's first research question: *What are the background characteristics and educational and life experiences among HAA Scholarship Applicants, and how do these differ between Scholarship Award Recipients and Non-recipients?*

Backgrounds, Education, Employment, and Engagement

Table 1 provides a summary overview of the HAA Applicant characteristics, in terms of demographics, socioeconomics, and measures of education, employment, and engagement in community and extracurricular activities. The Applicant characteristics are further broken down by scholarship award status (All Awarded Scholars, National Scholars, and State Scholars) and examined for differences between Awarded Scholars and Non-recipients, as well as differences between National Scholars and State Scholars.

Table 1: Characteristics of HAA Scholars and Non-recipients: Mean values of 2009–2010 HAA Applicants

	HAA Award Recipients			Non-Recipients	Sign
	All Awarded Scholars	National Scholars	State Scholars		
Demographic and Socioeconomic Characteristics					
Female (percent, versus Male)	0.66	0.49	0.68	0.73	** , ††
Family Income (dollar value)	\$19,512.23	\$12,169.65	\$20,537.81	\$27,931.49	** , ††
Number of dependents in family	3.49	2.87	3.58	3.60	** , ††
Parent is unemployed (percent)	0.20	0.27	0.19	0.16	** , ††
Family is receiving state financial aid (percent)	0.40	0.55	0.38	0.25	** , ††
Education, Employment, and Engagement					
<i>Academic Achievement</i>					
High school class rank (lower value is better) ^a	0.19	0.13	0.20	0.22	** , ††
Participated in college prep program (percent)	0.15	0.17	0.15	0.14	
Years spent in college prep program (years)	0.57	0.71	0.55	0.57	
High School GPA ^b	3.66	3.82	3.64	3.53	** , ††
College-entrance exam score (ACT composite)	23.53	25.30	23.26	22.14	
<i>Employment</i>					
Hours per week worked during school year	10.57	12.17	10.35	7.61	** , ††
Hours per week worked during summer	24.34	24.94	24.26	20.16	**
<i>Community service & extracurricular involvement</i>					
Total School Activities	3.26	3.53	3.22	2.84	** , ††
Total Leadership Positions for School Activities	2.17	2.61	2.11	1.87	** , ††
Total Community Service Activities	2.76	3.13	2.70	2.33	** , ††
Total Leadership Positions for Community Service Activities	1.69	2.09	1.64	1.41	** , ††

Source: 2009–2010 HAA Applicant Data.

^a High school class rank was calculated by dividing the applicant's numeric rank by the applicant's class size, and represents the percentage of the applicant's high school class that is ranked better. The lower the value, the better ranked the applicant.

^b High school GPAs represents population averages that were not standardized onto a common scale. It was not possible to distinguish between applicants who reported grades on a 4.0 versus 5.0 scale.

Significant mean differences between All Awarded Scholars and Non-recipients: * $p < 0.01$, ** $p < 0.001$.

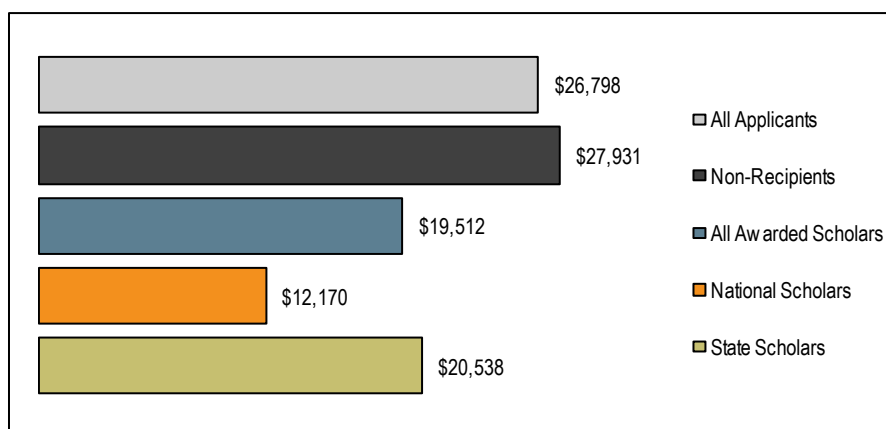
Significant mean differences between National Scholars and State Scholars: † $p < 0.01$, †† $p < 0.001$.

As shown in Table 1, across every measure of demographics and socioeconomics, Scholars, and particularly National Scholars, come from more disadvantaged backgrounds than their Non-recipient counterparts. These disadvantages take the form of lower average family incomes, more dependents in their households, and higher rates of parental unemployment and receiving state assistance. Despite these disadvantages, Awarded Scholars were more likely than Non-recipients to be ranked in the top 20 percent

of their high school class. However, fewer and less pronounced differences were found between the academic achievements of HAA Scholarship Recipients and Non-recipients.⁴ For example, Scholars and Non-recipients were statistically comparable in terms of ACT (or converted SAT) scores. Relative to Non-recipients, Scholars showed greater work, community, and extracurricular involvement, and they more often assumed leadership roles within those activities.

Taking a closer look the trends described above, the differences in family incomes between Scholars and Non-recipients become strikingly apparent. Figure 1 illustrates an average family income among HAA Scholars of \$19,512, well below the \$27,931 family income among Non-recipients. At \$12,170, National Scholars come from households earning on average less than half that of their Non-recipient counterparts.

Figure 1: Average Household Income among 2009–2010 HAA Applicants



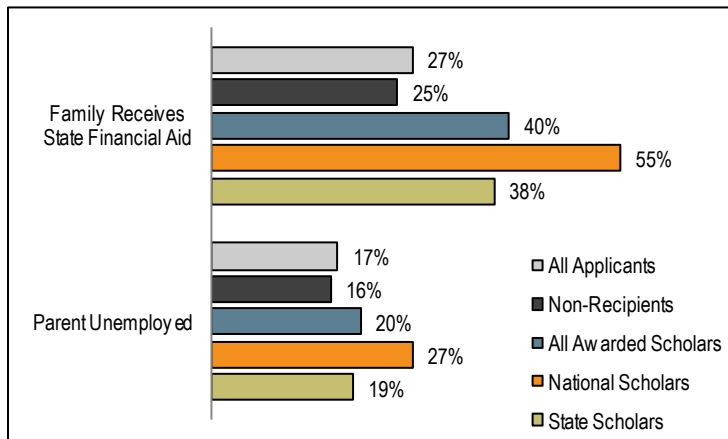
Source: 2009–2010 HAA Applicant Data.

Figure 2 highlights a similar pattern in the rates of parental unemployment: 27 percent among National Scholars versus 19 and 16 percent among State Scholars and Non-recipients, respectively. Furthermore, over half of all National Scholars come from state-assisted families, well above the share of State Scholars (38 percent) and Non-recipient (25 percent) from families receiving state aid.

In addition, as shown in Figure 3, the average number of school and community activities, as well as leadership positions held within those activities, favors Awarded Scholars compared to Non-recipients. Among Scholarship Recipients, National Scholars reported significantly more activities and leadership activities, than their State Scholar counterparts.

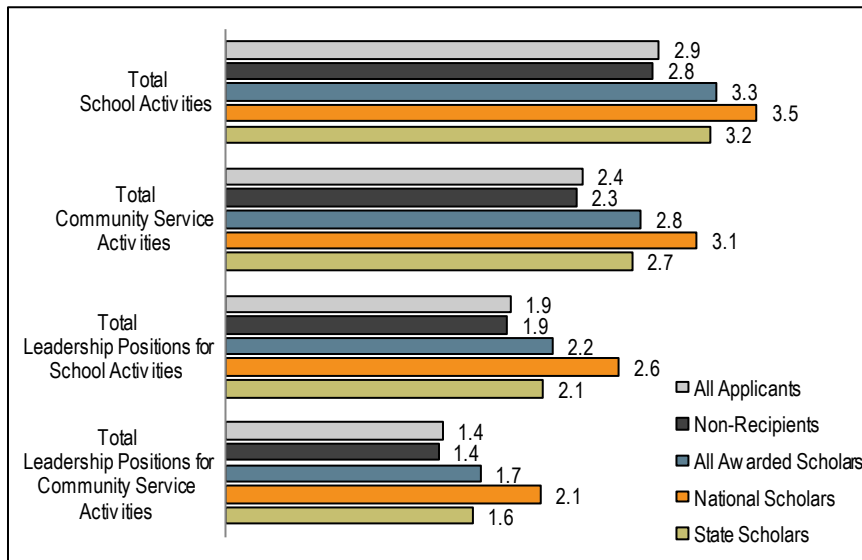
⁴ Note that while results suggest statistically significant differences between the High School GPAs of Scholars and Non-recipients or National and State Scholars, the measure of GPA could not be standardized to a 4.0 or 5.0 scale across all Applicants. These results should therefore be interpreted with caution.

Figure 2: Percentage of Families Receiving State Aid and Parental Unemployment Rates among 2009–2010 HAA Applicants



Source: 2009–2010 HAA Applicant Data.

Figure 3: School and Community Activities among 2009–2010 HAA Applicants



Source: 2009–2010 HAA Applicant Data

High School Context

To better understand the educational conditions of HAA Applicants, several measures of the high school context were examined to compare Scholars’ and Non-recipients’ schools. Table 2 presents indicators of structural diversity of the high school attended (percent of minority race students), a broad indicator of school resources (student-to-teacher ratios), the socioeconomic status of the student body (percent of

students eligible for free or reduced-price lunches through the National School Lunch Program),⁵ and the extent to which the school is located in an urban area. On average, compared to Non-recipients, Awarded Scholars attended schools with less student diversity (34 versus 46 percent), slightly fewer students per teacher (16 versus 17), and smaller proportions of students meeting the eligibility criteria to receive free or reduced-price lunches (42 versus 45)⁶. No statistically significant differences were found in the characteristics of schools attended by National and State Scholars.

