Pre-Analysis Plan
Impact Evaluation of the Uplifting Parents Program: Aiming to Increase College Completion for Single Parents

Bill Evans
University of Notre Dame

Sarah Kroeger
University of Notre Dame

November 2024

I. Introduction

There are 6.9 million single mothers aged 18-39 in the US that have a child in the household aged 18 or younger. The poverty rate for these families is 27.4 percent, roughly four times the poverty rate for the families of married mothers ages 18-39 which is 7 percent.[1] One reason for the high poverty rates among this group are low college completion rates, for both two and four year degrees. Only 30 percent of single mothers with children have at least an associates degree, about half the rate of married women (58.5 percent). An extensive body of literature has highlighted that college completion increases earnings and decreases poverty (for example, Goldin and Katz, 2008; Zimmerman, 2014; Kearney, Hershbein, Pardue, 2020). In the specific context of community college education, studies including Kane and Rouse (1995), Marcotte et al., (2005), Jepsen et al. (2014), Liu et al. (2015), Stevens et al. (2019), Xu and Trimble (2016) show positive causal effects of community college associate degrees and certificates on earned income. On average, earnings are 27 percent higher, and unemployment rates are 45 percent lower for individuals aged 25-39 with an associate compared to those with a high school degree (ACS 2016, Ruggles et al., 2021). Despite these high returns, only 28 percent of single mothers aged 22-39 hold a two-year degree or higher, while this number is 57 percent for married mothers.

There are two key reasons for the lower degree completion rates among single mothers. First, they have lower attempted college rates (57 percent) compared to married women (76 percent). The second reason is the low college completion rates for single parents. Of single mothers with children under 18 that have attempted college, only 51 percent have obtained at least a two-year degree. This same completion rate for married mothers is 76.5 percent.

Low completion rates among single mothers can be attributed in large part to the many non-academic barriers faced by single parents when attempting a college degree; schools are generally not well set up to handle this collection of problems. Deming (2017) puts it succinctly that "less-selective public institutions often have large classes and provide little in the way of academic counseling, mentoring, and other student supports (page 6.)" Single parents tend to start college later than students without children (Goldrick-Rab and Sorensen, 2010), and age at entrance is negatively correlated with success (Taniguchi and Kaufman, 2005). Work requirements instituted via welfare reform have crowds out time for school, making it more difficult for single parents to juggle the competing burdens of coursework, market work, and parenting (Cerven, 2013).

Logistics and time costs play a large role in these burdens, especially related to the need for childcare. Among single parents in college, 56 percent require 30 or more hours per week of dependent care (Miller et al., 2011). Keyes and Boulten's (1995) survey results find 80 percent of single parents attending community college report that the availability of childcare is very important in their decision to attend college, and 46 percent report that campus childcare was the most important factor when deciding to enroll in college. Despite the widespread need for childcare, a

[1] All of the calculations in this introduction are based on the 2022 one-year American Community Survey, Ruggles et al., 2024.

minority of community colleges have on-campus facilities. Data from Integrated Postsecondary Education Data System (IPEDS) indicate that less than half of public two-year institutions have on-site childcare (Miller et al., 2011) and 95 percent of campus child care centers have a wait list (Eckerson et al., 2016).

With the exception of a few innovative colleges offering comprehensive support services, and a small additional number that provide child care through the federal CCAMPIS program, the specific personal, non-academic obstacles and social and institutional obstacles experienced by single parents attending college have been largely unaddressed by education reformers. This is a particularly glaring omission given the evidence that these impediments are critically important for understanding why students do not return to college after initially enrolling. (Grubb, 2006; Tinto, 1975; Bean and Metzner, 1985; Johnson et al., 2011).

In an exhaustive review of non-academic support mechanisms, Karp (2011) lists the following critical mechanisms needed to encourage success in academically vulnerable students attending community college: 1) establishing social relationships, 2) identifying and maintaining clear goals, 3) developing college "know-how," and 4) making college life feasible–overcoming all the challenges that arise outside the classroom. Liebowitz and Taylor (2004) draw similar conclusions. Social and institutional obstacles have been shown to impede progress in school, especially because community college students are often confused or overwhelmed by the complexity of navigating the community college experience (Scott-Clayton, 2011; Karp, 2008) and this in turn prevents them from accessing support to deal with life-related challenges.

