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# Information and library science MPACT: A preliminary analysis

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**Abstract**

Dissertation advising is an important form of mentoring. To investigate the impact of dissertation advising over time, advisor and committee member names were collected for 2,400 dissertations completed over a 40-year period (1964–2004) in 32 North American information and library science schools. Several mentoring impact metrics are reported for a subset of the data, including the number of dissertations advised, the number of dissertation committees served on, the ratio of advising to committee membership, and the fractional "mpact" that weights advising and committee membership. The subset consists of data for six schools that produced at least three dozen dissertations and for which complete data is available. The data and resulting "mpact" metrics offer new ways to assess faculty impact and to investigate the nature and growth of a field.


## 1. Introduction

Like other professionals, college and university professors perform multiple roles, some of which involve complex activities that are difficult to evaluate. The traditional triad of activities for professors includes research, teaching, and service, with the ordering and emphasis of these three activities dependent on individual university culture. It may be that

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this separation of academic life into three parts is a false trichotomy, as the everyday life of a faculty member may bring the three together into something that might be labeled scholarship. Although current indicators of faculty performance and effectiveness reflect this trichotomy, there are no indicators that consider impacts across research, teaching, and service. A set of mentoring impact (MPACT) indicators are proposed to reflect mentoring as one important aspect of scholarship. Mentoring is operationalized as service as doctoral advisor and service on doctoral dissertation committees, which are perhaps the most intensive kinds of mentoring done by faculty. These indicators are illustrated with data from six ILS programs covering a 40-year period. This analysis should stimulate cooperation in more extensive data collection and analysis and motivate discussion on mentoring impact as a scholarly productivity measure.

Research-oriented universities typically place great emphasis on research activity for purposes of rewarding performance. Several measures of research productivity have evolved (e.g., the number of peer reviewed publications, number and dollar amount of grants, patents), with citation counts emerging over the past half century as an additional measure of research impact. The impact factor, created in the 1950s by researcher Eugene Garfield, was originally intended to evaluate journals; its current importance as a tool for rating individual scholars and researchers has been criticized and sometimes abused (Amin & Mabe, 2000; Monastersky, 2005). Despite the criticism, these types of measures can and do provide important evidence of scholarly impact when combined with other indicators. The reasoning is sound—if other people cite one's work, it follows that they have read it and have somehow been influenced by it. Significant efforts are devoted to gathering and analyzing citation data for a variety of purposes, including research productivity (Budd, 2000; Hayes, 1983; Meho & Spurgin, 2005), journal impact as calculated by Thompson Scientific, citation networks (Small, 1999), evidence of collaboration (Cronin, Shaw & La Barre, 2003, 2004), and disciplinary mapping (White & McCain, 1998). Cronin and Shaw (2002) expanded the scope of impact by providing data on citations, Web hits (in Google), and popular press mentions (Lexis-Nexis citations). Such data address the area of measurement of faculty research productivity but do not address all aspects of research scholarship, let alone how effective professors are as teachers and citizens of campuses and within particular fields of study.

Faculty effectiveness with respect to teaching is most often addressed through student and peer evaluations. These approaches are useful in providing some indication of classroom performance, but they fail to account for faculty impact outside of the classroom, through, for example, service as mentors and advisors. In particular, course evaluations do not address the more intensive and longitudinal interactions that take place as faculty collaborate with students on research projects or direct theses and dissertations. Especially for graduate-level education, mentoring effectiveness is a significant additional aspect not only of teaching but also of scholarship. Kyvik and Smeby (1994) provide evidence that graduate student supervision is strongly related to faculty publications in the social sciences. Indeed, there is some indication that senior faculty at doctoral-granting Information and Library Science (ILS) institutions derive high scholarly productivity from both their access to graduate assistants and from their collaborations and co-authorships with doctoral students (Hu and Gill, 2000).

## 2. The doctoral advising role

Doctoral advising entails a kind of scholarly apprenticeship and collaboration where advisor(s) and student jointly address research problems. Over time, the student shapes and leads a novel attack on the problem or research question that results in a dissertation. In a field like ILS, where there are no rigid canons or massive laboratory-based activities that guide research problem identification, advisors most frequently aim to inspire and encourage students to generate and pursue research problems rather than assign them. Advising graduate students has enormous impact. A new researcher may have a career spanning 30 or more years and may strongly influence the development of key ideas, theories, or methods in their fields. Clearly, it is one of the most significant activities undertaken by faculty at doctoral-granting institutions, and one that requires substantial amounts of time and energy.

As a scholarly undertaking, dissertation mentoring synthesizes Boyer's (1990) four prongs of faculty scholarship: discovery, integration, application, and teaching. As preparation for future researchers, dissertation mentoring helps students engage in critical thinking, problem solving, project management, and collaboration (Wisker 2005). Although research universities may include advising in annual reports of faculty productivity and graduate school reviews, there is little evidence that universities reward doctoral advising and mentoring in tenure and promotion decisions.

Some ILS schools recognize the importance of doctoral advising and mentoring, at least in the sense of the necessary time commitment. For instance, Koenig and Hildreth (2004) found that some ILS programs provide for a reduction in teaching load or an increase in compensation when faculty are involved in dissertation work, but the practice is far from universal. For most faculty, dissertation work is simply expected and if it is not done, there are few consequences. Why then do some faculty mentor and advise so much? How might we measure mentoring in an objective way? Can mentoring be quantified, as is done with publication and citation data? If the conduct of research is, in fact, the highest form of teaching (Goodpasture, 1946), it is important to capture the impact of faculty who serve as dissertation advisors and committee members.

## 3. Data collection process

This study explored these questions through the collection of data about dissertation advising and service on dissertation committees for ILS programs spanning the 1964–2004 time period. A master data set has been developed and gaps in information content continue to be filled. This master data set contains author names for 2400 ILS dissertations from 32 schools in the United States and Canada. As of the submission of this article, approximately 71% of the advisors[1] (1713 of 2400) and 53% of the committee members (1295 of 2400) have been identified.[2]

[1] Note that advisor is used here to mean the dissertation advisor, who in some administrative structures may be different from academic advisor or dissertation committee chair. Thus, advisor is meant to indicate the primary mentor for the dissertation.

[2] We continue to add data and invite readers to contribute additional data at http://www.ils.unc.edu/mpact.

This article provides some preliminary summary data based on the full data set and, in particular, focuses on data collected for ILS programs at Drexel University, Florida State University, Indiana University, the University of California, Los Angeles, the University of Illinois, and the University of North Carolina at Chapel Hill. These schools were chosen because we have complete data for these schools and they all have more than three dozen dissertations completed. Together, these six schools produced 665 dissertations in the 1964–2004 period, representing 28% of the dissertations in the full data set. Table 1 lists all 32 ILS schools[3] for which we have some data and the portions of the data complete for each.[4] Note that in addition to the complete data for the six schools included here, we have complete advisor data for 14 other schools.

The initial list of author names was compiled using the UMI Dissertation Abstracts database, WorldCat, two published bibliographies (Eyman, 1973; Schlacter & Thomison, 1982), and the online catalogs of the respective university libraries. Data on advisors and committee members were gathered from full-text versions of the dissertations held in *Dissertation Abstracts* for most dissertations completed in 1997 and later.[5] Physical searches were made of the print and microforms dissertation collection at the University of North Carolina at Chapel Hill; other copies were obtained through interlibrary lending. A number of ILS schools provided additional information, including missing dissertations and advisor and/or committee member names that were illegible in the copies consulted. In some cases, personal contact with authors was made.

Several challenges have been encountered in collecting the information. Not all institutions include signature pages in printed dissertations, and some signatures are indecipherable. Acknowledgments often provide clues to committee composition, but not every dissertation author specifies advisor or committee members as such in the acknowledgment. Searching for the dissertations themselves was complicated by the subject headings assigned to the works; not all ILS dissertations contain specific reference to libraries or information studies; thus, the 2,400 dissertations in this data set are not likely to be comprehensive. For example, "The identification and bibliographic control of African American women writers in New Jersey," by Sibyl Elizabeth Moses, was identified by using the field-related search term "bibliography." Additionally, determining name authority is problematic. First name and initial forms are one issue but this is especially difficult for faculty who change names or move to other institutions. Once we had assembled the data set, we created a database query that facilitated some disambiguations, but others were done based on knowledge of members of the ILS community. Like the challenge of obtaining (and maintaining) a comprehensive database, correction and update of the database will best be achieved by a community-based effort rooted in a publicly available data set.

