



Dear Vivian,

Thank you for submitting your proposal. A printable summary is below. Your confirmation number is 8875. A confirmation email will be sent to you within 24 hours.

Applicants will be notified of the status of the proposed project on May 4, 2015.

If you have questions or need assistance regarding your application please contact the AIR Grant staff at 850-385-4155 x200 or grants@airweb.org.

SUMMARY

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Discipline of highest degree	
Position description	
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Campus type	
Years of experience in IR	
IR Roles	
Year of birth	
Race/Ethnicity	
Gender	

Grant Type
I am applying for a:
Dissertation Grant

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Project Description

Project title:

Is there benefit to going backward? The first look at the labor market returns to reverse transferring from four-year to two-year colleges

Statement of the research problem and national importance (limit 750 words):

- What is the research problem this proposal intends to address?
- Why is this topic of national importance?
- Why is it timely to conduct this research at this time?

Student transfer and mobility have become some of the most pronounced trends in higher education in the past decade. While most studies look at upward transfer from two-year to four-year colleges (Adelman, 1999; Pascarella & Terenzini, 2005; Dougherty & Kienzl, 2006; Doyle, 2009; Eagan & Jaeger, 2009), we know very little about reverse transfer (RT) students that switch from four-year to two-year colleges. There are two types of RT: permanent RT - staying in the two-year sector for more than a term; and temporary RT - staying for only one term or a summer in the two-year schools. RT is an increasingly common occurrence in higher education that deserves closer study. According to Beginning Postsecondary Student (BPS) data (author's calculation), the percentage of four-year students that ended up at two-year colleges had been stable at 11% for the four-year cohorts beginning at 1989-90, 1995-96, and 2003-04. However, that percentage would have been higher if it included temporary RT students and those who eventually returned back to four-year universities. In fact, a recent RT report from the National Student Clearinghouse (NSC) utilizing student-level data representative of 93% of U.S. college enrollment (Hossler et al., 2013) found that 16% of the students that began at four-year institutions in fall 2005 eventually transferred to two-year colleges within six years of college entry, and 71% of those students remained in the two-year sector for more than one term.

The prevalence of RT prompts us to consider the importance of alternative education outcomes aside from degree completion and to emphasize the role of institutions as potential stepping-stones to goals more tailored to particular students' needs (Burd, 2004; Hebel & Selingo, 2009; Lopez et al, 2005; Reyna, 2010). As an example, the NSC report showed that two-thirds of the RT students left the four-year sector without any credentials after enrolling for five years (Hossler et al., 2013). Even though these students are conventionally considered "dropouts", half of these "dropouts" were actually enrolled in or had completed a two-year college by the end of their sixth year. This striking fact illustrates how RT helps students successfully pursue non-traditional goals even when they do not attain a four-year degree. Nonetheless, policy makers continue to tie funding priorities and institutional ranking systems to graduation rates on a per-school basis under the pressure of the college completion agenda. This approach to policy needs reevaluation, and my research intends to help facilitate that process.

It is important not to forget that alongside their mission to transition students from high school to employment or four-year colleges, community colleges act as safety nets to underachieving and low-income students and provide opportunities of labor market value they would not otherwise have. My research will shed light on this hidden group of community college students and beneficiaries under Obama's "free community college" proposal. Since many RT students are non-traditional and disadvantaged (Lowery, 2010; Kajstura & Keim, 1992; Adelman, 2006), an updated study of their characteristics and outcomes will help postsecondary institutions better serve them and publicize the advantage of the RT approach to appropriate students.

Despite the prevalence and importance of RT, very little is known about these students or their outcomes. Most previous research was descriptive, published before 2000, and utilized outdated data from only a single institution or region. Directly comparing RT and four-year students is problematic because transfer students are likely to be disadvantaged or underachieving, traits often associated with negative outcomes. Taking advantage of the demographic, transcript, and labor market data of the BPS and state administrative data, my proposed research will look at three research questions: (1) What are the demographic characteristics of RT students and their patterns of transferring? (2) What are the academic outcomes of RT students? And (3) what are the labor market outcomes of RT students?

I plan to use the number of two-year colleges in close proximity to initial 4-yr schools as an instrumental variable for likelihood of RT. I will also employ the difference-in-difference strategy based on two exogenous factors. First, I compare the outcomes of students with different numbers of two-year institutions near their initial four-year colleges. Then, I will compare the differences in the effect of the distance variable for those whose GPA is just above and below the cutoff of Pell grant.

Given the increased focus on postsecondary accountability, this research will provide useful information on a hidden group of students to help policy makers and postsecondary institutions better serve RT students.

Review the literature and establish a theoretical grounding for the research (limit 1000 words):

- What has prior research found about this problem?
- What is the theoretical/conceptual grounding for this research?

Literature Review

Empirical literature on the outcomes of RT students is mostly descriptive. Unsurprisingly, the literature generally found lower re-attendance rates and degree completion rates, as well as longer times to degree among RT students relative to students exclusively in four-year institutions (Goldrick-Rab & Pfeffer, 2009; Hossler et al., 2013). For the RT students that initially attended a four-year college in 2005, the NSC report found that only 18% of them returned to a four-year college and completed a degree, while 16% were still enrolled at a four-year institution by the end of their sixth year. Excluding the temporary RT students that made up 30% of the RT student population, that percentage drops to only 10%. The two-year degree completion rate is also low for RT students. Only 30% of them completed any degree or were still enrolled in a two-year college at 2 yrs. The only exception is the temporary RT students, which had a 20% higher completion rate than their peers in their original four-year colleges: 76% compared to 58% (Hossler et al., 2013). But the completion rate fell to 33-40% looking at just the permanent RT students.

Despite having worse academic outcomes than students with exclusive four-year enrollment, descriptive studies consistently found that RT students performed better than they had been doing at their original four-year institutions. Brimm & Achilles (1976) concluded from survey responses that RT students improved their GPA at community colleges by as much as one letter grade. Similar improvements were also found in other observational studies for students of all performance levels in their initial four-year universities in Northern Illinois (Swedler, 1983) and North Carolina (Gregg & Stroud, 1977). Both studies also suggested that RT students found their second four-year school a better match than their original colleges.

