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Project Description I

Title:

The Community College Effect: A Comparison of Labor-Market Outcomes and Graduate School Attendance Rates of Community College Transfer and Native Students

Statement of the research problem and national importance:

Research Problem

The American community college functions as a gateway to higher education and serves as a vehicle for upward mobility, opportunity, and prosperity for millions of low-income, minority, and first-generation students seeking entry to the American middle-class (American Association of Community Colleges [AACC], 2012; Glass & Harrington, 2002; Pew Charitable Trusts, 2012; Striplin, 2000; Vaughn, 2000). Indeed, postsecondary study builds human capital (Paulsen, 2001) and is strongly correlated with increased earnings (Baum and Ma, 2007; Paulsen, 2001; United States Department of Education [USDE], 2010). In 2010, 13 million community college students were enrolled in credit and non-credit programs, representing almost half of the nation's undergraduate students (AACC, 2012). Indeed, more than half of the nation's Native American and Hispanic students are enrolled in community colleges (AACC, 2012).

While approximately 80 percent of all students who begin postsecondary study at a community college intend to complete a bachelor's degree, less than 25 percent are ultimately successful within 6 years (Bradburn, Hurst, & Peng, 2001; Bradburn & Hurst, 2001; USDE, 2010). Moreover, between 23 and 27 percent of all community college students complete the associate's degree within 3 years (ACT, 2010). Many have explained this discrepancy by suggesting that community colleges dissuade students from their educational goals (Brint & Karabel, 1989) through a process of "cooling-out" (Clark, 1960) or the "diversion effect" (Rouse, 1995). Others have argued that community colleges have a "democratizing effect" (Rouse, 19995) in that many students who matriculate at a community college would not have otherwise enrolled in postsecondary study.

The democratizing versus diversion debate has generated much discussion in the literature. Many studies have found a strong diversion effect or a "community college penalty" for students who begin postsecondary study at community colleges in terms of reduced educational attainment or degree completion (Alfonso, 2006; Bowen, Chingos, & McPherson, 2009; Doyle, 2009; Long & Kurlaender, 2009; Reynolds, 2006; Sandy, Gonzalez, & Hilmer, 2006). Yet, less is known about whether or not a "community college penalty" also exists in terms of college outcomes, such as graduate degree attainment or labor market outcomes, for students who earn their bachelor's degree after having started at a community college.

Consequently, this study will examine whether or not differences in educational and labor market outcomes exist for native four-year graduates compared to community college transfer students who also earn a bachelor's degree. The two outcomes of interest in this study are graduate degree enrollment (or intent) and annual earnings. Given the inherent issues of selection bias in estimating the differences between students who begin postsecondary study in community college versus a four-year institution, this study will use propensity score matching to account for the issue of selection and allow for causal inference.

National Importance & Timeliness

From a public policy perspective, these competing functions (i.e. diversion or democratization) of the community college system are critical to address. First, for students attending community colleges, average tuition and fees cost around $3,131 compared to $8,655 at a public four-year institution (College Board, 2012). Moreover, per-student expenditures at public 2-year institutions average roughly one-third that of public 4-year institutions (USDE, 2010). Thus, expenditures are significantly lower for both students and state governments when students attend community colleges. If educational and labor market outcomes for students who begin postsecondary study at community colleges are similar to native students who matriculate and continue at four-year institutions, state policymakers should encourage some students to attend community colleges. However, if educational and labor market outcomes differ between community college transfer and four-year native students, state policymakers might wish to reassess their policies. Moreover, recent projections suggest one-half of all future jobs will require some level of postsecondary education (United States Department of Labor, 2010). Therefore, it is imperative that students understand whether or not a community college penalty exists in terms of future educational opportunities and annual earnings in order to best position themselves to capitalize on the changing labor market.

Review the literature and establish a theoretical grounding for the research:

Theoretical Framework

Recently the rise in American high school graduates pursuing postsecondary education can increasingly be attributed to the belief that one accrues considerable economic benefits as a result of one's investment in college education. Indeed, substantial research on the labor market outcomes of students who invest in higher education posits that increased educational attainment and degree completion are highly correlated with greater earnings (Grubb, 1992, 1995; Juhn, Murphy, & Pierce, 1993; Kane & Rouse, 1995; Leslie & Brinkman, 1998; Monk-Turner, 1994; Murphy & Welch, 1989; Paulsen, 2001). Thus, the human capital model suggests people invest in an assortment of knowledge, skills, and competencies to increase their productivity and earn higher wages (Becker 1964).

