# Comparing Communication Doctoral Programs, Alumni, and Faculty: The Use of Google Scholar

Mike Allen
John Bourhis
Nancy Burrell
Andrew William Cole
Emily Cramer
Keith Dilbeck
Nathanael England
Jennifer Morey Hawkins
Melissa Maier
Rebecca Mullane
Kim Omachinski
Kikuko Omori
Deborah DeCloedt-Pincon
Angela Victor
Kara L. Willes
Anna Nicole Zmyslinski[*]

*This paper examines three aspects of doctoral programs in Communication: (a) how doctoral department faculty compare using combined citations to published work using Google Scholar, (b) the contribution in quantity and quality (measured by citations) of alumni teaching in doctoral programs, and (c) identifying the top 25 most cited communication doctoral faculty in Google Scholar. The goal is to provide a series of additional alternatives for faculty and program evaluation beyond simply counting the number of published journal articles.*

**Key Words**:  Communication Doctoral Program Rankings, Google Scholar, Departmental Evaluation, Publishing,

No issue may be more frustrating to administrators in communication than dealing with the expectation of justifying the excellence of a program. The problem is that there are many different metrics available to use in the process of program evaluation. The challenge is that

[*] Mike Allen, (Ph.D, Michigan State University) is professor of Communication at UW-Milwaukee; John Bourhis, (Ph.D, University of Minnesota) is professor of Communication at Missouri State University, Nancy Burrell, (Ph.D, Michigan State University) is professor of Communication at UW-Milwaukee; Andrew William Cole, (MA, University of Wisconsin-Milwaukee), Emily Cramer, (MA, DePaul University), Keith Dilbeck, (MA, Bangkok University), Nathanael England, (MA, Maranatha Baptist Graduate School of Theology), Jennifer Morey Hawkins, (MA, University of Wisconsin-Milwaukee), Rebecca Mullane, (MA, University of Wisconsin-Milwaukee) is a doctoral student in the Department of Communication at UW-Milwaukee, Kim Omachinski, (MA, University of Wisconsin-Milwaukee), Kikuko Omori, (MA, University of Kansas), Deborah DeCloedt-Pincon, (MA, University of Wisconsin-Milwaukee), Angela Victor, (MA, Lakeland College), Kara L. Willes, (MBA, University of Wisconsin-Oshkosh), Anna Nicole Zmyslinski (MS, North Dakota State University) are doctoral students in the Department of Communication at UW-Milwaukee; Melissa Maier, (Ph.D, University of Wisconsin-Milwaukee) is an assistant professor of Communication at Missouri State University.

faculty may have multiple and simultaneous goals to achieve during this evaluation process. The goals involve those set by the institution, as well as those deemed important by the discipline. Trying to provide objective evidence that institutional goals have been achieved and that the program is valuable remains elusive. This investigation examines some of the questions using combined citations from *Google Scholar* to evaluate doctoral department faculty in communication for programs located in the United States.

The largest and perhaps most prestigious report for doctoral programs overall is the National Research Council (NRC, 2010) doctoral program evaluation of more than 5,000 programs across 212 universities in the U.S. The NRC's evaluation examines a large number of potential program details including graduation rate, financial support as well as faculty characteristics. One of the features of the NRC report is the faculty's research productivity. The numbers provide a five-year average of various indicators for faculty on staff in the year 2006 for research publications during the previous five years (2001–2005). Essentially, the data by the time of publication are almost a decade old and provide little reference for the current accomplishments of the faculty. The document functions more as a kind of historical examination of the various disciplines but provides little contemporary value due to the delay in collection and dissemination of publication rates. The changes that occur in any doctoral program during the time frame of 5 to 10 years can be enormous with a program focus and faculty entirely different from the beginning of the evaluation time frame.

Evaluating a program is based either on the fulfillment of internal requirements and expectations or based on a comparative model of how the program does relative to other programs. One set of evaluations is internal to the institution and the other is a comparison to how the department does relative to other units at different institutions. For example, an institution may evaluate programs on the basis of diversity of students or graduation rate. The question of what constitutes an appropriate level of diversity or rate of graduation is determined by the institution. For example, an institution may compare the graduation rate of the Communication program to other doctoral programs or refer to an institutional minimum set of expectations for graduation. Under these conditions, the program is seeking to fulfill or work within a set of institutional guidelines that may not regard disciplinary standards as a primary means of evaluation. Alternatively, the institutional evaluation could be primarily comparative, asking the question of how well the program does relative to all other Communication doctoral programs. Under these conditions, the goal is to provide evidence of how well the program stacks up to national standards for such programs and evidence of the comparative value (a "top ten" or "top twenty" program) serves an important and necessary set of evidence for excellence. Institutional preference is that evaluations or evidence is generated by agencies external to the college/university.

The evaluation of individual faculty remains an important issue at the institutional level for departments and administrators. Personnel decisions involving tenure and promotion typically use both criteria (that must be met for institutional features, as well as a kind of comparative test to what other departments/faculty use as a standard set of expectations for tenure and promotion). The challenge for administrators is to recognize that while the expectations for excellence in teaching, research, and service have some uniform characteristics across disciplines, the unique features and expectations of individual fields require consideration. The expectation for publication/research, for example, can vary both in terms of number of entries as well as type (e.g., articles, books, grants). For faculty engaged in the fine or creative arts, the standards by which one judges or evaluates the work may require articulation and

detailed explanation. Clearly, departmental units vary in their tenure and promotion standards within and between colleges and universities.

