



Dear Erdal,

Thank you for submitting your proposal. A printable summary is below. Your confirmation number is 15546. 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 850-391-7109 or [grants@airweb.org](mailto:grants@airweb.org).

## SUMMARY

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

Grant Type
I am applying for a:
Research Grant

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**Project Description**

**Project title:**

The Relative Efficacy of Adjunct Faculty in Law School Classrooms

**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?

The proposed project will address the question of whether exposure to adjunct (part-time) law school instructors affects students' success. Success will be measured by course grades, future course-taking, persistence and graduation, engagement with the university's law journals, performance on the bar exam(s), sector of employment, and law firm size and status (for those entering the private sector). Determining whether having adjunct (part-time) instructors in first-year required courses affects students' academic performance and subsequent labor market performance, particularly among students from demographic backgrounds that are underrepresented in the legal profession, will improve our understanding of the barriers to obtaining law degrees and employment in the legal profession faced by such students even after they have been admitted to law school. Identifying the educational inputs under law schools' control that influence the performance and decisions of female and racial and ethnic minority law students is important, as even among similarly credentialed students at top law schools, women and minorities often feel alienated in law school classrooms and are less likely to graduate than white men (e.g., Banks 1988; Guinier et al. 1994). These disparities in law school experiences contribute to the underrepresentation of females and racial and ethnic minorities in the legal profession, particularly in the highest paying, most visible positions (Holder, 2001).

The efficacy of adjunct (part-time) instructors relative to full-time and tenure-track faculty is a timely issue relevant to national policy debates as there are at least two reasons that law schools might wish to increase the usage of adjunct and other non-tenure track instructors (Ehrenberg, 2013). First, as job prospects and salaries for newly minted lawyers have levelled off in recent years, the lower costs of hiring adjuncts offer law schools an attractive way to reduce expenditures, and in turn, tuition. Second, proposed rule changes by the American Bar Association (ABA) for law school accreditation may make it easier for law schools to hire and staff more classes with adjunct and other types of non-tenure track instructors.

To date, however, rigorous evidence on the relative efficacy of adjunct and other types of non-tenure track law school faculty is lacking (Ehrenberg, 2013). The proposed project aims to fill this gap in the literature by providing credible evidence on the causal impacts of adjunct and term (non-tenure track) faculty on law students' academic and labor-market outcomes relative to those of their tenured (and tenure-track) counterparts. Specifically, the proposed project will address three research questions:

- Relative to tenured and tenure-track faculty, are adjunct and non-tenure track faculty more, less, or equally effective in promoting law students' academic and labor-market success?
- Does the relative efficacy of adjunct and non-tenure track faculty vary by law students' sociodemographic backgrounds?
- Does exposure to adjunct and non-tenure track faculty in first-year law classes vary by students' sociodemographic backgrounds?

**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?

It is theoretically ambiguous whether adjunct and term (non-tenure track) law school faculty's effects on law students' academic and labor-market outcomes are larger or smaller than those of their tenured (and tenure-track) counterparts (Ehrenberg 2013). On the one hand, tenure-track and tenured faculty might be more effective for several reasons. First, tenure and the attached job security provides faculty the freedom to teach and address controversial issues in the classroom. Second, tenured (and tenure-track) faculty are more likely to be researchers at the cutting-edge of the legal profession. Third, tenured (and tenure-track) faculty often have lighter teaching loads (i.e., they teach fewer courses per semester) and have more choice in the classes they teach. This academic freedom, expertise, ability to teach courses in which they are content experts, and extra time to prepare courses and meet with students all suggest that tenured (and tenure-track) might more contribute to students' academic and labor-market success.

On the other hand, there are several equally compelling reasons to expect that adjunct and non-tenure-line faculty are just as, if not more, effective than their tenured (and tenure-track) counterparts. For example, especially in first-year required (core) courses, expertise at the cutting edge of legal scholarship might not matter much. Moreover, many adjunct instructors enter the classroom with formidable practical experience that translates well in the classroom. Similarly, active practitioners might more easily connect students to internships and related job opportunities that both increase students' engagement with law school and ultimately lead to fulltime positions.

