
IMPACTS OF COLLABORATION ON SCHOLARLY PRODUCTION AMONG RECENTLY TENURED LANDSCAPE ARCHITECTURE FACULTY: A LONGITUDINAL STUDY

SLEIPNESS, OLE

Landscape Architecture and Environmental Planning, Utah State University, ole.sleipness@usu.edu

CHRISTENSEN, KEITH

Landscape Architecture and Environmental Planning, Utah State University, keith.christensen@usu.edu

MICHAEL, SEAN

Landscape Architecture and Environmental Planning, Utah State University, sean.michael@usu.edu

ABSTRACT

Career development and professional success of landscape architecture faculty hinge increasingly on their scholarly outputs such as peer-reviewed publications and external funding. Landscape architecture education traditionally emphasizes professional practice readiness. Consequently, landscape architecture faculty often have higher teaching loads than other non-design discipline faculty. The purpose of this study was to analyze the data from three previous studies of landscape architecture faculty scholarly productivity (Christensen et al., 2014; Christensen et al., 2019; Christensen et al., 2023) by further examining the role of collaborative authorship in the production of peer-reviewed journal articles, grants, and contracts in the CVs of recently tenured faculty members. The study employed direct content analysis of the curriculum vitas of landscape architecture faculty members who were awarded tenure at public universities between 2014-2021. Traditionally valued scholarly outputs—peer-reviewed journal articles, grants, and contracts—were examined by the research team to identify the role that collaborative authorship and submission plays in publication success and funding awards. The results describe the mean scholarly productivity of landscape architecture faculty during the tenure evaluation period and after the awarding of tenure, and analyze the relationship between these productivity levels and co-authorship of scholarly outputs. While findings suggest landscape architecture faculty members' scholarly productivity continues to be relatively low in comparison with other non-design academic disciplines, their scholarly productivity has increased, especially among landscape architecture who collaborate with faculty outside the discipline. Within landscape architecture, collaboration is a core professional value. Our discipline values collaborative design processes for assisting clients, communities, and the public. These findings highlight the importance of collaborative authorship for building a record of scholarly productivity necessary for successful tenure and promotion.

Keywords

Scholarship, Faculty, Tenure, Academia, Productivity

1 BACKGROUND

Career development of landscape architecture faculty has been researched by a range of scholars in the discipline. Within the context of faculty role statements, successful career development and promotion of landscape architecture faculty continues to be based on quality of scholarly production (Deming & Swaffield, 2011). Because university landscape architecture programs are often geared toward professional practice readiness of the next generation of licensed landscape architects, their faculty often have high instructional loads that include design studios, which require substantial student contact time. Contrasting the heavy teaching responsibilities of landscape architecture faculty, most universities emphasize research performance when assessing faculty for tenure and promotion, specifically assessing faculty productivity on quantifiable research behaviors (Milburn & Brown, 2003). In particular, land-grant universities often emphasize technical education and applied research, with landscape architecture programs at land-grant institutions often situated within colleges of agriculture or other applied sciences. These contexts can influence institutional expectations of landscape architecture faculty. In demonstrating the value of their scholarly productivity, faculty must often balance studio teaching with institutional research and publication expectations. Prior studies of landscape architecture scholarship indicate that research productivity is encumbered by relatively high instructional loads and student contact time (Milburn, Brown, & Paine 2001; Chen et al., 2011; Christensen & Michael, 2014; Christensen, Michael, & Sleipness, 2019; Christensen, Michael, & Sleipness, 2023). Consequently, landscape architecture faculty must often describe how the academic context in which they engage in scholarship impacts their scholarly productivity (Gobster, Nassauer & Nadenicek, 2010). These challenges can disadvantage landscape architecture faculty when evaluated alongside faculty in other disciplines within their institutions (Christensen, Michael, & Sleipness, 2023).

Within the discipline, scholarly productivity is primarily assessed by peer-review to measure the quality of a faculty member's intellectual contributions. Thus, measures of productivity may include the number of peer-reviewed publications and secured external funding (Rudd, 1988 in Milburn et al., 2003).