There is a growing literature on the benefits of holistic support services to improve college outcomes for disadvantaged populations. In general, college success interventions offer some form of coaching or mentoring that is often combined with financial or logistical support. Uplifting Parents (UP), a program provided by Catholic Social Services of Rapid City (CSS), is a wraparound support program designed to help single parents with the goal of achieving a college degree. Previous RCT evidence has demonstrated that wraparound support services for community college students can increase college persistence and completion. The two interventions that bear the greatest similarities to UP are the Accelerated Study in Associate Programs, or ASAP, (Scrivener et al., 2015) and Stay the Course (Evans et al., 2020). Other programs with similarities to UP that have been evaluated via RCT include Opening Doors (Scrivener and Weiss, 2009; Richburg-Hayes et al., 2009), Inside Track (Bettinger and Baker, 2014), MAAPs (Alamuddin et al., 2018), and Project Quest (Roder and Elliott, 2019). Randomized controlled trials of these programs found that some interventions can potentially raise graduation rates by as much as 50-80 percent (most notably, ASAP and Stay the Course). Moreover, Evans et al. (2020) uncovered evidence that cost, availability, and scheduling challenges associated with childcare are significant threats to college completion. This suggests that intensive case management has the potential to offer magnified benefits to students who are single parents. UP is especially promising because of the highly personalized counseling that characterizes the student-mentor interaction. Anecdotal evidence from UP participants cites the emotional support and encouragement as the most important component of the mentorship.

UP builds on the existing studies and stands out from previous student coaching models for several key reasons. First, it is restricted to only low-income single parents. Eligible applicants are single and have at least 50 percent custody of a child under 18, or are pregnant at the time that they apply to UP. The program is open to single parents of either gender but in practice virtually all applicants have been single mothers. A small number of applicants have still been legally married but undergoing a divorce at the time they applied to UP. Although the earlier support programs mentioned above generally served at-risk students and many of them were single parents, there are currently no other college completion programs designed specifically for single parents. There are

sometimes resources for single parents through individual schools. A number of colleges offer comprehensive support services, and several dozen provide childcare through the federal CCAMPIS program. That said, the specific personal, non-academic obstacles and social and institutional obstacles experienced by single parents attending college go largely unaddressed by education reforms. This is a glaring omission given the evidence that these impediments are critical to understanding why students do not persist in college (Grubb, 2006; Tinto, 1975; Bean and Metzner, 1985; Johnson et al., 2011).

Second, UP's program delivery model is differentiated because services are supplied through CSS as the main service provider in partnership with a unique coalition of local firms and organizations ("the Coalition"). Coalition members all have a vested interest in seeing UP participants succeed in college, and they are active members of both the program recruitment process as well as supporting participants through college to a successful outcome. The Coalition provides three basic services. First, the coalition members nominate individual students for UP. Second, the coalition is involved in the selection process to determine whether clients are eligible for UP. Finally, providers agree to supplement services for UP participants. The Coalition organizations are motivated both because of a desire to support the local community as well as an incentive to increase the pool of skilled labor in the local workforce.

In this study, we evaluate the causal impact of UP on college persistence and completion using a sample of single parents who applied to the program between 2018-2022. The study is a randomized controlled trial (RCT) of all eligible and interested applicants to the program during this time period. The main outcomes of interest analyzed in this paper are persistence through degree completion and graduation within two to four years of program enrollment. This project also establishes a framework for follow-up research using linked data on labor market outcomes over time. The project contributes to a growing literature on comprehensive wraparound services for vulnerable college students, and also serves as a proof of concept on how to implement such a program specifically for the single parent community.

II. Evaluation Design

Research Questions

The initial research question and the focus of this project is whether UP improves two key educational outcomes: 1) Persistence – whether the student continues to stay enrolled in college, and 2) Degree completion – whether the student obtains a college degree of any kind. As a secondary research question, we will explore how various personal attributes contribute to degree completion and the effectiveness of the intervention.

