

## Measuring the Impact of High School Counselors on College Enrollment

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### Summary Notes

- School counselors are among the first school staff to lose their jobs during budget shortfalls.
- Using high school counselor staffing counts and four-year college-going rates collected through the *Schools and Staffing Survey*, we find that an additional high school counselor is predicted to induce a 10 percentage point increase in four-year college enrollment.
- This causal result corroborates recent evidence from a national survey of counselors, thereby providing support for claims by counselors and school administrators that current counselor staffing levels are suboptimal.

An important duty of high school counselors is to complement the work of teachers by promoting college and career aspirations and to help students navigate the college process. In practice, the responsibilities of high school teachers are well defined and relatively consistent across schools. Teachers are generally responsible for transferring subject-specific knowledge to their students and enhancing the abilities of their students to think critically.

By contrast, the actual role played by high school counselors varies greatly across schools and even within schools (Paisley & McMahon, 2001; Bridgeland & Bruce, 2011). Effective counselors possess a nimbleness and an ability to work with students on an extremely wide range of issues, including college and financial aid application completion, academic planning, and the resolution of behavioral and personal problems.

Recent budget cuts have led to mass layoffs of counselors across many districts, particularly in California (Po, 2012). When financial resources are strained, difficult decisions must be made regarding dismissing school-level staff. Lacking evidence on the causal impact of counselors on student outcomes, it is possible that counselors are seen as more dispensable than other school staff.

Given the laser-like focus on teachers in the educational research arena, the dearth of rigorous empirical studies on the extent to which school counselors influence student outcomes is not surprising. In this brief, we highlight the first causal evidence on the impact of an additional school counselor on four-year college-going rates among students in

the high school, as well as the small body of evidence on how counselors impact other student outcomes of interest. The statistical approach we describe serves as a useful model for future studies of the causal impact of school counselors on student outcomes.

### Research Questions

1. How much do four-year college-going rates in a high school change when an additional school counselor is assigned to that school?
2. How do other student outcomes of interest change when an additional school counselor is assigned to that school?

