ASSOCIATION FOR INSTITUTIONAL RESEARCH
2009 DISSERTATION GRANT APPLICATION

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Title of Proposal

The relationship financial strain and the production of postgraduate degree, 1970-2006

Statement of the research problem and national importance

The proposed research is organized around the following question, what is the relationship between financial strain and postgraduate degree (master's degrees and postgraduate certificates) production in postsecondary education institutions (hereafter institutions)?

From 1985-86 to 2005-06 the number of master's degrees awarded annually grew from 288,567 to 594,065 (NCES, 2008), an increase of 106%. Beginning in the 1980s, institutions faced several threats to external funding, for example, a decline in the college age population (Mayhew, 1979; NCES & Snyder, 1997) and a decline in state appropriations (McPherson & Schapiro, 1999). Is there a relationship between financial strain and degree production? Institutions in financial distress may have an incentive to generate revenue through tuition from postgraduate programs. I hypothesize that difficult external funding environments cause institutions to create postgraduate credentials in order to garner financial resources necessary for survival. To test this hypothesis I will create a longitudinal database covering all U.S. institutions of higher education from 1969-70 to 2007-08.

Before I can explain why the research topic is important, I must set the stage by developing a theory of student demand for postgraduate credentials. Although classical economic theory (Hicks, 1932) views wages as determined by supply and demand, human capital theory (Becker, 1964) focuses entirely on supply, which leads to the unreasonable proposition that societal prosperity can be obtained by increasing the stock of skilled labor, independent of an increase in employer demand for skilled workers (Thurow, 1975). Clearly, the supply of college labor is rising faster than demand for college labor. The proportion of individuals age 25 and older possessing a baccalaureate degree rose from 17% in 1980 to 29% in 2007 (NCES, 2008; table 8). The Bureau of Labor Statistics (2006) reports that in 2004 20% of jobs required at least a baccalaureate degree and by 2014 21% of jobs will require at least a baccalaureate degree. The "signaling" perspective in economics argues that education increases the probability of obtaining a scarce job if the individual possesses credentials which distinguish their holder from other job applicants (Arrow, 1973; Spence, 1973; Stiglitz, 1975). Therefore, as the supply of baccalaureate educated labor surpasses the demand for such labor, rational individuals will earn postgraduate credentials to increase the chances of attaining baccalaureate level employment (R. H. Frank, 2008). Paradoxically then, institutions enjoy demand for postgraduate credentials partly because an excess of college-educated labor already exists.

Inquiry into the relationship between institutional finances and postgraduate degree production has national importance for the twin policy goals of equity (defined as equality of opportunity) and efficiency. To the extent that postgraduate credentials provide an advantage in the competition for jobs, low-income students will be at a disadvantage because they are less able to afford postgraduate tuition, thereby undermining equity. With regard to social efficiency, the recent growth in master's degree production is dominated by credentials that teach administrative, rather than technical skills. For example, in the 2005-06 academic year, 146,406 MBA degrees were awarded out of 594,065 total master's degrees (NCES, 2008; table

262). According to many scholars, these programs provide training for jobs that can be done sufficiently well by individuals possessing only a baccalaureate degree (Arrow, 1973; Berg, 1970; Bills, 1988). Postgraduate credentials are heavily subsidized by low-interest federal loans and contribute to student debt. From an efficiency perspective, the production of administrative postgraduate credentials is detrimental because the total expenditure on education surpasses that which is necessary fulfill the skill demands of the labor market (Labaree, 1997).

The proposed research is timely given increasing interest in the "corporatization" of higher education (Bok, 2003; Slaughter & Rhoades, 2004), a literature which argues that financial concerns dictate institutional behavior in ways that conflict with institutional mission. Relying mostly on case studies, this literature can be critiqued on the grounds of selection bias because. My quantitative analyses will allow for inferences about the general population.