Eligibility

The eligibility criteria for UP are as follows: participants are currently solo parenting or expecting, able to travel to Rapid City or Spearfish (a town about an hour from Rapid City and home to a local college), not presently struggling with addiction or substance abuse, prepared to complete a college degree within the next two years, and having a demonstrated history of stability in their personal life. For example, someone without a stable housing situation may not be considered ready for UP. There is no hard income cutoff for eligibility, but virtually all applicants are below 150 percent of the poverty line. Applicants must have clear education and career goals and must have an expectation of completing a degree within two years. This last criteria means that UP applicants are usually people expecting to enter community college or those who are already in progress of completing a four-year program.

The CSS staff interview all the applicants after the application period closes. This interview seeks to determine whether the applicant meets the eligibility criteria, and whether the candidate is academically and emotionally prepared for the program. At this point, the CSS staff assigns a "readiness" score to each client. These scores are on a 1-3 scale. Eligible applicants consent to be part of the experiment at this point as well. The eligible and consented applicants then complete the 10-question confidential Adverse Childhood Experiences (ACE) survey over the phone, and the only identifier included in this survey is a study-specific participant ID.

After the interviews, CSS presents the candidates' profiles to the Coalition, and the Coalition votes on whether candidates should be part of UP. The criteria for whether the candidate should be included are i) that they have requisite interest in the program and ii) that they are likely to benefit from the program. Applicants that receive 50 percent or more of positive votes are entered into the experiment. If a participant is considered "not ready" for UP at this time, they are allowed to re-apply in a later application cycle (and many do). The coalition members focus on whether the applicant has clear education goals and a high motivation for the program and hence whether they would benefit from UP. Given the selection process, the members in the control group are not a random sample of single parents in college but rather a more motivated group. This means that success rates for the control group are likely to be higher than the national average for single parents that start college.

Intervention

UP is an intensive case management that incorporates social and emotional support, help with navigating the college system and enrolling for courses each semester, help in securing childcare that matches each student's needs, a small stipend ($200 per month) and ongoing social and emotional support. Supports are drawn not only through the main social service provider of the program, but also via a unique coalition of small businesses and organizations in the Rapid City, South Dakota area. These coalition members are directly involved in bringing candidates into the UP program and offer an additional support network to participants.

The UP program is a wraparound support program designed to help single parents with the goal of achieving a college degree. Participants are scheduled to receive services for two years, but CSS continues to provide services to a client as long as that individual continues to be enrolled in college. Typically participants meet with their primary UP mentor about twice per month for around 20 months, at which point monthly meetings start to decrease. UP participants can enroll in any local two or four degree program as long as they can continue to travel to Rapid City to attend coaching sessions and receive other services. There are 4 major components of the program; these were designed to closely follow the theory of change laid out by Karp (2011). The first component is a monthly stipend of $200 that participants can receive for two years without any additional requirements or conditions. It is frequently the case that this money is used by participants to pay for childcare but the money can be used for any purpose and spending is not monitored directly by UP. Second, the mentors provide case management services that are designed to make sure the demands of being a single parent do not interfere with their schooling. A key emphasis of the coaching is solving logistic problems: how to balance work, parenting, school, and studying. Many participants require initial assistance in locating a quality childcare program that accommodates their class schedule, has an available opening for their child, and is affordable (generally with the help of grants and childcare payment programs). Third, there are many group activities for the parents and their children, designed to provide a social support network for a group of people on a similar journey.

Fourth, and maybe the most unique aspect of the program is that mentors provide the primary coaching services that are trauma-informed and maintain a low student-mentor ratio.

Randomization

All applicants deemed eligible for the program by both the CSS screening and the coalition vote are randomized into treatment and control groups (50 percent in each). In some cycles, the share of the application cohort randomized into the control will be greater than 50 percent if the CSS staff has exceeded their service capacity for that year. Control group students will not have access to the services provided through UP, but they will have access to standard services provided by the community college. Among those deemed eligible for the program, a list with randomly-generated applicant IDs is sent to LEO, and the research team randomly assigns approximately half into treatment and the rest to the comparison sample. Following standard practice, we randomize by assigning a random order within each randomization block, and assigning the first 50% of the block to the treatment group. To ensure CSS capacity is maximized, a greater portion may be assigned to treatment, starting from the top of the randomized list until capacity is reached. Randomization cohort indicators are included in the regression analysis to account for this possibility.