### Data & Methodology

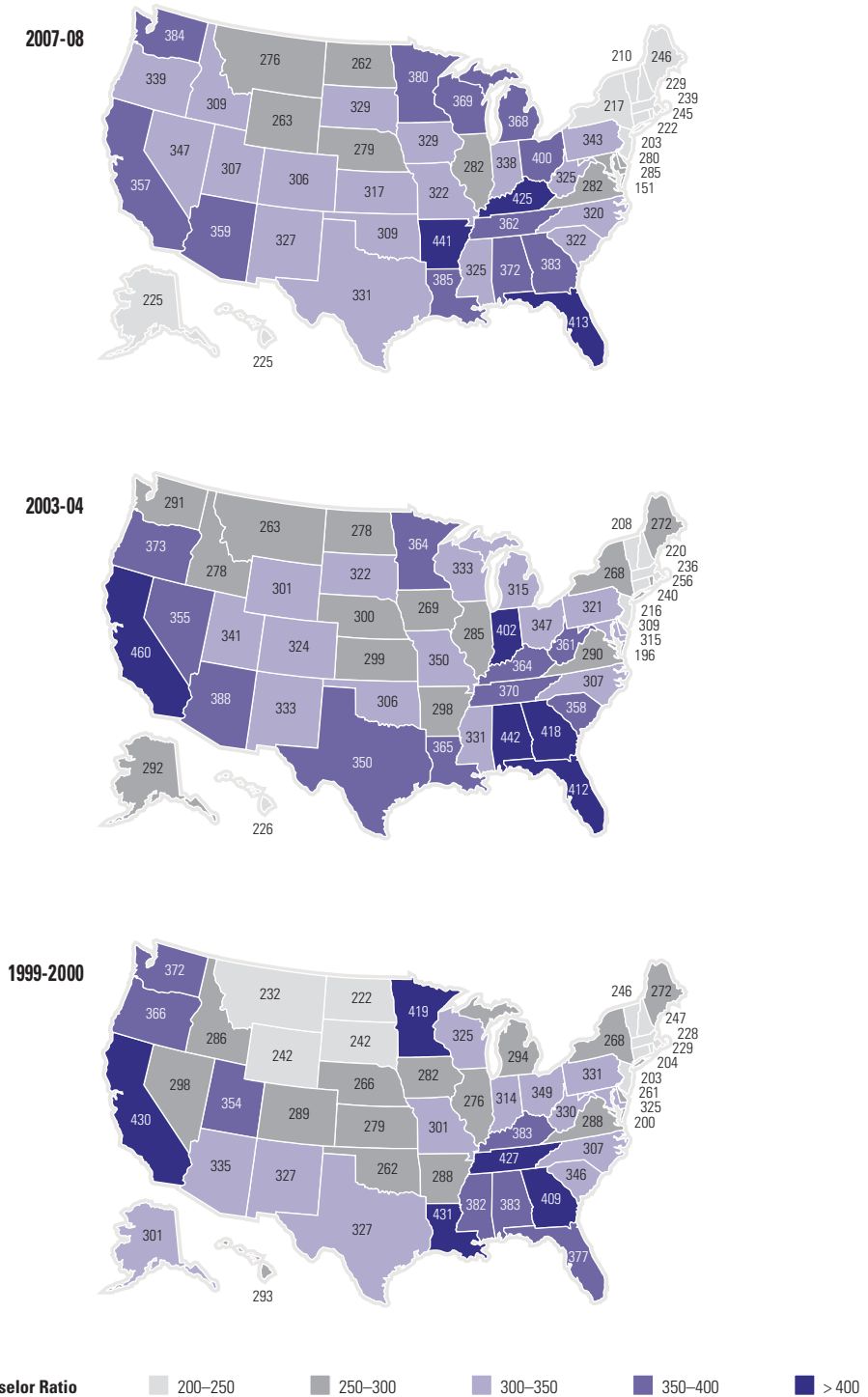
This study relies upon data from the National Center for Education Statistics' (NCES) restricted-use *Schools and Staffing Survey* (SASS), which includes three waves of data from the academic years 1999–2000, 2003–04, and 2007–08. The SASS is a repeated cross-sectional survey that collects ample information on teachers, principals, districts, and schools, with the intent of understanding school and teacher climates, pay structures, and general perceptions of these groups' professions. The SASS is particularly appealing in the context of this research because the survey collects data from respondents on the high school's four-year college-going rates, student enrollment, and number of counselors at the sampled schools, as well as school-level demographic characteristics such as minority student representation and the

percentage of students who are eligible for free or reduced-price lunch. The *Common Core of Data* (CCD) is a complementary NCES data set that provides information on teacher full-time equivalency at the sampled high schools in the SASS.

Figure 1 shows the variation across the United States in the number of high school students served by a single high school counselor in 2007–08, 2003–04, and 1999–2000, respectively.

In order to identify causal rather than correlational effects (methodology described below), the subsample analyzed includes states that have mandated maximum high school student-to-counselor ratios or that have programs through which the states subsidize the hiring of counselors, with school accreditation guidelines reinforcing these ratios. Either the American School Counselor Association (ASCA) or the National Association of State Boards of Education (NASBE) identified the 12 states listed in Table 1 as mandating maximum student-to-counselor ratios at the high school level, and each state's department of education verified this information. Because our results focus on four-year college-going rates, Table 1 also includes the average proportion of high school seniors in each state who enroll in a four-year postsecondary institution in the year following high school graduation, aggregated across all three survey years.

**Figure 1:** High School Students Served by One High School Counselor, by State and Year



Note. Authors' calculations based on the restricted-use *Schools and Staffing Survey (SASS)* in 1999–2000, 2003-04, and 2007-08.

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**Table 1:** High School Student-to-Counselor Ratio Policies and Average College-Going Rates, by State for States with Policies

State	High School Maximum Student-to-Counselor Ratio	Four-Year College-Going Rate
Alabama <sup>1</sup>	One counselor up to 499 students; 1.5 counselors up to 749 students; two counselors up to 999 students; 2.5 counselors up to 1,249 students; three counselors up to 1,499 students; one additional counselor for each additional 250 students	34%
Arkansas <sup>2</sup>	One counselor per 450 students	41%
Louisiana	One counselor per 450 students	43%
Maine	One counselor per 250 students	50%
Missouri <sup>3</sup>	One counselor per 301–375 students (desirable); one counselor per 500 students (minimum)	37%
Montana <sup>4</sup>	One counselor per 400 students	52%
Nebraska <sup>2</sup>	One counselor per 450 students	51%
New Hampshire	One counselor per 300 students	54%
North Dakota <sup>2</sup>	One counselor per 450 students	50%
Oklahoma	One counselor per 450 students	37%
Utah	One counselor per 400 students	29%
Vermont	One counselor per 300 students	51%
<b>All 50 states + the District of Columbia</b>	<b>No national ratio policy</b>	<b>38%</b>

