

NBER WORKING PAPER SERIES

COMPREHENSIVE APPROACHES TO INCREASING STUDENT COMPLETION
IN HIGHER EDUCATION: A SURVEY OF THE LANDSCAPE

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Working Paper 28046
<http://www.nber.org/papers/w28046>

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
November 2020

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of the Landscape

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NBER Working Paper No. 28046

November 2020

JEL No. I23,I26,J24

ABSTRACT

We describe the challenge of college non-completion in the U.S. and a variety of explanations for the high rate of non-completion. We then provide an overview of the implementation of and evidence from eight specific college completion interventions designed to increase college completion rates through a comprehensive set of services. The eight interventions that we review have all been implemented in the past decade and have been evaluated through randomized controlled trials (RCT). After we describe the eight featured programs and the evidence on their effectiveness, we discuss the potential to replicate these programs and deliver them at scale. Finally, we offer some recommendations for future research, with the goal of establishing a body of practical evidence for organizations and policymakers to learn from as they work to address the college completion crisis.

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Introduction

Millions of students who start college never finish, particularly low-income students and those who attend two-year community colleges. More than 40 percent of first time, full-time enrolled students in four-year institutions do not complete a bachelor's degree within six years, and more than two-thirds of those at community colleges do not complete an associate's degree within three years (NCES, 2020.) This so-called "completion crisis" is costly to both students themselves and the broader society because there are large economic and social returns to associate and bachelor degree completion that are not being secured.

Many programs and public policies have been implemented over the years with the goal of boosting college persistence and completion rates. The research and policy focus has typically been on issues of academic under-preparation and tuition costs or subsidies. In recent years, however, there has been considerable attention given to a newer approach focused on comprehensive student services designed to help students at risk of dropping out overcome a multi-faceted set of challenges. Such programs tend to include, to various degrees, elements of case management, mentoring, coaching, referrals, financial assistance, and academic advising.

In this paper, we describe the challenge of college non-completion in the U.S. and a variety of explanations for the high rate of non-completion. We then provide an overview of the implementation of and evidence from eight specific college completion interventions. These eight programs were selected because they meet the following set of criteria: explicitly aim to increase college completion rates; offer a comprehensive set of services; have been implemented in the past decade; and have been evaluated through a randomized controlled trial (RCT). Five of the programs serve community college students exclusively; one serves students at both two- and four-year institutions; and two of the programs were implemented at four-year universities. After we describe the eight featured programs and the evidence on their effectiveness, we discuss the potential to replicate these programs and deliver them at scale. Finally, we offer some recommendations for future research on these types of programs, with the goal of establishing a body of practical evidence for organizations and policymakers to learn from as they work to address the college completion crisis.

The College Degree Premium

There are large earnings differences between those with and without a college degree. Full-time, full-year workers with a bachelor's degree earn 114 percent more than workers with a high school degree, on average; full-time, full-year workers with an associate's degree earn 25 percent more (see Figure 1). Earnings differences also reveal that a degree confers an additional boost in earnings beyond college attendance. Those who complete an associate's degree earn 10 percent more than those who attend college but do not obtain a degree. Furthermore, individuals with college degrees are much more likely to work at all and work full time than non-college educated individuals, which amplifies wage differences.

Research evidence shows that much of the difference in earnings between those with and without a college degree reflects a causal effect of degree completion on earnings, not just differences in the attributes of people who complete a degree versus people who do not. For instance, if students who are harder-working and of higher ability are more likely to complete a degree than those who are not, we would expect them to earn higher wages based on their own traits, regardless of whether or not they have a degree. A number of economics studies use econometric techniques to overcome such selection effects in order to quantify the causal return to degree completion. The consensus view that emerges from this literature is that there are sizable earnings premiums associated with both four-year and two-year degree completion, though the magnitudes of the estimated effects vary considerably across studies, depending on factors such as the demographic group studied, the time period, and the type of institution attended.¹

With regard to community colleges in particular – which is a focus of this review article – many studies find employment and earnings benefits associated with community college degree completion (for example, Kane and Rouse, 1995; Marcotte et al., 2005; Jepsen et al., 2014; Stevens et al., 2015). A recent estimate suggests that for the cohort of students who attended college in the mid-2000s, an associate’s degree yields a causal earnings premium of about 30 percent over a high school degree (Marcotte, 2016).

A recent analysis simulates the effects of increasing BA and AA attainment on aggregate measures of economic security and income inequality, making use of causal estimates of degree completion. The results of this analysis demonstrate that a sizable increase in the rates of BA and AA degree completion would lead to meaningful reductions in the share of people living in poverty and living near poverty (defined as having family income less than 200 percent of the federal poverty threshold); it would also reduce rates of overall income inequality, driven mostly by raising the lower-middle part of the earnings distribution relative to the upper-middle (Hershbein, Kearney, and Pardue, 2020).

In addition to the well-documented economic benefits associated with increased college attainment, there is research showing that college completion has a causal effect on other social benefits, such as improved health and reduced mortality. Cowan and Tefft (2020) show that access to 2-year colleges leads to improved indicators of health including reduced smoking, increased exercise, and better self-reported health. There is also evidence that increased college attainment among women leads to better outcomes for their children. Currie & Moretti (2003) find that an additional year of maternal education reduces the chances of low birth weight by approximately 10 percent and the likelihood of a premature birth by 6 percent. Buckles et al. (2016) use the variation in college completion induced by the student deferment option during the Vietnam draft to identify the causal effect of college attainment on mortality. They find that the rise in college education that resulted from the deferment option lead to a substantial decline in mortality, due primarily to declines in heart disease and cancer-related deaths.

¹ See Oreopoulos and Petronijevic (2013) for a thorough summary of this literature.

The US College Completion Crisis

A larger share of high school graduates than ever are enrolling in college. In 1960, 45 percent of recent high school completers enrolled in higher education.² By 2005, this number had reached 69 percent, and it has held steady since then (NCES, 2017; Oreopoulos, 2019). More low-income, minority and first-generation students than ever in U.S. history are enrolling in post-secondary schooling (Goolsbee et al. 2019). Community colleges play a particularly important role in college going. Two-year colleges enroll almost half of all post-secondary students in the US (US Dept of Ed, 2016). In addition, half of all bachelor's degree recipients were previously enrolled at a community college (NSC, 2017).

However, the rise in degree completion has not kept pace with rising enrollment. The percentage of 23-year-olds with some college increased 31 percent between 1971-1999, but degree completion only increased by 4 percent from 23 to 24 percent (Turner, 2004). Almost one-fifth of students who start a 4-year program in the US leave within a year (Consortium for Student Retention Data Exchange, 2004), and many more never complete a degree. Data from the National Center for Education Statistics (NCES) show that fewer than 60 percent of first-time, full-time, degree-seeking enrollees at 4-year post-secondary institutions complete a degree within 6 years, and this rate has seen little improvement over time (see Figure 2a).

Completion rates are lowest among students who attend non-selective two-year institutions.³ A full two-thirds of first-time, full-time, degree-seeking students enrolled in community college do not obtain a degree within 3 years (Figure 2a). Black community college students have especially low rates of completion. NCES data on the 2012 entering cohort reveal that 25 percent of black students at two-year institutions earn an associate's degree within three years, as compared to 32 and 33 percent of white and Hispanic students, respectively (Figure 2b). The gap is even larger at four-year institutions, where 38 percent of black students graduate within 6 years, compared to 52 percent of Hispanic students, 63 percent of white students, and 73 percent of Asian students (Figure 2c).

Barriers to Student Completion

There are a variety of factors that contribute to the high rate of college non-completion among students who enroll in college. Adopting the framework of Evans et al. (forthcoming), we group explanatory factors into four categories: academic under-preparation, high college tuition costs, institutional obstacles, and personal non-academic obstacles. Studies suggest that many students, particularly those from low-income families or who are first generation college enrollees, face a combination of these obstacles (Scrivener and Coghlan, 2011; Bertrand, et al, 2019).

1. Academic under-preparation

² The National Center for Education Statistics defines a recent high school completer as someone who completed their high school (or equivalent) degree earlier in the calendar year in which they enroll, ages 16-24 (NCES, 2017).

³ NCES's IPEDS data are collected at the institution level, not at the student level. IPEDS graduation rates are reflective of full-time, first-time, degree-/certificate seeking students who started and finished at the same institution. Students included in graduation rates do not represent all of the students at an institution. For example, these graduation rates exclude part-time and transfer students.

A lack of academic preparation is often a key barrier to college completion (Adelman and Gonzalez, 2006). Students often do not select or are not guided to take courses in high school that are typically pre-requisites for many college courses and majors. This creates a significant barrier to completion, as students must take remedial or development coursework just to be eligible and prepared to enroll in classes that actually count towards a degree (Scott-Clayton, 2011). Almost one-third of U.S. college students take remedial courses in reading, writing or math (NCES, 2003; Angrist, et al 2009). The rate is particularly high at community colleges where about 60 percent of entering students are referred to at least one remedial education class (Bailey, 2009; Attewell et al., 2006). Academic under-preparation may be exacerbated by a lack of necessary study skills to tackle the challenging coursework needed to complete degrees on time (Angrist, et al, 2009).

Community colleges devote upwards of \$2 billion annually towards developmental education programs designed to address academic under-preparation (Strong American Schools, 2008). The data on the success of these programs is discouraging. Students who enroll in remedial courses are 38 percent less likely to complete their degree than other students (Attewell et al., 2006). This lower graduation rate, however, may reflect that the type of student enrolled in remedial courses is different from other students. There have been numerous initiatives aimed at addressing academic under-preparation. As others have concluded from reviewing that evidence, the results from this line of intervention are generally disappointing (Long, 2014; Martorell and McFarlin, 2011).

