



**2012 Dissertation Grant Proposal System**

**mandraza@airweb.org** [Sign Out](#)

[Back to All Proposals](#)

**Proposal Details**

**Personal Information**

Name	Ms. Jungmin Lee
Informal Name	Jungmin
Institution / Affiliation	Vanderbilt University
Unit / Department	Leadership, Policy, and Organizations
Title	Doctoral Student
Preferred Mailing Address	2601 Hillsboro Pike F-14
City	Nashville
Country	United States
State	Tennessee
Zip/Postal Code	37212-0000
Email	jungmin.lee@vanderbilt.edu
Phone	615-496-1810
Fax	

**Faculty Advisor**

Name	Prof. William R Doyle
Informal Name	
Institution / Affiliation	Vanderbilt University
Unit / Department	Leadership, Policy, and Organizations
Title	Associate Professor
Preferred Mailing Address	230 Appleton Pl., Peabody #414
City	Nashville
Country	United States
State	TN
Zip/Postal Code	37203
Email	w.doyle@vanderbilt.edu
Phone	615-322-2904
Fax	

**Financial Representative**

Name	Mr. Donald Clinton Brown
Informal Name	Clinton Brown
Institution / Affiliation	Vanderbilt University
Unit / Department	Office of Sponsored Programs
Title	Interim Co-Director
Preferred Mailing Address	PMB 407830
	2301 Vanderbilt Place
City	Nashville
Country	United States
State	TN
Zip/Postal Code	37240-7830
Email	Donald.c.brown.1@vanderbilt.edu
Phone	615-322-2450

Fax

615-343-2447

**Project Description I**

Title:

Does Merit-Based Aid Improve College Affordability?: Testing the Bennett Hypothesis in the era of Merit-Based Aid

Statement of the research problem and national importance:

As college costs have surged, college affordability becomes an important policy concern nationwide. During the last three decades, college tuition and fees have increased more than 250% even after adjusting for the inflation rates, and this makes college education a financial burden not only for low-income families but also for middle-income families. To mitigate the financial burden, governments and colleges have implemented various financial aid programs. However, their efforts have not substantially reduced net tuitions at four-year colleges (Baum & Ma, 2011). One of the possible explanations can be that colleges raised their prices as a response to the increased financial aid. The proposed study explores if colleges actually increased their tuition and fees after merit-based aid was adopted in their states.

Statewide merit-based aid is one of the most salient policy initiatives to improve college affordability. After the first merit-based aid program started in Arkansas in 1991, fifteen states adopted their program within the past two decades (Orsuwan & Heck, 2009). Although eligibility requirements and awards differ across states, there are two common characteristics that make merit-based aid appealing. First, most merit-based aid programs cover tuition and fees for public four-year colleges up to four years or upon graduation. Thus, they are sufficient to cover direct costs of attending state colleges. Second, eligibility requirements are easy to understand and relatively generous to meet. In most states, high school graduates with an average 3.0 GPA can receive merit-based aid, regardless of their family income (Dynarski, 2002).

Due to the affordability, simplicity, and broad coverage, merit-based aid became popular across the country. Moreover, merit-based aid successfully raised high school students' academic performance, increased college enrollment, and kept the best and brightest students in their states (Cornwell, Mustard, & Sridhar, 2006; Dynarski, 2002; Henry and Rubenstein, 2002; Pallais, 2009; Zhang & Ness, 2010).

Despite these positive effects, merit-based aid may have a negative impact on college access. First, given the positive relationship between family income and academic achievement, merit-based aid would be disproportionately awarded to middle- and high-income students (Heller & Marin, 2002; 2004). Second, merit-based aid states would shift their resources from need-based aid to merit-based aid, which further shrinks state funds for need-based aid (Doyle, 2010). Lastly, colleges in merit-based aid states have an incentive to raise their prices to capture new revenues from merit-based aid (Long, 2004). Of these three points, the proposed study focuses on the last issue given its potential impact on college access and affordability.