Table 2: School Characteristics of Scholars and Non-recipients: Mean values among 2009–2010 HAA Applicants

	HAA Award Recipients			Non-Recipients	Sign
	All Awarded Scholars	National Scholars	State Scholars		
Characteristics of Schools^a					
Percent Minority	33.95	38.95	33.21	46.22	**
Student-to-Teacher Ratio	16.03	16.79	15.91	17.29	**
Percent of Students Eligible for Free or Reduced Price Lunch ^b	42.29	43.97	42.04	45.43	**
Urbanicity ^c	2.45	2.34	2.47	2.40	

Source: 2009–2010 HAA Applicant Data; 2009–2010 Common Core of Data (CCD); 2007–2008 Private School Survey (PSS).

^a Among the 16,698 cases in the 2009–2010 HAA Applicant Data file, 10,587 had high school identifiers that were matched to CCD and PSS files to obtain the measures of high school characteristics. The figures shown are based on these 10,587 cases.

^b Percent of students eligible for free or reduced-price lunch is calculated only for applicant’s who attended a public school that was matched to CCD records.

^c Urbanicity indicates the extent that a school is located in an urban environment, where school setting is measured as: 4 = Urban, 3 = Suburb, 2 = Town, and 1 = Rural. Higher values of Urbanicity correspond to more urban the school environments.

Significant mean differences between All Awarded Scholars and Non-recipients: * $p < 0.01$, ** $p < 0.001$.

Significant mean differences between National Scholars and State Scholars: † $p < 0.01$, †† $p < 0.001$.

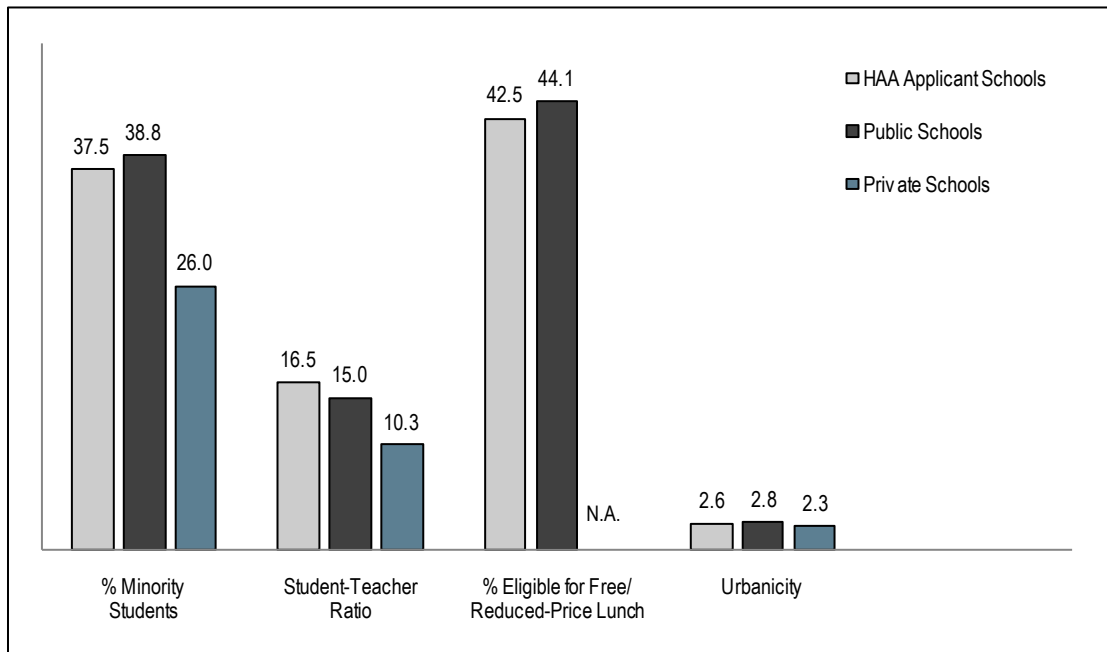
To place HAA Applicants’ schools into a national context of all U.S. schools, Figure 4 presents a profile of schools attended by HAA Applicants in relation to the broad population of all public and private high schools. Based on the results presented in Figure 4, HAA Applicant schools generally reflect national averages among public schools. Alternatively, HAA Applicant schools are, on average, considerably more diverse and have greater numbers of students per teachers than the population of private schools.⁷

⁵ The National School Lunch Program is available only at public schools. Therefore, the percent of students eligible for free or reduced-price lunches attending HAA Applicant schools is calculated only among public schools.

⁶ The family income cut-points for free and reduced-price lunches in 2011 were, respectively, at or below \$28,665 and at or below \$40,793. See <http://www.fns.usda.gov/cnd/lunch/AboutLunch/NSLPFactSheet.pdf> for more information on National School Lunch Program eligibility.

⁷ When viewing the results shown in Figure 4, it is important to keep in mind that the data did not support testing these differences for statistical significance; the results are useful for viewing broad trends, but caution should be applied before making conclusions based on these results. In particular, the private school statistics should be viewed with an understanding that a very small percentage (approximately 5%) of HAA applicant schools were matched to, and identified as, a private school.

Figure 4: Characteristics of Schools Attended among 2009–2010 HAA Applicants vs. All U.S. Public and Private Schools



Source: 2009–2010 HAA Applicant Data; 2009–2010 Common Core of Data (CCD); 2007–2008 Private School Survey (PSS).

Notes: All numbers shown are high school-level measures, where each school in the HAA Applicant Data is counted only once for comparison to similar measures across all U.S. public and private schools. Only those schools in the HAA Applicant data that were matched to NCES-IDs are represented in the exhibit. Percent of students eligible for free or reduced-price lunch is available only for public schools that were matched to CCD records. School-level samples are as follows: HAA Applicant Data, $N = 4,882$; CCD, $N = 20,163$; PSS, $N = 7,551$.

Adversity Experiences

A defining quality among the population of HAA Scholarship Recipients is the level of adversity they have experienced in their lives prior to applying to the HAA Scholarship Program. Table 3 focuses on adversities experienced across the full population of 2009–2010 HAA Applicants and by scholarship award status. The results indicate that that Scholarship Recipients were significantly more likely than non-recipients to have experienced each of the seven types of adversities listed in the HAA application form. For example, Scholarship Recipients were over three-times more likely than Non-recipients to have experienced homelessness (13 percent versus 4 percent), while National Scholars were more than three times more likely than State Scholars to have been homeless at some point in time (32 percent versus 10 percent). Financial hardship was the most prevalent adversity cited among the full population of HAA Applicants, with 96 percent of Scholarship Recipients and 84 percent of Non-recipients citing critical financial need.

Table 3: Adversities Experienced among 2009–2010 HAA Scholars and Non-recipients

	HAA Award Recipients			Non-Recipients	Sign
	All Awarded Scholars	National Scholars	State Scholars		
Adversity Experiences					
Foster care or ward of the state	0.11	0.25	0.09	0.03	** , ††
Homelessness	0.13	0.32	0.10	0.04	** , ††
Parental/guardian death, incarceration or abandonment	0.49	0.78	0.45	0.25	** , ††
Alcohol or drug abuse in household	0.34	0.63	0.30	0.15	** , ††
Physical or mental disability, or serious illness	0.10	0.11	0.10	0.06	**
Suffered physical or mental abuse	0.24	0.45	0.22	0.10	** , ††
Critical financial need	0.96	0.99	0.95	0.84	** , ††
Total number of adversities experienced	2.37	3.54	2.21	1.48	** , ††

Source: 2009–2010 HAA Applicant Data.

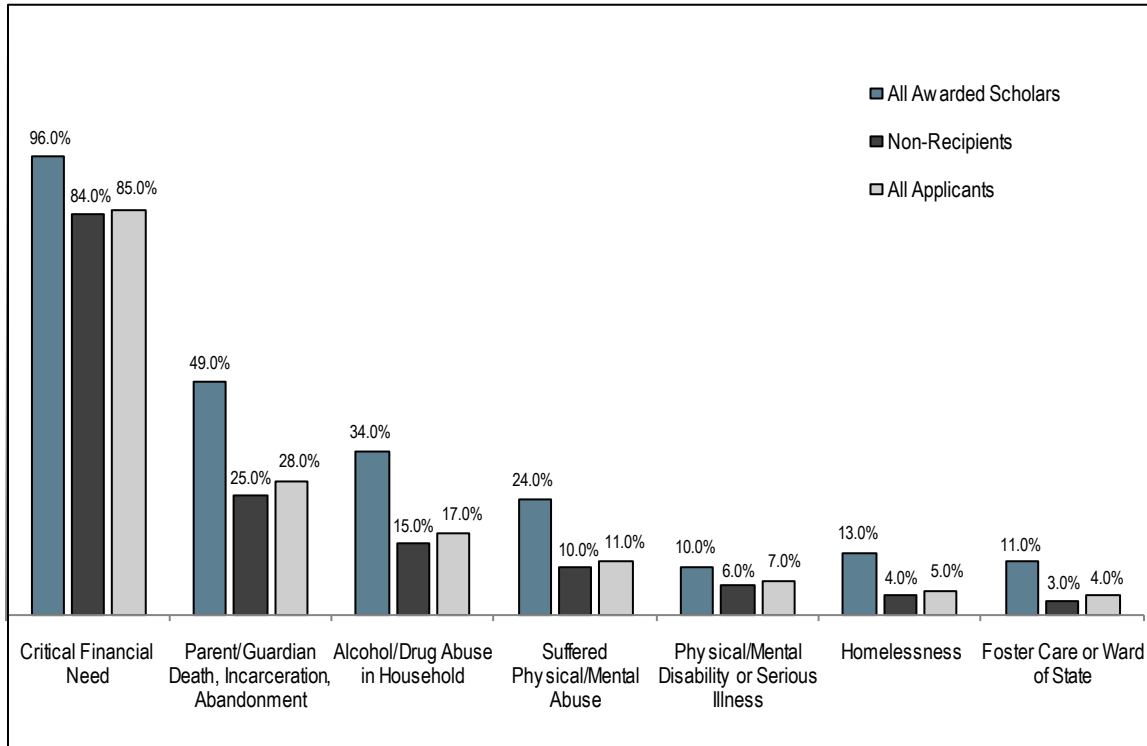
Significant mean differences between All Awarded Scholars and Non-recipients: * $p < 0.01$, ** $p < 0.001$.