The evaluation of departments or units inside a college or across a campus carries the same level of difficulty. The economic evaluations may appear more standard because the cost per credit hour or number of majors/student credit hours can be articulated and evaluated. However, difficulty emerges when there are joint programs, general educational requirements, certifications, and other considerations such as the relative cost of providing that instruction based on faculty salaries and limitations on class size. The general solution or traditional approach by the National Communication Association has been to survey a selected number of scholars (Speech Communication Association, 1996) or attempt to find some method of ascertaining the opinions of persons in the field (Edwards, Watson, & Barker, 1988a, 1988b). Because the number and type of doctoral programs has increased, it is extremely difficult to design a survey/instrument that reflects the variety of Ph.D. programs.

Typically, the method is to ask a person to name the top three or five programs and the accumulative mentions of the particular programs influence its ranking. The term used for this analysis is the examination of the "reputation" or the "highly regarded" nature of the doctoral program. The basis for that regard is unknown or the standard for the evaluation of the program unarticulated. What this means is that two persons could name a program for unrelated reasons; worse, if the two raters compared notes, the raters might entirely disagree on the value of the program when using the same standards. Clearly, using this type of rating is confusing in that there is no real criteria/standard for what constitutes a top program.

One challenge or question that frequently occurs is the articulation of how to evaluate the research across the unit. The issue of ranking individual scholars on the basis of the number of articles published in communication journals has received much attention (see Hickson, Bodon, Turner, 2004; Hickson, Stacks, & Amsbary, 1989; 1992; 1993; Hickson, Stacks, & Bodon, 1999; Hickson, Turner, & Bodon, 2003). The ranking of scholars on the basis of publications does not provide any relative value for those publications. Essentially, each publication is treated as equal in value and adds one to the scholar's score. The term used by the authors is to describe "prolific" scholars that have published a great deal of work in communication journals. This method has been objected to as creating a set of goals and values that run contrary to the goals of the academic missions (Erickson, Fleuriet, & Hosman, 1993; 1996). The creation of "publication junkies" creates the spectre of faculty seeking to publish items without regard to quality and targeting a narrow number of journals within the discipline without regard to enlarging the community or participation in the broad academic landscape (e.g., quantity of publications over quality of publications).

A couple of issues can be raised about this method of evaluation. First, the evaluation does not consider publication outside communication journals. The term, "communication journal" is subject to much dispute given the proliferation of journals and the potential for communication scholars to publish in a variety of journals that contain the term "communication" in the title but are not included (for example, *Political Communication, Journal of Communication and Religion, Health Communication, Journal of Health Communication,* and so forth). The designation of journals specific to the discipline of communication can prove problematic under the best of conditions and misleading under the more optimistic of conditions.

Second, there is no evaluation of the program or institution, just the individual scholar. The focus is typically on the top 25 or top 100 scholars in terms of published productivity but

little information on the value of those published works. Moreover, *the metric should be a combination of prolific writing with some measure of the various publications' impact*.

One method of evaluation is whether faculty have published research considered useful by other scholars. A metric for that examination is the use of citations to that work. One published work considers the relative impact of citations, not by scholar, but by department focused on communication using the *Web of Knowledge* (Allen, Maier, & Grimes, 2012). However, as Levine (2010) suggests the *Web of Knowledge*, and, an alternative, *Google Scholar*, can produce very divergent findings for the same scholar. The *Web of Knowledge* simply incorporates far fewer journals, making the number of citations to any work appreciably smaller. Moreover, the *Web of Knowledge* does not incorporate a large number of journals in the field of communication as well as other journals associated with areas of communication. The result is a far less comprehensive and authoritative set of numbers about the level of citations to any particular work. This study examines *the question of combined departmental citations* and the difference using *Google Scholar to generate a relative rank ordering of the doctoral departments in communication in the United States*.

The question of goals for a program should be important and require far more articulation than can be considered in this manuscript. Barnett, Danowski, Feeley, and Stalker (2010) believe that placement of doctoral students in centrally-located doctoral programs should represent the goal of a doctoral program. Clearly, one goal of any doctoral program is to produce graduates that are well prepared to conduct research and teach at advanced levels. One assessment of any doctoral program can be the degree to which graduates of the program work in other doctoral programs. This manuscript will not address the "centrality" question since the focus is not on what programs are central, but rather *what programs in establishing a research presence that can be characterized as influential*.

The particular analysis by Barnett, Danowski, Feeley, and Stalker (2010) examines the hiring patterns to indicate quality of the doctoral program. The problem with the network analysis is the difficulty of establishing a baseline or method of finding how to evaluate faculty that are hired. Hiring practices may indicate centrality of hiring or a preference by University A for applicants from a set of universities but does not provide evidence of the effectiveness or desirability of those candidates. The real evaluation comes some time after the hiring, during tenure and promotion decisions, and in some cases more than two decades later, assuming the faculty member remains at the institution. The challenge becomes to document the contribution of the faculty member that was hired. One method is to examine *the career citations to the work of the scholar and determine whether some doctoral programs have consistently produced such scholars*.

## Methods

### Identifying Faculty in Departments

The website of the National Communication Association was used to identify doctoral programs in the discipline of Communication. Programs that were entirely Mass Communication, Journalism, or dealing with performance or writing were not included in this analysis. No university could provide more than one program for inclusion in this analysis. Researchers identified sixty-one doctoral programs in communication that were included in this analysis, some of which offered multiple degrees, were interdisciplinary degrees, or participated in various institutes or additional programs.

