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Law School Libraries and the U.S. News & World Report Rankings:
An Empirical Defense of Library Investments in the Era of the Rankings Regime

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Submitted to Professor Penny A. Hazelton to fulfill course requirements for Current Issues in Law Librarianship, LIS 595, and to fulfill the graduation requirement of the Culminating Experience Project for the Master in Library & Information Science, University of Washington Information School, Seattle, Washington.

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I. Introduction.

Since its debut in 1987, U.S. News & World Report's ranking of law schools in their annual *America's Best Graduate Schools* publication¹ has grown into an almost all-important measurement of law school quality. The reasons for this stem from many factors. First, unlike other rankings systems in other academic areas, U.S. News & World Report dominates the law school field, with no other ranking having anywhere near the same influence.² Why we value rankings so highly in the first place may have its roots in our need for social status,³ or perhaps in America's obsession with sports and contests of all sorts.⁴ In any case, "U.S. News rankings [have become] gospel, so law school deans find themselves under tremendous pressure to adopt policies to improve their standing." This results in a "virtual arms race" in the various measurements that go into the rankings, to the exclusion of other educational concerns.⁵ This focus on ranking is probably only amplified by the difficult job market facing new law school graduates, with some suggesting that if an applicant does not get accepted into a top-ranked school, he or she should not attend law school, and take on the accompanying student loan debt, at all.⁶

But what effect has this rankings obsession had upon academic law libraries? And how should law libraries justify their schools' continuing investment in library staff services and materials (both print and electronic), in this era of the rankings regime?

¹ The rankings were not published again until 1990, but have been published annually since then.

² Christopher Polchin, *Raising the "Bar" on Law School Data Reporting: Solutions to the Transparency Problem*, 117 PENN ST. L. REV. 201, 205 (2012) (quoting Alex Wellen, *The \$8.78 Billion Maneuver*, N.Y. TIMES, July 31, 2005, available at <http://nyti.ms/QDdsIe/>).

³ Michael E. Solimine, *Status Seeking and the Allure and Limits of Law School Rankings*, 81 IND. L.J. 299, 306-08 (2006).

⁴ David A. Thomas, *The Law School Rankings Are Harmful Deceptions: A Response to Those Who Praise the Rankings and Suggestions for A Better Approach to Evaluating Law Schools*, 40 HOUS. L. REV. 419, 421 (2003)

⁵ Polchin, *supra*, note 2; see also Jeffrey Evans Stake, *The Interplay Between Law School Rankings, Reputations, and Resource Allocation: Ways Rankings Mislead*, 81 IND. L.J. 229, 242 (2006), for a good summary of the ways in which the rankings can distort law school administration priorities.

⁶ This includes the "rankings czar" for U.S. News & World Report, who said as much in a video interview with Bloomberg Law. *New Data "Unmasks" Schools, Says US News Law School Rankings Czar*, BLOOMBERG LAW (March 11, 2013), <http://about.bloomberglaw.com/videos/new-data-unmasks-schools-says-us-news-law-school-rankings-czar/>.

As to the first question, some have pointed out that the U.S. News & Report rankings have encouraged inefficiency and inflated per-student expenditure numbers, with libraries being one of many beneficiaries of this.⁷ Under this theory, academic law library spending levels have persisted because law schools are encouraged by the rankings system to spend as much money as possible on a per student basis on a variety of “direct” expenditures, as defined by U.S. News, which includes library expenditures. Others have argued, alternatively, that the rankings system in fact dis-incentivizes library expenditures, by encouraging law school administrations to invest instead in resources and programs that will not only increase overall spending levels but also more directly influence other important U.S. News & World Report factors, like bar passage rate and employment.⁸ It is hard to say with any certainty which of these views is correct, but the incentives created by U.S. News & World Report would seem to suggest allocation of resources to law libraries has indeed taken a back seat to other priorities.⁹

In any case, law librarians can do little about the influence of the U.S. News & World Report rankings. What we can have success doing, however, is answering the second question. So, how do we justify continuing investments in the libraries at our institutions in ways that speak to administrations’ all-consuming concern with the rankings? In this study, I examine several ways in which the numbers suggest that, indeed, a strong library does positively affect ranking and other, closely related measures of law school quality. Both simple correlation statistics and more advanced multiple regression models reveal that library material expenditures and the number of librarians employed by a law school positively correlate with important measures like peer assessment (the most important factor in the U.S. News & World Report rankings), and the scholarly influence of a law school’s faculty (as measured by Brian Leiter’s

⁷ Paul Campos, *The Crisis of the American Law School*, 46 U. MICH. J.L. REFORM 177, 196, 217 (2012).

⁸ Stake, *supra*, note 5; see also Taylor Fitchett, James Hambleton, Penny Hazelton, Anne Klinefelter, Judith Wright, *Law Library Budgets in Hard Times*, 103 LAW LIBR. J. 91, 97 (2011).

⁹ For example, in the wake of the economic crisis and the resulting drop-off in law school applications, endowments, and state funding, the University of California-Hastings College of Law cut staff by 23 full-time equivalent positions, the brunt of which was borne by the library and budget office. Karen Sloan, *Hastings College cutbacks a response to legal education's 'crisis'*, THE NATIONAL LAW JOURNAL (April 30, 2012). Even staff at the library for the highest-ranked law school in the land (Yale Law School) suffered “redundancies” (i.e., lay-offs) and cut hours for some remaining staff. Femi Cadmus and Blair Kaufman, *The Recession Mounts the Ivory Tower: How the Lillian Goldman Law Library at Yale has met the Challenges Posed by a Declining Economy*, 10 LEG. INFO. MGMT. 275, 278 (2010).

rankings system). If the law library wishes to survive as an integral part of the changing law school, we must learn new ways to justify our contributions to the academy – and empirical methods such as these need to be central in such efforts.

II. The Methodology of the U.S. News & World Report Rankings, and the Place of Libraries Therein.

In order to justify law library expenditures in the current rankings regime, one must understand how the rankings work. The methodology employed by U.S. News & World Report in compiling its rankings was, in its early days, a relatively straightforward affair: the first set of rankings from the publication in 1987 were simply the product of a poll of law school deans asking each to rate the reputation of the other schools.¹⁰ The rankings became more complex in the decade that followed, and as the influence of the rankings rapidly grew, U.S. News & World Report changed its methodology to take into account a number of factors (although a similar reputation measure still plays the largest role).