2. *College Tuition Costs*

The high cost of higher education is often considered a significant barrier to college enrollment and persistence. However, it is less clear that college tuition costs are a driving factor of community college non-completion. The average yearly tuition of an in-district 2-year college in 2017 was \$3,600, and books and supplies at a public 2-year college cost, on average, \$1,447 (Ginder, Kelly-Reid & Mann, 2018b). Room and board at public 2-year institutions can range, on average, from \$6,700 for students living on campus to \$8,409 for students living off campus (not with family) (Ginder et. al., 2018b).

The availability of means-tested federal grants and loans means that many low-income students pay little if any out-of-pocket for a college education. In 2015, the Pell Grant program provided \$30 billion in aid for low-income individuals to attend college, more than a third of whom attended community college (Baime and Mullin, 2011). Data from the 2011-12 National Postsecondary Student Aid Study indicates that 38 percent of community college students have zero out of pocket expenses for tuition and fees.⁴

Nguyen, et al. (2019) reports on the results of 42 experimental or quasi-experimental studies examining the effect of grant aid (needs-based, merit-based or combination of both; federal, state

⁴ <https://www.usnews.com/news/articles/2015/02/17/how-many-already-attend-community-college-for-free>

and University or private grants) on student outcomes. Their review concludes that receipt of any grant aid increases the probability of student persistence and degree completion by two to three percentage points. The authors note that while most studies report positive point estimates, not all do (some are null or negative). Other work, however, casts doubt on the efficacy of enhanced financial aid in increasing rates of college completion among low-income students. For instance, Deming (2017) finds little effect of community college tuition on associates degree completion, though he does find evidence of induced community college enrollment. Anderson et al. (2019) recently completed an experimental study of the Wisconsin Scholars Grant program and found that the needs-based financial aid it provided did not significantly impact degree completion or graduate school enrollment.

3. *Institutional barriers*

Qualitative studies based on interviews with community college students suggest that many of them struggle to successfully navigate the system in higher education institutions (Rosenbaum, Deil-Amen, & Person, 2006; Person, Rosenbaum, & Deil-Amen, 2006). Semi-structured interviews with 100 students from 14 two-year colleges in the Midwest reveal that many students need help understanding course requirements and knowing if courses selected meet their graduation needs (Person et al. 2006). Students are often side-tracked by failing to register for the correct courses on time or by choosing a major that does not match their skill set or career interests (Pearson et al, 2006).

A comprehensive report by a team of researchers at the Community College Research Center (CCRC) (Bailey et al., 2005) investigates the institutional characteristics that affect the success of community college students, particularly low-income and minority students. Their analyses find that there are a number of identifiable community college characteristics that systematically relate to student outcomes. On average, larger institutions have worse student outcomes. The authors speculate that the better performance of students at smaller community colleges might be because smaller institutions offer a more limited and focused set of programs, which might provide students with more structure. This would be consistent with the notion that large institutions are difficult for students to navigate. The authors also find that colleges with a larger percentage of minority students (black, Hispanic, and Native American) and a larger share of part-time students have lower graduation rates. In addition, a larger percentage of faculty who are part-time also correlates with lower student graduation rates at community colleges. Across their analyses, the authors find mixed evidence on whether expenditures on student services lead to better student outcomes. This might suggest that spending alone won't improve services, and therefore student outcomes, if that spending is not on well-designed or effective programs.

Holzer and Baum (2017) present an examination of college success programs along two dimensions – those aimed at students and those aimed at institutions. Using a combination of new data (from NCES and Administrative data from the state of Florida), existing studies and policy proposals, they conclude that in order to improve completion (or degrees with market value) for disadvantaged students, the non-selective colleges they typically attend would need to

significantly boost student supports and services such as personalized advising and career guidance, remediation, financial aid and additional supports such as tutoring and childcare.

4. *Personal non-academic barriers*

Students face a number of challenges that have nothing to do with academic coursework, but could derail their path to graduation. Challenges arise in the form of health issues, financial shocks, mental health struggles, among others. An analysis of quantitative data collected by 37 colleges involved in an emergency financial assistance pilot program shows that for many college students – especially non-traditional students at community colleges—personal issues, such as issues with bills, child care, and transportation, often arise that make it difficult for them to complete their degree (Geckeler, 2008). Feelings of separation and estrangement from the college community can also lead students to drop out of college. The results from a randomized controlled trial of over 1,500 students at the Kingsborough Community College in Brooklyn, New York indicate that learning communities, which encourage integration, have a positive effect on credit accumulation and can increase graduation rates for students without remedial English requirements (Weiss et al., 2014). Scholars have also pointed to issues of “self-efficacy”. Case studies of colleges in six states - New York, Texas, Florida, California, Washington, and Illinois - highlight how students often lack the necessary commitment and/or planning and time management skills necessary to set out a path to graduation and stay committed to that plan (Bailey and Morest, 2006). Based on his examination of these case studies as well as national data sets, Grubb (2006) reports that students who lack clear goals and a genuine understanding of why college is important often become derailed by relatively minor challenges and setbacks.

For low-income students, a lack of financial resources or buffers could exacerbate the consequences of any set-back. It is widely recognized in other contexts that vulnerability is an important dimension of poverty and many low-income families live perpetually on the brink of crisis and deep hardship (Barr and Blank 2009; Shipler 2005). Bertrand et al. (2004) describe this aspect of poverty in terms of some families having “narrow margins for error.” These challenges suggest that for many vulnerable college students, small negative shocks like a family emergency, a necessary vehicle repair, or a missed rent payment can be a significant barrier to persistence and degree completion. In an effort to address these challenges, many colleges that serve low-income students have implemented programs that provide emergency financial assistance. For example, see the Scholarship America’s Emergency Grant Assistance program.⁵

A key challenge for addressing the college completion crisis is that the students needing the *most* support to complete their degrees are often attending colleges with the *fewest* resources and support for them. Evidence documents a causal link between institutional resources and student outcomes. Bound, Lovenheim, and Turner (2010) identify how much of the decline in college completion rates between the 1970s and 1990s is because of the changing composition of students (as more students enrolled in college over time, they became less selected), versus the changing composition of higher education institutions attended. Their analysis finds that the shift toward lower-ranked, public schools along with declines in institutional resources per student are

⁵ <https://scholarshipamerica.org/partners/student-supports/emergency-aid/>

more important than shifts in student characteristics in explaining the decline in college completion rates over time. Deming and Walters (2017) compare the impact of changes in tuition to changes in spending (instruction and academic support are particularly responsive to budget shocks) on enrollment and degree completion in US public postsecondary institutions between 1990 and 2013. They find that spending increases are more effective per-dollar than price cuts in terms of increasing completion rates. These observations relate back to the discussion about institutional barriers above.

Comprehensive Approaches to Increase College Degree Completion

In recognition of the problem of low college completion rates – especially among low-income students at two-year and less selective colleges – there has been growing interest among researchers, policymakers, institutions, and organizations in programs that address this crisis.⁶ The focus has typically been on issues of academic under-preparation and tuition costs or subsidies. In recent years, however, there has been considerable attention given to approaches that address the multi-faceted set of challenges that students face that put them at risk of dropping out.

In this report we highlight eight such programs. The goal of this report is not to provide an exhaustive meta-analysis of college success programs, but rather to highlight programs that are comprehensive in their approach and have been rigorously evaluated. Our review focuses on eight programs that satisfy the following criteria: a) aim to increase college completion rates, b) offer a comprehensive set of services in the form of multi-year individualized support that is designed to address multiple barriers to success; c) have been implemented in the past decade, and d) have been evaluated through a randomized controlled trial (RCT).⁷

The key features of each of these programs and their RCT evaluations are provided in Table 1. Below we provide a brief description of each of these interventions, synthesize the similarities and differences across the highlighted programs, and discuss the evidence of impact on key outcomes.

Program Descriptions

Accelerated Study in Associate Programs (ASAP)

The Accelerated Study in Associate Programs (ASAP) was developed by the City University of New York (CUNY) in 2007. This program provides comprehensive support for up to three years for full-time, low-income students (Pell eligible or below 200% FPL) with fewer than 12 credits earned. Students in the program receive access to an advisor with a small caseload who supports

⁶ An extensive body of research focuses on the challenge of increasing rates of college enrollment among lower income students. This is a different issue than college non-completion. We refer interested readers to the review piece by Page and Scott-Clayton (2016) and recent studies by Barr and Castleman (2017), Oreopoulos and Ford (2019), Bird et al. (2019), Castleman and Page (2015), Page and Gehlbach (2017), and Carrell and Sacerdote (2017).

⁷ We include in this list programs with on-going studies if some short term RCT results are available.

the student's academic, social and interpersonal needs, helping them: transition to college life and culture; navigate their college campus (including talking to faculty); plan for a transfer to a four-year institution or career path; and access additional supports if they fall off track.⁸ The program offers enhanced career services, tutoring, blocked or linked courses in the first year and a seminar in the first semester that works with students on goal setting and study skills. Students are also provided tuition waivers if their needs-based financial aid does not cover tuition and fees (only a small portion of students require one, given Pell coverage for tuition), a MetroCard and free use of textbooks. ASAP originally served 1,132 students at CUNY, and has grown to 25,000 students in 2019. It is also being replicated at seven institutions across five states. MDRC conducted an RCT evaluation of the original ASAP program at CUNY from 2010 to 2013 with a sample size of 896 (Scrivener, et al, 2015), and of the replication program in Ohio from 2015 to 2016 with a sample size of 1,501 (Sommo et al. 2018).