Power Calculations

We anticipate enrolling 220 people in the analysis, with 110 in the control group. Data from 2016 five-year ACS suggest that for single mothers in North Dakota, of those that attempt college, only about 45 percent obtain at least an associate's degree. With this as a baseline completion rate in the control group, an alpha of 0.05 and power of 0.80, the minimal detectable effect is about 19 percentage points (i.e., a treatment completion rate of at least 64 percent). This is obtainable as UP had been run for a few years prior to the start of the RCT and were obtaining completion rates of about 75 percent.

III. Key Data Sources

The following section summarizes the planned primary data sources for this project. Notably, securing access to these data sources is partially complete. Given this, any outcomes for which we do not already have data secured may ultimately be excluded if there are barriers to gathering the needed information.

A. Uplifting Parents program in Rapid City, South Dakota

We plan to use baseline data from that our partner organization collects during conversations with clients. These data include client name, date of birth, Social Security Number, race, ethnicity, gender, and income. The Uplifting Parents online application survey also collects detailed demographic information about the applicant, their children, their education and career goals, the problems that threaten their ability to achieve these goals, and their coalition sponsor. In this initial survey, applicants provide identifying information that allows us to link observations to administrative data such as the National Student Clearinghouse (NSC). Social security numbers (SSN) are collected as part of the initial application survey so that we can examine labor market outcomes such as earnings (from unemployment insurance records) and participation in social safety net programs. Likewise, we have collected the SSNs for all the study subjects' children and we plan to examine the school records of these children in a future research project. LEO has a data sharing agreement with the partner organization.

B. Behavioral Risk Factors Surveillance and ACE (Adverse Childhood Experiences) Survey

States participating in the Behavioral Risk Factors Surveillance Survey have been fielding the ACE survey for about the last decade. ACE (Adverse Childhood Experiences) is a 10-question yes/no survey that asks adults whether they experienced specific childhood trauma events. The survey asks questions including whether your parents were divorced, whether you lived with someone with a drug or alcohol problem, if you frequently experienced verbal, physical or sexual abuse, etc. Given the sensitive nature of the questions, the data from these surveys are not publicly available but they can be obtained from individual states. We have already collected 44 state/year surveys from 20 different states representing the responses for roughly 438,000 people. LEO has data sharing agreements with these appropriate entities.

C. National Student Clearinghouse (NSC)

LEO plans to measure community college enrollment and graduation through National Clearinghouse data. This administrative data will provide measures of persistence and graduation rates of the single parents as well as participants' earnings and participation in social safety net programs. LEO collected the dates of birth for all the study subjects to examine NSC records.

D. Experian

We plan to measure the impact of the intervention on participants' credit score, use of credit, and total balance in delinquent accounts using data from Experian. LEO has an existing relationship with Experian which we will use to link records in this study with Experian's credit data.

E. Secondary Outcomes

Although persistence and college completion are our primary outcomes, we have set up the evaluation to obtain other longer-term outcomes. We will examine labor market outcomes using tax data from the federal government. The ability to measure such outcomes is contingent upon securing formal data sharing relationships with federal entities.

IV. Hypotheses: Analysis by Outcome Domains

A. *College Persistence and Degree Completion*

1. Primary measure: persistence (whether the student continues to stay enrolled in college or has completed a degree)
    a) Persistence is defined as being enrolled in school in a given semester or having completed a degree in a prior semester. We will measure persistence after two, four, six, and eight semesters following randomization.
    b) Hypothesis: The intervention is designed to increase college persistence. We will test the hypothesis that there is no effect of the intervention on whether the participant continues to stay enrolled in college, and we can conclude the intervention worked if we can reject the null and there is a statistically significant increase in college persistence outcomes for treatment group participants.
2. Secondary measure: whether the student obtains a college degree
    a) We will estimate degree attainment in the following categories: any certificate or degree; any degree (associate degree, bachelor's degree, master's degree); LPN+ (licensed practical nurse or any degree)
    b) We will evaluate college graduation results after participants have been in the school for at least 2 years, and also after 3 and 4 years.
    c) Hypothesis: The intervention is designed to increase college completion. We will test the hypothesis that there is no effect of the

intervention on whether the participant obtains a college degree, and we can conclude the intervention worked if we can reject the null and there is a statistically significant increase in degree completion outcomes for treatment group participants.