The proposed study examines if colleges raised their tuition and fees (or room and board) or reduced their institutional aid to capture the additional revenues generated by merit-based aid. This is known as the Bennett Hypothesis, which is named after the then secretary of education, William Bennett, who argued that any increases in the federal Pell Grant would lead to tuition increases by colleges for the additional revenues. If this were the case, governments' efforts to make college education affordable may actually work against its original policy objective.

The Bennett Hypothesis can lead to a more serious consequence specifically in the case of merit-based aid. When colleges raise their tuition after an increase in government aid, students who do not receive the aid would suffer the most from the tuition increase. If low-income students are indeed less likely to receive merit-based aid due to GPAs, the adoption of merit-based aid would limit their college access even more than before the aid was implemented. Also, there are many students who lost their merit-based aid during college because they failed to renew their scholarship, which required them to maintain their college GPA above 3.0 (Dee & Jackson, 1999; Henry, Rubenstein, & Bugler, 2004). If colleges raise their prices without increasing institutional aid, these

students who lose their scholarships may not be able to afford to continue their college education.

As illustrated, it is important to understand how colleges can moderate governments' efforts to keep college prices low. The proposed study explores this issue by looking at individual colleges' tuition and financial aid policy, which can moderate the intended effects of merit-based aid. Although merit-based aid policy is implemented at a state level, its scope and beneficiaries are large enough to have an implication on college affordability across the country. It is also timely to conduct this study as many states with merit-based aid are re-considering their merit aid program due to the current stringent economy (Quizon, 2011). This study will provide state policymakers with evidence to evaluate if their programs actually enhance college affordability.

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

---

To date, only a few studies have directly tested the Bennett Hypothesis, and most of them focused on the impact of federal financial aid. By looking at the percent change in federal subsidies in real terms between 1978 and 1985, McPherson, Schapiro, and Winston (1989) concluded that the Bennett Hypothesis would not be applicable to either public or private colleges for following reasons. First, federal grants and financial aid per student increased much slower than the growth of college spending and expenditures per student. Second, in private colleges, revenues from federal financial aid consisted of less than 5% of their tuition revenues. Therefore, colleges may have raised their tuition and fees to complement insufficient federal subsidies, not to gain additional federal revenues.

Using data on state flagship universities from 1979 to 1998, Rizzo and Ehrenberg (2004) investigated the impact of federal and state financial aid on in-state and out-of-state tuition levels. They found that increased Pell Grants or expanded federal loans were positively associated with in-state tuitions, but were not related to out-of-state tuitions. The authors explained that state flagship universities pursue different goals for resident and non-resident students. When recruiting non-resident students, flagship universities aim to increase their selectivity by admitting high-achieving students. To attract these students, colleges do not raise their tuition and fees even if they can earn more revenues by doing so. The introduction of merit-based aid led to the tuition increase only in Arkansas among five states (Arkansas, Florida, Georgia, Mississippi, and New Mexico) with merit-based aid at the time of the study.

Singell and Stone (2007) examined the impact of Pell Grant award per student on four-year college tuitions from 1989 to 1996. Contrary to Rizzo and Ehrenberg's research, Singell and Stone found that the average Pell award significantly increased out-of-state tuition in public colleges and tuition in private colleges, but did not affect in-state tuition in public colleges. The authors attributed the contrast between the studies to the different samples and time periods. Singell and Stone's samples include non-selective colleges, which tend to be dependent on tuition revenues rather than federal research grants and endowments. The authors also suggested that colleges may have increased institutional aid for needy students to mitigate the negative impact of raising tuition.

Curs and Dar (2010) addressed this issue by looking at both tuition and financial aid changes in four-year colleges from 2002 to 2007. When states increased their financial aid, public colleges reduced their net price by decreasing tuition and increasing institutional aid. In contrast, private colleges increased their net tuition by reducing institutional aid more than reducing listed tuition. This research suggests that it is important to look at both tuition and institutional aid to understand institutional response to government financial aid.

Doyle, Delaney, and Naughton (2009) found that four-year public colleges distributed their institutional aid in a manner consistent to their states' financial aid policy. For example, colleges in states distributing high merit-based aid were more responsive to students' SAT scores when they awarded their institutional aid. In contrast, colleges in states with high need-based aid consider a student's family income more than states with high merit-based aid.