To date, only two rigorous (i.e., credibly causal) analyses of the relative efficacy of adjunct instructors have been conducted, both in the undergraduate context. First, Bettinger and Long (2010) address this question using data on all full-time, first-time, first-year college students in a sample of 12 public postsecondary institutions in Ohio. The authors use a quasi-experimental instrumental-variables strategy, which we explain in detail in the methodology section of this proposal, and find that adjunct faculty perform no worse than their tenured (and tenure-track) counterparts in the classroom. In fact, the authors find that adjuncts perform slightly better when it comes to influencing subsequent course enrollments. Second, Figlio et al. (2015) address this question using detailed administrative data from eight cohorts of incoming students at Northwestern University. The authors develop a quasi-experimental fixed effects strategy, which we explain in detail in the methodology section of this proposal, and find that adjunct faculty are more effective than their tenured (and tenure-track) counterparts in terms of shaping students' subsequent course taking and in improving students' performance in subsequent courses in the same field. Despite using a different methodology and using data from a more selective university, these results are broadly consistent with those reported by Bettinger and Long (2010).

Of course, these results do not necessarily generalize to the law school context, as law students tend to be older, more mature, and have a clearer sense of professional direction. Additionally, class sizes and the teaching style in first-year law school courses likely differ from those in first-year

undergraduate courses. To our knowledge, the only study to broach this topic in the law school context is Ehrenberg (2013), who provides suggestive evidence that at the institution level, there is no difference in first-year attrition rates or in bar passage rates attributable to the share of faculty who are "full time" versus "part time." However, the author clearly articulates the myriad limitations of this initial analysis: the data did not distinguish tenured/tenure-line faculty from full-time non-tenure line teaching faculty nor did the data identify the share of full-time faculty teaching in crucial first-year courses. Another limitation of addressing this important question at the institution level regards within-institution sorting of students to classrooms, which might bias this sort of descriptive analysis. The proposed project will contribute to the literature, and address these shortcomings and more, by using rich, student-by-course level data in conjunction with a variety of rigorous, quasi-experimental methods to address the research questions laid out in Section 2.A.

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**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?

The proposed project will provide credible evidence on the causal impacts of adjunct and term (non-tenure track) faculty on law students' academic and labor-market outcomes relative to those of their tenured (and tenure-track) counterparts. Specifically, we will answer the research questions laid out in Section 2.A using a variety of quasi-experimental methods that have previously been applied to these questions in the undergraduate context.

Research Question (i) regards whether adjunct and non-tenure track faculty are more, less, or equally effective as their tenure-line and tenured counterparts in promoting law students' academic and labor-market success. Faculty rank will be coded as a four-category categorical variable, which differentiates between contingent adjuncts, full-time non-tenure line "term" faculty, tenure-line faculty, and tenured faculty. The research question will be addressed using two identification strategies: the two-way fixed-effects (FE) strategy pioneered by Figlio et al. (2015) and the instrumental-variables (IV) strategy pioneered by Bettinger and Long (2005, 2010). We describe each in turn.

First, the two-way FE strategy is the preferred method for identifying the impact of faculty rank on course-specific student outcomes, such as course grades, course persistence, and the probability of taking a subsequent course in the same field. This approach cannot be applied to singular outcomes such as persistence in law school, graduation, Bar passage, labor market success, or engagement with a law journal because this approach controls for a student FE, meaning that the estimates are driven by within-student variation in course outcomes. Because there is no within-student variation in singular outcomes such as graduation, this method cannot be applied to long-run, student-specific outcomes. Intuitively, the student FE plays the important role of controlling for all student-specific factors that might influence grades and related outcomes. The second FE is a "subsequent course" FE. This ensures that the estimates are driven by comparisons in the subsequent performance in subjects A and B of students who took the initial course in subject A with an instructor of one rank (e.g., adjunct) and the initial course in subject B with an instructor of a different rank (e.g., tenured) (Figlio et al. 2015). The two-way FE models will also control for other instructor characteristics, such as experience, demographic background, and quality of JD granting institution, which might be correlated with rank. The two-way FE models are formalized in equation (1) in the attached technical appendix. The two-way FE models will be estimated using the method proposed by Mittag (2012) and statistical inference will be made robust to three-way (student, instructor 1, and instructor 2) clustering (Cameron, Gelbach, & Miller 2011). Thus we can test the statistical significance of the estimated impacts in the most robust, conservative way possible.

