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The Impact of Library Support on Education Faculty Research Productivity: An Exploratory Study

CHRISTOPHER V. HOLLISTER AND ROBERT SCHROEDER

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Productivity: An Exploratory Study**

Christopher V. Hollister and Robert Schroeder

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1 **The Impact of Library Support on Education**
2 **Faculty Research Productivity: An Exploratory**
3 **Study**

Q1

4 CHRISTOPHER V. HOLLISTER
5 *University at Buffalo, State University of New York, Buffalo, New York*

6 ROBERT SCHROEDER
7 *Portland State University, Portland, Oregon*

8 *The authors surveyed college and university faculty members in the*
9 *field of professional education to gauge their perceptions pertain-*
10 *ing to the impact of library services on their research. The purpose*
11 *was to illuminate faculty perceptions in a postsecondary education*
12 *environment that emphasizes research productivity and requires*
13 *libraries to provide ever more compelling evidence of their institu-*
14 *tional value. Survey results showed that faculty members continue*
15 *to rely on traditional discovery and collections-based library ser-*
16 *vices, but that additional support for grant activity, data manage-*
17 *ment, intellectual property management, and bibliometric analysis*
18 *is needed. Implications for transforming library research support*
19 *are discussed, and areas for further study are proposed.*

20 *KEYWORDS* *faculty research, library support, research partner-*
21 *ships*

22 INTRODUCTION

23 The need for academic libraries to demonstrate their institutional value is
24 a given in the current postsecondary education environment; some in the
25 library field would qualify this need as an existential imperative. The ques-
26 tion, then, is how to effectively prove that value. The influential report
27 *The Value of Academic Libraries* provided a foundation for demonstrat-
28 ing value in terms of published evidence, suggestions for next steps, and
29 forming a relative research agenda (Oakleaf 2010). The report also included

© Christopher V. Hollister and Robert Schroeder
Address correspondence to Christopher V. Hollister, Education Librarian, 524 Lockwood
Memorial Library, University at Buffalo, Buffalo, NY 14260-2200. E-mail: cvh2@buffalo.edu

Q2

30 contextual discussion of trends in the academy that cannot be overempha-
31 sized: namely, the financial pressures that result in rigid, data-driven bud-
32 getary decision making. As noted by Lynch, Murray-Rust, and Parker (2007),
33 university administrators are unlikely to prioritize the static or diminishing
34 budgets of libraries without clear evidence of their connections to enrollment
35 and measureable student learning outcomes. Also discussed in Oakleaf's re-
36 port is the exigent concern among administrators pertaining to the emergent
37 culture of renewed institutional goals that emphasize research productivity.
38 For the purpose of demonstrating value, this is a particular concern to which
39 libraries would do well to align themselves.

40 From the institutional perspective, it can be argued that research produc-
41 tivity is principally an economic issue. Greater productivity characteristically
42 equates to successful external funding; it also weighs significantly in terms of
43 educational rankings, which, in turn, have an impact on student enrollment
44 and faculty recruitment. Research productivity can also be viewed in part
45 to be an economic issue for individual faculty because it correlates directly
46 with professional advancement and job security. Furthermore, many faculty
47 members have intrinsic and aesthetic motivations for conducting research.
48 Together, all these systemic and personal motivators are the basis for what
49 the authors of this article propose: Establishing the role of the library as an
50 essential partner in the research enterprise is a compelling demonstration of
51 institutional value.

52 On the surface, what the authors propose is not new. Others have effec-
53 tively argued for a dramatic realignment of library services and, more specifi-
54 cally, the targeted recasting of subject and liaison librarians' roles (Kirchner
55 2009; Goetsch 2008; Pinfield 2001). Some investigators have developed struc-
56 tures, such as publication and grant analyses, for linking collection-based li-
57 brary activity to faculty output (Monroe-Gulick, Currie, and Weller 2014; Poll
58 and Payne 2006). Still, these arguments and structures are mainly confined
59 to the silos of library discourse. The purpose of this exploratory study was to
60 illuminate the perceptions of faculty concerning the impact of library support
61 on their research productivity. The working hypothesis was a simple one:
62 Faculty perceptions are powerful, independent indicators of how relevant
63 library services are to an institution's research enterprise; these indicators
64 can and should be used to improve professional practice, build productive
65 partnerships, and exhibit institutional value. Accordingly, the authors investi-
66 gated what constitutes research productivity among faculty in different types
67 of institutions, the varying levels of importance attributed to categories of
68 research productivity, and the perceived impact of library support.

69

LITERATURE REVIEW

70 Evolution of Library Services

71 Traditional library support for faculty research has been based primarily on
72 collection development and discovery services (Aukland 2012; Oakleaf 2010;

73 Case 2008). Reviewing past discussions in the literature, Grover and Hale
74 (1988) were among the early scholars to emphasize the need for librarians
75 to move beyond traditional levels of service, and to assume more proactive
76 roles in faculty research. The authors contended that faculty researchers
77 are often reliant upon networks of colleagues whom they perceive to have
78 valuable disciplinary knowledge, and that librarians should endeavor to be
79 part of those networks by understanding and anticipating the researchers'
80 patterns. Forecasting the changes to come, the authors reasoned that "the
81 proliferation of information associated with the information age may require
82 a more assertive level of service" (9).