Other than academic outcomes, many qualitative studies also found that students are more satisfied with their experience at their two-year colleges than with the initial four-year colleges. The majority of the reverse transfer students found their two-year institutions less competitive, more conducive to learning, with smaller class sizes, more individual attention, and with more focused and relevant curriculum to their career (Hill-Brown, 1989; Kuznik, 1972; Losak, 1980; Vaala, 1991). In fact, they show dissatisfaction towards the counseling, job placement, cost of attendance, and work skill development in their initial colleges (Kajstura & Keim, 1992). These studies suggest that students transfer for reasons other than what are commonly measured, and soft outcomes related to job placement and college atmosphere are also important to look at.

The previous literature has provided a general understanding of reverse transfer students, but most of the studies are outdated. Student behavior and colleges' response to RT have changed drastically in the last two decades, so more updated research is needed. Besides, many of these studies use data from a single college, region, or state, which make it difficult to generalize the results to a broader group of students. Also, previous studies rarely look at labor market outcomes, which are better measures of the impact of reverse transferring than four-year academic outcomes. Finally, these estimates are likely to be biased since reverse transfer students and exclusive four-year students are different in unobservable characteristics, such as ability, motivation, and socioeconomic status. Failure in adjusting for these inherent differences will result in selection bias.

Kalogrides and Grodsky (2011) attempted to control for these pre-existing differences with propensity scores matching using the National Education Longitudinal Study of 1992. They found that though reverse transfer students had worse academic and labor market outcomes than exclusive four-year students, they fared better than those without postsecondary education, and so they concluded that two-year colleges act as a safety net for four-year students that are disadvantaged and academically underprepared. Their study may still be biased since there may be other unobservables, such as inherent ability and motivation, for which researchers do not have data and so cannot be controlled. Additionally, a better comparison group for their study population would have been four-year dropouts rather than those entirely without postsecondary education. This proposed paper attempts to fill the gap in the reverse transfer literature by providing causal estimates on the effect of reverse transferring on academic and labor market outcomes.

Conceptual Framework

Becker's human capital model (1962) provides a basic theoretical grounding as to why students may want to transfer to two-year colleges after having initially enrolled in four-year schools. This theory is widely used in the literature that looks at the relationship between education level and labor market outcomes (Card, 1999). The model hypothesizes that individuals would choose a suitable level and type of education to maximize future labor market gains and minimize cost within budget constraints.

Each of the crucial components in the model could change after students enrolled in four-year colleges and therefore cause students to RT (Hagedorn & Castro, 1999; Mullin & Phillippe, 2009; Townsend, 2001; Winter & Harris, 1999). In terms of perceived value of credentials, as students learned more about the labor market outcomes associated with four-year and two-year programs, they may also alter their academic or career goals leading them to choose programs in the two-year sectors. Regarding budget constraints, financial shocks may cause them to permanently or temporarily attend two-year colleges. Changes in non-monetary cost may also affect student's decisions. Individuals that find their original four-year institutes academically difficult or their studying environment hostile may opt for two-year colleges and seek a change of environment. For temporary transfer students, they may choose to attend summer courses for economic reasons or proximity to home. Despite the common notion of four-year schools as the pinnacle of higher education, permanent and temporary RT can be a valid and appropriate choice for many students.

Describe the research method that will be used (limit 1000 words):

- What are the research questions to be addressed?
- What is the proposed research methodology?
- What is the statistical model to be used?

My research questions are: (1) What are the demographic characteristics of RT students and the most common patterns of transferring? (2) What are the academic outcomes of the RT students? (3) What are the labor market outcomes of RT students?

My research will use both the BPS and administrative data from the Universities of Arkansas System. The former is nationally representative and has around 3,900 RT students over three cohorts. The state dataset contains administrative records of all students enrolling in Arkansas's public four-year and two-year institutions between 2006 and 2012 and has as much as 14,000 RT students. They both have demographic, transcript, and labor market data, which are essential for my analysis. Furthermore, the BPS data also contain students' financial aid and socioeconomic information.

The first question intends to provide a basic description of the RT students regarding their demographic characteristics and the patterns of RT. I define permanent RT students as those spending more than one term in the two-year sector and temporary RT students as individuals attending two-year colleges for only one term. My analysis will look at them separately given the different composition and goals of the students. For question 2 and 3, directly comparing the outcomes of students with different transfer statuses is problematic because students are unlikely to transfer randomly. If students that are underperforming or of lower socioeconomic status tend to RT, the returns to RT estimate will be biased downward. Research showed that students are more likely to attend a certain type of institution based on proximity and had commonly used the distance to college as an instrumental variable (IV) for attendance (Card 1995; Long & Kurlander, 2009). My preliminary results also suggest that four-year students are more likely to RT due to the proximity to or higher availability of two-year colleges near their initial universities. This supports the use of distance related IV for the two stage least square estimation:

$$Y_i = \alpha_i + \beta \text{TRANSFER}_i + \Omega X_i + \text{CollegeFE}_j + \text{CohortFE}_t + \xi_i$$

where $\text{TRANSFER}_i = \delta_i + \gamma \text{Distance}_i + \lambda X_i + \text{CollegeFE}_j + \text{CohortFE}_t + \epsilon_i$

TRANSFER_i is the key variable of interest and a function of the distance-related IV. It is a binary variable and shows whether individual i transfers to a two-year school from a four-year institution. I will run separate analysis for the two IVs: distance to the closest two-year colleges from and number of two-year schools near the initial university. In the second stage, I will regress the outcome Y_i on the estimated treatment status obtained in the first stage.

One of the major criticisms of the distance IV is that individuals who place higher value on education may live closer to postsecondary campuses. It

would be a threat to the identification strategy if highly motivated students live closer to four-year than to two-year colleges. One way to address this concern is to take advantage of the rich BPS dataset by including students demographic, socioeconomic characteristics, and their high school transcript information (Xit-1). I will also augment the IV estimation with cohort and college fixed effects to control for any between cohort or universities selections.