The current system, which has remained unchanged in its basic structure since 1999,¹¹ involves the weighting of twelve factors. U.S. News & World Report groups these factors into four categories; each category is given a certain weight in the rankings calculation, and each of the factors making up the category is given a certain weight in calculating the top-level category.¹² In practice, this results in the twelve factors having the following weights in the overall rankings calculations:

<u>Category</u>	<u>Factor</u>	<u>Weight</u>
“Quality Assessment” (40%)	Peer Assessment	25%
	Lawyer/Judge Assessment	15%
“Selectivity” (25%)	Median LSAT	12.5%
	Median Undergraduate GPA	10%
	Acceptance Rate	2.5%
“Placement Success” (20%)	Employment 9 Mos. after Grad.	14%
	Employment at Grad.	4%
	Bar Passage Rate	2%

¹⁰ William D. Henderson and Andrew P. Morris, *Student Quality as Measured by LSAT Scores: Migration Patterns in the U.S. News Rankings Era*, 81 IND. L. J. 163, 167 (2006).

¹¹ Theodore P. Seto, *Understanding the U.S. News Law School Rankings*, 60 S.M.U. L. REV. 493, 506-507 (2007); see also Stephanie C. Emens, *The Methodology & Manipulation of the U.S. News Law School Rankings*, 34 J. LEGAL PROF. 197, 200 (2009).

¹² *Methodology*, U.S. NEWS & WORLD REPORT, BEST GRADUATE SCHOOLS (2012), 74.

“Faculty Resources” (15%)	Direct Expenditures per Student	9.75%
	Student/Teacher Ratio	3%
	Indirect Expenditures per Student	1.5%
	Total Volumes/Titles in Library	.75%

Only two of these factors consist of, or explicitly include, measures of library quality. The final factor, total volumes and titles, of course, measures the quality of an institution’s library (however imperfectly), but libraries also play a significant role in the “direct expenditures per student” factor, which includes all spending directly related to the education of law students, including library staff and materials expenditures.¹³ The direct expenditures factor, as has been pointed out by Prof. Theodore P. Seto of Loyola Law School, Los Angeles,¹⁴ and as my own analysis also shows, plays an important role in the rankings beyond its relatively small weighting, which I will discuss further below.

In the meantime, in order to analyze libraries’ place in the rankings regime, it is necessary to better understand how the rankings truly work, and so I will briefly describe how each factor is calculated; as I do so, I will also address some of the problems that arise for the researcher attempting to reconstruct the U.S. News & World Report rankings from the available data.¹⁵ Generally, it is important to note two things at the outset. First, not all of the numbers used in calculating the rankings are actually disclosed by U.S. News & World Report (in fact, most of them are not). Second, many of the numbers that are disclosed are different from those actually used.

Peer Assessment

This factor was calculated by surveying the deans and three faculty members at each law school, asking them to assess the quality of each institution on a scale of 1 to 5, with 5 being the highest.¹⁶ Sixty-six percent of the survey recipients, of those polled for the 2012 rankings, responded. U.S. News & World Report publishes the resulting average scores for each law school to the tenth of a point.

¹³ *Id.*

¹⁴ Seto, *supra*, note 11, at 513-515, 530-545.

¹⁵ Note that it was necessary for me to use the 2012 U.S. News & World Report rankings for the analysis that follows (except where noted), rather than the most recent 2013 rankings, because that is the most recent year for which all of the data needed was available. For purposes of this study, the methodology did not change significantly from 2012 to 2013.

¹⁶ U.S. NEWS & WORLD REPORT, *supra*, note 12.

Lawyer/Judge Assessment

This factor was calculated by surveying lawyers and judges, and asking them to assess the quality of each institution on a scale of 1 to 5, with 5 being the highest.¹⁷ U.S. News & World Report did not disclose their methodology in selecting the survey recipients, although for its 2013 rankings, at least, it did send a number of the surveys to hiring partners and recruiters at law firms who made its “Best Law Firms” rankings.¹⁸ Only 14 percent responded among the survey recipients polled for the 2012 rankings, and probably because of the resulting small sample size, U.S. News & World Report averaged responses across the previous two years to get the scores for this factor, which are published for each school to the tenth of a point.¹⁹

Median LSAT

This factor takes the median (not the arithmetic mean) LSAT score for the previous year’s entering class²⁰ of J.D. students at each law school, including both full- and part-time students.²¹ U.S. News & World Report, however, does not publish this score; instead, it gives the distribution of scores for each school from the 25th to 75th percentile. In order to reconstruct this median number, I assumed a normal distribution of scores for each school and took the average of the 25th and 75th percentile scores, rounding up to the nearest point.

Median Undergraduate GPA

This factor takes the median (not mean) undergraduate GPA for the entering class of full- and part-time J.D. students.²² As with the median LSAT scores, U.S. News & World Report publishes the distribution of scores from the 25th to 75th percentile, to the one-hundredth of a point, instead of the actual median score used in calculating the rankings. I reconstructed this number in the same manner as the median LSAT, taking an average of the 25th and 75th percentiles and rounding up to the nearest one-hundredth of a point.

¹⁷ *Id.*

¹⁸ Sam Flanigan & Robert Morse, *Methodology*, U.S. NEWS & WORLD REPORT, BEST GRADUATE SCHOOLS (2013), available at <http://www.usnews.com/education/best-graduate-schools/top-law-schools/articles/2013/03/11/methodology-best-law-schools-rankings> (referring to previous years’ methodology for this factor).

¹⁹ U.S. NEWS & WORLD REPORT, *supra*, note 12.

²⁰ Since the U.S. News & World Report rankings are published early in the calendar year, by the “previous year” I mean the class that enrolled in the fall of the prior academic year. So, for example, the 2012 rankings include data from the class that first enrolled in Fall 2010. *Id.*

²¹ *Id.*

²² *Id.*

Acceptance Rate

This factor consists of a school's acceptance rate for the previous year's incoming class of J.D. students (both full- and part-time), i.e., the percentage of students accepted for admission out of the total number of applicants.²³ Because most of the factors used in the rankings indicate a larger number for a better score, this percentage was inverted by U.S. News & World Report when calculating the rankings, so that, for example, an acceptance rate of 10% was changed to a 90% *rejection rate*.²⁴ (Otherwise, this factor would have worked in opposition to the others in calculating total scores.) For the public's consumption, however, U.S. News & World Report publishes the non-inverted acceptance rate.