According to human capital theory, the labor market rewards individuals who invest in additional education or training, recompensing with greater salaries those who chose to make within themselves this form of capital investment. Human capital theory relies on the assumption that labor market outcomes are influenced by the level of one's productivity, and that variance in productivity is attributable to the different types of investment individuals make in themselves, as exemplified through the quantity and quality of their education and job training skills, among other factors (Becker, 1964, 1975; Mincer, 1958, 1962; Schultz, 1960, 1961). Therefore, individuals with greater levels of educational

attainment and training are more valuable in the economic labor market; consequently they are rewarded with higher salaries and greater earning opportunities. Human capital theory also suggests that, all else being equal, there should be no differences in the labor market outcomes of community college transfer students and four year natives. Rather, perhaps some form of signaling is taking place in the labor market that identifies and rewards community college transfer students differently than four-year native graduates (Bills, 2003). This study aims to address this gap in the literature and further illuminate labor market outcomes for these two student populations.

Previous Research

Educational Attainment

Community college students face a multitude of obstacles on the path towards degree attainment. Several studies have shown that academic ability, college-level preparation, or the differences in campus cultures, demographics and policies between the community college and four-year institution adversely affect transfer rates and baccalaureate degree attainment (Anderson, Alfonso, & Sun, 2006; Alfonso, 2006; Bailey & Weininger, 2002; Bradburn & Hurst, 2001; Brint, 2003; Dougherty, 1992; Dougherty & Kienzl, 2006; Hilmer, 1997; Leigh & Gill, 2003, 2004; Sandy, Gonzalez, & Hilmer, 2006; Roksa, 2006; Shaw & London, 2001; Townsend, 1995; Wassmer, Moore, & Shulock, 2004). Yet others have found that low course-load intensity and credit accumulation reduce transfer rates (Adelman, 1999, 2006, 2004; Doyle, 2011).

Once community college students successfully transfer to a four-year institution, research suggests they do not perform as well as their native counterparts. Native students are often defined as students who began and subsequently continued their higher education enrollment at the same four-year institution (Carlan, 2001; Glass & Harrington, 2002; Holahan, Green, & Kelley, 1983; Keeley & House, 1993). Some scholars have found that transfer students do quite well in their new institutions despite being less prepared academically as freshmen at community colleges than many native freshmen (Best & Gehring, 1993; Bogart & Price, 1993; Diaz, 1992; Hollomon & Snowden, 1996; Johnson-Benson, Geltner, & Steinberg, 2001; Owen, 1991; Porter, 1999; Solomon, 2001). However, other studies indicate that community college transfer students are unprepared for the rigorous curriculum at the nation's colleges and universities (Beckenstein, 1992; Dougherty, 1992; National Center for Education Statistics [NCES], 2003; Townsend, 2001). In fact, transfer students often experience transfer shock, a decrease in grade point average between the last semester at their former institution and the end of the first or second semester at their new institution (Anglin, Davis, & Mooradian, 1993, 1995; Berger & Malaney, 2001, 2003; Carlan & Byxbe, 2000; Cejda, 1994, 1997; Cejda, Kaylor, & Rewey, 1998; Glass & Harrington, 2002; Hills, 1965; Holahan, et al., 1983; Keeley & House, 1993; Laanan, 2001; Rhine, Milligan, & Nelson, 2000; Thurmond, 2007; Whitfield, 2005).

Substantial evidence is accumulating that some form of community college penalty exists which reduces educational attainment and degree completion (Alfonso, 2006; Bowen, Chingos, & McPherson, 2009; Doyle, 2009; Long & Kurlaender, 2009; Reynolds, 2006; Sandy, Gonzalez, & Hilmer, 2006). Yet, little research has been done to extend this line of inquiry beyond the baccalaureate degree. This study intends to address this gap in the literature and examine whether or not students who begin their postsecondary study at a community college prior to attaining their bachelor's degree pursue advanced degrees in similar rates to native students with a bachelor's degree.