83 Since the publication of Grover and Hale's paper, academic libraries
84 have undertaken major shifts to facilitate the transition to a digital research
85 environment. This has had the effect of making the library and its services
86 "virtually invisible to many faculty" (Corrall, Kennan, and Afzal 2013, 637),
87 who now perceive the library's role as less relevant to researchers and "more
88 geared to supporting teaching and learning" (Bent, Gannon-Leary, and Webb
89 2007, 82). As evidence of this, Schonfeld and Housewright (2010) surveyed
90 faculty at several postsecondary institutions concerning their attitudes toward
91 the transition to a digital research environment. Their findings suggest that
92 the availability of today's online collections and tools is making academic
93 libraries increasingly "disintermediated from the discovery process, risking
94 irrelevance in one of its core functional areas" (2). Law's (2010) assertions
95 concerning the perceived role of librarians are more blunt: "Librarians are
96 much less clearly partners in the academic enterprise and much more a
97 provider of services in an increasingly hierarchical relationship characterized
98 by the division of university staff into 'academic' and the very pejorative
99 'non-academic'" (192).

100 Notwithstanding these characterizations, Case (2008) maintained that
101 the digital research environment solidifies the academic library an essential
102 partner in the creation of new knowledge by virtue of its expertise in access,
103 preservation, online systems development, and digitization. Case argued that
104 this expertise "provides librarians with the opportunity to engage directly
105 with faculty in the research, teaching, and professional activities in a way
106 qualitatively different from and rarely possible before" (142). Building on
107 this, Monroe-Gulick, O'Brien, and White (2013) stressed that "The idea of
108 being a 'partner' in research rather than a 'supporter' of research is an area of
109 librarianship that needs further exploration and emphasis" (384). Still, there
110 is a lack of published research on library support for faculty researchers; the
111 current literature is mainly focused on support services at individual libraries
112 or on the future aligning of libraries with researchers (Corrall, Kennan, and
113 Afzal 2013; Wiklund and Voog 2013).

114 It is also noteworthy that transformations in the system of scholarly com-
115 munication favor the library as an active agent in ways that are pertinent to
116 the present discussion. Moving beyond traditional collections-based support,
117 the library partnership in faculty research includes leadership in the area of

118 open access, expertise in alternative citation metrics, and experimentation in
119 new publishing enterprises. As argued by Budd (2012), the library is an inte-
120 gral part of the new scholarly communication environment in which faculty
121 researchers must operate.

122 Economic Pressures

123 During the last two decades, academic libraries have embraced models of
124 demonstrating their value that are mainly focused on the student learning;
125 considerable energies have been devoted to the areas of information liter-
126 acy (Saunders 2011) and embedded librarianship (Carlson and Kneale 2011).
127 During the same time, many colleges and universities renewed their institu-
128 tional goals, emphasizing the increased importance of research productivity
129 (Budd 2006). This shift has been driven by changes in government pol-
130 icy in relation to the funding of research institutions and to an emergent
131 culture of assessment and accountability in higher education (Geuna and
132 Matrin 2003; Drummond and Wartho 2009). Accordingly, the professional
133 discourse has recently begun to address issues of library support for faculty
134 research productivity in the context of many industrialized countries (Raju
135 and Schoombee 2013). The perceived pressures of globalization have caused
136 the governments of many countries to use their university research systems
137 to drive strategic economic growth. As a result, research productivity analyt-
138 ics are playing a large role in the funding of national universities (Corrall,
139 Kennan, and Afzal 2013; O'Brien 2010). In the United Kingdom, for instance,
140 the Research Excellence Framework (formerly the Research Assessment Ex-
141 ercise) is used to allocate government funding for research. Similarly, the
142 Australian government used the Research Quality Framework (RQF) and the
143 Excellence Research for Australia (ERA) as instruments to determine funding
144 (Butler 2007; Drummond and Wartho 2009). In response, librarians in the
145 United Kingdom and Australia have moved quickly to support their faculty
146 and universities with robust bibliometric programs and other analytics initia-
147 tives. Fortunately, this shortsighted view of funding university research has
148 not gone uncontested (Boulton and Lucas 2008); still, it is the reality faced
149 by many of today's academics.

150 Research Productivity

151 In its most basic form, research productivity is “the ratio of production out-
152 put to what is required to produce it” (Dickeson 2013, 76). However, as
153 Dickeson explains, “What passes for research outputs at many institutions,
154 notwithstanding their missions, is sometimes scant and occasionally laugh-
155 able” (78). For this reason, the Oakleaf (2010) report, based on a review
156 of the literature, provides a clearer picture of what constitutes standard

TABLE 1 Alignment of Faculty Research Process Models to Information Literacy Standards

Q5

Information Literacy Standards for Higher Education* (ACRL 2000)	Information Search Process (Kuhlthau 2004)	Research Process (Wiklund and Voog 2013)	Research Life Cycle (Raju and Schoombee 2013)
Information need (1)	Initiation	Start research group	Prepare
Access information(2)	Selection	Collect material	Gather
Evaluate information(3)	Exploration		
Ethics and information (5)	Formulation		
	Collection		
Uses of information (4)	Search closure	Process/analyze/write	Create
Ethics and information (5)		Communicate results & make data accessible	Share
			Preserve Measure (impact)

*ACRL Information Literacy Standard numbers noted in parentheses.

