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Transdisciplinarity in Research: Perspectives of Early Career Faculty

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Abstract

Background: Early career faculty experiences and perspectives on transdisciplinary research are important yet understudied.

Methods: Assistant professors at 50 top-ranked social work programs completed an online survey assessing perspectives on the salience of transdisciplinary training in their field, obstacles to or negative impacts of transdisciplinary training, and current environments. Content analysis and descriptive statistics were used.

Results: A large majority of all participants (N = 118) believed that transdisciplinary research is important, that greater training is needed, and that they are relatively well prepared in related skill sets. They are expected to build cross-disciplinary collaborations, yet only a small minority believed that social work researchers are nationally recognized as important collaborators, or that they are prepared to navigate tensions on research teams.

Conclusions: We offer a multilevel framework of structural and training supports needed to realize transdisciplinary research in social work with relevance to other disciplines.

Keywords

transdisciplinary science; social work education; early career; collaboration

Effective responses to complex social and environmental problems such as climate change, poverty, and violence require holistic approaches and input from diverse disciplines and stakeholders (Gehlert et al., 2014; Nurius & Kemp, 2012; Patterson et al., 2013). Increasingly, transdisciplinary research collaborations, which bring scholars from different disciplines (and, frequently, key stakeholders) together to tackle complicated problems using new approaches to scientific inquiry, are seen as key to advancing innovative solutions. Transdisciplinary research aims to “synthesize and extend discipline specific perspectives, theories, methods, and translational strategies to yield innovative solutions to particular scientific and societal problems” (Vogel et al., 2014, p. 2). Stretching to create new frameworks, questions, and methods of inquiry, at multiple levels, transdisciplinary efforts

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build on but go beyond interdisciplinary work, which is typically characterized by scholars working together on a common project, transferring their knowledge, and focusing on interrelationships between their fields but with less emphasis on integration.

Early career scholars are increasingly recognized as pivotal to advancing these efforts. Yet, involvement in impact-oriented collaborations frequently comes with significant complexities. Early career scholars are launching their research careers in scientific contexts that, on the one hand, call for transdisciplinary teamwork and, on the other, typically require evidence of individual contribution and, at times, disciplinary purity for promotion and career advancement. In these environments, building a secure academic identity and coherent scholarly portfolio can be complicated. If departmental or disciplinary norms call for contributions in a strictly defined field, for example, participation in cross-disciplinary research may disadvantage early career scholars when being reviewed by their senior colleagues for promotion (Bridle, Vrieling, Cardillo, Araya, & Hinojosa, 2013). Furthermore, academia is itself in a period of significant change, from rapidly evolving research and knowledge production environments to marked shifts in the security of academic employment (Enright & Facer, 2016; Felt, Igelsböck, Schikowitz, & Völker, 2013). Navigating this changing landscape, one's own research program and ongoing training needs, institution and discipline-specific criteria for success, and the ever increasing importance of demonstrating the impact of one's work poses significant challenges for early career scholars.

Transdisciplinary research also poses operational challenges, as scholars navigate new and complicated relationships and ways of thinking about their research questions (Vogel et al., 2014). Being part of a transdisciplinary team requires not only disciplinary depth and expertise but also strong interpersonal, cross-disciplinary, communication, and collaborative skills, including the ability to give and receive challenges to customary ways of thinking about a particular problem and integrate new ways of thinking (Kemp & Nurius, 2015; Patterson et al., 2013; Uhlenbrook & de Jong, 2012; Willetts & Mitchell, 2006; Winowiecki et al., 2011). Successful participation in cross-disciplinary teams requires a willingness to take on these challenges, including commitment to and patience with the process.

Given these complexities, recognition is growing regarding the need for intentional investments in supporting early career readiness and success in changing research environments. Calls for advancing transdisciplinary research training (Sadovsky, et al. 2014), boundary-spanning competencies (Uhlenbrook & de Jong, 2012), a developmental training trajectory (Kemp & Nurius, 2015), and specific training methods (Benesh et al., 2015) have come from disciplines as diverse as environmental sciences, information technology, public health, social work, engineering, behavioral health, obstetrics and gynecology, and more. These and related efforts have begun to shape national and international conversations on the future of doctoral education, preparation for collaborative research, and the need to better align the institutional logics governing academic research careers and the changing nature of academic knowledge production.

