Dear Robert,

Thank you for submitting your proposal. A printable summary is below. Your confirmation number is 15149. A confirmation email will be sent to you within 24 hours.

Applicants will be notified of the status of the proposed project on February 2, 2017.

If you have questions or need assistance regarding your application please contact the AIR Grant staff at 850-391-7100 or grants@airweb.org.

**SUMMARY**

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<th>Personal Information</th>
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<tbody>
<tr>
<td>Name: Dr. Robert J Kelchen</td>
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<tr>
<td>Informal Name: Robert</td>
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<tr>
<td>Affiliation: Seton Hall University</td>
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<tr>
<td>Unit/Department: Education Leadership, Management and Policy</td>
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<tr>
<td>Title: Assistant Professor of Higher Education</td>
</tr>
<tr>
<td>Year began this position: 2013</td>
</tr>
<tr>
<td>Email: <a href="mailto:robert.kelchen@shu.edu">robert.kelchen@shu.edu</a></td>
</tr>
<tr>
<td>Cell Phone: 314-307-7828</td>
</tr>
<tr>
<td>Preferred Mailing Address: 413 Jubilee Hall 400 South Orange Avenue South Orange, New Jersey 07079 United States Phone: 973-761-9106</td>
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<th>Demographics</th>
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<th>Financial Representative</th>
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<tr>
<td>Name: Nicholas Snow</td>
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Project Description

Project title: Response to Federal Loan Policy Changes: Examination of the Bennett Hypothesis in Professional School Prices

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

• What is the research problem this proposal intends to address?
• How does this topic relate to the research priorities areas of access, affordability, and value of legal or graduate/professional education?
• Why is this topic of national importance?
• Why is it timely to conduct this research at this time?

During the last several decades, the price of professional degrees has risen at rates even faster than for undergraduate education. Between the 1995-96 and 2016-17 academic years, the listed price of tuition and fees increased by 118% at public four-year colleges and by 74% at private nonprofit colleges (Ma, Baum, Pender, & Welch, 2016). During this period, the sticker price of tuition, fees, and health insurance increased by 300% for in-state students at public medical schools and 130% for students at private medical schools (Association of American Medical Colleges, 2016). Law school tuition rose even more, with a 399% increase at public law schools and a 162% increase at private schools between 1995-96 and 2015-16 (American Bar Association, 2015).

Unlike many graduate fields of study, professional schools such as law, business, and medicine offer relatively few assistantships or scholarships. For example, in the 2015-16 academic year, the typical law school gave scholarships equal to at least half of tuition to just 26% of students (American Bar Association, 2015). This has resulted in large increases in student loan debt in recent years. In 2012, 87% of law students with debt graduated with a median debt of $140,616, up from $88,634 in inflation-adjusted dollars in 2004. In medical fields, the 90% of students who borrowed had a median amount of $161,772, up from $123,203 in 2004 (Delisle, 2014).

A potential reason for the increase in professional student debt could be that students can borrow more money than they could in the past. Prior to July 1, 2006, graduate and professional students could only borrow up to $18,500 per year in federal loans with a lifetime cap of $65,500 per year in all federal loans. But as of this date, the implementation of the federal Grad PLUS program allowed students to borrow up to the full cost of attendance—which exceeds $65,000 per year at the typical law school (American Bar Association, 2015) and is nearly $80,000 at the typical private medical school (Association of American Medical Colleges, 2015).

An important public policy question is whether colleges are using the increase in federal student loan eligibility as a way to raise additional revenue by increasing tuition prices. The idea that colleges take advantage of increased loan eligibility is widely attributed to William Bennett, who was President Reagan’s Secretary. In a 1987 opinion piece in The New York Times entitled “Our Greedy Colleges,” he wrote: “Increases in financial aid in recent years...
have enabled colleges and universities blithely to raise their tuitions, confident that Federal loan subsidies would help cushion the increase” (Bennett, 1987).

This research, which became known as the Bennett Hypothesis, has been the subject of many empirical studies over the last three decades. However, all of this research was for the undergraduate student population and mainly focused on the relationship between federal grant aid and tuition prices (e.g., Archibald & Feldman, 2016; Heller, 2013; Stoll, Bradley, & Mahan, 2014). To date, there has been no empirical research examining whether the Bennett Hypothesis holds for graduate or professional programs in spite of graduate students being responsible for about 40% of all outstanding student debt (Delisle, 2014).