Additionally, I hope this research makes contributions to organizational theory, the focus of my doctoral training. Several theoretical perspectives are salient. Resource dependence theory argues that organizations will adapt to adverse changes in their local external environment in order to ensure survival, yet retain autonomy (Pfeffer & Salancik, 1978). Neo-institutional theory argues that field-wide taken-for-granted ideologies, not local conditions, determine organizational action (Meyer & Rowan, 1977). Network theory argues that adoption by a peer increases the likelihood of adoption by other actors in the network (Davis, 1991). The proposed research will test hypotheses drawn from these competing, and at times complementary, theories.

Review the literature and establish a theoretical grounding for the research

Although historians of higher education argue that finding ways to increase credential production has always been an important strategy for organizational survival (Thelin, 2004; Veysey, 1965), few contemporary studies focus on the issue. Gumport and Snydman's (2002) quantitative study of degree offerings at San Jose State University from 1952 to 1997 indicates that the number of graduate programs in applied fields, and the social sciences increased dramatically after 1982. Using IPEDS data, Baker, Orr and Young (2007) show that between 1993 and 2003 the number of master's degree programs increased by 16% and the number of degrees awarded increased by 90%.

These studies do not explicitly examine the relationship between financial strain and postgraduate degree production. Kraatz (1998; 1996) does, however, by investigating the link between financial distress and the adoption of vocational baccalaureate degrees at liberal arts colleges. Furthermore Kraatz uses his results to test hypotheses from competing organizational theories. Following Kraatz

(1998; 1996), I describe the organizational theories relevant to the proposed research and present selected hypotheses drawn from each theory.

Resource Dependence Theory. Resource dependence theory argues that organizations adapt to changes in the external environment (Emerson, 1962; Pfeffer & Salancik, 1974). Organizations adapt to survive. Autonomy, however, is also an important goal; whenever possible, organizations avoid dependence on funding sources which are uncertain and those which demand acquiescence.

Changes in the external funding environment – reductions in state appropriations (McPherson & Schapiro, 1999), declines in the college age population (NCES & Snyder, 1997), shifts in preferences from liberal to vocational education (Brint, Riddle, Turk-Bicakci, & Levy, 2005), and the rise of accountability (Burke, 1998; Heller, 2001) – may increase financial strain and/or undermine institutional autonomy. In response, institutions may create new postgraduate programs to generate financial resources, thereby diminishing dependence on uncertain sources. Hypothesis one (H1) asserts that institutions will adopt new postgraduate credentials in response to external funding threats. However, response to funding threats may vary by institutional type.

Resource dependence theory regards organizations as a coalition of interests, with the most powerful coalition being the one responsible for acquiring the most external resources (Pfeffer & Salancik, 1974). For example, in liberal arts colleges, historically relying on undergraduate tuition funding, liberal arts professors are the dominant coalition. Kraatz (1996) argues that liberal arts faculties oppose the adoption of postgraduate credentials, which would diminish their power. Therefore, the adoption of postgraduate credentials is hypothesized to be a solution of last resort for liberal arts colleges. Hypothesis two (H2) states that postgraduate credentials will not be adopted at selective liberal arts colleges because these institutions enjoy strong demand for undergraduate education and can tap alternative revenue streams, but will be adopted at non-elite liberal arts colleges, which face enrollment decline and have few alternative funding sources.

Other hypotheses focus on the scale of postgraduate degree production. Hypothesis three (H3) states that declines in state appropriations at public 4-yr institutions are likely to be associated with higher production (more degrees awarded per year) of postgraduate credentials. This hypothesis can be tested because of inter-state variance in appropriations.

Neo-institutional theory. Neo-institutional theory explains why organizational fields which exhibit considerable diversity early in their life cycle become more similar (isomorphic) over time (DiMaggio & Powell, 1983). Empirical contributions search for causes that are independent from efficiencies gained by the adoption

of a particular practice. Three causes of institutional isomorphism are posited: regulative; normative; and cultural-cognitive (Scott, 2008). Employing the cultural-cognitive perspective, I develop hypotheses which oppose the resource dependence perspective.

