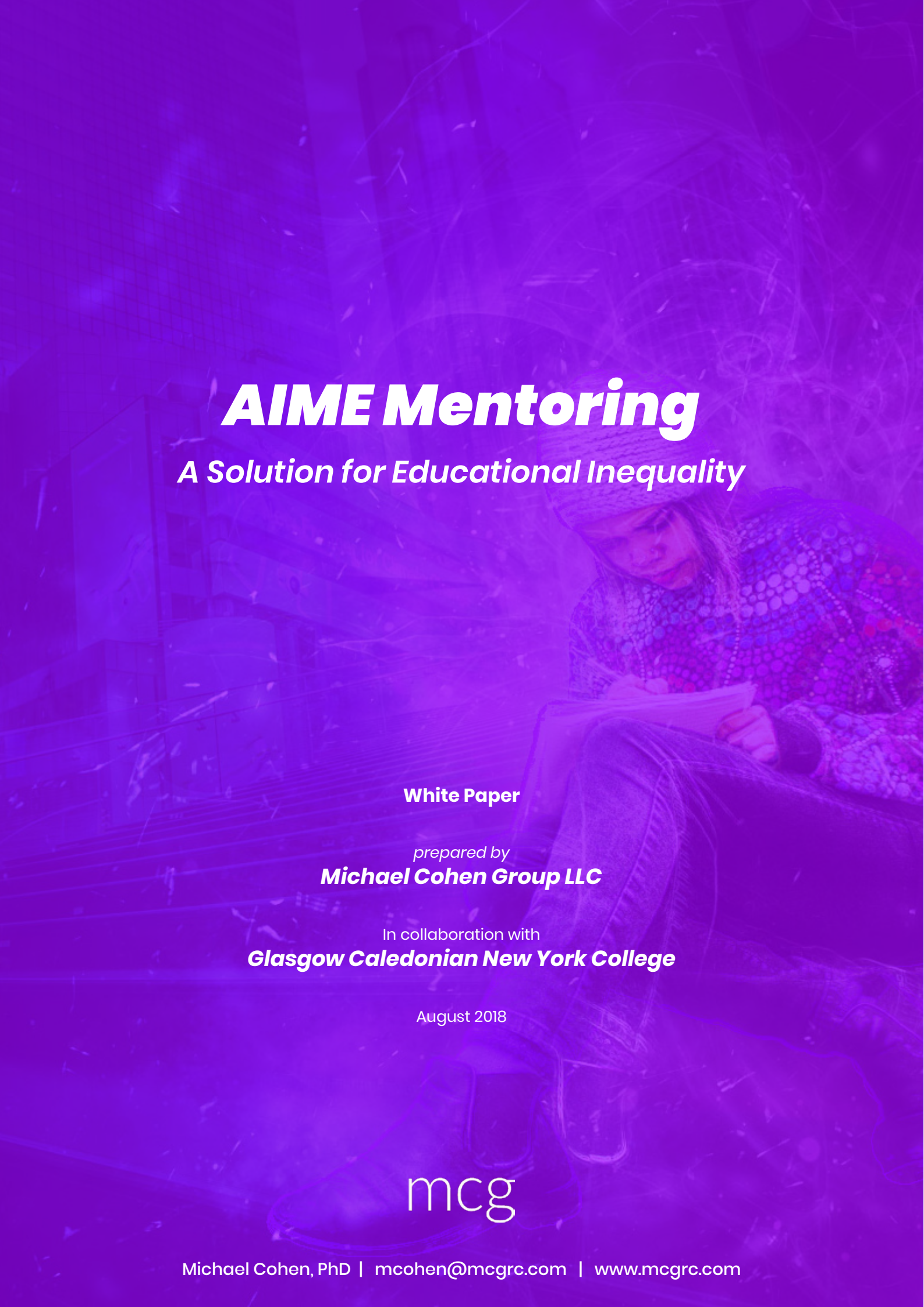

AIME Mentoring

A Solution for Educational Inequality

White Paper

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Executive Summary

Background

The U.S. is challenged by increased inequality. Education is acknowledged as a solution, providing the foundation for employment and financial security. There is a national consensus in the U.S. on the importance of education and there is strong public and institutional support for helping students finish high school, attend college and/or pursue other positive post-secondary pathways.

However, even in this supportive context, a significant percentage of U.S. students remain uneducated and lack positive pathways to post-secondary education and training. Importantly, a disproportionate percentage of these students are disadvantaged. All the ingredients necessary to provide education to disadvantaged students are seemingly available, including numerous programs, resources and strategies that have been developed specifically to help these students. Why, then, do many students continue to be uneducated? Importantly, what is the solution?

Objectives

This White Paper explores these issues in-depth and presents an evidence-based case for AIME, a program effective in providing disadvantaged students with a bridge from high school to positive post-secondary pathways. The inquiry and case for AIME are based on evidence and insights from several topic areas, including: the need; the existing resources for students and families; and research on the effectiveness and impact of the AIME program.

The case for AIME. The AIME mentoring program provides a bridge from high school to positive postsecondary pathways — college, training and employment — for disadvantaged youth. Originating in Australia with the goal of helping Indigenous youth make this transition, the core of the AIME program involves university student volunteers providing mentoring experiences to middle and high school students in need. AIME provides a six-year, comprehensive "School of Life," for students age 12-18, attending grades 7-12. The program's interrelated components include: one-on-one mentoring; exposure to role models via media resources; university campus visits and events; group mentoring; tutoring; and self-actualization activities.

AIME is a grass-roots, youth-created program identified with disadvantaged students and students are in turn identified with AIME. Findings indicate that student's lack of identification, comfort and familiarity with existing services and resources present significant barriers to their effective use. AIME has the potential to function as a needed guide to existing programs and support services.

AIME has been highly effective in Australia and the program's design allows for customization to meet the specific needs of various environments. Additionally, AIME's innovative programmatic design is cost-effective and easily scalable. AIME is currently being introduced internationally and will be implemented in the U.S. in early 2019.

Methodology

The research design is comprised of comprehensive literature reviews using an Environmental Scan method and subject-expert interviews.

The Environmental Scan method provides a process for the efficient identification and interpretation of relevant research and data. The literature reviews were comprised of three components, including: a review of scholarly literature published in peer-reviewed journals; grey literature available outside of peer-reviewed journals, (e.g., survey research, reports, conference proceedings, etc.); and a review of relevant digital resources. Individual interviews were conducted with subject-experts representing the fields of education, policy, management and student support services.

The Need. Research findings indicate that rates for high school non-completion are comparatively low. However, Black and Hispanic students have higher non-completion rates than White students. A high school Diploma is no longer considered adequate for entering the workforce and college completion rates remain inadequate. The majority of all young adults 25 to 29 years-old have not completed a degree and the rates are disproportionately higher for low-income, Black, Hispanic and Native Americans.

Programs and Resources

Research findings indicate that the tasks and challenges for preparing and applying for college are often overwhelming for disadvantaged students and their families. These tasks and challenges include: inadequate academic preparedness; performance on standardized admissions tests; the college selection and application process; the high cost of college and financial planning; and access to meaningful guidance, mentoring and counseling. There are numerous available resources for students that correspond directly to the individual tasks above. These include tutoring services, test-prep, college selection services, financial assistance and planning, and counseling and mentoring programs.

The tasks and challenges identified are highly interrelated but treated separately and the majority of available support resources only address a single task. As a result, the process is exponentially overwhelming. Additionally, substantial differences exist in the quality and effectiveness of available programs and services, with the more effective services often provided for fees that are prohibitive for low-income students and their families.

Research also identified a unique problem. The target audiences for these support resources – disadvantaged students – are often intimidated and alienated from the resources designed for their benefit. The students and families most in need often lack the skills, knowledge and familiarity required to locate, access and successfully utilize these resources. As a result, resources are often underutilized, their existence unknown and their use less effective than anticipated. Currently, students struggle to find accessible and trusted sources that provide overall guidance regarding awareness, access and optimal use of existing resources.

Research on AIME

Extensive research has been conducted assessing the effectiveness and impact of AIME. There are also in-depth, explanatory inquiries providing an understanding of the why and how, the mechanisms and dynamics, by which AIME's goals are accomplished. This powerful combination of descriptive findings (the impact) combined with studies yielding explanatory findings (the how and why) distinguishes the body of research on the AIME program's effectiveness.

Research has identified that student participation in AIME significantly raises students' high school completion and post-secondary continuation rates. AIME is effectively closing the attainment gap in Australia. Indigenous Australian students who have participated in the program now achieve completion and continuation rates in parity with their non-Indigenous peers and significantly higher than Indigenous students who have not participated in AIME.

Other assessments of AIME have identified a range of positive impacts, including: a nine to one-dollar return-on-investment (ROI) to the economy; an increase in social-emotional and cognitive skills and knowledge acquisition by participating mentors and mentees; and positive impacts on school and community environments.

Research has identified specific features of the AIME program as the predictive components underpinning these positive impacts and program effectiveness. These include the six-year School of Life framework; the constellation of program features; the non-deficit approach towards mentees; a philosophy of pride and empowerment; high expectations for all participants; the "no shame at AIME" philosophy and a personal pride orientation regarding mentees' heritage, families and experience.

Conclusions

Arriving at an opportune time, the AIME model offers a solution to educational inequality. AIME is a social movement created by the very people that it is meant to serve. The program avoids many of the problems that plague the landscape of well-intended resources for disadvantaged youth in the U.S. The volunteer student mentors, using their own experiences in overcoming adversity, comprise an ideal resource. Students are identified with AIME; the understanding and compassion required for effective mentoring arises organically from the shared life experience; and the structure of the program is designed explicitly to engender the development of mentees' self-sufficiency and agency. The implementation model does not involve creating an organizational superstructure; there is no cost for the disadvantaged student user; and the program requires no investment in new resources.

In summation, AIME achieves the Holy Grail of education interventions – effectiveness, cost-efficiency and unlimited scalability.

Introduction

AIME — A Solution to the Problem of Educational Inequality

Background

The U.S. is challenged by increased inequality, economic insecurity, and a heightened sense of divisiveness across identities and political orientations. These dynamics threaten the nation's cohesion and ability to succeed in the 21st century.

Simultaneously, there are powerful trends and social movements addressing these challenges. Notably, there is a national consensus on the importance of education and there are strong public and institutional supports and resources for helping students finish high school, attend college and/or pursue other positive post-secondary pathways. Education is acknowledged as a solution to extreme inequality; providing the foundation for employment, financial security, and individual and familial well-being.

However, even in this supportive context, a significant percentage of U.S. students remain uneducated and lack positive pathways to post-secondary education and training. A disproportionate percentage of these students are disadvantaged.

All the ingredients necessary to provide education for everyone, including disadvantaged students, are seemingly available. Numerous programs, resources and strategies have been developed to help disadvantaged students attend and succeed in college. Everything needed appears to be in place, including: 1) a general agreement regarding the necessity and benefits of education; 2) a wide range of supports and resources for students; and 3) numerous colleges and training institutions committed to increasing educational opportunities for everyone.

Why, then, do many students continue to be undereducated or under-matched in their educational choices? What is the solution?

The goals of the White Paper

This White Paper explores the issue in depth and presents a compelling case for AIME, a program effective in addressing educational inequality, soon to be implemented in the U.S. The case for AIME is based on a review of the need, existing educational resources, and the achievements and capabilities of the AIME program. These findings provide persuasive evidence that AIME is a timely, cost-effective, and scalable solution for effectively increasing the high school graduation and college attendance rates of low-income and other disadvantaged students. This White Paper is designed to raise awareness, generate interest, and encourage active participation in the U.S. implementation of the AIME Mentoring program.

AIME

The AIME mission is educational equality. The AIME mentoring program offers a breakthrough approach in assisting disadvantaged students to acquire essential high school and college level educations. AIME is self-defined as a mentoring program providing a bridge from high school to positive postsecondary pathways — college, training and employment — for disadvantaged and underrepresented youth. Originating in Australia with the goal of helping Indigenous youth make the successful transition from high school to positive post-secondary pathways, the core of the AIME program involves university student volunteers who provide mentoring experiences to high school students in need. The AIME program, however, is more complex than the mentoring description suggests. AIME provides a six-year, comprehensive "School of Life," for students age 12-18, attending grades 7-12. The program's interrelated components include (but are not limited to): one-on-one mentoring; exposure to role models and thought leaders accessed via media resources; university campus visits and events; group mentoring sessions; tutoring sessions; and self-help and self-actualization activities.