Significant mean differences between National Scholars and State Scholars: † $p < 0.01$, †† $p < 0.001$.

Figure 5 presents these results by arraying the HAA Scholarship Recipients according to the percentage who experienced each of the seven adversities. Viewed in this way, the differences in adversities experienced among Scholarship Recipients relative to Non-recipients are dramatically evident. Moreover, the prevalence of certain types of adverse experiences among all HAA Applicants, and particularly among those awarded the HAA Scholarship is striking: nearly all Scholarship Recipients have critical financial need, roughly half have experienced the death, incarceration, or abandonment of a parent or guardian, more than one-third have been exposed to addiction in their home, and roughly one-fourth have suffered abuse. The severity and prevalence of these experiences highlights the unique quality of the HAA Scholarship Recipients as defined by the shared experience of extreme hardships.

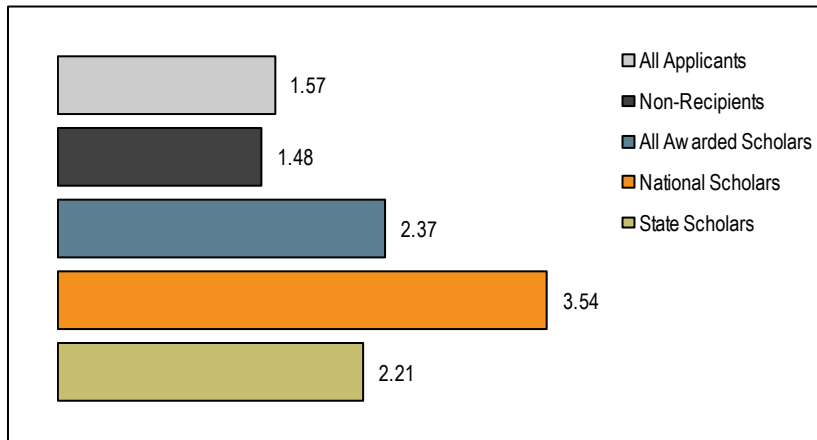
The results shown in Figure 6 provides an additional lens on which to view the adversities experienced by the HAA Applicants, according to the total number of reported adversity experiences at the time of applying the Scholarship Program. Once again, significant differences were found between the average number of adversities among Scholarship Recipients and Non-recipients (2.37 versus 1.48), and between National and State Scholarship Recipients (3.54 versus 2.21).

Figure 5: Type of Adversity Experiences among 2009–2010 HAA Applicants



Source: 2009–2010 HAA Applicant Data

Figure 6: Number of Adversities Experienced among 2009–2010 HAA Applicants



Source: 2009–2010 HAA Applicant Data

Activities as Expressions of Resilience

Results from the descriptive analysis of HAA Applicants demonstrate that, on average, HAA Scholarship Recipients come from more disadvantaged backgrounds than Non-recipients, and had greater exposure to adversity in their lives by the time they were applying to the HAA Scholarship Program. Scholars also found a way to maintain significantly more involvement in community, school, and work activities than did Non-recipients, while also achieving superior academic outcomes in terms of class rank within their high schools.

Building on these results, a multivariate analysis was conducted to examine whether or not differences in community, school, and work involvement between Scholarship Recipients and Non-recipients remained after accounting for differences in background conditions and adversity experiences. Through statistical techniques, we examined employment and engagement measures *as if* Scholars and Non-recipients had come from similar backgrounds with similar levels of adversity. In doing so, we examined if work, school and community involvement may be expressions of resilience among Scholars.

As summarized in Table 4, each of the involvement measures found in the previous analysis to significantly differ between HAA Scholarship Recipients and Non-recipients continued to differ after controlling for background characteristics (demographic, socioeconomic, and regional differences), and adversity experiences. In fact, differences in school and community activities became more pronounced when background conditions and adversity experiences were held constant. One exception to this finding was leadership positions within community service activities, where differences between Scholars and Non-recipients remained statistically significant and the magnitude of the difference were essentially unchanged after the controls were introduced. In addition, differences between Scholars and Non-recipients regarding the hours worked during the school year and summer remained significant but were less pronounced after controlling for background conditions and adversity experiences.

Altogether, results from the multivariate analysis suggest that if Scholars and Non-recipients had come from similar backgrounds, Scholars would have been *even more* involved in their communities and schools, and would have worked fewer hours during the school year and during the summer, relative to Non-recipients. It thus appears that the difficult circumstances of Scholars negatively influenced their ability to be actively involved in their communities and schools; and these results suggest that time spent working may be a compensatory response among Scholars in reaction to their backgrounds and adversities. It may be that work involvement during high school is a response mechanism to adverse conditions, a way to avert additional crises, and therefore, an expression of resilience.

Table 4: Differences between 2009–2010 HAA Scholars and Non-recipients when Controlling for Background Characteristics and Adversity Experiences

	Sign. Differences HAA Award Recipients vs. Non-Recipients ¹		
	No controls	Controlling for Backgrounds and Adversities ²	Change in Differences
<i>Employment and Engagement</i>			
<i>Employment</i>			
Hours worked during school year	Yes	Yes	↓
Hours worked during summer	Yes	Yes	↓
<i>Community service & extracurricular involvement</i>			
Total School Activities	Yes	Yes	↑
Total Leadership Positions for School Activities	Yes	Yes	↑
Total Community Service Activities	Yes	Yes	↑
Total Leadership Positions for Community Service Activities	Yes	Yes	No change

Source: 2009–2010 HAA Applicant Data.

¹ Significant differences between Awarded Scholars and Non-recipients are at the level of $p < 0.001$.

² Control measures for backgrounds include the demographic and socioeconomic characteristics shown in Table 1, plus geographic region. Control measures for adversity include the seven experiences shown in Table 3.

HAA Scholarship Applicants Relative to their U.S. Counterparts

The second analytic stage with Phase 1 of the Success Study compared HAA Applicant data against a nationally representative sample of high school seniors to highlight ways in which HAA Applicants are distinctive compared to their average U.S. counterparts. This line of inquiry showed how background characteristics and conditions of HAA Applicants exist as critical fault lines in determining postsecondary educational opportunity. Results from this analysis address research Question 2: *How does the population of HAA Scholarship Applicants compare to the general U.S. sample of high school students and early college enrollees?*

This stage of analysis employed descriptive techniques to examine population means among HAA Applicants (in total and among Scholarship recipients) and in relation to the national population of high school seniors. Comparisons were made in terms of family and socioeconomic background characteristics, academic achievement, involvement during high school, and measures of the high school context. Drawing on 2009–2010 HAA Applicant data in combination with information on a nationally representative sample of high school seniors from ELS:2002 data, analyses uncovered unique qualities among the HAA Applicant pool and Scholarship Recipients in the national context and the importance of

such qualities in determined enrollment in two- and four-year colleges or universities, full- and part-time college enrollment, and the selectivity of postsecondary institution attended. This stage of analysis ultimately identified the unique qualities of the HAA Applicants and Scholars in the national context and provides evidence of factors associated with postsecondary educational opportunity.

HAA Applicants versus a National Sample of High School Students

Table 5 describes characteristics of HAA Applicants (in total and among awarded Scholarship Recipients) relative to a nationally representative sample of high school students who were seniors in 2004. A series of categorical measures were used to measure family and socioeconomic characteristics, academic achievement and involvement, and the conditions of high schools attended. When viewing these results, it is important to recognize that the HAA and ELS:2002 measures were constructed based on different variables measured at different points in time and through different data collection procedures. While steps were taken to make variables measured from each of the data sources comparable, the results should be interpreted with caution. This is particularly important when viewing the high school context comparisons, in which HAA data were based on a matched sub-sample of indicators from CCD and PSS files described in previous sections of this report. The high school measures in both HAA and ELS:2002 data represent school measures assigned to student samples rather than a comparison sample of schools shown above in Figure 4. Therefore, in the results discussed below, the same school may be represented across more than one student in the sample.

As shown in Table 5, HAA Applicants, and particularly Scholarship Recipients, are significantly more likely to come from low-income families with five or more dependents, and less likely to be faced with a physical or mental disability. Despite these circumstances, HAA Applicants were also, on average, more likely than their national counterparts to achieve high ACT or SAT scores, and to participate in community service activities, while being less likely to report being employed during high school.

In terms of the high school conditions experienced by HAA Applicants and the national comparison population, it appears that HAA Applicants attend schools that, on average, have fewer students per teacher. This is particularly evident in the relatively large share of Scholarship Recipients attending schools with 15 or fewer students per teacher (43 percent versus 29 percent among the national sample of high school seniors). With respect to exposure to a diverse student body, small but significant differences were found between HAA Applicants and their national counterparts indicating larger concentrations of

minority students at HAA Applicant schools.⁸ In addition, HAA Applicants were more likely to attend high school in rural settings, and less likely to attend schools in urban and suburban settings than the average U.S. high school senior. These differences were more pronounced when examining Scholarship Recipients versus the national comparison population. Importantly, the fact that HAA Applicants and Scholars were more often situated in rural and suburban settings may be influencing other results such as family income differences and percent minority in schools.