1. In 1999-2000, the ratios in Alabama were 0.5 counselors up to 499 students, one counselor up to 749 students, two counselors up to 999 students, 2.5 counselors up to 1,499 students, and one additional counselor for each 250 students above 1,499.
  2. Counselor ratio is mandated at the district level.
  3. The desirable standards appear in the state accreditation guidelines, and are the standards used in these analyses. The absolute minimum ratio is 500 students to one counselor. Missouri schools tend to adhere to the desired standards, and 375 is the cut point used in these analyses.
  4. Montana law 10.55.710, which specifies student-to-counselor ratios, was modified in 2000 and 2002. While the authors were unable to secure documentation to the unamended accreditation guidelines, a summary of amendments suggests that only "language," not policy, was updated.
- Note.** Policies were confirmed through the appropriate contacts at state departments of education where no legal documentation was easily acquired. In Nebraska, an additional half-time counselor must be added for each additional 225 students. This was not used as a threshold because such a cut point would result in double counting of schools using a window size of +/-125. Four-year college-going rate is measured as the percentage of students graduating in the 1998-99, 2002-03, or 2006-07 academic years who enrolled at a four-year college in the following year.

- Academic years: 1999–2000, 2003-04, and 2007-08
- Number of states: 12
- Average high school enrollment: 489
- Average number of counselors: 1.69
- Average % underrepresented minority: 21%
- Average % free/reduced-price lunch approved: 35.7%
- Average four-year college-going rate: 42.3%

In order to draw causal inferences about the impact of high school counselors on student outcomes, we employ a regression discontinuity design.<sup>1</sup> This methodological approach is particularly well suited to address the research questions because the sample states listed in Table 1 have clear policies requiring that an additional counselor be hired when student enrollment exceeds a specified threshold. Undergirding this approach is the assumption that schools on either side of the state-mandated

1. See the Technical Appendix for more detail on regression discontinuity.

threshold are similar with respect to all observed and unobserved characteristics, except for the number of counselors employed. Figure 2 depicts a state with a student-to-counselor ratio of 450 to 1 (e.g., Arkansas, Louisiana, Nebraska, North Dakota, Oklahoma). The intuition behind the methodology is that, on average, high schools with 449 students are essentially identical to high schools with 451 students, except that the latter schools have twice as many school counselors (and a ratio of 451 to 2, i.e., 225.5 students per counselor rather than 449 students per counselor). Comparing the four-year college-going rates of high schools that fall on either side of the student-to-counselor thresholds that are mandated by each state may be used to identify the causal impact of an additional school counselor on four-year college enrollment rates.

## Results

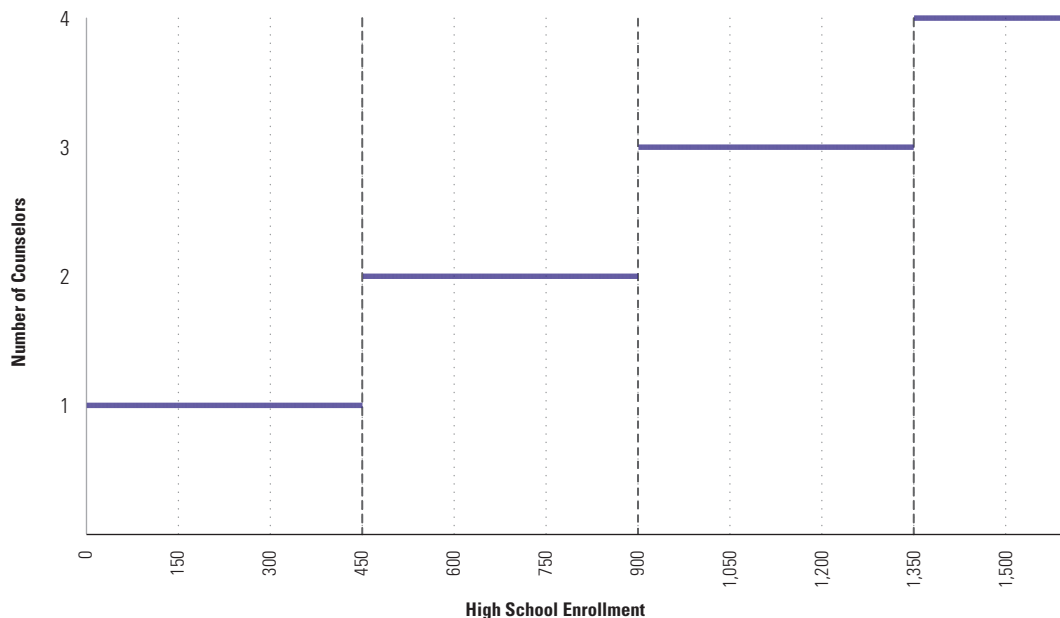
*How much do four-year college-going rates change when an additional school counselor is assigned to a high school?*