In social work, these conversations have taken productive root in several venues. In recent years, plenary presentations, workshops, and round tables at the Society for Social Work and

Research (SSWR) conferences have frontally addressed the changing arena of research and social work's potential, as an integrative science, to define a distinctive "business plan" for thriving in this scientific marketplace. The SSWR board for years sponsored a National Research Capacity Building Initiative (NRCBI) aimed at strengthening preparedness for involvement in transdisciplinary and translational research contexts. The NRCBI has now evolved into a standing SSWR Research Capacity Development Committee, focusing on fortifying "emerging scholar" development by linking doctoral, postdoctoral, and early career research supports to achieve greater individual, programmatic, and institutional consistency. Social work scholars from across the country have also gathered to sharpen the field's collective thinking about the science of social work and preparation of graduates for the opportunities and demands of research in the 21st century, resulting in a series of special issues and sections in the journal *Research on Social Work Practice*. The current article stems most directly from the 2015 Science in Social Work Doctoral Education Roundtable, a working conference focused on the scientific training contexts and priorities of social work, including readiness for cross-disciplinary research training, engagement, and translation.

These efforts mirror the broader literature in recognizing the central role of early career scholars in increasingly transdisciplinary environments (Benesh et al., 2015; Bridle et al., 2013; Patterson et al., 2013). However, few studies to date have focused specifically on the perspectives of early career faculty on their transdisciplinary research preparation, needs, and experiences. The present study is the first of its kind to canvas the transdisciplinary preparedness and experiences of a national sample of early career social work faculty. Recognizing that, in practice, the term transdisciplinary encompasses a range of cross-disciplinary experiences, we sought to characterize the research landscape of junior scholars relative to where they came from (their doctoral training), where they are headed (their current institutional environments and future career goals), and the field of forces within which they are functioning (e.g., how others perceive social work researchers, challenges or potential negative impacts of transdisciplinary research, and how social workers can communicate their research skills). The overarching goal of the study was to more directly include early career scholars' real-world experiences and perspectives in what has been largely a set of conversations among later career scholars. We also aimed to identify elements in participants' career trajectories as well as structural components at the levels of the academy, social work program level, professional organizations, and the individual that collectively support successful transdisciplinary research training and practice.

In the article that follows, we provide an overview of the survey and the analytic approach followed by a distillation of the qualitative and quantitative results aimed at providing a broad but also nuanced overview of participants' perspectives. We then highlight major themes and organize these into a multilevel model of structural and training supports needed to realize the transdisciplinary research potential of social work's early career scholars. In concluding, we discuss the implications of the key elements in the model for social work and other fields, focusing on elements of the model of broad relevance and flexible applicability across disciplines and university settings.

Method

Participants and Recruitment

We recruited participants from the U.S. News and World Report top 50 ranked social work programs. Assistant professors were identified within these programs through an online search of each program's faculty list. Because we were focused on research-related training and experiences, assistant professors were included in our study whether they had the title assistant professor or research assistant professor and had received a PhD. Assistant professors were sent an introduction to the study and an anonymous survey link via e-mail. Several personalized reminder e-mails were sent to encourage participation. Participants received a US\$5 gift card for participation. Survey responses were kept completely anonymous, with no identifying program or individual-level data collected or linked to an individual response. The study was reviewed by the University of Washington Human Subjects Division and found to be exempt.

Survey Instrument

The survey was developed through an iterative process of literature review and discussion among the investigator team. To build the questionnaire, we used the National Institutes of Health funded online survey platform REDCap (Harris et al., 2009). The survey questions, which included both open and categorical questions, focused on eliciting participant perspectives and experiences with transdisciplinary research and training, and skills and support needed for a successful academic research career. In addition, participants were asked to comment on obstacles and challenges related to transdisciplinary research and their perceptions of social work scholars relative to scholars from other disciplines. To ensure functionality and readability, the survey was pilot tested by six graduate students in our program.

Based on this feedback, the survey, which took between 8 and 25 min to complete, was refined. The final survey assessed the following topics: (1) knowledge, use, and importance of transdisciplinary research; (2) doctoral training preparation; (3) expectations and support for transdisciplinarity in their current work environments; and (4) contextual factors such as challenges or potential negative impacts of transdisciplinarity, and how social workers are perceived by other disciplines and can communicate their research skills. Some example questions included: "In your doctoral training, how did you balance gaining depth and breadth of knowledge? Please note if this was not raised as an expectation in your training"; "Do you think doctoral training programs in schools of social work should focus more on developing transdisciplinary research competencies? Please explain"; "What are the potential negative impacts of transdisciplinary training in social work?"; "In your current position and institution, how supported do you feel to complete your research agenda?"; "To what extent do you believe that social work researchers are recognized nationally as being important collaborators?"; "How can social work researchers communicate their research skills?"; "Please describe the factors in place in your current position that support your research agenda"; and "In your specific area of research, what skills and competencies do you think social work researchers need to be successful?" A copy of the entire survey can be

obtained by contacting corresponding author (M.M.) at the School of Social Work, University of Washington.