Scholarship in landscape architecture may be broadly defined as creative intellectual work that is reviewed and validated by peers and communicated (Christensen, Michael, & Sleipness, 2023). Table 1 illustrates the broad range of scholarly outputs in landscape architecture (Christensen, Michael, & Sleipness, 2023). These include measures from established definitions/specifications from the 2012 Higher Education Research Data Collection (HERDC) and Australia Research Council (HERDC, 2012; ERA, 2012; Deakin, 2012; LaGro, 1999) as developed in prior studies by Christensen, Michael, & Sleipness (2019) and Christensen and Michael (2014). Within the discipline's academic literature, the terms "scholarship" and "research" are often used interchangeably. In describing scholarly productivity among landscape architecture faculty, we also employ that convention.

Within this context, literature includes multiple investigations of quality, quantity, and types of scholarship that landscape architecture faculty may be evaluated on in the broad context of the discipline (Christensen, Michael, & Sleipness, 2023; Chenoweth, 1992; LaGro 1999; Milburn, Brown & Paine, 2001; Milburn & Brown, 2003; Milburn & Brown, 2016). When Milburn and Brown (2016) followed up on their earlier study (2003) inquiring whether research productivity among landscape architecture faculty had changed over the past 15 years, they found increases in faculty research (Milburn & Brown, 2016). In 2014, Christensen and Michael published a study examining research productivity of landscape architecture faculty. In 2019, Christensen, Michael, & Sleipness published a subsequent study of faculty productivity to broaden the time frame of data assessment for faculty tenured between 2008-2022 to provide a longitudinal understanding of scholarly productivity (Christensen, Michael, & Sleipness, 2023). These previous studies indicate increasing levels of faculty productivity, as illustrated in Table 1.

1.1 Tenure and promotion as career development

Achieving tenure and promotion is broadly recognized as the most significant form of career advancement in academia. While collaboration among faculty, community partners, and students is well-documented within the literature on service-learning, studio teaching, and community outreach, faculty in landscape architecture increasingly rely on traditional peer-reviewed products such as peer-reviewed journal articles and external funding to make the case for promotion and tenure in their dossiers (Christensen, Michael, & Sleipness, 2023).

Research on the levels of scholarly production of landscape architecture faculty have shown increasing numbers of journal articles authored by faculty who have been promoted and granted tenure. However, these studies (Christensen & Michael, 2014; Christensen, Michael, & Sleipness, 2019; Christensen, Michael, & Sleipness, 2023) have also highlighted an interesting phenomenon: outliers. While the average number of publications included in the CV has increased over time, a significant percentage of the total number of peer reviewed journal articles published by landscape architecture faculty are authored by a small number of highly productive faculty members. Christensen, Michael, & Sleipness (2023) found 35% of landscape architecture faculty produced 60% of the total peer reviewed journal articles pre-tenure. The outlier phenomenon is corroborated by Milburn and Brown (2016) who suggested that 54% of peer reviewed journal articles are produced by 20% of landscape architecture faculty. While the literature describes this phenomenon in the context of its contribution to overall scholarly productivity levels (Christensen, Michael, & Sleipness, 2019; 2023), these studies did not contemplate the role of co-authorship. As co-authorship is an additional measure of collaboration, this study contributes to the body of knowledge in the discipline by exploring impacts of collaboration on scholarly production among recently tenured landscape architecture faculty.

1.2 Collaboration as a core professional value

Collaboration within landscape architecture is evident in a variety of ways including teaching, service, and research. Often, the collaborative nature of the discipline manifests in overlapping ways through service-learning projects that embody areas of studio teaching, community service, and stakeholder involvement, and presented as creative scholarship (Cameron et al., 2001; Angotti et al., 2012), co-design (Lee, 2008), participatory action research (Reardon, 1998; Thering & Chanse, 2011; Sleipness et al., 2016), and myriad varieties of design as research (Armstrong, 1999; Hinson, 2007). These collaborative activities are both described and supported by literature on landscape architecture research and creative scholarship (Evans & Anderson, 2016; Hendricks et al., 2018; Horrigan, 2014).

Outside of academia, collaboration in the professional realm is identified in the literature through joint design activities among landscape architecture practitioners, consultation with specialists, and interdisciplinary design activities with adjacent design disciplines (Sleipness et al., 2019). Similarly to within academia, landscape architecture practitioners often include extensive community involvement programming for local stakeholders and end users of designed places, especially in public projects. Reflective of these activities, collaboration is identified as a core professional value in the academic literature on landscape architecture (Lee & Crawford, 2011, Sleipness et al., 2019).