Despite controlling for a rich set of observables, selection problem may still be present if I fail to control for unobservables affecting both treatment statuses and outcomes, such as motivation and innate ability. The second proposed method therefore combines the use of distance-related variables with a regression discontinuity (RD). Another factor that may influence student's decision to transfer is the eligibility for the continual receipt of the Pell grant, the largest need-based grant program. The initial Pell eligibility is based on financial need. To qualify for the renewal of Pell, students must meet the satisfactory academic progress (SAP) set by individual institutions. Most colleges set the criteria of SAP to a grade point average (GPA) of 2.0 and the completion of two-third of the attempted credits. Schudde and Scott-Clayton (2014) found that a quarter of the students failed to meet the GPA component of SAP nationally and the percentage increases to 40% once the credit requirement is taken into consideration. Since four-year schools are more expensive than two-year colleges, losing the Pell grant will induce an income shock and disincentivize students from attending universities (Bettinger, 2004; Lindo, Sanders, & Oreopoulos, 2010). In fact, preliminary research shows that students right below the GPA cutoff are more likely to transfer to two-year colleges compared to students right above the cutoff.

The second method combines the RD and difference-in-difference (DID) approaches. The RD component calculates the difference in outcomes for individuals just below and above the GPA cutoff. Then the DID approach compares the RD differences between students with different availability level of two-year colleges or distance to the closest two-year from by their four-year institution. The RD-DID model takes the form of:

$$Y_i = \eta_i + \rho (\text{Below}_i) + \Phi (\text{Distance}_i) + \theta (\text{Below}_i * \text{Distance}_i) + \alpha X_i + \text{CollegeFE}_j + \text{CohortFET}_t + \epsilon_i$$

where ρ represents the effect of failing the SAP cutoff on outcome Y_i . Below equals to 1 if the individual has a GPA below 2.0. Distance is the same as before. I will also include student characteristics, college and cohort fixed effects. The coefficient of interest is θ , which is a proxy for the likelihood of transfer from a four-year to a two-year school.

Under both methods, I will look at academic and labor market outcomes. The comparison group for the temporary RT students will be exclusively four-year students since their goal is to graduate from a four-year university. I will compare their Bachelor's degree attainment, time to degree, and satisfaction with their postsecondary experience. For permanent RT students, I will look at their satisfaction level with their college experience and the relative performance in the last attended colleges relative to four-year dropouts. For both treatment groups, I will examine their labor market outcomes, such as earnings, hours worked, job satisfaction, and the relevance of degree to work place.

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Project Description - Appendix

- [Appendix-variable list & CV](#)

NSF Datasets

NSF datasets:

Will you use a NSF dataset?

No

Please check all NSF datasets that apply:

Explain why the selected NSF dataset(s) best serves this research limit (250 words):

Include a variable list for each dataset used.

NCES Datasets

NCES datasets:

Will you use a NCES dataset?

Yes

Please check all NCES datasets that apply:

- Beginning Postsecondary Student (BPS) Longitudinal Study and Transcript Data

Explain why the selected NCES dataset(s) best serves this research (limit 250 words):

Include a variable list for each dataset used.

The Beginning Postsecondary Student (BPS) dataset is the ideal dataset for my research questions because of its representation, recent cohort, availability of geocode information, and a rich set of variables covering students from high school year to employment. The BPS is nationally representative of the beginning college cohorts of 1989-90, 1995-96, and 2003-04. To my knowledge, no other dataset beside the Educational Longitudinal Survey of 2002 has national data of a cohort enrolling beyond 2000. Moreover, the key advantage of the BLS is the larger sample size and higher volume of reverse transfer students (~3900). It also has students all started at postsecondary education at the same time as opposed to ELS that are representative of a high school cohort. The zip code information of student's college addresses will also be essential to construct one of the instrumental variables. In addition, BPS also has information on student demographic and socioeconomic status, which are crucial in my analysis to control the selection into transfer status. In terms of outcome variables, BPS contains student feedback toward the satisfaction of their education and work experience in addition to earnings information. Finally, the transcript data will allow me to track grade and credits information at all colleges attended by each individual.

I have attached a list of variables obtained from the BPS 04/09 data, which I will construct the variables I need from. Similar set of variables will be used for previous cohorts.

Timeline and Deliverables

Timeline:

Provide a timeline of key project activities.

I have already received approval to use the datasets I need and have begun cleaning the data and constructing variables required for the analysis. I plan to complete my proposed research according to the following timeline:

Summer 2015

June - Complete in-depth literature review and descriptive analysis of the characteristics and pattern of reversed transfer

July to Aug - Complete preliminary causal analyses for the outcomes of reverse transfer

Fall 2015

Sept to Oct - Complete the oral defense of the research proposal to dissertation committee. Write up preliminary results for the mid-year progress report to AIR due on Nov 4, 2015.

Nov - Present preliminary results at the Association for Public Policy Analysis and Management (APPAM) Annual Conference.

Spring 2016

Jan to March - Finish data analysis and write dissertation draft; share results with the Universities of Arkansas system; present at the Association for Education Finance and Policy (AEFP) Conference March 17-19th.

April to May - Thesis defense to dissertation committee and revise dissertation draft.

Summer 2016

May 30 to June 3 - Present my research at the AIR forum.

July 10 - Submit my final report to AIR.

Deliverables:

List deliverables such as research reports, books, and presentations that will be developed from this research initiative.

I will develop a working paper to present my key results to the Universities of Arkansas System and after approval the paper will be made available on the website of Community College Research Center at Teachers College. I will submit the proposal and present my findings at the APPAM and AEFP conferences. The final paper will be submitted to AIR, and I expect to submit it as a research article for publication in a leading peer-review education journal such as Educational Evaluation and Policy Analysis, Economics of Education Review, or Journal of Higher Education.

Disseminate results:

Describe how you will disseminate the results of this research.
(Note: Costs of travel to meetings should be calculated on the budget page.)

In addition to journal article submissions, I will present my research in the Economic and Education Seminar at Teachers College and to the Universities of Arkansas System. I will also apply for and present at major conferences, such as APPAM, AEF, and Association for the Study of Higher Education.

IRB Statement**Statement of Institutional Review Board approval or exemption (limit 250 words):**

As part of the proposal, a statement outlining a plan for Institutional Review Board (IRB) approval is required. The statement should outline the applicant's timeline and plan for submitting the proposal to an IRB or explain why IRB approval is not necessary. Final IRB action is not necessary prior to submitting the application.

The federal regulation 45 CFR 46.101(b) outlines that certain uses of existing data may be exempted from the IRB review requirement. "Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects" may be exempted.