Second, the IV strategy will be used to identify the impact of faculty rank on student-specific outcomes, such as persistence in law school, graduation, and labor market outcomes. This approach seeks to approximate a randomized experiment by isolating random variation in students' exposure to faculty of different ranks attributable to transitory variation in the composition of the first-year core faculty. Such variation occurs due to sabbaticals, retirements, new hires, and so on (Bettinger & Long, 2005, 2010). The basic idea, as formalized in section 2 of the attached technical appendix, is to use the deviation in a given year from the long-run steady state fraction of first-year courses taught by faculty of rank  $j$  (e.g., adjuncts) as an instrumental variable for the actual fraction of a given student's first-year courses taught by faculty of rank  $j$  (i.e., adjuncts). As shown in equation (2) of the attached technical appendix, the actual IV model can and will also control for student characteristics, as the demographic composition and credentials of incoming cohorts has changed over time. All of the usual IV/2SLS diagnostics will be performed. In particular, we will verify that the first stage relationship is strong and utilize nonlinear IV-probit models for binary outcomes such as graduation. Specifically, we will utilize the two-step control function approach to IV-probit developed by Rivers and Vuong (1988).

Research Question (ii), which asks whether the relative efficacy of adjunct and non-tenure track faculty vary by law students' sociodemographic backgrounds or other classroom characteristics (e.g., class size) (Ho & Kelman 2014), will be addressed by augmenting the FE and IV strategies discussed above to include the appropriate interaction terms. The practical and statistical significance of these interaction terms will provide evidence on the extent to which the relative efficacy of adjunct instructors varies by students' sociodemographic background characteristics.

Finally, Research Question (iii), which asks whether exposure to adjunct and non-tenure track faculty in first-year law classes varies by students' sociodemographic backgrounds, will be addressed by conducting a series of straightforward descriptive analyses. These include both simple cross tabs and descriptive linear regressions.

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**References cited (no word limit):**

- Banks, T. L. (1988). Gender bias in the classroom. *Journal of Legal Education*, 137-146.
- Bettinger, Eric P. and Bridget Terry Long. 2005. Do Faculty Serve as Role Models? The Impact of Instructor Gender on Female Students. *The American Economic Review* 95 (2):152-157.
- Bettinger, E. P., & Long, B. T. (2010). Does cheaper mean better? The impact of using adjunct instructors on student outcomes. *The Review of Economics and Statistics*, 92(3), 598-613.
- Cameron, A. C., Gelbach, J. B., & Miller, D. L. (2011). Robust inference with multiway clustering. *Journal of Business & Economic Statistics*, 29(2).
- Ehrenberg, R. G. (2013). American Law Schools in a Time of Transition. *Journal of Legal Education*, 63(1), 98-112.

Figlio, D. N., Schapiro, M. O., & Soter, K. B. (2015). Are tenure track professors better teachers? *Review of Economics and Statistics*, 97(4), 715-724.

Guinier, L., Fine, M., Balin, J., Bartow, A., & Stachel, D. L. (1994). Becoming gentlemen: Women's experiences at one Ivy League law school. *University of Pennsylvania Law Review*, 1-110.

Ho, D. E., & Kelman, M. G. (2014). Does class size affect the gender gap? a natural experiment in law. *The Journal of Legal Studies*, 43(2), 291-321.

Holder Jr, E. H. (2001). Importance of Diversity in the Legal Profession, *The. Cardozo L. Rev.*, 23, 2241.

Mittag, N. (2012). New methods to estimate models with large sets of fixed effects with an application to matched employer-employee data from Germany. *FDZ Methodenreport*, 201201.

Rivers, D., & Vuong, Q. H. (1988). Limited information estimators and exogeneity tests for simultaneous probit models. *Journal of Econometrics*, 39(3), 347-366.