Individual faculty members were identified on the web pages from their respective

departments using the official institutional sites that listed faculty as of July 2012. Faculty were not included if they had primarily administrative assignments outside the department (Dean, Provost, President,and so forth). Faculty with courtesy appointments, with multiple departmental memberships where the primary focus was not communication, were on leave, *emeriti*, or non-full-time status were excluded. Persons listed as instructors, adjunct faculty, or with visiting appointments were not included in the list of faculty assigned to the department. Some departments included areas of doctoral study that are not part of this report (film, journalism) and faculty that were primarily identified and assigned to those areas were not included. A complete list of faculty inclusion is available from the first author.[1]

In addition to membership in a particular department, the institution granting the doctoral degree for the particular faculty member was recorded. Most departmental web sites provide that information or it is listed on the *vita* or other searchable materials. *Dissertation Abstracts International* was helpful in identifying the source of the degree-granting institution for faculty. If a faculty member did not earn a doctorate (i.e., MFA or JD), then the institution was not recorded. If the degree listed was not a doctoral degree from a Communication program, the degree was not included. The goal of this analysis was to link the alumni of communication degrees to particular programs so degrees outside of communication other than Ph.D. were not considered applicable for that portion linking to alumni. The faculty member was used for the combined departmental analysis.

## Accumulating Data from *Google Scholar*

Data for this study were obtained from *Google Scholar*. *Google scholar* is a service that permits the entry of the name of a scholar, and a search conducted to identify all of the articles published by the scholar, as well as entries associated with that scholar. Articles identified by author list how many times the material has been cited by other works. Each scholar's name was then entered and articles published with citations to that work identified. If a publication existed without a citation, that work was not included in the analysis, only works that had been cited *at least once*, according to *Google Scholar,* were included in the analysis.

If a public research *profile* had been established for a scholar, that profile was used as the basis for the analysis. A profile is specific to the scholar and automatically identifies all published works of that person in the database. Then the articles in the Google Scholar Profile for an individual scholar are listed in order of frequency of citation with the most frequently cited manuscript first, then the publication with the next most frequent citations listed, and so on, until the publications without citations are listed. Thus, establishing a public research profile simplifies the task because the work is directly tied to the particular scholar that reduces the probability of missing any work.

If a public research profile is not established, then the articles authored/coauthored by the scholar were identified and the citations to the work added with all other works that have citations. The result is a number of publications with a number of total citations. When available, the *vita* of the scholar was consulted in order to identify publications relevant to the scholar.

For each department, all members of the faculty identified had the publications and citations calculated, and, then a total summed for each department, combining all the estimates for each faculty member. In short, the calculation provides a number of citations that represent

---

[1] Correspondence for this should be addressed to Dr. Mike R. Allen, University of Wisconsin-Milwaukee, mikealle@uwm.edu.

the departmental score.

## Statistical Analysis

The statistical analysis on this project was relatively simple and straightforward. First, there was a ranking of the 61 doctoral programs in communication based on the number of combined citations to research measured by *Google Scholar*. This is reported along with the number of publications that received citations and the number of faculty listed in the department used to generate that score.

The second analysis simply identified the institution from which faculty members listed at doctoral institutions earned their doctoral degrees; the calculation is the total number of persons listed at doctoral programs. For this analysis *only the top 20 programs*, measured in terms of contributing faculty to other doctoral programs, were counted; additionally, the number of citations to those scholars were combined. This created a score for the citations for faculty that are alumni of institutions working at doctoral programs. This sum provided an estimate of the citations generated by particular alumni of institutions that is rank ordered and appears later in Table 2.

## Results

### Ranking of Doctoral Programs Based on *Google Scholar* Citations

The rank order demonstrates that the faculty with the greatest number of combined citations is Ohio State (51,688 citations) followed by Pennsylvania (Annenberg School) with 39,167 citations, then Illinois-Urbana, Stanford, UC-Santa Barbara, Michigan State, Arizona State, Washington, USC, and Northwestern to round out the top ten (see Table 1). When comparing this top ten using *Google Scholar* to the earlier ranking of citations using *Web of Knowledge* (Allen, Maier, & Grimes, 2012), the list of *Pennsylvania, UC-Santa Barbara, Michigan State, Ohio State, Illinois-Urbana, USC, Pennsylvania State, Michigan, Iowa,* and *Texas*, demonstrates that six institutions are the same in the two lists. For the most part, the two lists present a great deal of overlap.

Consideration of the top 20 institutions when comparing the two lists demonstrates that the following institutions appear in both lists (Ohio State, Pennsylvania, Illinois-Urbana, UC-Santa Barbara, Michigan State, Arizona State, USC, Northwestern, Colorado, Texas, Pennsylvania State, Iowa, and UW-Milwaukee). Essentially, 13 of the institutions appear on both lists, indicating a great deal of overlap in the ranking of institutions by the two systems. What should be remembered, however, is that the date of the comparison is about two years apart and several changes in personnel have occurred at the institutions that would impact on the comparison of system rankings.

A comparison of the actual number of citations indicates a much greater number of citations for *Google Scholar*, unsurprising since *Web of Knowledge* is more restrictive in the number of journals and other sources included as a basis for citations. For example, the Ohio State total of 51,668 in *Google Scholar* is far more than 6,660 reported in *Web of Knowledge*. Similarly, the Pennsylvania total of 19,116 in *Web of Knowledge* is less than half of the *Google Scholar* total of 39,167. To appear in the top 20 institutions for citations required 2,129 citations for *Web of Knowledge* but 9,406 citations using *Google Scholar*. Part of the reason for more citations, particularly for communication scholars is that *Web of Knowledge* examines only a fraction of communication journals whereas *Google Scholar* includes most of what scholars would consider the primary communication journals.