Using the causal regression discontinuity methodology, we find that an additional counselor causes a 10 percentage point increase in four-year college-going rates.

An additional high school counselor increases four-year college-going rates by approximately 10 percentage points.

Although the magnitude of the estimated impact of an additional high school counselor is large, it is not implausible. Among the typical sampled high school with an enrollment of about 113 seniors, the result implies that an additional high school counselor would be predicted to induce 11 more graduating students into four-year colleges. Some of these

**Figure 2:** Theoretical Relationship Between Enrollment and Counselors with Mandated Student-to-Counselor Ratio of 450 to 1



induced students might be shifted from the workforce into the four-year college pipeline and others might be shifted from the two-year college pipeline into the four-year college pipeline. Due to sample size constraints in the SASS data, we are unable to analyze whether the addition of a fourth counselor to a staff of three generates the same effect as the addition of a second counselor to a staff of one. However, large state-level administrative data sets may permit this type of analysis in the future.

*How do other student outcomes of interest change when an additional school counselor is assigned to that school?*

Despite our clear finding that high school counselors impact four-year college-going rates, this is certainly not the only student outcome of interest. Measures such as the school attendance rate and graduation rate may also be positively affected by a reduction in the student-to-counselor ratio. Data from SASS do not allow us to capture the impacts of counselors on these two outcomes, but this study does provide a foundation for researchers to continue exploring the contributions of high school counselors. Such studies might be conducted by harnessing the power obtained through large state-level administrative data sets.

Although the empirical research on school counselors is very sparse, several researchers have begun using rigorous empirical techniques to evaluate the impacts of school counselors on a variety of student outcomes. Carey and Harrington (2010a, 2010b) analyze data from the *School Counseling Program Implementation*

*Survey* to determine that lower student-to-counselor ratios in Utah are associated with increases in attendance rates — a result also found in Nebraska — and decreases in the frequency of disciplinary actions in the state. Examining the postsecondary outcomes of 1,305 highly qualified students from seven high schools in a large urban district using logistic regression analysis, Pham and Keenan (2011) estimate that a 1 percent decrease in the first-generation student-to-counselor ratio is associated with a 0.4 percent decrease in the odds of bypassing four-year college enrollment.

Carrell and Hoekstra (2010) capitalize on the random placement of graduate student counselor interns in Florida, and find that an additional counselor intern positively impacts reading and math achievement scores as well as reduces misbehavior in their sampled elementary schools. Also focusing on elementary schools, but in the state of Alabama, Reback (2010) examines

A nascent body of literature on the impact of school counselors is examining a variety of data sets for causal impacts of counselors on student achievement, disciplinary problems, and on four-year college enrollment by first-generation students.

the impact of an expanded counselor workforce within a school on that school's frequency of disciplinary infractions and on student achievement scores. Unlike Carrell and Hoekstra (2010), Reback does not find any substantial impact of additional counselors on achievement test scores in Alabama elementary schools.

### **Policy Implications**

The data in this study point to strong evidence that an additional high school counselor favorably impacts four-year college-going rates. However, the results do not shed light on the mechanism behind this result. In contrast to teacher labor force expansion, which is generally perceived to improve student outcomes through class size reduction, there is far less clarity surrounding the mechanism of impact by which additional counselors contribute to such improvements. It is certainly plausible that the staffing ratio argument emphasized in teacher impact studies is applicable to counselors as well. The addition of counselors to a high school should provide greater time for counselors to work with more students, or for counselors to allocate more time for students. If the student demand for counselors has already been met, an additional counselor can generate more demand by proactively targeting students who might not otherwise have thought about college.