AIME is an authentic grass-roots initiative and has all the features of a social movement, including an unwavering and focused mission — the commitment to educational equality. Created by a university student to help other Indigenous youth overcome obstacles, AIME is notable for its non-deficit approach and respect for the experiences and capacities of its target audience. AIME champions and validates disadvantaged youth's existing and

often untapped abilities in overcoming adversities and challenges. The program is structured to engender skill and knowledge acquisition for mentors and mentees, encouraging both to be proactive agents in the service of achieving their personal goals.

AIME has been highly effective in Australia, helping Indigenous students achieve the high school completion and post-secondary success rates of their non-Indigenous peers. The program's design allows for customization to meet the specific needs of various cultural environments. Additionally, AIME's innovative programmatic design is cost-effective and easily scalable. AIME's goals of eliminating inequality and ensuring educational opportunity are global in scope and the program has recently been introduced in Africa and plans to operate in India and other locations in the near future.

AIME in the U.S. AIME will be introduced to the U.S. in early 2019 with the goal of matching volunteer mentors from two hundred U.S. campuses with twenty thousand middle and high school student mentees by the end of year one.

The costs of the AIME program are minimal, and existing evidence indicates that AIME achieves the Holy Grail of educational interventions – effectiveness, cost-efficiency, and unlimited scalability.

The Case for AIME

This White Paper presents an evidence-based case for AIME as an innovative solution to the challenge of providing students with a bridge from high school to positive post-secondary pathways. The case for AIME is based on research findings, comprehensive literature reviews, subject matter expert interviews, and the authors' first-hand knowledge and involvement in U.S. education. The conclusion is clear and compelling — AIME provides disadvantaged students and institutions committed to educational equality with a unique approach, one that successfully addresses a broad range of personal, socioeconomic, and institutional barriers that have historically plagued previous educational equality initiatives.

The Evidence for AIME

The case for AIME is based on evidence and insights from relevant sources across several topic areas. The topic areas and sources include the following.

The Need

An overview of the frequency and distribution rates of U.S. high school completion; college attendance; and college completion.

Available Programs & Resources

An in-depth review of scholarly and related literature and an overview of the current landscape of various resources designed to aid in the high school-to-college transition, including discussions of available programs and services in the areas of tutoring, counseling, college selection and application, financial assistance, standardized test preparation and mentoring.

Research on the AIME Program

A comprehensive review of the extensive existing research assessing AIME's impact.

Subject-Area Expert Interviews

Findings from recent interviews with high-level experts in the field of education. Interviews were conducted in July and August 2018 and include observations and insights that represent the current U.S. educational landscape.

Methodology

The literature reviews were conducted using an Environmental Scan method. The Environmental Scan method provides a process for the efficient identification and interpretation of relevant research and data for applied use.

The reviews were comprised of three components, including:

- a review of **scholarly literature** published in peer-reviewed journals;
- a review of **grey literature** available outside of peer- reviewed journals, including survey research, reports, conference proceedings, summaries and other literature produced by government agencies, research centers, associations, corporations and professional organizations; and
- a review of **relevant digital resources**.

Utilizing the Environmental Scan method, in combination with subject area expert interviews, yielded up-to-date findings and insights that would otherwise remain opaque and/or invisible if inquiry were limited to scholarly publications.

Quotes presented throughout the White Paper are attributable to the subject matter experts.

AIME provides a solution to a specific U.S. challenge

The overall case for AIME is presented throughout the White Paper. However, one finding merits highlighting and is presented here.

A U.S. specific challenge

The literature reviews and interviews identified a specific challenge that the AIME program is uniquely positioned to solve. Extensive resources have been developed and are available to aid disadvantaged students and their families across a wide range of relevant activities and tasks, including: college selection; the application process; budgeting for and securing financial aid; and test-prep for required standardized admission exams.

The target audiences for these resources – disadvantaged students – are often intimidated and alienated from the resources, the resource providers, the contexts in which the resources are located, and the processes required to access and use the resources. The students and families most in need often lack the skills, knowledge and familiarity required to locate, access and successfully utilize these resources.

As a result, these resources are often underutilized; their existence unknown by students, their use less effective than anticipated; and they are perceived be disconnected from each other. Currently there is no accessible and trusted source providing an overall understanding of the process, how the tasks are interrelated, and acting as a guide and map to existing resources.

"For the target user — these well-intended and often brilliantly executed resources are perceived to exist in some foreign land, a land to which they have no access, where they don't speak the language, and where they feel like outsiders and alone."

The AIME solution

AIME offers a solution to this unique U.S. challenge — the potential *to guide students* throughout the process and provide the *connective tissue between existing resources.* AIME can fulfill this role because it offers the missing variable that inhibits other initiatives and programs use and effectiveness — connection and identification.

Students are identified with AIME

AIME is a grass-roots, youth-created program representing disadvantaged students and championing their skills in overcoming adversity and barriers. AIME is identified with disadvantaged students and students see themselves in AIME. Findings indicate that for disadvantaged students, AIME is trustworthy, aspirational, and familiar. AIME's authenticity is a quality that cannot be manufactured or purchased. ***Students' identification with AIME is the essential dynamic required for the effective use of existing resources.***

"There's an apocryphal story about the engineering challenges in the design of the Verrazano Bridge. At the time of its construction it was the longest suspension bridge ever conceived. Engineers were stymied, and construction was halted until the curvature of the earth was included as a variable in the design. The curvature of the earth had always been there, but no bridge had required its inclusion in engineering plans. AIME provides the 'curvature of the earth' for engineering the bridge from high school to college."

Additionally, AIME can provide the connective tissue between existing resources, magnifying their value and impact.

"Excellent resources exist, but they're disconnected and forbidding for disadvantaged students. AIME has the opportunity to connect these resources, and similarly to the aligned molecules that differentiate a magnet from a non-magnetized piece of metal, these resources working in tandem become very powerful."

The Need

An educated workforce and citizenry

The U.S. is facing an educational crisis. A large percentage of our students are uneducated and unprepared to face the challenges of adulthood. A percentage will never finish high school; others won't continue on to college, training or meaningful employment; and a large percentage of those who do will never receive a degree or complete a course of training.

The failure of our educational system stands in sharp contrast to the conviction that education is essential for the well-being, prosperity and progress of individuals and society. Education reduces inequality; helps to address the consequences of disadvantage; and provides the foundation for lifelong economic stability. The U.S. post-secondary landscape — including colleges, universities, and vocational training — represents the gold standard globally and continues to enjoy enormous public trust.

High School completion rates

There has been progress in raising high school completion rates. In 2015, 5.9% of 16- to 24-year-olds in the U.S. had not completed high school. However, that percentage is not evenly distributed across race and ethnicity with higher rates of non-completion reported for Black and Hispanic students. For White youth, the rate was 4.6%, for Black youth it was 6.5%, and for Hispanic youth, 9.2% (McFarland, Hussar, de Brey, Snyder, & Wang, 2017).

Post-secondary training

While the high school graduation rate has improved, a high school diploma is no longer a ticket to a job with a living wage. Post-secondary education is now essential. In 2016, less than half of all 25-29-year-olds had completed an Associate Degree or higher. Additionally, large disparities exist between racial and ethnic groups in post-secondary education.

Table 1:
Percentage of U.S. 25- to 29-Year-Olds with an Associate Degree or Higher, 2000 & 2016

Race/Ethnicity	2000	2016
All 25-29-Year-Olds	38%	46%
White	44%	54%
Black	26%	32%
Hispanic	15%	27%
Asian/Pacific Islander	61%	69%
American Indian/ Alaska Native	17%	17%

SOURCE: U.S. Department of Commerce, Census Bureau, Current Population Survey (CPS), Annual Social and Economic Supplement, 2000–2016. See Digest of Education Statistics 2015, table 104.65 and Digest of Education Statistics 2016, table 104.20.

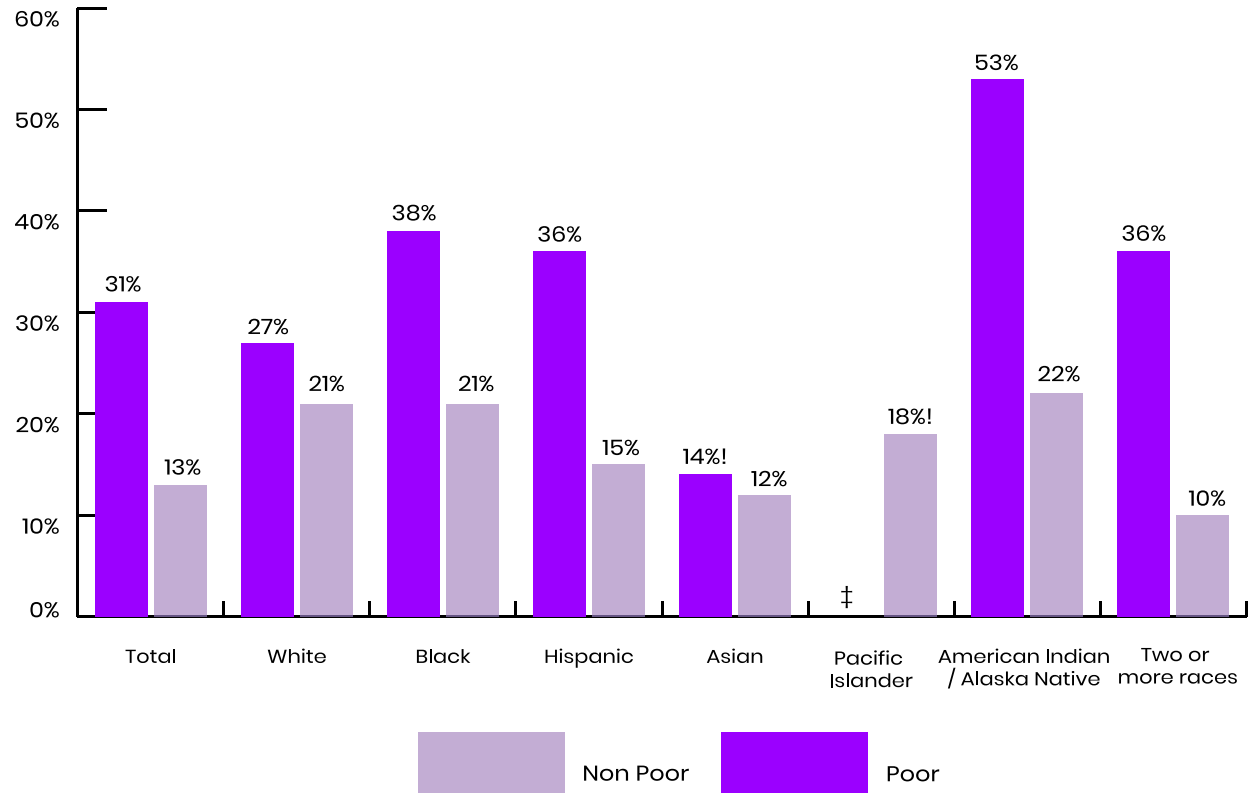
Although there has been progress, the overall percentage of 25- to 29-year-olds completing degrees remains inadequate. The disparities between racial and ethnic groups are also significant. In 2016, 54% of White young adults had completed degrees as compared to 32% of Black and 27% of Hispanic young adults. The percentage of American Indian/Alaska Natives remained low at 17%.

Socioeconomic status

Additionally, a disproportionate percentage of low-income students fail to complete a post-secondary degree or training. Because race and ethnicity are closely correlated with economic status in the U.S., Black, Hispanic, and Native American students face overwhelming obstacles. Students disadvantaged by socioeconomic status, race, and ethnicity have the lowest rates of educational participation and completion (See Figure 1 below).

Figure 1.