According to the cultural-cognitive perspective, organizations within a particular field become more similar over time because they adopt field-wide taken-for-granted ideologies about appropriate practices (Meyer & Rowan, 1977). The practices that obtain rule-like status – "the the way things are done" – tend to be the practices of the most prestigious institutions, which then diffuse to less-prestigious organizations (Strang & Meyer, 1993; Tolbert & Zucker, 1983), even when such practices are at odds with the local conditions (Schofer & Meyer, 2005). Hypothesis four (H4) asserts that less prestigious institutions adopt postgraduate credentials previously adopted by more prestigious institutions. Non-prestigious institutions are theorized to have insufficient legitimacy to create a program that other institutions adopt.

The cultural cognitive perspective hypothesizes (H5) that in the long run, all organizations will adopt regardless of local funding environment because all organizations share the same taken-for-granted ideologies. Less-prestigious institutions adopt the postgraduate credentials of more prestigious institutions, not because of acute funding needs, but because of "taken for granted" assumptions about what programs should be offered at a legitimate institution of higher education. Tests of this hypothesis involve analyzing rate and timing of adoption for non-prestigious institutions that vary in severity of financial strain.

Population Ecology. The Population ecology perspective (Carroll, 1985; Hannan & Freeman, 1977, 1989), positions itself in opposition to the resource dependency literature. It argues that forces of "structural inertia" within organizations – such as longstanding organizational mission, faculty opposition – prevent them from adapting to external changes with sufficient speed. Significant changes in the organizational environment – such as changes in consumer preferences – cause organizations "fit" for the old environment to perish and be replaced by organizations "fit" with the new environment. Hypothesis six (H6) asserts that non-selective liberal arts colleges will not adopt postgraduate credentials – or will only adopt very slowly – in response to financial strain. Hypothesis seven (H7) asserts that non-selective liberal arts colleges which do not adopt will be more likely to close down.

Network Theory. The network theory perspective argues that proximity to networks determines which actors adopt and when they adopt (Granovetter, 1985, 1995; Mizruchi, 1994). The postgraduate degree is not an obvious solution to financial problems. Institutions – or departments within an institution – are more likely to adopt once actors in their various communication networks have already adopted. Hypothesis eight (H8) is that the intra-institutional adoption of

postgraduate credentials will increase rapidly after initial adoption, because early adoption by one actor has a contagion effect on others within the institution.

Describe the research method that will be used

Herein I describe the data, sample, methods, and variables that will be used to test the hypotheses proposed in the previous section (not all hypotheses are discussed due to space limitations).

Data and sample. I will create a panel dataset of all baccalaureate granting institutions of higher education from 1969-70 to 2007-08, using data from the Higher Education General Information Survey (HEGIS) for the years 1969-70 to 1985-86 and data from the Integrated Postsecondary Education Data System (IPEDS) for the years 1986-87 to 2007-08. These data will be augmented by data from the U.S. Census, the Current Population Survey (CPS), and "Grapevine" historical data on state postsecondary education appropriations (Palmer, 2008). To be consistent with HEGIS sample definitions, analyses including years prior to 1985-86 will not include non-accredited institutions nor proprietary institutions (Cohen, 1990).

Methods. Three different dependent variables, each requiring different techniques, will be used to test the hypotheses.

Events. Of interest is whether an event occurred at a particular institution in a particular year: first, the adoption of a particular (e.g. master's of public policy) postgraduate credential; second, the adoption of any postgraduate credential (e.g. new master's degrees in public policy, or educational leadership). The Chartbook of Degrees Conferred, 1969-70 (NCES & Snyder, 1997) and the Digest of Education Statistics (NCES, 2008; tables 258 and 262) indicate that consistent measures of program adoption can be created for the years 1969-70 to the present. The year of adoption for a master's degree will be defined as two years prior to the year in which the degree was first awarded.

Events will be modeled using discrete-time event history analysis (EHA), used in higher education to investigate student departure (DesJardins, 2003; DesJardins, Ahlburg, & McCall, 1999, 2002) and state policy diffusion (Doyle, 2006; Hearn, McLendon, & Mokher, 2008). The adoption of a postgraduate credential by an institution in a particular year is analogous to the graduation/dropout of a student, or adoption of an education policy by a state. The dependent variable, the hazard rate, measures the probability of having an event in a year (T), given that the institution has not yet had such an event (Blossfeld, Golsch, & Rohwer, 2006). EHA is appropriate because different theoretical perspectives hypothesize different effects over time, which can be isolated by EHA models.