There are significant limitations to the data. First, these data do not reflect the work done by ILS faculty on dissertations outside their home departments, nor was an attempt made to

[3] We have not included schools (for example, the School of Information Sciences within the College of Communication and Information at the University of Tennessee Knoxville) that cooperate in broader doctoral programs.

[4] Note that these data were frozen in October 2005, and we have added many more advisors and committee members since then but had no other complete sets for schools with more than three dozen dissertations at the time of writing.

[5] Note that some schools do not contribute to *Dissertations Abstracts*.

Table 1
Dissertations by school

| School | Dissertations | Advisors known | Committees known |
|---|---|---|---|
| University of Pittsburgh | 333 | 94 | 68 |
| Rutgers University | 218 | 218 | 124 |
| Florida State University | 200 | 200 | 200 |
| Columbia University | 158 | 28 | 10 |
| Indiana University | 155 | 155 | 155 |
| University of Illinois | 142 | 142 | 142 |
| Case Western Reserve University | 128 | 72 | 72 |
| University of North Texas | 105 | 86 | 56 |
| University of California, Berkeley | 100 | 39 | 17 |
| University of Wisconsin | 88 | 88 | 28 |
| University of North Carolina | 66 | 66 | 66 |
| Syracuse University | 66 | 66 | 30 |
| Drexel University | 57 | 57 | 57 |
| University of Michigan | 52[a] | 16 | 16 |
| University of Texas | 52 | 40 | 28 |
| Texas Woman's University | 51 | 41 | 28 |
| University of Toronto | 49 | 36 | 32 |
| University of Chicago | 49 | 3 | 2 |
| University of Southern California | 49 | 1 | 0 |
| University of Maryland | 47 | 47 | 17 |
| University of California, Los Angeles | 45 | 45 | 45 |
| University of Western Ontario | 45 | 45 | 19 |
| University at Albany, SUNY | 44 | 44 | 35 |
| Simmons College | 22 | 5 | 0 |
| University of Missouri | 19 | 19 | 19 |
| University of Minnesota | 17 | 17 | 0 |
| University of Alabama | 13 | 13 | 10 |
| Emporia State University | 10 | 10 | 10 |
| University of Arizona | 10 | 10 | 9 |
| Long Island University | 4 | 4 | 4 |
| McGill University | 4 | 4 | 4 |
| Universite de Montreal | 1 | 1 | 1 |

[a] Additional data were obtained after the data were frozen in October and it will be included in the full data set that will be made public.



identify the departmental affiliations of non-ILS faculty serving on doctoral committees. These overlaps across disciplines are especially important in interdisciplinary fields like ILS and thus represent a limitation that future studies could remedy. Second, the practice of co-advising, although not common, appears often enough in the data to require some adjustment to be made, which is discussed subsequently. Third, we are using the six previously mentioned ILS programs to explore measurement and interpretation options. Although the master data set remains a work in progress, we expect that the data for the selected schools will reveal the rich possibilities for research in such a collection. Fourth, these data are limited

to ILS programs in the US and Canada and thus does not take into account data from programs that use different doctoral mentoring models. Fifth, these data are necessarily limited by the time period studied: some prominent programs have closed and their data are extremely difficult to obtain (e.g., Columbia, Chicago) and new programs began during the 40-year period; thus, comparisons across programs must be carefully qualified. Sixth, these data do not include the dissertations of faculty in the ILS schools who received their degrees in other fields (the data do include faculty from other fields who serve as advisors and committee members, but not their own dissertations, advisors, and committees). Because this is an increasingly common occurrence, this must also be addressed in future work. Although these are important limitations, we believe that the data yield a new portrait of ILS faculty productivity that may be used as an adjunct to other productivity measures. Additionally, the data provide a base for investigating the evolution of the ILS field and may serve as a model for similar investigations in other fields.

## 4. MPACT values

Analyzing the effects of multiple mentors can be challenging. The difficulties in crediting advisors and committee members are similar to those found in studies that examine multiple authorship in scholarly literature. How can we effectively assign a value to the contribution of each author, or as here, each advisor or committee member? Harsanyi (1993) discovered a variety of methods used in studying collaboration and multiple authorship. The use of straight counts, weighted counts, and the inclusion or exclusion of variables are all issues to be thoughtfully considered and applied.

As in studies of multiple authorship, the analysis of MPACT must grapple with assigning proportional credit to advisors, who are similar to first-named authors, and committee members, whose participation is analogous to authors 2 . . . $n$. For the study of MPACT, we present a series of metrics to examine the mentoring impact of dissertation advisors and committee members.

For each member listed in the data set, the following two pieces of raw information were accumulated: raw number of dissertations advised (A) and raw number of dissertation committees served (C). Each of these values individually provides important indications of mentorship. The dissertation advisor is clearly an important mentor for students and thus a faculty member's $A$ (mentoring as advisor) value is a primary metric of impact. Of course, $A$ is dependent on factors beyond the individual faculty member's willingness to mentor. Faculty longevity or tenure is surely a factor; just as with citations, the longer a faculty member is active, the greater the opportunity for impact. Also, if a school has a large and active doctoral program, then we might expect to see advising distributed across the faculty, whereas in smaller doctoral programs we might expect a few faculty members to take the bulk of the responsibility for advising. Note that in the data that follow, co-advising is included equally in computing $A$. For faculty who have advised at multiple institutions, total mentoring values in their most recent school's data set are provided as well as their impact within their previous schools.

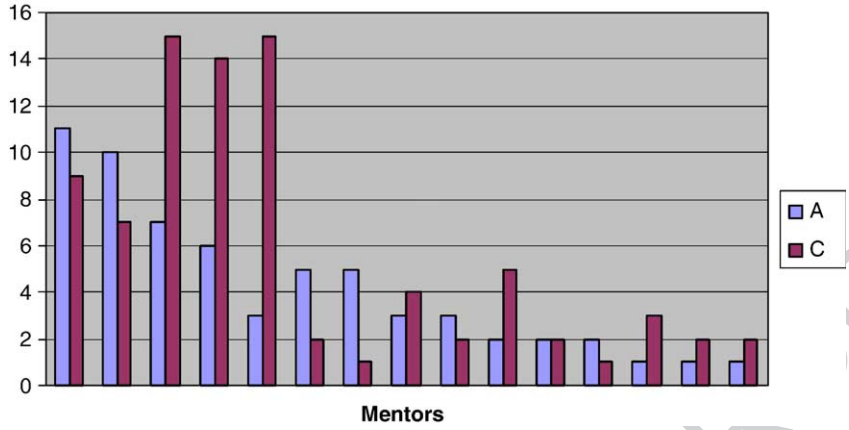


Fig. 1. Advisor and committee membership frequencies: Drexel University.

*C* (mentoring as committee member) is likewise a useful metric, as it demonstrates collegiality at least and serious impact at best. We might expect younger faculty to serve on several committees before taking on advising (in fact, some schools do not permit untenured faculty to serve as advisors without a senior faculty co-advisor). We would also expect in large, active doctoral programs that senior faculty would continue to serve on committees as well as serve as advisors. It may be argued that senior faculty who serve on committees both mentor the student and the other faculty on the committee and thus add coherence to a well-integrated doctoral program.

It may be useful to combine *A* and *C* into a single MPACT value or compare *A* and *C* values within or across schools. Simply summing the values is perhaps the easiest combination (*A* + *C*). However, the sum may not reflect the different degrees of effort typical in advising and serving on committees, just as a list of citations within an article does not reflect the relative influence or impact of individual articles on that citing article. de Solla Price and Beaver (1966) proposed a weighting system for co-authorship that they termed

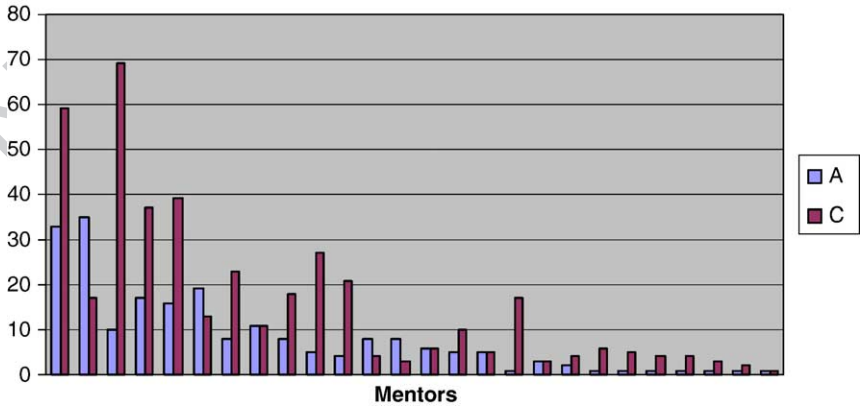


Fig. 2. Advisor and committee membership frequencies: Florida State University.