Stay the Course

Stay the Course™ (STC) is a comprehensive case management intervention aimed at helping low-income students overcome the multiple obstacles that might derail persistence and degree completion in community college. Stay the Course was initially designed and implemented in 2013 as a research demonstration project, implemented by Catholic Charities Fort Worth at Tarrant County Community College in collaboration with a research team affiliated with the Wilson Sheehan Lab for Economic Opportunities (LEO). This program serves full time (initially enrolled in at least 9 credit hours), low-income (Pell eligible or below 200% FPL) students with fewer than 30 credits already earned. The STC comprehensive program offers case management services that are substantially more intensive than what a community college academic counselor typically provides. Each student is placed with a trained social worker, called a navigator, who provides the student with coaching, mentoring and referral services. STC navigators work with students to help them overcome individual barriers to college completion. For example, a navigator might help a student find affordable child care or refer the student to available social services in the community, as well as help with institutional issues such as selecting courses that keep the student on track for graduation or provide practical advice about how to transfer to a 4-year institution. STC enrollees also have access to limited emergency financial assistance through the program that can be used for non-academic expenses that could impact persistence in college. LEO researchers conducted an RCT evaluation of the original program at Tarrant County Community College from 2013-2016 with a sample size of 869 (Evans et al, forthcoming).

The Stay the Course program expanded beyond the initial research demonstration project on the Trinity River campus of Tarrant County Community College to a fully operational program serving all five TCC campuses. In 2018, Stay the Course served 3,000 students enrolled at TCC. Efforts are underway to replicate the program at other community colleges around the country.

⁸ Each student is assigned to an advisor with whom they must meet at least twice per month. If a student is struggling academically, their advisor will immediately refer them to tutoring and require them to meet more regularly with the advisor (Linderman and Kolenovic, 2009).

Inside Track

Inside Track is an independent non-profit provider of coaching services that combine different methods, curricula, and technologies. The organization began providing services in 2001 and has served over 2 million students nationwide through its coaching based programs with more than 4,000 different partner programs. This program serves students from all income levels and depending on the site focuses on part-time, full time, athletes or other targeted groups of students at 2 and 4 year, public or private institutions. Students tend to be non-traditional with an average age in this study of 31 years old. Students are matched to coaches who help and support them at the start of college and through their first year. These services are provided through remote telephone and electronic delivery mechanisms. Coaches focus on helping students prioritize their studies and plan for success and on identifying and overcoming barriers to college success including issues outside of their school life. An RCT evaluation of Inside Track was conducted at multiple (anonymous) sites from 2003-2004 and 2007-2008 with a sample size of 13,555 (Bettinger and Baker, 2014).

Opening Doors

The Opening Doors Demonstration was a multi-site study run by MDRC from 2003 to 2006 to evaluate the impact of several different programs designed to improve student success. Our review focuses on the Opening Doors program that provided enhanced student services and a small stipend to students at Lorain County Community College and Owens Community College, both in Ohio. This program serves both part-and full-time, low-income (below 250% FPL) students with fewer than 12 credits earned at entry. Students in this program are given access to counselors with relatively low caseloads (157:1) and are expected to meet at least twice per semester for two semesters to check in on academic progress and address issues that could affect success in school. Students are also eligible for a \$150 stipend for each semester they work with a counselor. The program targets low-income students either new to the college or continuing students with fewer than 13 credits completed. Most students are in their mid-twenties, are working and have children. MDRC's RCT study was conducted at multiple locations in Ohio from 2003-2006 with a sample size of 2,139 (Scrivener and Weiss, 2009).

Student Achievement and Retention Project (Project STAR)

Project STAR was an RCT demonstration project implemented at a large Canadian university in 2005 with a sample size of 1,656 (Angrist, Lang and Oreopoulos, 2009). All first-year students (except those in top 25 percent of high school GPAs) were randomized into one of three treatment groups or a control group. This program serves first time, full-time students of all income levels. One treatment group is offered a full set of support services including mentoring by upperclassmen and supplemental instruction. The second group receives large cash awards up to the amount of one full year of tuition, by meeting a target GPA. The final program group is offered a combination of services and incentives. By design, the program is meant to provide comprehensive supports, however, the take up rates on supplemental instruction and usage rates of coaching were extremely low (Angrist, et al, 2009). The program served 650 students across

the three treatment arms, with 1,006 in the control group. The program was not continued beyond the life of the research study and does not operate today.

One Million Degrees

One Million Degrees is a non-profit organization founded in 2006 that provides comprehensive supports to community college students in Chicago. This program serves first-time, low-income (Pell-eligible or Chicago STAR eligible) students with at least one full year of college remaining and a GPA over 2.0. It operates on seven campuses of the City Colleges of Chicago and at three suburban colleges in the Chicago area. The program pairs students with a program coordinator whom they meet with regularly (at least monthly) to address challenges and plan out a path for success, and provides financial, academic, personal and professional support to students through efforts such as a performance-based stipend, last-dollar scholarships, skill-building workshops (time management, study skills, etc), advising and coaching. The Urban Labs at the University of Chicago is conducting an RCT evaluation of One Million Degrees at 10 different sites in and around Chicago from 2016-2017 with a sample size of 4,274 (Bertrand, Hallberg, Hofmeister, Morgan and Shirey, 2019).

Project QUEST

Project QUEST is a non-profit organization founded in 1992 in San Antonio, Texas, which provides comprehensive support to adults to gain post-secondary degrees and credentials and access well-paying jobs in the local economy. This program serves individuals interested in, but not currently attending college who are focused on careers in health care and/or an associate degree. Services include financial assistance (for tuition, fees, books, transportation, tutoring), remedial instruction in math and reading, counseling to address personal and academic concerns, referrals to outside agencies for other assistance (including utility bills, childcare), weekly meetings focused on life skills like time management and study skills, and job placement support (resume writing, interview skills). Project QUEST has operated in San Antonio since 1992 and has served over 7,700 people since first opening. Economic Mobility Corp's RCT evaluation of Project QUEST from 2006 to 2008 included 410 students (Roder and Elliott, 2019). It focused only on those students pursuing health-care sector jobs, which remains the focus of the program, though they work with students in the tech industry as well.

Monitoring Advising Analytics to Promote Success (MAAPs)

Monitoring Advising Analytics to Promote Success (MAAPs) was launched as an RCT study in 2016 by the University Innovation Alliance (UIA) and supported by a four-year First in the World grant from the Department of Education. MAAPs scaled a model developed and piloted at Georgia State University to address the lack of institutional "know how" of many low-income and first generation students in higher education. It is currently being implemented at 11 different public four-year institutions in 11 different states. This program serves Pell-eligible and/or first-generation students enrolled in one of the partner institutions. MAAPs is based on a model first developed and implemented at Georgia State University. It offers students the following services: (a) intensive, proactive advising to help them navigate key academic choices and to establish individualized academic maps; (b) early and real-time alerts prompted in part

through a system of analytics-based tracking when they go off path; and (c) timely, targeted advising interventions to get them back on the appropriate academic path. Ithaka S+R conducted an RCT evaluation of the MAAPs program at 11 sites from 2016 to 2019 with a sample size of 10,946 (Alamuddin, Rossman and Kurzweil, 2018).

Summary of Similarities and Differences across Programs

All of the programs highlighted in this report take a comprehensive approach to addressing the barriers to completion that students face, but the specific features of these programs vary considerably. Furthermore, these programs serve different populations and are implemented in different contexts. We list the key elements of each program in Table 1. In this subsection we summarize the similarities and differences across a number of program dimensions.

Delivery Institutions and Setting: Five of the programs – ASAP, Stay the Course, Opening Doors, Project Quest and One Million Degrees – work only with students at community colleges.⁹ Project STAR and MAAPs only work with students at four-year public institutions. Inside Track works with students at both two- and four-year, public and private institutions.

The programs also differed in terms of who delivered services—either non-profit entities or employees of the colleges themselves. ASAP, Opening Doors, Project STAR and MAAPs are delivered by the colleges themselves. Stay the Course, Inside Track, One Million Degrees, and Project Quest are delivered by non-profit entities in partnership with the educational institutions.

Intervention duration: All of the comprehensive programs selected for this review are designed to provide services to students for at least a year. Inside Track and Opening Doors support students for 1 year (2 semesters). ASAP, Stay the Course, MAAPs, Project Quest and One Million Degrees offer services for longer, but not all students use the program for the full duration offered. In the case of One Million Degrees, for example, students who joined the program while already in community college may leave sooner, as they transition to a four-year college. Students participating in Project Quest receive support for an average of 22 months and Stay the Course participants remain in the program for an average of 30 months. Information on duration of treatment is not available for the other programs.

Eligibility:

(a) Income-based eligibility: Five of the highlighted programs target low-income students—those with family income below 200 or 250% of the federal poverty line or those who are Pell eligible. The other three programs—Project QUEST, Project STAR and Inside Track—do not condition eligibility on income. However, even without an explicit income eligibility criteria in place, Project QUEST participants, 84 percent of whom had worked in the previous year, were observed to have an average income of around \$11,700/year.

⁹ Project QUEST works with students in both community colleges and technical training institutions, but the RCT evaluation focused only on the community college setting.

(b) *Enrollment status:* There is not uniformity across the programs in eligibility based on enrollment status. MAAPs and Project STAR serve only first-time enrolling students. ASAP, Stay the Course, One Million Degrees, and Opening Doors serve both new students and students with a limited number of already earned credits (ranging from 12 to 30) into their programs. Project QUEST recruits both currently enrolled students and students not-yet enrolled, though the evaluation focused only on individuals who had *not-yet* enrolled in college. Some programs only have minimum credit hour requirements for enrollment into the program, while others also have credit hour requirements as a condition for continuing in the program. Among the five programs that report only an initial minimum credit hour requirement, two (ASAP and Project Star) require students initially to be enrolled full time to receive services, another (Stay the Course) requires at least 9 credit hours initially, while two others (Opening Doors and Inside Track) allow either full-time or part-time students to enroll. One Million Degrees and Project QUEST require students to be enrolled full-time not only initially to enroll, but also as a requirement to continue in the program. Although the program description for MAAPs does not explicitly state a minimum credit hour requirement, average credit hours after one year suggest most students were enrolled fulltime. (Alamuddin, et al, 2018). Some of the programs target or exclude students based on type of degree program being pursued. For instance, ASAP excludes health sciences, nursing, forensic science and engineering majors, and for the study, Project Quest focuses on students interested in health-care jobs. MAAPs does not allow students in their program if they receive other supports via athletics or other special student groups.