1.3 Research objective

The purpose of this study is to explore the role of collaboration—operationalized as co-authorship of peer-reviewed journal articles—in scholarly productivity among recently tenured landscape architecture faculty at U.S. land-grant universities, through direct content analysis of CVs.

2 METHODS

The study used direct content analysis of faculty CVs to assess co-authorship of peer-reviewed journal articles that were identified and quantified in previous research studies (Christensen & Michael, 2014; Christensen, Michael, & Sleipness, 2019; Christensen, Michael, & Sleipness, 2023). Christensen and Michael's (2014) study examined the curriculum vitas of landscape architecture faculty who were promoted and awarded tenure between 2008 and the 2013-2014 academic year. Subsequent studies (Christensen, Michael, & Sleipness, 2019; Christensen, Michael, & Sleipness, 2023) evaluated CVs of faculty tenured and promoted in 2016 and 2022 respectively, to provide a longitudinal understanding of scholarly productivity among landscape architecture faculty at twenty-two public land-grant universities with accredited bachelors and masters degree programs in landscape architecture. All three previous generations of the study employed direct content analysis, specifically using systematic intuitive interpretive analyses to assess, classify, and quantify scholarly products described in the CVs of recently tenured landscape architecture faculty members (Christensen, Michael, & Sleipness, 2023). Selection of participants in these studies was informed by the need to communicate general productivity expectations for landscape architecture faculty among similarly situated university programs. The twenty-two similar programs in public land-grant universities that have accredited

bachelors and masters degrees in landscape architecture represent approximately one-third of accredited programs in the U.S. For each of these three studies, administrators for each of the 22 academic programs were contacted and requested to identify faculty members who were awarded tenure during the previous five years. Faculty members who were unsuccessful in garnering tenure were excluded from the studies. For each of the previous studies, identified individuals were contacted by email and asked to provide their current full curriculum vita and assured anonymity in the reported results. Cumulatively, 50 faculty members provided CVs for inclusion in these previous studies, comprising all known successful tenure and promotion cases at the selected land-grant universities.

2.1 Procedures for previous studies

During the three previous studies, the textual content of each CV was individually coded, and scholarly outputs were quantified for the year tenure was awarded and the prior five years. Reflecting publication lags, articles reported as accepted or in-press were counted as published in the year indicated. Within these studies, single and multi-authored publications were not assessed differently. Then, two researchers independently coded the textual content of each CV (Christensen, Michael, & Sleipness, 2023).

Subsequently, these individual results were evaluated to identify discrepancies, after which a dialogue with a third researcher achieved consensus agreement concerning alternative interpretations (Graneheim & Lundman, 2004). These consensus findings were then interpreted and arrayed in tabular format. For clarity of research context, these three studies are illustrated in summary in Table 1 (Christensen, Michael, & Sleipness, 2023).

2.2 Assessment of collaboration in journal articles through authorship type

Building on the data collected and evaluated in these previous studies from 2014, 2019, and 2023, this study further examines the data to identify the significance of collaborative authorship on scholarly productivity levels of recently tenured and promoted landscape architecture faculty. Within the established categories of scholarly products described in the previous studies (Christensen, Michael, & Sleipness, 2023), previously identified and tabulated peer-reviewed journal articles was assessed for authorship type. For each faculty candidate's CV, peer-reviewed journal articles were evaluated for sole authorship; first authorship with one or more co-authors; second, third, or subsequent authorship; and student co-authorship when student co-authors were identified in the CV. While the three previous studies (Christensen & Michael, 2014; Christensen, Michael, & Sleipness, 2019; Christensen, Michael, & Sleipness, 2023) assessed and reported productivity levels for a broader array of scholarly products, this study focuses its evaluation of authorship solely on peer-reviewed journal articles. This authorship data was evaluated in context of other content present on CVs including whether the faculty candidate possessed a PhD or equivalent degree, levels of extramural funding, and whether they are an outlier in their publication rates. Following collection and tabulation of authorship data, a series of statistical tests were conducted to further explore relationships between the authorship type and other characteristics.

Table 1. Mean yearly productivity by scholarly output category.