## Project Description - Appendix

- [Technical Appendix](#)

## Datasets

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

The proposed project will utilize rich student-by-course administrative data, including course title and grade earned, that is linked to instructor data from a private top 100 law school (LS). We also have access to students' application packets, so we can use things like LSAT scores and college GPAs as control variables. The Co-PI currently has access to these data as part of a university-wide initiative to improve retention and performance among students from traditionally underrepresented backgrounds. A signed user agreement from the university's general counsel is attached. Student-level outcomes such as graduation, final GPA, and engagement with the university's law journals are also included in the administrative data. Finally, we will merge these administrative data with student-level records of Bar Exam performance for a subset of states in which many LS students sit for the Bar exam.

These data are ideal for the proposed project for at least three reasons. First, in 2015, LS had a full time enrollment of over 1,000 students, which suggests that the sample sizes will be large enough to make valid statistical inferences (over a 10 year span). Second, LS is unique among leading law schools in that women comprise more than half of each class and in that as many as one third of entering students are racial or ethnic minorities. This ensures that there is sufficient variation in students' demographic backgrounds with which to identify heterogeneous effects of law school inputs such as course-taking and adjunct faculty on student outcomes.

### 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.

The proposed project will run for one year, from March 1, 2017 – February 28, 2018.

In spring of 2017 we will prepare an outline of the manuscript and assemble the relevant data on American University's Zorro High Performance Computer (HPC).

The majority of the work will be conducted in summer 2017, when two doctoral research assistants will assist in cleaning, coding, and merging the data sets; running the preliminary empirical analyses; and writing a preliminary draft of the manuscript.

In fall 2017 we will submit a mid-year progress report and present the initial results at the Fall Meeting of the Association for Public Policy Analysis & Management (APPAM) (Nov. 2-4) in Chicago and the Access Group Legal Education Research Symposium (AGLERS) (Nov. 16-17). We will then revise the manuscript and conduct any additional empirical analyses, incorporating feedback received at APPAM and AGLERS.

In spring 2018 we will prepare the manuscript for submission to a high impact, peer reviewed, academic journal such as the *Journal of Human Resources*. We will also write a non-technical overview of the results and policy implications for dissemination to practitioners and policymakers via an

outlet such as Brookings Brown Center for Education's Chalkboard Blog, a venue that the Co-PI has contributed to in the past. Finally, we will submit a final report to AIR.

#### Deliverables:

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

The proposed project will yield three deliverables in addition to the AGLERS presentation in Chicago and the mid-year and final reports to AIR:

- 1) One conference presentation (or poster) at APPAM's Fall 2017 Conference
- 2) One manuscript of the length and quality usually found in high impact, peer-reviewed, academic journals.
- 3) One 500-1000 word non-technical summary of the proposed project's main results and implications. This will be published in a public venue such as a Brookings Institution blog, or an outlet such as Education Next, that is widely read by the general public, practitioners, and policy makers.

#### Disseminate results:

Describe how you will disseminate the results of this research.

(Note: Costs of travel to meetings should be calculated on the budget page.)

We will use a three-pronged strategy to ensure wide dissemination of the proposed research to a variety of stakeholders, including policymakers, researchers, school administrators, and educators. First, we will present the findings and engage in dialogue at conferences attended by a diverse group of stakeholders, such as the Fall Meeting of the Association for Public Policy Analysis & Management (APPAM). Second, we will prepare a technical manuscript detailing the methodological innovations and empirical results for submission to a top peer-reviewed economics journal, such as the Journal of Human Resources. The PI and Co-PI will also circulate the manuscript as an NBER and IZA discussion paper so that it is advertised by NBER and IZA and freely available for download. Third, we will prepare a non-technical overview of the proposed research that summarizes the findings and resulting policy implications, which we will submit to an outlet that has a broader audience interested in education policy, such as Education Next or Brookings Chalkboard.

#### IRB Statement

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

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

The Co-PI already has IRB approval to use these data to address research questions related to the academic success of traditionally underrepresented students. The proposed project, while new, is covered under the broad IRB approval and agreement with the university. Should the project be funded, we will add the PI and relevant doctoral research assistants to the extant data-use agreement.