I will also be using the transcript record from the Universities of Arkansas system and the matched earnings data from the Arkansas Unemployment Insurance Record. Any student identifying information is already stripped away to ensure confidentiality. The Community College Research Center (CCRC) at Teachers College has already received IRB exemption for the use of the data and the data are now stored on a secure CCRC server. As one of the research assistants at CCRC, I have already requested and been added in the data agreement as an authorized user of the data.

I will also contact the IRB office of Teachers College Columbia University to confirm the above and take necessary steps as advised.

Restricted Datasets**Statement of use of restricted datasets (limit 250 words):**

Applicants should provide a statement indicating whether the proposed research will require use of restricted datasets. If restricted datasets will be used, the plan for acquiring the appropriate license should be described. Review the requirements for restricted use licenses at the NCES and NSF websites.

If restricted datasets will not be used, leave this text box blank and click *Save and Continue*.

My proposed research plans to use the restricted Beginning Postsecondary Student Longitudinal Study and Transcript data. I am currently under the license of my advisor Thomas Bailey (license #: 000814507E) for the purpose of studying the relationship of education and labor market outcomes and already have access to the data I need.

I have completed all of the requirements of the Institute of Education Sciences restricted-use data security training. I will follow the regulations by NCES and IES data Security Office, including but not limited to never using the data to identify individual respondents nor taking the data out to unauthorized locations. I will also submit my results, documents, and presentations to IES Data Security Office for disclosure approval before distributing to people without license.

As mentioned before, I have been written in the data agreement for the Arkansas data and will be using the data on the secure server.

Biographical Sketch(es)**Biographical sketch (limit 750 words):**

I am a fourth year doctoral student in Economics and Education at Teachers College (TC) Columbia University and a senior research assistant at Community College Research Center (CCRC) at TC. I hold a Master's of Art degree in the same program at TC and a Bachelor's of Art degree from Macalester College, MN. My research interests include transfer in the higher education sector, the return to postsecondary education, labor economics, and for-profit education.

Through my work at CCRC, I have developed a deep interest and understanding of the most pressing issues in postsecondary education. My first project that looked at the returns to four-year and two-year credentials also developed into a publication (lead author) in a top ranked journal – Economics of Education Review. In addition, I also have other CCRC working papers looking at the returns to for-profit education (see my CV attached). I have also presented my research and discussed papers in conferences like the Association for Education Finance and Policy Annual Conference, Association for Public Policy Analysis and Management Annual Conference, and Center for Analysis of Postsecondary Education and Employment Conference.

My work at CCRC also gives me strong quantitative skills in working with large-scale data and using STATA. I have cleaned and analyzed data using multiple state administrative datasets and restricted data from NCES, such as the Beginning Postsecondary Student and Educational Longitudinal Survey data. As a doctoral student, my coursework has set up a firm foundation for statistical and causal methods in the field of education. I have completed doctoral-level courses, such as Causal Inference, Panel Data Analysis, Labor Economics, and Public Finance at both Columbia University and New York University. My coursework and policy-related work at CCRC will therefore fully equip me to complete the proposed research.

Budget

- [budgetYuenTingLiu](#)

Funding History**Funding history (limit 250 words):**

A statement of prior, current, and pending funding for the proposed research from all sources is required. The statement should also include a history of all prior funding from AIR to any of the PIs for any activity. Funding from other sources will not disqualify the application but may be considered in the funding decision.

I have been receiving the International Student Fellowship and Departmental scholarship from Teachers College Columbia University, which have covered my cost of attendance so far. All of the funding will end by May 2015. I have not submitted this proposal for any other source of external funding other than this AIR dissertation grant application.

Dissertation Advisor Letter of Support

- [YTLiuLetterofSupport](#)

Variable List

I will construct the variables I need from this list of BPS variables obtained from the 04/09 data. Similar set of variables will be used for previous cohorts.

Demographics Information

CITIZEN2	Citizenship status 2003-04
depclaim	Claimed as a dependent 2003-04
delayenr	Delayed enrollment into PSE: Number of years 2003-04
DEPEND5A	Dependency and marital status (separated=married) 2003-04
DEPEND5B	Dependency and marital status (separated=unmarried) 2003-04
depend	Dependency status 2003-04
gender	Gender
hispanic	Race/ethnicity: Hispanic or Latino origin
hisptype	Race/ethnicity: Type of Hispanic origin
raindian	Race: American Indian or Alaska Native
raindtrb	Race: American Indian or Alaska Native recognized tribe
raasian	Race: Asian
rablack	Race: Black or African American
raisland	Race: Native Hawaiian or other Pacific Islander
raother	Race: Other
rawhite	Race: White
riskindx	Risk index and nontraditional indicators 2003-04
singlpar	Single parent status in 2003-04
smarital	Student's marital status as of 2003-04
disable	Disability 2004: Any
DISABL06	Disability 2006: Any
DISABL09	Disability 2009: Any
depchild	Dependent children: Any 2003-04
depany	Dependents: Has dependents 2003-04
immigra	Immigrant status 2003-04
homepar	Assets: Parent owns home 2003-04
homestud	Assets: Student owns home 2003-04
owninvst	Student owns investments, business, or farm over \$10,000 2003-04
cagi	Adjusted Gross Income (AGI) 2003-04
age	Age first year enrolled

Pre-college characteristics

tesatder	Admissions test scores (ACT or SAT)
CRDAP04	Advanced Placement credits accepted
teactder	Derived ACT score
tesatmde	Derived SAT math score
tesatvde	Derived SAT verbal score
CRDHS04	Earned any college level credits in high school
gpalast	Grade point average estimate when last enrolled thru 2009

hsdeg	High school degree type
hcgparep	High school grade point average (GPA)
hsgradyy	High school graduation year
hstype	High school type attended
hcmath	Highest level of high school mathematics
tetook	SAT or ACT exams taken