Category	Tenure Timing	2014 Mean Yearly Productivity excluding Outliers	2019 Mean Yearly Productivity excluding Outliers	2023 Mean Yearly Productivity	2023 Mean Yearly Productivity excluding Outliers
Journal Article	Pre	0.4	0.58*	4.3	0.7
Peer Reviewed	Post	0.35	0.50*	1.4	1.0*
Journal Article	Pre	0.31	0.29	2.3	0.4*
	Post	0.58	0.17	0.8	0.5*
Conference Proceedings	Pre	0.3	0.37	0.5	0.1
Peer Reviewed	Post	0.29	0.17	0	0
Conference Proceedings	Pre	0.15	0.36*	1.7	0.3
	Post	0.19	0	0.4	0.3*
Abstract	Pre	0.06	0.20*	6.7	1.1*
Peer Reviewed	Post	0	0	0.9	0.7*
Abstract	Pre	0.01	0.12*	0.5	0.1
	Post	0	0.04	0	0
Presentation – Invited	Pre	1.1	1	9.3	1.5*
	Post	1.97	0.63	1.1	0.8
Presentation – Contributed	Pre	0.86	1.73*	15.7	2.6*
	Post	1.52	0.71	3.5	0.6
Presentation – Poster	Pre	0.05	0.21*	1.4	0.2
	Post	0.09	0.04*	0.6	0.4*
Book	Pre	0.08	0.06*	0.3	0.1*
	Post	0.06	0.17*	0.1	0.1
Book Chapter	Pre	0.06	0.13*	1.3	0.2
	Post	0.25	0.08	0.7	0.5*
Article – Working Paper	Pre	0	0	0	0
	Post	0	0	0	0
Article – Popular Press	Pre	1.56	0.14	0.7	0.1
	Post	1.84	0	0.1	0.1*
Report	Pre	0.48	0.15	1.3	0.2*
	Post	0.19	0.04	0.1	0.1*
Website	Pre	0.05	0	0.3	0.1*
	Post	0.42	0	0.1	0.1*
Illustration	Pre	0	0	0.1	0
	Post	0	0	0	0
Exhibit	Pre	0	0.02	0	0
Refereed	Post	0	0	0	0
Exhibit	Pre	0.16	0.23*	2.3	0.4*
	Post	0.22	0.25	0.5	0.4*
Design Competition	Pre	0.05	0.12*	1.7	0.3*
Refereed	Post	0.03	0.08*	0.2	0.1
Creative Work, Design/Planning Project	Pre	0.2	0.50*	0.2	0
	Post	0.19	0.25*	0	0
Built Work	Pre	0.01	0.02*	0.1	0
	Post	0	0	0	0
Award	Pre	0.5	1.51*	5.7	0.9
	Post	0.67	1.39*	0.5	0.4
External Funding	Pre	\$57,485	\$20,085	\$234,976	\$39,163*
	Post	\$26,260	\$16,966	\$273,694	\$45,616*

* Denotes at least a 25% increase from previous study. (Christensen, Michael, & Sleipness, 2023).

3 RESULTS

Mean yearly productivity for a broad range of peer-reviewed and scholarly products that landscape architecture faculty customarily include in their tenure and promotion dossiers are arrayed in Table 1, reflecting study published in years of 2014, 2019, and 2023 (Christensen, Michael, & Sleipness, 2023). As illustrated, while publication of peer-reviewed journal articles has increased, much of this increase is due to the high research productivity of outlier faculty. In particular, of the 16 faculty CVs included in 2023 study, five were outliers, having significantly higher scholarly productivity in numerous categories, exceeding two standard deviations greater than the mean. For example, of the 132 total pre-tenure peer reviewed journal articles published by the 2023 study cohort, 80 articles were published by the five outliers. Of the \$11,861,981 in total funding secured by the 16 participants pre-tenure, over \$6,000,000 was secured by one outlier (Christensen, Michael, & Sleipness, 2023). When outliers were excluded from analysis, the mean annual publication rate for peer-reviewed journal articles did not increase substantially between 2019 (.58) and 2022 (.70). However, when outliers were included, mean annual publication rates increased dramatically. To illustrate the role of high-performing outliers in our study, we present the mean values—including and excluding outliers—instead of median values, as median values can be skewed by small sample sizes (Hozo, et al., 2005).