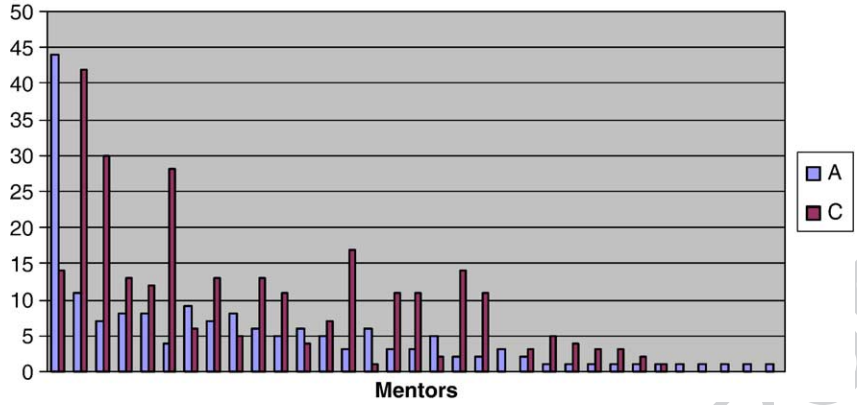


Fig. 3. Advisor and committee membership frequencies: Indiana University.

"fractional productivity." Fractional productivity is the sum of the number of first-authored papers plus the sum of co-authored papers divided by the number of authors on each paper. We compute an analogous fractional MPACT (M) value as $A + \sum(1 / \text{number of committee members})$. We treat the number of committee members as the full set including the advisor(s).[6] Thus, a faculty member who served as advisor for three students and was on two committees with 4 and 5 members, respectively (including the advisors) would have an $M$ value of $3 + 1/4 + 1/5 = 3.45$. Price and Beaver noted that their fractional productivity measures averaged about one-half of the full productivity of all papers authored or co-authored. Additionally, they noted that about two-thirds of the authors in their study had fractional productivity values less than one (thus had not been a sole author on any papers).[7] In the MPACT case, fractional productivity is influenced by institutional policies on the number of committee members required. Investigating this relationship requires data on all eligible faculty over the 40-year period and obtaining such data was not possible for this investigation but bears consideration in future work. Another interesting investigation for future work will be to explore citations to advisor and committee members within the dissertation and/or co-authorship with advisors and committee members after completion as more precise measures of combined $A$ and $C$ mentoring.

Yet another way of combining these basic values is to take the ratio of $A$ to $C$. Values above 1 will then indicate more mentoring leadership and those less than one will suggest more collaborative mentoring. This $A/C$ ratio is problematic from a mathematical point of view because mentors who have advised but not served on committees would have undefined values. A better measure for the purposes of using these values to order or compute derivative values would be $A / (A + C)$. For the $A / (A + C)$ metric, values above 0.5 would indicate more advisor mentoring and those less that 0.5 would indicate more collaborative mentoring.

[6] It might be argued that the number of committee members should exclude the advisor(s) because the committee membership roles are perhaps more different than co-authorship. We have computed both variations in preliminary investigations but report the fractional values based on full committee including advisor(s) here.

[7] Because we only include advisors as the focal point for the analyses here, all of the fractional MPACT values must be greater than 1.

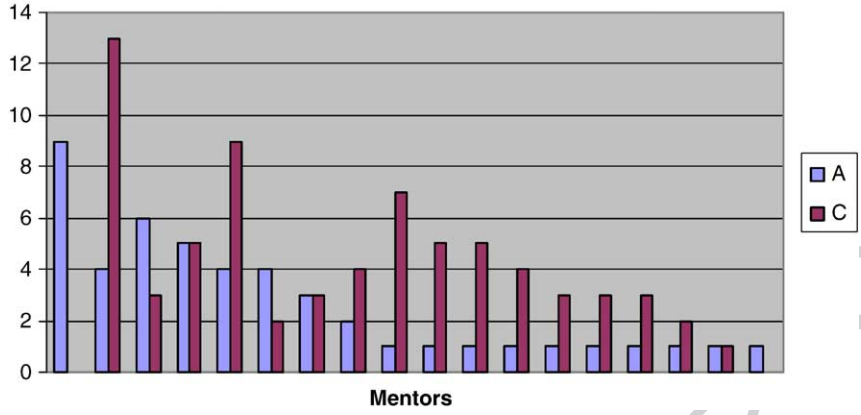


Fig. 4. Advisor and committee membership frequencies: UCLA.

In the tables below, we report the more easily interpretable *A*/*C* to show this relationship, and assign the value "*U*" to mentors without committee service as this approach provides some indication of numbers of faculty who have been advisors but not committee members. We might predict that over a career, this ratio would increase as professors accept more advising roles; however, this investigation remains for future work.

## 5. MPACT values by school

Yet another family of MPACT factors can be defined that use *A*, *C*, *M*, or various combinations as numerators for the entire set of dissertations done in a school (or in a subfield or the entire field). This kind of measure assesses the MPACT with respect to individual schools or across peer institutions. We provide these respective values for each of the six schools for *A*, *C*, and fractional MPACT (*M*). In the tables that follow, we present the

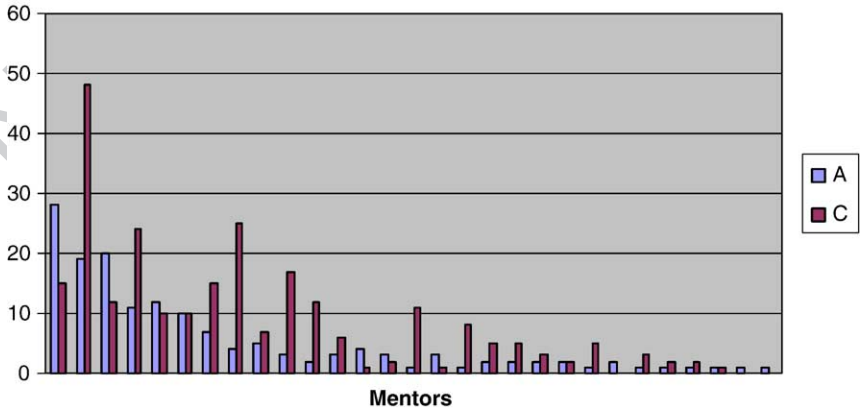


Fig. 5. Advisor and committee membership frequencies: University of Illinois.

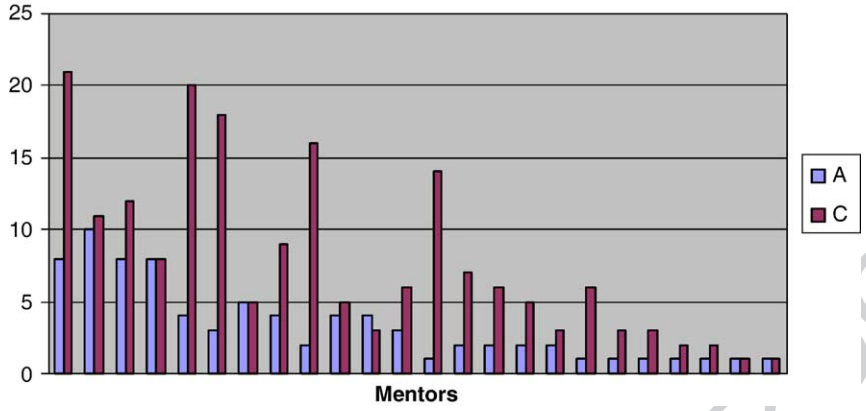


Fig. 6. Advisor and committee membership frequencies: University of North Carolina.

full set of MPACT metrics for each faculty member at each of the six schools who has had at least one advisee. The table for each school is ordered by the total number of mentoring activities $A + C$. Each table is followed by a chart that depicts $A$ and $C$ values, thus highlighting the distributional patterns of advising and committee membership (Figs. 1–6; Tables 2–7).