Major Fault Lines in U.S. Postsecondary Opportunity

The family and socioeconomic characteristics, academic achievement and involvement, and high school conditions discussed above were examined in relation to ELS:2002 data, which measured postsecondary outcomes of study participants roughly two years after high school graduation. Analyses of ELS:2002 data provide a context in which to understand the distinct qualities of the HAA Applicants and Scholarship Recipients, and how these qualities may influence postsecondary opportunities. These results are broadly summarized in the following discussion and presented in detail in Appendix D, Tables D.1, D.2, and D.3.

Several consistent patterns appeared from analyzing nationally representative students in terms of their rates of two-year, four-year enrollment, or no postsecondary enrollment (see Table D.1), rates of enrollment in inclusive, moderately selective, or selective colleges (see Table D.2), as well as rates of full-time versus part-time enrollment among students at four-year colleges (see Table D.3). Each of these postsecondary outcomes vary by family resources (income, parental unemployment, and number of dependents), disability status, academic achievement, community engagement, and high school conditions, while the most pronounced differences in postsecondary outcomes occur with respect to family incomes and academic achievement.

In terms of family income, among four-year college enrollees, only 4 percent of students come from families with annual incomes below \$15,000, compared to 81 percent of students from families with incomes greater than \$35,000 (see Table D.1). Furthermore, the proportion of students from the lowest income families who did not enroll in college was over four-times larger than the proportion of four-year college enrollees from the lowest income families. A similar pattern emerges from analyses of college selectivity, a measure commonly used to assess quality of postsecondary institution. Among enrollees at the most selective schools, only 2 percent come from the lowest family income category, while nearly 90

⁸ The apparent contradiction between this finding and those shown in Figure 4 result from different data sources and levels at which data were measured: Table 5 compares HAA and ELS student-level data where a school may be reporting on by multiple students, while Figure 4 compares HAA and CCD school-level data in which each school is counted only once.

percent of students from families earning over \$35,000 per year enroll in a selective college (see Table D.2). Among four-year college enrollees, essentially the same pattern appears in terms of full-time versus part-time enrollment (see Table D.3).

Table 5: 2009–2010 HAA Applicants versus National Sample of 2004 High School Seniors

	HAA Applicants		National Comparison Population	Sign
	Total Applicants	Awarded Scholars		
Family and Socioeconomic Characteristics				
Family income (year 2001 dollars)				** , ††
Less than \$15,000	32.71%	52.93%	9.73%	
\$15,001–\$25,000	26.67%	25.87%	11.23%	
\$25,001–\$35,000	23.56%	15.36%	12.21%	
More than \$35,000	17.24%	5.92%	66.83%	
Parental unemployment	16.71%	20.00%	22.27%	** , †
Number of dependents in household				** , ††
0–2	24.67%	28.04%	52.27%	
3–4	52.95%	50.24%	39.04%	
5 or more	23.16%	21.72%	8.69%	
Disabled	6.77%	10.41%	12.17%	** , †
Academic Achievement and Involvement				
ACT (converted SAT)				** , ††
20 and lower	36.27%	27.87%	46.44%	
21 through 28	53.85%	57.70%	44.56%	
29 and higher	9.88%	14.43%	9.00%	
Participation in community activities	90.93%	94.79%	58.69%	** , ††
Employment during high school	51.53%	64.56%	84.89%	** , ††
High School Conditions				
Student-to-teacher ratio				** , ††
Low (15 and lower)	32.96%	43.33%	28.69%	
Medium: 16–25	61.57%	54.54%	66.07%	
High: 26 and higher	5.47%	2.12%	5.24%	
Percent minority students				**
Low: 33% and less	43.89%	59.65%	57.02%	
Medium: 34%–66%	24.56%	19.49%	22.91%	
High: 67% and above	31.55%	20.85%	20.07%	
Urbanicity				** , ††
Urban	29.42%	29.48%	30.37%	
Suburban	29.03%	24.76%	50.19%	
Rural	41.50%	45.80%	19.45%	

Source: 2009–2010 HAA Applicant Data (N = 16,700); ELS: 2002 Restricted Data (Weighted Student Sample N = 3,388,460; Un-weighted Sample N = 16,200).

Group mean differences for HAA Total Applicants vs. National Comparison Data: * p < 0.01, ** p < 0.001.

Group mean differences for Awarded Scholar vs. National Comparison Data: † p < 0.01, †† p < 0.001.

Looking at academic achievement as measured by ACT scores (or converted SAT scores), national data indicate that the share of students enrolled at four-year colleges who scored 21 through 28 on their ACT is roughly two times greater than the shares of comparable students who either enrolled at two-year colleges (55 versus 28) or who did not enroll in college (22 percent). Furthermore, only 32 percent of four-year college enrollees earned an ACT of 20 or lower, considerably less than the corresponding shares of low scoring two-year enrollees (70 percent) and non-enrollees (77 percent). The selectivity of college attended also varies widely by ACT scores, where 62 percent of selective college enrollees had achieved between 21 and 28 on their ACT, compared to 58 percent among moderately selective college enrollees, and 33 percent among enrollees in inclusive colleges. Even more dramatic trends appear when looking at the highest ACT scorers, where nearly 29 percent of selective college enrollees achieved such high ACT scores compared to roughly 6 percent of moderately selective enrollees, and less than 3 percent of inclusive college enrollees. Among four-year college enrollees, the majority (nearly 56 percent) of full-time students earned ACT scores between 21 and 28, compared to nearly 35 percent of part-time enrollees who earned such ACT scores. In addition, the share of full-time enrollees who scored a 29 or higher on their ACT was almost four-times greater than the comparable share of part-time enrollees (14 versus 4 percent).

An examination of nationally representative ELS:2002 data indicates that family income, academic outcomes such as ACT scores, and participation in community activities during high school represent three critical correlates of postsecondary success. Other important student and school dimensions not discussed but shown in the Tables D.1–D.3 include student disability status, student-to-teacher ratios at the high school attended, and structural diversity of the high school (based on percent minority students).

The fact that the majority of HAA Scholarship Recipients come from families earning less than \$15,000 per year places these students at risk of following national trends which clearly show the disadvantages that students from low-income families confront in realizing postsecondary success. However, given that the large majority of HAA Scholarship Recipients who achieve ACT scores of 21 or higher (with National Scholars earning, on average, a score of 25), and over 90 percent who participate in community service activities, they are in good positions to attend relatively selective, four-year colleges and attend school on a full-time basis. Thus, the ACT scores and community involvement of HAA Scholars may counter the disadvantages presented by their family circumstances.

Resilience among HAA Applicants

Unlike the general population of American adolescents, HAA Applicants share two unique features: all have experienced adverse situations in their lives and all are educationally successful enough to have

applied to the HAA Scholarship Program. In this sense, every HAA Applicant demonstrates a degree of resilience. Research Question 3 examines resilience among HAA Applicants and attempts to identify its sources by asking: *What personal attributes and motivational characteristics have enabled applicants to overcome past obstacles in achieving educational and life success at the point of program application?*

Applicants’ personal narratives provide a valuable source of information on the types of adversities experienced, the extent to which adversity may have served as a motivating factor, and the ways in which applicants have reacted to adversity – their varying expressions of resilience. Through qualitative analysis of applicant essays, common themes emerged for each of these areas.

Types of adversities experienced

The adverse experiences of applicants vary widely in form and depth. The analysis of Applicants’ personal narratives identified 22 forms of adversity, seven of which were specifically queried in the HAA Scholarship application form (application Section 4) and discussed above in the results from the descriptive analysis (see Table 3). Table 6 provides a list of adversity experiences mentioned by applicants in their personally narratives. Experiences marked with asterisks are those that correspond to specific questions asked in the application.

The main finding stemming from this analysis is that financial problems plague most HAA Applicants and their families (over 60 percent). Often, financial problems are associated with the illness, disability, or death of a parent or guardian, or with parents’ divorce (the second- and third-most cited forms of adversity, respectively). Almost a fourth of applicants mentioned having suffered some form of psychological distress (e.g., anxiety, feelings of helplessness, or depression), and, similar to financial problems, this form of adversity was often described as a source and an outcome of other forms of adversity.

Adversity and other motivating factors

In answering the first essay question, most applicants (71 of the 120 cases in the qualitative sample; 59 percent) specified how adversity has been a motivating force in their lives. Among these 71 applicants, over half (39 cases) indicated that their adversity experiences have made them more determined to succeed. For example, one applicant wrote:

“I could choose to see adversities as obstacles. But I have chosen to view them as challenges and opportunities. Blind since birth, I have rarely felt sorry for myself, and instead have enthusiastically learned to adapt and excel. While not within my control, the

physical abuse, my mother's two divorces, and my mother's mental illness have only hardened my determination to take things in stride, learn to cope, and grow stronger."

A similar number of applicants (35 out of the 71 cases that cited adversity experiences as a motivating factor) provided evidence that adversity had influenced their perspectives or had made them more mature in some way. Several applicants, for example, related stories about having to take on additional responsibilities in the household with the recession and/or after a parent's loss of employment. Many others explained how adversities had forced them to be more independent, more self-sufficient academically and/or financially. Still other applicants, like the one quoted above, stressed that their adversity experiences had enabled them to see positive aspects amidst negative circumstances.