#### Biographical Sketch(es)

##### Biographical sketch (limit 750 words):

The Primary Investigator (PI) is Dr. Erdal Tekin. Dr. Tekin is a professor of public policy in the School of Public Affairs at American University, Washington DC. He is also a research associate at the National Bureau of Economic Research (NBER), a research fellow at the Institute for the Study of Labor (IZA) in Bonn, Germany, and honorary professor at Deakin University in Australia. In addition to these professional affiliations, he is an editor for the Journal of Population Economics and an associate editor for the IZA Journal of Labor Policy and the IZA World of Labor. Prior to joining American University, he was an assistant, associate, and full professor of economics at Georgia State University between 2001 and 2014. He received his Ph.D. in economics from the University of North Carolina at Chapel Hill in 2001. He also has an M.A. in economics from the University of Colorado at Denver and a B.S. in electronics and telecommunications engineering from Istanbul Technical University.

Erdal Tekin's scholarship is in applied microeconomics with a focus on questions related to economics of education, health, and crime. Currently, there are three research areas within his broader research agenda: (1) the role of public policies and programs in shaping decisions and behaviors related to education, health and crime; (2) how these decisions and behaviors influence subsequent life outcomes in several domains including labor market, human capital, crime, and health; and most recently (3) the effect of early life shocks and exposure to risk factors on the well-being of individuals during adolescence and adulthood. More specifically, some of his recent projects include an analysis of the impact of community traumatic events on academic achievement and the relationship between intrauterine exposure to malnutrition on educational outcomes using administrative data, the impact of child care subsidies on cognitive and behavioral development of low-income children, and an evaluation of a mentoring program on academic achievement using a randomized controlled trial. He is particularly experienced in secondary-data analysis and the application of quasi-experimental research designs similar to those in the proposed application to studying questions with important policy relevance.

Erdal Tekin has published extensively in leading economics journals such as the Review of Economics and Statistics, the Economic Journal, American Economic Journal: Economic Policy, the Journal of Health Economics, the Journal of Human Resources, the Journal of Urban Economics, Economics of Education Review, and the Journal of Law and Economics. Given the interdisciplinary nature and the policy relevance of his research, interests, his work speaks to audiences not only in economics, but also policymaking and legislative institutions. Accordingly, he has also published in interdisciplinary journals such as the Journal of Policy Analysis and Management, Criminology, and Social Science and Medicine. His research has been cited over 2,000 times and funded by a number of domestic and international organizations, including the National Institutes of Health, the U.S. Department of Justice, the U.S. Department of Agriculture, Robert Wood Johnson Foundation, Swiss Re, and the Danish government, among others. His current externally funded projects include an assessment of the impact of an enhanced mentoring program for at-risk youth through a grant from the U.S. Department of

Justice, and an analysis of the social determinants of HIV with a focus on the interactive effects of mass incarceration, housing stability, and subsidized housing policies through a grant from the National Institutes of Health.

In addition to his scholarly activities, Erdal Tekin is also the organizer of an international workshop that is held annually. Funded by IZA and the Center for Economic Analysis of Risk (CEAR), the Annual Meeting on the Economics of Risky Behaviors provides a platform for exchange of research and ideas for scholars from around the world working on economics of education, health, and crime. Started in 2009, the workshop has been held in various countries including the U.S., Germany, Colombia, Turkey, Switzerland, and Denmark. Finally, his research is frequently profiled by media outlets such as the New York Times, Washington Post, Wall Street Journal, NPR, and the Freakonomics Radio, the Economist magazine.

In sum, Dr. Tekin's experience suggests that he is an ideal researcher to lead, manage, and oversee the proposed project. Specifically, his experience working with administrative data and on externally funded projects suggests that he is well suited to successfully complete the proposed project. Moreover, his track record in publicizing and translating his research for broader, nontechnical and nonacademic audiences ensures that the results of the proposed project will have an impact on legal education policy and practice.

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#### Biographical sketch (limit 750 words):

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Co-PI

Dr. Seth Gershenson is the Co-Primary Investigator (Co-PI) on the proposed project and will primarily manage and work with the doctoral research assistants in preparing the data and conducting the empirical analyses. He is currently an Assistant Professor in American University's School of Public Affairs, a Research Fellow of the Institute for the Study of Labor (IZA), and a faculty affiliate of American University's School of Education. Professor Gershenson earned a Ph.D. in Economics from Michigan State University in 2011 and was the 2010 recipient of the Association for Education Finance & Policy (AEFP) pre-doctoral new scholar award. He was a member of the 2014 cohort of Emerging Education Policy Scholars, a program supported by the Thomas B. Fordham and American Enterprise Institutes that aims to "increase understanding of how the worlds of policy and practice intersect with scholarly research in education." In the spring of 2014, he was a visiting scholar at the Institute for Health and Social Policy at Johns Hopkins University.