Case Management:

A central component to each of these programs is the comprehensive or wrap-around supports provided to the students by an advisor, mentor, or case manager. Though the terminology differs across programs, the intent of the service is very similar. ASAP provides comprehensive advising from ASAP *advisors*. Stay the Course *navigators* provide intensive case management, coaching, mentoring, and referrals. Opening Doors *counselors* assist students with personal and academic issues and refer them to other services. One Million Degrees *program coordinators* provide comprehensive supports to address financial, personal, academic and professional barriers. Project Quest *career counselors* provide comprehensive specialized case management. And finally, MAAPs *advisors* provide wrap-around supports to navigate academic choices and paths. Inside Track is unique in this group as it provides *coaching* over the phone rather than in person, as in the other interventions, and Project STAR is unique in that it employs a *peer-mentoring* approach to student support.

The student to counselor or advisor ratio across these case management interventions differs substantially. The caseload numbers range from a low of 34 students per navigator in the Stay the Course program, to a high of 157 students per counselor in the Opening Doors program at the Owens campus. See Table 1 for caseloads for all programs. Note that for all these programs, the caseloads are substantially lower than the typical advisor or counselor load at most institutions, as noted above. This aspect of these programs is important for assessing the scalability and cost effectiveness of these programs.

We have limited information on the frequency or intensity of interactions between students and their counselors or advisors. Stay the Course navigators met with their students just over four times a semester in person, and connected with them via email, text, or phone more than 25 times per semester on average. MAAPS advisors had some type of meaningful contact (recommended an academic program or a particular set of actions) with at least 80 percent of their students during the first two years. More than 90 percent of ASAP students met with an advisor during their first year, and during that year they met an average of 38 times, which is a much greater frequency of in-person interactions than for the other programs. Over 75 percent of Inside Track students had at least 5 contacts with a program coach, and 58 percent of the students assigned to Opening Doors had at least six contacts with a program counselor.

In addition to academic services, ASAP, One Million Degrees and Project Quest also offer formal job placement and career support. These services may include a professional coach, as in One Million Degrees' model, who works with the student to attend professional development events and workshops, review resumes and cover letters, and support their networking efforts and opportunities. Project Quest provides students with career counselors who support them from college enrollment through job placement including help registering for professional license exams and prep materials. CUNY ASAP also employs a career and employment specialist that ASAP students see once per semester to talk about job skills, resume writing, applying for jobs, etc.

Financial support:

The programs offer financial supports in a variety of different forms. Five of these programs offer non-tuition financial assistance though it varies in amount and restriction – ASAP students get free use of textbooks and MetroCard, Stay the Course students get access to emergency financial assistance for qualified expenses up to \$1500 over three years, Opening Doors students receive a \$150 stipend each semester (for 2 semesters) without restrictions on use, One Million Degrees students receive a \$750-\$1000 annual stipend as a performance-based grant as well as access to \$250 in enrichment grants, and Project QUEST students receive financial support for transportation, review courses, uniforms, certificate exam fees and vaccinations.

Because most of the students served by these programs are Pell eligible, tuition assistance is less of a dire need, but ASAP and One Million Degrees do provide tuition (net of financial aid) waivers. Project QUEST typically covers 100 percent of tuition and fees during the first year in the program and 50 percent of tuition and 100 percent students' fees beyond the first year. Only Project STAR and One Million Degrees provide bonus incentives tied to student performance and engagement in the program.

Academic support:

Most of the programs provide educational planning or advising that includes course selection and/or academic advising. Access to and provision of tutors varies widely across programs. Three programs offer substantial tutoring support: ASAP provides dedicated tutors, One Million Degrees provides tutors and requires new entrants and poor performing students to use them, and

Project Quest provides remedial instruction and allows financial assistance to pay for tutors. Stay the Course and Opening Doors give referrals for tutors and Inside Track and MAAPs do not provide or refer for tutors. An academic support that is unique to the ASAP program is linked or blocked courses, which in some CUNY colleges closely resemble learning communities providing additional cohort-based support and more cohesive learning experiences.

Evidence from RCTs on the Impact of Comprehensive Programs

Each of the programs we highlight above has been rigorously tested through a randomized controlled trial (RCT) evaluation. These evaluations were conducted by independent evaluation teams and the results have been published as white papers, working papers, or in peer-reviewed journals. Table 1 lists the primary reference for each study. In this section, we summarize the results from these studies, focusing on the impact these programs had on two key outcomes: persistence in school and degree completion.

Impact on persistence: We report the estimated effects on persistence for seven of the programs in Figure 3.¹⁰ The period for which effects are recorded ranges from one to three years, depending on the study (see the notes to Figure 3). For all RCT evaluations, we report the intent-to-treat estimate (ITT), which is the raw (or regression adjusted) difference in the mean persistence between the treatment and control groups. We also report the estimated treatment-on-the-treated (TOT) effect when available.¹¹ For two of the RCTs – Stay the Course and One Million Degrees – the take-up rate of services for those assigned to the treatment group was well below one. In these cases, the TOT estimate will be much larger than the ITT.

There is a correspondence between the magnitude of positive effects and the intensity of services provided. Four of the reviewed programs -- ASAP, Stay the Course, Inside Track and One Million Degrees – produce statistically significant positive effects on persistence after at least one year. One Million Degrees led to a 21 percentage point increase in persistence through one year (TOT). The effect for Stay the Course after six semesters is similar in magnitude, although the effect is only marginally significant. The studies of Opening Doors, MAAPs, and Project STAR find no discernable impact on persistence.

Impact on Degree Completion (certificate and/or degree): We report the estimated effects on degree completion in Figure 4. The studies report this outcome at three to six semesters after enrollment. As with persistence, we report the ITT, and when available, the TOT.

ASAP, Stay the Course, and Inside Track all demonstrate positive impacts on completion. The effect size for ASAP indicates that the intervention led to an increase in receipt of any degree by 18 percentage points, or 83 percent, and this effect is statistically significant. The effect of Stay

¹⁰ Project Quest is not shown because the effect of the program on persistence, relative to the control group, was not included in the public report.

¹¹ TOT estimates, which are calculated as the ITT divided by the take-up rate, take into account that not all students who are assigned to the treatment group actually receive the treatment.

the Course on completion is also large, but the estimate is not statistically significant. For Inside Track the effect is smaller and marginally significant.

Impact on Earnings: A primary reason why the positive effects on degree completion are important is that this suggests that these programs ultimately improve labor market outcomes. Unfortunately, we don't observe such outcomes for most of these studies, although we do for Project Quest, and several of the other programs will collect this information in the future. Project Quest found after two years, participant wages were lower than those in the control group (due to reduced working hours or none at all while in the program). However, after 6 and 9 years, participants had significantly higher earnings, worked more consistently and were in higher wage careers. These findings are encouraging – noting that early earnings data might be depressed as students complete the programs and get into (or back into) the workforce.

Heterogeneity: An important takeaway from these studies is that for some of these comprehensive programs, the results differed sharply across demographic groups. The most notable evidence of heterogeneous effects was by gender. Both Stay the Course and Project STAR found larger effects for females than for males. In the case of Stay the Course, the effects on persistence and degree completion for females were large and statistically significant, while there was little evidence of an effect for males. Unlike Stay the Course and Project STAR, the ASAP study found little difference in the effect of the program by gender. Project Quest found that the greatest impact on earnings was for non-traditional students ages 35-64. As noted below, in the replication study of ASAP, non-traditional students had larger effects than their peers.

Scaling and Replication

While the evidence on the impact of comprehensive interventions is promising, efforts to scale up and replicate these smaller programs to serve much larger populations could prove to be challenging. In their Stanford Social Innovation Review article, “Why Proven Solutions Struggle to Scale up,” Deiglmeier and Greco (2018) identify three key barriers innovators face in scaling up: 1) inadequate funds to achieve larger growth, 2) the “fragmented nature” of social innovation “ecosystems”, and 3) talent gaps (i.e. the unique type of leaders and drivers of expansion and vision in this space).

Social innovations often have *inadequate funds* because there is no clear path for funding. Some strategies to scale up are very capital intensive, and earned revenue is not often a path for scaling in social ventures (particularly those that serve low-income populations). Thus, innovators must rely on external funds from grants, donors and other investors. Furthermore, social innovation funders often reward the incubation and start-up phase, but lack clarity or focus on scale-up. Social innovation *ecosystems are fragmented* by nature because they often involve multiple sectors. In the space of comprehensive approaches to student success in higher education this is particularly apparent, as some non-profit entities run programs within the context of complex college systems and some college systems support students in a comprehensive way by referring them to and assisting them with the complex networks of social services in their community. Finally, a key factor that contributes to the *talent gap* in the social innovation space is the fact

that the skills and characteristics needed at the beginning of a new venture are often quite different than the systems-thinking and management complexities of scaling an enterprise.

Replications typically have taken one of two different approaches.¹² The “affiliation” approach is similar to a franchise model, where the original designer establishes a network of partners and maintains a formal relationship with each local replicator, but allows for local flexibility in implementation. With the “branching” approach, the original program designer maintains much more control. It operates a centrally controlled network that helps replicators launch and maintain the program with fidelity and measure its impact, leaving little local flexibility. There are also hybrid approaches to replication and scaling that have features of each of these approaches.