Table 6: Types of Adversity Identified among Sample of 2009–2010 HAA Applicants

Adversity experiences mentioned by applicants in their essays	Number of Cases	Percent of Cases
Financial problems or parent's lack of employment*	73	60.8%
Illness, disability, or death of parent or other family member*	41	34.2%
Divorce or family instability	33	27.5%
Psychological distress	28	23.3%
Absence, neglect, or abandonment of parent*	21	17.5%
Alcohol or drug abuse of parent or other family member*	20	16.7%
First person in family to go to college or lacking information on college	18	15.0%
Homelessness or lack of consistent housing*	17	14.2%
Need to care for parent, sibling, or child	16	13.3%
Abuse*	12	10.0%
Illness or disability of applicant*	11	9.2%
Adopted or placed in foster care*	11	9.2%
Criminal activity or incarceration of parent or other family member*	8	6.7%
Difficulties related to immigration	4	3.3%
Difficulties with the English language	4	3.3%
Lacking encouragement or role model	3	2.5%
Teasing or bullying	3	2.5%
Alcohol or drug abuse of applicant	2	1.7%
Criminal activity or incarceration of applicant	2	1.7%
Pregnancy	2	1.7%
Prejudice or discrimination experiences	1	0.8%
Dangerous living conditions	1	0.8%

Source: 2009–2010 HAA Applicant Data, sample of 120 applications

* Indicates adversity experiences identified in applicant's personal narratives which reflect experiences directly asked in the applicant survey (source variables *advers1–advers7*).

Over a third of the 71 applicants who cited the motivating influence of adversity (26 cases) indicated that adversities had shaped their value systems in some way. For example, many applicants explained that their adversities have impressed upon them the importance of helping others who face social or economic challenges. Other applicants found fault in the value systems of their families and were determined not to repeat their parents’ mistakes. One applicant who typifies this perspective stated:

“My past experiences have made me truly contemplate what I want in life. Although I love my parents, I honestly do not want the lives that they chose. My father dropped out of high school, my mother dropped out of college, and for as long as I can remember both have gone from one job to the next. I do not want to be like my parents and settle for my dreams. I do not want a life of running away when adversity comes my direction.”

While experiences with adversity appear to be a prime motivator for HAA Applicants, many of the essays reference other attributes and characteristics that may have encouraged applicants to aspire to a college education or successful career. Results indicate four other key sources of motivation:

- (1) A desire to give back to their communities or to help others in some way (64 of the 120 cases in the sample, or 53 percent);
- (2) A desire for financial security (31 percent);
- (3) The positive influence of family members or other persons in their social network (28 percent);
- (4) A personal interest or passion (28 percent).

These findings suggest that individuals’ ability to overcome adversity is influenced by a mixture of external factors (e.g., the encouragement of a parent or teacher) and internal attributes or dispositions (e.g., a community service orientation). Further, many of these factors appear to be a function of (or to interact with) applicants’ adversity experiences. For example, an individual’s experience with financial hardships may inculcate a desire for financial security in adulthood and/or a desire to help others with similar difficulties. To better understand the relationships between these factors, we examined the ways applicants routinely express resilience.

Reactions to adversity: Identifying the resilient applicant

Judged qualitatively, some applicants’ narratives paint a picture of having suffered multiple adverse experiences and/or particularly severe adversities (e.g., physical and psychological abuse – often by a parent with substance abuse problems – parental abandonment, severe poverty or homelessness; a need to serve as a caregiver to a parent, sibling, or child; etc.). For other applicants, the picture is less grim: for

instance, the short-term parental unemployment, relatively minor troubles within the home or at school, lack of information about college, etc. For the purposes of our analysis, we grouped applicants into low, moderate, and high levels of adversity. Applicants who experienced medium or high levels of adversity and simultaneously demonstrated moderate to high levels of motivation or success in their essays were then deemed “resilient.”

In total, 76 of the 120 cases analyzed (63 percent) were classified as resilient by displaying moderate to high levels of both adversity and motivation/success. One of our main goals in identifying this group was to determine the key characteristics of resilient applicants: applicants who defy expectations and succeed despite facing difficult circumstances.

Overall, results suggests that resilience is expressed among HAA Applicants as three interrelated – not mutually exclusive – types: (1) those who take action to minimize present adversity in tangible ways, (2) those who focus on career and academic goals with the hope that adversity will be lessened in the future, and (3) those who mentally reframe past and present adversities in order to see the positive in them and/or transcend them. Each of these three types is summarized below.

Type 1 resilient applicants take it upon themselves to reduce their adverse experiences. As noted above, the most commonly cited form of adversity was financial problems. Type 1 applicants dealing with financial hardships frequently described taking on part-time work in an effort to help their families or become financially independent. They described educating themselves in financial matters and seeking out funding opportunities for the academic and extracurricular activities they wish to pursue. For example:

"Although always an issue, my mom tried her best not to let us worry about money, but nevertheless I made sure I got my first job when I was 13. I made a handy dishwasher. I have maintained a job status ever since. At one point I balanced three different jobs at once. To me, my way of helping out the family was to earn enough money so me being taken care of wouldn't be a worry."

Type 2 resilient applicants are focused on ensuring that their futures are free from the adversities they are experiencing today. For Type 2 applicants, adversities motivated them to make sacrifices now that may not pay off for several years. For example, many of the applicants of this type described working increasingly hard in school to prepare for college. These applicants were able to articulate their goals in concrete terms and specify the ways that they are working towards these goals: e.g., by seeking out mentors or by gathering information on potential college or career opportunities. For example:

"I spent the majority of my childhood bouncing between shelters and hotels. Sometimes, not knowing if we were going to have dinner. [...] I used these obstacles as inspiration to work harder, stay in school and prepare to go to college to better myself so that I will never have to suffer from these hardships again. The career I intend to go into is Sports Medicine/ Athletic Training. [...] In order to get the job I want to have I will need a masters or doctorates in sports medicine. It would take about 5–6 years of study and internship with different professional teams, taking a national certification test, and dedication to reading and staying involved with the teams, but I am sure this is what I want to do".

Type 3 resilient applicants are skilled at mentally reframing their adversities. Type 3 applicants view the adversities they have faced as accomplishments, or as obstacles that they have overcome and from which they have gained strength. These applicants were able to describe their situation with a degree of optimism, despite the profoundly negative issues involved. For example:

"Life has presented me with many challenges in my seventeen years. I have faced being homeless, watched my mother lose her battle with cancer, struggled with the financial burdens that were the consequences of my mother's illness, and learned to cope with my father's alcohol addiction and emotional abuse. [...] The challenges I have faced have shown me that I can survive and grow. I have become a stronger person. I can stand up and take charge of my own life. I have learned that life's about staying strong and facing each day with renewed hope and enthusiasm. And that is exactly what I plan to do."

HAA Applicants describe a wide range of adverse life experiences: from minor problems at home or school to the more severe issues of poverty, illness and disability, family instability, and psychological distress. Despite facing such challenges, these individuals appear motivated to pursue a college degree. Much of this motivation originates from applicants' experiences with adversity – experiences which have made them more determined, influenced their perspective and maturity, and shaped their value systems. Other motivating factors include aspirations of helping their communities, a desire for financial security, the positive influence of mentors at home or school, and a deep interest in a particular academic subject or career field. Since all HAA Applicants have faced some form of adversity and the very act of applying for a scholarship constitutes some evidence of academic success, all applicants can be said to be “resilient.” However, applicants who demonstrate moderate to high levels of resilience can be distinguished by the actions they have taken to improve their present situation, their willingness to sacrifice immediate

gratification to ensure future success, and their ability to mentally reframe adverse circumstances and see them as accomplishments.

Findings and Implications

Findings

Phase 1 of the Success Study consisted of a comprehensive set of analyses examining populations of 2009 and 2010 applicants to the HAA Scholarship Program and situating them in the national context of high school students and early college enrollees. Drawing on HAA Applicant Data in combination with nationally representative data from the Education Longitudinal Study, a mixed-methods analytic approach was employed to identify the unique characteristics of HAA Applicants within the national context, the differences between Scholarship Recipients and Non-recipients, and evidence of resilience among HAA Applicants.

Results from Phase 1 answer research questions related to (1) the background characteristics and educational and life experiences of HAA Scholarship Applicants, and the differences between Scholarship Award Recipients and Non-recipients; (2) the population of HAA Scholarship Applicants and Scholarship Award Recipients in comparison to the general U.S. sample of high school students and early college enrollees; and (3) the attributes and characteristics associated with HAA Applicants' ability to achieve resilience in the face of adversity. Below are sets of findings addressing each research question.

Question 1: HAA Scholarship Applicants and differences between Award Recipients and Non-recipients

- Across every measure of demographics and socioeconomics, Scholars and particularly National Scholars, come from more disadvantaged backgrounds than their Non-recipient counterparts. These disadvantages take the form of lower average family incomes, more dependents in their households, and higher rates of parental unemployment and receiving state assistance.
- Despite their disadvantages, Awarded Scholars were more likely than Non-recipients to be ranked towards the top of their high school classes.
- Scholarship Award Recipients had more work, community, and extracurricular involvement than Non-recipients. Scholars also more often assumed leadership roles during their school and community service activities.

- Compared to Non-recipients, Awarded Scholars attended schools with less student diversity, fewer students per teacher, and smaller proportions of students meeting the eligibility criteria to receive free or reduced-price lunches.
- HAA Applicant schools generally reflected national averages among public schools, while being more diverse, with greater numbers of students per teacher than nation-wide averages of private schools.
- Nearly all Scholarship Recipients have critical financial need, roughly half had experienced the death, incarceration, or abandonment of a parent or guardian, more than one-third had been exposed to addiction in their home, and roughly one-fourth had suffered abuse.
- Scholarship Recipients experienced more adversity than Non-recipients, and National Scholars experienced more adversity than State Scholars.
- The difficult backgrounds and adversities experienced by Scholars negatively influenced the degree to which they were able to be actively involved in their communities and schools, while time spent working may indicate that work involvement during high school is a response to adverse conditions and potentially an expression of resilience.

