Pursuing Reciprocity in Engaged Scholarship Partnerships Using Community Sustainability Certification Programs

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ABSTRACT

In recent years, there has been a proliferation of sustainability certification programs at the local, state, and national level to highlight the use of policies, programs, and infrastructure to achieve sustainable development outcomes within communities. In this paper, we use examples from Penn State's Sustainable Communities Collaborative to demonstrate how institutions with community-engaged scholarship programs can use these certification programs to enhance program operation and reciprocity by identifying projects, engaging new disciplines, and improving relevance.

Keywords: higher education, sustainability indicators, sustainable development, community engagement, service learning

INTRODUCTION

As population continues to grow and concentrate in urban areas and natural resources come under increasing pressure, local governments and communities are progressively seen as an effective point of departure for addressing the most pressing problems facing the planet (Svara, 2011). Additionally, the role of higher education institutions in addressing these problems is a necessary and important one, particularly through community-based and engaged scholarship initiatives. Yet these initiatives face a number of challenges, both in establishment and operation, as they strive for greater reciprocity, participation, impact, and institutional support (Chase and Barlett, 2013). Concurrently, local governments and communities are looking for ways to guide and track their work in sustainability. Community sustainability certification programs have emerged to meet the needs at the community level—but how might they also help guide the operation and impact of the engaged scholarship initiatives that strive to make positive, sustainable change in their local communities?

This paper aims to address this question. We suggest that colleges and universities with community engagement programs can use these same sustainability indicators and rating tools used by municipalities and communities to improve the programming process and ensure greater relevance and reciprocity. In this paper we will introduce two tools, the Sustainable Pennsylvania Community Certification and the STAR Community Rating System, and examine how colleges and universities can use them to develop engaged scholarship opportunities for their students and faculty. We describe concrete examples of engaged scholarship projects from Penn State's University Park campus in State College, Pennsylvania, that focus on the issues of human

resources, stormwater management, and traffic safety to illustrate the contributions of these frameworks to operation and reciprocity within engaged scholarship programming.

ENGAGED SCHOLARSHIP AND RECIPROCITY

The most commonly used definition of sustainable development comes from the United Nations: "meeting the needs of the present generation without compromising the ability of future generations to meet their own needs" (1987). Many institutions of higher education have answered this call for sustainability. This is done not only through improvements in curriculum itself, but also by establishing administrative-level sustainability goals, supporting sustainability-related extracurriculars, encouraging interdisciplinary research teams, improving the efficiency of physical operations, building staff and faculty sustainability engagement programs, and more (Cortese, 2003; Chase & Barlett, 2013). But the responsibility of universities and colleges has not stopped at the borders of campus. There has also been a wider investment in various outreach and community engagement programs, and initiatives focused on promoting engaged scholarship activities for students and faculty (Fitzgerald et al., 2012).

The movement toward more engaged, community-based ways of teaching, learning, and researching within universities and colleges began on a larger scale nearly 30 years ago, particularly with Boyer's (1990) call for a redefinition of scholarship that consists of discovery, integration, application, and teaching that incentivized a system in which teaching and application were on par with research activities. While many different interpretations exist, one commonly accepted definition of community engagement was developed by the Carnegie Foundation for the Advancement of Teaching, which defined it as the "collaboration between institutions of higher education and their larger communities (local, regional/state, national, global) for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity" (NERCHE, 2015).

Modes of engaged scholarship practice and interpretations of reciprocity in this work both vary widely across higher education institutions and programming. The latter is particularly important for ensuring meaningful and successful engaged scholarship opportunities, as reciprocity is "a foundational concept within service-learning and community engagement," yet it lacks clear definition or mutual understanding between engagement partners (Dostilio et al., 2012, p. 18). The benefits of engaged scholarship programming for community partners is particularly lacking and difficult to measure, in both practice and research literature (Miron & Moely, 2006). To ensure the effectiveness of current and future engaged scholarship programming, it is imperative that practitioners and scholars integrate reflection and methods for prioritizing community partners' needs and characteristics into their engagement work.