**Table 1**
Rank Order of Doctoral Department Faculty Contributions

| Institution | Ranking | Number Citations | Number of Publications | Number Faculty | Faculty Years | Average (rank) Number/Years |
|---|---|---|---|---|---|---|
| Ohio State | 1 | 51,688 | 947 | 26 | 410 | 4.84(10) |
| Pennsylvania | 2 | 39,167 | 529 | 15 | 371 | 7.03 (4) |
| Illinois-Urbana | 3 | 30,548 | 452 | 19 | 350 | 4.59(12) |
| UC-Santa Barbara | 4 | 27,496 | 713 | 16 | 373 | 4.61(11) |
| Michigan State | 5 | 27,298 | 607 | 16 | 301 | 5.67(9) |
| Arizona State | 6 | 25,682 | 1147 | 20 | 446 | 2.88(26) |
| Stanford | 7 | 23,217 | 391 | 5 | 85 | 54.62(1) |
| Washington | 8 | 20,668 | 383 | 18 | 389 | 2.95(22) |
| USC | 9 | 19,988 | 469 | 26 | 523 | 1.47(36) |
| Northwestern | 10 | 16,577 | 453 | 15 | 408 | 2.71(30) |
| Colorado | 11 | 16,032 | 522 | 15 | 305 | 3.50(17) |
| Texas | 12 | 15,189 | 458 | 20 | 336 | 2.26(32) |
| S. Florida | 13 | 14,868 | 350 | 14 | 293 | 3.62(16) |
| Penn State | 14 | 12,762 | 336 | 13 | 319 | 3.08(21) |
| N. Carolina | 15 | 12,586 | 290 | 22 | 424 | 1.35(38) |
| Connecticut | 16 | 11,770 | 286 | 13 | 228 | 3.97(14) |
| Iowa | 17 | 11,200 | 690 | 17 | 226 | 2.91(25) |
| Massachusetts | 18 | 11,161 | 361 | 11 | 320 | 3.17(19) |
| Rutgers | 19 | 11,015 | 251 | 11 | 171 | 5.85(8) |
| UW-Milwaukee | 20 | 9,406 | 373 | 14 | 242 | 2.78(28) |
| Ohio | 21 | 9,286 | 485 | 20 | 356 | 1.30(40) |
| Oklahoma | 22 | 8,791 | 260 | 16 | 202 | 2.72(29) |
| Kentucky | 23 | 8,248 | 528 | 17 | 214 | 2.26(32) |
| West Virginia | 24 | 8,202 | 369 | 14 | 221 | 2.65(31) |
| Illinois-Chicago | 25 | 7,960 | 195 | 9 | 144 | 6.14(7) |
| Purdue | 26 | 7,911 | 374 | 18 | 284 | 1.54(55) |
| Minnesota | 27 | 7,735 | 299 | 15 | 383 | 1.35(38) |
| Temple | 28 | 7,713 | 404 | 35 | 626 | 0.35(59) |
| Utah | 29 | 6,891 | 553 | 28 | 532 | 0.46(57) |
| Kent State | 30 | 6,382 | 188 | 11 | 208 | 2.79(27) |
| George Mason | 31 | 6,255 | 427 | 21 | 392 | 0.75(47) |
| UC-San Diego | 32 | 6,073 | 98 | 5 | 86 | 14.12(2) |
| Georgia | 33 | 5,850 | 263 | 11 | 181 | 2.93(24) |
| Maryland | 34 | 5,815 | 556 | 15 | 353 | 1.09(41) |
| Kansas | 35 | 5,704 | 196 | 15 | 269 | 1.41(37) |
| SUNY-Albany | 36 | 5,140 | 197 | 8 | 143 | 4.49(13) |
| N.C. State | 37 | 4,753 | 255 | 24 | 358 | 0.56(53) |
| UW-Madison | 38 | 4,478 | 196 | 11 | 138 | 2.94(23) |
| Indiana | 39 | 4,466 | 193 | 16 | 371 | 0.75(47) |
| SUNY-Buffalo | 40 | 4,093 | 207 | 11 | 172 | 2.16(34) |
| New Mexico | 42 | 4,069 | 9 | 9 | 120 | 3.76(15) |
| Missouri | 42 | 3,449 | 132 | 11 | 100 | 3.13(20) |
| Washington State | 43 | 3,349 | 7 | 7 | 75 | 6.37(6) |
| American | 44 | 3,270 | 62 | 4 | 105 | 7.78(3) |
| Miami | 45 | 3,145 | 143 | 45 | 98 | 0.71(49) |
| Florida State | 46 | 3,109 | 148 | 17 | 311 | 0.58(52) |
| Nebraska | 47 | 2,900 | 131 | 8 | 110 | 3.29(18) |
| Georgia State | 48 | 2,795 | 226 | 20 | 228 | 0.61(51) |
| Louisiana State | 49 | 2,827 | 347 | 12 | 222 | 1.06(45) |
| Wayne State | 50 | 2,781 | 89 | 14 | 183 | 1.08(42) |

Table 1, Cont'd.