157 research productivity: books, book chapters, journal articles, grant funding,
 158 conference presentations, juried exhibits, professional awards, patents, and
 159 consultancy work. Furthermore, Kroll and Forsman (2010), based on faculty
 160 interviews at several universities, make clear what library tools and services
 161 faculty value, and, in particular, where they experience unmet needs for
 162 their research. To this point, the authors of the present study were able to
 163 show that library support for faculty should be expanded beyond the pa-
 164 rameters of current information literacy models, which are mainly designed
 165 to address student learning (see Table 1). As shown in Table 1, the authors
 166 used the Association of College and Research Libraries' (ACRL) ubiquitous
 167 Information Literacy Competency Standards for Higher Education (2000) and
 168 Kuhlthau's highly cited Information Search Process (2004) to show the need
 169 for new areas of faculty research support.

170 As argued by Bourg, Coleman, and Erway (2009), librarians must be
 171 knowledgeable about new modes of publication and online research; faculty
 172 frustrations with facets of these modes will open up new roles for traditional
 173 instruction and liaison librarians. These changes will create opportunities for
 174 librarians who are willing to retool and reorganize their services to accommo-
 175 date areas such as scholarly publishing and data preservation. Accordingly,
 176 Wiklund and Voog (2013) created a model for their investigation of faculty
 177 productivity that moved to incorporate new facets of research. Their four-
 178 part model included the following elements of faculty research: starting a
 179 research group; collecting materials; processing, analyzing, and writing; and
 180 communicating results and making data accessible. At the same time, Raju

181 and Schoombee (2013) independently developed a slightly more robust Re-
182 search Life Cycle model, which included measurement and impact—an area
183 that uniquely aligns with faculty needs.

184 Faculty Perceptions

185 Despite the advantages of today's online discovery tools, Kroll and
186 Forsman (2010) showed that faculty researchers struggle with modern re-
187 search processes such as grant activity, data management, intellectual prop-
188 erty management, and bibliometric analysis; as shown by Corral, Kennan,
189 and Afzal (2013), these are among the core emerging trends in library support
190 for research. However, as Kroll and Forsman (2010) wrote, "Researchers do
191 not realize what expertise librarians have to offer their users, are uninformed
192 about services offered, and have little idea what the library might do in the
193 future" (18). This is confirmed by Brown and Tucker (2013), who found
194 that faculty members rate library support as an important element in their
195 research productivity, but only in "functions related to buying or providing
196 access to resources" (283).

197 The Present Study

198 The present study is merited by virtue of the nexus of factors presented in
199 this literature review. Stated in general terms, those factors are as follows:

- 200 • The increased pressures on faculty to produce research, and their need of
201 relevant support.
- 202 • The increased pressures on the academic library to provide relevant sup-
203 port, and the opportunity to demonstrate institutional value by doing so.
- 204 • The apparent disconnect between faculty and the library.
- 205 • The benefits that both parties can derive from a strategic research partner-
206 ship.

207 The authors of this article contend that an exploration of faculty percep-
208 tions in this area represents a gap in the professional literature: specifically,
209 faculty perceptions of what constitutes research productivity, the varying lev-
210 els of importance attributed research productivity, and the relative impact of
211 library support.

212

METHOD

213 The authors created a 10-question survey instrument, based on the Raju
214 and Schoombee (2013) Research Life Cycle model, to collect the percep-
215 tions of education faculty pertaining to their use and potential use of library

216 support for their research productivity (see the appendix). As noted, this
217 model uniquely aligns with the needs of faculty researchers; relevant com-
218 ponents were used to inform the development of survey questions. The first
219 part of the survey consisted of demographic questions about the respondents'
220 professional appointments and status, the Carnegie Classifications¹ of their
221 respective institutions, and the extent to which research productivity was part
222 of their professional work. The second part of the survey included questions
223 about the specific kinds of scholarly products valued at respondents' institu-
224 tions, the relative levels of library support received for that production, and
225 the levels of support that respondents believe the library might afford them
226 in the future. As this was an exploratory survey, and not a large study from
227 which the authors desired to generalize, a convenience sample of education
228 faculty members was deemed to be adequate. The authors sent a query to
229 the ACRL Education and Behavior Sciences Section (EBSS) listserv in July
230 of 2014 requesting subscribers—primarily education librarians—to distribute
231 the survey to the education faculty at their institutions; nine librarians agreed
232 to participate. A broad range of Carnegie Classification types of colleges and
233 universities was represented in the study sample, though all of the institu-
234 tions were located in the United States. The survey was open from July 28 to
235 August 29, 2014. Sixty education faculty members responded, which again
236 was deemed to be sufficient for this exploratory investigation.

237 Limitation

238 Presumably a high percentage of the participants in this study were pro-
239 fessionally acquainted with the librarians who volunteered to distribute the
240 survey instrument. Although participants were instructed that the survey re-
241 sults would be stripped of all individually and institutionally identifiable
242 data, it was possible for their responses to be biased. Given the positive
243 exchange that characteristically qualifies the librarian and college instructor
244 relationship, it was likely that biased responses would reflect favorably on
245 the distributors of the survey. Conversely, the potential for this bias may also
246 have had the reverse effect of making responses that were critical of library
247 support more noteworthy.

248

RESULTS

249 The first four questions of the survey were demographic in nature. For
250 Question 1, respondents were asked to identify the Carnegie Classifica-
251 tion of their college or university. Of the 60 respondents, three-quarters

¹ Information concerning Carnegie Classifications is available at <http://carnegieclassifications.iu.edu>.

252 (45) were from various doctoral/research universities or higher; of these
253 45, 20 were from doctoral/research universities, 15 were from high-activity
254 research universities, and 10 were from very-high-activity research univer-
255 sities. The remaining one-quarter (15) were from master's colleges and
256 universities.