The mean total of peer-reviewed journal articles published during faculty candidates' pre-tenure years are arrayed by authorship in Table 2. The 2014 study cohort included 18 successfully promoted faculty members, while the 2019 and 2023 study cohorts each had 16 successfully promoted and tenured faculty members. While all authorship types increased between 2014 and 2023, much of the increase in the total volume of peer-reviewed journal articles is found in second, third, or subsequently co-authored articles, as well as inclusion of student co-authors. This illustrates the fact that in many university landscape architecture programs, co-authorship is not assessed at a lower value than articles of sole or first authorship. Consequently, co-authorship of publications does not appear to divide or diminish the impact of a given published article. Rather, co-authorship has a multiplying effect, benefitting all co-authoring faculty by increasing their productivity levels.

Table 2. Mean journal articles by authorship, pre-tenure, including outliers.

	2014 (n=18)	2019 (n=16)	2023 (n=16)	Total Mean
Sole Author	0.56	0.75	1.65	0.98
First Author	1.56	2.63	2.18	2.10
Second or Subsequent Author	1.28	1.69	3.53	2.16
Student Co-Author	0.56	1.13	2.18	1.27
All Authorship	3.17	5.19	7.41	5.22

Longitudinal trends in authorship type are graphically illustrated with the inclusion of outliers (Figure 1) as well as with outliers excluded (Figure 2) in aggregate per study cohort. When highly productive outliers are included in aggregation (n=50), publication of journal articles by all authorship types increased markedly, with the exception of first author articles, which increased modestly. Figure 1 clearly illustrates the most dramatic increases in were in second, third, or subsequently co-authored articles, many of which also include student co-authors.

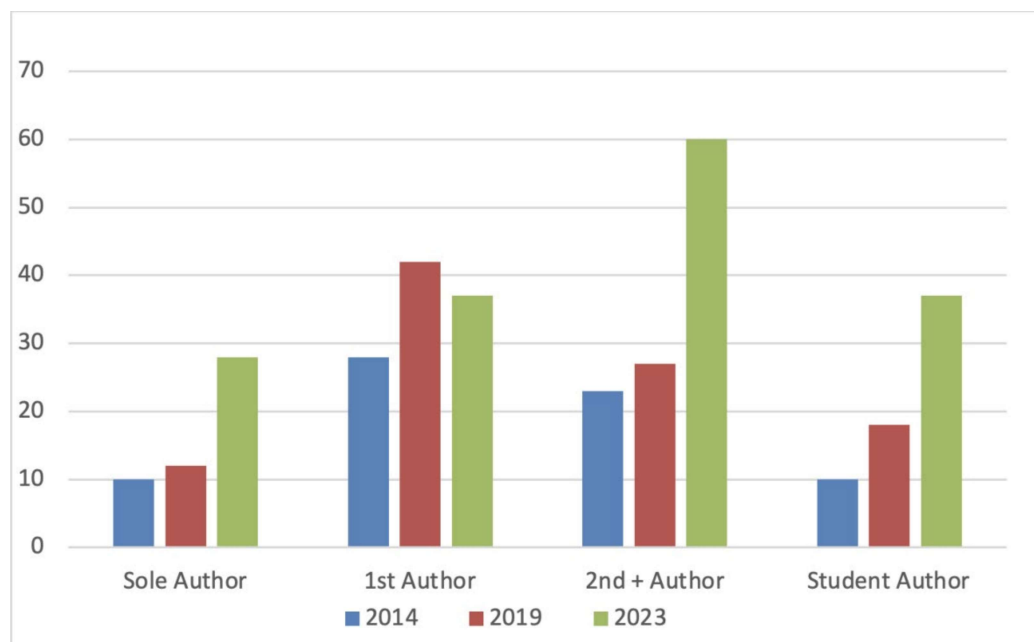


Figure 1. Authorship of peer-reviewed journal articles, including outliers (n=50)

However, when outliers are excluded, the aggregation of all non-outlier faculty members (n=40) reveals a very different graphic pattern (Figure 2). Solely authored journal articles increased dramatically between 2014 and 2023. Second, third, and subsequently co-authored articles did not increase significantly between 2014 and 2023. First-authored articles, while increasing between 2014 and 2019, dropped precipitously in 2023. And perhaps most notably, while student co-authors were low in 2014, they were nonexistent in the CVs of non-outlier faculty members in 2019 and 2023. In other words, highly productive faculty outliers are the only faculty in the 2019 and 2023 study cohorts who are publishing co-authored peer-reviewed journal articles with students.