B. *Credit (from Experian records)*
    1. Primary Measure: credit score
        a) Constructed with Experian data listing this value over time.
        b) When analyzing the effect of the intervention on Experian outcomes, we may restrict the sample to the set of individuals who have a credit record prior to random assignment. We expect roughly 50 percent of individuals to meet this criterion.
        c) Hypothesis: The research team will test the hypothesis that there is no effect of the intervention on credit score for study participants. We can reject the null if there is a statistically significant increase in the credit score for treatment group participants.
    2. Secondary Measure: mortgage trade line
        a) Constructed with Experian data listing this value over time.
        b) Hypothesis: The research team will test the hypothesis that there is no effect of the intervention on acquiring a mortgage trade line for study participants. We can reject the null if there is a statistically significant increase in the likelihood of a mortgage trade line for treatment group participants.
    3. Secondary Measure: total balance on open bankcards
        a) Constructed with Experian data listing this value over time.
        b) Hypothesis: The research team will test the hypothesis that there is no effect of the intervention on the total balance on open bankcards for study participants. We can reject the null if there is a statistically significant increase in the total balance on open bankcards for treatment group participants.
    4. Secondary Measure: total balance on delinquent accounts
        a) Constructed with Experian data listing this value over time.
        b) Hypothesis: The research team will test the hypothesis that there is no effect of the intervention on the total balance in delinquent accounts for study participants. We can reject the null if there is a statistically significant decrease in the total balance in delinquent accounts for treatment group participants.

V. Balance Checks

A. Participant demographics
1. Age
2. Gender
3. Race
4. Ethnicity
5. Years of Prior Education
6. Certificate or Some College
7. Home Owner
8. Marital Status (Single Parent)
9. Employment status

10. Any Government Assistance
11. TANF or SNAP
12. Number of Custodial Children
13. Any Health Insurance
14. Has Childcare
15. Annual Income

VI. Data Analysis

A. Main Specification

Given the simple random assignment design, the econometric model is straightforward. Let y_{ij} represent an outcome of interest (such as persistence or degree completion) for person i who was enrolled in the experiment round j. Let UP_{ij} be a dummy variable that equals 1 if the person was randomly assigned to the treatment group and zero otherwise. The impact of the program on outcomes can be estimated with a simple regression model

$$(1) \qquad y_{ij} = \alpha + x_{ij}\beta + UP_{ij}\delta + \lambda_j + \varepsilon_{it}$$

where x_{ij} is a vector of person level characteristics, λ_j is a cohort/round randomization effect, and ε_{ij} is a random error. The coefficient of interest is the estimate of δ. The two key outcomes for y_{ij} are persistence and degree completion, both measured as a dummy variable. In both cases, we give all participants an equal amount of time to complete the degree (2, 4, 6, or 8 semesters). Participants are counted as starting the semester after the initial UP enrollment process to account for the fact that the recruitment and lottery schedule generally is not completed until the last month of each respective semester. Second semester persistence is observable one year (two semesters) after the person is initially randomized into the study. For example, someone who applied in the fall of 2020 and passed the eligibility screen and coalition vote was then randomized in the November of 2020. The treatment group from that cohort connected with their coach and other UP services starting in December 2020. Individuals from this enrollment cohort were then identified as persisting for at least two semesters if they were still enrolled in their degree program during the Fall of 2021. In addition to general persistence, we estimate the program impact on 1, 2, 3, 4, 6, and 8 semester persistence.

This model produces an intention-to-treat estimate (ITT). As treatment has multi dimensions, it is not clear what compliance with treatment would entail in this context. If treatment is defined as entering the program, the treatment-on-the-treated estimate would be functionally the same as the ITT as historically, prior to randomization, so few offered admission have turned down the opportunity to enroll.