To date, there is only one study that directly examined whether or not the introduction of merit-based aid led to tuition increase. Long (2004) investigated if colleges in Georgia changed their tuition and financial aid policy after the HOPE scholarship. After the HOPE, public colleges decreased their listed tuition and fees, but increased room and board fees instead. In contrast, private colleges increased their tuitions. The difference between sectors is not surprising given that private colleges have more autonomy in tuition setting than public colleges. Interestingly, colleges with more HOPE recipients increased their tuition or room and board fees more sharply than their counterparts with fewer HOPE recipients. This evidence supports the Bennett Hypothesis. Also, private colleges in Georgia, especially with more HOPE recipients, significantly reduced their institutional aid after the HOPE.

Theoretically, the Bennett Hypothesis can be explained as individual colleges' efforts to maximize their revenues. Bowen (1980) explains these institutional efforts as the revenue theory of cost. Colleges seek to maximize their prestige, which is primarily determined by inputs (e.g., educational expenditure per student) rather than outputs (e.g., graduation rates). This seemingly unreasonable pattern occurs because prospective students cannot evaluate the educational quality of an institution unless they attend it (Martin, 2011). To enhance their prestige, colleges spend all their money on attracting outstanding students and faculty or luxurious amenities, which incentivizes them to raise as much revenue as possible. Colleges can spend all they have because most of them are non-profit organizations (Bowen, 1980; Martin, 2011).

As Archibald and Feldman (2008) point out, the above theoretical explanation should not be understood as revenue maximization. Instead, colleges attempt to maximize their revenues *as long as it does not hurt their prestige*. For example, Ivy League colleges do not charge an extremely high tuition although there would still be many students who are willing to pay any amount. That is because they may lose some excellent students to competitors by doing so, and thus it would hurt their prestige. On the contrary, there is much less risk for colleges to raise their tuition as a response to the adoption of merit-based aid. First, students will pay for the tuition as long as their merit-based aid is sufficient to cover it. In most states, merit-based aid covers full tuition and fees for public colleges. Therefore, colleges are less likely to lose students when they raise tuition as a response to merit-based aid. Second, students who receive merit-based aid have solid academic records, and therefore admitting them would not harm a college's prestige. However, these statements are applicable to colleges with sufficient number of merit-based aid recipients. If most students were not eligible for merit-based scholarships, colleges would not raise their tuition to avoid losing their students and tuition revenues (Long, 2004).

#### Describe the research method that will be used:

---

The proposed study addresses two research questions. First, do colleges raise their tuition and fees or room and board to capture the additional revenues from the merit-based aid? Second, if colleges raised their listed tuition and fees, do they reduce their institutional aid per student? Previous studies asking these questions use either the fixed-effects model (Curs & Dar, 2010; Rizzo & Ehrenberg, 2004; Singell & Stone, 2007) or the difference-in-difference method (Long, 2004). Both methods are appropriate to analyze panel data with controlling for time-invariant institutional characteristics; however, the proposed study will use the difference-in-difference method because the key independent variable (the introduction of merit-based aid) occurs at a state level, which affects all colleges within a state after its inception. Moreover, the proposed study will include southeastern states without merit-based aid as a comparison group to control for the possibility that an unrelated event that occurs in the same year in which merit-based aid is implemented might affect the outcome variables.

The difference-in-difference method can be used to estimate the average treatment effect by calculating the difference in an outcome variable between a treatment group and a control group before and after the treatment. In the proposed study, the treatment group includes four-year colleges located in fifteen states with merit-based aid (Alaska, Arkansas, Florida, Georgia, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Nevada, New Mexico, South Carolina, Tennessee, Washington, and West Virginia), and the control group includes four-year colleges in southeastern states without merit-based aid. I will compare the two groups on their tuition and financial aid trends three years before and after each state in the treatment group implemented merit-based aid.