Percentage of youth ages 20 to 24 who were neither enrolled in school nor working, by race/ethnicity and family poverty status: 2016



! Interpret data with caution. The coefficient of variation (CV) for this estimate is between 30 and 50 percent.
‡ Reporting standards not met. Either there are too few cases for a reliable estimate or the coefficient of variation (CV) is 50 percent or greater.
NOTE: Poor is defined to include families below the poverty threshold, and nonpoor is defined to include families at or above the poverty threshold. For information about how the Census Bureau determines who is in poverty, see http://www.census.gov/topics/income-poverty/poverty/guidance/poverty- measures.html. Race categories exclude persons of Hispanic ethnicity.
SOURCE: U.S. Department of Commerce, Census Bureau, Current Population Survey (CPS), Annual Social and Economic Supplement, 2016. See Digest of Education Statistics 2016, table 501.30.

The Consequences

The consequences for individuals are tragic. Uneducated adults are at a higher risk for poverty, health-related problems, unemployment, homelessness, and mental health disorders. Additionally, uneducated adults lack the skills to engage in lifelong learning and are unable to assume their roles as informed citizens and responsible family members.

The ramifications for the nation's future are equally profound. An uneducated populace weakens our workforce and economy, threatens our global standing, increases national vulnerability, lowers participation in the democratic process, and squanders our national achievements and potential.

Programs & Resources

At first glance, the challenges faced by disadvantaged, low-income students in planning and applying for college and training — and the resources provided to meet these challenges — may appear straightforward. The reality is far more complicated. Students are confronted by a complex constellation of tasks. Additionally, the resources to help students are themselves difficult to access and use.

Overwhelming obstacles

Specifically, students preparing for postsecondary education inevitably encounter the following overwhelming tasks and obstacles, including: inadequate academic preparedness; performance on standardized admissions tests; the college selection and application process; the high cost of college and financial planning; and access to meaningful guidance, mentoring and counseling.

The variety of programs and services are currently available to students to aid in accomplishing these tasks, including:

- Tutoring services
- Standardized test preparation services
- College selection/application services
- Financial assistance programs
- High school counseling
- Mentoring programs

Fragmented Resources

At first glance, the situation appears to be encouraging; there are numerous programs and services available. A closer examination, however, reveals that the tasks are highly interrelated but treated separately and the vast majority of available resources only address a single task. As a result, the process is exponentially overwhelming. The process is comprised of highly interrelated tasks, yet the resources provided for students are fragmented. Additionally, substantial differences exist in the quality and effectiveness of available programs and services, with the more effective services often provided for fees that are prohibitive for low-income students and their families.

There is a lack of connection between these services and resources and an absence of effective communications to students in need. There is a growing recognition that the longstanding postsecondary achievement gap between low-income students and their higher-income peers cannot be adequately addressed in piecemeal fashion. A recent report prepared for the Congressional Subcommittee on Higher Education and Workforce Training clearly summarizes the situation facing low-income college aspirants:

> *"Improving college access and success for low-income and first-generation students requires a multi-faceted, comprehensive approach, and commitment from multiple players. (Perna & Jones, 2013) Only with a comprehensive approach and involvement of multiple stakeholders will we address the multiple forces that limit college enrollment especially for students from groups that are historically under-represented in higher education. This comprehensive approach must ensure that: all students have the necessary financial resources to pay college costs; all students are adequately academically prepared for college-level requirements; and all students have the information and knowledge required to understand college-related requirements and processes, make appropriate college-related choices, and navigate the complicated pathways into, across, and through higher education institutions" (Perna, 2015).*

Need for a comprehensive approach

These findings highlight the need for a comprehensive and integrated approach to providing guidance and resources to students. The following section provides findings regarding the resource categories identified above as well as brief descriptions of current initiatives.

Tutoring

Educational inequality begins early. Disadvantaged students, as a group, require academic remediation and tutoring throughout their K-12 schooling. As a result, these students are academically unprepared for post-secondary education and completing high school doesn't provide assurance of college-readiness.

Tutoring and remediation services are currently provided to high school students in a variety of different ways (e.g., private in-person tutoring, online tutoring, tutoring centers, afterschool tutoring programs, and peer-to-peer) offered by a variety of national, regional, and local organizations. Available tutoring services lack uniformity, and range widely in accessibility and effectiveness.

Effective tutoring programs exist. A recent study conducted by the University of Chicago Urban Education Lab demonstrated the positive impact of targeted tutoring on the academic performance of low-income and minority students. According to the study, African-American students participating in a tutoring intervention implemented by Match Education performed at a significantly higher level in mathematics over the course of a single academic year (Ingmire, 2014). According to a joint statement released by the Urban Education Lab team members:

"The impacts of the pilot intervention reported in this paper are large enough to raise the question of whether the field has given up prematurely on the possibility of improving academic outcomes for disadvantaged youth."

An increasing number of for-profit, commercial services currently offer private one-on-one tutoring in the full range of academic subjects as well as standardized test preparation. Commercial tutoring services employ professionally certified tutors (usually local school teachers) who provide individual instruction either in-person or online. These programs are recognized to be effective in improving students' academic performance and test-readiness. However, costs typically exceed the financial resources of most low-income families, ranging from $85 to $100 for private sessions.
Many of the tutoring services also maintain on-site tutoring centers, where teacher/tutors provide instruction to groups of students in a classroom setting. Fees are lower than private tutoring, however, these services do not provide students with personalized assessment, planning skills, and the personal encouragement needed to address the lack of confidence and direction that often limits the academic success of low-income students.

Many high schools offer their own after-school tutoring programs which are usually conducted by teachers in after school classroom hours and for no fee. School-based after-school tutoring programs typically do not provide students with private individualized assessment, instruction, planning and encouragement. However, tutoring class sizes are generally small and conducted by teachers who may have direct knowledge of students' academic performance and learning needs.

Peer-to-peer tutoring programs represent a more accessible and affordable model for low-income students. A variety of local, regional, and national organizations currently recruit and train academically advanced high school students to provide one-one-one, in-person tutoring to their peers in either school-based, after-school, or summer-program settings. The National Honor Society includes peer-to-peer tutoring as a requirement for member students, and a number of states and local communities have organized their own no-fee, peer-to-peer tutoring programs.

The need for student identification

A reported problem with many of the available tutoring services is the lack of identification and a bond between the tutor and the student. Tutors are often unaware or unable to address the unique challenges faced by low-income and disadvantaged students. Students who don't identify with and lack social connection to their peer tutor often report the experience to be unhelpful, demeaning, and reinforcing of their negative self-images.

Several of the experts interviewed observed that many programs self-described as offering mentoring services, in practice provide basic tutoring assistance as described above. Effective tutoring requires a 'positive alliance' to develop between the tutor and student and current programs are limited by an exclusive focus on the academic subject matter.

"Successful tutoring, whether individual or in groups, requires a keen understanding of the struggles that the student is experiencing. Tutoring is not only about helping the student arrive at the correct answer. It's about helping the student understand how to get to the answer and identifying where and why the student is running into problems."

Standardized Test Preparation

The importance of standardized test scores in the admissions decisions of colleges and universities is a major obstacle for low-income and disadvantaged students who are often intimidated and alienated by the testing process and unable to afford the cost of test preparation.

Many college admission offices rely on standardized tests to evaluate potential applicants to colleges and universities (Buckley, Letukas, & Wildavsky, 2017). A growing body of research indicates that student scores on the SAT and ACT are more effective at predicting the race, gender, and economic status of applicants than in predicting students' future academic performance. Standardized test questions and language have been critiqued as biased towards white and middle- and upper-class students from families with a history of college attendance and biased against low-income, minority, and first-generation college applicants (Geiser, 2015).

The overwhelming majority of U.S. colleges and universities continue to require standardized test results as part of the admission process. As a result, an entire industry of agencies offers in-person and/or online standardized test preparation and promising higher scores.

The best known of these services are Kaplan Test Prep and the Princeton Review, and both provide students with a series of one-on-one, in-person instruction sessions with highly skilled tutors. The cost of the services ($395 per package) exceeds the financial resources of low-income students and their families. These test prep services have been documented to be highly effective in increasing student scores. The success of test prep and the cost involved effectively perpetuate educational inequality and deepens the consequence of disadvantage.

High cost of Test Preparation

Additionally, and independent of test prep services, there are fees required to take standardized admissions tests ($52.20 for the SAT and $62.50 for the ACT). These fees represent a financial obstacle for low-income students and their families. The agencies administering the SAT and ACT now offer fee waivers for low-income 11th and 12th grade students. These waivers allow for more students to participate but they are limited to one test for the SAT and two for the ACT, placing low-income students at a comparative disadvantage to higher-income students who choose to take multiple tests to achieve a competitive score. Regardless of the limitations, the problem is compounded by a lack of access to counseling and many low-income students and their families are often unaware of the availability of fee waivers.

Reduced-fee options less effective

Increasingly, there are a number of free and reduced-fee options available for low-income students. In 2015, the College Board partnered with the Khan Academy, a web-based educational resource founded in 2006 as an alternative to fee-based test preparation and tutoring, to offer free online test preparation with video lessons in a variety of subject areas. The College Academy and the Khan Academy are currently working with local school districts and high school educators to integrate the online resource into classrooms, allowing teachers to monitor their students' progress and provide direct student feedback. The effectiveness and accuracy of the Khan Academy on-line resources have recently been questioned (Strauss, 2013, Danielson and Goldenberg, 2014; Strauss, 2015) and the value of these recent partnerships are now being closely scrutinized.

In March of 2018, the creators and administrators of ACT introduced ACT Academy, a free online platform to assist students preparing for the ACT standardized test. Following the College Board/Khan Academy model, the ACT Academy features sample tests, video instruction, and an online planning feature. ACT recently purchased OpenEd, an online resource used by approximately 15 percent of all U.S. teachers to facilitate the use of ACT Academy in the classroom. The effectiveness of the ACT Academy has not yet been assessed.

The following quote from a high school guidance counselor summarizes the perceived challenges faced by low-income students preparing for standardized college admissions tests.

"Standardized testing is a challenge. (Even when) students can take [the tests] for free, I still find they are not taken seriously, and students won't show up, since they didn't have to pay for it. Even when you take away the financial barrier, getting students there is not always successful. Disadvantaged students are also not as prepared in terms of prep classes. We offered a course, but only two to three students took it. It also hurts that the family does not always understand how important the testing is or they feel like it is an elite thing. In New York, students are also 'tested out' because there are so many tests they have to take. Students have to travel to a different school to take the SAT and even if the student is able to take the standardized test, they face an inherent barrier which tells them, 'You do not belong!'"

College Selection and Application

Undermatching

Low-income high school students in the U.S. typically experience difficulty selecting and applying for an appropriate college. According to one recent study, 41% of all postsecondary students "undermatch" in their postsecondary school selection, applying to colleges or universities beneath their demonstrated level of academic achievement (Smith, 2013). According to a number of recent studies, the phenomenon of "undermatching" is most prevalent among first-generation college students, particularly those from low-income families (Preston, 2016). High-achieving, higher-income students are twice as likely to apply to an elite or "selective" college than their high-achieving, low-income peers. Students from the lowest economic quartile comprise only 3% of the student population at "selective" colleges, compared to 72% of students from the highest economic quartile (Fain, 2013).

One factor that contributes to undermatching is a reported lack of encouragement and support from parents and other family members who often lack personal experience and understanding of the college selection and application process. One subject expert described her own experience seeking admission to college and later to graduate school:

The College Board has invested considerable resources to assist students in college selection. Established in 1899 and with a membership of more than 6,000 schools, universities, and other educational organizations, the College Board administers the SAT while also offering a wide range of programs and resources to assist in preparing for and selecting an appropriate college or university. The College Board's Advanced Placement Program provides special courses through which high school students can gauge their college preparedness and earn advance college credits, and the College Level Examination Program (CLEP), through which students can assess and demonstrate their academic abilities. Several of these charge fees which many low-income students cannot afford. As discussed above, there has been ongoing criticism of the cultural bias of the College Board's standardized tests and advanced placement programs (Preston, 2016). The conundrum for the College Board is that students are hesitant and mistrustful of using resources designed to help that are provided by the same institution that is perceived as the producer of one of the most significant barriers and obstacles.

"I was a first in my family to go to college, and while they were proud, I don't think they got it. When I told them that I was applying to graduate school, my grandfather said, 'I thought you passed the first time'."