As our two primary outcomes – college persistence and completion – are discrete, estimating (1) by OLS will generate heteroskedastic errors so standard errors will be calculated using the procedure suggested by White (1981). We can estimate (1) by a logistic regression, but years of experience has suggested that marginal effects from multivariate logistic regressions and OLS models are quite similar when the mean of the outcome does not approach 1 or 0, so we will primarily use OLS estimation. That said, we will verify that the results are not sensitive to functional form and estimate robustness checks with logistic models.

The variables in the vector of individual characteristics (x) will include controls for the participant's age, sex, race/ethnicity, college credits acquired at the time of randomization, and the number of

children in the household. As we mentioned above, during the interview process, CSS rates the candidates along 6 dimensions (grit, follow-through, etc.). We will experiment with whether these rankings are predictive of education success as well, which will provide some descriptive background and inform the theory of change.

The research design of this study is fairly resilient to issues of attrition. Because all our outcomes will be generated from administrative data and not surveys, our randomized sample will be our estimating sample and we will not lose people to follow-up.

B. Covariates

We plan to include the following covariates in our regressions:

1. *Participant demographics*
    a) Age and age-squared
    b) Gender (1 = female, 0 otherwise)
    c) Race and ethnicity (set of mutually exclusive variables)
    d) Years of Prior Education
    e) Certificate or Some College
    f) Home Owner
    g) Marital status
    h) Employment status
    i) Any Government Assistance
    j) TANF or SNAP
    k) Number of Custodial Children
    l) Any Health Insurance
    m) Has Childcare
    n) Annual Income
    o) Levels of Childhood Trauma

C. Treatment effect heterogeneity

Heterogeneous impacts can be obtained by estimating separate models for sub-groups. We have sufficient power in the full sample to detect statistically significant program impacts but we will have limited ability to examine heterogeneity in program impacts. Our ability to examine these heterogeneous responses will be enhanced if we examine mostly binary groups where both groups have a large fraction of the sample. For example, we have a large minority population made of mostly American Indians and Hispanics. As a result, we will examine differences between white, non-Hispanic and minorities. We also hope to examine whether results differ based on levels of childhood trauma using ACE scores collected in baseline application materials. In the interviews conducted prior to the coalition vote for program participation, CSS staff rate the candidates on likelihood of success in the program on a 1-3 scale, and we want to examine whether this scale is predictive of success. We will cut the sample at the median rank of these CSS rankings from baseline, breaking the samples in half.

C1. Race

We will examine the differences between white, non-Hispanic and minorities. Differential program effects for the white vs. Native American subsamples are of interest.

C2. Levels of childhood trauma

We will check for any suggestion of heterogeneity by degree of childhood trauma, defining "high" levels of childhood trauma as answering "yes" to three or more ACE questions (out of 10 questions). This analysis reduces our sample size as the ACE survey will only be administered to enrollment cohort 3 and later. Given the small sample size that is currently available, we will split the sample at the median of ACE score rather than restricting covariates with the use of an interaction term.

C3. Employment status

Employed at baseline vs. not employed at baseline.

C4. Multiple children

One child at baseline vs. more than one child at baseline

C5. Age of youngest child

Youngest child less than five years of age at baseline vs. youngest child older than five years of age at baseline

C6. CSS readiness ranking

Above median rank of rating vs. below median rank of rating

D. Multiple Hypothesis Testing

The research team has limited their primary outcomes to those described above, which each fall under distinct domains. Classic p-values will be reported for all outcomes, which will provide a reader with full information that they can use to make multiple hypothesis testing corrections if they desire. To the extent we further explore secondary outcomes beyond those listed above, we will report traditional standard errors and p-values, as well as p-values that adjust for a family-wise error rate through a standard approach, such as the Westfall and Young (1993) step-down procedure. We will treat each data source as its own family when making these adjustments.