The most promising evidence that comprehensive programs to improve college outcomes can be scaled and replicated is that several of them have already done so. In some of these cases, there is already RCT evidence of impact for the replication sites, but in other cases the replications are still at too early a phase to determine whether the promising results of the initial intervention can be replicated. Some programs have scaled up, offering a centrally controlled, consistently defined set of services to a large number of students across multiple locations. Other programs have expanded through replication, using the various approaches described in the paragraph above. We summarize the replication efforts of these programs in Table 2 and describe these instances below.

ASAP Replication: The ASAP program is being replicated now through an affiliation approach at seven sites across five states where the sites utilize the program but adapt it locally. The ASAP program at the three Ohio sites was based on CUNY ASAP but differed in several ways, including the types of students served (the Ohio campus had a much larger fraction of non-traditional students), the political and leadership structure, and the resources and services available to students not served by ASAP (Sommo et al., 2018). Sommo, et al (2018) conclude that the 2-year Ohio ASAP results are comparable to (or in some cases exceed) those from CUNY ASAP, including large impacts on graduation rates. Ongoing efforts to expand evidence-based programs like ASAP to more students include MDRC’s Scaling up Community College Efforts for Students Success (SUCCESS) program that takes *components* from several proven programs and tests how to sustainably achieve improved graduation rates.¹³

Inside Track at Scale: Inside Track currently operates nationally via a branching approach serving more than 4,000 programs (Inside Track, 2020). This level of scale has been achieved over two decades and ten years after their RCT evaluation demonstrated impact of the program on student success. Key features of Inside Track that likely contributed to the ability to scale up and promote cost-effectiveness include the relatively low cost of personnel. The telephone and

¹² See Dees, et al. (2004) for a description of the “affiliation”, “branching”, and other ways social enterprises can scale up to have broader impact.

¹³ For more information about the SUCCESS initiative see MDRC’s description <https://www.mdrc.org/project/scaling-college-completion-efforts-student-success-success#overview>

electronic delivery mechanisms of this program allow a smaller number of people to serve a larger number of students in shorter time and at lower costs. The typical active caseload for an Inside Track coach was between 75 and 150 students at any one time.

One Million Degrees: The One Million Degrees program is not yet being scaled with full implementation fidelity, but aspects of the program have been embraced and adopted by some participating community colleges. For instance, Harper College, a public college in suburban Illinois, has introduced case management-style advising practices to advisers beyond those employed to support OMD scholars and are considering how to reach more students with these practices. This reflects an affiliation approach where Harper College is adapting the program to its own local context. In addition, given OMD's results for students entering the program directly from high school, the local K-12 district has partnered with the City Colleges of Chicago in a human-centered design project to shadow high school seniors as they apply for college. Through this process, they are mapping how OMD provides students with support to help ameliorate summer melt and attrition before the first year of college and to persist in their first year in school.

MAAPs Replication: The MAAPs program is being replicated via affiliation at 11 different public 4-year institutions in 11 different states. At all sites, all treatment group students were assigned to dedicated MAAPs advisors and these advisors were hired and trained by their institutions to deliver the MAAPs advising intervention (as assisted by GA State). However, significant local adaptation has been allowed and utilized (Alamuddin, et al, 2018). For example, in two of the sites, MAAPs advisors serve as the students' primary advisor; at five other sites MAAPs advisors are supplementary to primary school-provided advisors. Three institutions have a combination of primary and supplemental models, and two have a coordinated advising system where MAAPs advisors and department advisors worked together to support MAAPs students (Alamuddin, et al, 2018). Long-term completion results are not yet available, but one-year results from the evaluation of MAAPs replication indicate no significant effect on student achievement or persistence overall. One site -- Georgia State, the lead institution for the project -- is showing significant impacts on credits earned and GPA in the first year. The researchers note that the absence of early impacts of MAAPs on student outcomes is not surprising considering "a number of sites encountered early implementation challenges" (Alamuddin, et al, 2018).

Stay the Course Replication: CCFW recently launched replications of Stay the Course via branching at several sites across the country. They are working with local non-profit entities who are implementing the program in partnership with local community colleges. Program services at one of the replication sites were halted after one year due to challenges the provider faced with program implementation. Based on the experience at this site, CCFW incorporated new training elements to improve efficiency and better support the replication sites. In addition to the initial in-person training, CCFW developed a new portal for service providers to access the Provider Manual throughout the year and review updates to the program methodology. As part of the fidelity assurance process, CCFW developed a centralized database for service providers to capture Stay the Course program services. This allows CCFW to monitor enrollment and how

often navigators meet with the students. CCFW also holds weekly calls and monthly implementation meetings with the program manager of each site, as well as regular site visits. Providers from the replication sites can participate in monthly “Community of Learning” calls to share best practices and the challenges they have encountered. LEO is working with CCFW to evaluate the impact of Stay the Course on completion and earnings at replication sites through an RCT.

Project QUEST Replication: Project QUEST has been replicated via affiliation in several locations - Project VIDA in the Rio Grande Valley, Capital IDEA in Austin, TX, Capital IDEA in Houston, TX, Project Arriba in El Paso and SkillQUEST in Dallas. Of those, two are being rigorously evaluated - Project VIDA by Abt Associates and Capital IDEA by Economic Mobility Corp. Economic Mobility Corp began an RCT evaluation of Capital IDEA in 2019 and will enroll 700 participants, with half assigned to the treatment group, over three years. Capital IDEA is a replication of Project QUEST, but with the local adaptation to focus exclusively on students in a nursing-RN program (Roder, 2019). Abt Associates is conducting an RCT evaluation of Project VIDA in the Rio Grande Valley that enrolled 958 participants between 2011 and 2014. Early results indicate that participants have a significantly higher number of credits earned, had a higher rate of full-time enrollment in college and had higher credential completion rates (Rolston, Copson and Gardiner, 2017).

Project STAR Replication: The original Project STAR program has not been replicated, but a modified version of the program that offered financial incentives but not support services was launched in 2008. This financial incentive only program, “Opportunity Knocks” (OK), aimed to boost achievement by rewarding “above average” performance. It was piloted at a large Canadian commuter university and targeted a population of students with low overall academic achievement. See Angrist, Oreopoulos and Williams (2014) for more details.

A key feature of several of these replications is that they are being evaluated with an RCT. Replication RCTs are becoming increasingly recognized as critical to successful scaling of social programs (Deiglemeier and Greco, 2018). Replication RCTs are meant to demonstrate whether a model program can be moved to a new context and produce the same results. A recent report from Arnold Ventures, a philanthropy committed to the use of RCTs to improve outcomes for social programs, notes that there has been a dearth of replication RCTs in part because the academic community rewards “bold, new discoveries” and thus replications of existing studies are not incentivized or performed broadly. In other disciplines, such as psychology, replication studies have often failed to reproduce the original findings (Buck, 2019).

Sustainability

For comprehensive interventions such as those highlighted in this report to have a large and sustained impact on college completion at a national level, there needs to be a way to fund these programs at a large scale. Because these comprehensive programs are centered on human interactions to support success, they are relatively expensive. An important question is therefore

whether the improved outcomes that these programs generate are large enough to justify the greater price tag.

As noted in Table 1, the costs to implement these programs range from \$700 to \$16,000 per participant per year. It is difficult to compare or assess programs based on costs because the interventions differ considerably in duration and impact. One way to compare the cost effectiveness across programs is to examine how much is spent on the program for each additional degree obtained. For example, Evans et al. (2020) estimate a cost of just over \$27,000 per additional associate degree for Stay the Course, while Weiss et al. (2019) estimate a cost of \$78,000 per additional associate degree induced through the ASAP program.

A key challenge for maintaining effective programs is identifying a sustainable funding source. Some of the comprehensive programs we highlight, such as Stay the Course and One Million Degrees, were originally funded primarily by private philanthropy, but relying exclusively on private resources can limit the sustainability of these programs when implemented on a national scale. Policymakers at the federal, state, and local level are often interested in investments that increase completion rates, so public funding is a potential option.

A policy proposal titled “A Policy Agenda to Develop Human Capital for the Modern Economy,” put forward by an Aspen Economic Strategy Group working group calls for federal funding for “student supports at community colleges at the same per-student level as at public four-year institutions” (Goolsbee, et al, 2019 p. 12). Their concept of student supports comes from the programs and research we highlight in this report and would include “increasing the availability of dedicated, nonfinancial student supports such as case management or individualized financial counseling” (Goolsbee, et al, 2019 p. 12).

A variety of funding models have emerged to address the completion crisis. For example, thirty-two states have implemented performance-based funding models that allocate a portion of state funding to public 2- and 4-year colleges based on student outcomes. Dougherty, et al, (2016) note that states often use performance funding as a policy instrument to financially incentivize public institutions to increase completion, but they are not always supportive of the additional resources and capacity necessary to increase completion. Several studies have examined the effect of performance-based funding on degree completion using variation across states and time in such policies. These studies have found little evidence that these policies lead to increased completion of associates degrees, and mixed evidence regarding increased certificates (Hillman, Tandberg, and Fryar, 2015; Li and Kennedy, 2018).

Another potential funding model that addresses the sustainability of comprehensive college completion programs is *pay for success* financing. In this financing structure, private or public funds are used to pay for services, but these investors are reimbursed, typically by a local

government, if positive outcomes and/or cost savings is achieved.¹⁴ These models break from the federal grant model in important ways. First, they are primarily local or state initiatives whereby the players closest to the community needs set up the PFS model. Second, they utilize *private* investors who are both financially and socially motivated – investors are only paid if the program performs as promised. Finally, a key difficulty in these PFS schemes is identifying an end-payer (or payers) – entities that most benefit from successful completion programs which might include the colleges themselves, local tax-collecting governments or others.