257 Questions 2 and 3 were asked to ensure that survey participants met
258 the criteria for inclusion in this study. Question 2 asked respondents whether
259 they were affiliated with a postsecondary department or school of education.
260 Fifty-nine of the 60 respondents indicated that they were; the one unaffiliated
261 respondent was disqualified. Question 3 asked respondents whether research
262 productivity (i.e., scholarship) was part of their professional work. Fifty-two
263 of the 59 affiliated respondents answered affirmatively; the remaining seven
264 respondents were disqualified. The 52 remaining participants continued with
265 the rest of the survey.

266 Question 4 asked participants to identify their professional appointments
267 or positions. Forty-nine participants answered this question. Almost half (22)
268 were tenured faculty; one-third were tenure-track faculty (16); five were
269 adjunct faculty; and four were fixed-term or temporary faculty. Two partici-
270 pants identified themselves as "other," of whom one was an associate dean.
271 Cross tabulations of Questions 3 and 4 showed that research productivity is
272 either required or expected professional activity for 36 of the 38 tenured or
273 tenure-track survey participants.

274 Question 5 asked participants to indicate the level of importance that
275 is attributed to research productivity at their respective institutions. Forty-
276 nine participants answered this question. The majority (31) answered that
277 research productivity was required; nine answered that it was expected; six
278 answered that it was encouraged; and three answered that it was based on
279 personal prerogative. Cross tabulations of Questions 4 and 5 produced no
280 surprises. Ninety-five percent (36) of the 38 tenured or tenure-track faculty
281 had requirements or expectations of research productivity, whereas 63 per-
282 cent (7) of the 11 remaining faculty in temporary, adjunct, or other positions
283 were merely encouraged to produce scholarship or took it upon themselves
284 to do it.

285 Question 6 asked the participants to rank various research products in
286 terms of the institutional value placed on them for job security and profes-
287 sional advancement (see Table 2). Respondents ranked each type of product
288 on a scale of 1, the lowest, to 5, the highest. Unsurprisingly, the average rank-
289 ing showed that refereed journal articles, books, and book chapters continue
290 to be among the most highly valued research products in the academy. The
291 authors had expected that grant activity would rank as an important area
292 of productivity, but they did not anticipate a second-place ranking; this re-
293 sult seemed particularly noteworthy. Finally, and perhaps not surprisingly,
294 it seems clear that nonrefereed publication and consultancy work are not
295 considered valuable production.

TABLE 2 Faculty Ranking of Research Products

Productivity products ranking	Average value
Refereed journal articles	4.87
Grants (applications or funding)	4.00
Books	3.80
Book chapters	3.53
Professional awards	3.07
Conference presentations	3.04
Patents	2.63
Juried exhibits	2.61
Nonrefereed articles (journals, trade publication, weblog, or newspaper)	2.24
Consultancy or advisory work	1.94

296 Question 7 asked participants which areas of their research have ben-
 297 efit from library support (see Table 3). These areas were predefined by
 298 the authors as indicative of the current range of library support given to col-
 299 lege and university instructors, and they were presented in a list from which
 300 respondents could select.

301 Question 7 was posed in the past tense because the authors wished
 302 to learn which areas were already viewed by the education faculty as

TABLE 3 Areas in Which Research Productivity Has Benefited From Library Support

Areas of research productivity	Yes	No	Do not know	Not relevant
Information access and retrieval (i.e., library collections and subscriptions)	47	1	—	—
Management of literature citations (e.g., EndNote, Zotero, RefWorks)	23	18	1	5
Management of intellectual property, copyright, publications, or postprints	18	18	4	7
Grant-related activity	18	24	2	3
Promotion and tenure support	18	20	2	7
Increased professional visibility/professional standing in the field	18	22	4	3
Selection of traditional or alternative publishing venues	15	23	6	3
Storage, management, or analysis of research data (i.e., large document or data sets)	11	27	4	5

TABLE 4 Areas in Which Research Productivity Could Benefit From Library Support

Areas of research productivity	Yes	No	Do not know	Not relevant
Information access and retrieval (i.e., library collections and subscriptions)	47	1	—	—
Grant-related activity	38	5	3	2
Management of literature citations (e.g., EndNote, Zotero, RefWorks)	37	8	2	1
Selection of traditional or alternative publishing venues	35	9	4	—
Management of intellectual property, copyright, publications, or postprints	32	14	2	—
Storage, management, or analysis of research data (i.e., large document or data sets)	32	12	1	3
Increased professional visibility/professional standing in the field	31	8	7	2
Promotion and tenure support	29	6	7	5

303 being currently supported by the library. Almost all (47 of 48) respondents
 304 to this question indicated that “information access and retrieval” was an area
 305 of library support from which they benefited. The remaining areas all gar-
 306 nered less than 50 percent affirmative answers; less than one-third of the
 307 respondents confirmed receiving library support in the areas of “selection
 308 of traditional or alternative publishing venues” or “storage, management, or
 309 analysis of research data.”

310 Question 8 asked participants which areas of their research productivity
 311 might benefit from library support (see Table 4). The same predefined areas
 312 were presented in a list from which respondents could select, but this was
 313 posed as a future-oriented question. The purpose was to generate data to
 314 compare with the results of Question 7, potentially showing the strengths
 315 and weaknesses of library support from the faculty perspective.

