© *Journal of Higher Education Outreach and Engagement*, Volume 19, Number 1, p. 1, (2015)
 ISSN 1534-6104

Systemic Engagement: Universities as Partners in Systemic Approaches to Community Change

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Abstract

The most pressing social problems facing humanity in the 21st century are what systems theorist Russell Ackoff referred to as "messes"—complex dynamic systems of problems that interact and reinforce each other over time. In this article, the authors argue that the lack of progress in managing messes is in part due to the predominance of a university-driven isolated-impact approach to social problem solving. The authors suggest an alternative approach called systemic engagement (SE), which involves universities as partners in systemic approaches to community change. The six principles of SE are presented and illustrated with a case example. Barriers to SE are discussed, and strategies are proposed for increasing faculty use of this methodology. The promises and perils of SE as an alternative community-engaged approach to social problem solving are considered.

Introduction

The most pressing problems facing humanity in the 21st century (e.g., climate change and social inequality) are not isolated problems, but what systems theorist Russell Ackoff *(1999)* referred to as "messes"—complex dynamic systems of problems that interact and reinforce each other over time. The complexity of messes presents daunting challenges to our collective problem-solving capacities, let alone the capacities of any particular engaged scholar. In the context of calls to strengthen the role of universities in addressing social problems (*Boyer, 1990; Kellogg Commission on the Future of State and Land-Grant Universities, 1999),* it is reasonable to ask whether prevailing forms of engaged scholarship are capable of managing messes. In this article, we argue that the lack of progress in effectively managing complex problems is due in part to the predominance of a particular approach to engagement called the *isolated-impact approach (Kania & Kramer, 2011)*. In the isolated-impact approach, universities and communities collaborate to design and implement interventions that address a particular problem, with limited attention paid to the contextual factors that perpetuate the problem. Such interventions, if designed well and implemented with fidelity, may have strong short-term effects

within a narrow range of outcomes for targeted populations, but the dynamics of the larger system that generated the problem remain unchanged. In addition, isolated-impact efforts are frequently conducted as stand-alone projects that are disconnected from other related efforts, thereby failing to realize the synergies possible with more coordinated strategies. In this article, we propose an alternative to the isolated-impact approach to problem solving called *systemic engagement* (SE). We discuss the six principles of SE and provide a case example to illustrate the principles. We then consider barriers to faculty involvement in SE and how these barriers might be surmounted to allow for the wider use of SE.

Systemic Engagement

Simply put, SE involves universities as partners in systemic approaches to social problem solving. SE has six key principles:

1. Systems thinking
2. Collaborative inquiry
3. Support for ongoing learning
4. Emergent design
5. Multiple strands of inquiry and action
6. Transdisciplinarity

Although SE includes within its scope all community–university partnerships that use systemic approaches to social problem solving, the focus of this article is on SE within the context of place-based initiatives, or what we refer to here as *systemic approaches to community change*.

Systems Thinking

Systems theorists have argued that the foundation of systems thinking is holism *(Midgley, 2007)*, comprehensiveness *(Midgley, 2000)*, or "taking into account the whole" *(Burns, 2007, p. 21)*. In other words, systems thinking involves a widening of the usual scope of inquiry to include a larger share of the contextual factors that contribute to messes. Imam, LaGoy, and Williams *(2007)* argued that three systems concepts are essential for understanding systems-based interventions: *boundaries, perspectives,* and entangled systems (or *relationships*). Because of the inclination toward comprehensiveness in systems thinking and the practical impossibility of considering every influence on a focal problem, *boundaries* help

define what lies inside or outside the scope of a particular inquiry. However, these boundaries must be placed carefully and provisionally, with a clear understanding of the implications of their placement for what or whom is included or excluded from the inquiry space. Systems thinking also involves considering the subject of inquiry from the *perspectives* of a wide range of individuals with a stake in managing the problem or from different perspectives on the possible purposes of the system in question. Finally, systems thinking involves an exploration of the key *relationships* among system elements, between systems and subsystems, and how these relationships contribute to the perpetuation of the problem.

Boundaries. SE expands the boundaries of *inquiry* based on the understanding that complex problems rarely (if ever) arise from the action of a single isolated cause. Rather, complex problems typically result from the interplay of relationships among several factors. In addition, problems rarely exist in isolation. Instead, they are often subcomponents of dynamic systems of problems that interact and reinforce each other over time (i.e., messes). For this reason, Ackoff *(1999)* argued that "a partial solution to a whole system of problems is better than whole solutions of each of its parts taken separately" *(p. 324)*. Based on these insights, SE expands the boundaries of inquiry to bring "whole systems of problems" within the inquiry space of an initiative. For example, a systemic approach to the study of child development, informed by Bronfenbrenner's *(1979)* ecological systems theory, would expand the typical boundaries of inquiry from influences operating within the child's proximate *microsystem* (family, school, neighborhood, and peers) to influences operating in the child's *mesosystem* (connections between elements of the microsystem), *exosystem* (industry, social services, neighbors, and mass media), and *macrosystem* (attitudes and ideologies prevalent in the larger culture).