Enrollment pattern

ENDTLA3Y	Date of last enrollment through 2006
ENDTLA6Y	Date of last enrollment through 2009
ENCOEN3Y	Ever co-enrolled through 2006
ENCOEN6Y	Ever co-enrolled through 2009
ENMNT3Y	Months enrolled (total) through 2006
ENMNT6Y	Months enrolled (total) through 2009
ENMNFT3Y	Months enrolled full time (total) through 2006
ENMNFT6Y	Months enrolled full time (total) through 2009
ENMNPT3Y	Months enrolled part time (total) through 2006
ENMNPT6Y	Months enrolled part time (total) through 2009
ENINUM1	Number of institutions attended in 2003-04
ENINUM2	Number of institutions attended in 2004-05
ENINUM3	Number of institutions attended in 2005-06
ENINUM4	Number of institutions attended in 2006-07
ENINUM5	Number of institutions attended in 2007-08
ENINUM6	Number of institutions attended in 2008-09
ENINUM3Y	Number of institutions attended through 2006
ENINUM6Y	Number of institutions attended through 2009
PRLVL6Y	Attainment or level of last institution enrolled through 2009
ENDTFI3Y	First institution date last enrolled as of 2006
ENDTFI6Y	First institution date last enrolled as of 2009
ENLY3Y	Last academic year enrolled anywhere through 2006
ENLY6Y	Last academic year enrolled anywhere through 2009
PTX4TY3Y	Track exit: Type of exit at 4-year institution 2006
PTXTY3Y	Track exit: Type of exit at any type of institution 2006
RSN2A	Purpose (2nd school) 2006: Complete a degree
RSN2C	Purpose (2nd school) 2006: Earn credits
RSN2D	Purpose (2nd school) 2006: Gain job skills
RSN2F	Purpose (2nd school) 2006: Other reasons
RSN2E	Purpose (2nd school) 2006: Personal interest
RSN2B	Purpose (2nd school) 2006: Transfer to 4 year
RSN3A	Purpose (3rd school) 2006: Complete a degree
RSN3C	Purpose (3rd school) 2006: Earn credits
RSN3D	Purpose (3rd school) 2006: Gain job skills
RSN3F	Purpose (3rd school) 2006: Other reasons
RSN3E	Purpose (3rd school) 2006: Personal interest
RSN3B	Purpose (3rd school) 2006: Transfer to 4 year

rsnlsa	Purpose (last school) 2009: Earn a degree
rsnlsb	Purpose (last school) 2009: Earn credits
rsnlsc	Purpose (last school) 2009: Gain job skills
rsnlsx	Purpose (last school) 2009: Other reasons
rsnlsd	Purpose (last school) 2009: Personal interest
rsnlse	Purpose (last school) 2009: Transfer to 4 year
RLV04A	Reason left 2004: Academic problems
RLV04C	Reason left 2004: Dissatisfied with program
RLV04E	Reason left 2004: Family responsibilities
RLV04D	Reason left 2004: Financial reasons
RLV04G	Reason left 2004: Finished desired classes
RLV04X	Reason left 2004: Other reasons
RLV04F	Reason left 2004: Personal reasons
RLV04B	Reason left 2004: Scheduling problems
RLV06A	Reason left 2006: Academic problems
RLV06H	Reason left 2006: Called for military service
RLV06C	Reason left 2006: Dissatisfied with program
RLV06E	Reason left 2006: Family responsibilities
RLV06D	Reason left 2006: Financial reasons
RLV06G	Reason left 2006: Finished desired classes
RLV06X	Reason left 2006: Other reasons
RLV06F	Reason left 2006: Personal reasons
RLV06B	Reason left 2006: Scheduling problems
RTR04A	Reason transferred 2004: Academic problems
RTR04E	Reason transferred 2004: Family responsibilities
RTR04D	Reason transferred 2004: Financial reasons
RTR04G	Reason transferred 2004: Finished classes
RTR04C	Reason transferred 2004: Not satisfied
RTR04X	Reason transferred 2004: Other reasons
RTR04F	Reason transferred 2004: Personal reasons
RTR04J	Reason transferred 2004: Pursue bachelor's degree
RTR04B	Reason transferred 2004: Scheduling problems
TFDTDI3Y	Transfer (first): Date began at destination institution 2006
TFDTDI6Y	Transfer (first): Date began at destination institution 2009
TFDTOI3Y	Transfer (first): Date left origin institution 2006
TFDTOI6Y	Transfer (first): Date left origin institution 2009
TFIFTY3Y	Transfer (first): Destination institution type as of 2006
TFIFTY6Y	Transfer (first): Destination institution type as of 2009
TFMNFT3Y	Transfer (first): Full time months before destination school 2006
TFMNFT6Y	Transfer (first): Full time months before destination school 2009
TFINCT3Y	Transfer (first): Institutions by control 2006
TFINCT6Y	Transfer (first): Institutions by control 2009
TFINLV3Y	Transfer (first): Institutions by level 2006
TFINLV6Y	Transfer (first): Institutions by level 2009
TFLMOI3Y	Transfer (first): Intensity last month before transfer 2006

TFLMOI6Y	Transfer (first): Intensity last month before transfer 2009
TFINOI3Y	Transfer (first): Intensity pattern before transfer 2006
TFINOI6Y	Transfer (first): Intensity pattern before transfer 2009
TFMN2I3Y	Transfer (first): Months between institutions 2006
TFMN2I6Y	Transfer (first): Months between institutions 2009
TFMNOI3Y	Transfer (first): Months elapsed at origin school 2006
TFMNOI6Y	Transfer (first): Months elapsed at origin school 2009
TFMNDI3Y	Transfer (first): Months elapsed before destination school 2006
TFMNDI6Y	Transfer (first): Months elapsed before destination school 2009
TFENOV3Y	Transfer (first): Overlapping enrollment 2006
TFENOV6Y	Transfer (first): Overlapping enrollment 2009
TFMNPT3Y	Transfer (first): Part time months before destination school 2006
TFMNPT6Y	Transfer (first): Part time months before destination school 2009
TFMNT3Y	Transfer (first): Total months enrolled before destination school 2006
TFMNT6Y	Transfer (first): Total months enrolled before destination school 2009
TFTYPE3Y	Transfer (first): Type 2006
TFTYPE6Y	Transfer (first): Type 2009
TFYRDI3Y	Transfer (first): Year began at destination institution 2006
TFYRDI6Y	Transfer (first): Year began at destination institution 2009
TFYROI3Y	Transfer (first): Year left origin institution 2006
TFYROI6Y	Transfer (first): Year left origin institution 2009
TFILTY3Y	Transfer (last): Destination institution type as of 2006
TFILTY6Y	Transfer (last): Destination institution type as of 2009
TFATT3Y	Transfer after attainment through 2006
TFATT6Y	Transfer after attainment through 2009
TRPLNY1	Transfer plans 2003-04
TFTYPE1	Transfer status during 2003-04
TFTYPE2	Transfer status during 2004-05
TFTYPE3	Transfer status during 2005-06
TFTYPE4	Transfer status during 2006-07
TFTYPE5	Transfer status during 2007-08
TFTYPE6	Transfer status during 2008-09
TR4PLNY1	Transfer to 4-year institution plans 2003-04
ITLVLA3Y	Institution level last attended through 2006
ITLVLA6Y	Institution level last attended through 2009
ITTYLA3Y	Institution type last attended through 2006
ITTYLA6Y	Institution type last attended through 2009