The data for all six schools follow similar distributional patterns with a small portion of faculty members accounting for more than half of all mentoring in the school. The total portion of fractional mentorship values for the top five mentors in each school is Drexel, 62%, Florida State, 53%, Indiana, 44%, University of California Los Angeles, 55%, Illinois, 52%, and University of North Carolina at Chapel Hill, 43%. The more distributed mentoring loads at Indiana and UNC are of interest. As we would expect, committee membership

t2.1 Table 2
t2.2 MPACT values for faculty at Drexel University

| t2.3 Mentor name | $A$ | $C$ | $A + C$ | $M$ | $A/C$ | $A$/Total $A$ (%) | $C$/Total $C$ (%) | $M$/Total $M$ (%) |
|---|---|---|---|---|---|---|---|---|
| t2.4 Howard White | 7 | 15 | 22 | 9.98 | 0.47 | 11.29 | 17.86 | 12.69 |
| t2.5 Belver Griffith | 11 | 9 | 20 | 12.77 | 1.22 | 17.74 | 10.71 | 16.23 |
| t2.6 M. Carl Drott | 6 | 14 | 20 | 8.93 | 0.43 | 9.68 | 16.67 | 11.36 |
| t2.7 Katherine McCain | 3 | 15 | 18 | 5.78 | 0.20 | 4.84 | 17.86 | 7.35 |
| t2.8 Gary Strong | 10 | 7 | 17 | 11.28 | 1.43 | 16.13 | 8.33 | 14.35 |
| t2.9 Thomas A. Childers | 5 | 2 | 7 | 5.42 | 2.50 | 8.06 | 2.38 | 6.89 |
| t2.10 Il-Yeol Song | 3 | 4 | 7 | 3.70 | 0.75 | 4.84 | 4.76 | 4.70 |
| t2.11 Guy Garrison | 2 | 5 | 7 | 2.93 | 0.40 | 3.23 | 5.95 | 3.73 |
| t2.12 Steven Andriole | 5 | 1 | 6 | 5.17 | 5.00 | 8.06 | 1.19 | 6.57 |
| t2.13 Charles Meadow | 3 | 2 | 5 | 3.67 | 1.50 | 4.84 | 2.38 | 4.66 |
| t2.14 June M. Verner | 2 | 2 | 4 | 2.42 | 1.00 | 3.23 | 2.38 | 3.07 |
| t2.15 Margaret Christensen | 1 | 3 | 4 | 1.58 | 0.33 | 1.61 | 3.57 | 2.01 |
| t2.16 Thomas Childers | 2 | 1 | 3 | 2.25 | 2.00 | 3.23 | 1.19 | 2.86 |
| t2.17 Michael Atwood | 1 | 2 | 3 | 1.40 | 0.50 | 1.61 | 2.38 | 1.78 |
| t2.18 Gregory W. Hislop | 1 | 2 | 3 | 1.37 | 0.50 | 1.61 | 2.38 | 1.74 |

t3.1 Table 3
t3.2 MPACT values for faculty at Florida State University

| t3.3 Mentor name | *A* | *C* | *A* + *C* | *M* | *A*/*C* | *A*/Total *A* (%) | *C*/Total *C* (%) | *M*/Total *M* (%) |
|---|---|---|---|---|---|---|---|---|
| t3.4 Ronald D. Blazek | 33 | 59 | 92 | 47.55 | 0.56 | 15.64 | 14.36 | 15.35 |
| t3.5 Harold Goldstein | 10 | 69 | 79 | 26.73 | 0.14 | 4.74 | 16.79 | 8.63 |
| t3.6 Thomas L. Hart | 16 | 39 | 55 | 25.47 | 0.41 | 7.58 | 9.49 | 8.22 |
| t3.7 Frank Summers | 17 | 37 | 54 | 25.82 | 0.46 | 8.06 | 9.00 | 8.33 |
| t3.8 John Milford Goudeau | 35 | 17 | 52 | 39.20 | 2.06 | 16.59 | 4.14 | 12.65 |
| t3.9 Jane B. Robbins | 19 | 13 | 32 | 21.89 | 1.46 | 9.00 | 3.16 | 7.07 |
| t3.10 Ruth H. Rockwood | 5 | 27 | 32 | 11.70 | 0.19 | 2.37 | 6.57 | 3.78 |
| t3.11 Mary Alice Hunt | 8 | 23 | 31 | 13.63 | 0.35 | 3.79 | 5.60 | 4.40 |
| t3.12 Phyllis J. Van Orden | 8 | 18 | 26 | 12.50 | 0.44 | 3.79 | 4.38 | 4.04 |
| t3.13 Elisabeth A. Logan | 4 | 21 | 25 | 9.13 | 0.19 | 1.90 | 5.11 | 2.95 |
| t3.14 Gerald Jahoda | 11 | 11 | 22 | 13.60 | 1.00 | 5.21 | 2.68 | 4.39 |
| t3.15 Alphonse Trezza | 1 | 17 | 18 | 4.97 | 0.06 | 0.47 | 4.14 | 1.60 |
| t3.16 Kathy Burnett | 5 | 10 | 15 | 7.10 | 0.50 | 2.37 | 2.43 | 2.29 |
| t3.17 John DePew | 8 | 4 | 12 | 9.00 | 2.00 | 3.79 | 0.97 | 2.91 |
| t3.18 Charles Conaway | 6 | 6 | 12 | 7.45 | 1.00 | 2.84 | 1.46 | 2.40 |
| t3.19 Sara K. Srygley | 8 | 3 | 11 | 8.75 | 2.67 | 3.79 | 0.73 | 2.82 |
| t3.20 Elfreda Annmary Chatman | 5 | 5 | 10 | 5.95 | 1.00 | 2.37 | 1.22 | 1.92 |
| t3.21 Gary Burnett | 1 | 6 | 7 | 2.35 | 0.17 | 0.47 | 1.46 | 0.76 |
| t3.22 Myron Henry Gluck | 3 | 3 | 6 | 3.62 | 1.00 | 1.42 | 0.73 | 1.17 |
| t3.23 Shirley L. Aaron | 2 | 4 | 6 | 3.00 | 0.50 | 0.95 | 0.97 | 0.97 |
| t3.24 Doris Clack | 1 | 5 | 6 | 2.25 | 0.20 | 0.47 | 1.22 | 0.73 |
| t3.25 John Bertot | 1 | 4 | 5 | 1.87 | 0.25 | 0.47 | 0.97 | 0.60 |
| t3.26 Eliza T. Dresang | 1 | 4 | 5 | 1.90 | 0.25 | 0.47 | 0.97 | 0.61 |
| t3.27 Gene T. Sherron | 1 | 3 | 4 | 1.65 | 0.33 | 0.47 | 0.73 | 0.53 |
| t3.28 Marcella Genz | 1 | 2 | 3 | 1.45 | 0.50 | 0.47 | 0.49 | 0.47 |
| t3.29 Jane K. Zachert | 1 | 1 | 2 | 1.25 | 1.00 | 0.47 | 0.24 | 0.40 |



mentoring is greater for most faculty members with a few individuals having more advisees than committee memberships. It is interesting that UNC data show that every faculty member has served on at least as many committees as the number of students they advise. This may indicate a strong collaborative culture in this school over the 40 years and suggests an area for future research as the data become more complete across all schools. These data provide some preliminary indicators of individual faculty mentorship as well as some very preliminary glimpses into the overall mentorship patterns for these six schools. Some logical follow-ups will be to compare individual doctoral advising mentorship and school-based mentorship with other productivity measures such as authorship and citations. Figs. 7–9 show the advisor frequency, committee frequency, and fractional MPACT values for of the six schools.