Perspectives. SE expands the boundaries of inclusion based on the understanding that there is no single correct definition, perspective, or understanding of problems or systems of problems (indeed, whether something is a problem is a matter of perspective), and that those affected by problems should have a voice in how they are addressed. Far too often university-based scholars develop theory-based interventions for testing and dissemination in communities, viewing communities largely as "passive distribution or delivery systems rather than as rich sources of knowledge and skills" *(Miller & Shinn, 2005, p. 169)*. SE pushes the boundaries of inclusion to incorporate the perspectives of a broad range of both community-based and university-based actors with a stake in the

problems, explicitly including both local and indigenous knowledge and generalized university-based knowledge both in understanding problems and in generating solutions to manage them *(Fitzgerald, Bruns, Sonka, Furco & Swanson, 2012).* SE strives to bring these different sources of knowledge into respectful and appreciative dialogue with one another for the purpose of cocreating new understandings and codesigning new solutions to complex problems.

Relationships. SE explores the relationships between systems and subsystems and among the components of systems to reveal the complex dynamics that perpetuate the problem of concern. Meadows *(2008)* argued that whereas changes in system elements (e.g., changes in the individual members of a social group) typically have little to no effect on the functioning of a system, changes in their interconnections will often have very large effects. Consequently, a clear understanding of the relationships among a system's components is essential to restructuring that system to produce different results. As Meadows *(2008)* has argued, "the results that systems produce will continue until they are restructured" *(p. 4).* A systemic study of child development would explore the structure of relationships both within and across micro-, meso-, exo-, and macrosystems. For example, within the level of individual children, it would explore the relationships among four brain systems (executive, regulation, sensory, and relevance; *Lillas & Turnbull, 2009)* while also examining the influences of factors operating at the micro-, meso-, and exosystem levels on the functioning of these same brain systems.

Collaborative Inquiry

Collaborative inquiry refers to the use of collaborative and participatory approaches to research and evaluation. SE intentionally solicits multiple perspectives on problems and relevant systems by drawing on both local and indigenous knowledge as well as generalized university-based knowledge to understand problems and to generate strategies for managing them more effectively. The methods of inquiry best suited to fostering deep participation by people with a stake in particular problems and utilizing both university-based and community-based sources of knowledge for understanding and managing them are collaborative approaches to inquiry and action such as community-based participatory research *(Israel et al., 2001, 2008; Minkler & Wallerstein, 2008),* participatory action research *(Kemmis & McTaggart, 2000; McTaggart, 1991; Whyte, 1991)*, and collaborative and participatory

approaches to evaluation *(Cousins & Whitmore, 1998)*. In addition, there are explicitly systemic approaches to collaborative inquiry, including systemic action research *(Burns, 2007)*, systemic intervention *(Midgley, 2000)*, and participatory system dynamics modeling *(Hovmand, 2014)*. Despite their differences, these approaches share a commitment to involving community members at some level in all or nearly all phases of inquiry, including identification of the problem or topic of inquiry, selection of research or evaluation questions, choice of research or evaluation methods, collection of data, analysis of data, interpretation of findings, deliberation over the implications of findings for further inquiry or action, and dissemination of findings.

Support for Ongoing Learning

In their review of the successes and failures of comprehensive community initiatives, Kubisch, Auspos, Brown, and Dewar *(2010)* recommended a new approach to the evaluation of community change initiatives that assists in planning, managing, and learning. Instead of midpoint formative and endpoint summative evaluations, community change initiatives require flexible, adaptive approaches to evaluation that produce findings in real time to support ongoing learning and action. Recent frameworks for systemic approaches to community change, including systemic action research *(Burns, 2007)* and the ABLe change framework *(Foster-Fishman & Watson, 2011)*, are consistent with this imperative. Both make use of ongoing cycles of inquiry and action, with evaluators and researchers providing continuous support to learning teams. Another systemic approach to community change, collective impact *(Kania & Kramer, 2011, 2013)*, embraces developmental evaluation, an approach to evaluation that is uniquely suited to complex situations, and uses a flexible and adaptable design to support the emergence of innovations *(Patton, 2011)*. These developments in the evaluation of systemic approaches to community change are consistent with emerging trends in the larger field of evaluation and reflect many of the characteristics of what Gopalakrishnan, Preskill, and Lu *(2013)* referred to as the next generation of evaluation, including (a) a focus on whole systems, (b) shorter cycles and more real-time feedback, (c) shared responsibility for data collection and learning across multiple organizations, and (d) collecting and using data as part of ongoing practice.