A recent feasibility study of PFS in higher education by Third Sector notes that “...there is a clear pathway for PFS to improve student outcomes through college access and student support services delivered prior to and/or during enrollment in higher education; however, there are several gaps and areas of uncertainty to be addressed prior to bringing a successful PFS project to fruition.” (Silman, et al., 2017). Third Sector is now working with 4 states to pilot and test PFS programs in higher education systems, so more information on that option as a funding mechanism is to come.

Conclusions and Future Research

Current student supports at both two- and four-year institutions do not meet the needs of the most vulnerable students in a way that leads to degree completion. In light of the completion crisis, new, more comprehensive approaches have been developed to address the multi-faceted barriers that many students face. There is a growing body of evidence that these comprehensive approaches can significantly improve both persistence in school and degree completion. Despite this evidence, there remains a lot we do not know. Additional research is needed to shed light on what features of these programs are the most critical and what types of students benefit the most from which types of programs.

Given the high cost of these programs, it will be important to target them towards the students who are likely to benefit the most. Existing evidence for the programs highlighted in this report indicate that there can be sharp differences in program effects across groups. For example, evidence for both Stay the Course and Project STAR indicates significant and large impacts on persistence and completion for female students, but not males. On the other hand, ASAP did not find noticeable differences by gender. There is also some evidence that non-traditional students benefit more than other students from comprehensive approaches. As these and other comprehensive programs are replicated, it will be important to test whether there are consistent patterns in terms of who benefits most.

Furthermore, to fully understand the long run benefit of these interventions, it will be important to continue to track study participants as they transition into the labor market. Currently, there is very limited evidence of the impact of these programs on employment and earnings. Recent 9-

¹⁴ The federal government also provides resources to pay for programs that generate positive outcomes in a pay for success model. For example, the Social Impact Partnerships to Pay for Results Act (SIPRA) allocated \$100 million to support such programs.

year findings from Project QUEST are encouraging, but there is no direct evidence of the impact of the other programs on labor market outcomes at this point.

All of these programs, by design, are multi-faceted. This comprehensive approach allows these programs to address the many barriers that vulnerable students often face. However, some components of these programs may be more critical than others. To understand better the mechanisms by which these programs improve outcomes, it will be important to test different versions. For example, to address whether financial assistance is critical, one could test two different versions of the program, one that provides financial assistance and one that does not. Better information on the key mechanisms can inform program designers about how best to refine the programs to maximize cost effectiveness.

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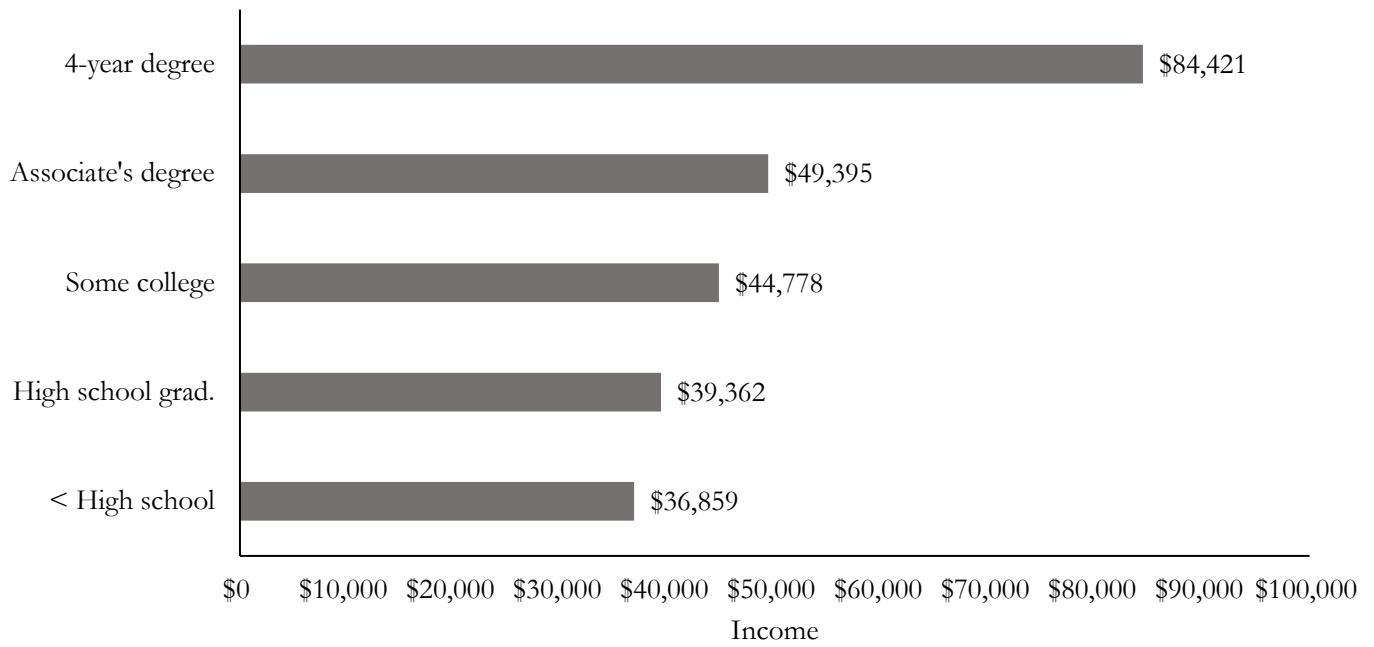
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Figure 1

Average Annual Earnings, Full-Time,
Full-Year Workers, Ages 18-49, by Educational Attainment, 2018



Source: 2018 American Community Survey

Figure 2a

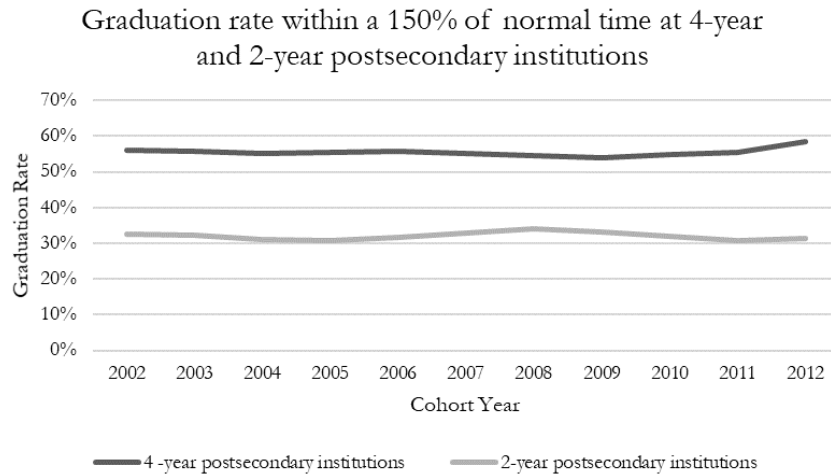


Figure 2b

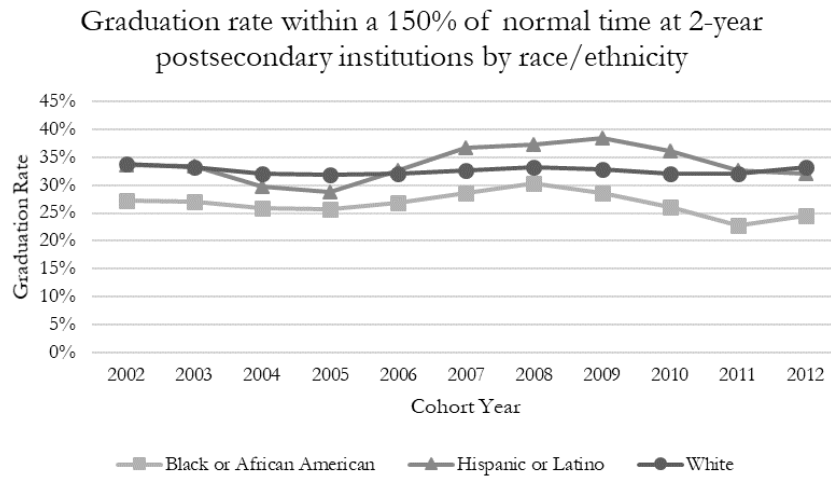
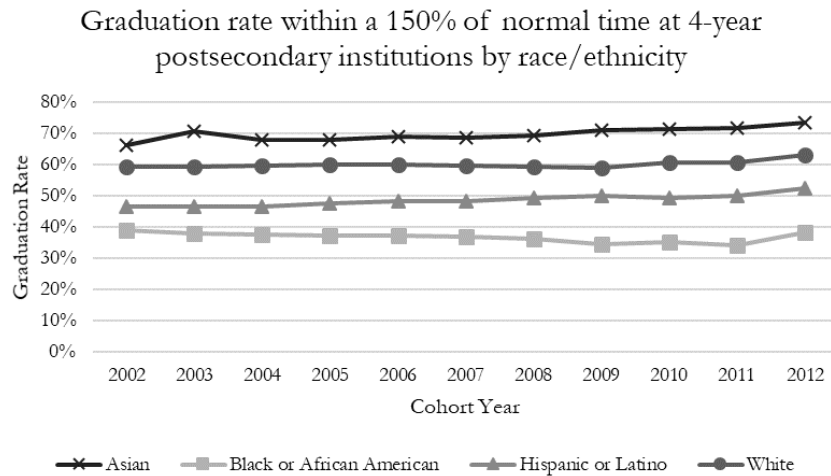