Employment Rate Nine Months after Graduation

This factor consists of the number of the previous year's graduating class members working either full- or part-time in a legal or non-legal job nine months after graduation, and then dividing that total by the total number of J.D. graduates that year.²⁵²⁶ This number is printed, unmodified, in the rankings each year.

Employment Rate at Graduation

This factor consists of the number of the previous year's graduating class members working either full- or part-time in a legal or non-legal job at graduation (or who have accepted job offers), and then dividing that total by the total number of J.D. graduates that year.²⁷²⁸ This number is also printed in the rankings each year.

Bar Passage Rate

U.S. News & World Report measures this factor by taking the passage rate for first-time bar exam takers from each school for the year *before* the previous

²³ *Id.*

²⁴ *Id.*; Seto, *supra*, note 11, at 499.

²⁵ U.S. NEWS & WORLD REPORT, *supra*, note 12.

²⁶ This factor and another "placement success" factor, employment at graduation, underwent considerable change in the way in which they are measured between 2012 and 2013. Now, more weight is given to the number of graduates who obtain jobs requiring the J.D. or in which the J.D. provides an advantage; the number of graduates with other types of jobs is given less weight. *See* Flanigan and Morse, *supra*, note 18. This caused a major stir, but had relatively little effect on the rankings overall. BLOOMBERG LAW, *supra*, note 6. As noted, for this study, it was necessary for me to analyze the 2012 rankings because that is the most recent year for which all data going into the rankings was available.

²⁷ U.S. NEWS & WORLD REPORT, *supra*, note 12.

²⁸ *See* note 17.

year (due to the lag in obtaining scores, one can assume) in the jurisdiction in which the largest number of graduates from that school sat for the bar exam. Then, this passage rate is divided by the average passage rate in that jurisdiction to account for differences in exam difficulty.^{29 30} However, U.S. News & World Report does not publish this final number used in calculating the rankings; instead, it publishes both the bar passage rate and the average passage rate for the jurisdiction.

Direct Expenditures per Student

This factor measures each school's total spending on a broad category of items described by U.S. News & World Report as "instruction, library, and supporting services."³¹ This essentially means all items directly contributing to legal education at the law school, including all library spending (both salaries and materials), faculty and instructor salaries, and administrative salaries.³² However, this factor excludes scholarships, loan forgiveness, and financial aid, which are instead included in another category, indirect expenditures.³³ U.S. News & World Report then divides this total direct expenditures number by the number of full-time equivalent (FTE) J.D. students at the school.³⁴ Finally, these numbers are then adjusted to account for cost of living differences between the locations of each school.^{35 36} None of these direct expenditure numbers are published or

²⁹ U.S. NEWS & WORLD REPORT, *supra*, note 12.

³⁰ This is a somewhat troublesome way to calculate this statistic, as it disfavors those schools whose graduates take the exam in jurisdictions with high passage rates. For example, a school whose class members take the bar exam in a jurisdiction with an average 90% passage rate can, mathematically, score only a maximum of 1.11 on this factor, even if 100% of its graduates pass the test. A school in a jurisdiction with a 50% passage rate, on the other hand, could theoretically score as high as 2.0. Although it is possible U.S. News & World Report somehow adjusts their data to account for this, there is no indication in their published methodology that it does so (and I am not sure how it would do so in any case).

³¹ U.S. NEWS & WORLD REPORT, *supra*, note 12.

³² Seto, *supra*, note 11, at 501-504.

³³ U.S. NEWS & WORLD REPORT, *supra*, note 12.

³⁴ *Id.*; Seto, *supra*, note 11, at 502-503.

³⁵ *Id.*

³⁶ This cost of living adjustment is not publicly disclosed as part of U.S. News & World Report's methodology, but one of the creators of the methodology, Samuel Flanigan, has acknowledged it. Seto, *supra*, note 11, at n. 64. U.S. News & World Report generally remains mum about its methodology beyond what the brief *Methodology* note included in each year's rankings discloses, a policy which the publication has tightened in recent years as law schools have become more adept at manipulating the rankings. See BLOOMBERG LAW, *supra*, note 6. As of 2006, the publication was using a commercial cost of living adjuster created by a company called Runzheimer International, but it is unclear whether it still uses this adjuster, or now uses another. See, Seto, *supra*, note 11,

otherwise disclosed by U.S. News & World Report. The American Bar Association (ABA) gathers essentially the same statistics from law schools, but the ABA also keeps the numbers strictly confidential, making them available only to law school deans. I was graciously granted access to the ABA data in order to reconstruct the U.S. News & World Report calculations to better understand libraries' role within them for this study, but I am also required to abide by this confidentiality, and will not identify expenditure or expenditure-related numbers for any specific school.

Student/Teacher Ratio

This factor measures the number of J.D. students per instructor.³⁷ It is unclear how U.S. News & World Report defines “instructor” (for example, do teaching librarians count as instructors?), but unlike other factors, this one is at least transparent in the sense that each school’s student/instructor ratio is published in the rankings each year, and this is the same number actually used in calculating the rankings. The only modification made by U.S. News & World Report is to invert the ratios in a manner similar to that used for acceptance rates, so that a better score equals a higher number.³⁸ I did the same to reconstruct the rankings for this study.

Indirect Expenditures per Student

This factor measures all law school spending not included in the direct expenditures category, and then modifies the data in the same way, per student, adjusting for cost of living differences.³⁹ I reconstructed this number from the ABA data as well, as explained, *supra*.

Total Volumes/Titles in Library

This is the only factor in the U.S. News & World Report rankings calculations that directly measures library quality. Although an increasingly anachronistic measurement of quality as libraries generally move toward electronic resources, it remains a factor in even the most recent 2013 rankings.⁴⁰ The factor is measured by simply adding the total number of volumes in a

at 502-503. In any case, because the Runzheimer cost of living adjuster is available only at great expense, for purposes of this study I used the cost of living adjuster created by a company called C2ER, and published in the 2012 Statistical Abstract of the United States. *Prices, Table 728*, in STATISTICAL ABSTRACT OF THE UNITED STATES 478-479 (2012).

³⁷ U.S. NEWS & WORLD REPORT, *supra*, note 12.