Emergent Design

Based on insights from complexity theory, SE recognizes the degree of uncertainty and unpredictability inherent in the kinds of complex dynamic systems that messes are, and therefore the limited utility of predetermined solutions or interventions *(Westley, Zimmerman, & Patton, 2007).* Addressing messes requires a tolerance for ambiguity, uncertainty, and conflict and a willingness to test strategies whose results cannot be known with any degree of certainty in advance. Flood *(1999)* referred to this process as "learning our way into a mysterious future" *(p. 90)*. Borrowing a key principle from systemic action research *(Burns, 2007)*, SE supports the principle of *emergent design*, in which the likely design, methods, and measures are sketched out initially in very broad terms, with the specific elements of the design emerging based on what is being learned.

Multiple Strands of Inquiry and Action

Because messes consist of networks of interacting problems, the effective management of messes depends on the mobilization of multiple strands of inquiry and action, with each strand directed at a particular problem within a larger mess. Any given SE initiative would therefore involve different teams tackling different problems within the same mess. Consistent with this approach, systemic action research *(Burns, 2007),* the ABLe change framework *(Foster-Fishman & Watson, 2011)*, and collective impact *(Kania & Kramer, 2011)* call for the use of multiple strands of inquiry and action to address complex problems.

Transdisciplinarity

Because complex social problems do not respect the boundaries of academic disciplines, SE calls for *transdisciplinarity*, or the participation of multiple disciplines in addressing messes. According to Rosenfield *(1992)*, *multidisciplinary* research involves researchers working in either parallel or sequential fashion on a common problem, each operating from his or her own disciplinary knowledge base. *Interdisciplinary* research involves researchers working jointly on a common problem but with each researcher operating from his or her disciplinary base. In contrast, transdisciplinary research involves researchers working jointly on a common problem using a shared conceptual framework that draws from multiple disciplines. Of these, transdisciplinary research holds the greatest promise for "intellectual integration and the creation of

new knowledge at the intersection of multiple fields" *(Stokols, 2006, p. 67)*. Because complex problems do not respect disciplinary boundaries, we argue that precisely this kind of new transdisciplinary and transsectoral knowledge is needed to effectively address them.

Place-Based Efforts

Why the focus on place? Because place matters a great deal in the life chances of individuals. Place influences the quality of the housing in which we live; the quality of schools that our children attend; the availability of nutritious food; access to safe spaces for recreation; air, water, and soil quality; the availability of jobs; and access to public transportation. Reviewing and synthesizing the research on how the features of neighborhoods affect health and contribute to racial and ethnic disparities in health, Roux and Mair *(2010)* identified a wide range of neighborhood-level factors that influence health, including residential segregation by race/ethnicity and class; features of neighborhood physical environments such as environmental exposures, food and recreational resources, the quality of the built environment, and housing; and features of neighborhood social environments such as level of safety and violence, social connections and cohesion, local institutions, and local norms. Given that place has a profound impact on the health and life chances of people, *working with people to transform the places in which they live for the better is a primary goal of SE.*

In sum, we believe that six key features of SE make it a more promising approach to tackling the complex, dynamic systems of interrelated problems known as messes than the isolated-impact approach. In putting forth these principles, we are not making a claim for their uniqueness. Rather, we are arguing that the act of bringing them together in partnership with communities to address complex community-identified problems is not practiced as widely as we believe it should be for effective community-based management of complex problems. In this article, we focus on SE as applied to place-based efforts, or *systemic approaches to community change.* Below, we provide a case example that illustrates the use of the six principles of SE on a community-driven systemic change effort.

Case Example: Wiba Anung

Wiba Anung is a partnership between Michigan State University, Inter-Tribal Council of Michigan, Bay Mills Community College, and nine Michigan tribes that began in 2005. The partnership focuses on supporting early childhood education research in

tribal communities and has been described in prior written work *(Fitzgerald et al., 2013)*. Wiba Anung was formed to address the complex problem of disparities between American Indian/Alaska Native children, other minority children, and White children in early childhood education outcomes and the lack of early childhood research in tribal communities.

In this partnership, an organizational design emerged that allows us to move forward in a way that aligns with each of the six SE principles. This design consists of three types of teams: a *partnership* team, a *leadership* team, and *communities of learning*. Our *Partnership Team* consists of community and research partners who have an interest in working to address issues regarding early childhood education in tribal communities. As shown in Figure 1, members of the Partnership Team include community partners, parents and caregivers, university researchers, and program staff. The Partnership Team meets once or twice a year in person and quarterly via phone when the initiative is engaged in ongoing planning and data collection. The *Leadership Team* consists of a small group of researchers and community partners that meets a minimum of monthly (and as frequently as weekly) via conference call to make decisions about the overall direction of the partnership. *Communities of learning* (currently three) consist of smaller teams of researchers and community partners who meet virtually or in person monthly to move forward on a particular strand of inquiry. Each community of learning is led by a research staff member or faculty partner and typically involves meeting via conference call or webinar.