I exclude two-year colleges because these colleges have low tuition policy with a goal to serve low-income students. The model will be estimated separately depending on its sector and Carnegie's classification (public doctoral, private doctoral, other publics, and other privates) because government subsidies and endowment vary greatly depending on the two factors (Baum & Ma, 2011; Rizzo & Ehrenberg, 2004; Singell & Stone, 2007). To answer the research questions, the following statistical model will be estimated:

$$y_{ist} = B_0 + B_1 (\text{state}_s) + B_2 (\text{post}_t) + B_3 (\text{state}_s * \text{post}_t) + B_4 (Z_{ist}) + B_5 (\text{year dummies}) + e_{ist}$$

In the model above,  $y_{ist}$  is the dependent variable of institution  $i$  located in state  $s$  in year  $t$ . Note that  $y_{ist}$  is listed tuition and fees for the first research question and institutional aid per student for the second research question. I will take the natural logarithm of both outcome variables for ease of interpretation, so that  $B_3$  can be interpreted as the percent changes in tuition and financial aid as a response to merit-based aid.

Of the independent variables, the key independent variable is the interaction term between state and post-merit-based-aid variable. If the value of this variable is one, it means that a college is located in a state after the state started its merit-based aid. The coefficient B3 indicates whether or not colleges in states with merit-based aid changed their tuition and financial aid differently from comparable colleges in states without merit-based aid. If the Bennett Hypothesis holds, the coefficient B3 will be statistically significant and positive for the first research question, suggesting a tuition increase, and significant and negative for the second research question, suggesting a financial aid decrease.

In addition to the key independent variable, there are control variables in the model. I include dummy variables for states, after the policy adoption ( $post_t$ ), and years. State dummy variables are included because there has been a substantial variation in public colleges' tuitions across states depending on their tradition, higher education governance structure, and higher education demand (Cheslock & Hughes, 2011; Lowry, 2001). The state dummy variables capture these state characteristics that are constant over time. The post dummy variable shows the average changes in the outcome variables after a state implemented merit-based aid. Year dummy variables are included to take into account any possible events that affect colleges across the country in a specific year (e.g., federal stimulus fund).

I also include a set of control variables,  $Z_{ist}$ , which indicates the vector of institutional variables that are known to affect tuition and financial aid levels. It includes the percent of Pell Grant eligible students (student body characteristics), federal financial aid per student, state appropriations per student, and endowments per student (revenues) (Curs & Dar, 2010; Long, 2004; Lowry, 2001; Rizzo & Ehrenberg, 2004; Singell & Stone, 2007). Lastly, when using a panel data set, there is a possibility of serial correlation, which means that errors in two different time periods are correlated. The proposed study will conduct a test for serial correlation and utilize an appropriate correction, if necessary (Wooldridge, 2005).

When using the difference-in-difference method, two important assumptions must be held. First, the trends in the outcome variable will be constant in the absence of merit-based aid. If this assumption is violated, we cannot isolate the net impact of the treatment from that of other factors (Angrist & Pischke, 2009). This is why it is critical to choose an appropriate comparison group in the difference-in-difference method. The ideal comparison group for this study is states that are almost identical with merit-based aid states, except whether or not they have merit-based aid. For this reason, the proposed study will include southeastern states without merit-based aid programs as control groups, because these states have similar levels of income per capita and higher education demand as those states with merit-based aid (Dynarski, 2002; Long, 2004; Zhang & Ness, 2010).

Another critical assumption is exogeneity assumption (Angrist & Pischke, 2009). The proposed study assumes that an introduction of merit-based aid is an exogenous event that affects colleges in the state, but colleges cannot determine its introduction. This assumption can be held because it is rare that individual college would decide to move their location to a state with merit-based aid in order to capture the benefits.