Labor Market Outcomes

Several studies have examined the labor market returns of community college students in general. For example, evidence suggests that the average community college student who never transfers to a four-year institution earns approximately 9 to 13 percent more than the average high school graduate with similar academic ability (Belfield & Bailey, 2011; Leigh & Gill, 1997; Kane & Rouse, 1995, 1999). More importantly, some studies have estimated that each year of credit at a community college is associated with a 4 to 8 percent increase in annual income compared to high school graduates, which roughly approximates the 6 to 9 percent return in income (compared to those with a high school diploma) for one year of education at a four-year institution (Belfield & Bailey, 2011; Kane & Rouse, 1995; Grubb, 1995; Monk-Turner, 1994).   For older, more experienced, displaced workers, researchers found each additional year of community college was associated with a 2 to 5 percent increase in annual income. However, this study found

that quantitatively or technically oriented courses yielded a 15 percent increase in annual earnings, while non-quantitative, non-technical courses such as social sciences and humanities yielded negligible returns to annual income (Jacobson, LaLonde, & Sullivan, 1997, 2005).

Another technique for studying labor-market returns to education is to examine highest degree earned. While the rates of return vary by gender, with women recording higher gains, overall students who earn their associate's degree can expect to earn between 16 and 31 percent more in annual income than those with a high school diploma (Kane & Rouse, 1995, Leigh & Gill, 1997). Conversely, students with bachelor's degrees might expect to earn between 42 and 51 percent more than those with a high school diploma, with women again reporting higher gains than men (Kane & Rouse, 1995).

While scholars have examined the returns to education for community college students (compared only to high school graduates), much less is known about the labor market returns for college graduates who began postsecondary study at a community college. Similarly, very little research has compared these transfer students to similar students who began their entry to high education at a four-year institution. Just as the research has suggested there is a community college penalty in terms of educational attainment or degree completion for those who initially enroll at a community college, this study seeks to address a gap in the literature and examine if a similar penalty exists in the labor market.

Describe the research method that will be used:

What are the research questions to be addressed?

This study will examine two key questions related to whether or not differences in educational and labor market outcomes exist for native graduates compared to community college transfer graduates. First, do students who transfer from a community college with an associate's degree prior to obtaining their bachelor's degree have different educational and labor market outcomes than similar transfer students who do not have an associate's degree? Second, do students who transfer from a community college prior to earning a bachelor's degree have different educational and labor market outcomes than similar native students who earn a bachelor's degree? For both of these questions, transfer students will be defined twice: first as those who earned an associate's degree; second as any student who began postsecondary study at a community college whether or not they earned their associate's degree.

What is the proposed research methodology?

A major issue with conventional regression analysis is that these models are unable to control for selection bias. Students who begin postsecondary study at a community college might be inherently different from those who initially enroll in a four-year institution. Thus, it is typical that subjects who have similar values on the treatment variable (initially enrolled at a community college) differ significantly on numerous characteristic variables from those with dissimilar values on the treatment variable (i.e. began postsecondary study at a four-year institution). The cumulative effect of these differences on the characteristic variables are included in the estimated coefficient of the treatment variable, creating bias and confounding attempts at causal inference (Winship & Morgan, 1999). In this case, the treatment variable is whether or not (0,1) a student began postsecondary study at a community college, or whether or not a student attained an associate's degree prior to graduating with the baccalaureate degree.

To address the issue of selection bias and provide for causal inference, scholars developed the counterfactual model of causal inference (Heckman & Hotz, 1989; Heckman, Ichimura, Smith, & Todd, 1998; Rosenbaum & Rubin, 1983, 1985). This statistical approach attempts to replicate an experimental design with randomized assignment by assigning matched students to treatment and control groups. In a true randomized experiment, the random assignment of subjects to treatment and control groups guarantees that both groups have equal background characteristics. This assurance that the two groups are equal allows for any differences observed between the two groups on the dependent measure to be attributable to the treatment alone and not caused by any background characteristics.

The counterfactual model replicates this process by first building a logistic regression model that predicts the dichotomous outcome of the treatment variable. This model includes as predictor variables the measured background characteristics that might otherwise distinguish students from one another. The result of this regression model estimates the probability or likelihood of that student being assigned to the treatment group. This estimate is known as the propensity score, and ranges from 0 to 1 (Rosenbaum & Rubin, 1983, 1985).