The Obama administration created the College Scorecard in 2015 to assist low-income students and their parents in selecting an appropriate college or university. This tool allows students and parents to compare the cost and educational value of U.S. colleges and universities. The College Scorecard's value as a comparative tool for low-income students and their parents seeking to make decisions about which colleges or universities to attend has been debated since its introduction (Turner, 2015; McGuire, 2017).

In recent years, a variety of fee-based online services have emerged that provide sophisticated information, guidance, and self-assessment tools for

high school students preparing to apply for college. Common App is an online platform through which prospective college students can compose and submit essays and applications to more than 500 participating colleges and universities. Common App also provides students with access to a team of Virtual Counselors who directly respond to questions and concerns about the application process. CollegeVine features an online platform that enables college applicants to track the completion of college-application milestones, maintain a realistic list of college and university preferences, and interact with an online consultant. Common App, CollegeVine, and other sophisticated online college selection and application programs are fee-based services and prohibitively expensive for low-income students.

Underutilized resources

In 2015, the College Coalition, comprised of one-hundred and forty (140) member colleges and universities across the U.S., created Coalition App to provide low-income, under-resourced, and first-generation college applicants with a non-fee-based alternative to Common App, CollegeVine, and other fee-based resources. To date, however, Coalition App participants have reported a negligible impact on student applications. For the 2016-2017 academic year, Yale University reported only 317 Coalition App applications out of 32,900 applicants and Emory University reported 1,000 Coalition App users out of 23,694 applicants (Sandler, 2017).

Financial Assistance

The spiraling cost of college tuition represents the single greatest obstacle to applying to and attending college for many aspiring high school students from low-income families. Between 2008 and 2015, average tuition costs rose by thirty-four percent, with median incomes increasing by only two percent during the same period (Kolodner, 2018), reinforcing the financial barrier to college attendance.

The federal government has created an assortment of grants, loans and work programs to provide supplemental financial aid to students with "exceptional financial need," including Federal Pell Grants (the largest federal assistance program for low-income students with a maximum award of $5,920 for the 2017-2018 academic year), Federal Supplemental Educational Opportunity Grants, and Federal Work Study.
State governments also provide grant and scholarship programs as financial assistance for attending college. Unlike federal grant programs, in which funding is awarded strictly by need, criteria for state level assistance varies by state and is often merit-based.

Scarce and inaccessible financial resources

The resources currently available from federal and state financial assistance programs are far from adequate to meet the needs of most students, particularly those from low-income families. On average, students receiving Federal Pell Grants for the 2016-2017 academic year required an additional $12,000 in tuition (Kolodner, 2018). Additionally, more than 900,000 students from across the U.S. who were awarded state grants during the same period never received the expected financial assistance because the state agencies, many of which were facing draconian budget reductions, ran out of money before the grants were awarded. This is a particularly alarming trend for students from low-income families, who are often dependent on external financial assistance to cover tuition and related expenses.

Research indicates that federal and state funding is not reaching the majority of low-income students for which it is intended (Giancola, 2016). A 2011 National Bureau of Economic Research study reported suggested that the low "take-up rates" for federal college financial assistance are largely the result of the confusion and frustration that low-income students and parents experience in completing the Free Application for Federal Student AID (FAFSA) request form (Bettinger et al., 2011). The FAFSA form, which is also used in applying for many state-based grants, is sufficiently complex and confusing to have generated a cottage industry of fee-based services to assist with its completion and filing, a service that the majority of low-income students and families cannot afford.

An educator interviewed offered the following regarding the difficulty involved in understanding and completing the FAFSA request form:

"I have been in higher education for 35 years, and when I had to help my daughter complete the FAFSA, I didn't understand half of it."

In addition to the financial assistance provided by state and federal agencies, colleges and universities have developed their own initiatives to aid low-income students. Elite private colleges and universities, state universities, and community colleges have implemented tuition reduction programs. On the elite level, the Harvard Financial

Aid Initiative requires no tuition for academically qualified students from households with incomes below $65,000, with similar initiatives implemented at Yale University, Stanford University, Brown University, Columbia University, Princeton University, and Duke University. The benefits of these programs are restricted to "high-achieving" students, however, and are not available to other students from low-income families.

Similar to federal and state programs, university-based financial assistance and tuition relief programs also suffer from low use rates, particularly by high-achieving low-income students. According to a recent study published by the National Bureau of Education Research, the effectiveness of university-based programs targeting high-achieving low-income applicants is severely limited by an over-reliance on geographically based communication strategies, and information about the programs is disseminated to schools with traditionally high-concentrations of high-achieving students (Bettinger et al., 2011). The majority of high-achieving low-income students, who typically attend high schools and live in communities with lower concentrations of high academic achievement, never receive information about the programs and are unaware of university-based financial assistance or tuition relief.

Qualified Counseling

For the majority of high school students, the high school guidance counselor is the single most important resource for making decisions about college selection and application. The high school guidance counselor is currently the only individual equipped with the required information, knowledge and skills to assist students in navigating all of the challenges involved in the college selection and application process. In the current highly competitive college application environment, the majority of high school seniors lack the "college knowledge" required to make informed decisions about college selection, application and financial aid (Tierney and Garcia, 2011).

Shortage of Counselors

Research suggests that access and interaction with a high school counselor is a "significant predictor of college application rates" (Bryan et al., 2009). According to a 2016 report by the National Association for College Admissions Testing, students who seek the one-on-one advice of school counselors in the college preparation and application decisions are three times more likely to attend college and seven times more likely to seek financial assistance for college tuition (Velez, 2016).

Research also suggests that direct, one-on-one access to a qualified counselor is particularly important for low-income and minority high school students (Lapan, 2012; Marsico, et al., 2009). The school counselor is often the only available source of reliable information about colleges, application requirements, the availability of scholarships and other forms of financial assistance and other details involved in the college-application process.

Three critical factors currently limit the ability of guidance counselors to work effectively with low-income students who need their assistance in preparing for, applying to, and securing funding for college:

1. Family and Community Pressure. Many low-income and first-generation students do not apply to college as a result family and community pressure to "stay home" rather than attend college. As reported in an interview, low-income students who do attend college frequently fail to complete their initial year because of family and financial pressures 'tugging them back' toward their homes.

2. Negative Stigma attached to Counseling. There is strong negative stigma attached to counseling in many low-income families and communities, specifically recent immigrant communities. This stigma based on a widespread association of counseling with incompetence, dependency, and mental illness. Low-income and other disadvantaged students may feel as if they are failures or disappointments to their families if they seek the assistance of a school counselor for guidance and for dealing with academic or financial obstacles. Students also have difficulty trusting counselors because of their advanced education and association with school authorities.

3. Counselors are Stretched too Thin. The most pervasive and devastating problem facing students in need of quality counseling is limited access to counselors as a result of diminishing institutional support. According to a recent joint study by the National Association for College Admission Counseling (NACAC) and the American School Counselors Association (ASCA), the current ratio of students to counselor sin U.S. high schools is 482 to 1 (NACAC, 2016) — almost double the optimal model recommended by ASCA. The unreasonable workloads that counselors face is compounded by a range of competing

responsibilities that include: mental health counseling; career and trade preparation; in-house tutoring programs; assessing and assisting school learning; career counseling; job placement; crisis management; and conflict resolution.

"If a counselor with a case load of 400 students is suddenly confronted by a student suicide attempt, the demands of addressing the needs of the student and his or her family will inevitably — and understandably, given the counselor's already overburdened schedule — result in a number of other students not receiving the college counselling that they need."

Currently, funding to increase the numbers and availability of high school counselors is unlikely. The low ratio of counselors to students is the reality for the overwhelming majority of U.S. high schools. The lack of access to counselors combined with the need of guidance for low-income students to make informed decisions about college —underlies the critical need for additional resources to assist low-income students and their families in the college preparation and application process.

Mentoring

Qualified mentoring programs represent an obvious and effective means for helping low-income students address challenges and gain access to the resources and support they need.

The educational and developmental benefits of mentoring have been well documented in recent literature. Rhodes (2004) maintains that mentors can influence their mentees by improving social skills, cognitive abilities, emotional well-being and provide a positive role model. The mentor plays a significant role in assessing and directing student learning over time. Numerous studies have documented and confirmed the benefits of the mentor-student relationship to students' learning as well as their personal development and growth (Chen, Greenberger, Farruggia, Bush & Dong, 2003). Mentoring programs abound in the U.S. educational community. The current review identified more than 60 formal mentoring programs specifically designed to serve the needs of low-income and minority high school students.

According to Alan Mandell, College Professor of Adult Learning and Mentoring at SUNY's Empire State College:

"In 2018 -- as distinct from 1970 -- there are few places that don't have some kind of mentoring. The term is almost omnipresent in colleges, businesses, law offices, etc."

Although mentoring is ubiquitous, there's a noticeable lack of assessments or agreement regarding the quality and effectiveness of the mentoring programs available for low-income students. Several of the subject experts interviewed described a lack of consistency in the standards, priorities, and practices in many existing mentoring programs. Additionally, several questioned whether some of the self-defined mentoring programs (e.g., college recruitment programs providing minimal student assistance and tutoring services that promote themselves as mentoring programs without actually providing any of the essential elements of the mentoring relationship) should be considered mentoring programs at all.

A number of respected mentoring programs – such as Reality Changers, College Forward, Mind Matters, and Brilliant Pathway – have demonstrated the extraordinary value of effective mentoring for low-income students considering and preparing for college. These and other similarly effective mentoring programs exhibit a shared commitment to a critical set of characteristics of quality mentoring for low-income high school students identified and discussed below.

A number of recent studies have attempted to describe the essential characteristics of effective mentoring. Based on a review of the existing literature on educational mentoring, Ghosh (2013) identified 10 essential mentoring functions, including: encouraging reflection; coaching; assessing; role modeling; being a colleague/fellow learner; parenting; mediating; being a friend; and teaching.

Based on a review of the available literature on mentoring and interviews with educators and subject experts, we have identified five essential characteristics of effective mentoring programs and mentor-student relationships.

Five Characteristics of Effective Mentoring

1. *Reciprocity and Shared Learning*

An effective mentoring relationship involves genuine reciprocity and shared learning — not a hierarchy characterized by knowledge passed down from the mentor to the mentee.

Effective mentoring relationships presuppose mutual understanding and trust between the mentor and the student. Far more than a hierarchical transfer of knowledge and skills, the successful mentor-mentee relationship is a reciprocal process that provides valuable developmental opportunities for both the mentor and the student. Although mentoring is often explicitly considered to exist for the benefit of the mentee, in a positive relationship both parties share and learn from one another.

According to Bill Mayfield, a senior higher education consultant, the potential for reciprocity, shared understanding, and trust is frequently undermined by the hierarchical approach of many well-intentioned mentoring programs:

"In most cases, mentor means advisor/senior guide, someone to check with so you can navigate your way through an institution, who can serve as an institutional facilitator/ translator. The hierarchy is taken for granted. The strength in those models resides in those who have the knowledge to impart."

In contrast to this hierarchical model, positive mentoring relationships create opportunities for shared reflection, a transaction of ideas, and mutual development of knowledge and skills (Ramirez, 2012). The mentoring relationship provides opportunities for collaboration between the mentor and student and allows both to gain knowledge from each other (Lea, 2011). The willingness of the mentor to listen to and learn from the student is a crucial factor in the student's progressive openness and receptivity to the experience, knowledge, and skills that the mentor provides.

2. *Understanding and Assistance*

The second essential characteristic of an effective mentoring program is the mentor's ability to understand and assist appropriately on the full range of personal, social, familial, and financial challenges faced by low-income, first-generation, and other disadvantaged students.

The capacity to understand the complex, interrelated challenges typically faced by low-income students is the basis for mentors' decision making as to how and when to provide assistance to the students with whom they work. Effective mentoring engenders students' self-sufficiency to develop the skills, knowledge and self-confidence necessary for achieving their educational goals.

According to Dr. Mandel, a successful mentoring relationship encompasses more than aiding in the immediate challenges of academic achievement, college admissions, and securing adequate financial assistance.

"Mentoring of first-generation students is not [simply] academic. It includes social skills, cultural skills, issues of identity questions. The mentor helps the student answer 'transformative questions' such as: How do I think of myself as someone who can learn and offer anything?"