Using EHA, hypothesis one (H1) will test whether institutions adopt any new postgraduate credentials (the event) in a given year in

response to changes in funding variables and a set of controls. The dependent variable will be lagged to allow time for institutional response. Negative coefficients on the funding variables (meaning the hazard of adoption increases when funding decreases) would provide support for (H1). The following model is proposed:

$P(T=t| T>t -1, X1\_t, X2\_t)$ (1)

Where,

"$P(T=t \mid T>t -1)$" is the probability that an institution adopts in year t given that it has not adopted prior to t;

"X1_t" is a vector of time-varying funding variables (different combinations and subsets of these variables will be modeled) including: percent annual change in current fund revenues; percent annual change in state appropriations (including restricted state grants/contracts); percent annual change in FTE enrollment; percent annual change in federal government grants/contracts; percent annual change in auxiliary enterprise revenue; and annual change in endowment per FTE.

"X2_t" is a vector of time constant and time-varying covariates including: year founded; control (public-private), highest degree awarded; a time-varying measure of institutional selectivity derived from Barron's Profiles of American Colleges; resident tuition; non-resident tuition; state; total enrollment; annual change in the state college age population; urbanicity; local-level measures of educational attainment; local-level measures of racial composition; and state unemployment rate.

For the neo-institutional hypothesis (H5), that all institutions will adopt in the long run regardless of local funding environment, the dependent variable (event) is the adoption of a particular credential – for example, master's degree in public administration – in a particular year. The same explanatory variables as in equation (1) will be used. If this hypothesis is true we would expect to see less selective institutions adopting the credentials of more selective institutions (as in H4), but among less prestigious institutions, the time-varying coefficients on the funding variables would be either insignificant, or their significance would decrease over time.

Other hypotheses can be tested by restricting the sample by institutional type. For example, the coefficient on the selectivity covariate can be used to test hypothesis (H2), that selective liberal arts colleges will not adopt but non-selective liberal arts colleges will adopt (Note: the likely strong correlation between selectivity and funding variables will require investigation).

Counts. The number of new postgraduate programs adopted at an institution in a year will be used to test the network contagion hypothesis (H8), that the adoption of postgraduate programs within an institution will increase after an initial adoption. Poisson regression is

often the choice when modeling "count" data (Hausman, Hall, & Griliches, 1984), however, it may be inappropriate in this case because the distribution of new postgraduate program adoptions is likely to be right-skewed, with variance larger than the mean ("over-dispersion"). If over-dispersion is present, panel negative binomial regression will be used (Greene, 2003). The count model will include the same covariates as in equation (1).

Continuous variables. A continuous variable will be created to measure the total number of postgraduate credentials awarded annually by an institution. Unlike the previously discussed measures of adoption, this variable indicates the scale of postgraduate degree production, which can help determine how reliant an institution is on postgraduate tuition revenues. Furthermore, hypothesis (H3) states that changes over time in state funding appropriations are likely to be negatively associated with postgraduate degree production, controlling for other covariates.

This hypothesis could be tested using OLS panel regression models, employing (roughly) the same covariates as those defined in equation (1). I will consider fixed-effects (for states and institutions), between-effects (to control for omitted variables that change over time (Wooldridge, 2002)), and random effects models (Faraway, 2005).

Will you use a NCES target dataset?

Yes

Will you use a NSF target dataset?