316 Again, almost all (47 of 48) respondents indicated that “information ac-
 317 cess and retrieval” was potentially the most fruitful area for future library
 318 support, but in the responses for this question no other areas of support gar-
 319 nered less than 60 percent (29) affirmative answers. This is in stark contrast to
 320 the answers given for Question 7, in which no areas other than “information
 321 access and retrieval” rose above 50 percent affirmative. Interestingly, the av-
 322 erage ranking for “Do not know” responses for each area was slightly higher

323 in Question 8 than for Question 7 (3.3 vs. 2.8), and the average ranking of
324 “not relevant” responses fell dramatically from 4.1 to 1.6.

325 Question 9 asked participants whether there was a specific librarian
326 assigned to serve faculty and students in their department or school of
327 education. There was a total of 48 responses: 90 percent (43) answered
328 affirmatively, and 10 percent (5) indicated that they did not know.

329 Question 10 was open-ended; it asked whether respondents knew of
330 additional areas of library support that could potentially improve faculty
331 research productivity. There were 17 responses to this question: Four par-
332 ticipants described how effective their current library liaison was, and two
333 noted that increased access to more library databases was needed. There
334 were also some surprising and innovative ideas put forth. Two respondents
335 suggested that their doctoral students could use more access to librarians,
336 and one commented that a K–12 district partner benefited from securing an
337 affiliate account with which to access the library databases. One respon-
338 dent mentioned that he or she would welcome opportunities to publish or
339 present jointly with a librarian, and another presented the idea of collab-
340 orating with librarians to develop LibGuides² on areas of faculty research
341 interests.

342

DISCUSSION

343 Results from this investigation align well with the Krull and Forsman (2010)
344 findings on the information needs and desires of college and university
345 researchers; participants in the present study indicated that their research
346 activities continue to benefit from access to library collections and discovery
347 tools. However, they also specified numerous areas in which their produc-
348 tivity could benefit from greater library support: for instance, grant-related
349 activity, bibliographic management, selection of traditional and alternative
350 publishing venues, intellectual property management, and data management.
351 It is noteworthy that Dickeson’s (2013) work on faculty research does not
352 include grant-related activity as a quality measure; participants in the present
353 study indicated that this is a highly valued area of research productivity at
354 their respective institutions.

355 Implications of the findings in this study relate to those from Corral, Kennan,
356 Kennan, and Afzal’s (2013) work; their exploration of emerging trends in
357 library support for research showed the need for “education and train-
358 ing to meet the needs arising from new roles for librarians and differ-
359 ent relationships with researchers” (640). Specifically, Corral, Kennan, and

² Information concerning Springshare’s LibGuides is available at <http://springshare.com/libguides>.

360 Afzal found evidence of knowledge and skills gaps among librarians per-
361 taining to research data management, institutional and governmental re-
362 search environments, and research methods and processes. These gaps
363 correlate well with the areas in which library support can improve fac-
364 ulty productivity, as expressed by participants in this study. Accordingly,
365 “LIS schools need to be flexible enough to design their curricula to ensure
366 that they are training librarians for contemporary library and information
367 practices” (Raju and Schoombee 2013, 36). For practitioners, there needs to
368 be concerted institutional investments in professional development activities
369 (White 2014). The key, however, is relevant professional development. As
370 noted by Corral, Kennan, and Afzal (2013), library education and training
371 needs to “extend beyond the focus on technological competencies and do-
372 main/disciplinary knowledge that pervades existing literature on the subject”
373 (667).

374 Unsurprisingly, there is a strong correlation between tenured or tenure
375 track-track participants in this study and the high expectations they expe-
376 rience for producing research. The intrinsic motivators of job security and
377 professional advancement easily explain much of this. However, as shown
378 by Budd (2006), there is also a measurable reverse correlation between
379 decreased research productivity and the trend in higher education toward
380 greater numbers of nontenured faculty. This runs counter to emergent cul-
381 ture of renewed institutional goals that emphasize research productivity.
382 Campus administrators, who rely heavily on metrics for decision making,
383 are likely to recognize this, redouble their efforts to increase their numbers
384 of tenure-track faculty, and provide relevant support. As revealed by Budd
385 (2006), institutional support for libraries equates with greater faculty pro-
386 ductivity. Academic libraries may do well to anticipate this shift and to plan
387 accordingly.

388 As libraries advance with new and expanded services for faculty, the
389 promotion and marketing of those services must also change. Traditional,
390 informal means of reaching faculty and large-scale outreach campaigns will
391 continue, but new services afford new and more focused entrées into the re-
392 search lives of faculty. Survey instruments, for instance, serve to provide
393 relevant data for librarians, but they can also be used to promote ser-
394 vices to disciplinary faculty. Library researchers used this approach to pro-
395 mote new services among engineering faculty at Loughborough University
396 (Marshall and Reid 2008). Faculty data can then be leveraged to develop
397 targeted instructional workshops. University of Minnesota librarians, for in-
398 stance, developed a “Creating a Data Management Plan for Your Grant Appli-
399 cation Workshop” to support their institution’s e-science initiative (Johnson,
400 Butler, and Johnston 2012, 764). In another approach, librarians at Wayne
401 State University collaborated with their Division of Research and their Of-
402 fice of Technology Transfer to provide workshops and individual research
403 assistance to faculty as they apply for grants or move to license and mar-

404 ket intellectual property (Healy 2010). As noted by Stern, Rojas, and Namei
405 (2010), the synergy created by aligning library workshops with institutional
406 missions generates greater overall impact. Q6

407 The present investigation and its results are bolstered in several ways
408 by Creaser and Spezi's (2014) exploration of the imputed value and impact
409 of academic libraries on faculty. Their work, which was based on librarian
410 input, showed that current library measures for demonstrating value are fo-
411 cused mainly on student-centered information literacy activities. Creaser and
412 Spezi revealed that library value cannot be determined based on user met-
413 rics alone, and they confirmed the lack of published literature on research
414 partnerships between faculty and librarians. They also reinforced the notion
415 that for this area of study library researchers continue to rely on the percep-
416 tions of librarians instead of faculty; and notwithstanding all these factors,
417 they indicated a reimagining of library support for faculty research may be
418 needed. The authors of the present study suggest that these lines of inquiry
419 merit further investigation.