Professor Gershenson teaches masters- and doctoral-level classes in policy analysis, advanced quantitative methods, and microeconomics at AU and he received the 2014 AU School of Public Affairs Outstanding Teaching Award. His methodological training and experience teaching advanced graduate-level methods courses, along with his prior experience analyzing administrative data, suggest that Professor Gershenson is capable of overseeing and completing the empirical components of the proposed project.

Professor Gershenson's research focuses generally on issues related to K-16 education policy, including sources of socio-demographic achievement gaps, teacher labor markets, and the determinants of students' socio-behavioral and cognitive skills. He has published 16 articles in peer-reviewed journals including some of the top education-policy journals, such as American Educational Research Journal, Educational Evaluation and Policy Analysis, Education Finance and Policy, Educational Researcher, Economics of Education Review, and Teachers College Record. He has similarly presented his research at over 25 professional and academic conferences, including the annual meetings of the American Educational Research Association, American Economic Association, Society of Labor Economists, Society for Research on Educational Effectiveness, Association for Education Finance and Policy, and the Association for Public Policy Analysis and Management. His research has been featured in media outlets such as The Atlantic and Nate Silver's FiveThirtyEight.com. This track record provides further evidence that Professor Gershenson is well equipped and competent to effectively manage and successfully complete the proposed project in a timely manner. Moreover, it suggests that he is capable of producing high impact, journal-quality manuscripts that summarize the methodological innovations and policy-relevant results that are expected to emerge from the proposed project. Professor Gershenson also has experience writing non-technical summaries of his research and publishing them in outlets read by policy makers and practitioners such as the W.E. Upjohn Institute's Employment Research newsletter Brookings' Brown Center Chalkboard Blog. This experience suggests that he will be able to produce and disseminate a non-technical overview of the policy-relevant results of the proposed project to relevant stakeholders.

It is also important to note that he has content knowledge in areas related to the proposed project. Specifically, he has experience analyzing administrative data: his dissertation analyzed school district teacher-level administrative data from Michigan and his recent research on student absences utilized longitudinal administrative matched student-teacher data from the state of North Carolina. Most relevant to the proposed project, Professor Gershenson recently completed a research grant from the Access Group/AIR program entitled "A Law School Instructor Like Me: Gender, Race, and Ethnicity Dynamics in Law School Classrooms," which used administrative data to identify the causal impact of student-instructor demographic mismatch on first-year law students' course grades. The study found that mismatch leads to sizable 10 to 20% reductions in the probability of receiving an A/A-. The proposed project will use similar quasi-experimental methods to analyze administrative data from the same law school.

Finally, Professor Gershenson has successfully completed five externally-funded projects. For example, his research on the causes and consequences of student absences was funded by both the American Educational Research Association and the Spencer Foundation. Both grants are now completed and resulted in two publications in Education Finance and Policy. Another recently completed project, funded by an Early Career Research Grant from the W.E. Upjohn Institute, yielded a manuscript recently published in the Journal of Policy Analysis and Management. In sum, Professor Gershenson has a solid track record of completing externally funded research projects in a timely fashion, publishing the results in high-impact peer-reviewed education policy journals, and widely disseminating the results to diverse, interdisciplinary audiences of researchers, policy makers, and practitioners.

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#### Budget

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- [Budget](#)

### 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.

Neither the PI nor the Co-PI has any current or pending funding for the proposed project.

The PI has never received funding from AIR.

The Co-PI has received one previous research grant from AIR:

AIR Grant #RG1606, entitled A Law School Instructor Like Me: Gender, Race, and Ethnicity Dynamics in Law School Classrooms.

### Dissertation Advisor Letter of Support

There are no files attached.