Question 2: HAA Scholarship Applicants compared to U.S. high school seniors

- Compared to a nationally representative sample of high school seniors, HAA Applicants and particularly Scholarship Recipients came from lower income families with more dependents, and were less likely to be faced with a physical or mental disability.
- Despite their background circumstances, HAA Applicants were more likely than their national counterparts to have achieved high ACT or SAT scores, and to have participated in community service activities, while being less likely to have been employed during high school.
- HAA Applicants attended schools with fewer students per teacher, larger concentrations of minority students, and were more likely to attend high school in rural settings.
- The fact that the majority of HAA Scholarship Recipients came from families earning less than \$15,000 per year places these students at risk of following national trends which show the disadvantages that students from low-income families confront in realizing postsecondary success. Scholars' ACT scores and frequent participation in community service activities counter these trends,

placing Scholars in a position to attend relatively selective four-year colleges and attend school on a full-time basis, thereby countering the disadvantages presented by their family circumstances.

Question 3: Identifying resilience among HAA Applicants

- HAA Applicants displayed motivation to succeed that appears to originate from their experiences with adversity – experiences which have made them more determined, influenced their perspective and maturity, and shaped their value systems.
- Other motivating factors among HAA Applicants include aspirations to help their communities, a desire for financial security, positive influence of mentors at home or school, and a deep interest in a particular academic subject or career field.
- HAA Applicants who demonstrated moderate to high levels of resilience can be distinguished by their actions to improve their present situations, their willingness to sacrifice immediate gratification to ensure future success, and their ability to mentally reframe adverse circumstances in order to see them as accomplishments.

Implications

HAA Applicants share the unique quality of having experienced considerable adversity in their lives while staying motivated to seek opportunities available through the HAA Scholarship Program. In this way all HAA Applicants have demonstrated resilience by the time they applied to the Scholarship Program. The prevalence of certain types of adversities among Applicants, and particularly among awarded Scholars, is striking. Nearly all Scholarship Recipients have critical financial need, roughly half have experienced the death, incarceration, or abandonment of a parent or guardian, more than one-third have been exposed to addiction in their home, and roughly one-fourth have suffered abuse. And yet, the academic achievements (such as ACT scores) and involvements in such things as community activities provide a basis on which to situate the Scholars in a national context, highlighting their unique qualities, and defining what it means to be resilient.

Resilience is a multifaceted construct which can enhance our understanding of how students' pathways to college and success in general are shaped by interactions between opportunities and backgrounds. Relatively more resilient students endure adversity in their lives to ultimately achieve greater educational opportunities, while relatively less resilient students succumb to external pressures at the expense of educational opportunities.

Based on the three types of resilience identified through the qualitative analyses of Applicants' essays, a framework begins to emerge for understanding how Applicants and Scholars have successfully overcome adversity up to the point of applying to the HAA Scholarship Program. What appears to be a major mechanism in the process is the presence of a mental and emotional reframing of one's adversity. Applicants, and particularly Scholars, steer away from focusing on the bad hand that life has dealt them, or about the lost opportunities and hardships that they have encountered. Instead, they appear to reach a level of awareness that allows them to view hardship as an advantage rather than an impediment. An apparent desire to survive acts as a prompting mechanism for immediate action, where employment, attending school, and engaging in community activities provide tangible means for efficiently dealing with everyday financial and emotional challenges. Through work, financial shortcomings can be addressed in order to avert inevitable crises. Academic achievement also provides the means to achieving long term goals and the school environment may offer an alternate reality. Applicants' attitude appears to facilitate an ability to disregard immediate gratification for the sake of fulfilling future goals. These elements of resilience are further strengthened by an altruistic desire to help others or give back to the community. Such manifestations could be further viewed as a means of recasting oneself within a larger community circle. Engagement in community service and extracurricular activities provide the opportunity to be regarded by others as a well-respected, active, positive member or role model; attributes that may not be afforded by Applicants' immediate family environments. School and larger social networks thus becoming another environment that allow Scholars to enjoy life beyond the dysfunction and vicious cycle of adversity.

Through an improved understanding of resilience, results from the present study may be used to understand the unique population of HAA Applicants and Scholars with implications for future research and practice.

Implications for research

The results from Phase 1 of the Success Study represent an important first step towards building research designed specifically to study the educational and life trajectories of HAA Applicants and Scholars, examining the efficacy of HAA Program services, and collecting data specifically measuring aspects of resilience.

By collecting follow-up data on current Scholars enrolled in college as well as program Alumni at various stages of their lives, Phase 2 of the Success Study aims to improve our understanding of how HAA Program resources, along with Scholars' own unique set of educational experiences, contribute to educational, career, and interpersonal success during college and beyond. By collecting follow-up data on

2009 and 2010 HAA Applicants, Phase 2 also offers the opportunity to examine change over time, and to assess the influence of HAA Program services during Scholars' transition into college and the efficacy of those services for Scholars across a variety of educational settings. Results from Phase 2 will be particularly useful for expanding those aspects of the Scholarship program found to be most influential in fostering success, and encouraging current and future Scholars to participate in educational experiences found to be promising for fostering educational success and other positive outcomes.

Results from Phase 1 suggest that resilience can be viewed as the ability to mentally reframe adverse circumstances and see them as accomplishments. Such results provide justification on which to design data collection efforts for gathering information on constructs known to measure aspects of resilience. Constructs to consider incorporating into future data collection projects include:⁹

- *Stressful Life Events Screening Questionnaire* (Goodman, Corcoran, Turner, Yuan, & Green, 1998) which asks about exposure to a variety of stressful or traumatic events;
- *Student Adaptation to College Questionnaire (SACQ)* (Baker & Siryk, 1989) which has been used to examine adjustment to college;
- *Ways of Coping Questionnaire* (Folkman & Lazarus, 1988) which measures strategies used for coping with various stressors;
- *Index of Resilient Functioning* based on Hyman & Williams (2001) model and used by Banyard & Cantor (2004) as a single index of resilience as an indicator of positive adjustment to college; and
- *Internal-External Locus of Control* (Rotter, 1966) which is used to measure individuals' sense of control over their life's events.

Implications for practice

Altogether, the results from Phase 1 of the Success Study indicate that the HAA Scholarship Program is effectively awarding Applicants who have succeeded amidst the harshest conditions. The HAA Program selection criteria assigns particular weight to such qualities as financial need, adversity, work history, and academic achievement, while assigning less weight to community service and extracurricular school involvement. Results indicate that Scholars differ from Non-recipients across each of these criteria, providing empirical evidence that the criteria used for awarding scholarships is effective.

⁹ For more information on these constructs applied to studying college students, see Banyard & Cantor (2004).

Based on the Phase 1 findings, the HAA Scholarship Program may wish to consider refining the selection criteria in the following ways to account for interactions between applicants' background characteristics and experiences, as well as the conditional nature by which Applicants are situated in both family and school contexts. For example:

- *Given the findings that academic achievement and community service correlate with postsecondary success, the HAA Scholarship Program could consider assigning greater weight to Applicants who demonstrate involvement in community service activities, or by applying an interactive perspective by awarding applicants' points based on ACT scores in combination with community involvement.*
- Based on the findings that disadvantaged family backgrounds and relatively greater exposure to adversity negatively influence Scholars' levels of community and extracurricular school involvement, the HAA Program selection criteria could condition the weight placed on these involvements according to the amount and type of adversity experienced.
- Results clearly show that while Scholars come from disproportionately low-income families, they also outperform their national counterparts on college entrance exams while attending schools that generally mirror the typical public school in America. Selection criteria for the HAA Program could factor in measures of the high school context to identify and reward those applicants who perform well academically despite attending under-resourced schools. This approach may prove particularly useful for identifying the most resilient applicants.

By utilizing HAA application records we were able to explore resilience as the means by which students stay on track to achieve educational success. By additionally drawing on nationally representative ELS:2002 data to situate these at-risk students in the national context we identify fault lines in postsecondary opportunity in the U.S. and provide one of the only examples of research to make use of national datasets for the purpose of examining the concept of resilience.

Ultimately, HAA Application data in combination with ELS:2002 data form a unique and rich dataset with depth and breadth to contribute new information on an understudied group of at-risk students. Phase 1 of the Success Study provides a set of findings that improves our understanding of the factors associated with HAA Applicants and Scholars up to the point of applying to the HAA Scholarship Program and future phases of the Success Study hold the promise of continuing this line of research and further advancing our understanding of this unique and resilient population of Americans.