3. *A Non-deficit Approach*

An effective mentor identifies the student's skills and experience in overcoming adversity as strength. The student's unique life experiences are not treated as obstacles or disadvantages to be overcome.

Michael Merrill, Director of the LEARN Center at Rutgers University, observed that mentoring provided to low-income students can often be anything but positive:

"We often have the same philosophy in education as that of enterprise; we mentor by stress. We assume survival will kick in, and if it doesn't, they (students) are worthless. It is not a pretty picture. We set the stakes so high for students and give them so few resources, and then wonder why they are stressed and can't study and are not able to move forward."

Bill Mayfield similarly noted:

"To the student of need, there are key questions of 'How will I be valued?' and 'What will I get out of this?' They don't need or want to be talked down to."

Mentoring programs are frequently designed and implemented on the assumption that low-income, first-generation and other disadvantaged students are operating from a deficit – that the student is 'missing something' and that their experience (including school, community, and family situation) is something negative and undesirable, which must be overcome in order to succeed. Students are understandably resistant to information, advice, and mentoring strategies that tacitly portray their overall life experience in a negative light, without acknowledging the values and strengths derived from their experience.

Low-income and other disadvantaged students can benefit enormously by understanding that the characteristics and life experiences that they bring to the table represent an advantage to be used as they go forward — not simply a disadvantage to be overcome. As respondent Bill Mayfield observed:

"Toughness is key; the country club set scores great on standardized tests and protecting their own by keeping the 'different ones' out. The advantaged student doesn't possess the toughness of the street kid. In a real mentoring program, standards become higher. The disadvantaged student raises the bar for other disadvantaged students."

4. Student Identification with the Mentor

Effective mentoring is based on the student's positive identification with their mentor and/or mentoring program. Identification is not limited to race, ethnicity and gender. Identification includes life experience.

In a successful mentor-mentee relationship, the student identifies with the mentor based on shared life experiences. The mentor is understood to have faced and overcome similar challenges to the challenges that the student is facing.

According to Dr. Mandell, an effective mentor is one who can speak to the mentee's challenges using stories and references that are familiar and relevant to the mentee's own experience:

"[It's important that] a mentee is with a person who has been through that experience and that they can recognize their own struggles. For example, in a program for formerly incarcerated students. In those instances, the identity [between the mentor and mentee] makes a huge difference. It allows the mentee to recognize that it can be done."

Based on their own previous life experiences, effective mentors are able to reassure low-income students that they understand and respect the challenges and obstacles that they are facing and to persuade students that those obstacles can be overcome. According to Holly Morris, of the Washington State Charter Schools Alliance:

"The biggest need of disadvantaged students is to get them to see possibility. A mentor opens the student's eyes to see beyond what is in front of them. Most don't know how big the world is and what they could be doing in it. The second piece is preparing them to go into contexts where they will feel unfamiliar and unprepared."

Kristen Carey, a guidance counselor interviewed reported that an identification between mentor and student is particularly important in overcoming the resistance of family members to the student's college aspirations:

"Some parents want kids to succeed, and they encourage them. But I see a lot who don't want kids to go to college, who want them to stay home and are sometimes afraid of sending them off for even a short distance. This leads to a reluctance of the student to even apply to college, and I also see a lot of students who drop out and come back to the area. Mentors [who have faced and overcome] similar family situations can demonstrate for the student that 'you can get through it and continue.'"

5. *Commitment*

Effective mentoring requires mutual commitments between the mentor and student. Commitment may be manifest as length of time, intensity of involvement and/or simply adhering to a meeting schedule.

Recent studies indicate explicit and adhered to commitments between mentors and student are a major component of effective mentoring. Commitments of time, adherence to schedules and appointments, and agreed upon project completion facilitate learning and growth (Gray and Smith 2000). An increase in face- to-face contact allows mentees to receive higher quality consistent, genuine feedback. DuBois and Neville (1997) discovered that mentors who reported spending necessary time with their students felt a stronger emotional connection and perceived better relationship outcomes. Several recent students have demonstrated the correlation between allocating appropriate time and the effectiveness of the mentoring relationship (Herrera et al., 2007; Parra et al., 2002).

Need for a nationwide, coordinated mentoring program

In combination, the previously discussed characteristics – mutual trust, understanding and respect for the unique challenges faced by low-income students, positive and productive orientation toward students' life experiences, identification between mentor and student, and commitment to student success – are the foundations for mentoring to be an optimal experience for assisting low-income students. Given the current shortage of qualified high school counselors, mentors represent a viable alternative for helping low-income students navigate the complex and intimidating environment of college preparation, admissions, and funding – both by providing students with direct academic tutoring and support and by directing students to available programs and services of which they would otherwise be unaware.

While the effectiveness of quality mentoring is widely recognized throughout the educational community, the impact of mentoring programs on a nationwide level is limited both by the local scale of available programs and the lack of standards and methodologies across mentoring programs.

There's a clear need for a coordinated, nationwide mentoring strategy with uniform standards and practices and mentors who have the skills and knowledge to assist low-income students in meeting the challenges in selecting, applying, and succeeding in their postsecondary education, training and employment.

Research on AIME

AIME Program Overview and Effectiveness

AIME is a self-defined mentoring program providing a bridge from high school to positive post-secondary school pathways (university, technical training, or work) for disadvantaged and underrepresented youth.

Program Objectives and Goals

AIME's objectives and goals include:

- Providing mentoring as the core component of a program establishing a bridge from high school to university for underrepresented and disadvantaged youth; and
- By achieving this objective, AIME seeks to alleviate disadvantage and create a more equitable and caring world — characterized by inclusive economic opportunities for all citizens and a shift in societal values.

Program Structure

The AIME program provides a six-year, comprehensive "School of Life" program for students age 12-18, from grades 7-12 and continues for the first six months of post-secondary education, training or employment. See Figure 2 for a visual depiction of the connective tissue that AIME provides between Universities and high schools. The program is comprised of various components, including:

- developmental workshops on university campuses;
- free tutoring in schools;
- exposure to role models and thought leaders via in-person presentations and media resources;
- group mentoring sessions; and
- six months of post-graduation support.

Figure 2.

AIME's 'School of Life' structure, building a bridge between Universities and high schools to mentor the most disadvantaged kids out of inequality

Research and Program Effectiveness.

Descriptive and Explanatory

AIME has been a topic of research inquiry in Australia and program success is now well-documented. Multiple studies by leading Australian universities and researchers have provided a clear *description of the positive impact* of the AIME program on individuals, school cultures and society as a whole (Harwood et al., 2013; McMahon, Bodkin-Andrews, Priestly, & Harwood, 2013).

Australian research also includes in-depth, *explanatory inquiries* providing an understanding of the why and how – the mechanisms and dynamics by which AIME's goals are accomplished (Harwood, McMahon, O'Shea, Bodkin-Andrews, & Priestly, 2015; McMahon et al., 2017; O'Shea, Harwood, Kervin, & Humphry, 2013; O'Shea, McMahon, Priestly, Bodkin-Andrews, & Harwood, 2016; Priestly, Lynch, Wallace, & Harwood, 2015).

This powerful combination of ***descriptive findings*** (the *impact*) combined with studies yielding ***explanatory findings*** (the *how* and *why*) distinguishes the growing body of research on the AIME program's effectiveness.

Program Participation

Since its inception in 2005, fifteen thousand indigenous high school students and five thousand university students have participated in AIME.

Impact of AIME on rates of Indigenous student grade progression and high school completion

Research findings indicate that participation in AIME results in significantly higher rates of Indigenous students' school progression and Year 12 completion in comparison to non-AIME participant Indigenous students.

Additionally, Indigenous students participating in AIME achieve parity with non-Indigenous Australian students' progression and completion rates (Priestley, Lynch, Wallace, & Harwood, 2015; AIME, 2017; Harwood et al., 2013).

Research indicates that in 2014, indigenous students who participated in AIME had the same or higher progression rates from Years 10 and 11 and higher year 12 completion rates than the national rates for both non-Indigenous and Indigenous students

Table 2 (below) compares the progression and completion rates for AIME students, non-AIME Indigenous students, and non-Indigenous students in 2014.

More recent findings show a continued increase in the percentage of AIME students completing Year 12.

Table 2.

2014 Percentages of student progression in Years 10 through 12 by grade and completion rates for year 12 for AIME students compared with non-indigenous and Indigenous students

Year-on-year school progression rates	National Outcome Non-Indigenous Students (% 2014)	National Outcome Indigenous Students (% 2014)	AIME Students (% 2014)
Year 10 – 11 Progression	94.7	82.9	94.8
Year 11 – 12 Progression	88.1	73.1	87.6
Year 12 Completion	86.5	58.5	93.2

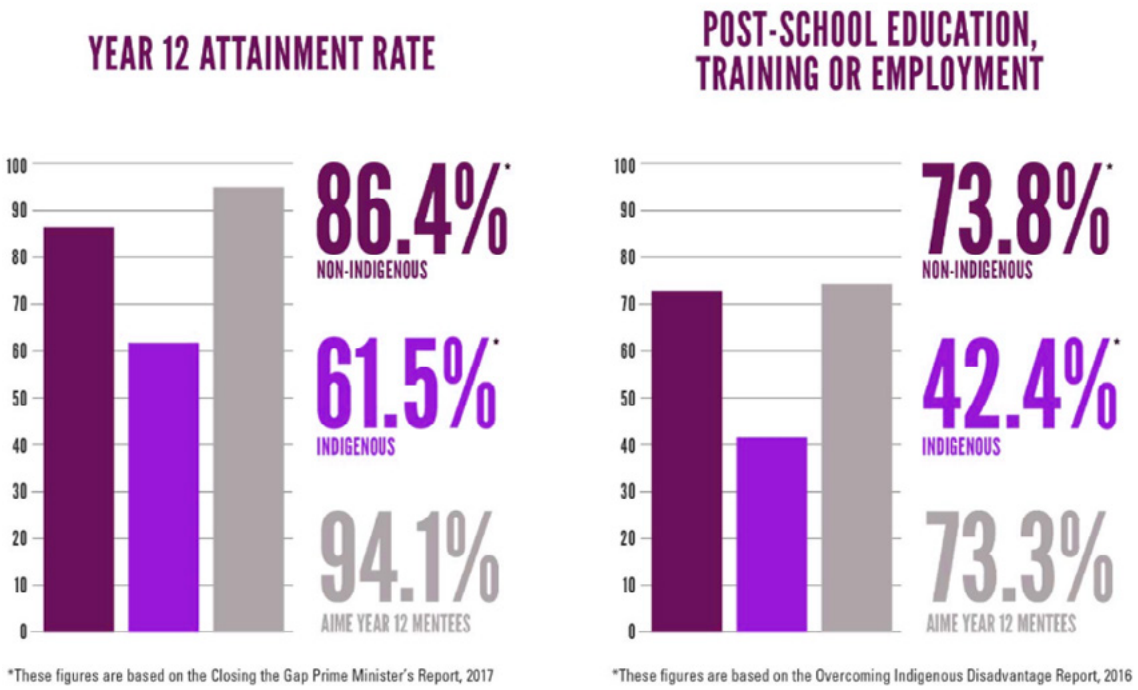
(Priestly et al., 2015)

Positive post-secondary pathways

In regard to post-secondary education, training or employment AIME graduates are on par with their non-Indigenous peers (73.8% to 73.3%), but only 42.4% of Indigenous graduates who have not participated from AIME continued on to post-school education, training or employment. Both the increase in Year 12 completion in 2016 and rates of post-school education, training and employment are presented below in Figure 3.

Figure 3.

Year 12 Graduation Rate and Percentages of AIME Students in Post-School Education, Training or Employment Compared with Non-Indigenous and Indigenous Students in Australia Not Participating in AIME as at 2016



Closing the Attainment Gap

Independent studies report that AIME has significantly closed the gap between non-Indigenous and Indigenous students' level of educational attainment. The most recent data is even more promising.

In 2017, seventy-four percent (74%) of non-Indigenous 17-24-year-old young adults were employed, attended university or received further training as compared to the significantly lower rate of forty-two percent (42%) for Indigenous 17-24-year-old young adults who had not participated in AIME. In 2017, 76% of Indigenous students who participated in the AIME program transitioned into employment, university attendance or further training, placing them on par with their non-Indigenous peers (AIME 2018).