Uploaded Appendix Document(s):

---

## Project Description II

Will you use NCES target dataset? Yes

Please check all NCES datasets that apply

- IPEDS Fall Enrollment (EF)
- IPEDS Finance (F)
- IPEDS Institutional Characteristics (IC)
- IPEDS Student Financial Aid (SFA)

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

I will use the Integrated Postsecondary Education Data System (IPEDS), specifically the IPEDS Student Financial Aid, the IPEDS Institutional Characteristics, the IPEDS Fall Enrollment, and the IPEDS Finance. IPEDS data is the most appropriate secondary data set for my research question given its samples and variables. For instance, the IPEDS data have information on sufficiently large samples (approximately 6,700 colleges) and these samples are

nationally representative for colleges applying for federal financial aid. Across the country, higher education institutions applying for or participating in federal financial aid programs are required to submit their institutional information. Additionally, the IPEDS have collected tuition and fees information since the early 1990s and financial aid data since 2000, which will serve as the dependent variables of my study. The IPEDS also contains extensive information regarding institutional characteristics such as sector, selectivity, student body, and finances. This information is necessary to control for institutional factors that might affect tuition and financial aid (Fuller, 2011).

The proposed study will include the following list of variables from each data set: control (affiliation), degree-granting/non-degree granting status, and undergraduate tuition and fees and room and board (IPEDS Institutional Characteristics); total fall enrollment, total fall enrollment for full-time equivalent students (IPEDS Fall Enrollment); percentage of all undergraduates enrolled who were awarded Pell Grants, total dollar amount of federal grants awarded, and total dollar amount of institutional grants awarded (IPEDS Student Financial Aid); federal appropriations, state appropriations, gifts including contributions from affiliated organizations (IPEDS Finance).

---

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:

---

- May 2012 – June 2012
  - 1) Finalize the statistical model with variables included
  - 2) Data Cleaning
- July 2012
  - Prepare a conference proposal for AERA
- July 2012 – October 2012
  - Analyze the IPEDS data
- November 2012
  - Present a preliminary result in ASHE
- December 2012
  - Revise the statistical model and reanalyze the data, if necessary
- December 2012 - February 2013
  - Write up findings and conclusions
- April 2013

Present research findings in AERA

- May 2013

Present findings in AIR

- April 2013-May 2013

Prepare and submit final report

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

---

- Conference presentations at 2012 ASHE, 2013 AERA, and 2013 AIR conferences
- Manuscripts for scholarly journals including *The Journal of Higher Education*, *The Review of Higher Education*, and *Research in Higher Education*

Describe how you will disseminate the results of this research:

---

Results from this research will be disseminated at national conferences and in scholarly journals. First, I will submit a proposal to present in national conferences at ASHE (Nov, 2012), AERA (Apr, 2013), and AIR (May, 2013). Based on feedback from these conference presentations, I will develop my research into a publishable manuscript and submit to *The Journal of Higher Education*, *The Review of Higher Education*, and *Research in Higher Education*.

Provide a reference list of sources cited:

---

- Angrist, J. D., & Pischke, J.-S. (2009). *Mostly Harmless Econometrics*. Princeton, NJ: Princeton University Press.
- Archibald, R. B., & Feldman, D. H. (2008). Explaining Increases in Higher Education Costs. *Journal of Higher Education*, 79(3), 268-295.
- Baum, S., & Ma, J. (2011). Trends in College Pricing 2011. In C. Board (Ed.), *Trends in Higher Education Series*. New York, NY: College Board.
- Bowen, H. R. (1980). *The Costs of Higher Education: How Much do Colleges and Universities Spend per Student and How Much Should They Spend?* San Francisco, CA: Jossey-Bass.
- Cheslock, J. J., & Hughes, R. P. (2011). *Differences Across States in Higher Education Finance Policy*. Working Paper. Center for the Study of Higher Education, The Pennsylvania State University. University Park, PA.
- Cornwell, C., Mustard, D. B., & Sridhar, D. J. (2006). The Enrollment Effects of Merit-Based Financial Aid: Evidence from Georgia's HOPE Program. *Journal of Labor Economics*, 24(4), 761-786.
- Curs, B. R., & Dar, L. (2010). Does State Financial Aid Affect Institutional Aid? An Analysis of the Role of State Policy on Postsecondary Institutional Pricing Strategies. Retrieved from SSRN website:
- Dee, T. S., & Jackson, L. A. (1999). Who Loses HOPE? Attrition from Georgia's College Scholarship Program. *Southern Economic Journal*, 66(2), 379-390.
- Doyle, W. R. (2010). Does merit-based aid "crowd out" need-based aid? *Research in Higher Education*, 51, 397-415.
- Doyle, W. R., Delaney, J. A., & Naughton, B. A. (2009). Does Institutional Aid Compensate for or Comply with State Policy? *Research in Higher Education*, 50(5), 502-523.
- Dynarski, S. (2002). *The Consequence of Merit Aid NBER Working Paper Series*. Cambridge, MA: National Bureau of Economic Research.