Community Sustainability Certification Programs

Ensuring that engaged scholarship practice is relevant and responsive to community priorities requires the alignment of engaged scholarship initiatives with the sustainable development needs of people and places. In the 1980s and 1990s, the concept of community sustainability certifications and indicators emerged as several communities in the United States started developing indicators that were holistic and multidimensional measures of well-being (Dluhy & Swartz, 2006; Mitra, 2003). Today, many different sustainably indicator/certification programs exist in the United States at a variety of governance levels (Mitra, 2003; Mori & Christodoulou, 2012; Tanguay et al., 2010). Banerjee (1996) noted that indicators serve many purposes, among them to measure performance of policies and programs, examine trends, inform policy deci-

sions and strategic investment decisions, raise public awareness, define targets, benchmark against other communities, track performance over time, raise warning flags, and challenge conventional wisdom.

Some of these indicator systems emerge from the local level; others are formulated and organized at the state or national level. The first local-level sustainability-related indicator system was established in 1985 in northern Florida by the Jacksonville Community Council Inc. (JCCI), a non-profit organization. Considered to be the world's first community quality-of-life indicators project, the original development of this program resulted in nine quality-of-life target areas, each comprised of 10 indicators (Powell, 2012). Another one of the earliest and most well-known community sustainability initiatives is Sustainable Seattle (Holden, 2006), launched in 1991 as a grassroots effort by a volunteer citizen's network. Sustainable Seattle identified a set of 40 indicators that could be used to measure the extent to which Seattle balances social equity, ecological integrity, and economic vitality for current residents while ensuring the ability of future generations to do the same.

More recently, a number of statewide programs aimed at municipal governments have been developed (Table 1). One of the important differences between these certification programs and local or national sustainability indicator programs is that many state-based municipal certification programs focus on actions instead of outcomes. For example, instead of measuring energy consumption per capita or GHG emissions per dollar of GDP, these programs measure the extent to which municipalities adopt specific policies or offer particular services or programs such as curbside recycling, energy efficiency audits for low-income residents, or water conservation programs (McDermott & Solomon, 2016; Schlossberg & Zimmerman, 2003). In this paper, we will take a more in-depth look at two programs: Sustainable Pennsylvania (state) and the STAR Community Rating System (national).

Table 1. Thirteen state-level sustainability certification programs[1]

State	Program	Year Established	# Participating Communities	# Certified Communities	Institutional Base
CA	Green Cities California	2007	14	--	Membership
CT	Clean Energy Communities	2002	147	--	State Gov't
FL	Florida Green Building Coalition	2006	79	66	Membership
MA	MA Green Communities	2009	136	--	State Gov't
MD	Sustainable Maryland	2011	67	35	NGO/ University
MI	Michigan Green Communities	2009	33	25	NGO/ University
MN	Minnesota GreenStep Cities	2007	91	57	Public-Private
NC	League of Municipalities Green Challenge	2007	90+	--	NGO/ University
NJ	Sustainable Jersey	2009	444	198	NGO/ University
NY	NY Climate Smart Communities	2014	169	6	State Gov't
PA	Sustainable Pennsylvania	2014	81	66	NGO/ University
VA	Go Green Virginia	2007	208	25+	NGO/ University
WI	Green Tier Legacy Communities	2010	12	12	Public-Private

Sustainable Pennsylvania. Launched in June 2014, Sustainable Pennsylvania was modeled after the original Sustainable Pittsburgh program and adapted for the overall local government structure of Pennsylvania. This framework is a certification program of the Pennsylvania Municipal League, and it consists of 131 specific sustainability actions organized into 26 categories, ranging from air quality and affordable housing to recycling and renewable energy. The certification is largely based on municipal actions taken, including the adoption of policies, codes, and ordinances, as well as the implementation of sustainability-related programs. There are no measurable outcomes or statistics per se included in the certification process; instead, local governments check the yes/no box on the online application for a particular action and then provide evidence for the action, usually in the form of a web link to a policy or program (Sustainable Pennsylvania, 2017a).

As of July 2017, 84 Pennsylvania communities have signed up, 71 of which have submitted enough evidence to be certified as associate, bronze, silver, gold, or platinum level (Sustainable Pennsylvania, 2017a). By design, the administrative burden of completing the certification and submitting evidence is not so overwhelming as to deter participation. The low threshold for participation means that more municipal governments can engage and with the hope that their certification may be a starting point for greater engagement around sustainability.