No

Please select the datasets that you intend to use:

NCES-IPEDS_12-Month_Enrollment_(E12), NCES-IPEDS_Completions_(C), NCES-IPEDS_Fall_Enrollment_(EF), NCES-IPEDS_Finance_(F), NCES-IPEDS_Human_Resources_(HR), IPEDS_Institutional_Characteristics_(IC)

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

My knowledge about variable availability is primarily based on the (2008) NCES Digest of Education Statistics (hereafter The Digest), the (1997) Chartbook of Degrees Conferred (hereafter the Chartbook), and from personal experience analyzing selected years of HEGIS/IPEDS data – 1972-73, 1977-78, 1996-97, 2000-01 through 2005-06. Given space limitations, I present information on selected

variables, rather than all variables.
Creating the dependent variables requires data on all postgraduate credentials produced during the analysis period. Chartbook Tables 16 through 40 and Digest table 262 prove that these data exist. I provide selected variable names from the 1972-73 degrees awarded data: the "SUBJECOD" variable identifies program name and can be combined with the continuous variables "MASTMEN3" and "MASTWOM4" to calculate the total number of master's degrees awarded in each program.
Tables 336 and 337 in the Digest indicate that consistent measures of revenue can be created across time. I present a selection of revenue variable names from the 1977 financial statistics data: A7601='TUITION AND FEES'; A7602='FEDERAL APPROPRIATIONS'; A7603='STATE APPROPRIATIONS'; A7614='ENDOWMENT INCOME RESTRICTED'; A7620='CURRENT FUNDS REVENUES'.
Table 187 in the Digest indicates that measures of enrollment and institutional control can be created consistently over time. Selectivity measures will be created from Barron's Profiles of American Colleges (See the Bastedo 2009 AIR Research Grant Application for information on this variable).
Time-varying measures of state unemployment from the Current Population Survey (see http://www.nber.org/data/cps_basic.html) will be used.
Census measures of college-age population, local racial composition, and local educational attainment (see http://usa.ipums.org/usa/) will also be collected.

Will you address the NPEC focus topic?

Yes

If yes, please briefly describe:

Student flow in graduate education remains woefully understudied relative to its size. In the Fall of 2004, 2.2 million graduate students were enrolled in graduate education (not including first professional degrees) and in the 2005-06 academic year 594,065 master's degrees were awarded (NCES, 2008). I will study trends in the flow of these students over time, across states, and across programs. Graduate education enrollments are likely to increase in the future and, by testing the limits of IPEDS with regard to tracking graduate students, I hope to provide insights about the construction of future variables. Furthermore, the proposed research will provide an alternative perspective on student flow. The majority of postsecondary education analyses make the implicit assumption that institutions passively fulfill student demand for education (with the important exception of feasibility studies trying to increase access for households living in remote locations). Before students can flow through a particular degree program, however, the program must exist. I investigate whether degree programs exist because institutions require the

enrollment revenue for organizational survival. From this perspective, student flow follows the resource needs of institutions. One potential finding is that academic program creation requires robust market potential. If so, this information could be of use to policymakers. Higher levels of public subsidization could be the most effect way to ensure that vital academic programs are available in areas with low population density and low household income.

Provide a timeline of key project activities:

January 2009: Submit AIR grant application.

January 2009 through June 2009: Create analysis HEGIS/IPEDS analysis dataset as follows:

Download all years of HEGIS data from: http://www.icpsr.umich.edu/ICPSR/; Download all years of IPEDS data from: http://nces.ed.gov/ipedspas/dct/index.asp; Identify years with substantial differences in data from previous year (for example 1986-87, 2001-02, etc.); for each "substantially different" data year, create a SAS program which reads in data and creates analysis variables; next, create a macro program for each of these "substantially different" data years; modify each macro program so that it can read in data and create analysis datasets for multiple years; append datasets; and sort by institution/year.

July 2009: Create analyses variables from additional datasets (Grapevine, Census, CPS)

Download "Grapevine" Historical Data from: http://www.grapevine.ilstu.edu/historical/index.htm; create time-varying state appropriations variable; Obtain Census data (1970, 1980, 1990, 2000) from University of Michigan Professor Brian P. McCall; create state/local level covariates for college-age population, urbanicity, poverty, education, and racial composition; Download CPS state-level labor market data from: http://www.nber.org/data/cps_basic.html; create time-varying state-level unemployment rate variable; merge Grapevine, Census, and CPS variables to HEGIS/IPEDS analysis dataset.