³⁸ Seto, *supra*, note 11, at 505.

³⁹ U.S. NEWS & WORLD REPORT, *supra*, note 12.

⁴⁰ Flanigan and Morse, *supra*, note 18.

school's library to the total number of titles,⁴¹ which of course double-counts some titles; but this apparently represents what U.S. News & World Report believes to be a reasonable compromise between these two measurements of a library's collection. Volume and title numbers have long been falling out of favor as valuable measurements of a library's collection, and in fact the ABA no longer collects this information in its confidential survey. This is perhaps why U.S. News & World Report continues to use the 2007 volume/title counts for law libraries in this factor, even for the current 2013 rankings.⁴² These numbers are not published by U.S. News & World Report, so I obtained them from the ABA survey.

Once all of these numbers from the twelve factors are gathered, U.S. News & World Report then “normalizes” the scores on each factor, adds them together using the weights indicated above, and then scales the scores for each school from 0 to 100.⁴³ (Normalization refers to the process by which a set of data is translated to each data point's distance from the mean for that data set; this allows easy comparison among data sets using different scales of measurement, like GPA – measured in points on a four-point scale – and direct expenditures, measured in dollars.)

III. Findings and Analysis: Why Libraries Matter to Rankings.

a. Simple Correlation Analyses of the Data: Better Libraries Correlate with Better Outcomes.

Before getting into multiple regression analyses of library quality, on the one hand, and the U.S. News & World Report rankings and other measures of law school quality, on the other, it is useful to look at the basic correlations between some of the important factors involved. While correlation calculations based upon a single factor cannot control for other factors – and thus cannot go as far in explaining complex, quantitative relationships as multiple regression analysis can – it is nevertheless striking how strong the correlations are between measurements of library quality and measurements of law school quality.

For this initial part of the analysis, I considered two sets of data about law libraries at law schools ranked in the top 100 in the U.S. News & World Report rankings: yearly expenditures on library materials, and FTE professional

⁴¹ U.S. NEWS & WORLD REPORT, *supra*, note 12.

⁴² Flanigan and Morse, *supra*, note 18.

⁴³ U.S. NEWS & WORLD REPORT, *supra*, note 12.

librarians employed.⁴⁴ I then calculated the correlations between these two data sets, on the one hand, and three measures of law school quality, on the other: (i) the U.S. News & World Report rankings; (ii) the peer assessment averages reported by U.S. News & World Report; and, (iii) Brian Leiter’s law school rankings, which measure scholarly impact of the faculty at top law schools.⁴⁵ Here are the results, measured in ‘r’ value, the standard measurement for statistical correlation⁴⁶:

<u>Library Measurement:</u>	<u>Correlation with: USNWR Ranking</u>	<u>Correlation with: USNWR Peer Assessment</u>	<u>Correlation with: Leiter Scholarly Impact</u>
Materials Expenditures	r = .48	r = .58	r = .49
FTE Librarians	r = .42	r = .51	r = .43

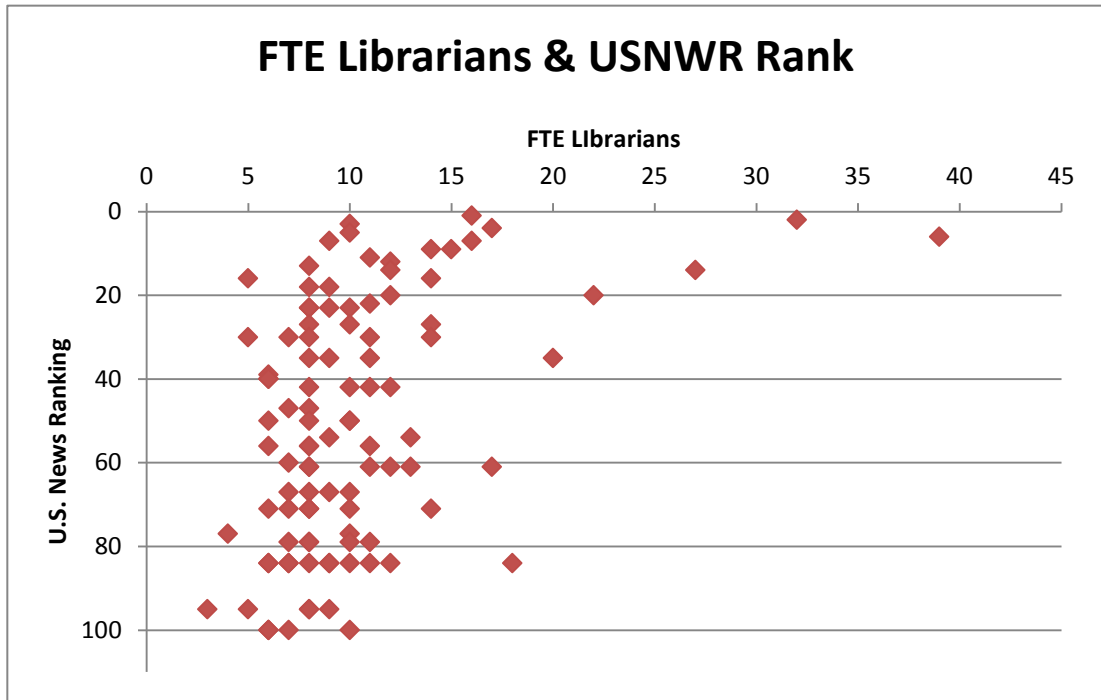
For measurements in the social sciences, these are all strong to very strong statistical correlations.⁴⁷ For example, even the smallest ‘r’ value (i.e., weakest correlation) measured above – that between FTE librarians employed and U.S. News & World Report ranking (.42) – has less than a one-in-1,000 chance of arising through normal statistical variation alone. One can confirm this strong relationship visually by looking at the data on a scatterplot:

⁴⁴ I obtained this data from American Bar Association, OFFICIAL GUIDE TO ABA-APPROVED LAW SCHOOLS ARCHIVES (2009–2012), <http://www.lsac.org/lisacresources/publications/official-guide-archives.asp>.