STAR Community Rating System[2]. The Sustainable Tools for Assessing and Rating Communities (STAR) System was launched in October 2012. The rating system was developed over the course of four years from 2008 to 2012 by ICLEI – Local Governments for Sustainability USA, the U.S. Green Building Council, National League of Cities, and the Center for American Progress. The program is comprised of eight goal areas covering 49 objectives with over 500 measurable outcomes. The eight goal areas are the Built Environment; Climate and Energy; Economy and Jobs; Education, Arts, and Community; Equity and Empowerment; Health and Safety; Natural Systems; and Innovation and Process. Communities submit data and evidence to STAR for verification, and STAR evaluates whether outcomes meet standards set by local and/or national organizations. Community points are tallied to achieve a 3-, 4-, or 5-STAR rating (STAR Communities, 2017; STAR Technical Guide, Version 1.1, 2014). As of April 2017, STAR has certified 60 communities and hundreds more are using the framework to guide their development work (STAR Steering Committee Minutes, April 11, 2017).

Participation in the STAR Community Rating System allows communities to establish baselines; benchmark against other communities; set targets; align policies, programs, and infrastructure to meet targets; and track progress. The categories reveal that the rating depends on diverse community stakeholders including the local government, school district, health system, chamber of commerce, transportation authority, and area non-profits. In this way, STAR emphasizes the cross-jurisdictional nature of sustainability and the need for boundary spanning approaches in order to achieve sustainable outcomes (STAR Communities Technical Guide, Version 1.1, 2014).

ENGAGED SCHOLARSHIP AND SUSTAINABILITY CERTIFICATION PROGRAMS

We propose that community sustainability certifications, like Sustainable Pennsylvania and the STAR Community Rating System, can be useful for establishing engaged scholarship opportunities in three distinct ways. The first is when a local government has completed the certification process by submitting data and information about current activities and achievements. In this case, the certification can be used to identify weaknesses or gaps that need to be addressed. Projects are then scoped to ad-

dress these gaps. Second, the certification can also be used to identify relative strengths that can be further enhanced through engaged scholarship projects. In both these approaches, higher education institutions mine the data in the completed certification to develop projects that address community needs in an effort to enhance sustainable outcomes. The third approach is when the local government has not completed a particular national or state sustainability certification, but the certification frameworks are used by colleges and universities as an orienting tool that can be applied to engaged scholarship projects to illuminate objectives and approaches to the chosen issue and to show how they connect to promoting sustainable outcomes. If the local government has a written sustainability or climate action plan, for example, the university partner can map elements of the plan onto the STAR Community framework and/or a state sustainability certification framework as a way of providing context and connecting local sustainability efforts to larger state and national efforts.

Drawing on the experiences of the Sustainable Communities Collaborative at Penn State, the next section of this paper will briefly discuss three examples in which two sustainability certification frameworks (Sustainable Pennsylvania and the STAR Community Rating System) were used to organize sustainability-focused engaged scholarship opportunities.

PENN STATE'S SUSTAINABLE COMMUNITIES COLLABORATIVE

The Sustainable Communities Collaborative (SCC) is an initiative of the Penn State's Sustainable Institute centered at the University Park campus. The SCC works on local sustainability priorities, challenges, and opportunities by connecting Penn State faculty and students to community partners (including local governments, businesses, and non-profit organizations) to address real-world problems. Between spring 2013 and spring 2017, the SCC organized a total of 99 engaged scholarship projects, engaging 1,185 students and 24 community-based partners. Projects are typically addressed in the time frame of one semester, although some projects may span multiple semesters and may involve more than one course, particularly if the project is multidimensional and would benefit from an interdisciplinary problem-solving approach. Projects are undertaken by a wide range of academic disciplines, a sample of which may be viewed in the Appendix, Table 2. The following examples discuss three different SCC-facilitated projects between University Park faculty and students and community-based partners from surrounding municipalities to demonstrate the usefulness of sustainability certification programs for guiding engaged scholarship opportunities (SCC, 2017).

Example 1: Sustainability Training in the State College Borough

This first example demonstrates how an engaged scholarship program may use a completed community certification program to create engagement opportunities that address a municipality's sustainability weakness. The State College Borough completed the Sustainable Pennsylvania certification in 2015, achieving recognition as a Gold-level community, meaning they met at least 70 percent of Sustainable Pennsylvania's 131 policies, best practices, and/or specific actions (Sustainable Pennsylvania, 2017b). One area that prevented the Borough from achieving Platinum status was the lack of any sort of sustainability training program for Borough employees as specified under Governance and Community Engagement: Sustainability 4-E ("There is ongoing training for municipal employees and officials and the HR function is closely engaged in advancing objectives of the municipal sustainability program.") (Sustainable Pennsylvania, 2017b).