420 This exploratory study focused solely on education faculty; the suite of
421 library support services they desire is tied to the nature of research that is
422 conducted in their field. Whether those forms of library support overlap with
423 other disciplines is a matter for additional research. Librarians who serve in
424 STEM disciplines, for instance, have found grant support, data curation, and
425 research impact services to be more highly valued by their faculty (Karasma-
426 nis and Murphy 2014; Vaughn et al. 2013). The digital humanities constitute
427 an emerging, multidisciplinary field, and Jeonghyun (2013) cautiously posits Q7
428 that the data curation and sharing needs of faculty in the arts and humanities
429 are growing as well. There is a need for larger scale surveys of faculty in
430 multiple disciplines at all types of postsecondary institutions to factor the ac-
431 tual impact of library services on their research productivity; this will allow
432 for the generalizable findings that are necessary to guide the evolution of
433 library services and the development of productive research partnerships.

434

CONCLUSION

435 The amplified culture of accountability in higher education requires academic
436 libraries to provide more compelling evidence of their institutional value.
437 Recent shifts in the academy that focus on research productivity provide
438 libraries an opportunity to demonstrate that value as essential partners in their
439 institutional research enterprises. As explained by Case (2008), "Partnering
440 with faculty in the act of creating knowledge in the digital age is not only a
441 tremendous opportunity for libraries, but ultimately an obligation. We owe
442 it to the faculty to share our expertise to help make the products they create
443 more valuable. We owe it to ourselves to build our expertise and secure the
444 library's future as a significant partner in research and scholarship" (153).

445 Brown and Tucker (2013) conducted a pivotal study on library readiness
 446 or resistance to expanding library support for faculty research; the authors
 447 found that “although a high percentage of faculty rate the library as important
 448 or very important to research productivity, perceived importance of specific
 449 support functions drops markedly, except for functions related to buying or
 450 providing access to resources” (283). The education faculty participants in
 451 the present investigation indicated specific ways in which library support can
 452 improve their research productivity, particularly in the areas of grant-related
 453 activity, bibliographic management, selection of traditional and alternative
 454 publishing venues, intellectual property management, and data management.
 455 These faculty perceptions, coupled with institutional demands for increased
 456 research productivity, should be the driving forces for changes in library
 457 education and training, and in the current models of providing library support
 458 for research.

459

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462

REFERENCES

- 463 Association of College and Research Libraries. 2000. Information liter-
 464 acy competency standards for higher education. [http://www.ala.org/acrl/
 465 standards/informationliteracycompetency](http://www.ala.org/acrl/standards/informationliteracycompetency).
- 466 Aukland, M. 2012. Reskilling for research: An investigation into the role and skills
 467 of subject and liaison librarians required to effectively support the evolving
 468 needs of researchers. *RLUK: Research Libraries UK*. [http://www.rluk.ac.uk/wp-
 469 content/uploads/2014/02/RLUK-Re-skilling.pdf](http://www.rluk.ac.uk/wp-content/uploads/2014/02/RLUK-Re-skilling.pdf).
- 470 Bent, M., P. Gannon-Leary, and J. Webb. 2007. Information literacy in a researcher’s
 471 learning life: The seven ages of research. *New Review of Information Networking*
 472 *13*(2): 81–99. doi:10.1080/13614570801899983.
- 473 Boulton, G., and C. Lucas. 2008. What are universities for? *League of European*
 474 *Research Universities*. [http://www.leru.org/files/general/%E2%80%A2What%
 475 20are%20universities%20for%20%28September%202008%29.pdf](http://www.leru.org/files/general/%E2%80%A2What%20are%20universities%20for%20%28September%202008%29.pdf).
- 476 Bourg, C., R. Coleman, and R. Erway. 2009. Support for the research pro-
 477 cess: An academic library manifesto. Report produced by OCLC Research.
 478 [http://www.oclc.org/content/dam/research/publications/library/2009/2009-
 479 07.pdf](http://www.oclc.org/content/dam/research/publications/library/2009/2009-07.pdf).
- 480 Brown, J., and C. Tucker. 2013. Expanding library support of faculty research: Ex-
 481 ploring readiness. *Portal: Libraries and the Academy* *13*(3): 283–99.
- 482 Budd, J. M. 2006. Faculty publishing productivity: Comparisons over time. *College &*
 483 *Research Libraries* *67*(3): 230–39.
- 484 Butler, L. 2007. Assessing university research: A plea for a balanced approach. *Sci-
 485 ence and Public Policy* *34*(8): 565–74.