References

- ACT, Inc. (2008). ACT – SAT Concordance. Retrieved December 11, 2010, from <http://www.act.org/aap/concordance/pdf/reference.pdf>.
- Baker, R.W., & Siryk, B. (1984). Measuring adjustment to college. *Journal of Counseling Psychology, 31*, 179–189.
- Baker, R. W., & Siryk, B. (1989). *Student Adaptation to College Questionnaire*. Los Angeles: Western Psychological Services.
- Banyard, V.L., & Cantor, E.N. (2004). Adjustment to college among trauma survivors: An exploratory study of resilience. *Journal of College Student Development, 45*, 207–221.
- Bernard, H. R., & Ryan, G. (2010). *Analyzing Qualitative Data: Systematic Approaches*. Sage Publications: Thousand Oaks, CA.
- Domina, T. (2009). What works in college outreach: Assessing targeted and schoolwide interventions for disadvantaged students, *Education Evaluation and Policy Analysis, 31*, 127–152.
- Engberg, M.E., & Wolniak, G.C. (2010). Examining the effects of high school contexts on postsecondary enrollment. *Research in Higher Education, 51*(2), 132–153.
- Folkman, S., & Lazarus, R. S. (1988). *Ways of Coping Questionnaire Permissions Set*. Redwood City, CA: Mind Garden, Consulting Psychologists Press.
- Gall, M.D., Gall, J.P., & Borg, W.R. (2003). *Educational research: An introduction* (7th ed.). New York, NY: Allyn ad Bacon.
- Glaser, B.G., & Strauss, A.L. (1967). *The discovery of grounded theory: strategies for qualitative research*. Chicago.: Aldine.
- Goodman, L. A., Corcoran, C., Turner, K., Yuan, N., & Green, B. L. (1998). Assessing traumatic event exposure: General issues and preliminary findings for the stressful life events screening questionnaire. *Journal of Traumatic Stress, 11*, 521–542.
- Grodsky, E., & Jackson, E. (2009). Social stratification in higher education. *Teachers College Record, 111*, 2347–2384.
- Horn, L.J. (1997). *Confronting the odds: Students at risk and the pipeline to higher education*. NCES Report No. 98-094. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.
- Horn, L.J., Chen, X., & Adelman, C. (1998). *Toward resiliency: At-risk students who make it to college*. Office of Educational Research and Improvement, Washington, D.C.: U.S. Department of Education.
- Hyman, B., & Williams, L. (2001). Resilience among women survivors of child sexual abuse. *Affilia, 16*, 198–219.

Institute for Higher Education Policy (IHEP) (2011). *The role of mentoring in college access and success*. Available on-line at: <http://www.ihep.org/publications/publications-detail.cfm?id=144>.

Kaufman, P., & Bradbury, D. (1992). *Characteristics of at-risk students in NELS:88*. NCES Report No. 92-042. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.

Luthar, S.S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, 71, 543–562.

Masten, A., Coatsworth, J.D., Neemann, J., Gest, S., Tellegen, A., & Garmezy, N. (1995). The structure and coherence of competence from childhood through adolescence. *Child Development*, 66, 1635–1659.

Masten, A.S. (1994). Resilience in individual development: Successful adaptation despite risk and adversity. In M. Wang and E. Gordon (Eds.), *Educational resilience in inner-city America: Challenges and prospects* (pp. 3–25). Hillsdale, NJ: Erlbaum Publishers.

Neuendorf, Kimberly A. 2002. *The Content Analysis Guidebook*. Sage Publications: Thousand Oaks, CA.

Obama, B. (2009). *Remarks of President Barack Obama –Address to Joint Session of Congress*. Retrieved May 30, 2009 from http://www.whitehouse.gov/the_press_office/Remarks-of-President-Barack-Obama-Address-to-Joint-Session-of-Congress/

Paulsen, M. B., & St. John, E. P. (2002). Social class and college costs: Examining the financial nexus between college choice and persistence. *Journal of Higher Education*, 73, 189–236.

Peng, S.S. (1994). Understanding resilient students: The use of national longitudinal databases. In M. Wang and E. Gordon (Eds.), *Educational resilience in inner-city America: Challenges and prospects* (pp. 73–84). Hillsdale, NJ: Erlbaum Publishers.

Perna, L. W. (2006). Studying college access and choice: A proposed conceptual model. In J. C. Smart (Ed.) *Higher Education: Handbook of Theory and Research*, Vol. XXI (pp.99–157). The Netherlands: Springer.

Perna, L. W., & Titus, M. A. (2005). The relationship between parental involvement as social capital and college enrollment: An examination of racial/ethnic group differences. *Journal of Higher Education*, 76, 486–518.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80, 1–28.

U.S. Department of Education, (2010). *ESEA Blueprint for Reform*. Washington, D.C.: Office of Planning, Evaluation and Policy Development: Available on-line at: <http://www2.ed.gov/policy/elsec/leg/blueprint/blueprint.pdf>.

Wang, M., & Gordon, E., (Eds.). (1994). *Educational resilience in inner-city America: Challenges and prospects*. Hillsdale, NJ: Erlbaum Publishers.

Welch, B. L. (1937). The significance of the difference between two means when the population variances are unequal. *Biometrika*, 29, 350–62.

Welch, B. L. (1947). The generalization of “Student’s” problem when several different population variances are involved, *Biometrika*, 34, 28–35.

Wolniak, G.C., & Engberg, M.E. (2011, April). *Socioeconomic Disparities in College-Linking Resources and the Impact on Postsecondary Access*. Presented at the meeting of the American Education Research Association, New Orleans, LA.

Appendix A. Descriptive Statistics

Table A.1: Descriptive Statistics among 2009–2010 HAA Applicants

	Mean	SD	Minimum	Maximum	N	Source Variable
Award Status						
Awarded	0.10	0.30	0.00	1.00	16,682	<i>scholarshipaward</i>
Demographic and Socioeconomic Characteristics						
Family income (\$ values)	26,797.52	14,885.79	0.00	15,1196.00	12,540*	<i>agi</i>
U.S. citizen	0.99	0.07	0.00	1.00	16,682	<i>citizen</i>
Female	0.72	0.45	0.00	1.00	16,679	<i>gender</i>
Number of dependents in family	3.59	1.55	0.00	14.00	16,664	<i>numdep</i>
Parent is unemployed	0.17	0.37	0.00	1.00	16,682	<i>parentunemploy</i>
Family is receiving state financial aid	0.27	0.44	0.00	1.00	16,682	<i>sfa</i>
Education, Employment, and Engagement						
<i>Academic Achievement</i>						
High school class rank (lower value is better) ^a	0.22	0.20	0.00	0.99	12,298*	<i>classpercent/classpercent2</i>
Participated in college prep program	0.14	0.35	0.00	1.00	16,682	<i>collegeprep</i>
Years spent in college prep program (years)	0.57	1.28	0.00	15.00	11,731*	<i>collegeprep_years</i>
High school GPA ^b	3.55	0.54	2.00	5.00	13,844*	<i>hsgpa</i>
College entrance exam score (ACT composite)	22.32	4.60	11.00	36.00	11,274*	<i>actscore, satscore</i>
<i>Employment</i>						
Hours per week worked during school year	7.91	9.74	0.00	40.00	16,666	<i>jobhours_school</i>
Hours per week worked during summer	20.62	17.68	0.00	80.00	13,673*	<i>jobhours_summer</i>

Table A.1: Continued

	Mean	SD	Minimum	Maximum	N	Source Variable
<i>Community service & extracurricular involvement</i>						
Total school activities	2.88	1.25	0.00	4.00	16,698	<i>activity1–activity4</i>
Total leadership positions for school activities	1.89	1.47	0.00	4.00	16,698	<i>activity1_LP–activity4_LP</i>
Total community service activities	2.37	1.34	0.00	4.00	16,698	<i>activity5–activity8</i>
Total leadership positions for community service activities	1.44	1.44	0.00	4.00	16,698	<i>activity5_LP–activity8_LP</i>
Adversity Experiences						
Foster care or ward of the state	0.04	0.19	0.00	1.00	16,682	<i>advers1</i>
Homelessness	0.05	0.22	0.00	1.00	16,682	<i>advers2</i>
Parental/guardian death, incarceration or abandonment	0.28	0.45	0.00	1.00	16,682	<i>advers3</i>
Alcohol or drug abuse in household	0.17	0.38	0.00	1.00	16,682	<i>advers4</i>
Physical or mental disability, or serious illness	0.07	0.25	0.00	1.00	16,682	<i>advers5</i>
Suffered physical or mental abuse	0.11	0.32	0.00	1.00	16,682	<i>advers6</i>
Critical financial need	0.85	0.36	0.00	1.00	16,682	<i>advers7</i>
Total number of adversities experienced	1.57	1.14	0.00	7.00	16,682	<i>advers1–advers7</i>

Source: 2009–2010 HAA Applicant Data (N = 16,698)

^a High school class rank was calculated by dividing the applicant’s numeric rank by the applicant’s class size, and represents the percentage of the applicant’s high school class that is ranked better. The lower the value, the better ranked the applicant.

^b High school GPAs represents population averages that were not standardized onto a common scale. It was not possible to distinguish between applicants who reported grades on a 4.0 versus 5.0 scale.

* Percentage of missing cases exceeds 10% of the total sample.

Table A.2: Descriptive Statistics of the High Schools Attended among 2009–2010 HAA Applicants^a

	Mean	SD	Minimum	Maximum	N
School Characteristics					
Percent Minority	45.01	33.12	0.00	100.00	10,515
Student-to-Teacher Ratio	17.17	4.83	0.00	56.19	10,519
Percent of students eligible for free or reduced-price lunch ^b	45.12	21.69	0.00	99.88	9,708
Urbanicity ^c	2.41	1.19	1.00	4.00	10,546
Urban	0.29	0.46	0.00	1.00	10,546
Suburb	0.29	0.45	0.00	1.00	10,546
Town	0.13	0.33	0.00	1.00	10,546
Rural	0.29	0.45	0.00	1.00	10,546

Source: 2009–2010 HAA Applicant Data; 2009–2010 Common Core of Data (CCD); 2007–2008 Private School Survey (PSS).

^a Among the 16,698 cases in the 2009–2010 HAA Applicant Data file, 10,587 had high school identifiers that were matched to CCD and PSS files to obtain the measures of high school characteristics.

^b Percent of students eligible for free or reduced-price lunch is calculated only for applicant's who attended a public school that was matched to CCD records.

^c Urbanicity indicates the extent that a school is located in an urban environment, where school setting is measured as: 4 = Urban, 3 = Suburb, 2 = Town, and 1 = Rural. Higher values of Urbanicity correspond to more urban the school environments.

Appendix B. CEEB-NCES ID Crosswalk

The Common Core of Data (CCD) covers only public schools in the United States, while the Private School Survey (PSS) covers private schools. Because the HAA applicant data contain applicants from both public and private schools, information from both the CCD and PSS were necessary.