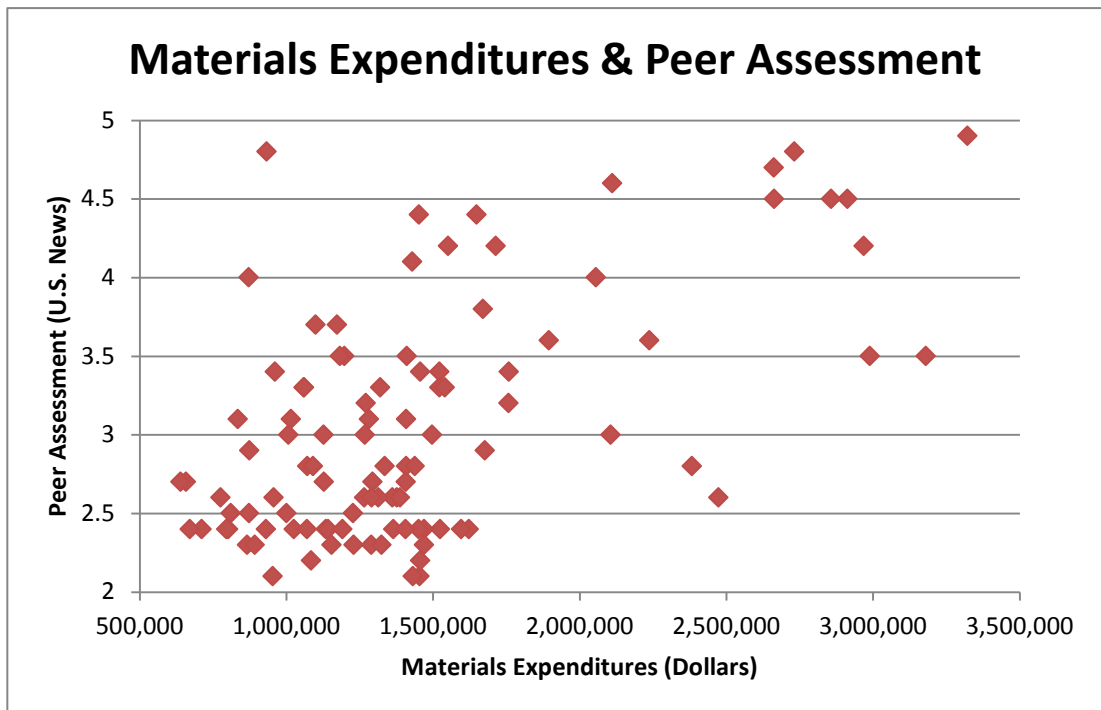
⁴⁵ Leiter’s rankings measure scholarly impact by the number of citations to tenured faculty at each school in law reviews in the past five years. See Brian Leiter, BRIAN LEITER’S LAW SCHOOL RANKINGS (March 2013), http://www.leiterrankings.com/new/2010_scholarlyimpact.shtml. The most recent (2012) rankings are available here: http://www.leiterrankings.com/new/2012_scholarlyimpact.shtml.

⁴⁶ The ‘r’ value measurement ranges from -1.0 to 1.0, with -1.0 meaning a perfect negative correlation, such that increase in one variable always results in a proportional decrease in the other; 0.0 meaning no correlation at all; and 1.0 meaning a perfect one-to-one correlation.

⁴⁷ See, e.g., JACOB COHEN, STATISTICAL POWER ANALYSIS FOR THE BEHAVIORAL SCIENCES (2d ed.) (1988).

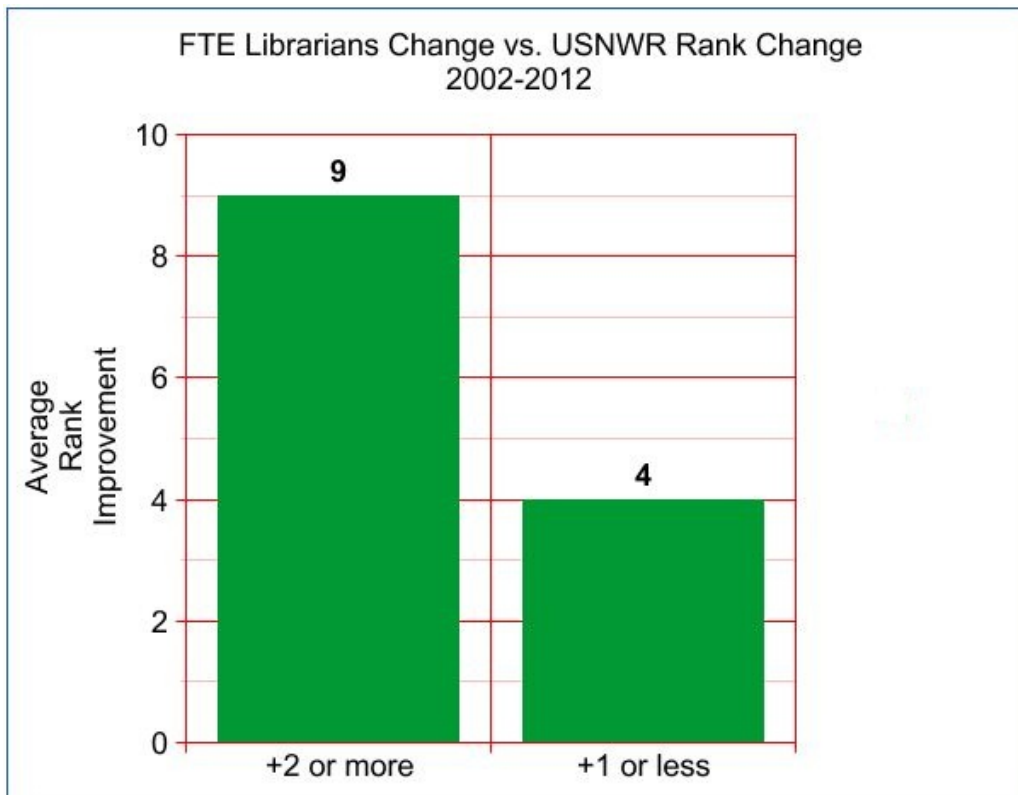


Clearly, those schools with more FTE librarians tend to be ranked higher in the U.S. News & World Report rankings. The correlation is even more visually striking for the strongest observed correlation, that between materials expenditures and peer assessment:



Obviously, those schools investing more in library materials tend to enjoy a higher peer assessment as reported by U.S. News & World Report.