The second step in this technique produces matched pairs with approximately equal propensity scores. Through the caliper and radius matching technique, each student who actually received the treatment (i.e. began at a community college) will be paired with a student with a nearly identical propensity score (within a preset caliper width of approximately .15 standard deviations in propensity score) who did not receive the treatment (i.e. a native student) (Doyle, 2009). Thus, the second person in each pair serves as a member of a control group, producing a counterfactual estimate of what the outcome for the student in the treatment group would have been had that person not actually received the treatment (Rosenbaum & Rubin, 1983, 1985).

The final step in this process utilizes the matched sample produced in the second step as the outcome variable in an OLS or logistic regression model. The resulting coefficient of this final model represents the average effect of the treatment (i.e. the community college effect) for those students who began postsecondary study at a community college, or the effect of the treatment on the treated (Smith & Todd, 2001).

What is the statistical model to be used?

The propensity score is the probability of being treated given a vector of observed variables:

$$p(x) = Pr[z = 1 | X = x]$$

where z represents the treatment group (0 = native student, 1 = began at community college), and x represents the vector of covariates (the group of observed variables that represent background characteristics). This study attempts to estimate the effect beginning postsecondary study at a community college has on students who actually began at a community college, also known as the effect of the treatment on the treated. This results in a model:

$$E(y_1 | x, z = 1) - E(y_0 | x, z = 1)$$

Where y_1 represents the treatment group (began postsecondary study at community college) and y_0 represents the control group (native students). Similar to the previous equation x represents the vector of covariates, and $z = 1$ indicates the estimate is being made for the treated group (i.e. community college transfer students).

Propensity Score Matching Model

To estimate the propensity score for each student, this study will closely follow the probit model for community college entrance (Doyle, 2009). Doyle (2009) examined the effect beginning postsecondary study at community college has on baccalaureate degree attainment, and used approximately 40 different covariates comprised of family and high school characteristics, student information, attitudinal factors, and financial aid and college cost records to build his propensity score matching model, which was shown to have a very good model fit. While Doyle's study utilized the Beginning Postsecondary Study dataset, many of the variables are the same on the B&B:08/09 which is what I will be using. A list of those variables can be found in the appendix.

Dependent Measures

The outcome variable for the labor-market study will be B1ERNINC, annual earnings from the student's primary job in 2009. The outcome variables in the second part of this study, which addresses post baccalaureate degree attainment,

will be B1GRFUTR (future educational plans), and B1HIENR (highest postsecondary enrollment).

Uploaded Appendix Document(s):

- [List of Key Variables](#)

Project Description II

Will you use NCES target dataset? Yes

Please check all NCES datasets that apply
- Baccalaureate and Beyond Longitudinal Study (B&B) and Transcript Data

Explain why each dataset best serves this research. Include a variable list for each dataset used.

This dissertation will analyze data from the Baccalaureate and Beyond 2008/09 longitudinal study (B&B:08/09). The B&B:08/09 sample of approximately 17,160 students was derived from the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) which sampled 137,800 undergraduate students. The Baccalaureate and Beyond study serves as the National Center for Education Statistics' primary tool for studying the lives and post-graduation activities of baccalaureate recipients, including graduate education, work experiences, financial situations, and personal experiences. Consequently, this is the dataset of choice for my dissertation given that my study seeks to examine the educational and labor market outcomes of baccalaureate recipients, some of whom either first attended or received an associate's degree from a community college prior to their completion of the baccalaureate degree. A list of variables can be found in the appendix.

Will you use NSF target dataset? No

Explain why each dataset best serves this research. Include a variable list for each dataset used.