| Institution | Ranking | Number Citations | Number of Publications | Number Faculty | Faculty Years | Average (rank) Number/Years |
|---|---|---|---|---|---|---|
| S. Mississippi | 51 | 2,581 | 156 | 11 | 252 | 0.93(46) |
| Oregon | 52 | 2,464 | 220 | 22 | 347 | 0.22(60) |
| Pittsburgh | 53 | 2,415 | 143 | 12 | 497 | 0.40(58) |
| Howard | 54 | 1,990 | 116 | 8 | 230 | 1.08(42) |
| S. Illinois | 55 | 1,494 | 125 | 14 | 211 | 0.50(56) |
| Arizona | 56 | 1,231 | 62 | 4 | 44 | 6.99(5) |
| Tennessee | 57 | 672 | 88 | 8 | 81 | 1.03(45) |
| Denver | 58 | 629 | 101 | 10 | 117 | 0.53(56) |
| North Dakota State | 59 | 592 | 20 | 7 | 162 | 0.52(55) |
| Memphis | 60 | 355 | 74 | 10 | 150 | 0.64(50) |
| Regents | 61 | 3 | 8 | 3 | 55 | 0.02(61) |

Another consistency factor is how the lowest 20 institutions listings compare in both Web of Knowledge and Google Scholar rankings. Nine institutions appear in both sets of rankings, but there are substantial increases in the number of citations to the works of those scholars reported using Google Scholar as a means to generate citation counts.

What the results, taken as a whole, indicate is that both *Web of Knowledge* and *Google Scholar* generate largely similar results but are not identical in terms of the rank ordering. The results imply that institutions doing well or poorly on one set of indices do similarly as well on the other set of citation generation. Care must be taken, since the citation counts are different in magnitude and the nature of what is included and excluded as a basis for a citation source thus impacting the number of citations. In the case of the top rated institutions, the failure to include a particular journal may not provide much impact to the relative total citation numbers when compared to other institutions. However, the failure to include a set of journals may play a significant role in changing the rank order of programs at the lower end because adding a few citations (in the case of *Web of Knowledge*, 50 citations) may change the relative ranking at a large number of institutions.

One factor of consideration was the adjustment provided for both the number of scholars in a department and the relative age of the faculty. In Table 1, the last columns provide for the number of faculty, the combined number of years since the granting of the doctoral degree for each faculty member. The very last column is calculated by taking the total number of citations and then dividing by the number of faculty and the number of combined faculty years. What this provides is an estimate of the per year citation for each faculty member in that department. The number in the parenthesis is the ranking using that system.

Stanford, using that system, is far ahead of other programs (54.62 citations per faculty/year). The Stanford value is very impressive when compared to the number two program using this system, UC-San Diego (14.12 citations per faculty/year). Only four programs (Ohio State, Penn, Michigan State, and Stanford) appear in both top ten systems (combined total citations or average combined citations adjusted for size/longevity). Joining those four programs in the top 10 are: UC-San Diego, American University, Washington State, Arizona, Rutgers, Illinois-Chicago. The numbers indicate that what initially may look like impressive departmental totals may reflect a large department with many older faculty that collectively have generated a great number of citations but whose individual contributions are, on average, not as great as other doctoral programs. Conversely, modest combined totals may not fully reflect the per faculty member contribution, particularly considering the longevity of the departmental faculty.

### Evaluating the Alumni of Doctoral Programs

**Number of Alumni Teaching in Doctoral Programs**. The results indicate that Illinois-Urbana contributed 50 graduates to teach in doctoral programs in communication. UW-Madison contributed 48 graduates, slightly more than Texas which contributed a total of 46. The complete ranking for those institutions contributing at least 10 graduates to doctoral programs appear in Table 2 and a full set of results is available from the first author. Programs that continue to maintain excellence over a longer period of time would have the reputation to build up numbers of alumni working at doctoral programs and maintaining research centrality and importance. The comparison of the top 10 programs contributing alumni to doctoral programs and the top 10 programs based on combined faculty citations provides four institutions in common (Illinois-Urbana, Michigan State, USC, and Northwestern).

**Citations by Alumni of a Department.** Examining the top contributing programs on the basis of citations generates some interesting findings. For example, Michigan State University graduates have generated the highest number of citations to publication. The top institutions are not surprising because of the relationship to number of alumni. However, Stanford, in this group, has a relatively low number of alumni, but a high number of combined citations, indicating a group that has produced important contributions on a per person basis.

Citation counts take years to build and often are either the result of a few very well-cited works or contributions spread across a number of works that are all well cited. The question, unanswered in this article, is the *degree* to which a particular doctoral program's faculty has contributed to the success, measured in terms of citations, to the individual scholar. That is beyond the scope of this investigation; the presumption or mythology is that the faculty should be viewed as responsible or at least contributing to the formation of the scholar and in a sense claim a kind of responsibility for the achievement.

### Examining Consistency across Measures

One aspect of this analysis is the question about the relative consistency or lack of consistency across essentially the three measurements provided: (1) departmental faculty total citations, (2) number of alumni working in doctoral departments, and (3) total citations by alumni. The optimal validation would involve a degree of consistency across the three measures that would indicate a well-cited faculty contributing alumni to doctoral programs that in turn produce work that receives a large number of citations. If one examines the top 10 across all dimensions, the following institutions achieve that: Illinois-Urbana, Michigan State, USC, and Northwestern.

What this indicates is that the current faculty have research records that have generated a great deal of citations, that the historical record indicates that other doctoral programs have hired graduates of that program, and finally, that the alumni have generated research that has collectively received a great deal of citations. In part, this indicates both an historical tradition as well as an ongoing sense of continuation of that effort sustained over decades of effort by the faculty and alumni to build that record.

Table 3 provides a listing of the top 25 faculty based on combined citations using *Google Scholar* to their works. The top scholar with the most citations is Marshal Scott Poole, currently teaching at the University of Illinois-Urbana. Not surprisingly, many of the top programs have at least one member on the top 25 list and many of these individuals are alumni of the list of doctoral programs contributing the most number and productive of scholars.