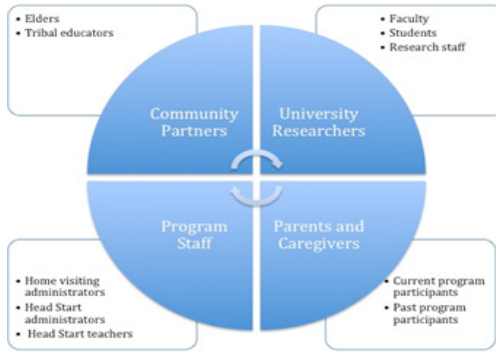

Figure 1. Wiba Anung Partnership Team

Our Leadership Team has documented its progress in our work together both formally and informally. To formally document progress in building a strong partnership, we have conducted focus groups regarding the functioning of our partnership. We are also planning to conduct a social network analysis of the partnership in order to better understand the structure of our partnership network and the strength of the relationships we have forged. Informally, we have ongoing discussions regarding how we are progressing. We include the Partnership Team in discussions regarding how each of our actions might be creating changes in other aspects of our work together. Has our work to include culture in the classroom changed how parents perceive the program? Are parents more likely to be engaged? Do federal program officers perceive the program differently because of the work we are doing together? Finally, we have also been gathering data annually on children's academic school readiness. Data have been collected in the fall and spring of each year since 2008. Analyses are currently in progress, but preliminary evidence suggests that over time, children are making greater gains from fall to spring in numeracy and literacy skill development.

Systems Thinking

Boundaries and perspectives. Following the systems thinking orientation toward holism, the Wiba Anung partnership has explored the problem of disparities in educational outcomes by expanding the boundaries of inquiry to encompass the tribal early childhood context as a whole, acknowledging the importance of the larger tribal community systems, early childhood education systems, and family systems in the genesis of the problem. In our work, we have drawn on the perspectives of a wide range of stakeholders in the tribal early childhood context, including parents, teachers, elders, directors of tribal-based early childhood programs, and university-based researchers. Each individual comes to the table with a different perspective on "the whole," making the overwhelming task of examining our small slice of the early childhood context more manageable.

Relationships. Although we recognize it is not possible to truly attend to all components and interactions of the multiple systems that influence child health and well-being, we have established mechanisms to examine the interactions within and across many of these systems in our work. For example, in a PhotoVoice project led by Nicole Thompson, tribal Head Start staff documented many of the challenges and strengths in tribal Head Start programs, one of which was how to support families to be engaged in their young

children's education. Thus, in terms of the relationships dimension of systems thinking, this project involved exploring the relationships between family and tribal early childhood educational systems. In response to this identified challenge, our Leadership Team formed a community of learning to develop an interactive seminar that would support the efforts of home visiting, Head Start, and child care staff to engage families in their young children's education in culturally meaningful ways *(Barnes, Abramson, Burnett, Verdugo, & Fillimore, 2014).*

Collaborative Inquiry and Action

The Wiba Anung partnership has used community-based participatory research *(CBPR; Israel et al., 2008; Minkler & Wallerstein, 2010)* as a guiding framework for collaborative inquiry and action. We have included the larger partnership group in determining what our research questions are, as well as how we go about answering those questions. The Partnership Team has collectively made decisions regarding the methods used and has participated in interpreting the results of all data analyses. For example, when determining how to measure social and emotional competence in young children, our community partners reviewed three commonly used research measures and determined which one of these measures was most appropriate in their communities. Additionally, analyses are always guided by either the larger partnership team's questions or by requests from the leadership team.

Ongoing Learning and Action

SE calls for flexible approaches to research and evaluation that produce findings in a timely fashion to support ongoing learning and action. Consistent with the CBPR approach described above, our partnership is committed to producing findings that support ongoing learning and action. As soon as data are analyzed, the findings are shared with partners for their review and, as described above, their interpretation. These findings always produce more questions. Some require further analysis of existing data; others require the development of a new strand of research. For example, early in our partnership, we conducted focus groups with immediate and extended family members of children who attended Michigan tribal Head Start programs. During these focus groups, a theme was identified that we did not expect: support for teaching tribal language and culture in Head Start classrooms. Because of this finding, our team conducted a focus group with tribal knowledge

holders to identify appropriate ways to incorporate tribal beliefs, values, and customs into classrooms. As a result of this focus group, our research partners obtained a much deeper understanding of the indigenous ways of the participating tribes. For example, one of the elders shared the Teachings of the Seven Grandfathers that have been passed down to Anishinaabe people for many generations, guiding the next generation in supporting children's healthy emotional, moral, and spiritual development. The Seven Grandfathers are viewed as a collective grouping of seven interwoven teachings. The English equivalents of these seven teachings are wisdom, love, respect, bravery, honesty, humility, and truth. These teachings directly relate to what adults should be teaching children, how children should be treated, and how adults should treat each other. Thus, it was very important for us to understand these teachings at a deeper level as a collective to guide our knowledge and practice of how teachers/staff and children should be interacting and how we should treat each other in our partnership.