When the State College Borough identified this gap as a potential need, the SCC identified a faculty member teaching a course in Labor and Employer Relations for students preparing for careers in human re-

sources management. Working directly with the Borough's HR Manager as the client, the students in the course researched sustainability training programs in the private sector and the public sector. Using information from the Borough's sustainability plan and other municipal documents, the students created a short video training module that Borough employees can complete at any time. When the Borough re-submits to the Sustainable Pennsylvania certification program, they will be able to point to the training program and the completion rate by Borough employees as evidence to fulfill the requirement for Governance and Community Engagement: Sustainability 4-E (Sustainable Pennsylvania, 2017b).

Example 2: Stormwater Mitigation in Ferguson Township

In this second example, we aim to demonstrate how using a completed certification program for projects may be used to improve an area of strength. Ferguson Township completed the Sustainable Pennsylvania certification in 2015, achieving recognition as a Gold-level community (Ferguson Township, 2017). Within Sustainable Pennsylvania, water is addressed under two categories: Water Use, Conservation and Quality (16) and Green Infrastructure (18). Within the category of Water Use, Conservation and Quality, Ferguson received 13 points (out of 16 points possible) by addressing six of the seven subcategories. Within the Green Infrastructure category, the township provided evidence of policies and actions in all six subcategories and was awarded 11 points (out of 11 points possible).

In spite of Ferguson Township's high performance in the domain of water stewardship according to the Sustainable Pennsylvania certification, public officials used this process to identify an area of strength for continued improvement. Specifically, the township is home to several locations that experience perennial stormwater flooding during periods of intense or prolonged rain. Students in biological and agricultural engineering, working with staff in the Public Works Department, were assigned the task of designing stormwater solutions for three sites within the township. The student teams assessed each site, designed environmentally sensitive solutions, analyzed the cost of alternative solutions, and delivered cost-effective plans for remediation. Based on student designs, the township council subsequently authorized funding to construct the suggested remediation projects in its capital improvement plan (CIP) for 2018. This project also prompted additional projects related to community outreach around stormwater mitigation, green infrastructure, and sustainable design outside the scope of the original Sustainable Pennsylvania focus.

Example 3: Pedestrian Safety in the State College Borough

In this third example, we aim to demonstrate how a municipal partner and engaged scholarship practitioners may use a sustainability certification framework not yet completed by the municipality to develop collaboration opportunities. As of summer 2017, the State College Borough had not completed the STAR program. However, the STAR certification was still used to demonstrate how proposed projects fit within a sustainability framework, particularly when those projects were not exclusively environmentally focused.

Within a 12-month window in 2016-17, there were three fatal crashes involving pedestrians on Borough streets adjacent to the university campus. While alternative transportation had been a focus of the Borough's efforts to reduce greenhouse gases and improve their built environment, the Borough chief of police was, in addition, highly motivated to do something to also address pedestrian and bicycle safety in the community, spurring a number of engaged scholarship projects across multiple disciplines. These projects were guided and connected to the sustainability interests of the Borough and the SCC using the STAR Community Rating System's Health and

Safety (HS) category, which includes the subcategory Active Living (HS-1) that emphasizes active transportation choices as a way to enhance health outcomes, and intersects with the Built Environment (BE) category, particularly BE-7 Transportation Choices that specifies that communities "demonstrate that pedestrian and bicycle fatalities are making incremental progress towards zero fatalities by 2040" (STAR Technical Guide, Version 1.1, 2014, p. 69).

In fall 2015, civil engineering students analyzed film footage to assess motorist, bicyclist, and pedestrian behavior. They also addressed physical attributes and traffic patterns along the corridors with the most crashes. In fall 2015, fall 2016, and spring 2017, communication students conducted an origin and destination study; surveyed motorists, cyclists, and pedestrians about their perceptions of traffic safety and their attitudes toward various modes of transportation; developed and tested various messaging strategies; and developed and implemented innovative public relations campaigns related to traffic and pedestrian safety for area residents and student populations.