Analysis

Categorical survey questions were analyzed quantitatively using Stata 14 (Stata Corp, 2015). Dedoose analytic software was used to code and store open-ended survey data (Dedoose, 2015). Dedoose (2015) allows for efficient management, sharing, and analysis of large amounts of qualitative and quantitative data by geographically distributed teams. Inductive qualitative content analysis was utilized to analyze open-ended survey questions. This method entails subjective interpretation of the content of text data through a systematic classification process of coding and identifying themes or patterns when existing theory or research on a phenomenon is limited (Elo & Kyngas, 2008; Hsieh & Shannon, 2005). Data were read word for word to derive codes that captured key concepts or thoughts. Codes were then sorted into higher order concepts or categories based on how they were related or linked with the aim of building a conceptual model (Hsieh & Shannon, 2005; Morse & Field, 1995). Investigators then employed a consensus-based process to develop the model presented in the article.

Results

Participants

Survey participants included $N = 118$ (42%) of the assistant professors identified in the top-ranked 50 social work programs across the country. Of those, $n = 100$ (85%) provided one or more responses to open-ended questions. Participants had been at the assistant professor rank for <1 year (10.2%), 1–3 years (44.4%), 4+ years (42.6%), and very recently promoted beyond assistant professor rank (2.8%). Although there was some variation in training backgrounds, the majority of participants reported their doctoral training was in social work (70.7%) with a research-intensive focus (87.9%; Table 1). Participants reported a wide range of research areas and methods. Engaged in collaborative research in areas as diverse as disability, economic policy, the intersection of health and mental health, child welfare, and behavioral health, they described their research as boundary spanning and as requiring collaboration within, beyond, and at the intersection of disciplinary silos.

We conducted several sensitivity analyses to examine whether responses to quantitative items varied as a function of the respondents' training backgrounds. We found no significant differences in training background. We also found no difference in responses comparing the top 25 social work programs to the full sample, and all results are reported at the full sample level.

Early Career Faculty Responses

Participants provided important information in the following areas: (1) their perspectives on the use and importance of transdisciplinary research, (2) their own training experiences, (3) their current work environments, (4) challenges and ambivalence about transdisciplinary research, and (5) recommendations for strengthening the continuum for transdisciplinary

research success from doctoral training to early career supports. Major themes were identified in each area, as elaborated below.

Perspectives on Transdisciplinary Research

Twenty-three percent of participants reported they had not heard the term “transdisciplinary research” prior to completing the survey. However, 98% reported that they believed it was important to the field of social work and 93% reported it was important to their own research, presumably on the basis of the definitions of transdisciplinary research included in the survey.

Three major themes emerged from the open-ended survey responses that illuminated participants’ reasons for emphasizing the importance of transdisciplinary research: (1) transdisciplinary approaches are needed in order to address complex social problems, (2) transdisciplinary work is required in their area of research, and (3) social work is inherently transdisciplinary. By far, the most common response was that the complexity of social problems facing researchers today requires the ability to represent multiple levels, dimensions, contexts, or systems. Comments related to this theme also alluded to the value of integrating methodological tools as well as theories. One participant quote illustrates what many reported:

Given the breadth of theory and methods that exist, our field and indeed each discipline can only boast of a narrow specialization. The only way to begin a reconceptualization of the issues affecting the human condition will involve moving away from artificial scientific silos...[for instance] poverty is a multifaceted phenomenon we have been unable to grasp in our individual disciplines. Merging ideas, theory, methods across disciplines is long overdue. (Participant #93)

Participants also noted the relevance or need for crossdiscipline work given their research area. As one participant noted,

I work in [a field] that is naturally dominated by education and educational psychology. Social work has a lot to offer in making sense of the full life of the student and what affects the learning environment outside of the classroom. (Participant #52)

Numbers of participants pointed out that social work research is inherently transdisciplinary and indicated that they see the field as well positioned to conduct and lead these efforts. Highlighting the boundary-spanning, integrative nature of social work that many participants identified, one participant noted that:

Our field, by definition, crosses boundaries to work across professional domains: politics and policy, health and mental health care, environmental science, etc. We need to be working across professions and making sure that our work reaches diverse audiences in order to have an impact on the issues we care about. (Participant #86)

Doctoral Training Experiences

Asked about their level of preparation on a range of transdisciplinary research competencies, the majority of participants reported that, in most competency areas, they felt either extremely prepared or very prepared to conduct transdisciplinary research-related tasks. An important exception was preparation to navigate tension or conflict on research teams, where participants felt less prepared. Participants also demonstrated some equivocation in relation to their preparedness to translate research findings into practice, and to design, seek funding for, and implement interdisciplinary research. Openended responses about training experiences added nuance to these responses, revealing that although individuals felt prepared in many areas, some reported that they needed enhanced methodological training, experience in writing scholarly papers, and obtaining grant funding (Table 2). In addition, much of their transdisciplinary preparation was self-directed: The following quote highlights this theme:

My research focus was a little outside the expertise of my program's faculty. Several months into my study, I knew more about the topic than any of my mentors. For this reason, I feel like I set my own course about how to pursue knowledge in my area. (Participant #62)

Participants also expressed a need to seek out supplemental training in particular areas of interest or expertise beyond their home training department. Those interested in broadening their preparation sought cross-disciplinary mentors, research projects, and coursework. One quote illustrates a theme mentioned by many respondents:

Our program helped us to go in depth in one area, but encouraged us to tailor our educational experience to our own interest and to seek out courses and mentoring from across diverse departments/ fields at our university. (Participant #51)

Looking across the categorical and open-ended responses, participants noted gaps in some key components of transdisciplinary research skill sets. Identified gaps spanned both concrete skill sets and competencies (e.g., methods training or experience with grant development) and those related to team processes (in particular, navigating differences or tensions on research teams).

Current Work Environment

Participants were asked to describe their current work environments, including availability of supports and encouragement of collaboration. Participants reported feeling supported with regard to their research agenda and encouraged to seek collaborations with different disciplines (Table 3).

Specific supports identified as critical to launching their research careers included financial resources, course buyouts and time protection from burdensome service, strong mentoring, access to good collaborators, grant writing support, and a strong dean who supports junior faculty research agendas and academic freedom and creates a collegial environment.

Transdisciplinary Training

In response to a question about whether PhD programs in social work programs should focus on developing transdisciplinary research competencies among students, 86% of participants answered “yes.” Some respondents were adamant in their endorsement, with comments such as “Very simple: grand challenges and impact!”; “Social work is far too insular...”; “I think it is necessary...”; “We live in a complex world; single discipline orientation is not adequate” Taking a more modulated approach, others suggested that an incremental approach may be necessary, beginning with interdisciplinary experiences and frameworks and working toward a clearer consensus on transdisciplinarity. However, as we elaborate further below, a third group of participants expressed clear ambivalence about transdisciplinary training in social work, concerned that such emphases could further weaken social work’s research identity, dilute students’ disciplinary grounding and identification with the field, and undermine their ability to contribute to teams.

Challenges and Obstacles to Transdisciplinary Training and Success

Three themes emerged related to challenges and obstacles to transdisciplinary training and success: ambivalence, challenges in engaging in transdisciplinary research, and obstacles to collaboration (see Table 4 for illustrative quotes of these themes).

Ambivalence about transdisciplinary training in social work.—Ambivalence emerged as a theme in participants’ perspectives on whether or not social work doctoral programs should focus on transdisciplinary competencies. Although responses varied, participants expressed ambivalence on several levels, including concerns that social work’s identity as a discipline might be threatened and the social work knowledge base diluted given the amount of material to be covered and time constraints of doctoral programs. Participants also expressed confusion (indeed skepticism) about what transdisciplinary training in doctoral programs would actually entail, noting confusion about the meaning of transdisciplinary research definitions and competencies, and uncertainty about how to train for these competencies.

Challenges in engaging in transdisciplinary research.—A second set of responses identified challenges related to undertaking successful transdisciplinary work as an early career scholar. Reflecting on their current academic positions, participants expressed concern that despite “rhetorical” support and encouragement for transdisciplinary collaborations, in reality transdisciplinary research was not well understood, supported, or valued at the discipline or institutional level. Expressing a related concern, some participants worried that social work researchers would not be valued on transdisciplinary teams or would be overshadowed by other disciplines.