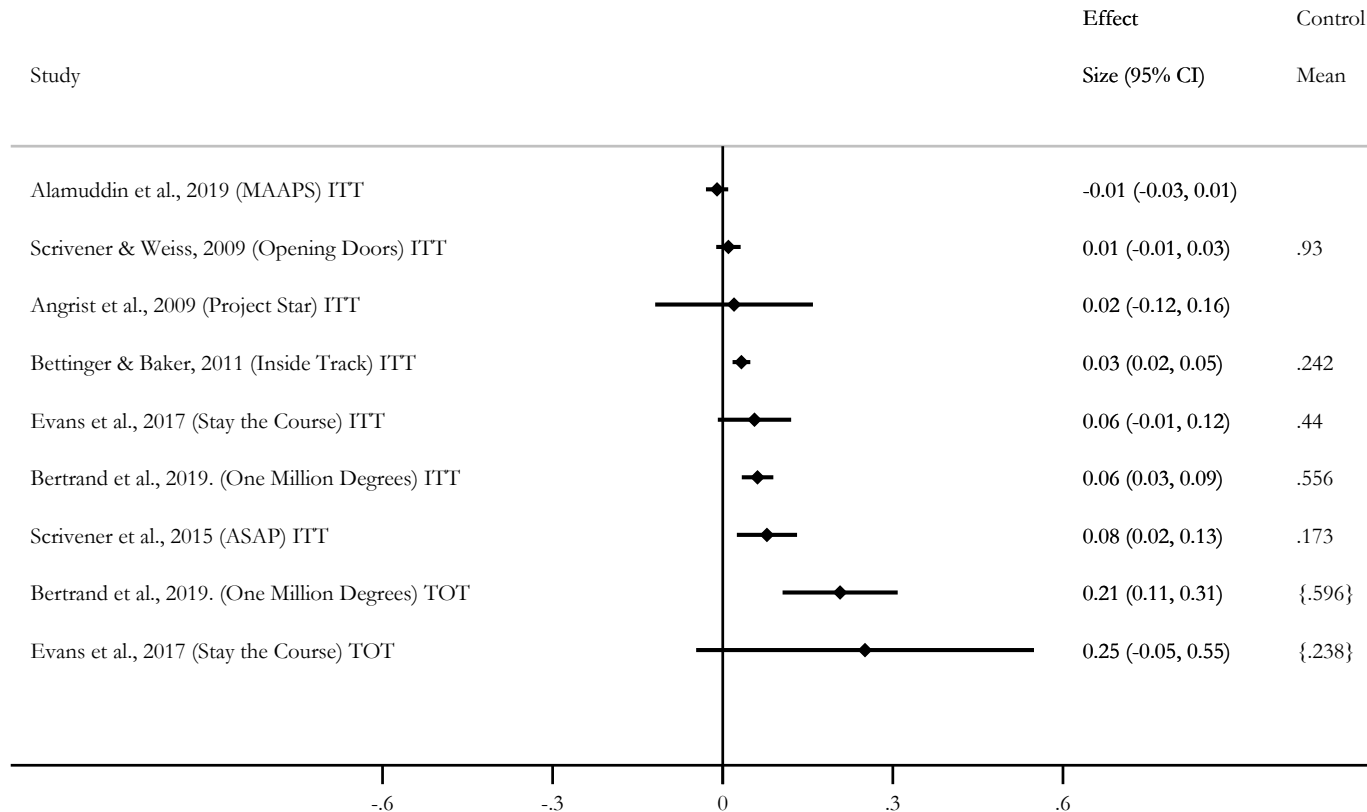
Figure 2c



Note: Data from the U.S. Department of Education National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS). This figures present data items collected from Title IV institutions in the United States. Prior to cohort year 2004, the data include only Title IV primarily postsecondary institutions. The figures shows graduation rates within 6 years at 4-year colleges and within 3 years at 2-year colleges. IPEDS data are collected at the institution level, not at the student level. IPEDS graduation rates (GR) are reflective of full-time, first-time, degree-/certificate-seeking students who started and finished at the same institution. Students included in graduation rates do not represent all of the students at an institution (e.g., GR excludes part-time and transfer students).

Figure 3

Persistence in Post Secondary Education



Weights are evenly distributed. CI is the confidence interval.

The IIT average does not include IIT estimates from Evans et al.(2017) and Bertrand et al.(2019) because the take-up rates for these studies are well below 1.

Project Quest is not shown because the effect of the program on persistence, relative to the control group, was not included in the public report.

Persistence outcomes vary by study:

In Alamuddin et al. (2019), the outcome is continuous enrollment of pell eligible students over two years.

In Scrivener & Weiss (2009), the outcome is continuous enrollment from the first through the third semester in the program.

In Angrist et al. (2009), the outcome is good standing in the second year for SFSP students.

In Bettinger & Baker (2011), the outcomes is 24 months retention.

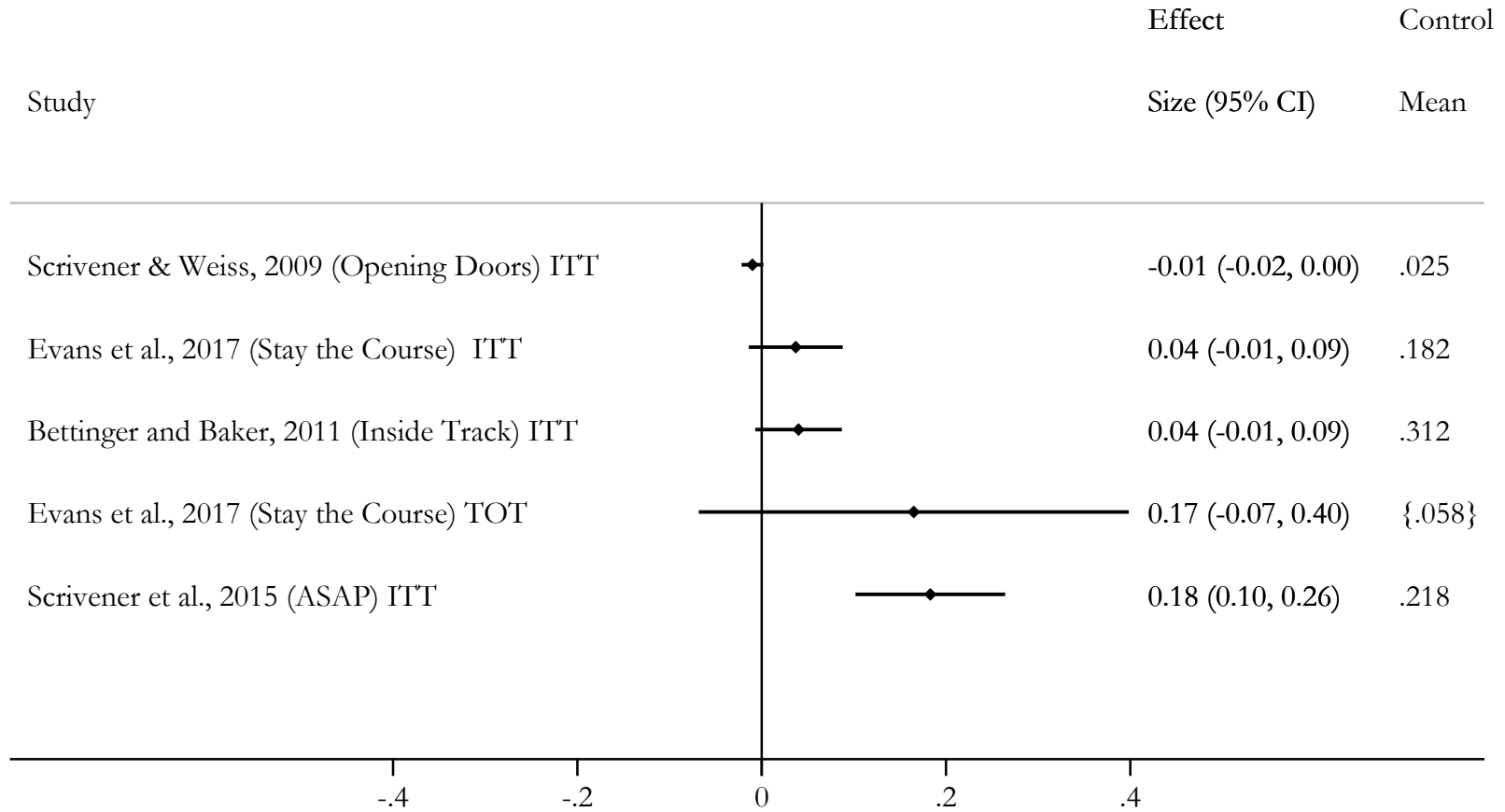
In Betrand et al. (2019), the outcome is enrolled through the first year.

In Evans et al. (2017) and Scrivener et al. (2015), the outcome is enrolled in college after six semesters.

{Control Complier Mean}

Figure 4

Degree Completion



Weights are evenly distributed. CI is the confidence interval.

Completion outcomes vary by study:

In Scrivener & Weiss (2009), the outcomes is earned a degree or certificate through the third semester in the program.

In Bettinger & Baker (2011), the outcomes is earned any degree in 24 months.

In Evans et al. (2017) and Scrivener et al. (2015), the outcome is earned a degree from any college after six semesters.