An entirely different kind of analysis that might be undertaken with a complete data set of dissertation mentoring is to look at highly productive individuals from a social network perspective. To illustrate what is possible, we provide one illustration that shows how one selected faculty member impacts a field through her students and their subsequent students.

t4.1 Table 4
t4.2 MPACT values for faculty at Indiana University

| t4.3 Mentor name | *A* | *C* | *A* + *C* | *M* | *A*/*C* | *A*/Total *A* (%) | *C*/Total *C* (%) | *M*/Total *M* (%) |
|---|---|---|---|---|---|---|---|---|
| t4.4 David Kaser | 44 | 14 | 58 | 47.08 | 3.14 | 26.19 | 4.90 | 20.03 |
| t4.5 George Whitbeck | 11 | 42 | 53 | 21.20 | 0.26 | 6.55 | 14.69 | 9.02 |
| t4.6 Clayton A. Shepherd | 7 | 30 | 37 | 14.30 | 0.23 | 4.17 | 10.49 | 6.08 |
| t4.7 Bernard M. Fry | 4 | 28 | 32 | 10.57 | 0.14 | 2.38 | 9.79 | 4.50 |
| t4.8 Sarah R. Reed | 8 | 13 | 21 | 11.02 | 0.62 | 4.76 | 4.55 | 4.69 |
| t4.9 Charles Davis | 3 | 17 | 20 | 6.45 | 0.18 | 1.79 | 5.94 | 2.74 |
| t4.10 Verna Pungitore | 7 | 13 | 20 | 10.00 | 0.54 | 4.17 | 4.55 | 4.25 |
| t4.11 Margaret R. Sheviak | 8 | 12 | 20 | 10.90 | 0.67 | 4.76 | 4.20 | 4.64 |
| t4.12 Haynes McMullen | 6 | 13 | 19 | 9.08 | 0.46 | 3.57 | 4.55 | 3.86 |
| t4.13 Thomas E. Nisonger | 2 | 14 | 16 | 5.40 | 0.14 | 1.19 | 4.90 | 2.30 |
| t4.14 Debora Shaw | 5 | 11 | 16 | 7.45 | 0.45 | 2.98 | 3.85 | 3.17 |
| t4.15 Stephen P. Harter | 9 | 6 | 15 | 10.45 | 1.50 | 5.36 | 2.10 | 4.45 |
| t4.16 Herbert S. White | 3 | 11 | 14 | 5.55 | 0.27 | 1.79 | 3.85 | 2.36 |
| t4.17 Marcy Murphy | 3 | 11 | 14 | 5.60 | 0.27 | 1.79 | 3.85 | 2.38 |
| t4.18 Judith Serebnick | 8 | 5 | 13 | 9.20 | 1.60 | 4.76 | 1.75 | 3.91 |
| t4.19 Calvin James Boyer | 2 | 11 | 13 | 4.55 | 0.18 | 1.19 | 3.85 | 1.94 |
| t4.20 Margaret Rufsvold | 5 | 7 | 12 | 6.70 | 0.71 | 2.98 | 2.45 | 2.85 |
| t4.21 Mildred Hawksworth Lowell | 6 | 4 | 10 | 6.87 | 1.50 | 3.57 | 1.40 | 2.92 |
| t4.22 Shirley A. Fitzgibbons | 6 | 1 | 7 | 6.25 | 6.00 | 3.57 | 0.35 | 2.66 |
| t4.23 Ann F. Painter | 5 | 2 | 7 | 5.45 | 2.50 | 2.98 | 0.70 | 2.32 |
| t4.24 Carolyn Guss | 1 | 5 | 6 | 2.25 | 0.20 | 0.60 | 1.75 | 0.96 |
| t4.25 Allan Pratt | 1 | 4 | 5 | 2.00 | 0.25 | 0.60 | 1.40 | 0.85 |
| t4.26 Peter Hiatt | 2 | 3 | 5 | 2.75 | 0.67 | 1.19 | 1.05 | 1.17 |
| t4.27 Daniel Callison | 1 | 3 | 4 | 1.65 | 0.33 | 0.60 | 1.05 | 0.70 |
| t4.28 Charles Busha | 1 | 3 | 4 | 1.67 | 0.33 | 0.60 | 1.05 | 0.71 |
| t4.29 Andrew Dillon | 3 | 0 | 3 | 3.00 | U | 1.79 | 0.00 | 1.28 |
| t4.30 Javed Mostafa | 1 | 2 | 3 | 1.50 | 0.50 | 0.60 | 0.70 | 0.64 |
| t4.31 Cecil K. Byrd | 1 | 1 | 2 | 1.17 | 1.00 | 0.60 | 0.35 | 0.50 |
| t4.32 Richard Schiffren | 1 | 0 | 1 | 1.00 | U | 0.60 | 0.00 | 0.43 |
| t4.33 Stephen Harter | 1 | 0 | 1 | 1.00 | U | 0.60 | 0.00 | 0.43 |
| t4.34 Gene L. Post | 1 | 0 | 1 | 1.00 | U | 0.60 | 0.00 | 0.43 |
| t4.35 Richard M. Dorson | 1 | 0 | 1 | 1.00 | U | 0.60 | 0.00 | 0.43 |
| t4.36 John Billman | 1 | 0 | 1 | 1.00 | U | 0.60 | 0.00 | 0.43 |



Fig. 10 shows a map for Professor Jean Tague, who was advised by Andrew Booth at Case Western and had 14 advisees of her own, some of whom have subsequently had advisees, who in a few cases, will soon have their own advisees.[8] Thus, this map shows four generations of scholars and provides yet another way to think about the impact a scholar has on a field. This map raises several important points that highlight some of the limitations of the MPACT statistics above. Several of Professor Tague's advisees (noted on the sociomap with asterisks) are active scholars in other countries or disciplines. For example, Rao

[8] To illustrate committee role, we only show one example (Nelson as committee member for Wilkinson with the dashed arrow) to keep the diagram easy to scan at this size.

t5.1 Table 5
t5.2 MPACT values for faculty at University of California at Los Angeles

| t5.3 Mentor name | *A* | *C* | *A* + *C* | *M* | *A*/*C* | *A*/Total *A* (%) | *C*/Total *C* (%) | *M*/Total *M* (%) |
|---|---|---|---|---|---|---|---|---|
| t5.4 Virginia A. Walter | 4 | 13 | 17 | 7.18 | 0.31 | 8.51 | 18.06 | 11.33 |
| t5.5 Marcia J. Bates | 4 | 9 | 13 | 6.02 | 0.44 | 8.51 | 12.50 | 9.49 |
| t5.6 Mary N. Maack | 5 | 5 | 10 | 6.15 | 1.00 | 10.64 | 6.94 | 9.70 |
| t5.7 Elaine F. Svenonius | 9 | 0 | 9 | 9.00 | U | 19.15 | 0.00 | 14.20 |
| t5.8 John V. Richardson | 6 | 3 | 9 | 6.60 | 2.00 | 12.77 | 4.17 | 10.41 |
| t5.9 Michele V. Cloonan | 1 | 7 | 8 | 2.70 | 0.14 | 2.13 | 9.72 | 4.26 |
| t5.10 Harold Borko | 4 | 2 | 6 | 4.40 | 2.00 | 8.51 | 2.78 | 6.94 |
| t5.11 Anne Gilliland-Swetland | 3 | 3 | 6 | 3.75 | 1.00 | 6.38 | 4.17 | 5.92 |
| t5.12 Christine L. Borgman | 2 | 4 | 6 | 2.77 | 0.50 | 4.26 | 5.56 | 4.37 |
| t5.13 Donald O. Case | 1 | 5 | 6 | 2.00 | 0.20 | 2.13 | 6.94 | 3.16 |
| t5.14 Leah Lievrouw | 1 | 5 | 6 | 2.15 | 0.20 | 2.13 | 6.94 | 3.39 |
| t5.15 Clara M. Chu | 1 | 4 | 5 | 2.00 | 0.25 | 2.13 | 5.56 | 3.16 |
| t5.16 Jonathan Furner | 1 | 3 | 4 | 1.75 | 0.33 | 2.13 | 4.17 | 2.76 |
| t5.17 Diana M. Thomas | 1 | 3 | 4 | 1.65 | 0.33 | 2.13 | 4.17 | 2.60 |
| t5.18 William H. Fisher | 1 | 3 | 4 | 1.57 | 0.33 | 2.13 | 4.17 | 2.47 |
| t5.19 Philip E. Agre | 1 | 2 | 3 | 1.50 | 0.50 | 2.13 | 2.78 | 2.37 |
| t5.20 Beverly P. Lynch | 1 | 1 | 2 | 1.20 | 1.00 | 2.13 | 1.39 | 1.89 |
| t5.21 Richard K. Gardner | 1 | 0 | 1 | 1.00 | U | 2.13 | 0.00 | 1.58 |

Ravichandra is now Professor and Head of the Documentation Research and Training Centre in Bangalore, India; Michael Shepherd is Professor of Computer Science at Dalhousie University; and Elaine Toms is Professor of Management Informatics at Dalhousie University. Although all of these scholars have their own students they advise, they will not show up in the ILS database that is limited to North American ILS programs. It may be useful to include second and higher generation impact as part of a single MPACT measure, perhaps adding some weighted values for subsequent generations of students.