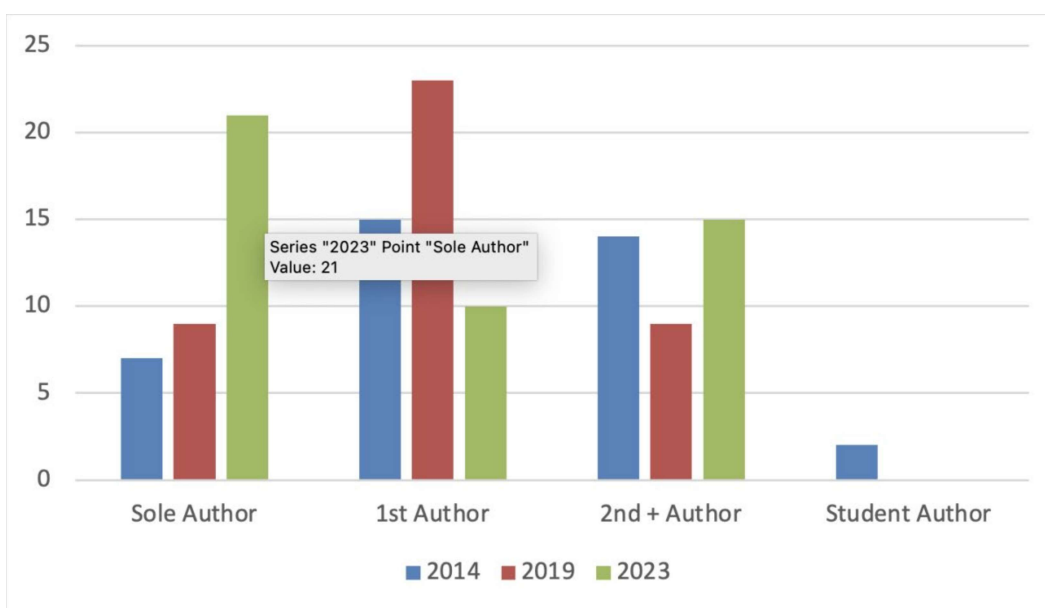


Figure 2. Authorship of peer-reviewed journal articles, excluding outliers (n=40)

4 DISCUSSION

Following data collection and tabular array of the findings, a series of statistical tests were also performed to explore potential relationships between other faculty characteristics and their authorship of peer-reviewed journal articles. When testing for correlation between faculty members who have a PhD and authorship, we found a relationship between PhDs and all types of authorship except sole authorship. Interestingly, there was no significant relationship between a faculty having a PhD and their funding levels (Table 1). However, there was a very strong relationship between co-authored articles and higher levels of funding. Within the various types of authorship, the strongest relationship was found between second, third, and subsequent authorship of articles and high levels of extramural funding. This finding is unsurprising, as most large grants are team-driven and require many collaborators to serve as co-investigators to not only secure a large grant but also perform the required tasks. The research outputs from these large grants—primarily peer-reviewed journal articles—often include a large number of collaborators as co-authors. However, no relationship was found between sole authorship, first authorship, or student co-authorship and funding levels.

There is, however, a significant relationship between co-authorship and faculty members who are outliers due to high levels of productivity, as measured in their number of peer-reviewed journal articles. Apparently, their high productivity has a strong relationship to collaborative authorship and publication. However, no relationship was found between whether a faculty member was a publishing outlier and their level of extramural funding. For the purpose of this study, outliers are defined by having a significantly higher rate of publication in peer-reviewed journal articles. This finding is interesting as it illustrates that while significant extramural funding is useful in facilitating research activities, not all research requires large amounts of funding.

5 IMPLICATIONS

This study provides increased granularity in illustrating the trends in authorship, as it relates to faculty productivity in landscape architecture programs at U.S. based land-grant universities that have accredited BLA and MLA degree programs. Specifically, this study illustrates the collaborative authorship patterns of faculty outliers who publish peer-reviewed journal articles at higher rates than the mean for successfully tenured and promoted faculty members. These outlier faculty publish high numbers of peer-reviewed journal articles by co-authoring work with others colleagues as well as student co-authors. To achieve high levels of publication productivity, the outliers were found to publish higher numbers of peer-reviewed journal articles of all authorship types except for sole authorship articles. Outlier faculty do not tend to solely author many articles. Most notably, outliers are the only faculty publishing with students, who are a boon to research productivity.