Graduate programs have an additional incentive to raise tuition prices that is not nearly as salient for undergraduate programs. A 2007 law increased the generosity of federal income-driven repayment programs that allowed students to tie their payments to their monthly income instead of making the standard ten-year payment. This law also created the Public Service Loan Forgiveness program that will forgive any outstanding balances for students who make ten years of payments in an income-driven plan and work for a qualified employer. For many graduate students, their debt is sufficiently high relative to their income that any additional loans that they receive are likely to be forgiven—potentially reducing colleges’ incentives to keep tuition in check (Delisle, 2016).

I propose to examine whether professional programs raised their tuition prices at higher rates following the 2006 creation of the Grad PLUS program and 2007 expansion of income-driven repayment programs after controlling for factors such as student demographics, economic conditions, and enrollment mix. This is of particular policy relevance as the incoming Trump administration wrestles with whether to continue current policies regarding federal student loans for graduate students and whether the amount of loans eligible for income-driven repayment programs should be capped—a policy change that President Obama also supported (Stratford, 2014).

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

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

The theoretical grounding for this study lies in resource dependency theory (e.g., Aldrich & Pfeffer, 1976), in which the vast majority of colleges are dependent on those outside the institution (such as prospective students, governmental bodies, and donors) to provide resources. Diversifying revenue sources has traditionally been important for tuition-reliant private colleges, but is becoming increasingly crucial for public colleges as state appropriations keep up with inflation but not with enrollment growth (Carlson, 2016). Professional programs provide an opportunity for colleges to diversify their revenue sources beyond undergraduate tuition dollars.

A growing number of universities are adopting variations of responsibility center management budgeting models for their professional programs, which require individual colleges or programs to generate their own revenue (Kosten, 2016; Strauss & Curry, 2002). In these models, a percentage of a program’s revenue goes to the university’s central administration to pay for overhead. Law schools frequently turn over 25% to 30% of their revenue to the administration, which brings complaints from law school deans that they are subsidizing other departments on campus (Segal, 2011). As any remaining proceeds stay within the department, both the department and the university have an incentive to raise additional revenue through tuition.

Professional programs also have an incentive to raise tuition in an effort to become (or appear) more prestigious. Bowen’s (1980) revenue theory of costs stated that reputation is associated with a high price tag, and as such colleges will seek to raise and spend as much money as possible. Colleges often counter with Baumol’s (1967) cost disease hypothesis, in which the heavy reliance on highly-skilled labor explains cost increases. Over the long term, it appears that Baumol’s cost disease is responsible for most of the rise in educational costs (Archibald & Feldman, 2008). However, there is some evidence in recent years that research universities’ actions contribute to rising costs more than Baumol’s cost disease (Martin & Hill, 2013; 2014).

Most college rankings providers implicitly or explicitly reward professional programs with high levels of resources, with the justification that additional resources will result in a higher-quality educational environment. For example, the U.S. News & World Report law school rankings directly reward programs with high per-student expenditures (Morse, 2016), while The Economist’s ranking of MBA programs gives credit to colleges with outstanding facilities and career services (The Economist, 2016). There is also some evidence of the “Chivas Regal” effect, in which colleges that slipped in the rankings raised their tuition in an effort to appear more prestigious (Askins & Bothner, 2016).

Professional programs, particularly in fields in which graduates earn high salaries, have strong incentives to raise tuition prices to whatever the market will bear. In many cases, a student’s ability to pay for a professional degree is influenced by the availability of federal student loans due to the relatively limited nature of the private student loan market. Other programs may not be affected by increased federal loan eligibility because students are only willing to pay the current sticker price even if they had access to additional loan dollars. For this reason, any increases in federal loan eligibility may only be salient for more-selective professional programs as they consider setting tuition prices. This fits with Gillen’s (2012) Bennett Hypothesis 2.0, which noted the importance of selectivity in considering how colleges respond to aid increases.