A three-stage process was followed to merge the appropriate school-level indicators with HAA applicant data. First, the CCD and PSS were merged into a single file. Next, because the HAA data set contains College Board identifier codes for each applicant’s high school (HSSATcode), while the CCD and PSS use National Center for Education Statistics (NCES) identifier codes, a crosswalk for HSSAT codes and NCES codes was necessary. Once the crosswalk was completed, both the CCD and PSS data were merged on the HAA data file, allowing for analysis of each applicant’s school conditions, to accompany applicants’ individual information.

In order to crosswalk CEEB IDs and NCES ID numbers, we first attempted to match based on the state, city, zip code and school name. This produced no exact matches, causing us to refine our process. We cleaned the school names of extraneous text characters and abbreviations (e.g., “jr/sr,” “ms-hs”), and again matched on state, city, zip code and the school name producing a significant number of exact matches (approximately 10,000 cases in which the text of the school name matched exactly), and a very large number of inexact matches (approximately 9,000 additional cases in which school names partially matched). For each pairing of inexact match cases, we created a percentage measure of how many letters matched for each pairing. Based on an examination of the inexact matched cases and the associated percentage measure, we selected 30% as the cut-off point such that all matches that met the criteria were selected, while all those that did not meet the criteria were discarded.

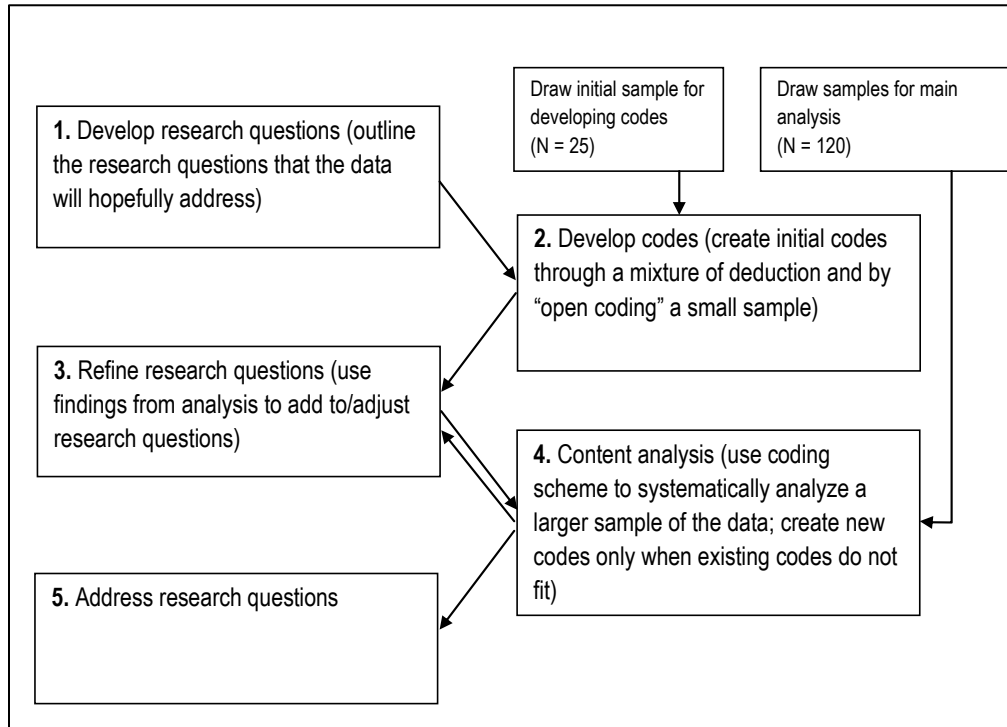
Table B.1: Summary of Dataset Matching Results: CEEB-NCES ID

	CEEB Codes	NCES Codes	Unique CEEB Codes in HAA Dataset [schools]	Total CEEB Codes in HAA Dataset [students]
Total Cases	34,876	20,500	7,625	16,698
Total Matched	14,666 (42%)	14,666 (71%)	4,901 (62%)	10,587 (63%)
Public School Matches			4,483 (91%)	9,962 (94%)
Private School Matches			418 (9%)	625 (6%)

Source: 2009–2010 HAA Applicant Data; 2009–2010 Common Core of Data (CCD); 2007–2008 Private School Survey (PSS).

Appendix C. Qualitative Analysis Plan

Figure C.1: Analysis plan for examining the open-ended narratives



Appendix D. Major Fault Lines in Postsecondary Opportunity

Table D.1: Rates of Postsecondary Enrollment by Student and School Characteristics among National Sample of 2004 High School Seniors

	Two-Year College Enrollment	Four-Year College Enrollment	No College Enrollment
Family, and Socioeconomic Characteristics			
Family income (in 2001 dollars)			
Less than \$15,000	10.19%	4.38%	17.48%
\$15,001–\$25,000	12.12%	5.88%	18.61%
\$25,001–\$35,000	13.46%	8.54%	16.56%
More than \$35,000	64.23%	81.19%	47.35%
Parental unemployment	22.50%	18.53%	27.87%
Number of dependents in household			
0–2	53.01%	54.12%	48.44%
3–4	38.04%	40.36%	38.11%
5 or more	8.95%	5.52%	13.45%
Disabled	13.70%	4.82%	22.41%
Academic Achievement and Involvement			
ACT (converted SAT)			
20 and lower	70.01%	31.65%	76.53%
21 through 28	28.25%	55.08%	21.72%
29 and higher	1.74%	13.26%	1.76%
Participation in community activities	54.71%	77.04%	34.93%
Employment during high school	84.79%	86.78%	81.42%
High School Conditions			
Student-to-teacher ratio			
Low (15 and lower)	27.66%	31.60%	25.82%
Medium: 16–25	65.48%	65.14%	67.91%
High: 26 and higher	6.85%	3.26%	6.27%
Percent minority students			
Low: 33% and less	53.97%	65.73%	48.30%
Medium: 34%–66%	24.66%	20.02%	25.06%
High: 67% and above	21.37%	14.25%	26.64%
Urbanicity			
Urban	26.72%	32.22%	31.52%
Suburban	52.49%	50.12%	48.06%
Rural	20.79%	17.66%	20.42%

Source: ELS: 2002 Restricted Data (Weighted Student Sample N = 3,388,460; Un-weighted Sample N = 16,200).

Table D.2: Rates of Enrollment by College Selectivity among National Sample of 2006 College Enrollees

	Enrolled in Inclusive School	Enrolled in Moderately Selective School	Enrolled in Selective School
Family, and Socioeconomic Characteristics			
Family income (in 2001 dollars)			
Less than \$15,000	8.35%	4.12%	2.26%
\$15,001–\$25,000	9.25%	6.10%	3.44%
\$25,001–\$35,000	12.59%	9.16%	5.12%
More than \$35,000	69.79%	80.62%	89.18%
Parental unemployment	20.46%	17.41%	18.90%
Number of dependents in household			
0–2	52.47%	52.35%	57.59%
3–4	40.03%	42.17%	38.02%
5 or more	7.50%	5.48%	4.39%
Disabled	9.15%	4.58%	2.55%
Academic Achievement and Involvement			
ACT (converted SAT)			
20 and lower	63.63%	35.71%	8.67%
21 through 28	33.46%	58.17%	62.41%
29 and higher	2.91%	6.12%	28.93%
Participation in community activities	63.05%	75.92%	87.52%
Employment during high school	83.02%	87.63%	87.86%
High School Conditions			
Student-to-teacher ratio			
Low (15 and lower)	26.62%	30.38%	36.55%
Medium: 16–25	68.38%	66.54%	61.07%
High: 26 and higher	5.00%	3.08%	2.38%
Percent minority students			
Low: 33% and less	46.04%	68.94%	74.11%
Medium: 34%–66%	24.01%	18.86%	19.03%
High: 67% and above	29.94%	12.19%	6.86%
Urbanicity			
Urban	38.22%	29.02%	32.85%
Suburban	45.55%	51.27%	51.49%
Rural	16.22%	19.71%	15.65%

Source: ELS: 2002 Restricted Data (Weighted Student Sample, N = 3,388,460; Un-weighted Student Sample, N = 14,470).

Table D.3: Rates of Full- and Part-Time Enrollment by College Selectivity among National Sample of 2006 Four-Year College Enrollees

	Full Time Enrollment	Part Time Enrollment
Family, and Socioeconomic Characteristics		
Family income (in 2001 dollars)		
Less than \$15,000	4.27%	6.82%
\$15,001–\$25,000	5.52%	13.34%
\$25,001–\$35,000	8.44%	10.81%
More than \$35,000	81.77%	69.03%
Parental unemployment	18.47%	20.22%
Number of dependents in household		
0–2	54.06%	55.40%
3–4	40.60%	34.95%
5 or more	5.34%	9.65%
Disabled	4.38%	14.62%
Academic Achievement and Involvement		
ACT (converted SAT)		
20 and lower	30.72%	61.58%
21 through 28	55.76%	34.70%
29 and higher	13.51%	3.71%
Participation in community activities	78.46%	48.77%
Employment during high school	86.85%	85.31%
High School Conditions		
Student-to-teacher ratio		
Low (15 and lower)	32.22%	19.97%
Medium: 16–25	64.56%	76.06%
High: 26 and higher	3.22%	3.96%
Percent minority students		
Low: 33% and less	66.35%	54.20%
Medium: 34%–66%	20.09%	18.12%
High: 67% and above	13.56%	27.68%
Urbanicity		
Urban	32.02%	35.47%
Suburban	50.43%	44.30%
Rural	17.55%	20.23%

Source: ELS: 2002 Restricted Data (Weighted Student Sample, N = 1,350,670; Un-weighted Student Sample, N = 6,490).