Landscape architecture is a collaborative discipline; this core professional value is reputed to impact the manner in which professional landscape architects design the outdoor environments for private clients and members of the public alike. Collaboration is embodied in the incorporation of allied and disparate disciplinary knowledge in the project research and design process, as well as in project implementation, construction, and post-occupancy evaluation. Within accredited programs across the U.S. and beyond, collaboration is integral to the publicly engaged design processes that faculty attempt to enculturate in their students through myriad design studios. Often, collaboration arises out of necessity through a recognized need to involve others in the process, possibly because one lacks the expertise, connections, and resources—including time—to achieve a desired goal. In other instances, while professional and project success may be feasible without collaboration, it is easier, more productive, and possibly more enjoyable when working with others. Increasingly, the nature of contemporary professional practice—particularly large-scale and public work—necessitates collaboration due to projects' inherent complexity and technical requirements. In this regard, faculty adoption of collaboration in their research activities is reflective of the nature of contemporary professional practice. Faculty may benefit from framing their academic accomplishments in context of *both* collaboration and individual contribution in their annual self-assessment materials as well as their tenure and promotion dossiers.

This study illustrates the evidence that landscape architecture's collaborative values—operationalized as co-authorship—have led to success in the production of peer-reviewed journal articles. However, additional research is necessary to explore why some landscape architecture faculty choose to collaboratively publish with colleagues and students, while others publish solely-authored articles. While we can speculate on the influences and motivations of both groups, this research topic is ripe for discovery. Future research might also contemplate the impacts of collaborative authorship on the nature and character of landscape architecture scholarly work, particularly when driven by research funding. While the value of collaborative design and research is well-documented, the intrinsic value of individual creativity and reflection should not be diminished, particularly as facilitated through deep inquiry in solitude. Relatedly, scholars should contemplate whether our discipline may overlook important and unfunded research topics.

This study's scope of analysis, which is limited to its analysis of collaboration in authoring peer-reviewed journal articles. Moreover, our analysis does not evaluate the relative quality of each peer-reviewed journal article, the prestige of each journal, or the quality or relevance of scholarship contained within, but only the authorship and quantity of publications. Necessarily, this study does not examine the other manifold arenas for collaboration that landscape architecture faculty engage, including serving as co-investigators on research grants, joint studio projects, community-engaged scholarship disseminated through alternative publication venues, exhibition of creative scholarship, or Extension, outreach, service, or other engaged teaching activities.

However, landscape architecture faculty willingness to collaborate with colleagues and students in the authorship and publication of peer-reviewed journal articles has been instrumental in enabling our discipline to achieve higher levels research productivity. Through an openness to sharing the credit of publication with others, landscape architecture faculty outliers have illustrated compelling evidence that collaboration yields a multiplication of scholarly benefits for all involved.

REFERENCES

- Angotti, T., Doble, C., & Horrigan, P. (Eds.). (2012). *Service-learning in design and planning: Educating at the boundaries*. NYU Press.
- Armstrong, H. (1999). Design studios as research: an emerging paradigm for landscape architecture. *Landscape Review*, 5(2), 5-25.
- Cameron, M., Forsyth, A., Green, W. A., Lu, H., McGirr, P., Owens, P. E., & Stoltz, R. (2001). Learning through service: The community design studio. *College Teaching*, 49(3), 105-113.
- Crawford, P., Kotval, Z., Rauhe, W., & Kotval, Z. (2008). Social capital development in participatory community planning and design. *Town Planning Review*, 79(5), 533-554.
- Chen, Z., Clements, T., Miller, P., & Powers, M. (2011). How and why we do research: faculty attitudes toward the research in landscape architecture. *Urban Nature: 2011 Proceedings of the Council of Educators in Landscape Architecture*, 155.
- Chenoweth, R. (1992). Hype and reality. *Landscape Architecture*, 82(3), 47-48.
- Christensen, K. M., & Michael, S. (2014). Quantifying scholarly production among recently tenured landscape architecture faculty. *Landscape research record*, 2, 31-39.
- Christensen, K., Michael, S., & Sleipness, O. (2019). Revisiting scholarly production among recently tenured landscape architecture faculty. *Landscape Research Record*, 8, 15-24.
- Christensen, K.M, Michael, S.E., & Sleipness, O.R. (2023). Scholarly production among recently tenured landscape architecture faculty; A longitudinal study. *Landscape Research Record*. 12:1., 26-35.
- Deakin University (n.d.). *Definitions of research and output categories*. Retrieved January 23, 2014 from: <http://www.deakin.edu.au/research/admin/pubs/reports/database/dynamic/output/cat/catdef.php#J6>
- Deming, M. E., & Swaffield, S. (2011). *Landscape architectural research: Inquiry, strategy, design*. John Wiley & Sons.
- ERA (2012). *Excellence in research for Australia*. Canberra: Australian Research Council.