Will you address the NPEC focus topic? No

If yes, please briefly describe:

Project Description III

Provide a timeline of key project activities:

January—April (2013): draft first 3 chapters of dissertation, submit to committee for approval

May—June: begin to collect and clean data, runs descriptive statistics, revise 1st 3 chapters of dissertation
July—September: conduct data analysis; revise methods section
October—December: write analysis sections, draft conference papers, revise previous chapters
January—February (2014): revise previous chapters, write conclusion, submit to committee for comments
March—April: revise & submit dissertation, defend dissertation, finish conference paper
May: present research at AIR
June: Submit final copies of paper and materials to AIR

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

I am writing my dissertation following a three article format. Essentially, my dissertation will consist of an introduction, literature review, and methods chapters, followed by one chapter on each of the three main research questions, written in journal-ready format, followed by a final concluding chapter. Consequently, I hope to have three separate journal ready articles to submit to *Research in Higher Education*, *Journal of Higher Education*, *American Educational Research Journal*, or *Community College Review*.

I also plan to submit proposals/present at both the AERA and AIR conferences in April and May of 2014, as well as the ASHE conference in November of 2013.

Describe how you will disseminate the results of this research:

I plan to disseminate my results through conference proposals and presentations, journal submissions for publication, and through completion of a dissertation (publishing it to *proquest*).

By presenting my work in the form of conference proposals to three national conferences (ASHE, AIR, AERA), my work will reach a wide array of higher education professionals. Additionally, I plan to submit my findings in the form of three journal articles, which if published will also help disseminate the results of this study.

Provide a reference list of sources cited:

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IRB Statement

Statement of Institutional Review Board approval or exemption:

This study will utilize secondary data analysis from the Baccalaureate and Beyond 2008/09 longitudinal study (B&B:08/09). Since no additional quantitative or qualitative data will be collected by this researcher, this study will be exempt from requiring Institutional Review Board approval.

Statement of Use of Restricted Datasets

I have used restricted data once before for a study on civic engagement for Professor Alyssa Bryant Rockenbach (who is also on my doctoral committee), which resulted in two manuscripts which are currently under review. For that study, we used the Beginning Postsecondary Study Longitudinal data. Consequently, I am familiar with the federal requirements on the use of restricted data. Additionally, my advisor, Professor Paul Umbach has also used national datasets and has gone through the application process with other graduate students to secure this data. Therefore, at least two professors on my doctoral committee who received permission to use restricted datasets or supervise graduate students who will use them. Having gained permission once before, I am very familiar with the security restrictions associated with the use of restricted data and will take all necessary precautions to maintain confidentiality and follow federal guidelines.

Biographical Sketch

I am a third-year doctoral student in the Educational Leadership and Policy Analysis program with a specialization in Higher Education Administration at North Carolina State University. Originally from Wilmington, NC, I received my BA in Political Science from the University of North Carolina at Chapel Hill, and an M.Ed. in Higher Education Administration with a focus on student affairs from Peabody College of Vanderbilt University. While in graduate school at Vanderbilt I participated in a research study with John Braxton, Michael McLendon, and Will Doyle funded through the Lumina Foundation which investigated the cumulative effect of institutional and state policies on student departure rates. My work on that study resulted in a publication with Michael McLendon and a fellow graduate student, Tony Park, which investigated the relationship between state policy climates and student retention rates.

Since enrolling in the doctoral program at North Carolina State University I have been involved in two research projects with Audrey Jaeger, where we have conducted research on the scholarship of engagement and faculty tenure (manuscripts in progress). I also worked on an AIR research grant with Alyssa Rockenbach which used the BPS:04/09 study to examine how various dimensions of community service influenced life goals over time. This research culminated in two manuscripts which are currently under review. Finally, I am currently conducting research for Paul Umbach under a North Carolina College Access Challenge Grant in which we are examining differences in educational attainment and degree completion between community college transfer students and four-year natives using a large statewide dataset with more than four million student records.

While it is clear that my research interests are quite varied, each project has introduced me to a different type of educational research. My current work with community college transfer students introduced me to a new line of inquiry which I have presented here and wish to pursue for my doctoral dissertation.

Budget Requirements

Salary/Stipend: $18500.00
Tuition and fees: $0.00
Travel: $1500.00
Other travel related expenses: $0.00
Other research expenses: $0.00
Total Request: $20000.00

Funding History

During my time at North Carolina State University I have received support from the Graduate Student Support Plan (GSSP). The GSSP covers my tuition and health insurance and provides funds for a 9-month stipend in exchange for a 20-hour a week assistantship. In addition to this, I received a 5-hour a week research stipend in 2011 for my work on the AIR research project with Alyssa Rockenbach. If I receive the AIR dissertation fellowship, it is my hope that the university will continue to cover my tuition in my fourth year (not my stipend), and I will use the fellowship funding to cover my stipend and travel expenses to AIR.