# Technical Appendix

December 19, 2016

## 1 Two-Way FE Model for Course-Specific Outcomes

This section specifies the two-way fixed effects (FE) model that will be used to estimate the impact of law school faculty rank on course-specific student outcomes such as course grades and subsequent course taking. The approach is based off of that pioneered in Figlio, Schapiro, and Soter (2015). Specifically, we estimate models of the form

$$y_{ics2} = \theta_i + \omega_{cs2} + \delta RANK_{is1} + \beta X_{is1} + \epsilon_{is1}, \quad (1)$$

where 1 and 2 index initial and subsequent courses,  $c$  and  $s$  index classrooms and subjects, respectively, and  $\theta$  and  $\omega$  are student and course FE, respectively.  $RANK$  is a vector of categorical indicators that identify the rank of the instructor of student  $i$ 's first course in subject  $s$ . The parameters of interest are the elements of the vector  $\delta$ , which measure the relative impacts of various faculty ranks on student outcomes ( $y$ ).  $X$  is a vector of additional instructor characteristics that might jointly predict rank and teaching effectiveness, such as experience, quality of JD program, and demographic background. We will test the statistical significance of the estimated  $\delta$  coefficients using three-way, cluster-robust standard errors (Cameron, Gelbach, and Miller, 2012). Specifically, the standard errors will be clustered along three dimensions: student,  $s1$  instructor, and  $s2$  instructor.

## 2 IV Strategy for Student-Specific Outcomes

This section specifies the instrumental variables (IV) strategy that will be used to estimate the impact of law school faculty rank on student-specific student outcomes such as graduation and engagement with a law journal.

Following Bettinger and Long (2005, 2010), we will estimate student-level linear probability models (LPM) of the form

$$Pr(y_i = 1) = \tau fractionRANK_{it}^j + \beta W_i + \nu_{it}, \quad (2)$$

where  $t$  indexes incoming cohorts and  $fractionRANK^j$  is simply the fraction of student- $i$ 's first-year instructors of rank  $j$ , where  $j$  is adjunct, term, tenured, or tenure-line.  $W$  is a vector of observed student socio-demographic and pre-admission ability measures (i.e., LSAT scores). Even with rich controls in  $W$ , OLS estimates of equation (2) are potentially biased by unobserved student factors that jointly predict  $fractionRANK^j$  and  $y$ .

Accordingly, we estimate equation (2) by 2SLS, using cohort-specific deviations from the steady-state level of first-year instructors of rank  $j$  to instrument for  $FractionRANK^j$ . This IV strategy exploits arguably random variation over time in the composition of the first-year core faculty, attributable to retirements, sabbaticals, adjunct hires, and so on (Bettinger and Long, 2005, 2010). Specifically, we will create cohort-specific instruments that measure the difference between the share of first-year core instructors of rank  $j$  in the student's first year and the share of first-year core instructors of rank  $j$  over what would be the student's first four years in the program.

## References

- Bettinger, Eric P. and Bridget Terry Long. 2005. "Do Faculty Serve as Role Models? The Impact of Instructor Gender on Female Students." *The American Economic Review* 95 (2):152–157.
- Bettinger, Eric P and Bridget Terry Long. 2010. "Does cheaper mean better? The impact of using adjunct instructors on student outcomes." *The Review of Economics and Statistics* 92 (3):598–613.
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# Research Grant Proposal Budget Form



Name Dr. Erdal Tekin

### Personnel - Salary

Principal Investigator \$ 18,000.00

Second Principal Investigator \$ 12,000.00

Third Principal Investigator \$

Graduate Research Assistant \$ 10,500.00

### Travel

2017 Access Group Legal Education Research symposium: \$ 2,500.00

Other research related travel: \$ 2,500.00

(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.* \$ 4,500.00

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.

\$2,000 is allocated to purchase time on American University's Zorro High Performance Computer (HPC). This is the standard per-project rate set by the university. The Zorro HPC is necessary to successful completion of the project for two reasons: (i) this is the secure server on which the administrative data are stored and (ii) it facilitates the estimation of the computationally intensive two-way fixed effects models. \$1,000 is allocated to miscellaneous office/research expenses, such as books, printing, journal submission fees, etc. Finally, \$1500 is allocated to funding travel for one doctoral research assistant to the 2017 Access Group Legal Education Research symposium.

TOTAL REQUESTED – Maximum Allowable is \$50,000 \$ 50,000.00