Economic Return on Investment

Findings indicate that AIME provides an increasing positive economic return on investment.

In 2013 KPMG found that AIME produced a $7 return to the Australian economy for each $1 of investment (KPMG, 2013). In 2017, in the context of an exponential increase in the numbers of students served and a concomitant increase in spending, KPMG study reports that AIME increased its ROI to $9 for each $1 invested (KPMG, 2018).

The impact of AIME on Mentors

Research indicates that AIME is effective in achieving its core goals regarding mentors (O'Shea et al., 2013).

In a 2016 study, AIME mentors, overall, reported gains in cultural and social awareness (O'Shea et al., 2016). Additionally, non-Indigenous mentors, many with limited experience with Indigenous people prior to working with AIME, reported increased respect for Indigenous culture and customs. Other important outcomes for all mentors included positive gains in:

- Desire to implement constructive changes in their communities
- Communication skills
- Confidence
- Leadership skills
- Teamwork skills
- Ethical responsibility
- Initiative
- Problem solving skills
- Integrity
- Creativity
- Critical thinking skills

The impact of AIME on Mentees

In addition to increasing rates of class progression, high school completion and transition to post-secondary positive pathways, research indicates that AIME has a positive impact on mentees' social-emotional development and skill and knowledge acquisition.

A 2012 study (Harwood et al., 2013) indicated that AIME had a positive impact on mentees':

- Strength and resilience;
- Pride in being Indigenous;
- Ability to make strong connections with Indigenous peers, role models and culture;
- Aspirations and engagement for finishing school; and
- Aspirations for continuing their education.

Results from the 3-year Partnership Project completed in 2016 indicate that the AIME program:

- Creates relationships and a culturally safe space that supports mentees' engagement in the program;
- Is effective in improving mentees' academic self-perceptions and motivation;
- Significantly increased the mentees' sense of self-esteem, school confidence and cultural confidence at school;
- Promotes stronger study habits and aspirations; and
- Helps mentees value themselves and their culture within the learning environment.

Community benefits

The combined findings of AIME's effectiveness indicate a positive impact on a social level as well as on the level of the individual student. Educators report an increase in student school success and engagement result in healthier, more conflict-free and supportive educational and community environments.

Understanding AIME's Effectiveness — Explanatory Findings

Several studies have documented the impact and effectiveness of different aspects of AIME's programmatic structure. This section presents the components found to be the basis for the programs' effectiveness.

Unique Structure of the AIME Program

Within the "School of Life" framework, AIME has a unique structure divided into three delivery modes:

the Theatre of Education at college campuses, tutor squads in the schools, and coaching, career support and post-school transition support (Priestly et al., 2015).

Students attend developmental workshops at university campuses in which they work with mentors while presenters deliver the content of the workshops. In this context, mentors and mentees are sharing an educational experience. This allows for a peer-to-peer experience instead of a one-way flow from "teacher" to "student." (McMahon et al., 2017)

Workshops include a personal component, in which presenters share the parts of their personal stories that are relevant to the goals of AIME, and students are also asked to share their stories (McMahon et al., 2017).

University mentors travel to schools for multiple school year visits as members of tutor squads. Mentors help with homework, study plans, and other needed assistance.

After graduation, AIME works with corporate and university partners to find post-school opportunities for their mentees. They also provide mentoring support and encourage mentees at university to become AIME mentors.

The structure of the AIME program provides a unique and culturally safe learning context that encourages the formation of strong bonds between mentors and mentees while boundaries assuring personal safety and engendering self-reliance are strictly maintained. Socializing within mentor and mentee peer groups is encouraged and socializing between mentors and mentees outside of AIME activities is prohibited. In many ways, from a psychological perspective, the collective community merges as a support system and involvement with the AIME program functions similarly as in a one-to-one relationship.

In addition to the above characteristics, AIME is conceived of by its staff and participants as a social movement with the goal of eliminating inequality of opportunity. The organization and its sponsors hold events like "Hoodie Day," in which staff, mentors and mentees participate together. Through its goals and activities AIME encourages the formation of a strong collective identity that provides a sense of belonging and solidarity to students who might otherwise feel isolated in their attempts to continue their education.

A non-deficit approach to mentoring

AIME does not adhere to the traditional deficit approach to understanding and working with struggling and disadvantaged students. The deficit approach characterizes disadvantaged students as lacking 'something' that needs to be acquired, including motivation, skills, and knowledge. AIME views students as having developed and acquired strong and successful skills that are necessary in facing and overcoming the barriers, hardships and challenges associated with disadvantage. The AIME goal is to help mentees identify and direct existing strengths in the service of productive life goals (Harwood et al., 2015). In this context, mentors are trained to help students identify and express their aspirations and mentees are viewed as containing within themselves the resources to imagine and create successful and fulfilling lives. Mentors engage in open-ended discussions with mentees about their interests and encourage them to explore possibilities for future study or training.

Philosophy of pride and empowerment

AIME was founded by an Indigenous student for Indigenous students, and AIME's curriculum was developed to encourage cultural pride and highlight the importance of overcoming prejudice and hardship to achieve both educational and personal goals.

Students' Indigenous heritages and their individual experiences are conceptualized as a source of strength that they can draw on. In this context, the relationship between mentors and mentees are expected to be egalitarian and respectful. Students report that these qualities of the relationship enable their engagement with the program. Building this relationship between mentor and mentee is a critical part of AIME's approach. Both mentors and mentees are asked to talk about who they are and where they come from. They are also asked to share their stories (McMahon et al., 2017).

High expectations for all participants

AIME incorporates high expectations into its program.

AIME includes a contract between the mentees and the AIME program, staff and volunteers. The contract is discussed in the first session of the program and covers topics such as respect, responsibilities during AIME sessions, safety rules about contact with university mentors and how mentees behave on the university campus. They also agree to stay in school and to attend all AIME sessions.

The high expectations of AIME mentees are evidenced by the active role that they are expected to play in AIME sessions. Mentees are expected to "step up" and take risks such as writing and

performing their own rap songs, dancing, or giving speeches. AIME presenters explain to mentees that they will need to learn how to present themselves to potential employers (Harwood et al., 2015).

No shame at AIME

Many children are shamed by their peers in young childhood, before they can understand that the children who try to shame them are wrong to do so.

In Australia, Indigenous people have been historically shamed and mistreated by racist Australians, just as many groups (African-Americans, Latinos, Asians, others) are shamed by racist people and practices in the United States. In some cases, schools have participated in shaming students who are from minority cultural and/or racial backgrounds.

The concept of shame that AIME puts forth is of something to overcome; it comes from not accepting ourselves because our environment doesn't value us. Shame is not compatible with learning; in order to learn students need to feel safe and able to take risks (American Institutes for Research, 2016). Research is currently being conducted on the effects of AIME's emphasis on overcoming shame on mentees. Based on preliminary findings, this emphasis is important and helpful to mentees.

Conclusions

This White Paper provides a clear understanding of the challenges in achieving educational equality in the U.S. Arriving at an opportune time, the AIME model offers a solution. AIME is a social movement created by the very people that it is meant to serve. The AIME implementation model does not involve creating an organizational superstructure and there is no cost for the disadvantaged student user.

Importantly, the AIME program avoids the problems that plague the entire landscape of well-intended resources for disadvantaged youth in the U.S. The volunteer student mentors, using their own experience in overcoming adversity, comprise an ideal resource. There's no barrier to identification and the necessary understanding and compassion required for effective mentoring arises organically from the shared life experiences. The structure of the program is designed explicitly to engender the development of mentees' self-sufficiency and agency. The AIME program requires no investment in new resources.

The case for enthusiastic support and implementation of AIME in the U.S. is strong, evidence-based and multi-faceted. The AIME model is prescient and represents a confluence of need, imagination and innovation. AIME can be viewed from many perspectives. This White Paper highlights those dimensions of AIME most relevant for meeting the educational needs of disadvantaged youth in the U.S. AIME does not attempt to recreate existing resources; it is equipped to harness a wide range of resources and potentiate their effectiveness. AIME is cost-effective and scalable. AIME's strength is a characteristic that can't be purchased or manufactured. AIME is the tangible expression of its underlying values — kindness, equality, empathy, and a deep respect for the extraordinary efforts of individuals and communities in overcoming hardship and adversity. The overriding strength of AIME from the perspective of the authors is that it exists solely to achieve its stated mission.

AIME was born, developed, and lives to serve disadvantaged students, and by doing so, it achieves its goal of equality.

Appendix A: References

AIME Mentoring. (2018). *A Year of Kindness: from AIME 2017* (Annual Report). AIME. Retrieved from https://aimementoring.com.

AIME Mentoring. (2017). *2016 Annual Story* (Annual Report). AIME. Retrieved from https://aimementoring.com

Allen, T. D., & Eby, L. T. (Eds.). (2010). Best practices for formal youth mentoring. In *The Blackwell Handbook of Mentoring: A Multiple Perspectives Approach*. Malden, MA: Wiley-Blackwell.

Allen, T., Eby, L., & Lentz, E. (2006). Mentorship behaviors and mentorship quality associated with formal mentoring programs: Closing the gap between research and practice. *Journal of Applied Psychology*, *91*(3), 567–578. https://doi.org/10.1037/0021-9010.91.3.567

Allen, Tammy D., Russell, J. E. A., & Maetzke, S. B. (2016). Formal Peer Mentoring: Factors Related to Proteges' Satisfaction and Willingness to Mentor Others. *Group & Organization Management*, *22*(4), 488–507. https://doi.org/10.1177/1059601197224005

Allen, T.D., McManus, S. E., & Russell, J. E. A. (1999). Newcomer socialization and stress: Formal peer relationships as a source of support. *Journal of Vocational Behavior*, *54*(3), 453–470.

American Institutes for Research. (2016, February 16). Beyond Shame and Blame in the Classroom [Text]. Retrieved August 3, 2018, from https://www.air.org/resource/beyond-shame-and-blame-classroom

Bettinger, E. P., Long, B. T., Oreopoulos, P., & Sanbonmatsu, L. (2009). *The Role of Simplification and Information in College Decisions: Results from the H&R Block FAFSA Experiment* (Working Paper No. 15361). National Bureau of Economic Research. https://doi.org/10.3386/w15361

Bettinger, E. P., Long, B. T., Oreopoulos, P., & Sanbonmatsu, L. (2012). The Role of Application Assistance and Information in College Decisions: Results from the H&R Block Fafsa Experiment*. *The Quarterly Journal of Economics*, *127*(3), 1205–1242. https://doi.org/10.1093/qje/qjs017

Bodkin-Andrews, G., McMahon, S., Harwood, V., & Hogan, M. (2015). Culturally appropriate pathways to enhancing Aboriginal and Torres Strait Islander students' self-perceptions: Findings from the AIME mentoring program. Presented at the Australian Association for Research in Education, Adelaide, Australia.

Bowman, N. A., Kim, S., Ingleby, L., Ford, D. C., & Sibaouih, C. (2018). Improving College Access at Low-Income High Schools? The Impact of GEAR UP Iowa on Postsecondary Enrollment and Persistence. *Educational Evaluation and Policy Analysis*, *40*(3), 399–419. https://doi.org/10.3102/0162373718778133

Bryan, J., Holcomb-McCoy, C., Moore-Thomas, C., & Day-Vines, N. (2009). Who sees the school counselor for college information? A national study. *Professional School Counseling*, *12*(4).

Buchmann, C., Condron, D. J., & Roscigno, V. J. (2010). Shadow Education, American Style: Test Preparation, the SAT and College Enrollment. *Social Forces*, *89*(2), 435–461. https://doi.org/10.1353/sof.2010.0105

Buckley, J., Letukas, L., & Wildavsky, B. (2017). *Measuring Success: Testing, Grades, and the Future of College Admissions*. Baltimore, MD: Johns Hopkins University Press.

Burd, S., Fishman, R., Keane, L., Habbert, J., Barrett, B., Dancy, K., … Williams, B. (2018). *Decoding the Cost of College: The Case for Transparent Financial Aid Award Letters* (p. 38). Washington D.C.: New America.

Cahill, H. A. (1996). A qualitative analysis of student nurses' experiences of mentorship. *Journal of Advanced Nursing*, *24*(4), 791–799.