As noted in the previous section, all of the empirical literature examining the veracity of the Bennett Hypothesis examines undergraduate tuition and fee prices instead of considering graduate or professional programs. The best available research on the Bennett Hypothesis with respect to undergraduate federal student loans finds a modest relationship between increased borrowing limits and listed tuition prices. Lau (2014) found that for-profit colleges increased tuition prices by $.51 for each one-dollar increase in loan limits, compared to $.25 among community colleges. Lucca, Nadauld, and Shen (2015) estimated that increases in subsidized loans were more strongly associated with tuition increases ($.45 to $.60 for each dollar in loans) than unsubsidized loans (between zero and $.17). They found stronger evidence of the Bennett Hypothesis at for-profit and expensive private nonprofit colleges than other sectors of higher education.

There has been more research examining whether increases in Pell Grant awards for undergraduate students is associated with higher listed tuition prices. These findings generally support mixed (Rizzo & Ehrenberg, 2004; Singell & Stone, 2007) or modest positive relationships (Lau, 2014; Lucca et al., 2015; Turner, 2014). Cellini and Goldin (2014) took a different empirical strategy, comparing the prices of for-profit colleges that received federal financial aid to those that did not and finding some support for the Bennett Hypothesis. But it is worth noting that all of these studies except for Cellini and Goldin (2014) relied on small changes in the Pell Grant maximum award or discontinuities in the Pell Grant award formula, which are much smaller than the changes to graduate student loan eligibility that I seek to examine.
Describe the research method that will be used (limit 1000 words):

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

My research questions are the following:

(1) Did tuition/fees or living expenses increase at a faster rate for law, medical, and business programs following the creation of the Grad PLUS program in 2006?

(2) Did the student debt burden of graduates increase at a faster rate for law and medical programs following the creation of the Grad PLUS program in 2006?

I will use data from the 1999-2000 through 2014-15 academic years in my analyses to examine law, medical, and business school programs at public and private nonprofit institutions, with data available on between 150 and 250 programs for each field of study. I chose these programs because students generally finance these programs through debt and because data were able on both tuition and covariates over time. The majority of data will come from U.S. News & World Report’s annual guide and ranking of graduate programs, with tuition and fee levels supplemented with data from the Integrated Postsecondary Education Data System (IPEDS). The data include the following:

Outcomes: In-state and out-of-state tuition and fees, room/board and other living expenses, median debt burden of graduates

Control variables: Program size, percent full-time, racial/ethnic distribution, percent female, percent international, acceptance rate, standardized test score percentile (GMAT/LSAT/MCAT), undergraduate GPA

To examine these questions, I will use two different analytic models to examine whether the Bennett Hypothesis holds (or does not hold) under alternative specifications. First, I will use an interrupted time series model that tests for whether there is a change in the trends for each of the outcomes after the Grad PLUS program was implemented in 2006 and students could borrow up to the full cost of attendance. The regression equation is the following for college i:

\[ Y_{i} = \beta_{0} + \beta_{1} \text{Time}_{i} + \beta_{2} \text{Post}_{i} + \beta_{3} \text{Time} \times \text{Post}_{i} + \epsilon_{i} + \mu_{i}, \] (1)

where \( Y \) represents the outcome of interest for college \( i \), \( \text{Time} \) represents the number of years before or after the 2006-07 academic year, \( \text{Post} \) is an indicator variable equal to 0 before the 2006-07 academic year and 1 after that period, and \( \text{Time} \times \text{Post} \) reflects the interaction between the first two variables.

The \( \text{X} \) vector includes the control variables presented above as well as three other institutional metrics (from IPEDS) that could potentially affect graduate tuition pricing. I include the percentage of full-time equivalent enrollment that is graduate and professional students, undergraduate tuition revenue per FTE, and endowment revenue per FTE to reflect the reliance on graduate enrollment and the institution’s overall financial health. For public universities that report combined financial data with other institutions in their system due to sharing the same Federal Student Aid OPEID (Jaquette & Parra, 2014), I will assign the same per-FTE values to all colleges that share the same OPEID. Finally, \( \epsilon \) represents an idiosyncratic error term and \( \mu \) an institution-specific error term.

As an additional set of models, I will use difference-in-differences estimators that test for whether there is a change in the trends for each of these outcomes relative to undergraduate students at the same institution after the Grad PLUS program was created. In these models, I will control for the same characteristics mentioned above when examining undergraduate students, as the U.S. News data for graduate students all have analogues in IPEDS or College Scorecard data for undergraduate students. However, I will exclude the percentage of graduate enrollment, tuition revenue, and endowment revenue variables as they will drop out of the difference-in-differences model. I will also exclude the program size and GPA measures due to data not being comparable between undergraduate institutions and professional programs.