Increases in library expenditures by law schools over time also tend to indicate improved outcomes in law school quality. For example, if one calculates the increase (or decrease) in FTE librarians employed by libraries at schools ranked in the top 100 from 2002 to 2012⁴⁸, and compares these differences over time with each school's change in U.S. News & World Report ranking over the same period, the numbers indicate the following:



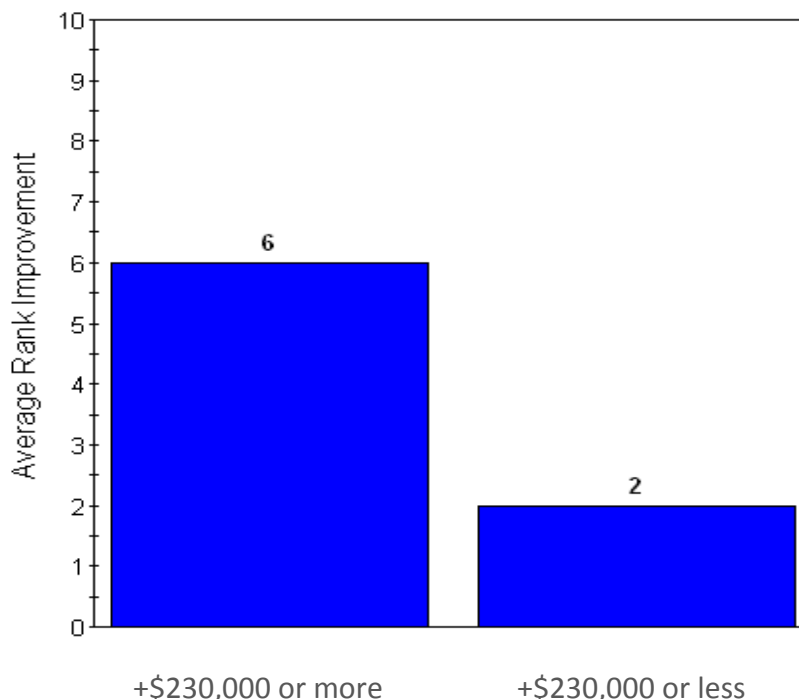
Thus, schools that increased their total FTE librarian employment by two or more from 2002-2012 saw an average improvement in U.S. News & World Report ranking of nine spots, while those that increased their employment of FTE librarians by only one or fewer (or decreased their total employment of FTE librarians) over the same period saw an average improvement of only four spots in the ranking.⁴⁹ Similarly, schools that increased their library expenditures

⁴⁸ The 2002 numbers are from American Bar Association, *ABA-LSAC Official Guide to ABA-Approved Law Schools* (Wendy Margolis et al. eds., 2002). The 2012 numbers are from the online version of the same publication, American Bar Association, *supra*, note 44.

⁴⁹ Both groups saw an average improvement in ranking because the 2012 top 100 includes several schools that made large jumps up in the rankings, while several other

budgets by more than \$230,000 (roughly, the mean increase for this group) from 2002-2012 saw an average improvement in U.S. News & World Report ranking of six spots, while those that increased their expenditures by less than that amount (or decreased their expenditures) over the same period saw an improvement of only two spots on average.

Materials Expenditures Increase vs. Rank Change 2002-12



However, neither of these differences, in FTE librarians employed or total materials expenditures, was statistically significant; in other words, either or both could have arisen through random statistical variation alone.

- b. Multiple Regression Analyses: Controlling for Other Factors, Better Libraries Still Correlate with Better Outcomes.
 - 1. The Importance of Direct Expenditures to the U.S. News & World Report Rankings.

The correlations and statistical tendencies discussed so far, however, do not go very far in establishing the extent to which library factors actually

schools that saw large drops, dropped out of the top 100 altogether, thus removing their change in ranking from the average.

contribute to ranking outcomes and other measures of law school quality. This is because many other factors may, or do, play a role in the observed differences in these measures of law school quality. It could simply be that library factors correlate with one or more of these other factors, and in fact do not independently contribute to the variation observed. For example, twelve factors play into the U.S. News & World Report rankings. We know that library measurements like FTE librarians and materials expenditures probably correlate with the direct expenditures factor discussed above, since that factor includes library spending. It could be that differences in direct expenditures are truly driving the rankings, and library factors simply correlate with direct expenditures without having an independent effect. Or, it could be that schools with higher peer assessment scores in the U.S. News & World Report have more money to throw around, and thus give their libraries more resources, and these peer assessment differences are what truly drive the rankings. So, does library spending independently correlate with higher ranking outcomes, when we control for the contributions of other factors that go into the U.S. News & World Report rankings?

To attempt to answer this question, I started with a multiple regression analysis of the twelve factors taken into account by U.S. News & World Report, after reconstructing the data in the manner described above, for the top 30 schools in the 2012 rankings.⁵⁰ For the uninitiated, multiple regression is the standard statistical method for predicting the value of a dependent variable (here, U.S. News & World Report rank) based upon the values of two or more independent variables (here, the factors that go into the U.S. News & World Report rankings). Researchers are then able to compare the relative contributions of the given independent variables to the observed variation in the dependent variable.⁵¹ In other words, multiple regression is a method of controlling for other variables to isolate the statistical effect of each single variable.

The multiple regression analysis of the U.S. News & World Report rankings shows that four of the twelve factors – including the direct expenditures factor, in which library spending is included – play a statistically significant role in contributing to the observed differences in the 2012 rankings outcomes, when

⁵⁰ Due to the amount of labor involved in entering and reconstructing the data, I decided to limit the analysis to the top 30 schools only. Generally, sample sizes of 20 or more for each variable are considered viable for regression analysis. *See, e.g.*, JEREMY MILES AND MARK SHEVLIN, *APPLYING REGRESSION & CORRELATION: A GUIDE FOR STUDENTS AND RESEARCHERS* 119 (2001).