- 486 Carlson, J., and R. Kneale. 2011. Embedded librarianship in the research context:
487 Navigating new waters. *College & Research Libraries News* 72(3): 167–70.
- 488 Case, M. M. 2008. Partners in knowledge creation: An expanded role for research
489 libraries in the digital future. *Journal of Library Administration* 48(2): 141–56.
490 doi:10.1080/01930820802231336.
- 491 Corral, S., M. A. Kennan, and W. Afzal. 2013. Bibliometrics and research data
492 management services: Emerging trends in library support for research. *Library*
493 *Trends* 61 (3):636–74.
- 494 Creaser, C., and V. Spezi. 2014. Improving perceptions of value to teaching and re-
495 search staff: The next challenge for academic libraries. *Journal of Librarianship*
496 *& Information Science* 46(3): 191–206. doi:10.1177/0961000613477678.
- 497 Dickeson, R. C. 2013. Unbundling the issue of faculty productivity. *Planning for*
498 *Higher Education* 41(2): 75–82.
- 499 Drummond, R., and R. Wartho. 2009. RIMS: The research impact measurement ser-
500 vice at the University of New South Wales. *Australian Academic & Research*
501 *Libraries* 40(2): 76–87.
- 502 Goetsch, L. A. 2008. Reinventing our work: New and emerging roles for
503 academic librarians. *Journal of Library Administration* 48(2): 157–72.
504 doi:10.1080/01930820802231351.
- 505 Grover, R., and M. Hale. 1988. The role of the librarian in faculty research. *College*
506 *& Research Libraries* 49: 9–15.
- 507 Guena, A., and B. Martin. 2003. University research evaluation and funding: An
508 international comparison. *Minerva* 41(4): 277–304.
- 509 Healy, A. M. 2010. Increasing the visibility of the library within the academic
510 research enterprise. *Issues in Science and Technology Librarianship* 63.
511 doi:10.5062/F43N21B7.
- 512 Johnson, L. M., J. T. Butler, and L. R. Johnston. 2012. Developing e-science and
513 research services and support at the University of Minnesota health sciences
514 libraries. *Journal of Library Administration* 52(8): 754–69.
- 515 Karasmanis, S., and F. Murphy. 2014. Emerging roles and collaborations in research
516 support for academic health librarians. Paper presented at the annual conference
517 of the Australian Library and Information Association, Melbourne, Australia,
518 September 15–19, 2014.
- 519 Kim, J. 2013. Data sharing and its implications for academic libraries. *New Library*
520 *World* 114(11/12): 494–506.
- 521 Kirchner, J. 2009. Scholarly communications: Planning for the integration of liaison
522 librarian roles. *Research Library Issues* 265: 22–28.
- 523 Kroll, S., and R. Forsman. 2010. A slice of research life: Information sup-
524 port for research in the United States. Report commissioned by OCLC
525 Research in support of the RLG Partnership. [http://www.oclc.org/content/](http://www.oclc.org/content/dam/research/publications/library/2010/2010-15.pdf?urlm=162948)
526 [dam/research/publications/library/2010/2010-15.pdf?urlm=162948](http://www.oclc.org/content/dam/research/publications/library/2010/2010-15.pdf?urlm=162948).
- 527 Kuhlthau, C. 2004. *Seeking meaning: A process approach to library and information*
528 *services* (2nd ed.). Westport, CT: Libraries Unlimited.
- 529 Law, D. 2010. Academic and professional identities in higher education the
530 challenges of a diversifying workforce. In *International studies in higher*
531 *education*, ed. G. Gordon and C. Whitchurch, 185–98. New York, NY:
532 Routledge.

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Q9

- 533 Lynch, B. P., C. Murray-Rust, and S. E. Parker. 2007. Attitudes of presidents
534 and provosts on the university library. *College & Research Libraries* 68(3):
535 213–27.
- 536 Marshall, T. M., and S. D. Reid. 2008. How to use a survey as a marketing tool: A case
537 study of Loughborough University Library. *Library and Information Research*
538 32(101): 39–56.
- 539 Monroe-Gulick, A., L. Currie, and T. Weller. 2014. Local citation analysis of National
540 Science Foundation and National Institutes of Health grant applications: Meeting
541 the needs of researchers. *Serials Librarian* 67(4): 399–414.
- 542 Monroe-Gulick, A., M. O'Brien, and G. W. White. 2013. Librarians as partners: Moving
543 from research supporters to research partners. Paper presented at Association of
544 College and Research Libraries 2013 Conference, Indianapolis, IN, April 10–13.
- 545 Oakleaf, M. J. 2010. *The value of academic libraries: A comprehensive research review*
546 *and report*. Chicago, IL: Association of College and Research Libraries.
- 547 O'Brien, L. 2010. The changing scholarly information landscape: Reinventing infor-
548 mation services to increase research impact. In *Publishing in the networked*
549 *world: Transforming the nature of communication: 14th International Confer-*
550 *ence on Electronic Publishing 16–18 June 2010, Helsinki, Finland*, ed. H. Turid
551 and T. Yasar, 142–66. Helsinki, Finland: Hanken School of Economics.
- 552 Pinfield, S. J. 2001. The changing role of subject librarians in academic li-
553 braries. *Journal of Librarianship & Information Science* 33(1): 32–38.
554 doi:10.1177/096100060103300104.
- 555 Poll, R., and P. Payne. 2006. Impact measures for libraries and information services.
556 *Library Hi Tech* 24(4): 547–62.
- 557 Raju, R., and L. Schoombee. 2013. Research support through the lens of transforma-
558 tion in academic libraries with reference to the case of Stellenbosch University
559 Libraries. *South African Journal of Libraries and Information Science* 79(2):
560 27–38.
- 561 Saunders, L. 2011. *Information literacy as a student learning outcome: The perspective*
562 *of institutional accreditation*. Santa Barbara, CA: Libraries Unlimited.
- 563 Schonfeld, R. C., and R. Housewright. 2010. Faculty survey 2009: Key strate-
564 gic insights for libraries, publishers, and societies. [http://www.sr.ithaka.](http://www.sr.ithaka.org/sites/default/files/reports/Faculty_Study_2009.pdf)
565 [org/sites/default/files/reports/Faculty_Study_2009.pdf](http://www.sr.ithaka.org/sites/default/files/reports/Faculty_Study_2009.pdf).
- 566 Stern, C., A. Rojas, and E. Namei. 2013. Marketing library workshops: A model for
567 achieving popular and critical success. *Library Communications* 2 (1):3–6.
- 568 Vaughan, K. T. L., B. E. Hayes, R. C. Lerner, K. R. McElfresh, L. Pavlech, D. Romito,
569 L. H. Reeves, and E. N. Morris. 2013. Development of the research lifecycle
570 model for library services. *Journal of the Medical Library Association* 101(4):
571 310–14.
- 572 White, G. 2014. Professional development for liaison librarians: Fostering skills for
573 the twenty-first century. In *Assessing liaison librarians: Documenting impact for*
574 *positive change*, ed. D. Mack and G. White, 121–37. Chicago, IL: Association of
575 College and Research Libraries.
- 576 Wiklund, G., and H. Voog. 2013. It takes two to tango: Making way for rele-
577 vant research support services at Lund University Libraries (LUB). *Sciecom*
578 *Info: Nordic-Baltic Forum for Scientific Communication* 9(1). [http://journals.](http://journals.lub.lu.se/index.php/sciecominfo/article/view/6125)
579 [lub.lu.se/index.php/sciecominfo/article/view/6125](http://journals.lub.lu.se/index.php/sciecominfo/article/view/6125).