Difficulty finding collaborators.—The final theme was reflected in responses to questions about how participants believed social workers are viewed by collaborators from other disciplines. An overall negative perception was reported, indicating potential for difficulty in finding transdisciplinary collaborators who are willing to engage with social work faculty. Indeed, participants also pointed out how difficult transdisciplinary work can be in terms of finding and working effectively with collaborators. This is likely related to the

fact that the majority of participants (83%) believed that social work researchers are not recognized nationally as important collaborators either a great deal or much of the time. Furthermore, 74% believed that other disciplines do not understand the skills social work researchers can bring to the team (see Table 3). These concerns stand in stark contrast to the interest that most participants expressed in working within cross-disciplinary frameworks—pointing to considerable startup challenges for early career scholars as they arrive on a new campus and need to take the initiative in pursuing new collaborations (Tables 3 and 4).

Recommendations for the Training Continuum: From Doctoral Program to Early Career

Participants' responses to questions about gaps in their training, and to being asked what skills and competencies are needed for success in their area of research, generated a taxonomy of recommendations spanning the training continuum. Considerable emphasis was placed on concrete skills such as rigorous methodological training, scholarly paper writing, and grant writing skills. In addition, some participants mentioned the need for enhanced competency in what we have labeled underlying faculty success skills. These included directing an independent research program, charting the developmental trajectory of research, expansive thinking, learning how to translate research and increase the impact of one's work, and teamwork skills, including navigating differences, tensions or conflict on teams, and good communication skills (see Table 5 for illustrative quotes related to these recommendations).

Recommendations for Enhancing Transdisciplinary Research in Social Work

When we asked participants to explain how social workers can communicate their skills and contributions to others, particularly in the context of team science, some participants found it difficult to articulate the particular contributions of social work researchers. As one participant said, "I don't think we have a collective understanding of 'social work research skills' or a shared skill set. Our diversity is a gift and a marketing challenge" (Participant #44). Others suggested that the following tenets set social work apart: social work values and commitment to social justice, ethics, leadership and communication skills, applied research focus, and understanding the whole person. Suggested pathways to improving other disciplines' understanding of social work included publishing and presenting in interdisciplinary venues, identifying ourselves as social work researchers, working on teams to demonstrate our value, and a national campaign or website to communicate to others what we do.

In addition to the concrete supports (noted above) identified as critical to success in their current environments, participants suggested that successful transdisciplinary research will require changing the academic culture through a reenvisioning of existing siloed academic disciplines as well as promotion and reward systems that encourage individual-level credit and expertise. One participant summarized these barriers to transdisciplinary research as follows:

I think we spend too much time in our individual disciplines reinventing (and renaming) the wheel. On one hand, this is a huge waste of time and resources. On the other, this is how people make names for themselves in their own fields and it is hard for me to imagine anyone wanting to give this up. For example, medicine has

recently discovered social work and several physicians have become very well-known developing ‘innovative’ new practices that are in their essence, just hiring social workers. Why would people profiting from ‘discovering’ and renaming something that already exists want to admit that it is just an adaptation of well-established methods and models? (Participant #62)

Another participant highlights the need for increased institutional and academic support for TD research:

This work would have to be rewarded by the institution and research community through monies and publication support. I imagine it may be difficult to get started, to learn to speak each others language and to utilize each of our skills in the most efficient way. (Participant #51)

In sum, participants’ responses indicated that fully embracing transdisciplinary research models in social work and beyond will require strong supports, enhanced training at multiple levels, and cultural shifts in academia about the meaning (and markers) of success, contribution, and impact. See Figure 1 for a proposed model of recommended supports for social work faculty to engage in transdisciplinary research. (Figure 1).

Discussion

The Grand Challenges for Social Work Initiative recently launched by the American Academy of Social Work and Social Welfare (2016) emphasizes collaboration and teamwork as key to tackling complex social issues such as family violence, homelessness, incarceration, and economic inequality. This “call to action” requires the profession and those allied with it to invest in training and research models that bring diverse groups of scholars and community stakeholders together to attack intransigent social problems from multiple angles. Transdisciplinary research is one such model. Preparing our scientific workforce for effective participation in collaborative science requires, however, thoughtful educational and early career scaffolding.

The perspectives of early career scholars highlighted in this article provide fresh input to help shape these scaffolding efforts. Overall, respondents conveyed a strong message that they see cross-disciplinarity (both inter- and transdisciplinary) as an important dimension of their research careers. Similarly, they are generally supportive of increasing the extent to which social work doctoral programs provide explicit preparation for the cross-disciplinary and translational dimensions of research, even as some express concerns about potential threats to social work’s disciplinary identity and distinctive knowledge base.