⁵¹ For a fuller explanation, *see, e.g., Id.*, at 27-39; for a good explanation of the mathematical underpinnings of multiple regression analysis, *see, e.g.*, WILLIAM H. CROWN, *STATISTICAL MODELS FOR THE SOCIAL AND BEHAVIORAL SCIENCES: MULTIPLE REGRESSION AND LIMITED-DEPENDENT VARIABLE MODELS* 27-52 (1998).

all other factors are controlled.^{52 53 54} Specifically, the analysis showed the following:

<u>USNWR Factor</u>	<u>Coefficient</u>	<u>P-value</u>
Peer Assessment	5.0 points	<0.01
Median LSAT	1.7 points	0.02
Student/Teacher Ratio	1.4 points	<0.01
Direct Expenditures per Student	1.0 points	0.07

To translate the statistical jargon: the P-value indicates the probability that the correlation observed for this factor would arise through normal statistical variation alone (e.g., .07 = 7%). The coefficient, meanwhile, indicates the number of points by which a school could expect, on average, to raise its score in the U.S. News & World Report, were it to increase its measurement in that factor by one standard deviation.⁵⁵ (Remember, since regression controls for the other factors, this measures how much a school’s ranking would increase, on average, if it were to do *nothing else* to increase its ranking on any of the other factors, relative to the other schools.) Thus, schools that increase their scores by the following amounts could expect the following improvements in their U.S. News & World Report score, on average:

⁵² This does not mean, however, that the other factors did not play a role in the *calculation* of the rankings. They did, to the degree indicated by their assigned weights, as discussed above. However, these four factors better explained the observed *differences* in rankings in 2012 – i.e., these were the factors that differentiated otherwise similar schools.

⁵³ The overall strength of a given multiple regression analysis is measured by a statistic called the adjusted R-square, a measurement of the overall “goodness of fit”, i.e., how well the set of independent variables explains the observed variation in the dependent variable. As expected, the adjusted R-square for this analysis was very strong -- .98, meaning it accounts for 98% of the observed variation in rankings. This means my reconstruction of the rankings calculations was pretty close to what U.S. News & World Report actually did.

⁵⁴ For this study, I considered statistically significant any P-value less than 0.1.

⁵⁵ The standard deviation is the average difference between each data point and the average (mean) for that sample of data. This is a foundational concept in statistics, because one can calculate the likelihood of a given result based on how many standard deviations it is from the mean, and the sample size.

<u>USNWR Factor</u>	<u>Amount increase in given factor (i.e., standard deviation)</u>	<u>Average expected increase in score</u>
Peer Assessment	0.5 (on the USNWR scale of 1 to 5)	5.0 points ⁵⁶
Median LSAT	+3	1.7 points
Student/Teacher Ratio	-2 (fewer students per teacher)	1.4 points
Direct Expenditures per Student	+\$14,200	1.0 points

What does this analysis mean for libraries? As noted, one of these factors, direct expenditures, explicitly includes measurements of library quality (in the form of library spending). This would suggest library spending needs to continue to have at least some importance for rankings-conscious law school administrators. However, there are two reasons why library spending might in fact need to be given greater importance than this analysis might at first suggest.

First, the direct expenditures factor, in which library spending is included, may have even more influence than this type of analysis suggests. It is an enormously important factor in light of how the “rankings game”⁵⁷ is actually played by law schools. This is because: (a) It is very difficult for a school to increase its score by anything close to an entire standard deviation on most factors, especially factors over which it has no direct control, such as peer and lawyer/judge assessment (which are also the two most heavily weighted variables). (b) Schools tend to cluster in overall scores, meaning that a relatively small increase in one factor can enable a school to leapfrog a competitor.⁵⁸ Thus, law schools have been engaged over the last two decades in an increasingly sophisticated effort to marshal their resources strategically in order to move

⁵⁶ To put these types of point gains in the U.S. News & World Report in perspective, a gain of 5 points would, for example, jump the University of Virginia from its current ninth ranking all the way to fifth. Even a gain of 1 point would move most schools up in the rankings.

⁵⁷ You can play, too! Prof. Jeffrey Stake of the University of Indiana-Bloomington created the “Law School Ranking Game” website, where players adjust different variables to see the rankings outcome for different law schools. Available at, <http://monoborg.law.indiana.edu/lawrank/>.

⁵⁸ For example, Prof. Theodore Seto has shown that differences in direct expenditures play a large role in the observed order of the top 10 schools in the U.S. News & World Report rankings. Stanford’s stay as the number two law school in the land, for example, owed itself entirely to differences in direct expenditures between it and Harvard. Seto, *supra*, note 11, at 530.

incrementally up in the rankings.⁵⁹ They have even been known to use creative accounting in reporting numbers such as direct expenditures in order to get an edge over rival schools.⁶⁰ In lieu of “creative” accounting, however, it is indisputable that schools engaged in the rankings game must carefully manage, and if at all possible increase, their standing in the direct expenditures category. Increases in library spending are one way to do this.

Second, libraries may well have an indirect, but possibly quite strong, influence upon other factors. The peer assessment factor, for example, is by far the most important variable in the U.S. News & World Report rankings, not only in terms of weight assigned to it in calculating the rankings, but also as an explanatory variable with regard to the observed differences in rankings outcomes (as the regression analysis above shows). However, the survey participants that determine a school’s peer assessment score may take anything they wish into account in determining the quality of an institution on the mandated scale of one to five. The impressiveness of an institution’s library collection, and the number and helpfulness of its library staff, may well play an important role in the minds of these survey participants. In addition, librarians play an important role in scholarly support, and thus contribute to the scholarly output of an institution’s faculty (which I will analyze further below). Scholarly output undoubtedly plays a role in the minds of the survey participants determining peer assessment outcomes.

Without numbers to back this up, however, such arguments remain only speculative. The question remains, can law school administrators actually expect to see positive outcomes from increased library funding? How do libraries contribute to measurable outcomes for law schools, aside from playing a small role in direct expenditures, and a statistically insignificant role in terms of volume/title count in the least heavily weighted variable in the U.S. News & World Report rankings? Are libraries still a sound investment for law schools?

2. The Importance of Materials Expenditures and FTE Librarians Employed to Ranking Outcomes.

In fact, my analysis strongly suggests that libraries do remain a sound investment in this age of quantitative measurement of outcomes. Regression analyses of the data suggest at least two ways in which library spending appears to improve scores on the accepted measures of law school quality.

⁵⁹ Seto, *supra*, note 11, at 530-545; Polchin, *supra*, note 2, at 205-07; Emens, *supra*, note 11, at 202-204; Stake, *supra*, note 5, at 232-242.

⁶⁰ Seto, *supra*, note 11, at 530-545; Emens, *supra*, note 11, at 202-204.