## 6. Field-wide MPACT

To illustrate some of the potential for looking beyond individual schools to an entire field, we provide preliminary data for the entire data set, with care to point out the limitations of the current data completeness. Table 8 lists the *A*, *C*, *A* + *C*, *M*, and *A*/*C* values for faculty in the six schools who have advised 15 or more dissertations. We certainly expect to see the high fractional MPACT (M) values but it is interesting to see that only three of these eight mentors have served on more committees than they have had advisees. The Pearson correlation between *A* and *C* across all the six schools is 0.52, whereas the Pearson correlation coefficient between *A* and *C* in this group of eight frequent advisors is −0.14. The Pearson correlation coefficient between *A* + *C* and the *M* for the complete data set is 0.93 and 0.75 for this group. These differences may be artifacts of the small number of advisors with more than 15 dissertations advised or reflect some distinction in these advisors such as their "star" power in

t6.1 Table 6
t6.2 MPACT values for faculty at University of Illinois

| t6.3 Mentor name | *A* | *C* | *A* + *C* | *M* | *A*/*C* | *A*/Total *A* (%) | *C*/Total *C* (%) | *M*/Total *M* (%) |
|---|---|---|---|---|---|---|---|---|
| t6.4 Linda C. Smith | 19 | 48 | 67 | 30.58 | 0.40 | 12.42 | 19.05 | 14.50 |
| t6.5 F. W. Lancaster | 28 | 15 | 43 | 31.38 | 1.87 | 18.30 | 5.95 | 14.88 |
| t6.6 Rolland Stevens | 11 | 24 | 35 | 16.28 | 0.46 | 7.19 | 9.52 | 7.72 |
| t6.7 Herbert Goldhor | 20 | 12 | 32 | 22.50 | 1.67 | 13.07 | 4.76 | 10.67 |
| t6.8 Kathyn Luther Henderson | 4 | 25 | 29 | 9.75 | 0.16 | 2.61 | 9.92 | 4.62 |
| t6.9 Robert B. Downs | 12 | 10 | 22 | 14.10 | 1.20 | 7.84 | 3.97 | 6.68 |
| t6.10 Lawrence Auld | 7 | 15 | 22 | 10.20 | 0.47 | 4.58 | 5.95 | 4.84 |
| t6.11 Donald W. Krummel | 10 | 10 | 20 | 12.23 | 1.00 | 6.54 | 3.97 | 5.80 |
| t6.12 Charles Davis | 3 | 17 | 20 | 6.45 | 0.18 | 1.96 | 6.75 | 3.06 |
| t6.13 Bryce L. Allen | 2 | 12 | 14 | 5.12 | 0.17 | 1.31 | 4.76 | 2.43 |
| t6.14 Lucille M. Wert | 5 | 7 | 12 | 6.65 | 0.71 | 3.27 | 2.78 | 3.15 |
| t6.15 Cora E. Thomassen | 1 | 11 | 12 | 3.30 | 0.09 | 0.65 | 4.37 | 1.56 |
| t6.16 Terry L. Weech | 3 | 6 | 9 | 4.62 | 0.50 | 1.96 | 2.38 | 2.19 |
| t6.17 J. Brett Sutton | 1 | 8 | 9 | 3.20 | 0.13 | 0.65 | 3.17 | 1.52 |
| t6.18 Guy Garrison | 2 | 5 | 7 | 2.93 | 0.40 | 1.31 | 1.98 | 1.39 |
| t6.19 Selma K. Richardson | 2 | 5 | 7 | 3.10 | 0.40 | 1.31 | 1.98 | 1.47 |
| t6.20 Geoffrey Bowker | 1 | 5 | 6 | 2.37 | 0.20 | 0.65 | 1.98 | 1.12 |
| t6.21 Elizabeth G. Hearne | 4 | 1 | 5 | 4.25 | 4.00 | 2.61 | 0.40 | 2.01 |
| t6.22 Leslie Edmonds | 3 | 2 | 5 | 3.45 | 1.50 | 1.96 | 0.79 | 1.64 |
| t6.23 Caroline Alison Haythornthwaite | 2 | 3 | 5 | 2.83 | 0.67 | 1.31 | 1.19 | 1.34 |
| t6.24 Ann Bishop | 3 | 1 | 4 | 3.25 | 3.00 | 1.96 | 0.40 | 1.54 |
| t6.25 Carol L. Kronus | 2 | 2 | 4 | 2.50 | 1.00 | 1.31 | 0.79 | 1.19 |
| t6.26 Christine Jenkins | 1 | 3 | 4 | 1.78 | 0.33 | 0.65 | 1.19 | 0.85 |
| t6.27 Thelma Eaton | 1 | 2 | 3 | 1.40 | 0.50 | 0.65 | 0.79 | 0.66 |
| t6.28 Michael B. Twidale | 1 | 2 | 3 | 1.50 | 0.50 | 0.65 | 0.79 | 0.71 |
| t6.29 Leigh S. Estabrook | 2 | 0 | 2 | 2.00 | U | 1.31 | 0.00 | 0.95 |
| t6.30 Martha E. Williams | 1 | 1 | 2 | 1.20 | 1.00 | 0.65 | 0.40 | 0.57 |
| t6.31 R. S. Michalski | 1 | 0 | 1 | 1.00 | U | 0.65 | 0.00 | 0.47 |
| t6.32 Roger G. Clark | 1 | 0 | 1 | 1.00 | U | 0.65 | 0.00 | 0.47 |

a school or the nature of specific programs with respect to ILS research at different periods of time. Note that if we include faculty from other schools[9] having complete data for advising roles, the following faculty have advised 15 or more students:

- Blasingame, Ralph: Rutgers University, 24
- Soergel, Dagobert: University of Maryland, 20
- Rice, Ronald: Rutgers University (also one at Columbia), 18
- Belkin, Nicholas: Rutgers University, 15
- Saracevic, Tefko: Case Western Reserve University (9), Rutgers University (6), 15.

[9] Note that even with incomplete data for some schools, there are advisors who have had 15 or more students (e.g., William Goffman at Case Western, Edie Rasmussen at Pittsburgh, and Ana Cleveland at North Texas).

t7.1 Table 7
t7.2 MPACT values for faculty at University of North Carolina at Chapel Hill