Capizzi, L., Hofstetter, C. H., Mena, D., Duckor, B., & Hu, X. (2017). Promoting Low-Income Students' College Readiness, Well-Being, and Success: A GEAR UP Counseling Program Study. *Journal of School Counseling*, *15*(3), 1–26.

Castleman, B. L., Page, L. C., & Schooley, K. (2014). The Forgotten Summer: Does the Offer of College Counseling after High School Mitigate Summer Melt among College-Intending, Low-Income High School Graduates? *Journal of Policy Analysis and Management*, *33*(2), 320–344. https://doi.org/10.1002/pam.21743

Cataldi, E. F., Bennett, C. T., Chen, X., & RTI International. (2018). *First-Generation Students: College Access, Persistence, and Postbachelor's Outcomes* (Statistics in Brief No. NCES 2018-421) (p. 31). Washington D.C.: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

Chandler, P., Harwood, V., O'Shea, S., Bodkin-Andrews, G., Priestly, A., & McMahon, S. (2015). Smashing the gap: Indigenous Australians accessing and transitioning to university the AIME way. Presented at the Equity Practitioners in Higher Education Australasia (EPHEA) Conference, Geelong, Australia.

Chandler, Paul, Shea, S. O., & Harwood, V. (2015, September 24). Getting students into uni is one thing, but how to keep them there? Retrieved August 4, 2018, from http://theconversation.com/getting-students-into-uni-is-one-thing-but-how-to-keep-them-there-47933

Chapman, C., Laird, J., Ifill, N., Kewal-Ramani, A., & National Center for Education Statistics, E. (2011). *Trends in High School Dropout and Completion Rates in the United States: 1972-2009. Compendium Report. NCES 2012-006* (Numerical/Quantitative Data No. ED513692) (p. 108). National Center for Education Statistics. Retrieved from http://ies.ed.gov/pubsearch/pubsinfo.asp?pubid=2012006

Chen, C., Greenberger, E., Farruggia, S., Bush, K., & Dong, Q. (2003). Beyond parents and peers: The role of important non-parental adults (VIPS) in adolescent development in China and the United States. *Psychology in the Schools*, *40*(1), 35–50. https://doi.org/10.1002/pits.10068

Chen, G. (2018, April 6). Tutoring Programs for High School Students. Retrieved August 9, 2018, from https://www.publicschoolreview.com/blog/tutoring-programs-for-high-school-students

Clotfelter, C. T., Hemelt, S. W., & Ladd, H. F. (2016). *Multifaceted Aid for Low-Income Students and College Outcomes: Evidence from North Carolina* (IZA Discussion Paper No. 9888) (p. 57). Bonn, Germany: Institute for the Study of Labor.

Covaleskie, J. F. (2014). What Good Is College? The Economics of College Attendance. *Philosophical Studies in Education: Proceedings Of The Annual Meeting Of The Ohio Valley Philosophy Of Education Society*, *45*, 93–101.

Danielson, C., & Goldenberg, M. P. (2012, July 27). Does the Khan Academy know how to teach? Retrieved August 9, 2018, from https://www.washingtonpost.com/blogs/answer-sheet/post/how-well-does-khan-academy-teach/2012/07/25/gJQA9bWEAX_blog.html

Day, R., & Allen, T. (2004). The Relationship between Career Motivation and Self-Efficacy with Protégé Career success. *Psychology Faculty Publications*, *64*(1), 72–91. http://dx.doi.org/10.1016/S0001-8791(03)00036-8

Doerschuk, P., Bahrim, C., Kruger, J., & Mann, J. (2016). Closing the Gaps and Filling the STEM Pipeline: A Multidisciplinary Approach. *Journal of Science Education & Technology*, *25*(4), p682-695; 14 pages. https://doi.org/10.1007/s10956-016-9622-8

Drotos, S., & Cilesiz, S. (2016). Shoes, Dues, and Other Barriers to College Attainment: Perspectives of Students Attending High-Poverty, Urban High Schools. *Education and Urban Society*, *48*(3), 221–244. https://doi.org/10.1177/0013124514533793

DuBois, D. L., & Neville, H. A. (1997). Youth mentoring: Investigation of relationship characteristics and perceived benefits. *Journal of Community Psychology*, *25*(3), 227–234. https://doi.org/10.1002/(SICI)1520-6629(199705)25:3<227::AID-JCOP1>3.0.CO;2-T

Ensher, E. A., Heun, C., & Blanchard, A. (2003). Online mentoring and computer-mediated communication: New directions in research. *Journal of Vocational Behavior*, *63*(2), 264–288. https://doi.org/10.1016/S0001-8791(03)00044-7

Fain, P. (2016, January 12). High-achieving, low-income students remain rare at the most selective colleges. Retrieved August 9, 2018, from https://www.insidehighered.com/news/2016/01/12/high-achieving-low-income-students-remain-rare-most-selective-colleges

Federal Interagency Forum on Child and Family Statistics. (2017). *America's Children: Key National Indicators of Well-Being, 2017* (Numerical/Quantitative Data; Reports - Evaluative No. ED577338) (p. 228). Federal Interagency Forum on Child and Family Statistics. Retrieved from https://eric-ed-gov.avoserv2.library.fordham.edu/?id=ED577338

Geiser, S. (2015). *The Growing Correlation Between Race and SAT Scores: New Findings from California by Saul Geiser* (Research and Occasional Papers Series). Berkeley, CA: University of California Center for Studies in Higher Education. Retrieved from https://cshe.berkeley.edu/publications/growing-correlation-between-race-and-sat-scores-new-findings-california-saul-geiser

Ghosh, R. (2013). Mentors Providing Challenge and Support: Integrating Concepts from Teacher Mentoring in Education and Organizational Mentoring in Business. *Human Resource Development Review*, *12*(2), 144–176. https://doi.org/10.1177/1534484312465608

Giancola, J., & Kahlenberg, R. D. (2016). *True Merit: Ensuring Our Brightest Students Have Access to Our Best Colleges and Universities*. Jack Kent Cooke Foundation. Retrieved from https://www.jkcf.org/research/true-merit-ensuring-our-brightest-students-have-access-to-our-best-colleges-and-universities/

Gibbs, R. W. (2000). Irony in Talk Among Friends. *Metaphor and Symbol*, *15*(1–2), 5–27. https://doi.org/10.1080/10926488.2000.9678862

Gray, M. A., & Smith, L. N. (2000). The qualities of an effective mentor from the student nurse's perspective: findings from a longitudinal qualitative study. *Journal of Advanced Nursing*, *32*(6), 1542–1549.

Greene, J. P., Forster, G., & Manhattan Institute, N. Y., NY. (2003). *Public High School Graduation and College Readiness Rates in the United States* (p. 32). Center for Civic Innovation; http://www.manhattan-institute.org. Retrieved from https://eric-ed-gov.avoserv2.library.fordham.edu/contentdelivery/servlet/ERICServlet?accno=ED498138

Gunn, D. (2016, May 11). Making College Accessible to Low-Income Students Is About More Than Just Tuition. *Pacific Standard*. Retrieved from https://psmag.com/news/making-college-accessible-to-low-income-students-is-about-more-than-just-tuition

Harwood, V., Chandler, P., O'Shea, S., & McMahon, S. (2016). Community benefits from university students mentoring in the Australian Indigenous Mentoring Experience program. Presented at the Universities Australia Conference, Canberra, Australia.

Harwood, V., Chandler, P., O'Shea, S., McMahon, S., & Priestly, A. (2016). "It is the best think you can do at uni": How volunteering as an AIME mentor enhances university students' learning and positively impacts their community. Presented at the STARS, Perth, Australia.

Harwood, V., McMahon, S., Chandler, P., O'Shea, S., McKnight, A., Bodkin-Andrews, G., & Priestly, A. (2016). Best practice in online remote mentoring: iSee online mentoring with young people in remote settings. Presented at the First in Family National Forum, Wollongong, NSW.

Harwood, Valerie, Chandler, P., Bodkin-Andrews, G., McKnight, A., O'Shea, S., McMahon, S., … Priestly, A. (2016). Understanding the achievements of the Australian Indigenous Mentoring Experience (AIME). Presented at the Symposium at AARE, Melbourne.

Harwood, Valerie, McMahon, S., Chandler, P., O'Shea, S., McKnight, A., Bodkin-Andrews, G., & Priestly, A. (2016). Focus on AIME Mentoring. Presented at the First in Family National Forum, Wollongong, NSW.

Harwood, Valerie, McMahon, S., O'Shea, S., Bodkin-Andrews, G., & Priestly, A. (2015). Recognising aspiration: the AIME program's effectiveness in inspiring Indigenous young people's participation in schooling and opportunities for further education and employment. *The Australian Educational Researcher*, *42*(2), 217–236. https://doi.org/10.1007/s13384-015-0174-3

Harwood, Valerie, O'Shea, S., Clapham, K., Wright, J., Kervin, L., Humphry, N., … Bodkin-Andrews, G. (2013). Final Report: Evaluation of the AIME Outreach Program. *Australian Health Services Research Institute*. Retrieved from http://ro.uow.edu.au/ahsri/216

Hausmann, L., Schofield, J., & Woods, R. (2007). Sense of Belonging as a Predictor of Intentions to Persist Among African American and White First-Year College Students. *Research in Higher Education*, *48*(7), p803-839, 37p. https://doi.org/10.1007/s11162-007-9052-9

Hernandez, T. E. (2018, May 23). Abolish standardized testing for college admissions. Retrieved August 12, 2018, from https://pullias.usc.edu/blog/theresa-e-hernandez-huffington-post-abolish-standardized-testing-college-admissions/

Herrera, C., Grossman, J. B., Kauh, T. J., Feldman, A. F., & McMaken, J. (2007). *Making a Difference in Schools: The Big Brothers Big Sisters School-Based Mentoring Impact Study*. Public/Private Ventures.

Hoxby, C., & Turner, S. (2013). *Expanding College Opportunities for High-Achieving, Low-Income Students | SIEPR* (Working Paper No. 12–014). Stanford, CA: Stanford Institute for Economic Policy Research. Retrieved from https://siepr.stanford.edu/research/publications/expanding-college-opportunities-high-achieving-low-income-students

Hussey, K. A., & Katz, A. N. (2006). Metaphor Production in Online Conversation: Gender and Friendship Status. *Discourse Processes: A Multidisciplinary Journal*, *42*(1), 75–98.

Ingmire, J. (2014, January 27). Targeted tutoring can reduce 'achievement gap' for CPS students, study finds. *UChicago News*. Retrieved from https://news.uchicago.edu/story/targeted-tutoring-can-reduce-achievement-gap-cps-students-study-finds

iSee virtual mentoring. (2016). *Real mentoring in a virtual world: University students mentoring people in remote communities*. Retrieved from https://www.youtube.com/watch?v=PgOJhIhbg-0&feature=youtu.be

Johnstone, A., O'Shea, S., Harwood, V., Chandler, P., McMahon, S., Bodkin-Andrews, G., & Priestly, A. (2015). The university and the AIME learning environment: Inspiring and supporting Indigenous learners on campus. Presented at the National Association of Enabling Educators of Australia, Sydney, Australia.

Karcher, M. (2007). *Cross-Age Peer Mentoring. Research in Action. Issue 7*. MENTOR. Retrieved from https://eric.ed.gov/?id=ED502220

Kervin, L., McMahon, S., O'Shea, S., & Harwood, V. (2014). Digital Storytelling: Capturing the Stories of Mentors in Australian Indigenous Mentoring Experience. *Sage Research Methods Cases*. Retrieved from http://methods.sagepub.com/case/digital-storytelling-mentors-australian-indigenous-mentoring-experience

Kolodner, M. (2018, May 23). Eligible for financial aid, almost one-third of students never get it. Retrieved August 12, 2018, from https://hechingerreport.org/eligible-for-financial-aid-almost-one-third-of-students-never-get-it/

KPMG. (2018). *Economic Evaluation of the AIME Program Final Report*. AIME, Government Advisory Services.

KPMG. (2013). *Economic Evaluation of the Australian Indigenous Mentoring Experience Program Final Report*. Australian Indigenous Mentoring Experience (AIME), Government Advisory Services.