Emergent Design

Because of the degree of uncertainty inherent in tackling complex problems, SE cautions against detailed, upfront planning and predetermined outcome measures. Instead, following the principles of systemic action research *(Burns, 2007)*, SE favors *emergent designs*, in which the likely design, methods, and measures are sketched out initially in very broad terms, with the specific elements of the design developing iteratively based on what is being learned. From the very beginning of the Wiba Anung partnership, we moved forward strategically by developing plans that allowed for emergence. When we wrote our grant application, we identified the general strategies and approaches we would use to engage our partners and jointly identify our research topics, questions, methods, and products, but we did not identify specific topics, questions, methods, and products, although these details are typically the foundation of a well-written research grant proposal. Our proposal, however, was for building the foundation for a Michigan-based tribal early childhood education research partnership. Once we received funding, we set out to build that foundation, establishing a community–university research team that explored new opportunities, both big and small. In the section that follows, we illustrate how the principle of emergent design operated within a particular strand of inquiry and action.

Multiple Strands of Inquiry and Action

In our partnership, we have always maintained three active strands of inquiry within the larger problem space of disparities in early education outcomes. As determined in our early partnership meetings, these strands were (a) inclusion of Native language and culture in the Head Start classroom (described above), (b) examination of children's school readiness, and (c) understanding and supporting effective teacher–child interactions in the classroom. Each of these three strands includes several substrands or smaller projects, allowing us to more fully explore each line of inquiry and create appropriate action. We addressed the incorporation of tribal language, cultural skills, values, beliefs, and life ways into the Head Start classroom through three specific avenues. First, by conducting focus groups with community partners and tribal knowledge holders, we were able to learn about appropriate ways to incorporate tribal language and culture into the classroom. Second, we conducted surveys and observations in the classrooms to identify how tribal classrooms are able to support young children's knowledge of tribal language and culture *(Gerde et al., 2012).* Results from this study indicated that, although programs were offering children opportunities to learn tribal language and culture within the classroom, these opportunities were often disconnected from curricular activities. Additionally, opportunities for learning tribal language were generally limited to learning single words or phrases. Using these findings, we then worked with collaborators from tribal Head Start programs and the National Center on Cultural and Linguistic Responsiveness of the Office of Head Start to develop *Making it Work!*, a framework that supports tribes to create culturally based content for the classroom that connects to the Head Start Child Development and Early Learning Framework domains of early learning (https://eclkc.ohs.acf.hhs.gov/hslc/tta-system/cultural-linguistic/making-it-work).

It is important to note that the main three strands of inquiry and action within the Wiba Anung partnerships are not viewed in isolation. We actively work together to explore how findings from different strands are related. Our team has also implemented the use of mirrored methods across different types of tribal early childhood programs to enable a more comprehensive understanding of these themes from different perspectives. Specifically, the team decided that common measures would be used by our Head Start research team and our Home Visiting research team. By using the same measures, we will be able to combine data across these two research projects. In addition, we have been able to increase the

collaboration between these two programs, which are typically not closely coordinated.

Transdisciplinarity

The Wiba Anung partnership has included university staff and faculty from different disciplines (e.g., psychology, human development and family studies, education, anthropology), parents, teachers, elders, and directors of different tribal-based early childhood programs. In addition, faculty from nursing, kinesiology, human medicine, and engineering have contributed their expertise to the partnership, but not as formal members. To coordinate such a large and disparate group, we formed teams of the three types described above (partnership team, leadership team, and communities of learning). In addition, we conduct consultations in the form of focus groups and key informant interviews with a broader range of community stakeholders and tribal elders to obtain their guidance and advice as we move forward with our work.

In sum, the Wiba Anung case demonstrates in concrete terms the application of the six principles of SE within a successful community–university research partnership that has yielded scholarly products, enhancements to tribal early childhood education systems, and stronger connections between tribal educational and family systems. Preliminary results indicate that this partnership has also produced improvements in early childhood education outcomes among American Indian/Alaska Native children. In light of this successful case, we now turn our attention to some of the barriers university-based faculty, staff, and students are likely to experience in practicing the principles of SE.

Barriers to Implementing Systemic Engagement

Given the apparent promise of SE, it is reasonable to ask why its principles are not more widely deployed in university–community partnerships. To provide a partial answer to this question, we briefly review the literature on the barriers to faculty engagement in general and SE in particular to understand why the principles of SE are not more widely used to address complex problems in partnership with communities.

Barriers to Engagement

Most barriers associated with faculty engagement are located in five domains: personal, professional, communal, institutional

(Demb & Wade, 2012), and logistical *(Demb & Wade, 2012; Hammond, 1994)*.