- Dynarski, S. (2004). The New Merit Aid. In C. M. Hoxby (Ed.), *College Choices: The Economics of Where to Go, When to Go, and How to Pay For It* (pp. 63-100). Chicago, IL: University Of Chicago Press.
- Fuller, C. (2011). The History and Origins of Survey Items for the Integrated Postsecondary Education Data System. Washington, DC: U.S. Department of Education.
- Heller, D. E., & Marin, P. (2002). Who Should We Help? The Negative Social Consequences of Merit Scholarships. Cambridge, MA: Civil Rights Project, Harvard University.
- Heller, D. E., & Marin, P. (2004). State Merit Scholarship Programs and Racial Inequality. Cambridge, MA: Civil Rights Project at Harvard University.
- Henry, G. T., & Rubenstein, R. (2002). Paying for Grades: Impact of Merit-Based Financial Aid on Educational Quality. *Journal of Policy Analysis and Management*, 21(1), 93-109.
- Jr., L. D. S., & Stone, J. A. (2007). For Whom the Pell Tolls: The Response of University Tuition to Federal Grants-in-aid. *Economics of Education Review*, 26(3), 285-295.
- Long, B. T. (2004). How do Financial Aid Policies Affect Colleges?The Institutional Impact of the Georgia HOPE Scholarship. *The Journal of Human Resources*, 39(4), 1045-1066.
- Lowry, R. C. (2001). Governmental Structure, Trustee Selection, and Public University Prices and Spending: Multiple Means to Similar Ends. *American Journal of Political Science*, 45(4), 845-861.
- Martin, R. E. (2011). *The College Cost Disease*. Northampton, MA: Edward Elgar Publishing.
- McPherson, M. S., Schapiro, M. O., & Winston, G. C. (1989). Recent Trends in U.S. Higher Education Costs and Prices: The Role of Government Funding. *The American Economic Review*, 79(2), 253-257.
- Orsuwan, M., & Heck, R. H. (2009). Merit-Based Student Aid and Freshman Interstate College Migration: Testing a Dynamic Model of Policy Change. *Research in Higher Education*, 50, 24-51.
- Pallais, A. (2009). Taking a chance on College: Is the Tennessee Education Lottery Scholarship Program a Winner? *The Journal of Human Resources*, 44(1), 199-222.
- Quizon, D. (2011, Apr, 3, 2011). Next in Line for Cuts: Scholarships Designed to Keep Students in Their States, *The Chronicle of Higher Education*.
- Rizzo, M., & Ehrenberg, R. G. (2004). Resident and Nonresident Tuition and Enrollment at Flagship State Universities. In C. M. Hoxby (Ed.), *College Choices: The Economics of Where to Go, When to Go, and How to Pay For It* (pp. 303-353). Chicago, IL: University of Chicago Press.
- Wooldridge, J. M. (2005). *Introductory Econometrics: A Modern Approach* (3 ed.). Florence, KY: Cengage Learning.
- Zhang, L., & Ness, E. C. (2010). Does State Merit-Based Aid Stem Brain Drain? *Educational Evaluation and Policy Analysis*, 32(2), 143-165.

#### IRB Statement

Statement of Institutional Review Board approval or exemption:

The proposed study falls under the non-human/non-research determination application. Because the sample used is colleges and universities, non-human subjects, only the non-human/non-research determination application is required (<http://www.mc.vanderbilt.edu/irb/start/student.php>). Consequently, neither IRB approval nor IRB exemption is required. I will submit the non-human/non-research determination application form as soon as I am notified by AIR about the dissertation grant decision.