Testing multiple hypotheses raises the likelihood that any one hypothesis is found to be statistically significant purely by chance. We will report summary indices that aggregate multiple outcome variables within a common outcome domain. Aggregation not only improves the statistical power within a given domain but also vastly reduces the number of hypotheses examined. This plan pre-specifies what data will be collected, primary and secondary outcomes, the main specification, and subgroups of interest. By committing to a set of analyses in advance, we avoid concerns about data-mining and specification searching, and credibly commit to a few hypotheses that, together, comprise the central test of the diversion interventions. Classic p-values will be reported for all outcomes, which will provide a reader with full information that they can use to make multiple hypothesis testing corrections if they desire. We will also conduct non-parametric permutation tests and report permuted p-values for the main sets of analyses following Chetty et al. (2016).[2]

[2] This approach entails randomly re-assigning treatment status to households in the main sample and running the main specification thousands of times to simulate a counterfactual distribution of T-statistics. Relative to this counterfactual distribution, we can then compute permuted p-values as likelihood of observing our realized T-statistic. The same approach can be applied to sets of hypotheses to calculate the likelihood of observing by chance the magnitudes of treatment effects observed in the study.

VII. References

Aizer, Anna. 2010. The Gender wage gap and domestic violence. American Economic Review 100(4): 1847-59.

Bailey, T., Jenkins, D. and Leinbach, T., 2005. What We Know about Community College Low-Income and Minority Student Outcomes: Descriptive Statistics from National Surveys. Community College Research Center.

Bean, J.P. and Metzner, B.S., 1985. A conceptual model of nontraditional undergraduate student attrition. Review of Educational Research, 55(4): 485-540.

Bettinger, E.P. and Baker, R.B., 2014. The effects of student coaching: An evaluation of a randomized experiment in student advising. Educational Evaluation and Policy Analy- sis, 36(1):3-19.

Cerven, C., 2013. Public and private lives: institutional structures and personal supports in low-income single mothers' educational pursuits. Education Policy Analysis Archives, 21:17.

Deming, D.J., 2017. Increasing college completion with a federal higher education matching grant. The Hamilton Project, Policy Proposal, 3.

Evans, W. N., Kearney, M. S., Perry, B., & Sullivan, J. X. 2020. Increasing Community College Completion Rates Among Low-Income Students: Evidence from a Randomized Controlled Trial Evaluation of a Case-Management Intervention. Journal of Policy Analysis and Management, 39(4): 930-965.

Evans, W.N., Kolka, S. Sullivan J.X. 2019. Fighting Poverty One Family at a Time: Evidence from a Random Assignment Experiment of an Intensive Case Management Interven- tion. Working Paper, Wilson Sheehan lab for Economic Opportunities.

Goldin, C., and Katz, L. 2010. The Race Between Education and Technology. Cambridge, MA: Harvard University Press.

Goldrick-Rab, S., & Sorensen, K. 2010. Unmarried parents in college. The Future of Chil- dren, 20(2), 179–203.

Grubb, W. Norton. 2006. "Like, what do I do now?": The Dilemmas of Guidance Counsel- ing." In T. Bailey and V. Morest (Eds.), Defending the Community College Equity Agenda. Baltimore, MD: Johns Hopkins University Press, 195-222.

Hershbein, B., Kearney, M.S., and Pardue, L.W. 2020. College Attainment, Income In- equality, and Economic Security: A Simulation Exercise. AEA Papers & Proceedings, 110: 352-355. (longer version: NBER Working Paper No. 26747 February 2020.)

Jepsen, C., Troske, K., & Coomes, P. 2014. The labor-market returns to community college degrees, diplomas, and certificates. Journal of Labor Economics, 32(1):95-121.

Johnson, Jean, Jon Rochkind, Amber Ott, and Samantha DuPont. 2011. With Their Whole Lives Ahead of Them: Myths and Realities About Why So Many Students Fail to Finish College. Public Agenda. http://files.eric.ed.gov/fulltext/ED507432.pdf

Kane, T. J., Rouse, C. E., and Princeton University. 1995. Labor-market returns to two- and four-year college. Princeton, N.J: Princeton University, Industrial Relations Section.

Marcotte, D. E., Bailey, T., Borkoski, C., and Kienzl, G. S. 2005. The Returns of a Com- munity College Education: Evidence from the National Education Longitudinal Survey. Educational Evaluation and Policy Analysis, 27(2): 157-176.