Personal domain. The personal domain encompasses individual attributes such as race/ethnicity, gender, personal values, motivation, epistemology, and experience *(Demb & Wade, 2012).* Although the influence of race/ethnicity and gender on faculty engagement is unclear *(O'Meara, Sandmann, Saltmarsh, & Giles, 2011)*, personal values that prioritize the intrinsic rewards of engagement over the extrinsic rewards of professional accomplishment, motivation to accomplish social change versus enhancing one's professional status, and a humanistic rather than an exclusively intellectual orientation are associated with higher levels of faculty engagement *(Demb & Wade, 2012)*. Therefore, recruiting engaged scholars with value stances that are associated with higher levels of engagement and developing a new generation of engaged scholars that possess such value stances will be essential to the widespread use of the principles of SE.

Professional domain. The professional domain includes such elements as a faculty member's tenure status, rank, length of time in academe, and professional orientation *(Demb & Wade, 2012).* In general, senior faculty discourage junior untenured faculty from participating in engagement activities, counseling them instead to focus their efforts on research activities that will quickly yield publications in top-tier disciplinary journals *(Demb & Wade, 2012; Jaeger & Thornton, 2006; Sandmann, Saltmarsh, & O'Meara, 2008; Weerts & Sandmann, 2008)*. Consequently, tenured faculty are more likely to participate in engagement than untenured faculty and if untenured faculty are engaged, they are more likely to be teaching a service-learning course than conducting community-based research *(Jaeger & Thornton, 2006)*. Although an increasing number of journals are devoted to publishing engaged scholarship *(Franz, 2011),* publication in such journals does not garner the same degree of recognition or reward as publication in disciplinary journals *(Sobrero & Jayaratne, 2014)*. Consequently, the challenge for the engaged scholar is to produce scholarly products worthy of publication in both disciplinary and engagement-oriented journals.

Communal domain. The communal domain refers to the degree of support for engagement in graduate socialization, professional communities, academic disciplines, and departments *(Demb & Wade, 2012).* Much of graduate education "emphasizes competitive individualism, without attention to the consequentiality of research for public purposes" *(O'Meara, 2011, p. 185)*. Graduate socialization also tends to favor traditional forms of scholarship

(Jaeger & Thornton, 2006). As a consequence, new faculty members may arrive on campus lacking the "knowledge, skills, or values orientation needed for engagement" *(Sandmann et al., 2008, p. 50)*. As we will see later, many new faculty will also lack the knowledge, skills, and value orientation necessary for SE.

Faculty engagement varies significantly by discipline. Whereas the most highly engaged faculty are found in the disciplines of social work *(Demb & Wade, 2012)*, education (*Demb & Wade, 2012; Doberneck, Glass, & Schweitzer, 2012; O'Meara et al., 2011)*, human ecology, food sciences *(Demb & Wade , 2012)*, forestry *(O'Meara et al., 2011)*, agriculture *(Demb & Wade, 2012; Doberneck et al., 2012; O'Meara et al., 2011)*, environmental sciences *(Demb & Wade, 2012)*, and health sciences *(Doberneck et al., 2012; O'Meara et al., 2011)*, the least engaged faculty are found in the science, technology, engineering, and mathematics (STEM) disciplines *(Demb & Wade, 2012; O'Meara et al., 2011)*; humanities *(Demb & Wade, 2012; O'Meara et al., 2011)*; and English *(O'Meara et al., 2011)*. Oddly enough, whereas O'Meara et al. *(2011)* reported that faculty in the social sciences were among the most highly engaged, Demb and Wade *(2012)* found that faculty in the social and behavioral sciences were among the least engaged. These contradictory results may be an artifact of differences between the studies in which disciplines were included in the categories of social and behavioral sciences. Nevertheless, the results overall suggest that additional work must be done to foster engagement in those disciplines in which engagement is less frequently practiced. After all, consistent with the principle of transdisciplinarity, it is desirable to have all disciplines that possess knowledge relevant to the effective management of a complex problem involved in an SE effort.

The reality for most faculty members is that engagement is *not* highly valued in the hiring, retention, promotion, and tenure (HRPT) process, even when policies are in place to reward engagement *(Jaeger & Thornton, 2006; O'Meara, 2011)*. Furthermore, faculty who serve on HRPT committees are often unprepared to assess the quality of engaged scholarship *(Jaeger & Thornton, 2006; Sandmann et al., 2008; Weerts & Sandmann, 2008)* and have limited understanding of standards and metrics appropriate for evaluating engaged scholarship *(Sandmann et al., 2008; Sobrero & Jayaratne, 2014)*. Even where standards and metrics of excellence in engaged scholarship have been established, senior faculty may resist using them during the HRPT process *(Jaeger & Thornton, 2006)*.