Among these particular early career faculty members, the majority presented a favorable picture of their preparedness for transdisciplinary research across a number of skill sets. This suggests that doctoral programs graduating these scholars constitute a disciplinary set of resources available to other programs seeking to accelerate their own pedagogical and teaching tool development. At the same time, participants reported underpreparation for some of the challenging parts of cross-disciplinary collaboration, such as working around differences, tensions, and a sense of hierarchy among disciplines that disadvantaged social work researchers.

Deepening this concern, these early career scholars described a kind of “bind”: In their current positions, they are being encouraged if not expected to pursue cross-disciplinary collaborations, yet looking at the research landscape, they fear they will not be recognized by others as value-added research colleagues or be sought out by interdisciplinary colleagues in their new institutions. Respondents also voiced concern about power dynamics—noting that given disciplinary hierarchies, their perspectives may be overshadowed by others. Nor do they feel well equipped to undertake the task of marketing the potential contributions of social work science on their own.

Although these junior colleagues largely reported feeling supported by their home departments, they noted mixed or unclear messaging in the standards by which they would be evaluated. Senior faculty sometimes seem to hold contrasting values or at least to not be clear about how to help incoming faculty launch the kinds of research careers for which they themselves were not trained. Given these ambiguities, will junior scholars be rewarded (and tenured) for pursuing crossdisciplinary research or partnerships or is this potentially a risky career path?

Taken as a whole, these findings argue for thoughtful multilevel attention to supporting emerging scholars for success in contemporary scientific contexts. Figure 1 illustrates some aspects of what such a coordinated approach might involve, portraying potential strategic actions at four levels: doctoral programs, schools/departments, discipline, and academy. This schematic is intended to be heuristic rather than comprehensive.

Doctoral Programs

Doctoral programming can provide an initial level of transdisciplinary research readiness that can be further developed in the early career years. Participants in this survey noted the need in doctoral training for both sophisticated methodological and theoretical content and research skills and for “soft” skills or metacompetencies, such as communication skills, conflict management skills, writing and conceptual skills, and the ability to clearly identify and articulate one’s social work identity and unique contribution to teams (Nurius & Kemp, in press). Findings that much of respondents’ cross-disciplinary learning was self-initiated and self-directed point to the importance of more intentional programmatic attention to supporting students’ development in these domains (Kemp & Nurius, 2015). Specifically, programs can assist students to strengthen scholarly identity, provide holistic mentoring, and opportunities to participate in team science. Success in these efforts will involve doctoral students, faculty, program directors, and curriculum committees.

Schools/Departments

In addition to school or departmental supports such as protected time, workload reductions, and startup resources, this survey makes clear that early career scholars need more robust mentoring, networking, and “system navigation” assistance. Deans, associate deans for research, and senior mentors or development teams all play roles in helping junior scholars find their niche in new collaborations. At the institutional level, senior colleagues are also critical players in efforts to ensure optimal clarity and alignment between departmental benchmarks for success and security (e.g., promotion and tenure criteria), the ways in which

these benchmarks are interpreted by faculty colleagues and junior colleagues' research plans and investments. Similarly, as we note below, there are parallel needs in the larger academy.

Discipline

Survey results indicate a need for a coordinated effort to market social work research identity and value. National organizations, such as the American Academy of Social Work and Social Welfare, the Group for the Advancement of Doctoral Education in Social Work, and the Society for Social Work Research, share interlinked, complementary forms of support to advance educational efforts related to social work identity. In addition, these organizations can enhance support for research career readiness. These efforts have begun and are illustrated through recent conversations aimed at systematically coordinating training and mentoring programs across the country (Nurius et al., 2016). Recent national presentations have aimed to provide guidance as to pedagogical models, metacompetencies, and team science readiness skills and tools to support social work research careers (and pipeline alignment from our professional degree programs) in the context of our Grand Challenges (Hall, Gehlert, & Palinkas, 2017; Nurius, Coffey, Fong, Korr, & McRoy, 2017).

These important efforts need to be sustained and, ideally, coordinated to provide predictable offerings that social work's emerging scholars can count on. In addition, these organizations can serve as repositories for pedagogical resources (e.g., syllabi, training activities, individualized development plans, and mentoring guidelines) that schools and programs can access. A good many respondents reported promisingly high levels of preparation, indicating that some of these pedagogical resources are already in place and could have value in their dissemination. Although we focus here on interlocking needs at the doctoral training and early career levels, these institutional investments will also benefit mid-career and later career scholars interested in retooling for effective participation in crossdisciplinary and translational research collaborations.