Karp, M.M. and Bork, R.H., 2012. "They Never Told Me What to Expect, so I Didn't Know What to Do": Defining and Clarifying the Role of a Community College Student. CCRC Working Paper No. 47. Community College Research Center, Columbia University.

Karp, M.M., 2011. Toward a New Understanding of Non-Academic Student Support: Four Mechanisms Encouraging Positive Student Outcomes in the Community College. CCRC Working Paper No. 28. Assessment of Evidence Series. Community College Research Center, Columbia University.

Karp, M.M., O'Gara, L. and Hughes, K.L., 2008. Do Support Services at Community Colleges Encourage Success or Reproduce Disadvantage? An Exploratory Study of Students in Two Community Colleges. CCRC Working Paper No. 10. Community College Research Center, Columbia University.

Keyes, C.R. and Boulton, P., 1995. Campus Children's Centers: Support for Children and Families. Children Today 23(4): 18-21.

Liebowitz, M. and Taylor, J.C., 2004. Breaking Through: Helping Low-Skilled Adults Enter and Succeed in College and Careers. Jobs for the Future.

Liu, V. Y., Belfield, C. R., & Trimble, M. J. 2015. The medium-term labor market re- turns to community college awards: Evidence from North Carolina. Economics of Education Review, 44: 42-55.

Long, Bridget Terry. 2014. Addressing the Academic Barriers to Higher Education. in Policies to Address Poverty in America, ed. Melissa S. Kearney and Benjamin H. Harris. Brookings Institution, The Hamilton Project.

Miller, Kevin, Barbara Gault, and Abby Thorman. 2011. Improving Child Care Access to Promote Postsecondary Success Among Low-Income Parents. Report, IWPR #C78. Washington, DC: Institute for Women's Policy Research.

Richburg-Hayes, L., Brock, T., LeBlanc, A., Paxson, C.H., Rouse, C.E. and Barrow, L., 2009. Rewarding persistence: Effects of a performance-based scholarship program for low-income parents. Available at: http://dx.doi.org/10.2139/ssrn.1353360

Ruggles, S., Flood, S., Foster, S., Goeken, R., Pacas, J., Schouweiler, M. and Sobek, M.

IPUMS USA: Version 11.0 [dataset]. Minneapolis, MN: IPUMS, 2021. https://doi.org/10.18128/D010.V11.

Scott-Clayton, Judith. 2011. "The Shapeless River: Does a Lack of Structure Inhibit Students' Progress at Community Colleges." Columbia University, Teachers College, Com- munity College Research Center Working Paper No. 25.

Scrivener, Susan, and Michael J. Weiss. 2009. "More Guidance, Better Results?: Three-Year Effects of an Enhanced Student Services Program at Two Community Colleges." New York: MDRC.

Scrivener, Susan, Michael J. Weiss, Alyssa Ratledge, Timothy Rudd, Colleen Sommo and Hannah Freaques. 2015. Doubling graduation rates: Three-year effects of CUNY's Acceler- ated Study in Associate Programs (ASAP) for Developmental Education Students.

Stevens, A. H., Kurlaender, M., & Grosz, M. 2019. Career technical education and labor market outcomes evidence from California community colleges. Journal of Human Resources, 54(4), 986-1036.

Taniguchi, H. and Kaufman, G., 2005. Degree completion among nontraditional college students. Social Science Quarterly, 86(4): 912-927.

Tinto, V., 1975. Dropout from higher thesis of recent research. Review of Educational Research, 45(1): 89-125.

Westfall, P. H., Young, S. S., & Wright, S. P. (1993). On Adjusting P-Values for Multiplicity. *Biometrics*, *49*(3), 941–945. https://doi.org/10.2307/2532216

Xu, D., and Trimble, M. 2016. What about certificates? Evidence on the labor market returns to nondegree community college awards in two states. Educational Evaluation and Policy Analysis, 38(2): 272-292.

Zimmerman, S. D. 2014. The returns to college admission for academically marginal stu- dents. Journal of Labor Economics, 32(4): 711-754.