Institutional domain. The institutional domain includes such elements as institutional mission, institution type, and engage-

ment structures *(Demb & Wade, 2012)*. O'Meara et al. *(2011)* found that faculty perceived institutional commitment to engagement to be higher at 2-year colleges, public 4-year colleges, and Catholic 4-year colleges than at other types of institution. In addition, a comparative study of land-grant and urban research universities found that "land-grant universities struggle more than their urban counterparts to institutionalize engagement language and practices across their campuses" *(Weerts & Sandmann, 2008, p. 86)*. However, this study contained a very small sample of three land-grant institutions, and much has changed in the field of engagement since the study was conducted. The extent to which these findings are true of land-grant institutions today is unclear.

Many institutions of higher education have institutionalized their support for engagement by establishing internal structures with dedicated engagement staff. Some institutions have centralized their engagement structures in institution-level offices, and others have implemented a distributed model of engagement, dispersing engagement functions and staff throughout colleges and departments. There is no consensus on the preferred model; each possesses distinct advantages and disadvantages *(Weerts & Sandmann, 2008)*.

In their study of engagement at six public research universities, Weerts and Sandmann *(2008)* found that "engagement work was typically led by academic staff, not traditional tenure-track faculty. Instead, faculty were more likely to assume the role of content expert or researcher alongside the academic staff who were facilitating the engagement projects" *(Weerts & Sandmann, 2008, p. 91)*. In other words, engagement staff provide a critical bridging or boundary-spanning *(Williams, 2002)* function within university–community engagement efforts. They also lower the costs of engagement to faculty by assuming responsibility for time-consuming efforts to establish and nurture university–community partnerships and coordinate engagement activities, allowing faculty to maintain a focus on the elements of engaged work most relevant to their scholarship.

Logistics. Community engagement faces an additional set of challenges related to the coordination of people and tasks and the additional time this coordination takes *(Demb & Wade, 2012; Hammond, 1994)*. Although one should not underestimate the logistical challenges of operating a busy university-based laboratory, engagement multiplies the logistical challenges by requiring the coordination of people and tasks within universities, within communities, and between universities and communities. Engagement

also often entails protracted negotiations between university faculty and community partners around the focus of a particular project as well as project procedures, personnel, facilities, and resources. Because it often involves multiple strands of linked activities, the logistical demands of SE are even more acute. Consequently, university-based structures and resources, including dedicated engagement staff as well as corresponding engagement structures and resources within communities and between universities and communities, will be critical to making SE a reality, meaning that SE is most likely to succeed where universities have the capacity to provide these structures and resources.

Barriers to Systemic Engagement

The second set of barriers to engagement are those associated with the principles of SE. Challenges related to the first four principles—systems thinking, collaborative inquiry, support for ongoing learning, and emergent design—stem from the lack of knowledge, interest, and skill among faculty, staff, and students in using what may be unfamiliar approaches to research and evaluation. In other words, the challenges associated with the first four principles are in part related to a set of competencies specific to SE that faculty, staff, and students may not possess in full measure. Although the complete specification of these competencies and the kinds of training that would be required to prepare a cadre of "systemic engagers" is beyond the scope of this article, spelling out these competencies more fully will be essential to the implementation of SE.

Challenges related to the last two principles of SE—multiple strands of inquiry and action and transdisciplinarity—are in part logistical, requiring coordination, communication, and research/evaluation support across multiple strands as well as various disciplines and sectors. The collective impact *(Hanleybrown, Kania, & Kramer, 2012; Kania & Kramer, 2011)* solution to this logistical challenge is the establishment of an independent community-based backbone organization and cascading levels of linked collaboration. Backbone organizations provide strategic direction; facilitate dialogue between partners; and support data collection and analysis, communications, and community outreach. Cascading levels of linked collaboration involve the establishment of multiple independent working groups formed around different leverage points or strategies. Although these groups work independently, their efforts are coordinated by the backbone organization, allowing several different teams to simultaneously address different dimensions of a complex issue or problem. In the Wiba Anung case,

the collective efforts of a diverse set of community and university partners were coordinated through the organizational structure of a small leadership team, a larger partnership team, and multiple communities of learning. One university-based solution to promoting transdisciplinarity is reflected in the proliferation of transdisciplinary research centers and institutes on campuses *(Cooper, 2011; Etzkowitz, 2008; Hall et al., 2008)* that have been established to promote the growth of new knowledge at the intersections of multiple disciplines.

Another challenge related to collaboration across strands, disciplines, and sectors is related to the difficulty of developing and carrying out coordinated plans of action among a group of actors with varying understandings of a focal problem, different interests, and competing agendas. Wicked problems *(Batie, 2008)* are characterized by high levels of value conflict among stakeholders and high levels of uncertainty about the likely consequences of implementing any particular strategy to manage them. In such circumstances, it is essential to reduce value conflict to allow the emergence of strategies that can be supported by a majority of stakeholders. Consequently, knowledge of and skill in using techniques that enable a diverse set of actors to arrive at a common plan of action, such as strategic assumption surfacing and testing *(Williams & Hummelbrunner, 2009)*, are essential for the success of any SE initiative.