This framework has the advantage of isolating whether the same college responded differently regarding undergraduate and professional school tuition following the introduction of Grad PLUS loans, and also helps to reduce the effect of expanded income-driven repayment programs following legislation enacted in 2007 that applied to both undergraduate and graduate loans. A limitation of this design is that undergraduate loan limits were increased twice during this period, but undergraduate students did not see the same increase in student loan limits as graduate students did in this period. In the 2007-08 academic year, first-year students could borrow an additional $875 in federal loans (going to $3,500 for dependent students and $7,500 for independent students). Beginning in the 2008-09 academic year, unsubsidized Stafford loan limits increased by $2,000 per year for undergraduate students. The lifetime maximum in federal loans increased from $23,000 to $31,000 per year for dependent students and from $46,000 to $57,500 per year for graduate students (Wei & Skomsvold, 2012). Given some evidence that colleges responded to this increase in loan amounts by raising tuition (Lucca et al., 2015), this likely underestimates the results when compared to a model examining just professional students.

References cited (no word limit):


Datasets

There are no files attached.

List the datasets that will be used and explain why they best serve this research (limit 500 words)

I plan to use a combination of three datasets in this project. The majority of the data on business, law, and medical programs will come from U.S. News & World Report’s annual rankings of graduate and professional programs. The U.S. News dataset is the only available source of program-level data, as the federal government currently does not collect or report these data at the program level for nonprofit institutions. Not all colleges provide data to U.S. News, but participation rates are generally quite high. The variables include the following:

Outcomes: In-state and out-of-state tuition and fees, room/board and other living expenses, median debt burden of graduates

Control variables: Program size, percent full-time, racial/ethnic distribution, percent female, percent international, acceptance rate, standardized test score percentile (GMAT/LSAT/MCAT), undergraduate GPA

I will also use the U.S. Department of Education’s Integrated Postsecondary Education Data System (IPEDS) for certain metrics, primarily for those that pertain to either the college as a whole or to the undergraduate student body. IPEDS is the most comprehensive source of institutional-level panel data, which I will leverage in this study. The variables include the following:

Outcomes for interrupted time series model: In-state and out-of-state tuition and fees, room/board and other living expenses (to supplement U.S. News data if needed)

Controls for interrupted time series model: Percent graduate/professional students, undergraduate tuition revenue per FTE, endowment per FTE

Outcomes for diff-in-diff model: In-state and out-of-state tuition and fees, room/board and other living expenses
Controls for diff-in-diff model: Percent full-time, racial/ethnic distribution, percent female, percent international, acceptance rate, standardized test score percentile (ACT/SAT)

Finally, I will use the U.S. Department of Education’s College Scorecard dataset to obtain information on the median debt of bachelor’s degree recipients for the difference-in-differences analysis. These data are drawn from the National Student Loan Data System for students who received federal financial aid and are the most comprehensive source of institution (OPEID)-level debt data at the undergraduate level.

Statement of use of restricted datasets (limit 250 words):

Applicants should provide a statement indicating whether the proposed research will require use of restricted datasets. If restricted datasets will be used, the plan for acquiring the appropriate license should be described.

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

Timeline and Deliverables

Timeline:

Provide a timeline of key project activities.

March 1, 2017: Grant period begins

March 1-June 30, 2017: Compile, clean, and code data from U.S. News program rankings and IPEDS/College Scorecard

May 2017: Prepare proposal for ASHE conference

July 1, 2017: Submit first progress report

July 1-October 31, 2017: Write draft manuscript to submit to Access Group and ASHE conferences

November 1, 2017: Submit second progress report

November 2017: Present at Access Group and ASHE conferences, revise paper based on feedback received

December 2017: Release draft paper via SSRN and publish blog post

February 2018: Submit article(s) to academic journals

February 28, 2018: Grant period ends

April 30, 2018: Submit final progress report

Deliverables:

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

This project will include four main deliverables. First, I will present the preliminary findings at the Access Group and ASHE conferences in November 2017. Second, after incorporating that feedback, I will release a working version of this paper through SSRN in December 2017 to get additional feedback from a broader audience. Third, I will write a blog post (to potentially be published on the Brookings Institution’s Brown Center Chalkboard blog, to which I occasionally contribute) with the key findings to correspond with the SSRN working paper release. Finally, I will produce at least one scholarly article based on this research. Potential venues for this work include American Educational Research Journal, Educational Researcher, Journal of Higher Education, or Research in Higher Education.