The impact of Poole's number of citations is such that he accounts for about 50% of the

**Table 2**
Considering Graduates of Doctoral Programs-Top 26

| Institution | Rank Graduates | Number of Graduates | Rank Citation | Citation Total |
|---|---|---|---|---|
| Illinois-Urbana | 1 | 50 | 4 | 34,376 |
| UW-Madison | 2 | 48 | 2 | 51,768 |
| Texas | 3 | 45 | 7 | 21,436 |
| Northwestern | 4 | 43 | 9 | 18,068 |
| Michigan State | 5 | 40 | 1 | 56,359 |
| USC | 6 | 37 | 6 | 22,867 |
| Penn State | 7 | 29 | 20 | 7,474 |
| Minnesota | 8 | 28 | 14 | 13,567 |
| Iowa | 9 | 27 | 10 | 16,504 |
| Purdue | 9 | 27 | 8 | 19,924 |
| Washington | 11 | 26 | 12 | 15,114 |
| Kansas | 12 | 23 | 17 | 10,297 |
| Indiana | 13 | 22 | 24 | 3,095 |
| Ohio State | 14 | 19 | 13 | 13,682 |
| Penn | 15 | 18 | 16 | 10,589 |
| N. Carolina | 16 | 17 | 27 | 2,350 |
| Arizona State | 17 | 16 | 21 | 4,119 |
| Michigan | 17 | 16 | 15 | 13,290 |
| Arizona | 19 | 15 | 5 | 25,220 |
| Georgia | 20 | 14 | 22 | 4,081 |
| Stanford | 20 | 14 | 3 | 35,124 |
| Oklahoma | 22 | 13 | 28 | 1,933 |
| Ohio | 23 | 12 | 18 | 9,678 |
| Cornell | 24 | 11 | 11 | 15,654 |
| Temple | 24 | 11 | 26 | 2,519 |
| Nebraska | 26 | 10 | 25 | 2,639 |
| Pittsburgh | 26 | 10 | 19 | 8,263 |
| S. Illinois | 26 | 10 | 23 | 3,186 |

total citations for the University of Illinois-Urbana faculty. If he were his own doctoral program, Poole's ranking would place him 13th on the doctoral department list. What these numbers indicate is the potential impact that a change in one scholar can have on the perception or evaluation using this metric of accomplishment when applied to a department. Given that NRC data, evaluating doctoral programs, uses citations as a factor, this factor can be substantially altered by the addition or deletion of one person.

If one combines all the citations for all faculty teaching at doctoral institutions in Communication, the combined number of citations is 587,215. The top 25 scholars combine for 186,280 or 31.7% of the total. In short, 25 scholars are responsible for about one-third of the citations in the discipline by faculty at doctoral institutions.

## Discussion

The results of this study provide a rank ordering of academic departments offering doctoral degrees, at least in terms of citations. The ranking provides a basis for considering the level of influence of the faculty in terms of generating research considered useful or foundational for other scholars to incorporate in additional research. This level of influence can be thought of as establishing a kind of reputation for the faculty at that doctoral program, particularly among the community of scholars and scholarship of which they are a part. Scholarly communities

**Table 3**
Top Individual Communication Scholars at Doctoral Programs using Google Scholar

| Ranking | Person | Citations | Doctoral Institution | Graduate of | Date |
|---|---|---|---|---|---|
| 1 | Poole | 15,049 | Illinois-Urbana | UW-Madison | 1980 |
| 2 | Bushman | 11,804 | Ohio State | Missouri | 1979 |
| 3 | Krippendorf | 11,704 | Penn | Illinois | 1970 |
| 4 | Nass | 11,181 | Stanford | Princeton | 1986 |
| 5 | Walther | 11,045 | Michigan State | Arizona | 1990 |
| 6 | Rice | 10,937 | UC-Santa Barbara | Stanford | 1982 |
| 7 | Hayes | 8,394 | Ohio State | Cornell | 1996 |
| 8 | Bennett | 7,836 | Washington | Yale | 1974 |
| 9 | Ellis | 7,683 | S. Florida | SUNY-Stony Brook | 1981 |
| 10 | Reeves | 7,418 | Stanford | Michigan State | 1976 |
| 11 | Deetz | 7,090 | Colorado | Ohio | 1973 |
| 12 | Dervin | 6,855 | Ohio State | Michigan State | 1971 |
| 13 | Baxter | 6,698 | Iowa | Oregon | 1975 |
| 14 | Jameison | 6,488 | Penn | UW-Madison | 1972 |
| 15 | Eveland | 5,855 | Ohio State | UW-Madison | 1997 |
| 16 | McChesney | 5,378 | Illinois-Urbana | Washington | 1989 |
| 17 | Grossberg | 5,336 | Illinois-Urbana | Illinois | 1976 |
| 18 | Slater | 5,322 | Ohio State | Stanford | 1988 |
| 19 | Buck | 5,280 | Connecticut | Pittsburgh | 1970 |
| 20 | Allen | 4,931 | UW-Milwaukee | Michigan State | 1987 |
| 21 | Canary | 4,921 | Arizona State | USC | 1983 |
| 22 | Hallin | 4,798 | UC-San Diego | UC-Berkeley | 1980 |
| 23 | Morgan | 4,735 | Massachusetts | Louisiana State | 1980 |
| 24 | Bochner | 4,717 | S. Florida | Louisiana State | 1971 |
| 25 | Mutz | 4,716 | Penn | Stanford | 1988 |

eventually generate a sense of value for the work and scholarship of members, the accumulation of citations over the years and across a set of scholars can provide a crude metric of the reputation for the program in the minds and practices of other scholars.