{Control Complier Mean}

Table 1. College Completion Interventions

		ASAP	Stay the Course	Inside Track	Opening Doors-OH	Project STAR	OMD	Project QUEST	MAAPs
Study Details	Start Date	2010	2013	2003	2003	2005	2016	2006	2016
	Study Duration	2010-2013	2013-2016	2003-2004; 2007-2008	2003-2006	2005-2006	2016-2023	2006-2008	2016-2019
	Sample Size	896	869	13,555	2,139	1,656	4,257	410	10,946
	Location	New York, NY	Ft. Worth, TX	Multiple, anonymous	Ohio (2 site)	Canada	Chicago, IL	San Antonio, TX	11 locations
	Replication	Yes (3 sites)	Yes (4 sites)	Yes (multiple)	No ¹	No	No	Yes (5 sites)	Yes
	Reference	Scrivener, Weiss, Ratledge, Rudd, Sommo, and Fresques, 2015	Evans, Kearney, Perry, and Sullivan, 2019	Bettinger and Baker, 2014	Scrivener and Weiss, 2009	Angrist, Lang and Oreopoulos 2009.	Bertrand, Hallberg, Hofmeister, Morgan and Shirey, 2019.	Roder and Elliott, 2019	Alamuddin, Rossman and Kurzweil, 2018
Outcomes	Persistence	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
	Completion	Yes	Yes	Yes	Yes	No	Forthcoming	Yes	Planned
	Certificate	Yes	Yes	Yes	Yes	No	Forthcoming	Yes	No
	Transfer	Yes	Yes	No	Yes	No	Forthcoming	Not mentioned.	No
	Earnings	No	No	No	No	No	Planned	Yes	No

¹ Additional Opening Doors RCTs tested other types of programs, not the same program model.

		ASAP	Stay the Course	Inside Track	Opening Doors-OH	Project STAR	OMD	Project QUEST	MAAPs
	Primary Finding: Intent to Treat (ITT) or Treatment on the Treated (TOT)	ITT: 18 pp increase in degree completion, ~2x graduation rate of control group.	TOT: 31.5 pp increase in associate's degree completion for females-3X higher than control group females.	ITT: Coached students 3-4 pp more likely to persist after 18 mos, 24 mos; 4 pp more likely to graduate.	ITT: No significant increase in credits earned over 3-year follow up period.	TOT: Increase in GPA and credits earned for first-year female students (but not males) in the full SFSP program.	TOT: After one year, overall persistence (fall to spring) among those who took up the program was 20.7 percentage points higher, a 35 percent increase over the control group	ITT: At 6 and 9 year follow-up, participants had significantly higher earnings, worked more consistently and were in higher wage jobs.	ITT: Initial finding (only GA state campus) students accumulated 1.2 more credits and 3 pp higher credit success rate and 0.17 point higher cumulative GPA, other 10 campuses no effect on persistence so far.
Program Details	Implementer	Community college	Social service/non profit	Private organization	Community college	College	Non profit	Non profit	4 year universities
	Education Institution Setting	Community college	Community College	Private, public; 2 and 4 year	Community college	Public 4-year University	Community college	Community college; technical/certificate programs	Universities
	Program cost per student	\$16,284 (\$42,065 for three years)	\$5640 for 3 years	\$500 per semester	Not available	\$739 for one year	\$2,500-\$3,000 per year	\$10,501	Not available
	Duration	Most students took an ASAP seminar for 3 semesters.	Up to 3 years. Most students stayed in the program for 2 years.	1 year (first year of college)	2 semesters	1 year	Up to 3 years	22 months avg	3 years

		ASAP	Stay the Course	Inside Track	Opening Doors-OH	Project STAR	OMD	Project QUEST	MAAPs
	Eligible population for enrollment into the study	Pell eligible or below 200% FPL, Restricted to all majors except allied Health Sciences, Pre-Clinical Nursing, Forensic Science, and Engineering Science, Full time only, 12 or fewer credits accumulated.	Pell eligible or below 200% FPL, enrolled in at least 9 credit hours, 30 or fewer accumulated credits.	Varies by site. Some school focused on full-time students, others selected part-time students. Some schools assigned new entrants; others assigned upperclassmen. One school decided to offer services to athletes.	Below 250% FPL, Full-time or part-time, 12 or fewer accumulated credits at baseline.	No income restrictions; full time only; entering first year.	Pell-eligible or eligible for the Chicago STAR scholarship; full-time students; GPA of at least 2.0, pursuing first college degree, at least one full year remaining to graduate (can be directly from HS or already enrolled in college).	Individuals pursuing training for health-care jobs; individuals wanting to enroll full-time in associates degree program; individuals interested in, but not currently attending college classes (remediation often needed first).	Enroll in one of the institutions, complete FAFSA, be Pell-eligible or 1st gen or both, not be NCAA athlete or part of other special student group that gets advising services not compatible with MAAPs advising.
Case Management									
	Coaching, Mentoring, Referrals	Comprehensive coaching from an ASAP dedicated advisor; includes enrollment advising, Career information from an ASAP dedicated career and employment services staff member.	Intensive case management: coaching, mentoring and referrals for all aspects of a student's life including enrollment support; emphasis on in-person meeting.	Coaching by phone to help student develop time management, self-advocacy and study skills.	Counselor assists with personal and academic issues. Counselor refers students to services on and off campus.	Peer mentoring from upper-class students in the same field of study; Peer Advisors were trained to identify circumstances that called for more professional help and to make appropriate referrals.	Comprehensive supports to address financial, personal, academic and professional barriers.	Comprehensive specialized case management including recruitment, assessment, enrollment.	Wrap-around supports: intensive proactive advisement to navigate key academic choices and establish individual academic maps; early and real time alerts when they go off path, targeted advising interventions to get them back on appropriate academic path.

		ASAP	Stay the Course	Inside Track	Opening Doors-OH	Project STAR	OMD	Project QUEST	MAAPs
	Student: Counselor Ratio	80:1 to 60:1	34:1	75-150:1	Lorrain 81:1; Owens 157:1	Not reported	50-65:1	Not available.	150 (or fewer) :1
	Educational Planning/Advising- to include enrollment, course selection OR academic advising	Students enroll in an ASAP seminar covering topics such as goal-setting, study skills and academic planning.	Navigator helps student identify goals and steps necessary to achieve those goals.	Coach works with the student to develop a clear vision of his/her goals and set up steps necessary to achieve those goals.	Counselor helps with work-based, learning efforts, juggling school and work, and career aspirations.	Peer advisors e-mailed advisees at least biweekly to solicit questions about university assimilation, scheduling, studying and time management.	To address personal barriers, scholars are required to meet regularly with a Program Coordinator to discuss their academic plans and progress as well as address any issues that have arisen in a scholar's personal life.	Career advising and enrollment support.	The role of MAAP advisors varies by institution. MAAPS advisors can serve as the student's primary advisor on campus delivering the standard advising plus MAAPS advising or they can have a supplemental role. At some institutions, MAPP advisors coordinate with the departmental advisors.
	Professional support	Career support	Informal	No	No	No	Professional support.	Job placement help	No
	Financial Support								
	Non-tuition financial assistance	Students receive free use of textbooks and MetroCards for use on public transportation	Students with GPA of 2.0 or higher are eligible for \$500 EFA per semester for a total of \$1500.	No	Students eligible for \$150 stipend per semester for 2 semesters, usable for any purpose.	No	\$750-\$1000 stipend annually as performance-based awards to address any financial need; \$250 in enrichment grants.	Help with books, transportation, certification exam fees, review courses, uniforms, and vaccinations.	No

		ASAP	Stay the Course	Inside Track	Opening Doors-OH	Project STAR	OMD	Project QUEST	MAAPs
	Tuition Waivers	3-11 percent of students received waiver in a given semester.	No	No	No	No	Last-dollar scholarships to address gap in aid and tuition (rarely used since most are Pell or STAR eligible).	Yes, first three years of the study QUEST paid 100 percent of tuition for participants. After this time, QUEST covered 50 percent of tuition for participants.	No
	Grade Bonus-incentive	No	No	No	No	Substantial cash awards, up to \$5,000, for meeting a target GPA	Stipends tied to performance	No	No
Academic									
	Tutoring	Students receive ASAP dedicated tutoring services separate from the usual college tutoring services.	Referrals to tutoring	No	Referrals to tutoring	No	Provided with tutors and/or referred to existing support within college they attend; required to use a tutor for any class earning less than a C.	The program includes remedial instruction in math and reading to help individuals pass college placement tests. The program's financial assistance can go towards tutoring.	No

		ASAP	Stay the Course	Inside Track	Opening Doors-OH	Project STAR	OMD	Project QUEST	MAAPs
	Learning Communities/Block classes	Students enroll in blocked or linked courses in their first year.	No	No	No	No	No	No	No

Table 2: Replication among evidence-based comprehensive completion programs

	ASAP	Stay the Course	Inside Track	Opening Doors-OH	Project STAR	OMD	Project Quest	MAAPs
Replication	Y	Y	Y	Y	N	N	Y	Y
Number of replication sites	7	4	8	6 or 2			5	11
RCT of Replication	Y	Y	Tested at scale	Y			Y	Y
Description	ASAP was originally implemented for 1,132 students at one site, CUNY, to 25,000 students in 2019. In addition, it is being replicated at 7 institutions across 5 states. Replication results via RCT are available for Ohio sites.	STC was originally implemented for 400 students at one site, TCC, to 3,500 across 5 campuses of TCC. In addition, it is being replicated at 4 institutions (by 4 different nonprofits under the guidance of CCFW) in 4 states. Replication results are not yet available.	Inside Track began serving students in 2000-2001 school year and had served 250,000 students (as of 2011). The RCT analysis focused on 2 years of enrollment into Inside Track for 13,555 students randomly assigned to the program or control in 8 different higher education institutions. Results at scale are available.	MDRC tested different completion strategies at 6 different community colleges. Only two of them, OH and LA tested the comprehensive student supports program)			Project QUEST has been replicated at 5 other sites, Of those, 2 are being rigorously evaluated. Abt Associates' RCT evaluation of one site, Project VIDA in the Rio Grande Valley, early results indicate that participants have a significantly higher number of credits earned, had a higher rate of full-time enrollment in college and had higher credential completion rates	The comprehensive advising program originally developed by Georgia State University on their own campus. MAAPs is a replication of that program across 11 public Universities (4-year programs) in 11 states. Local adaptation was allowed to the advising model. Replication results are available for 2 semesters only at this time.
Evidence/Results	Y	N	Y	Y			Y	Y