#### Statement of Use of Restricted Datasets

The proposed study does not require restricted data sets.

## Biographical Sketch

I am a doctoral student in the department of Leadership, Policy, and Organization at Vanderbilt University. Before coming to Vanderbilt University, I earned a bachelor's and master's degree in education from Yonsei University in South Korea. My research interests in financial aid and its effects began as I wrote my master's thesis on the impact of financial aid policy on science, technology, engineering, and math major enrollments. After revising and developing my thesis, I published an article in *The Journal of Educational Administration* (in Korea) in 2008. After completing my master's program, I worked with local governments and the college of medicine at Yonsei University to develop educational policy and tuition policy, respectively. Working on these projects helped me develop hands-on skills, such as data analysis, and observe the policymaking processes. However, these experiences also motivated me to study further about tuition and financial aid policy within a doctoral program.

Thus far in my doctoral study at Vanderbilt, I have achieved my goal of gaining in-depth knowledge about higher education policy and advanced methodologies. While taking core courses such as Postsecondary Access and College Students, I learned about the latest research on various types of financial aid programs and their effects on college access and success. In addition, I learned that complex factors, other than financial aid, affect students' college outcomes and often mediate or moderate the effects of financial aid. Taking Econometrics and Economics of Education courses taught me to navigate various ways of minimizing selection bias by employing advanced methods such as instrumental variable, difference-in-difference, fixed-effect model, regression discontinuity, and propensity score matching methods, to name a few.

In addition to these courses, I have been trained in quantitative methods by taking several method courses, working as a teaching assistant for statistic courses, and participating in a data workshop sponsored by the NSF, NCES, and AIR. Throughout my coursework, I learned about regression, logistic regression, hierarchical linear modeling, instrument variable approach, fixed-effect models, difference-in-difference method, event history analysis, and structural equation modeling. In most courses, I had opportunities to analyze large-scale data sets with one of these statistical methods, which helped me develop hands-on data analysis skills. In 2009, I participated in the National Summer Data Policy Institute held in Washington D.C. During the workshop, I learned about a variety of NSF and NCES data sets, data tools such as the data analysis system (DAS) and the Web CASPAR, and how to analyze national data sets for my own research. Through the workshop, I became familiarized with the national data sets and relevant software.

During the last four years, I have presented several papers at national conferences. In the 2010 ASHE (Association for the Study of Higher Education), I presented a paper about the impact of high school environments on college enrollment using the hierarchical linear model with the Education Longitudinal Study of 2002. In the 2009 CIES (Comparative and International Education Society), I presented a paper about the relationship between college ranking and its enrollment boost effects using a fixed-effect model. In the 2011 CIES, I presented a paper about over-education issues. In the 2009 AERA (American Educational Research Association), I presented a symposium paper about the effects of No Child Left Behind in Minnesota by analyzing the state-level data set with the propensity score matching method. Also, in 2012, two papers discussing about college professors and scholarship will be published in *The Journal of Professoriate*.

With my adviser, I have been working on several projects. We have been investigating the impact of the Tennessee Student Association Awards (a state need-based aid program) on student persistence using the regression discontinuity method. We have finished the literature review and data analysis, and are preparing a paper for publication. In addition, we have been working on two additional projects as well. The first one addresses whether or not merit-based aid programs succeeded in keeping college graduates in their home states. The second project explores the labor market outcomes of over-educated people, that is, college graduates who took a job not requiring a college degree. We plan to use the Current Population Survey for both projects.

I believe that the combination of my education and professional experiences has given me an ideal background to conduct my proposed study with the support of Association for Institutional Research.

**Budget Requirements**

Salary/Stipend: \$15000.00  
Tuition and fees: \$3150.00  
Travel: \$1000.00  
Other travel related expenses: \$850.00  
Other research expenses: \$0.00  
Total Request: \$20000.00

**Funding History**

For the proposed study, I do not have funding from any sources. I received support from AIR for the National Summer Data Policy Institute in 2009 for airfare, lodging, meal, and transportation.

**Letter of Support from Dissertation Faculty Advisor**

- [Letter of Support](#)