Letter of Support from Dissertation Faculty Advisor

- Letter of Support

List of Variables

This dissertation will analyze data from the Baccalaureate and Beyond 2008/09 longitudinal study (B&B:08/09). The B&B:08/09 sample of approximately 17,160 students was derived from the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) which sampled 137,800 undergraduate students. The Baccalaureate and Beyond study serves as the National Center for Education Statistics' primary tool for studying the lives and post-graduation activities of baccalaureate recipients, including graduate education, work experiences, financial situations, and personal experiences. Consequently, this is the dataset of choice for my dissertation given that my study seeks to examine the educational and labor market outcomes of baccalaureate recipients, some of whom either first attended or received an associate's degree from a community college prior to their completion of the baccalaureate degree. A list of variables can be found in the appendix.

AGE
AGEATBA   (age at BA)
B1CITZN
RACE2
SEX
HSCRDAP   (earned AP credit while in HS)
HSCRDANY   (earned any college credit while in HS)
HSCRDCOL   (earned college credits @ a college while enrolled in HS)
DEGPRAA   (earned an AA prior to BA)
ATT2PUB   (ever attended a 2-year public institution)
I1LEVEL   (1st postsecondary institution attended was 4yr, 2yr, >2yr)
TEACTDER   (ACT composite score)
TESATDER   (SAT combined score)
ATTEND   (full-time/part-time)
GPA
B1NP2YR   (believe could have attained BA w/out having attended CC)
B1FUTENR   (expects to pursue additional degree, 4-level)
NGGRDPLN   (expects to pursue additional degree, 3-level)
B1GRFUTR   (future plans: plans to enroll, no plans, is enrolled in grad program)
NGGRDAPP   (applied to graduate school)
B1HIENR   (highest degree program enrollment post BA)
B1GR1DG   (type of degree enrolled post bachelors, in 2009)
B1ENRST   (enrollment in degree program at time of interview)
B1GRE   (took GRE or equivalent)
MAJORS23   (undergrad degree major)
MAJORS4Y   (undergrad degree major, collapsed categories)
B1SALPR   (annual earnings percentile)
B1ERNINC   (annual earnings in 2009)
B1OCC33   (occupation)
JOBHOUR2   (hours worked per week while in school)
JOBEARN2   (earnings from work while enrolled)

B1DEPS   (supporting any dependents while in school)
DEPEND5A   (dependent status, 5-level)
TRIO   (eligible for TRIO program)
PAREDUC   (parents' highest degree)
PDADED   (Father's highest degree)
PMOMED   (Mother's highest degree)
PFEDBEN   (# of Federal benefits family received)
FEDBEN   (received Federal benefits or not)
FEDBENB   (Free or reduced lunch program)
CAGI   (parents' AGI)
CINCOME   (parents' total income)
INCOMST   (student's income)
B1BORAT   (cumulative loans borrowed for undergrad degree)
FEDNEED   (Federal need-based aid amount)
TFEDGRT   (Total Federal grant-aid amount)
HSGPA   (HS GPA)
HS_PSE   (months between HS grad & initial enrollment; delayed entry)
HCMATHHI   (highest level math completed)
HCHONORS   (# of HS honors/AP subjects)
HCYSENGL   (# yrs HS English)
HCYSLANG   (# yrs HS Foreign Language)
HCYSMATH   (# yrs HS math)
HCYSSCIE   (# yrs HS science)
HCYSSOCI   (# yrs HS social studies)
HSTYPE   (Type of HS)
TUITION2   (Tuition & Fees)
CNTLAFFI   (BA degree institutional control)
LOCALE   (degree of urbanization of institution)
CC2000   (Carnegie code for institution)
SELECTV2   (selectivity of BA degree institution)
PRIMLANG   (English primary language)
QEYR1GPA   (Transcript: yr1 GPA)
QEYR2GPA   (Transcript: yr2 GPA)
QEYR3GPA   (Transcript: yr3 GPA)
QEYR4GPA   (Transcript: yr4 GPA)
QEYR5GPA   (Transcript: yr5 GPA)
QEYR6GPA   (Transcript: yr5 GPA)
QETOTR   (Total # of remedial courses taken)
QETRNACC   (# of transfer credits accepted)