Discussion

In this article, we proposed an alternative to the university-driven isolated impact approach to community change—systemic engagement (SE)—and described its six principles:

1. Systems thinking
2. Collaborative inquiry
3. Support for ongoing learning
4. Emergent design
5. Multiple strands of inquiry and action
6. Transdisciplinarity

Next, we illustrated the application of the six principles of SE with a case example. We then discussed barriers to faculty engagement in general and systemic engagement in particular, briefly remarking on the changes that would be necessary to make the

widespread deployment of SE a reality. We discuss those changes and their implications more fully here.

Overall, the literature on barriers to engagement suggests that SE faces significant headwinds. Beginning in graduate school, future faculty in many disciplines are schooled in a competitive, individualistic model of private scholarship *(O'Meara, 2011)* that favors traditional discovery-oriented scholarship over engaged scholarship and values traditional epistemologies over epistemologies that are open to practice-based or indigenous sources of knowledge. When they arrive on campuses, new faculty members are often discouraged by senior faculty from pursuing community engagement. When their scholarly portfolios are reviewed for reappointment, promotion, or tenure, less value is placed on their engaged work—in spite of university missions and policies that explicitly support engagement. Despite these headwinds, countless engaged faculty have persevered to achieve successful careers. Many of these faculty may have strong personal commitments to engaged scholarship. Some may have been trained in disciplines that value engagement and teach graduate students the knowledge and skills to succeed as engaged scholars. Others are fortunate enough to find supportive mentors among senior engaged faculty. Still others may work at universities that provide structures, resources, and rewards that support engagement. In addition, as O'Meara *(2011)* points out, the community engagement movement has achieved three significant accomplishments during the last two or three decades. First, faculty civic engagement has simply increased. More institutions of higher education have made commitments to engagement, the number of faculty who report engagement has increased, and the number and range of engagement opportunities for students has expanded. Second, faculty civic engagement has made inroads into disciplinary associations and has established a research base. Third, greater attention has been paid to creating the structures and processes necessary to support the engagement of faculty, students, and institutions.

Despite these accomplishments, scaling up SE will require changes at the individual, disciplinary, departmental, and institutional level. At the *individual level*, it will require that faculty achieve a balance between being oriented toward doing good versus doing well, a humanistic versus an exclusively intellectual orientation, and an openness to alternative ways of knowing (including practice-based and community-based/indigenous knowledge) versus a strict adherence to postpositivist epistemology. It will also require increased understanding of, interest in, and skill in using (a) sys-

tems approaches and methods; (b) collaborative and participatory approaches to inquiry and action; and (c) flexible and adaptable approaches to research and evaluation that promote learning and action in real time among faculty, staff, and community members. In addition, it will require increased understanding among faculty, staff, and community members of the realities of operating in complex environments and increased knowledge of effective strategies to mitigate the risks that are entailed. Finally, it will require that faculty have enough experience with SE (or exposure to sufficiently convincing case examples of SE) to appreciate SE's contribution to improved understanding and resolution of complex problems.

At the *disciplinary level*, scaling up SE will require graduate socialization that communicates to students that engagement is a valued part of their discipline, and graduate training in the knowledge and skills required to be successful engaged scholars. At the *departmental level*, scaling up SE will require policies, procedures, metrics, and faculty evaluation systems that recognize and reward quality engaged scholarship; the application of those policies, procedures, and metrics in hiring, reappointment, promotion, and tenure decisions; and the mentoring of junior faculty by engaged senior faculty in how to succeed as engaged scholars.

At the *institutional level*, scaling up SE will require missions that support community engagement; policies, practices, and procedures to reward and celebrate engagement; supportive internal structures with dedicated engagement staff to serve in bridging/boundary-spanning roles and to assist faculty in managing the logistical complications of SE; and internal seed funding for engaged scholarship.

The preceding list of requirements for SE is daunting, but as Tainter *(1990)* has demonstrated, the effective management of increasingly complex problems requires increasing resource inputs. As the problems facing communities in the 21st century grow in number and complexity, it will be necessary to make difficult choices about which complex problems to tackle and which to leave for a later day. Such choices must be guided by our best understanding of which problems are most fundamental; which problems are more cause than symptom; and which problems, such as growing inequality in income and wealth *(Wilkinson & Pickett, 2011)*, are at the bottom of many other problems. In addition, we should devote sufficient resources to the efforts to ameliorate such complex problems, including the selection of an approach that is suited to taming them. We believe that SE is one such approach.

Acknowledgments

We would like to express our deep gratitude to Ann Belleau and Lisa Abramson of the Inter-Tribal Council of Michigan for their patient guidance, enthusiastic encouragement, and useful critiques of the Wiba Anung case example. We also thank Nicole Thompson of Memphis State University and Hope Gerde of Michigan State University for their ongoing involvement in the Wiba Anung partnership. Finally, we wish to thank Robin Lin Miller for reading several drafts of this article and offering her thoughtful critiques.

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