First, the quality of a school’s library appears to have independent predictive power over measures of peer assessment. Specifically, out of a regression analysis of quantifiable factors that could conceivably play a role in the minds of survey participants assessing an institution’s quality – including Leiter ranking score, average LSAT, acceptance rate, direct expenditures minus library spending, and library materials expenditures – library material expenditures showed a statistically significant effect in predicting peer assessment scores when controlling for the other factors:

<u>Variable</u>	<u>Coefficient</u>	<u>P-value</u>
Median LSAT	0.2	0.07
Acceptance Rate	Not statistically significant.	Not statistically significant.
Leiter Ranking	Not statistically significant.	Not statistically significant.
Direct Expenditures per student (less library)	0.1	0.07
Materials Expenditures	0.1	0.06

Although, of course, other factors no doubt play a role in the minds of survey participants assessing the quality of an institution, this analysis was relatively powerful in explaining the observed variation in peer assessment outcomes – meaning that the above five factors do appear to explain a large majority of the peer assessment data.⁶¹

Interpreting this table of results in the same manner as the first regression analysis above, this means that library materials expenditures correlated about as strongly with peer assessment as did total direct expenditures minus library spending. This is a surprising result, and a happy one for librarians. Library spending for schools ranked in the top 100 in 2012 accounted for, on average, only 10% of law school direct expenditures, and materials expenditures specifically, of course, made up less than that. Nevertheless, materials expenditures alone appear to explain peer assessment just as well as the rest of a school’s “direct” non-library budget combined. To put this in the context of the other statistically significant variables found above, this means that law schools looking to improve their peer assessment scores could expect, on average, the following outcomes:

⁶¹ The adjusted R-square (*supra*, note 53) of the regression analysis described was fairly high, 0.81, meaning that these factors are measured to predict 81% of the variation in observed peer assessment scores.

<u>Variable</u>	<u>Amount increase in given factor</u>	<u>Average expected increase in peer assessment</u>
Median LSAT	3.5	0.2
Direct Expenditures per student (less library)	\$13,200	0.1
Materials Expenditures	\$75,000	0.1

Thus, this analysis suggests an increase of \$75,000 in the *total* budget for library materials expenditures would, on average, increase a school's score in that category by as much as an increase in direct expenditures of \$13,200 *per student* (\$6.6 million for a school of 500 students). It seems that an institution's investment in its library collection has a surprisingly strong effect on the all-important peer assessment variable in the U.S. News & World Report rankings.

The importance of librarians' role in scholarly support is also borne out by the data. A multiple regression analysis of factors that may affect the scholarly influence of a law school's faculty as measured by Leiter score shows that the number of FTE librarians employed by an institution has a significant effect. The regression analysis used took the following factors into account: direct expenditures per student minus library spending (which includes faculty salaries, and thus measures the school's direct investment in its scholars); library materials expenditures; total volume/title count; and FTE librarians employed.⁶² The results were as follows:

<u>Variable</u>	<u>Coefficient</u>	<u>P-value</u>
Direct Expenditures per student (less library)	246	<0.01
Materials Expenditures	Not statistically significant.	Not statistically significant.
Volume/Title Count	Not statistically significant.	Not statistically significant.
FTE Librarians	176	<0.01

As one might expect, the direct expenditure numbers play a large role in contributing to scholarly output, since this number includes the amount of money

⁶² I also considered using peer assessment scores as an additional variable here, since the prestige of a faculty's institution probably has an effect on Leiter scores. I decided against this, however, since peer assessment and Leiter rankings are meant to measure much the same thing, and therefore the correlation between them would obscure the other variables. In fact, when peer assessment scores are added in, the importance of these other variables drops below a level of statistical significance.

invested in scholars' salaries. However, although two library measures were not found to be significant in this analysis (materials expenditures and volume/title count), the effect of number of FTE librarians employed had a surprisingly strong effect in explaining the observed variations in Leiter score among top schools. This suggests that schools that were to employ an additional seven FTE librarians, would expect, on average, to receive 176 additional citations for their faculty in law reviews, enough to move a school up by an average of seven spots in the Leiter ranking. Again, this is likely a cheaper investment for a law school than increasing its direct expenditures by the amount this analysis would suggest necessary for a similar increase in Leiter scores (one standard deviation in direct expenditures less library being equal to \$13,200 *per student*, or \$6.6 million for a school of 500 students).⁶³

Examining the data at an institution-specific level also suggests the strong role played by librarians in facilitating scholarly publication by faculty. For example, at the University of Washington School of Law, the number of memoranda (i.e., research projects) completed by librarians on behalf of full-time, tenured or tenure-track faculty correlated positively with the number of scholarly publications⁶⁴ completed by those faculty within the last three years:

<u>Library Measurement:</u>	<u>Correlation with: Number of Scholarly Publications by Faculty Members</u>
Memoranda Completed for Faculty by Librarians in Past Calendar Year	$r = .29$ ⁶⁵

This analysis suggests that for every six additional memoranda produced on behalf of a faculty member by a law librarian at the University of Washington School of Law, that faculty member will publish one additional work of legal scholarship – not, by any means, a trivial amount for an institution with 55 tenured and tenure-track faculty. Both this institution-specific analysis and the regression analysis for FTE librarians and Leiter score strongly indicate that the work of reference librarians on behalf of faculty does indeed result in increased scholarly output for an institution. This again underscores the value of libraries in the contributing to the factors that determine ranking outcomes.

⁶³ However, I would caution that this regression model was not as strong in explaining the observed variation in Leiter scores as the model used for peer assessment scores, above. The adjusted R-square for this regression model was 0.59, meaning that this analysis accounts for about 59% of the observed variation in Leiter scores.

⁶⁴ I defined “scholarly publication” as any publication in a peer-reviewed journal, any book chapter, and any treatise/monograph.

⁶⁵ An r-value of .29 for this sample size (55 faculty members) has less than a five percent chance of occurring through random statistical variation alone.

IV. Conclusion.

I hope to have accomplished two things with this article. First, I have shown ways in which measures of library quality, like materials expenditures and number of librarians employed, do, in fact, have significant positive effects on rankings outcomes – an important point to make in this era of law schools’ collective obsession with the U.S. News & World Report rankings. Second, I hope to have alerted academic law librarians to some of the statistical tools they can use to justify law library investments in ways that will resonate with law school administrations. If I have made headway on either of these goals, this paper will have been worthwhile, and I will have hopefully done my small part in helping to ensure the continuing place of the academic law library in American legal education.