Similarly, the lack of citations of a program's academic work may indicate the perception of scholarly weakness or lack of centrality about the program in terms of research efforts. What the lack of citations can be interpreted as is a form of lack of popularity or awareness of the work or ideas of the scholars in that program. Considering that all doctoral students seek to generate a dissertation and find a job, the lack of established reputation for the program over the years on the basis of the efforts of the faculty in that program could prove problematic for graduates of that program and the sustainability of that program. Establishing a reputation of consistent excellence in both alumni and faculty performance should serve to increase the perception of the value of that program.

Another goal or basis for evaluation of a doctoral program is the degree to which the alumni of that organization engage in foundational research themselves. Most doctoral programs view the mission of the program as the generation of productive and successful scholars who are contributing to knowledge generation and the field itself. Those scholars that subscribe to the mission of generating scholars for other doctoral programs (Barnett, Danowski, Feeley, & Stalker, 2010) would probably endorse this method of evaluation since the metric attributes value to the training of future scholars. Not only did the alumni find jobs at doctoral programs but once in those programs managed to generate research that was recognized as useful and contributing

to the field at large.

A comparison of the use of *Google Scholar* to *Web of Knowledge* indicates that the number of citations is far larger for *Google Scholar*, reflecting a more complete inclusion of available journals (see Allen, Maier, & Grimes, 2012). The top number of citations using *Web of Knowledge* was for the University of Pennsylvania (19,116) followed by UC-Santa Barbara (7,068). When that is compared to the totals using *Google Scholar*, nine institutions have more total citations then the top institution using *Web of Knowledge*. UC-Santa Barbara using the *Web of Knowledge* would not appear in the top 20 of the analysis using *Google Scholar*. The larger survey of the available journals in social science/humanities provides a clear advantage in terms of inclusion for the analysis using *Google Scholar*.

Comparing the ranking of programs with the 2012 analysis (Allen, Maier, & Grimes, 2012) using *Web of Knowledge* indicates a great deal of agreement. Seven of the top 10 programs are the same when comparing the two analyses and 13 of the top 20 institutions are the same. What this indicates is that most institutions would be rated similarly, regardless of the particular method chosen. However, significant differences may exist in the publication practices or emphases of some departments that would contribute to changes in the rankings for the programs. Identification of the source(s) of this difference, if existing, is important in understanding how the choice of metric can impact the perception of the value of the particular program.

One limitation is that the impact of a single scholar on the ranking can be enormous. For example, a scholar with more than 5,000 citations accumulated across their research can immediately impact the ranking of a department either by leaving or joining a department. The impact of such individual scholars means that the rankings can reflect not necessarily the efforts of the entire program, but instead the contributions of a single scholar. One problematic issue of citation counts is that an article cited by 100 other articles can be counted multiple times for the same institution. For example, a coauthored article that involves two or more persons from the same institution will count 100*number of authors for that institution because each separate author will receive 100 citations. For areas of the discipline like rhetoric where the articles are typically sole-authored will receive a minimum of counts toward the effort. This process or procedure indicates that social scientists will be favored in terms of citation counts because of the probability of co-authorship and the ability to garner more articles with a greater number of citations. The procedure also favors parts of the discipline that are larger in terms of published work (more persons able to cite a particular work) and parts of the discipline with a larger external audience for the research, as well as scholars that publish in journals outside the discipline with larger audiences. An examination of the power ratings of journals in communication reveals that the top journal in communication is usually lower in terms of average citations when compared to top journals in other disciplines. The result is a kind of favoritism or distortion that favors some scholars with particular methodologies or content areas that by their nature provide a better basis for more citations.

The definition of what constitutes a member of the "faculty" could be unnecessarily restrictive. The problem is that every institutional setting is different and with private and public institutions working across the 50 states, the definitions of faculty and assigning membership all differ. While the general terms, "assistant professor," "associate professor", and "professor," are clearly universal, there exists much flexibility for programs to assign, create, and distinguish faculty roles and affiliations in a variety of ways. Not all institutions recognize or elaborate on the various roles or expectations for someone listed on a departmental website.

The question of how accurate the websites depict the actual staff of a program remains an open question. A departmental website may be updated once a year, once a month, or simply ignored for any length of time. Finding and establishing a roster for a given department may be difficult for a particular time period. In some cases, institutions listed faculty that were joining the program in the Fall of 2012 and those faculty were not included because of the restriction of a listing as active when examined in July of 2012. The problems of other changes not reflected in a website may have changed the number or roster of faculty included in the analysis.

The more interesting issue is the split between a program whose current faculty exhibit a great deal of citations but whose graduates do not reflect that value or where the citations of a faculty are low but the graduates demonstrate a great deal of recognized value. One factor is that the alumni may reflect not the current faculty but instead the staff as it existed 20 or more years ago. The real test for whether good faculty (as measured by research citations) really impacts or improves the contributions of that program's alumni is difficult to establish by examining current faculty. The problem with this particular measure of citations is that the accumulation of citations typically takes decades.

An additional consideration is that a scholar might produce one work with a great deal of citations (e.g., 2,000 or more) that provide more than 50% of the total citations in the scholar's career. That work might come early in the career, even as part of the dissertation. The sense of a single work published that made an enormous contribution should be recognized, but the value of the scholar 20 years later is unclear when the work did not provide the basis for an extended program of research recognized as valuable by others.