Disseminate results:

Describe how you will disseminate the results of this research.

In addition to using the traditional methods of dissemination (conference presentations, SSRN working paper, and scholarly publications), I will use my professional networks to broadly disseminate results to other researchers, policymakers, and the public. I will use my Twitter account (a verified account with over 4,300 followers as of this writing) to promote each of the deliverables. I regularly interact with journalists from both trade outlets such as The Chronicle of Higher Education and Inside Higher Ed as well as broader publications such as The Wall Street Journal and The Washington Post. I have a list of journalists who request all of my new publications, which they then frequently write about for broad audiences. (The idea for this project came in part from one of those conversations with journalists.) Additionally, I will use a blog post through a venue such as Brookings as a way to summarize the key results for policymakers and the general public.

IRB Statement

Statement of Institutional Review Board approval or exemption (limit 250 words):
As part of the proposal, a statement outlining a plan for Institutional Review Board (IRB) approval is required. The statement should outline the applicant’s timeline and plan for submitting the proposal to an IRB or explain why IRB approval is not necessary. Final IRB action is not necessary prior to submitting the application.

Because all of the data that I will use in this project are publicly available, IRB approval is not necessary.

Biographical Sketch(es)

Biographical sketch (limit 750 words):

Robert Kelchen is an assistant professor in the Department of Education Leadership, Management and Policy at Seton Hall University. He earned a PhD in educational policy studies and a master’s degree in economics at the University of Wisconsin-Madison and earned a bachelor’s degree in economics and finance from Truman State University. His areas of research include higher education finance, accountability policies and practices, and student financial aid.

Kelchen has recently authored or co-authored articles in well-respected academic journals such as the American Journal of Sociology, Journal of Education Finance, Journal of Higher Education, Journal of Student Financial Aid (where he is also on the editorial board), and the Review of Higher Education. He is currently finishing a draft of a book on the landscape of accountability in American higher education, which is under contract with Johns Hopkins University Press.

Most of his work uses datasets such as IPEDS and the College Scorecard, and he has become involved in the improvement of these datasets. He is currently working with the National Postsecondary Education Cooperative on a white paper evaluating the strengths and weaknesses of IPEDS finance data. He has served on technical review panels for the College Scorecard and the Baccalaureate and Beyond datasets. Finally, he has also presented to the Education Writers Association and the IPEDS training groups on how to use IPEDS and/or Scorecard data.

He is regularly quoted in the media, including outlets such as National Public Radio, Politico, The New York Times, The Wall Street Journal, and The Washington Post, and has appeared on PBS and MSNBC. Kelchen is the methodologist for Washington Monthly magazine’s annual college guide and rankings, which has won an award for best data journalism from the Education Writers Association. He was recently recognized as one of The Chronicle of Higher Education’s 15 most indispensable academics on Twitter for being “a reliable source of deep-wedges wonkery.”

Budget

- Kelchen Budget Form

Funding History

Funding history (limit 250 words):

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

I have no prior, current, or pending funding for the proposed research, nor do I have a history of prior funding from AIR.

Dissertation Advisor Letter of Support

There are no files attached.
Research Grant Proposal Budget Form

Name  Robert Kelchen

Personnel - Salary
Principal Investigator  $ 23,413.00
Second Principal Investigator  
Third Principal Investigator  
Graduate Research Assistant  $ 4,709.00

Travel
2017 Access Group Legal Education Research symposium:  $ 1,400.00
Other research related travel:  $ 1,400.00
(Note: Other planned travel should be listed in the "Timelines and Deliverables" section)

Other research expenses
Please provide a breakdown of expenses below and add the total value in the box to the right. Allowable expenses include: materials, such as software, books, supplies, etc.; consultant services, such as transcription, analysis, external researchers, etc.; and costs for publishing articles in journals. The purchase of computer hardware, overhead or indirect costs, and living expenses are not allowable. If you have questions about specific expenditures, please contact AIR.

The budget is revised to include funds for a graduate student to also travel to and attend the Access Group conference in November 2017.

TOTAL REQUESTED – Maximum Allowable is $50,000  $ 32,322.00