Distance related variable

homedist	Distance from first institution 2003-04
DISTNC06	Distance from most recent institution 2006
latitude	Transcript: Latitude coordinates for institution
longitude	Transcript: Longitudinal coordinates for institution

Transcript information

PRLVL5Y	Attainment or level of last institution enrolled through 2008
ATAADT3Y	First associate^s degree date attained through 2006
ATAADT6Y	First associate^s degree date attained through 2009
ATAAM6Y	First associate^s degree months elapsed through 2009
ATAAEN6Y	First associate^s degree months enrolled through 2009
ATBADT3Y	First bachelor^s degree date attained through 2006
ATBADT6Y	First bachelor^s degree date attained through 2009
ATBAM6Y	First bachelor^s degree months elapsed through 2009
ATBAEN6Y	First bachelor^s degree months enrolled through 2009
ATCTDT3Y	First certificate date attained through 2006
ATCTDT6Y	First certificate date attained through 2009
ATCTM6Y	First certificate months elapsed through 2009
ATCTEN6Y	First certificate months enrolled through 2009
AT1DT3Y	First degree date attained through 2006
AT1DT6Y	First degree date attained through 2009
AT1DIP6Y	First degree intensity pattern through 2009
AT1DM6Y	First degree months elapsed through 2009
AT1DEN6Y	First degree months enrolled through 2009
AT1TY3Y	First degree type attained through 2006
AT1TY6Y	First degree type attained through 2009
ATDEG1	Attained degree during 2003-04
ATDEG2	Attained degree during 2004-05
ATDEG3	Attained degree during 2005-06
ATDEG4	Attained degree during 2006-07
ATDEG5	Attained degree during 2007-08
ATDEG6	Attained degree during 2008-09
ENINPT1	Attendance intensity pattern in 2003-04
ENINPT2	Attendance intensity pattern in 2004-05
ENINPT3	Attendance intensity pattern in 2005-06
ENINPT4	Attendance intensity pattern in 2006-07
ENINPT5	Attendance intensity pattern in 2007-08
ENINPT6	Attendance intensity pattern in 2008-09
ENINPT3Y	Attendance intensity pattern through 2006
ENINPT6Y	Attendance intensity pattern through 2009

Financial Aid Information

aidapp	Applied for any aid 2003-04
fedapp	Applied for federal aid 2003-04
titivamt	Total federal Title IV aid 2003-04
CNSOWE09	Consolidated loan: Amount owed 2009
STFCUM09	Cumulative Stafford total through 2009
employamt	Employer aid (includes college staff) 2003-04
TOTGRT4	State and institutional grants 2003-04
meritaid	Total merit only grants 2003-04
instamt	Institutional aid total 2003-04

totalaid	Total aid 2003-04
PELL04	Pell grant amount during 2003-04
PELL05	Pell grant amount during 2004-05
PELL06	Pell grant amount during 2005-06
PELL07	Pell grant amount during 2006-07
PELL08	Pell grant amount during 2007-08
PELL09	Pell grant amount during 2008-09
pelldep	Pell Grant and dependency status in 2003-04
emplwaiv	Institutional tuition waivers for staff 2003-04
unsbloan	Total unsubsidized loans (all sources) 2003-04
aidsneed	Aid amount exceeding federal need 2003-04
efcaid	Aid subject to federal EFC limitation 2003-04
efc	Expected Family Contribution (EFC composite) 2003-04
SNEED1	Student budget minus EFC 2003-04
NETCST9	Tuition and fees minus all grants 2003-04
othrscr	Outside sources total 2003-04
privloan	Private (alternative) loans 2003-04
vadodamt	Veteran's benefits and DOD 2003-04
fedpack	Federal aid package by type of aid 2003-04
fedlnpak	Federal loan package by type of loan 2003-04
stateamt	State aid total 2003-04
stlnamt	State loans amount during 2003-04
stgtamt	Grants: Total state grants in 2003-04

Outcomes

LOCALR09	Housing when last enrolled 2009
PRLVL3Y	Attainment or level of last institution enrolled through 2006
ATBAFM6Y	Bachelor's degree at first institution months elapsed thru 2009
ATBAFI6Y	Bachelor's degree attainment at first institution through 2009
ATTYPE3Y	Degree types attained through 2006
ATTYPE6Y	Degree types attained through 2009
ATDEG3Y	First year attained degree through 2006
ATDEG6Y	First year attained degree through 2009
ATHTY3Y	Highest degree attained anywhere through 2006
ATHTY6Y	Highest degree attained anywhere through 2009
ATHTYF3Y	Highest degree attained at first institution through 2006
ATHTYF6Y	Highest degree attained at first institution through 2009
ATLTY3Y	Last degree type attained through 2006
ATLTY6Y	Last degree type attained through 2009
ATCTNU3Y	Number of certificates attained through 2006
ATCTNU6Y	Number of certificates attained through 2009
ATNUM3Y	Number of total degrees attained through 2006
ATNUM6Y	Number of total degrees attained through 2009
FREQ04A	Frequency 2004: Faculty informal meeting
FREQ04B	Frequency 2004: Faculty talk outside class