Citation patterns reflect accumulation of works and articles for the individual scholar that when accumulated provide the basis for the examination of how well the faculty in a program can be considered in terms of accomplishment. But that accomplishment should be viewed in terms of how useful other scholars evaluated the work as seminal or probative in the formulation of their own theories and research programs. In a sense, the value is always put within the context of trying to further the ends of the appropriate research, and is in some ways a very insular and closed system.

The argument that institutions should place graduates at central doctoral programs creates attention and controversy (Barnett, Danowski, Feeley, & Stalker, 2010). Such a view, if seriously communicated to students or prospective students seeking information about the goals of a program provides one form of indoctrination and acculturation into a limited set of values (Erickson, Fleuriet, & Hosman, 1993). The need for a set of more multi-voiced, diverse, and nuanced approaches when considering academic evaluation has been raised (Blair, Brown, & Baxter, 1994). The development of multiple means to evaluate programs and a consideration of how to define success using a variety of metrics represents a serious set of issues to consider.

The focus could be on considering *whether a program achieves a particular goal and attains the fulfillment of a particular criteria rather than a comparative ranking*. The challenge is to move beyond a narrow set of goals to establishing a set of broader objectives that some programs may view differently, depending on the outcomes sought by the institutional forces at work. A ranking system puts programs into direct competition and creates a comparative frame where the view is always examining what other programs are doing to find a way to do this better, rather than asking what function or role is appropriate for this particular program. To put it another way, *the rankings or comparisons only have value if the goals sought by the programs are imbedded in the evaluation*, otherwise the ranking may be very important to some programs and have little value to other programs.

This set of results is dynamic and ongoing, *Google Scholar* counts change each week and faculty composition at institutions is always undergoing revision and change. The university has both the properties of stability and the ongoing impact of constant change in scholarship as more research is conducted and published . There are other metrics that one could use to evaluate and study the academy; the NRC (2010) report provides a whole host of alternative measures and means to evaluate graduate programs and institutions. We welcome the development and implementation of additional metrics to understand and appreciate the achievements of the various programs. The criteria chosen for this report only provide a small representation of potential goals and accomplishments for any program. Instructional and service goals are not addressed in this report and play a vital and important contribution for all academic programs. As other metrics are developed and implemented, a more complete examination and evaluation of programs becomes possible and the choices better defined.

## References

Allen, M., Antos, A., Hample, J.M., Hebl, M., Kulovitz, K., Liang, X., Ogi, M., Zhao, X., & Pederson, J.R. (2009, May). *A method of evaluating the impact of scholars.* Paper presented at the International Communication Association Convention, Chicago, IL.

Allen, M., Maier, M., & Grimes, D. (2012). Evaluating doctoral programs in communication on the basis of citations. *Electronic Journal of Communication, 22,* 14pages, http://www.cios/www/ejc/v22n12toc.htm.

Barnett, G. A., Danowski, J. A., Feeley, T. H., & Stalker, J. (2010). Measuring quality in communication doctoral education using network analysis of faculty-hiring patterns. *Journal of Communication, 60*, 388-411.

Blair, C., Brown, J.R., & Baxter, L.A. (1994). Disciplining the feminine. *Quarterly Journal of Speech, 80,* 383-409.

Edwards, R., Watson, K., & Barker, L. (1988a). A rating of doctoral programs in selected areas of speech communication: 1987-1988. *Association for Communication Administration Bulletin, 66,* 23-36.

Edwards, R., Watson, K., & Barker, L. (1988b). Highly regarded doctoral programs in selected areas of communication: 1987. *Communication Education, 37,* 263-269.

Erickson, K.V., Fleuriet, C.A., & Hosman, L.A. (1993). Prolific publishing: Professional and administrative concerns. *Southern Communication Journal, 58,* 328-338.

Erickson, K.V., Fleuriet, C.A., & Hosman, L.A. (1996). Scholars and pub-junkies: Perspectives on academic publishing. *Southern Communication Journal, 61,* 271-276.

Funkhouser, E. (1989). Problems with the use of citation indexes in communication research. *Association for Communication Administration Bulletin, 69,* 79-83.

Hickson, M. III., Bodon, J., & Turner, J. (2004). Research productivity in communication: An analysis, 1915-2001. *Communication Quarterly, 52,*323-333.

Hickson, M. III., Stacks, D.W., & Amsbary, J.H. (1989). An analysis of prolific scholarship in speech communication, 1915-1985: Toward a yardstick for measuring research productivity. *Communication Education, 38,* 230-236.

Hickson, M. III., Stacks, D.W., & Amsbary, J.H. (1992). Active prolific female scholars in communication: An analysis of research productivity, II. *Communication Quarterly, 40,* 350-356.

Hickson, M. III., Stacks, D.W., & Amsbary, J.H. (1993). Active prolific scholars in communication studies: Analysis of research productivity, II. *Communication Education, 42,* 224-233.

Hickson, M. III., Stacks, D.W., & Bodon, J. (1999). The status of research productivity in communication, 1915-1995. *Communication Monographs, 66,* 178-197.

Hickson, M. III., Turner, J., & Bodon J. (2003). Research productivity in communication: An analysis, 1996-2001. *Communication Research Reports, 20,* 308-319.

Levine, T. (2010). Rankings and trends in citation patterns of communication journals. *Communication Education, 59*, 41-51.

National Research Council. (2012). *A Data-based Assessment of Research-Doctorate Programs In the United States (2011).* Retrieved from www.nap.edu/rdp October 28, 2012.

Speech Communication Association. (1996). *A study of reputations of doctoral programs in communication.* Annandale, VA: Speech Communication Association.