-
- Evans, D., & Anderson, D. (2016). The Community design team: Pedagogy of practice and community service. *Proceedings Council of Educators in Landscape Architecture, Salt Lake City, UT, March*.
- Gobster, P. H., Nassauer, J. I., & Nadenicek, D. J. (2010). Landscape Journal and scholarship in landscape architecture: The next 25 years. *Landscape Journal*, 29(1), 52–70.
- Hendricks, M. D., Newman, G., Yu, S., & Horney, J. (2018). Leveling the landscape: Landscape performance as a green infrastructure evaluation tool for service-learning products. *Landscape Journal*, 37(2), 19-39.
- HERDC (2012). *Higher Education Research Data Collection; specifications for the collection of 2011 data*. Canberra: Department of Industry Innovation, Science, Research and Tertiary Education.
- Hinson, D. (2007). Design as research. *Journal of Architectural Education*, 61(1), 23-26.
- Horrigan, P. (2014). Rust to Green: Cultivating resilience in the Rust Belt. In M. Bose, P. Horrigan, C. Doble, & S.C. Shipp (Eds.), *Community matters: Service-learning in engaged design and planning*. (pp.167-186). New York: Routledge.
- Hozo, S. P., Djulbegovic, B., & Hozo, I. (2005). Estimating the mean and variance from the median, range, and the size of a sample. *BMC Medical Research Methodology*, 5, 1-10.
- LaGro, J. A. (1999). Research capacity: A matter of semantics? *Landscape Journal*, 18(2), 179 –186. doi:10.3368/lj.18.2.179
- Lee, Y., & Crawford, P. (2011). A Cross-Disciplinary Exploration of Core Values. *Design Principles & Practice: An International Journal*, 5(3).
- Lee, Y. (2008). Design participation tactics: the challenges and new roles for designers in the co-design process. *Co-Design*, 4(1), 31-50.
- Milburn, L. A. S., Brown, R. D., & Paine, C. (2001). "... Research on research": Research attitudes and behaviors of landscape architecture faculty in North America. *Landscape and Urban Planning*, 57(2), 57–67.
- Milburn, L.-A. S., & Brown, R. D. (2003). The relationship of age, gender, and education to research productivity in landscape architecture faculty in North America. *Landscape Journal*, 22(1), 54–62. doi:10.3368/lj.22.1.54
- Milburn, L. A. S., & Brown, R. D. (2016). Research productivity and utilization in landscape architecture. *Landscape and Urban Planning*, 147, 71-77.
- Reardon, K. M. (1998). Enhancing the capacity of community-based organizations in East St. Louis. *Journal of planning Education and Research*, 17(4), 323-333.
- Rudd, E. (1988). The evaluation of the quality of research. *Studies in Higher Education*, 13(1), 45–57. doi:10.1080/03075078812331377955
- Thering, S., & Chanse, V. (2011). The scholarship of transdisciplinary action research: Toward a new paradigm for the planning and design professions. *Landscape Journal*, 30(1), 6-18.
- Sleipness, O., Ryan, K., Krikac, R., & Gomez, S. (2016). Rural interdisciplinary service-learning projects: Frameworks for engagement within regional rural development centers. *Landscape Research Record*, 5(1), 181-195.
- Sleipness, O., Powell, J., Anderson, D., Evans, D., McCann, R., & Chen, S. (2019). Extension-based community engagement project contributions to landscape architecture core competencies and professional values. *NACTA Journal*, 63(2), 37.