FREQ04D	Frequency 2004: Fine arts activities
FREQ04C	Frequency 2004: Meet academic advisor
FREQ04E	Frequency 2004: School clubs
FREQ04F	Frequency 2004: School sports
FREQ04G	Frequency 2004: Study groups
FREQ06A	Frequency 2006: Faculty informal meeting
FREQ06B	Frequency 2006: Faculty talk outside class
FREQ06D	Frequency 2006: Fine arts activities
FREQ06C	Frequency 2006: Meet academic advisor
FREQ06E	Frequency 2006: School clubs
FREQ06F	Frequency 2006: School sports
FREQ06G	Frequency 2006: Study groups
UGEWC09	Undergraduate education worth the cost 2009
DGEVR09	Highest degree ever expected 2009
GREN09	Currently enrolled in graduate school 2009
MAJ09CHG	Major changed as of 2009
GPA04	Grade point average 2003-04
GPA06	Grade point average 2006
GPA09	Grade point average estimate 2009
PROUT1	Cumulative persistence and attainment anywhere 2003-04
PROUT2	Cumulative persistence and attainment anywhere 2004-05
PROUT3	Cumulative persistence and attainment anywhere 2005-06
PROUT4	Cumulative persistence and attainment anywhere 2006-07
PROUT5	Cumulative persistence and attainment anywhere 2007-08
PROUT6	Cumulative persistence and attainment anywhere 2008-09
JBEN09A	Job 2009 employer offers benefits: Life insurance
JBEN09B	Job 2009 employer offers benefits: Medical insurance
JBEN09C	Job 2009 employer offers benefits: Retirement benefits
JOBEG06	Job 2006: Begin date
JOBTRN06	Job 2006: Courses not needed to get job
JOBFST06	Job 2006: First job after leaving school
JOBINT06	Job 2006: Had an internship or practicum
JOBEN06	Job 2006: Health insurance offered
JOBHRS06	Job 2006: Hours worked weekly
JOB CAR06	Job 2006: Related to career goals
JOBRCR06	Job 2006: Related to coursework
JOBRLM06	Job 2006: Related to major
JOBSIM06	Job 2006: Same or similar job while enrolled
JOBCLS06	Job 2006: Took classes toward certificate
JOBEMP06	Job 2006: Type of employer
JOBIND06	Job 2006: Type of industry
JOBOCC06	Job 2006: Type of occupation
JOBD09A	Job 2009 description: Allows freedom for other interests
JOBD09X	Job 2009 description: Others
JOBD09B	Job 2009 description: Pays the bills

JOBD09C	Job 2009 description: Provides benefits
JOBD09D	Job 2009 description: Provides experience for future
JOBR09A	Job 2009 responsibilities: Hiring or firing decisions
JOBR09B	Job 2009 responsibilities: Set salaries
JOBR09C	Job 2009 responsibilities: Supervise others
JOBCAR09	Job 2009: Consider current job start of career
JOBFST09	Job 2009: First job after leaving school
JOBHRS09	Job 2009: Hours worked weekly
JOBRCR09	Job 2009: Related to coursework
JOBRLM09	Job 2009: Related to major
JOBSBE09	Job 2009: Same or similar job before enrolled
JOBSIM09	Job 2009: Same or similar job while enrolled
JOBMON09	Job 2009: Total number of months in same or similar job
JOBEMP09	Job 2009: Type of employer
JOBIND09	Job 2009: Type of industry
JOBOCC09	Job 2009: Type of occupation
JOBUG09	Job 2009: Undergraduate education helped advance career
JOBS09A	Job 2009 satisfaction: Fringe benefits
JOBS09B	Job 2009 satisfaction: Importance and challenge
JOBS09C	Job 2009 satisfaction: Job security
JOBS09D	Job 2009 satisfaction: Opportunities for future training
JOBS09E	Job 2009 satisfaction: Opportunities for promotion
JOBS09F	Job 2009 satisfaction: Opportunities to use education
JOBS09G	Job 2009 satisfaction: Overall
JOBS09H	Job 2009 satisfaction: Pay
JOBPS09	Job 2009 placement: School assistance
JOBST09	Job 2009: Employment status
UNEMPL06	Unemployment 2006: Currently looking for a job
UNEMPT06	Unemployment 2006: Longest period in months
UNEMPN06	Unemployment 2006: Number of times unemployed
UNEMPL09	Unemployment 2009: Currently looking for a job
CUMULN09	Cumulative total student loan amount borrowed through 2009
ATDEG1	Attained degree during 2003-04
ATDEG2	Attained degree during 2004-05
ATDEG3	Attained degree during 2005-06
ATDEG4	Attained degree during 2006-07
ATDEG5	Attained degree during 2007-08
ATDEG6	Attained degree during 2008-09

Vivian Yuen Ting Liu

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718-514-4593

EDUCATION

Expected graduation: **Teachers College Columbia University, NY**, Ph.D. in Economics and Education
May 2016

Academic Advisor: Thomas Bailey
Teachers College, Columbia University
Department of Education Policy and Social Analysis
212-678-3091, TBailey@tc.edu

2011 **Teachers College Columbia University, NY**, M.A in Economics and Education, Academic Advisor: Mun Tsang
2009 **Macalester College, MN**, B.A. Double Majors in Economics and Education, Minor in Anthropology
2005 **Red Cross Nordic United World College**, Norway, Diploma of the International Baccalaureate

RESEARCH EXPERIENCE AND EMPLOYMENT

2012-present Senior Research Assistant, Community College Research Center, Teachers College, Columbia University
2014-present Education Monitoring & Evaluation Intern, Earth Institute, Columbia University
2011-2011 Quantitative Analyst, Communities for Teaching Excellence
2010-2010 Analytics Consultant, Teach For America
2007-2009 Research Assistant, Education Studies Department, Macalester College

TEACHING EXPERIENCE

Spring 2013 Statistics Teaching Assistant, Sociology Department, Columbia University
Fall 2009 – Spring 2010 Microeconomic Teaching Assistant, School of Social Work, Columbia University

PUBLICATIONS

Liu, V., Belfield, C., & Trimble, M. (2014). The Medium-term Labor Market Return to Community College Award: Evidence From North Carolina. *Economics of Education Review*, 44, 42-55.