North Carolina State University is a land-
grant university and a constituent institution
of The University of North Carolina

**Department of Leadership, Policy
and Adult and Higher Education
College of Education**

NC STATE UNIVERSITY

January 10, 2013

Grant Program
The Association for Institutional Research
1435 E. Piedmont Drive, Suite 211
Tallahassee, FL 32308

RE: Jeremy Tuchmayer application for the AIR Dissertation Grant

Dear Grant Review Panel:

It is with great pleasure that I write this letter in support of Jeremy Tuchmayer's AIR
Dissertation grant application. I first met Jeremy nearly three years ago and have come to
know him quite well in that time. He has been my research assistant, a student in one of my
classes, and a collaborator on several research projects. Through these experiences, I have had
the opportunity to get to know Jeremy's skills, knowledge, and abilities, and I believe he is
uniquely qualified for the fellowship. In addition, as the chair of his dissertation, I am in a
unique position to be able to assess his work and the impact that it and his future research
endeavors are likely to have on the field of education. I offer four specific reasons why I
believe he is deserving of your dissertation grant.

First, Jeremy possesses the intellectual ability, theoretical grounding, and analytical skills
required to be a successful scholar. Simply put, Jeremy is one of the best graduate student
with whom I have worked at NC State. He is well read in the field of education, economics
and sociology and uses this knowledge as a lens for his research. He is able to integrate and
apply theory to a broad range of social issues. He also has very strong quantitative skills and
is adroit in using them to explore research problems. He has excelled in our required
quantitative methods sequence and has taken several advanced methods courses and knows
advanced techniques such as structural equation modeling, multilevel modeling, and quasi-
experimental methods (e.g., regression discontinuity, instrumental variables, propensity score
matching).

Second, Jeremy has extensive experience working with large statewide datasets and data from
the National Center for Education Statistics using advanced quantitative techniques. For
example, he recently co-authored two manuscripts, both of which are under review, with one
of my colleagues where he employed structural equation modeling to explore civic

engagement outcomes using NCES' Beginning Postsecondary Students Longitudinal Study (BPS). For the past two years, Jeremy has been working with me to analyze data from the University of North Carolina General Administration and the North Carolina Community College System. A large portion of his work has been to manage, clean and analyze data to examine the success of community college transfers. These experiences have made Jeremy adept at handling issues related to large-scale survey data, such as weighting, missing data, and design effects, and will contribute significantly to the success of his dissertation.

Third, Jeremy's current research is likely to contribute a great deal to our understanding of community college students who go on to earn a bachelor's degree. We know surprisingly little about this population. For his dissertation, he is integrating his interests in student success, labor market outcomes of college, and various pathways students take to earning a degree. Specifically, he intends to explore baccalaureate degree outcome differences of those who started at a community college and those "native" four-year college students. Utilizing both NCES' Baccalaureate and Beyond data, along with exploring various educational outcomes, Jeremy's study will fill an important gap in the literature. The surprisingly few studies in this area have done little to address the issue of selection. Guided by the work on college choice, Jeremy employs propensity score matching (PSM) in an attempt to ameliorate the effect of selection bias.

Fourth, and perhaps most important, this study is laying the groundwork for Jeremy's long-term research agenda. As students increasingly begin their college careers at community colleges and state policy makers seek to find efficient ways to educate citizens, his dissertation will offer valuable information about the relationship between different pathways to the baccalaureate and college outcomes. What is likely to make his work have an impact on the field is that his experiences, knowledge, theoretical grounding, and quantitative skill allow him to explore student paths to a baccalaureate and degree outcomes effectively. His research will go a long way in aiding our understanding of the conditions that aid or inhibit the educational transitions and transitions through college and from college to work, which has important social policy implications.

It is without hesitation that I offer my full support of Jeremy's application for the AIR dissertation grant. His dissertation proposal hearing is scheduled for late April 2013, putting him on schedule to complete his dissertation in Spring 2014. If you need additional information or have any questions, please do not hesitate to contact me.

Sincerely,

Paul D. Umbach, Associate Professor of Higher Education
North Carolina State University