Academy

Participants in this study underscored the persistent gap in many research-intensive academic settings between enthusiastic rhetorical support for collaborative research partnerships and a range of persistent, if not intransigent, structural barriers to realizing these collaborations. Shifts in both the culture and the pragmatics of academia are needed to better support collaborative, community-engaged research initiatives, including expansions in promotion, retention, and tenure criteria; investments in developing "communities of practice" aimed at supporting and sustaining early career researchers (Patterson et al., 2013); and efforts to address long-standing, often hierarchical disciplinary divides.

Limitations

Although the data presented here provide grounds for optimism regarding early career social work scholars' enthusiasm and preparedness for transdisciplinary research, this study has several limitations. By targeting junior faculty from the top 50 ranked social work programs, we sampled from those most likely to have had more fully developed research training as well as exposure to the factors that encourage crossdisciplinary research preparation. Thus, this sample is not fully representative of the emergent social work academic workforce.

However, responses did not statistically differ when contrasting the first 25 and second 25 ranked programs, suggesting considerable stability of trends. With limited resources, we reasoned that this approach provides insights into those graduates most likely to be early adopters, working in research-oriented academic settings already actively engaged in supporting their careers. Furthermore, all of these programs have doctoral programs, and within a national framework are likely also among those more prepared to engage with social work professional organizations in developing training, mentoring, and early career research supports. In addition, in order to safeguard confidentiality, we asked very limited personal identifiers so cannot associate important demographic characteristics (e.g., sex, race/ethnicity, and institutional characteristics) with the responses.

Conclusions

Pressing social and environmental challenges call for robust attention to new trends in research; responsiveness to the most compelling scientific opportunities; smarter collaborations to advance the knowledge base of the field; and efforts to accelerate impact by better linking research, policy, and practice. Disciplinary strengths, including long-standing investments in multilevel analyses and interventions, a commitment to social justice, and a track record of community engagement and collaborative science–practice partnerships, position social work scholars as potential leaders in moving forward transdisciplinary research models. This study adds the early career faculty perspective to discussions of transdisciplinary research. With a call from our National Academy to address grand challenges facing our society, existing momentum among national leadership groups, and an interest from early career faculty to move transdisciplinary training and supports forward, social work is poised to begin to implement and refine transdisciplinary training models. This study identified recommendations for addressing the challenges posed by transdisciplinary training and research. Although some elements are specific to social work, many may also be relevant to other disciplines. Further research is nonetheless needed to assess trends regarding cross-disciplinary research preparation more broadly within social work.

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Figure 1.
Supports for Transdisciplinary Science in Social Work

Table 1.

Doctoral and Master-Level Discipline and Program Focus (Percentage).

Discipline and Program Focus	Doctoral Level	Master Level
Doctoral program focus		
Research intensive	87.9	N/A
Research and teaching	9.5	N/A
Advanced clinical/practice	2.6	N/A
Training discipline		
Social work	70.7	61.2
Social work + other discipline	6.9	16.4
Public health	4.3	2.6
Psychology	5.2	6.0
Social or public policy	1.7	1.7
Other discipline	11.2	12.1

Table 2.

Doctoral Program Preparation (Percentage).

Discipline and Program Focus	Extremely Prepared	Very Prepared	Moderately Prepared	Slightly Prepared	Not Prepared
Complex theory application	28.3	39.8	23.0	7.1	1.8
Engage colleagues from other disciplines	31.0	41.6	16.8	8.0	2.7
Integrate concepts/methods from disciplines	24.8	44.3	21.2	8.0	1.8
Translate research findings into practice/community	21.2	38.1	28.3	8.9	3.5
Design, seek funding for, and implement interdisciplinary research	20.4	31.9	27.4	10.6	9.7
Explain your work clearly	23.9	52.2	16.8	4.4	2.7
Reading work from, attending conferences, or publishing beyond your discipline	33.6	42.5	16.8	3.5	3.5
Navigate tensions on research teams	8.0	26.6	34.5	19.5	11.5

Table 3.

Challenges and Supports for Cross-Disciplinary Collaboration (Percentage).