WORKING PAPERS

Liu, V. & Belfield, C. (2014). Evaluating For-Profit Higher Education: Evidence from the Education Longitudinal Study. CAPSEE Working Paper. (Also under review) Available at:
<http://ccrc.tc.columbia.edu/media/k2/attachments/capsee-evaluating-for-profit-els.pdf>

Liu, V. & Belfield, C. (2014). The Labor Market Returns to For-Profit Higher Education: Evidence for Transfer Students. CAPSEE Working Paper. Available at:
<http://ccrc.tc.columbia.edu/media/k2/attachments/labor-market-returns-to-for-profit-higher-education.pdf>

Belfield, C. & Liu, V. (2015). The Labor Market Returns to Math Courses in Community College. A CAPSEE Working Paper. Available at:
<http://ccrc.tc.columbia.edu/media/k2/attachments/returns-to-math-courses.pdf>

SCHOLARSHIPS AND GRANTS

2012-present	Scholarship, Teachers College Columbia University, \$25,300
2009	Alma M. Robinson Education Prize, Macalester College, \$300
2005-2009	Shelby Davis Scholarship, Davis United World College Scholars Program, \$40,000
2005-2009	Kofi Annan International Scholarship, Macalester College, \$64,689
2008	Freeman Assist Grant, Institute of International Education, \$4000
2007	Freeman Assist Grant, Institute of International Education, \$4000
2003-2005	United World College Scholarship, \$44,000

SELECTED CONFERENCE PRESENTATIONS

More Credentials, More Pay? The Labor Market Returns to Stackable Credentials in Community Colleges, Association for Education Finance and Policy Annual Conference (AEFP), 2015

The Medium-term Labor Market Return to Community College Award: Evidence From North Carolina, Center for Analysis of Postsecondary Education and Employment Conference, 2014

Labor Market Returns to Community College Student Pathways, Association for Public Policy Analysis and Management Annual Conference (APPAM), 2013

The Labor Market Returns to For-Profit Higher Education, AEFP, 2013

PROFESSIONAL ACTIVITIES

Journal Referee: *Economics of Education Review*



**2015 Dissertation Grant Proposal
Budget Form**

Salary/Stipend	\$ 12,500.00
Tuition and Fees (if any)	\$ 5,000.00
Travel	
2016 AIR Forum (Presentation at 2016 Forum required):	\$ 1,000.00
Other research related travel:	\$ 1,000.00
<i>(Note: Other planned travel should be listed in the "Timelines and Deliverables" section)</i>	
Other research expenses	
Allowable expenses include: materials, such as software, books, supplies, etc.; consultant services, such as transcription, analysis, external researchers, etc.; and costs for publishing articles in journals. The purchase of computer hardware, printing a stand-alone book, overhead or indirect costs, and living expenses are not allowable. If you have questions about specific expenditures please contact AIR.	\$ 500.00
TOTAL REQUESTED	\$ 20,000.00

March 23, 2015

Association for Institutional Research
1435 E. Piedmont Drive, Suite 211
Tallahassee, FL 32308
Attn: AIR Dissertation Grant
grants@airweb.org

Letter of Support: Yuen Ting “Vivian” Liu

I am writing to recommend Yuen Ting “Vivian” Liu for an AIR Dissertation Grant. I am Vivian’s dissertation advisor. Vivian has been a graduate student in our economics of education program since 2011 and a research assistant at the Community College Research Center since 2012. During that time she has worked primarily on projects associated with our Center for the Analysis of Postsecondary Education and Employment (CAPSEE). These projects have involved quantitative estimation of the economic returns to different characteristics of a student’s postsecondary education. In particular she has worked on projects that analyzed the effects of attending a for-profit institution and the labor market implications of taking more math courses.

Vivian has been an excellent student in our selective PhD economics of education program. She has also been an effective research assistant. She has done an excellent job with carrying out the quantitative analyses, but she has also been a collaborator in the development of the projects, both in the consideration of the substantive content as well as the methodology. These analyses have yielded several research papers, one of which was just published in *Economics of Education Review* (Liu, Belfield, and Trimble, 2014), and another which is in submission.

She has chosen an excellent topic for her dissertation. It turns out that many students transfer in reverse, starting out at a four year college and then transferring to a community college. Some of these students simply take a course or two at the community college over the summer, but many are fully matriculated in the community college at least with the intention of either completing an associate degree and transferring back to the four-year college or in some cases earning an associate degree and going directly to work. There is very little research on this phenomenon so we have very little idea about its effects on students and under what circumstances it makes sense. It might be advantageous for students who struggle in a four year college to shift to a community college where they would be in smaller classes or might have a chance of taking more focused occupational programs. It also might be a good idea for students to transfer to a lower-cost community college for financial reasons. On the other hand, for students who want a bachelor’s degree, transferring to a community college may lower their chances of completing that degree. Given the surprising volume of reverse transfer, it is important to understand these effects, both in order to more effectively advise students and to be able to strengthen programs at both the four-year college and community college in order to better address the problems that lead students to reverse transfer or the problems the reverse transfer students might encounter.

While the topic is important, there are methodological problems that make a definitive analysis difficult. Students choose to reverse transfer so analysts cannot simply compare such students to those who stay at the four year college. Vivian has developed two identification strategies. The first

Liu Recommendation

Bailey page 2

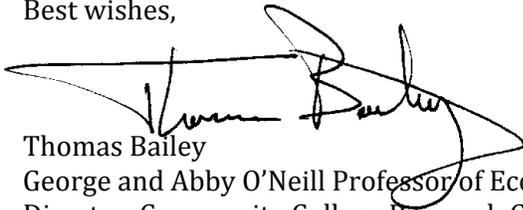
is to use the distance to a community college as an instrumental variable. A four-year student living close to community college is more likely to choose this option than a student living farther away. This identification strategy is common in the higher education literature. Her second strategy is novel. She will use a regression discontinuity approach based on the requirement that students achieve Satisfactory Academic Progress (SAP) to maintain eligibility for a Pell Grant. The idea is that students who do not maintain SAP will lose their financial aid and be more likely to switch to a lower cost community college. Thus she will be able to compare outcomes for students just above and just below the SAP cutoff GPA.

Vivian meets the requirements for the AIR Dissertation Fellow grants. She has completed the coursework needed for the PhD program. She is ready to begin dissertation work. Given her applied skills working with the necessary data, I anticipate she can complete the dissertation within one year. As a CAPSEE researcher, Vivian is provided support in using any NCES/NSF restricted datasets.

Vivian is an excellent student with an important dissertation topic that will have important implications for students and will be of interest to practitioners. She has chosen a good strategy to address a difficult methodological problem. She would be an excellent AIR Dissertation Fellow.

Please do not hesitate to get in touch with me if I can be of any further help with this decision.

Best wishes,



Thomas Bailey
George and Abby O'Neill Professor of Economics and Education
Director, Community College Research Center
Director, Center for Analysis of Postsecondary Education and Employment
Director, Center for the Analysis of Postsecondary Readiness