580 APPENDIX: LIBRARY SUPPORT FOR FACULTY RESEARCH
581 PRODUCTIVITY

582 Q1 Which of the following Carnegie Classifications best describes the post-
583 secondary institution to which you are currently appointed? [If you are un-
584 sure, look up your institution at the Carnegie Classification Lookup.]

- 585 o Master's S: Master's Colleges and Universities (smaller programs) (1)
- 586 o Master's L: Master's Colleges and Universities (larger programs) (2)
- 587 o DRU: Doctoral/Research Universities (4)
- 588 o RU/H: Research Universities (high research activity) (5)
- 589 o RU/VH: Research Universities (very high research activity) (6)

590 Q2 Are you affiliated with a postsecondary department or school of educa-
591 tion?

- 592 o Yes (1)
- 593 o No (2)

594 If No Is Selected, Then Skip To Thank you for taking this survey!

595 Q3 Is research productivity (i.e., scholarship) part of your professional work
596 in any way?

- 597 o Yes (1)
- 598 o No (2)

599 If No Is Selected, Then Skip To Thank you for taking this survey!

600 Q4 Which of the following best describes your current position in your
601 department or school of education?

- 602 o Faculty (tenured) (1)
- 603 o Faculty (tenure track) (2)
- 604 o Clinical or research appointment (3)
- 605 o Fixed term, temporary, or visiting faculty/lecturer (4)
- 606 o Adjunct faculty/lecturer (5)
- 607 o Other (please specify) (6) _____

608 Q5 Which of the following best qualifies the importance of research produc-
609 tivity in terms of your professional work?

- 610 o It is required. (1)
- 611 o It is expected. (2)
- 612 o It is encouraged. (3)
- 613 o It is based on personal prerogative. (4)

614 Q6 What weight does your institution place on each of the following in
615 terms of professional appointments, promotions, and tenure? (Please rank
616 each item on a scale of 1 to 5, with 1 being the lowest ranking and 5 being
617 the highest.)

	1 (lowest) (1)	2 (2)	3 (3)	4 (4)	5 (highest) (5)
Books (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Book chapters (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Refereed journal articles (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-refereed articles (journals, trade publication, weblog, or newspaper) (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grants (applications or funding) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conference presentations (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Juried exhibits (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional awards (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patents (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultancy or advisory work (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

618 Q7 In terms of your own research productivity, HAVE ANY of the following
 619 elements required or benefited from library support (i.e., information-related
 620 sources or services)?

	Yes (1)	No (2)	Do not know (3)	Not relevant (4)
Information access and retrieval (i.e., library collections and subscriptions) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Management of literature citations (e.g., EndNote, Zotero, RefWorks) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Management of intellectual property, copyright, publications, or post-prints (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Selection of traditional or alternative publishing venues (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Storage, management, or analysis of research data (i.e., large document or data sets) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grant-related activity (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promotion and tenure support (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased professional visibility/professional standing in the field (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

621 Q8 In terms of your own research productivity, CAN ANY of the following
622 elements potentially require or benefit from library support (i.e., information-
related sources or services)?

	Yes (1)	No (2)	Do not know (3)	Not relevant (4)
Information access and retrieval (i.e., library collections and subscriptions) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Management of literature citations (e.g., EndNote, Zotero, RefWorks) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Management of intellectual property, copyright, publications, or post-prints (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Selection of traditional or alternative publishing venues (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Storage, management, or analysis of research data (i.e., large document or data sets) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grant-related activity (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promotion and tenure support (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased professional visibility/professional standing in the field (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

623

624 Q9 Is there a specific librarian assigned to serve faculty and students in your
625 department or school of education?

626 Yes (1)

627 No (2)

628 Do not know (3)

629 Q10 Are there any additional elements of your own research productivity
630 that have benefited or could potentially benefit from library support? If so,
631 please describe.

632 Thank you for taking this survey!