Thinks other disciplines understand the skills a SW researcher can bring to research	Yes				
	25.5				
Believe that SW researchers are recognized nationally as important collaborators	A great Deal	Much	Somewhat	Little	Never
	6.4	10.9	46.4	33.6	2.7
Supported in current position and institution to complete research agenda	Extremely supported	Supported	Moderately supported	Somewhat supported	Not supported
	30.3	39.5	19.3	5.5	5.5
Encouraged to collaborate with others in different disciplines	Extremely encouraged	Encouraged	Neutral	Discouraged	Very discouraged
	40.4	34.9	23.9	0.9	0.0

Table 4.**Challenges and Obstacles to Transdisciplinary Training and Success.**

Ambivalence about transdisciplinary training in social work	
Social work identity threatened	“[Transdisciplinary research training may lead to] dancing at everyone else’s party rather than throwing a party of our own . . . we might be giving up what little power we have as a discipline if relationships are not reciprocal, respectful, and mutually beneficial.” (Participant #44)
Social work knowledge base diluted	“Transdisciplinary training may water down the foundation in social work theory and methods.” (Participant #45)
Confused about transdisciplinary definition	“I am a bit skeptical [about transdisciplinary research training in PhD programs] as I struggle to fully understand the distinction between transdisciplinary and interdisciplinary research in practice . . . and what the added value of the former relative to the latter is.” (Participant #63)
Uncertain about how to do transdisciplinary training	“I think it would be difficult to prepare doctoral students for this kind of work. It is extremely difficult. Often even within one discipline there are subspecialties that have completely different terms for similar or the same constructs.” (Participant #17)
Challenges in transdisciplinary research	
Transdisciplinary research not supported or valued by institution/discipline	“We are encouraged to collaborate with other disciplines in the University text, talk, and rhetoric. However, the incentive structures are less concrete and precise in encouraging and incentivizing transdisciplinary work. I would say that this is especially the case for untenured faculty. That is, tenured faculty have much more leniency to do collaborative work without the threat of needing to perform ‘independently’ . . . We need more specific and concrete incentives for collaborative research; Tenure policies must value and reward collaborative and multiauthored scholarship . . . funders must providing funding for longer period to allow for the additional time required to do transdisciplinary work.” (Participant #84)
Social work will be overshadowed by other disciplines on transdisciplinary team	“[Social work might be] overpowered by more research-oriented or heavily funded disciplines (e.g., medicine) . . . [because there are] stereotypes about social workers as researchers from more established/heavily funded research professions (again, e.g., medicine).” (Participant #71)
Difficulty finding transdisciplinary collaborators	“[Obstacles for transdisciplinary training in social work include] finding colleagues from other fields especially as a junior faculty member and integrating various methods into building a shared framework; How to be creative enough to prove to colleagues from other fields that you have innovative methods for research that they can learn from.” (Participant #76)

Table 5.**Recommendations for the Training Continuum.**

Theme	Quote
Concrete skills	
Rigorous methodological training	"[We need to] expect/teach more rigorous methods which will lead toward more rigorous funding which will lead toward better representation." (Participant #54)
Scholarly paper writing	"I was very well prepared for conducting thoughtful, well-planned research in my field. However, I lacked more preparation in writing up the research and sharing it widely." (Participant #56)
Obtaining grant funding	"One area that my school did not cover very well was funding. So I participated in a post doc after graduating which gave me experience applying for/developing grant proposals." (Participant #77)
Underlying faculty success skills	
Directing and building an independent research program	"I was not fully prepared for this position in terms of additional methodological training and clarity of complex, transdisciplinary program of research." (Participant #58)
Charting developmental trajectory of research	"We were very prepared for the research end. There was less discussion about building to a larger grant from smaller ones." (Participant #69)
Expansive thinking	"[I was] much less prepared in terms of ... thinking more expansively about research that can address grand challenges, which I think needs to be approached from an interdisciplinary perspective. Essentially, I had no training at all on affecting public policies and translating findings into practice" (Participant #10)
Translating research to community impact	"Because I work in a department that is not my department of doctoral training, I feel that I was moderately prepared for transdisciplinary work. The rigorous methods training works well in any department; however, I was not prepared in terms of translating results into community action." (Participant #37)
Teamwork: navigating conflict and tension on research teams	"I think I was prepared to carry out inter/multidisciplinary work extremely well; however, the doctoral program prepared me moderately for navigating tensions within a research team—particularly as a junior scholar bringing together senior faculty from other disciplines. So, I was not just a participant of transdisciplinary research, I was an organizer of it and of faculty with decades of research expertise. There were multiple layers that I needed to coordinate and navigate, in addition to bringing together everyone's expertise, and this was a challenge." (Participant #89)
Teamwork: communication skills	"... [social work scholars need] 'soft' communication skills, being able to speak the language of other disciplines." (Participant #89)