Additionally, having more counselors in a school translates into greater opportunities for a student to be matched with a counselor who can ably address that student's specific needs. Counselors wear many hats and are expected to nimbly resolve a variety of issues. If the additional counselor's skill set is different from what already exists among the counseling staff, then an increased breadth and depth of counseling skills resulting from additional staff could be at least partially responsible for a jump in positive student outcomes.

This study represents a stepping-stone from which future empirical research investigating school counselors can springboard. Hurwitz and Howell (in press) is the first study broaching this topic, and we hope and anticipate that it will not be the last. Perhaps most importantly, we provide a foundation for states to track the progress of student outcomes with the addition of high school counselors. Variation in high-school-level counselor counts over time that results from exogenous state-level policies is ideally suited for developing a clearer and more precise understanding of counselors' true impact on student outcomes. A narrowing of plausible estimates in this paper and an examination of the differential impacts by student race, socioeconomic status, and gender means that policymakers and school administrators will have a clearer understanding of whether augmented counselor staffing is prudent and financially advisable, given the school's broader goals.

Finally, this research has powerful implications in terms of affirming the perception that counselors are unable to allocate an adequate amount of time toward developing a college-going culture at their high schools. Results from the College Board's 2012 *National Survey of School Counselors and Administrators* reveal that more than half of high school counselors believe that school counselors should spend "a little more" or "a lot more" time on building a college-going culture (Hart Research Associates, 2012). If these sentiments represent the reality of the

school counseling landscape, one might expect that additional counselor staffing would provide more time for counselors to effectively shape their high school's college-going culture. Our findings suggest that not only are counselors' perceptions correct, but increases in counselor staffing achieve powerful results in bolstering college attendance. Counselors as well as administrators can leverage this evidence by defending claims that current counselor staffing levels are suboptimal and that students are being penalized as a result.



## References

- Boatman, A., & Long, B. T. (2009). *Does financial aid impact college student engagement? The effects of the Gates Millennium Scholars Program* (Unpublished manuscript). Cambridge, MA: Harvard Graduate School of Education.
- Bridgeland, J., & Bruce, M. (2011). *2011 national survey of school counselors: Counseling at a crossroads*. New York: The College Board. Retrieved from [http://media.collegeboard.com/digitalServices/pdf/nosca/11b\\_4230\\_NarReport\\_BOOKLET\\_WEB\\_111104.pdf](http://media.collegeboard.com/digitalServices/pdf/nosca/11b_4230_NarReport_BOOKLET_WEB_111104.pdf)
- Carey, J. C., & Harrington, K. M. (2010a). *Nebraska school counseling state evaluation*. Amherst, MA: Center for School Counseling Outcome Research and Evaluation. Retrieved from <http://www.education.ne.gov/CARED/PDFs/NSCEFullReport.pdf>
- Carey, J. C., & Harrington, K. M. (2010b). *Utah comprehensive counseling and guidance program evaluation report*. Amherst, MA: Center for School Counseling Outcome Research and Evaluation. Retrieved from [http://schools.utah.gov/cte/documents/guidance/publications/Research\\_UtahSchoolCounselingEvaluation.pdf](http://schools.utah.gov/cte/documents/guidance/publications/Research_UtahSchoolCounselingEvaluation.pdf)
- Carrell, S. E., & Hoekstra, M. (2010). *Are school counselors a cost-effective education input?* (Unpublished manuscript). Davis, CA: Department of Economics, University of California, Davis. Retrieved from [http://www.econ.ucdavis.edu/faculty/scarrell/counselors\\_input.pdf](http://www.econ.ucdavis.edu/faculty/scarrell/counselors_input.pdf)
- Hart Research Associates. (2012). *The College Board 2012 national survey of school counselors and administrators report on survey findings: Barriers and supports to school counselor success*. New York: The College Board. Retrieved from [http://media.collegeboard.com/digitalServices/pdf/nosca/Barriers-Supports\\_TechReport\\_Final.pdf](http://media.collegeboard.com/digitalServices/pdf/nosca/Barriers-Supports_TechReport_Final.pdf)
- Hurwitz, M. D., & Howell, J. S. (in press). Estimating causal impacts of school counselors using regression discontinuity designs. *Journal of Counseling & Development*.
- Lee, D. S., & Lemieux, T. (2009). *Regression discontinuity designs in economics* (Working Paper No. 14723). Cambridge, MA: National Bureau of Economic Research. Retrieved from <http://www.nber.org/papers/w14723.pdf>
- Papay, J. P., Murnane, R. J., & Willett, J. B. (2010). The consequences of high school exit examinations for low-performing urban students: Evidence from Massachusetts. *Educational Evaluation and Policy Analysis*, 32(1), 5–23. doi:10.3102/0162373709352530
- Paisley, P. O., & McMahon, H. G. (2001). School counseling for the 21st century: Challenges and opportunities. *Professional School Counseling*, 5(2), 106–115.