| t7.3 Mentor name | *A* | *C* | *A* + *C* | *M* | *A*/*C* | *A*/Total *A* (%) | *C*/Total *C* (%) | *M*/Total *M* (%) |
|---|---|---|---|---|---|---|---|---|
| t7.4 William M. Shaw | 8 | 21 | 29 | 12.62 | 0.38 | 10.13 | 11.23 | 10.88 |
| t7.5 Barbara Moran | 4 | 20 | 24 | 7.87 | 0.20 | 5.06 | 10.70 | 6.78 |
| t7.6 Gary Marchionini | 10 | 11 | 21 | 12.07 | 0.91 | 12.66 | 5.88 | 10.40 |
| t7.7 Paul Solomon | 3 | 18 | 21 | 6.43 | 0.17 | 3.80 | 9.63 | 5.54 |
| t7.8 Edward G. Holley | 8 | 12 | 20 | 10.53 | 0.67 | 10.13 | 6.42 | 9.08 |
| t7.9 Barbara Marie Wildemuth | 2 | 16 | 18 | 5.17 | 0.13 | 2.53 | 8.56 | 4.45 |
| t7.10 Evelyn Daniel | 8 | 8 | 16 | 9.53 | 1.00 | 10.13 | 4.28 | 8.22 |
| t7.11 Robert M. Losee | 1 | 14 | 15 | 3.70 | 0.07 | 1.27 | 7.49 | 3.19 |
| t7.12 Robert N. Broadus | 4 | 9 | 13 | 5.80 | 0.44 | 5.06 | 4.81 | 5.00 |
| t7.13 Elfreda Annmary Chatman | 5 | 5 | 10 | 5.95 | 1.00 | 6.33 | 2.67 | 5.13 |
| t7.14 Lester E. Asheim | 4 | 5 | 9 | 5.00 | 0.80 | 5.06 | 2.67 | 4.31 |
| t7.15 Stephanie Haas | 3 | 6 | 9 | 4.17 | 0.50 | 3.80 | 3.21 | 3.59 |
| t7.16 Marilyn L. Miller | 2 | 7 | 9 | 3.40 | 0.29 | 2.53 | 3.74 | 2.93 |
| t7.17 Helen R. Tibbo | 2 | 6 | 8 | 3.10 | 0.33 | 2.53 | 3.21 | 2.67 |
| t7.18 Susan Steinfirst | 4 | 3 | 7 | 4.60 | 1.33 | 5.06 | 1.60 | 3.96 |
| t7.19 Jerry Dale Saye | 2 | 5 | 7 | 2.93 | 0.40 | 2.53 | 2.67 | 2.53 |
| t7.20 Joe A. Hewitt | 1 | 6 | 7 | 2.17 | 0.17 | 1.27 | 3.21 | 1.87 |
| t7.21 Diane H. Sonnenwald | 2 | 3 | 5 | 2.62 | 0.67 | 2.53 | 1.60 | 2.26 |
| t7.22 Gregory B. Newby | 1 | 3 | 4 | 1.60 | 0.33 | 1.27 | 1.60 | 1.38 |
| t7.23 Martin Dillon | 1 | 3 | 4 | 1.60 | 0.33 | 1.27 | 1.60 | 1.38 |
| t7.24 Claudia J. Gollop | 1 | 2 | 3 | 1.37 | 0.50 | 1.27 | 1.07 | 1.18 |
| t7.25 Judith Wood | 1 | 2 | 3 | 1.40 | 0.50 | 1.27 | 1.07 | 1.21 |
| t7.26 Brian W. Sturm | 1 | 1 | 2 | 1.20 | 1.00 | 1.27 | 0.53 | 1.03 |
| t7.27 Fred Roper | 1 | 1 | 2 | 1.20 | 1.00 | 1.27 | 0.53 | 1.03 |

Note that some faculty serve as advisor much more often than as committee member and some just the opposite. An interesting line of future work will be to investigate the personal and institutional factors that lead to patterns of advising and committee service.

Figs. 11–13 show the advisor frequency, committee frequency, and fractional MPACT values for all faculty at the six schools.

## 7. Discussion

This preliminary investigation of dissertation advising as one element of overall faculty mentoring provides very promising results. The research potential of a completed data set for dissertation authors, advisors, and committee members is immense. Of the various MPACT metrics presented, the fractional MPACT value may be the best single estimator of mentoring productivity as this takes into account both kinds of mentoring roles in a logically weighted fashion, which although strongly correlated, reflect different mentoring contributions. The very high overall correlation of the fractional *M* values with the simple sum of *A* and *C* also suggests that it is not unreasonably skewed from the patterns of treating the two

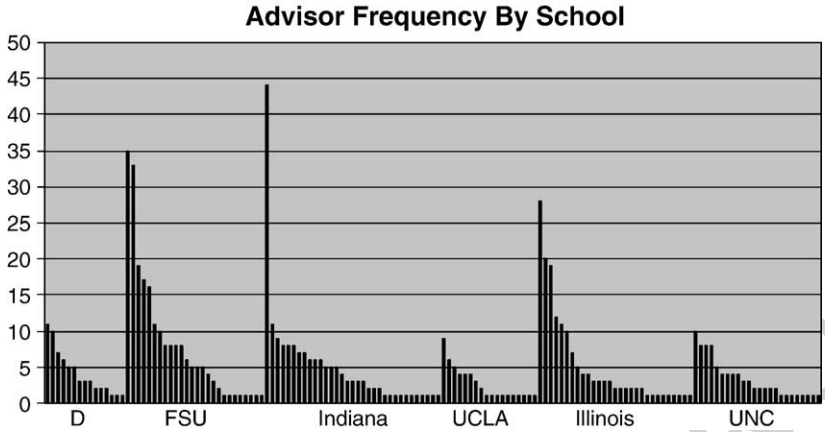


Fig. 7. Advisor frequency for six schools.

kinds of mentoring equally. For the construct of mentoring as a form of scholarship, many questions arise beyond the challenges of simply collecting the data. Such data also may be used to investigate the creation and dissemination of knowledge in a field, from personal influence to collaborations to the developments of social networks both within and between disciplines.

### 7.1. Faculty scholarship

A number of questions arise around the notion of faculty productivity. How do MPACT factors compare to citation counts? To patents approved and grants awarded? Are the most productive researchers also the most active mentors? What is the pattern of MPACT over the course of a career and how do these patterns compare to publication and citation patterns over a lifetime? How might the MPACT values themselves be made more sophisticated to take into account other factors? For example, how can adjustments be made for number of years in

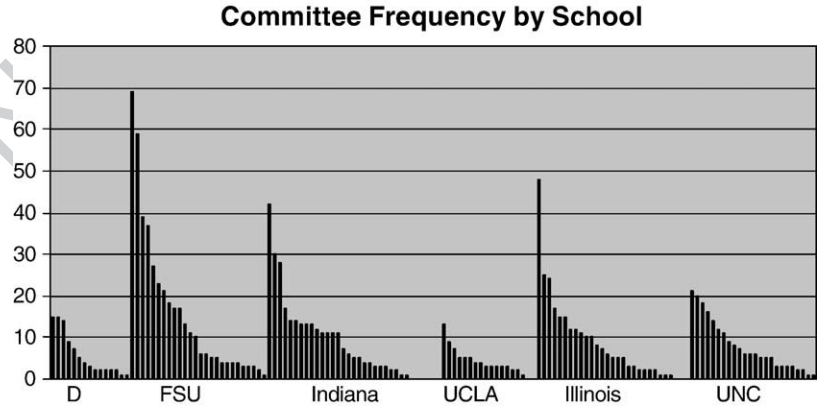


Fig. 8. Committee frequency for six schools.

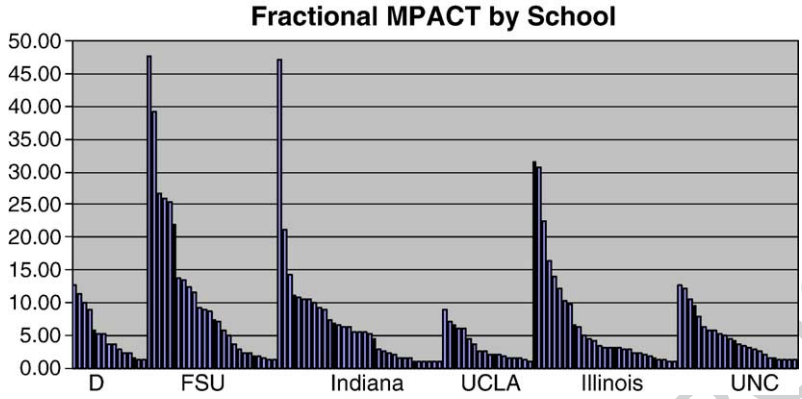


Fig. 9. Fractional MPACT values for six schools.

rank or in an institution or in a particular field? For size of doctoral program? Can adjustments be made for time? For example, as the field grows and more PhDs are granted, how can we compare MPACT factors across time? At more pragmatic levels, How much should MPACT factors count toward promotion, tenure, and annual salary increases? How do current salaries and ranks relate to MPACT factors?