Kram, K. E., & Isabella, L. A. (1985). Mentoring Alternatives: The Role of Peer Relationships in Career Development. *The Academy of Management Journal*, *28*(1), 110–132. https://doi.org/10.2307/256064

Kuh, G., Cruce, T., Shoup, R., Kinzie, J., & Gonyea, R. (2008). Unmasking the Effects of Student Engagement on First-Year College Grades and Persistence. *The Journal of Higher Education*, *79*(5), 540–563.

Lapan, R. T. (2018). Comprehensive School Counseling Programs: In Some Schools for Some Students but not in all Schools for All Students: *Professional School Counseling*. https://doi.org/10.1177/2156759X1201600201

Laverick, D. M. (2016). *Mentoring Processes in Higher Education*. Springer International Publishing. Retrieved from //www.springer.com/us/book/9783319392158

Lea, Y. (2011). When the student is ready, the teacher will appear. *International Journal of Learning*, *18*(1), 259–268.

Marsico, M., & Getch, Y. Q. (2009). Transitioning Hispanic Seniors from High School to College. *Professional School Counseling*, *12*(6), 2156759X0901200610. https://doi.org/10.1177/2156759X0901200610

McFarland, J., Hussar, B., de Brey, C., Snyder, T., & Wang, X. (2017). *The Condition of Education 2017. NCES 2017-144* (No. 2017–144) (p. 386). National Center for Education Statistics.

McFarland, J., Stark, P., & Cui, J. (2016). Trends in High School Dropout and Completion Rates in the United States: 2013. Compendium Report. NCES 2016-117. *National Center for Education Statistics*.

McGuire, P. (2015, September 13). College Scorecard Sandbags Equity in Higher Education. Retrieved August 9, 2018, from https://www.huffingtonpost.com/patricia-mcguire/college-scorecard-sandbag_b_8129780.html

McMahon, C., & Avery, C. (2013). *The Missing "One-Offs": The Hidden Supply of High-Achieving, Low-Income Students* (Brookings Papers on Economic Activity). The Brookings Institution. Retrieved from https://www.brookings.edu/wp-content/uploads/2016/07/2013a_hoxby.pdf

McMahon, S., Bodkin-Andrews, G., Priestly, A., & Harwood, V. (2013). AIM(E) for completing school and university: Analysing the strength of the Australian Indigenous Mentoring Experience. In *Seeding Success in Indigenous Australian Higher Education* (Vol. 14, pp. 113–134). Emerald Group Publishing Limited. https://doi.org/10.1108/S1479-3644(2013)0000014005

McMahon, S., Harwood, V., Bodkin-Andrews, G., O'Shea, S., McKnight, A., Chandler, P., & Priestly, A. (2017). Lessons from the AIME approach to the teaching relationship: valuing biepistemic practice. *Pedagogy, Culture and Society*, *25*(1), 43–58. https://doi.org/10.1080/14681366.2016.1214169

Murray, N., Harwood, V., & Brown, L. (2016). Promoting Educational Futures: LEAD MY LEARNING and the Australian Indigenous Mentoring Experience (AIME). Presented at the Presentation at the University of Auckland, New Zealand.

National Association for College Admission Counseling, & American School Counselor Association. (2016). *State-by-State Student-to-Counselor Ratio Report: 10-Year Trends* (p. 57).

National Centre for Student Equity in Higher Education. (2017, May 2). Virtual Mentoring Potential: exploring possibilities for extending the reach of campus-based mentoring programs. Retrieved August 4, 2018, from https://www.ncsehe.edu.au/virtual-mentoring-potential-exploring-possibilities-for-extending-the-reach-of-campus-based-mentoring-programs/

National Student Clearinghouse, R. C. (2017). *First Year Persistence and Retention Snapshot Report* (No. ED580292) (p. 12). Retrieved from https://nscresearchcenter.org/wp-content/uploads/SnapshotReport28a.pdf

O'Shea, S., Chandler, P., Harwood, V., McMahon, S., & Priestly, A. (2014). AIME and the University of Wollongong. In *Partnerships in Education* (pp. 62–64).

O'Shea, S., Harwood, V., Kervin, L., & Humphry, N. (2013). Connection, Challenge, and Change: The Narratives of University Students Mentoring Young Indigenous Australians. *Mentoring & Tutoring: Partnership in Learning*, *21*(4), 392–411. https://doi.org/10.1080/13611267.2013.855863

O'Shea, S., McMahon, S., Priestly, A., Bodkin-Andrews, G., & Harwood, V. (2016). 'WE ARE HISTORY IN THE MAKING AND WE ARE WALKING TOGETHER TO CHANGE THINGS FOR THE BETTER': EXPLORING THE FLOWS AND RIPPLES OF LEARNING IN A MENTORING PROGRAMME FOR INDIGENOUS YOUNG PEOPLE. *Education as Change*, *20*(1), 59–84. https://doi.org/10.17159/1947-9417/2016/558

Parra, G. R., DuBois, D. L., Neville, H. A., Pugh-Lilly, A. O., & Povinelli, N. (2002). Mentoring relationships for youth: Investigation of a process-oriented model. *Journal of Community Psychology*, *30*(4), 367–388. https://doi.org/10.1002/jcop.10016

Peak, C. (2016, November 29). The Test-Prep Program That Helps Low-Income Students Get to College. Retrieved August 9, 2018, from http://nationswell.com/collegespring-test-prep/

Perna, L. (2015). Improving College Access and Completion for Low-Income and First-Generation Students: The Role of College Access and Success Programs. *GSE Publications*. Retrieved from https://repository.upenn.edu/gse_pubs/301

Perna, L., & Jones, A. P. (Eds.). (2013). *The State of College Access and Completion: Improving College Success for Students from Underrepresented Groups*. Routledge Taylor & Francis Group.

Preston, J. (2016, May 3). Mentors helping students prepare for college: More than just making the grade. Retrieved August 9, 2018, from https://chronicle.umbmentoring.org/mentors-helping-students-prepare-for-college-more-than-just-making-the-grade/

Priestly, A., Lynch, M., Wallace, C., & Harwood, V. (2015). Pathways to success: AIME's educational mentoring model. *Learning Communities: International Journal of Learning in Social Contexts*, *17*(Indigenous Pathways), 44–53. https://doi.org/10.18793/LCJ2015.17.04

Ramirez, J. J. (2012). The Intentional Mentor: Effective Mentorship of Undergraduate Science Students. *Journal of Undergraduate Neuroscience Education*, *11*(1), A55–A63.

Rhodes, J. E. (2004). *Stand by Me*. Cambridge, MA: Harvard University Press. Retrieved from http://www.hup.harvard.edu/catalog.php?isbn=9780674016118

Rosenberg, T. (2016, April 26). Guiding a First Generation to College. Retrieved August 9, 2018, from https://opinionator.blogs.nytimes.com/2016/04/26/guiding-a-first-generation-to-college/

Ross, T., Kena, G., Rathbun, A., Kewal-Ramani, A., Zhang, J., Kristapovich, P., & Manning, E. (2012). *Higher Education: Gaps in Access and Persistence Study* (Statistical Analysis Report No. NCES 2012046) (p. 329). National Center for Education Statistics, Institute of Education Science, U.S. Department of Education.

Rugaber, C. (2017). Pay gap between college grads and everyone else at a record. *USA Today*.

Sandler, H. (2017, May 5). Recent Changes That Have Altered the Landscape of College Admissions. Retrieved August 9, 2018, from https://www.applerouth.com/blog/2017/05/05/recent-changes-that-have-altered-the-landscape-of-college-admissions/

Schuller, N. (2010, May 27). Why Low-Income Students Need Tutoring. Retrieved August 9, 2018, from http://www.povertyinsights.org/2010/05/27/why-low-income-students-need-tutoring/

Scrivener, S., Weiss, M. J., Ratledge, A., Rudd, T., Sommo, C., & Fresques, H. (2015). *Doubling Graduation Rates: Three-Year Effects of CUNY's Accelerated Study in Associate Programs (ASAP) for Developmental Education Students*. MDRC. Retrieved from https://www.mdrc.org/sites/default/files/doubling_graduation_rates_fr.pdf

Smith, J., Pender, M., & Howell, J. (2013). The full extent of student-college academic undermatch. *Economics of Education Review*, *32*, 247–261. https://doi.org/10.1016/j.econedurev.2012.11.001

Steering Committee for the Review of Government Service Provision. (2014). *Overcoming Indigenous disadvantage [electronic resource]: key indicators 2014 : overview*. Canberra: Productivity Commission.

Stewart, S., Lim, D. H., & Kim, J. (2015). Factors Influencing College Persistence for First-Time Students. *Journal of Developmental Education*, *38*(3), 12–16, 18–20.

Strauss, V. (2013, October 22). Khan Academy using contractors to check Web site's videos. *Washington Post*. Retrieved from https://www.washingtonpost.com/news/answer-sheet/wp/2013/10/22/khan-academy-using-contractors-to-check-websites-videos/

Strauss, V. (2015, October 24). Confirmed: Standardized testing has taken over our schools. But who's to blame? *Washington Post*. Retrieved from https://www.washingtonpost.com/news/answer-sheet/wp/2015/10/24/confirmed-standardized-testing-has-taken-over-our-schools-but-whos-to-blame/

Taylor, P., Fry, R., & Oates, R. (2014). The rising cost of not going to college. *Pew Research Center*.

The Annie E. Casey Foundation. (2017). *2017 KIDS COUNT Data Book: State Trends in Child Well-Being* (p. 68). The Annie E. Casey Foundation. Retrieved from http://www.aecf.org/resources/2017-kids-count-data-book/

Thurston, L. P., Navarrete, L., & Miller, T. (2009). A ten-year faculty mentoring program: Administrator, mentor, and mentee perspectives. *International Journal of Learning*, *16*(4), 401–415.

Tierney, W. G., & Garcia, L. D. (2011). Remediation in Higher Education: The Role of Information. *American Behavioral Scientist*, *55*(2), 102–120. https://doi.org/10.1177/0002764210381869

Turner, C. (2015, September 12). President Obama's New "College Scorecard" Is A Torrent Of Data. Retrieved August 9, 2018, from https://www.npr.org/sections/ed/2015/09/12/439742485/president-obamas-new-college-scorecard-is-a-torrent-of-data

Vander Ark, T., & Ryerse, M. (2017). *An Integrated Approach to Academic and Social Supports*. Retrieved from http://www.gettingsmart.com/2017/05/an-integrated-approach-to-academic-and-social-supports/

Velez, E. D. (2016). *How Can High School Counseling Shape Students' Postsecondary Attendance?* National Association for College Admission Counseling. Retrieved from https://www.nacacnet.org/news--publications/Research/postsecondaryattendance/

Wilkes, Z. (2006). The student-mentor relationship: a review of the literature. *Nursing Standard (Royal College of Nursing (Great Britain): 1987)*, *20*(37), 42–47. https://doi.org/10.7748/ns2006.05.20.37.42.c4160

Wilson, Z., Iyengar, S., Pang, S.-S., Warner, I., & Luces, C. (2012). Increasing Access for Economically Disadvantaged Students: The NSF/CSEM & S-STEM Programs at Louisiana State University. *Journal of Science Education & Technology*, *21*(5), 581–587. https://doi.org/10.1007/s10956-011-9348-6

Appendix B: Interview Participants

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  Senior Program Officer, U.S. Department of Education (retired)
- **Clougherty, Robert**
  Provost, Glasgow Caledonian New York College
- **Hugley, Allyson**
  President, Measurement & Analytics, Weber Shandwick
- **Leventhal, Mitch**
  Professor of Professional Practice and Entrepreneurship, University of Albany
- **Lu, Julia**
  Director of Development, Children's Museum of Manhattan
- **Mandell, Alan**
  Professor of Adult Learning and Mentoring at SUNY Empire State College
- **Mayfield, William**
  Senior Higher Education Consultant; formerly, Provost at West Virginia Institute of Technology
- **Merrill, Michael**
  Director, Rutgers LEARN (Labor Education & Research Now); formerly, Dean at the Harry Van Arsdale Jr. Center for Labor Studies
- **Morris, Holly**
  Director of School Incubation at Washington State Charter Schools Association (WA Charters); formerly, Director of Post-Secondary Model Development and Adoption at EDUCAUSE