- Pham, C., & Keenan, T. (2011).  
Counseling and college matriculation:  
Does the availability of counseling  
affect college-going decisions among  
highly qualified first-generation  
college-bound high school graduates?  
*Journal of Applied Economics and  
Business Research*, 1, 12–24. Retrieved  
from [http://www.aebrjournal.org/  
uploads/6/6/2/2/6622240/3\\_cp\\_tk\\_  
college.pdf](http://www.aebrjournal.org/uploads/6/6/2/2/6622240/3_cp_tk_college.pdf)
- Po, V. (2012, May 22). California schools  
under more stress. *New America Media*.  
Retrieved from [http://newamericamedia.  
org/2012/05/california-schools-under-  
more-stress.php](http://newamericamedia.org/2012/05/california-schools-under-more-stress.php)
- Reback, R. (2010). Noninstructional  
spending improves noncognitive  
outcomes: Discontinuity evidence from  
a unique elementary school counselor  
financing system. *Education Finance  
and Policy*, 5(2), 105–137. Retrieved  
from [http://www.mitpressjournals.org/  
doi/pdf/10.1162/edfp.2010.5.2.5201](http://www.mitpressjournals.org/doi/pdf/10.1162/edfp.2010.5.2.5201)
- Thistlethwaite, D., & Campbell, D. (1960).  
Regression discontinuity analysis:  
An alternative to the ex post facto  
experiment. *Journal of Educational  
Psychology*, 51, 309–17. doi:10.1037/  
h0044319
- van der Klaauw, W. (2002). Estimating the  
effect of financial aid offers on college  
enrollment: A regression discontinuity  
approach. *International Economic  
Review*, 43(4), 1249–1287. Retrieved  
from [http://aysps.gsu.edu/isp/files/9\\_  
Van\\_der\\_Klaauw\\_2002.pdf](http://aysps.gsu.edu/isp/files/9_Van_der_Klaauw_2002.pdf)

### Technical Appendix

Thistlethwaite and Campbell (1960) introduced the regression discontinuity design (RDD) approach as an alternative to relying on experimental research design to draw causal inferences. Researchers in the domain of education policy and practice are increasingly turning to this approach as a means of addressing a wide range of research questions, including the impact of financial aid on college student engagement (Boatman & Long, 2009), the impact of financial aid on college enrollment behavior (van der Klaauw, 2002), and the effects of failing a high-stakes exit examination on high school graduation (Papay, Murnane, & Willett, 2010).

In general, data suitable for RDD require the implementation of either a *sharp* RDD or a *fuzzy* RDD. If all sampled high schools adhered strictly to the state-mandated maximum student-to-counselor thresholds (as depicted in the theoretical Figure 2), a *sharp* RDD would be the preferred methodological approach. Under such a design, simply taking the difference in four-year college-going rates immediately above and below the specified threshold would reveal the estimated impact of an additional counselor on that student outcome (Lee & Lemieux, 2009). While a step-like pattern is clearly visible in the data, in practice there is *not* strict compliance with the student-to-counselor mandates, and so we employ a *fuzzy* RDD with instrumental variables and two-stage least squared. Please see Hurwitz and Howell (in press) for the complete model and methodology.

### **About the Authors**

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The research highlighted in this brief is based upon a larger project that is forthcoming in the *Journal of Counseling & Development*. The full research paper is available from the journal or authors upon request.

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