### 7.2. Knowledge creation and dissemination and field characterization

Because dissertations are manifestations of original research, a mentoring database may also be leveraged to understand how knowledge in a field evolves and how a field may be characterized and compared to other fields. Some possible questions include the following:

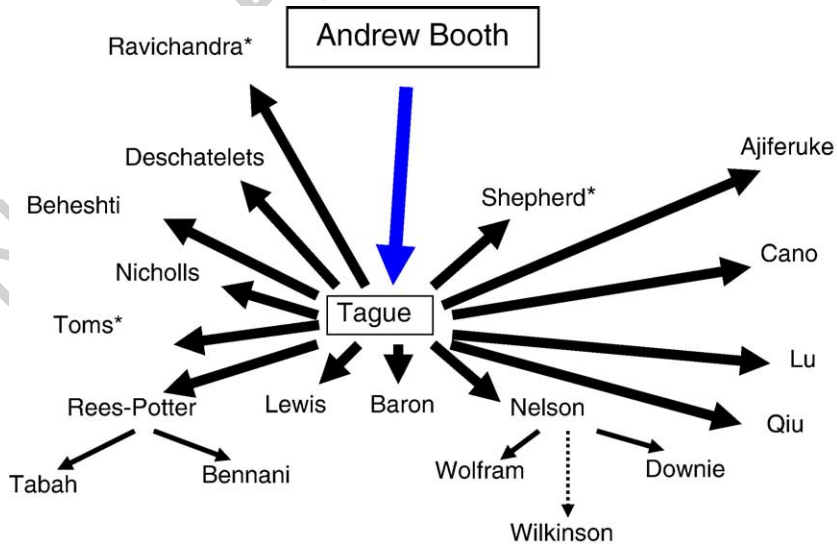


Fig. 10. Dissertation mentoring sociomap for Jean Tague.

t8.1 Table 8
t8.2 Highest impact advisors at six ILS programs

| t8.3 Mentor name | School | *A* | *C* | *A* + *C* | *M* | *A*/*C* |
|---|---|---|---|---|---|---|
| t8.4 David Kaser | Indiana | 44 | 14 | 58 | 47.08 | 3.14 |
| t8.5 John Milford Goudeau | Florida State | 35 | 17 | 52 | 39.20 | 2.06 |
| t8.6 Ronald D. Blazek | Florida State | 33 | 59 | 92 | 47.55 | 0.56 |
| t8.7 F. W. Lancaster | Illinois | 28 | 15 | 43 | 31.38 | 1.87 |
| t8.8 Herbert Goldhor | Illinois | 20 | 12 | 32 | 22.50 | 1.67 |
| t8.9 Jane B. Robbins | Florida State/Wisconsin | 19 | 13 | 32 | 21.89 | 1.46 |
| t8.10 Linda C. Smith | Illinois | 19 | 48 | 67 | 30.58 | 0.40 |
| t8.11 Frank Summers | Florida State | 17 | 37 | 54 | 25.82 | 0.46 |

Does the collaboration that resulted in the dissertation continue after graduation? Is there evidence of a continuing community of scholarship? Are there co-authorship trends among dissertation advisors, committee members and their advisees? Do faculty who serve together on committees collaborate after this experience? Are there research themes or problems that continue within schools or across these communities over generations? Mentoring data may also be used to investigate what changes have taken place within ILS as well as how ILS influences the world at large beyond academe. For example, where do these PhDs go after graduation? How many become faculty members? How many become library directors or chief information officers in industry and government? What does this say about ILS as a field?

Research on mentoring may also lead to broader attention to dissertation content. For example, what might be done with the dissertations themselves—titles, subject headings, texts? How does the language of the field change? The problems addressed? How do these changes relate to scholarly communication? Does dissertation research lead or follow what is published in the scholarly literature?

Finally, we may ask how does ILS compare to other fields? Nearly all of the above questions can be explored in comparison to other fields of study. An interesting follow-up

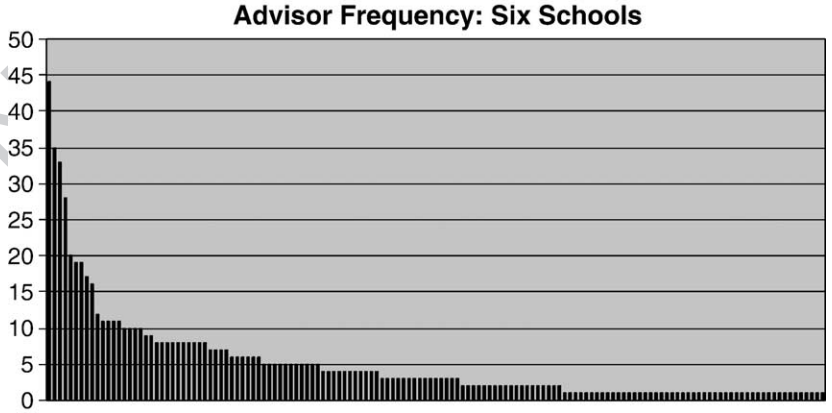


Fig. 11. Advisor frequencies for all mentors at all schools.

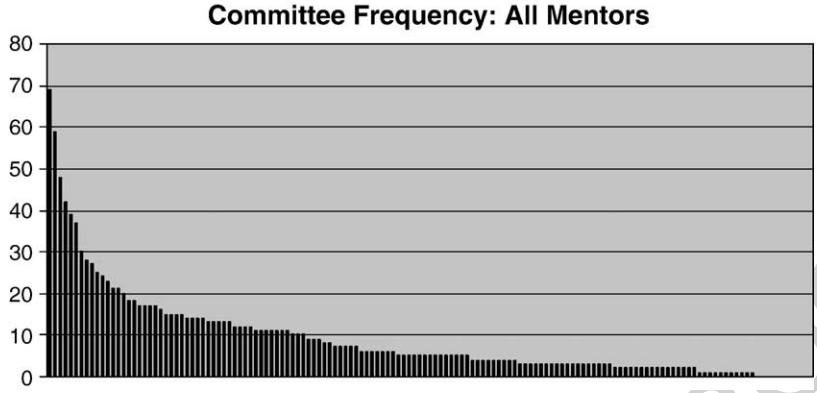


Fig. 12. Committee frequencies for all mentors at all schools.

would be to examine MPACT in another field, such as chemistry, and compare the results to those found for the ILS field. How does ILS impact other fields? If, as suggested above, data were collected that reveal the extent of ILS faculty participation in dissertations outside of ILS, the interdisciplinary impact of ILS could be calculated.

### 7.3. Data challenges

Gathering these data has been surprisingly difficult. There is hope that data collection will become easier as dissertations go online in digital libraries such as the Electronic Digital Library of Theses and Dissertations. However, for now, University Microfilms has the best data buried in its vaults on microforms. Some immediate challenges include the following: How can we get data for faculty in ILS who serve on committees in other fields and scholars from other fields who serve on ILS dissertations? We might predict that an interdisciplinary field will have many more committee memberships that overlap with other fields? Which

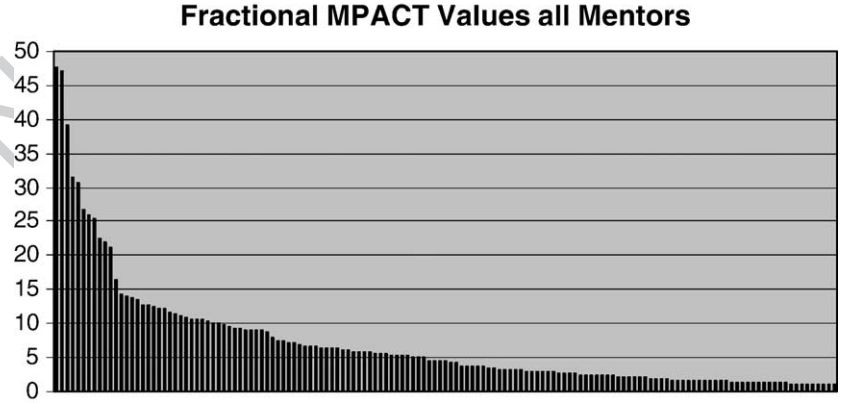


Fig. 13. Fractional MPACT values (M) for all mentors at all schools.

fields and what does this imply for our field? Our own limited experiences suggest that there will be substantial overlaps with computer science, psychology, business, and journalism/communication studies. How has this changed over time?

A final caution must be added once more. Beyond the limitations of the data itself, this approach to assessing mentoring impact only considers dissertation advising as the basis of mentoring. Clearly, there are many other ways that faculty mentor students and these MPACT measures only address this one aspect of mentoring. Finding ways to assess other forms of mentoring remain a fruitful area of future research.

## 8. Conclusion

This paper presents preliminary results from an ongoing effort to gather and analyze data on dissertation advising. We present a set of metrics for rating mentoring impact in doctoral studies and demonstrate their efficacy for characterizing mentoring for individuals and schools. The data raise a host of questions that beg investigation. We invite your participation. Contribute data or use the data to address some of the questions above. We aim to raise questions and demonstrate what is possible with this new kind of data set that will become increasingly accessible in an age of digital libraries.

## 9. Uncited reference

Qing and Grandon, 2000

## Acknowledgments

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