August 2009: run diagnostic checks of data accuracy; create descriptive statistics.

September 2009: Reread relevant theoretical literature and sharpen/refine hypotheses

October 2009 through November 2009: Create event history models in order to test hypotheses which employ "event" dependent variables.

November 5 – 7, 2009: Present descriptive results at ASHE meeting, Vancouver Canada.

December 22, 2009: Mid-year progress report submitted to AIR.

December 2009 through January 2010: Create count models (Poisson/negative binomial) in order to test hypotheses which employ "count" dependent variable.

February 20010 through March 2010: Create OLS panel models in order to test hypotheses which employ continuous measures of degrees awarded.

April 2010 through May 2010: Write results.

April 30 – May 4, 2010: Present hypotheses and modeling results at AERA meeting, Denver Colorado.

May 29- June 2, 2010: Present results at AIR Annual Forum in Chicago, Illinois.

May 30, 2010: submit final report to AIR.

Summer 2010: (Based on feedback from AIR forum) defend dissertation, write journal manuscripts for Research in Higher Education and Journal of Higher Education.

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

I hope to produce the following deliverables from the work that will be funded by this grant.

1) A journal article examining the adoption of postgraduate degree programs using event history analysis, Research in Higher Education;

2) A journal article examining the diffusion of postgraduate degree programs within institutions using count models, Journal of Higher Education;

3) A journal article examining the effect of financial strain on the total production of postgraduate credentials (will consider econometric methods to correct for potential selection bias), Economics of Education Review;

4) A journal article examining the efficacy of alternative theoretical explanations for the patterns of postgraduate credential production, Administrative Science Quarterly;

5) A conference paper presenting descriptive results of postgraduate degree adoption and credential production for the 2009 ASHE conference in Vancouver, British Columbia;

6) A conference paper examining the adoption of postgraduate degree programs using event history analysis, 2010 AERA Annual Meeting in Denver, Colorado;

7) A conference paper examining the relationship between state appropriations and total production of postgraduate credentials, 2010 AIR Annual Forum in Chicago, Illinois;

8) A policy brief showing major trends in degree adoption and total degree production, and discussing policy implications. Potential publishers include Jobs for the Future, Lumina Foundation, and the Spencer Foundation.

9) Mid-term and final progress reports to AIR demonstrating the accomplishments of the grant.

Describe how you will disseminate the results of this research:

The results of the project will be disseminated through conference presentations, journal articles, policy briefs, and hopefully through meetings with policymakers. The project results will be disseminated to other researchers through the (hopefully) four journal articles and through presentations at the major higher education research conferences (ASHE, AIR, AERA).

I firmly believe that this research has important policy implications. From a policy perspective, state and federal policymakers want the limited public funds for higher education to be spent in the most productive manner possible. As an ideal, public funding should be used to teach people skills (broadly speaking) that they would not otherwise have. However, given that the potential for the supply of college educated labor to exceed demand for college educated labor, the contemporary higher education system has a strong element of zero sum competition. Billions of dollars are spent per year on post-graduate education. Some of this money could be spent more efficiently. Policymakers do have levers to decrease zero-sum competition and increase positive-sum competition, thereby increasing the efficiency of education spending. I hope that my research can inform such policies. I intend to disseminate my research through policy briefs (I will approach the Lumina Foundation and the Spencer Foundation) and through informal conversations with policymakers.

Provide a reference list of sources cited:

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Statement of Institutional Review Board approval or exemption

I intend to submit an IRB application by the end of February, 2009. All research projects conducted by students/staff at the University of Michigan must have IRB approval. However, because I am only using publicly available data, my research will fall into the "exempt" category and I will not need to submit a full IRB application.

Statement of Use of Restricted Datasets

This research will only employ publicly available data.

Biographical Sketch

I am a doctoral candidate of higher education at the University of Michigan. Upon completing a Bachelor's of Business Administration (also fulfilled requirements for B.S. in economics) at the George Washington University in 2001, I gained employment as a quantitative analyst at Abt Associates, a large research organization. I worked as a SAS programmer on random assignment experiments which evaluated the effect of 1996 welfare reform on employment

and family formation outcomes (Fein, 2003; Long & Jaquette, 2003). In one project, welfare recipients in the treatment group received free community college "college-readiness" courses, which significantly increased earnings and later educational attainment (Fein, Beecroft, Long, & Robertson, 2003). Through this project I became interested in community colleges.

In 2003 I was awarded a two-year fellowship at the University of Oxford, where I earned an MPhil in social policy. My MPhil thesis analyzed the impact of a per-pupil funding system on student success in English further education colleges (equivalent to U.S. community colleges) employing five cohorts of student data (Harbour & Jaquette, 2007; Jaquette, 2006a, 2006b, 2009). To create the analysis dataset I wrote several "macro" programs, which increase the efficiency of iterative tasks. For example, instead of writing five separate programs to input the student cohorts, I created a single macro program (even though variables differed somewhat between cohorts). My dissertation research, which incorporates over 35 years of data, will utilize several macro programs, creating a new macro each time (for example, the transition to IPEDS in 1986-87) the data change substantially.

As a doctoral student I invested in methods. I completed the two-semester applied statistics sequence required of all MA/PhD students in the Department of Statistics. In my second year I took an independent study course with Professor Stephen DesJardins, where I learned the basics of several econometric techniques designed to deal with selection bias. In my third year I took the applied micro-econometrics course offered to PhD economics students and taught by Professor Jeff Smith, one of the nation's foremost econometricians.

As a research assistant for Professor DesJardins, I prepared NELS:88 postsecondary transcript data for event history analysis (EHA) and conducted initial EHA analyses. Using seven cohorts of Florida secondary school students, I created an EHA panel dataset which integrates high school transcripts, high school awards, postsecondary transcripts, financial aid, labor market outcomes, and IPEDS data on in-state tuition. Working for Professor Michael Bastedo, I created a single analysis dataset from four NCES longitudinal studies – NLS:72, HS&B:80 (sophomore cohort), NELS:88, and ELS:2002 – to study changes over time in the relationship between socioeconomic status and college access.

Topically, my research interests have shifted. I commenced doctoral studies with an explicit interest in community colleges (Alfred, Shults, & Jaquette, 2009). However, research indicating declining returns for the associate's degree (Kienzl, 2005) troubled me (although see strong earnings for particular programs Grubb, 2002). Searching for explanations, I stumbled onto the "credentialism" literature (Collins, 1979; Robert H. Frank & Cook, 1995; Labaree, 1997; Thurow, 1975), which argues that declining returns to

particular credentials is the aggregate result of individuals engaging in credentials "arms races" to compete for scarce jobs. The credentialism literature focuses on student demand, but my research will focus on the supply of credentials because of something my Oxford MPhil advisor told me about the origins of my MPhil program:

In the late 1990s the University of Oxford faced a budget deficit, in part, because of the low government-regulated tuition ceiling for European Union citizens. In response, the University implemented an incentive based budgeting system, decreeing that academic departments must generate revenues to match costs. Overnight, most departments went into debt. Several departments decided to create master's programs targeted towards foreign students, for whom no tuition ceiling existed. Master's programs spread quickly throughout the university.

My advisor's story has haunted me for years. I became interested in education – specifically community college education – because of my belief that people can earn a living wage if they are given the opportunity to learn a valued skill. The Oxford example showed me an element of the education system which provides obstacles instead of opportunities to low income students. Oxford credentials garner considerable labor market benefits, but only for those who can afford the tuition. To what extent do these elements exist in the U.S.? Theories lead me to certain hypotheses, but I will not allow theoretical leanings to bias my analyses. I will not know the answer to this question until I test it empirically.

Budget

Salary/Stipend: 5488	**Tuition & fees**: 10712
Travel: 800	**Other travel related expenses**: 2500
Other research expenses: 500	**Total Request**: 20000

Statement of Prior, Current, and Pending Funding

I have not applied for any other funding for the proposed research. I have never received funds from AIR.