In this example, the STAR program helped to orient the Borough's work to promote alternative transportation, not only from a Climate and Energy or Built Environment perspective (other relevant STAR program categories used to guide this work), but from a Health and Safety perspective that was galvanized by a series of fatal accidents. By looking at Health and Safety HS-1 as the primary point of focus, students were able to craft a compelling public relations campaign to address multiple goals (STAR Technical Guide, Version 1.1, 2014).

DISCUSSION

These three examples of community-university partnership demonstrate the usefulness of sustainability certification frameworks in the formation and support of engaged scholarship collaborations. Through the Sustainable Communities Collaborative, we have seen the use of community sustainability certification frameworks benefit our engaged-scholarship practice in two main ways. First, the use of the frameworks has improved our program's overall operation by helping us to identify both partners (community- and university-based) and potential projects for collaboration; offering objectives for designing the projects themselves and tracking progress and impact at the municipality level; and more clearly integrating a holistic approach, beyond the environment, to sustainability into our and our partners' practices. This practice has brought new disciplinary partners to the table including the liberal arts and humanities, expanding student engagement beyond the typical science and engineering disciplines (See Appendix, Table 2 for examples). Saha and Paterson (2008) found that many municipal sustainability efforts lack integration of equity and social sustainability issues. But through the use of the Sustainable Pennsylvania and STAR frameworks, respectively, it became apparent not only how issues like municipal employee training (Example 1) and traffic/pedestrian safety (Example 3) fit the sustainability missions of the municipalities and SCC, but also from which academic departments to seek faculty skills and expertise to address the municipality-based issues.

Second, the use of these frameworks has also strengthened the reciprocity of our programming, particularly on the side of our community partners by improving relevance and responsiveness of the projects by directly addressing community sustainability weaknesses and strengths; providing a common language to bolster dialogue between community and university partners; and building long-term, multidisciplinary relationships between project partners. As Holden (2013) suggested, we have found these sustainability certification programs to be "boundary objects" or "tools which open up dialogue, information sharing, [and] learning and consensus building" particularly between university and community

partners (p. 89). Additionally, in Example 2 and Example 3, each project has respectively blossomed into collaborations that have stretched beyond one or even two semesters—helping to address the ongoing problem of student turnover and inconsistency in engaged scholarship and service-learning activities (Wallace, 2000).

However, there are some important limitations to consider. First, these sustainability certification frameworks and programs are not perfect, whether they are developed through top-down or bottom-up approaches (Reed et al., 2006). Faculty and administrators should not only be aware of the programs for the sake of improved engaged scholarship opportunities, but also the inherent weaknesses of the frameworks and the metrics they employ. Secondly, aligning projects solely with these frameworks/programs risks creating engaged scholarship programming that is more reductionist than intended, susceptible to 'green-washing' like many other sustainability initiatives (Barlett & Chase, 2013). However, these frameworks need not function as a stopping point, an end-all. The use of these frameworks in guiding engaged scholarship work should function as a starting place, encouraging future research, learning, and practice that continues to improve the sustainability conditions of local communities and the certification programs themselves.

CONCLUSIONS

This paper has explored the relationship between engaged scholarship and community sustainability as well as provided an overview of sustainability certification programs as a bridging mechanism for promoting better program process and community reciprocity in engaged scholarship practice. Through the use of case studies and discussion, the paper further demonstrated how these frameworks might be important tools in furthering sustainability-focused, engaged scholarship opportunities. This approach bridges the gap that currently exists between sustainability and engaged scholarship, offering a road map for integrating the two more thoroughly in research, learning, and practice. From the perspective of the Sustainable Communities Collaborative at Penn State, both the STAR Community Rating System and the Sustainable Pennsylvania program have been important tools in expanding the scope and impact of our program. We encourage others in higher education institutions to engage with these certification programs through their work with local communities to improve reciprocity through better relevance and overall outcomes. Future research and practice in this area may include formal assessments and evaluations of engaged scholarship programs from the perspective of diverse program stakeholders that draw upon sustainability certification programs so that we may continue to improve both the frameworks/programs as well as our own approaches to working with community partners on important sustainability issues.

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[1] Table adapted from Sustainable Jersey's "Statewide Change, One Community at a Time: A Comparative Study of Collaborative State-Local Sustainability Programs (McDermott & Solomon, 2016).

[2] The Green Business Certification Inc. (GBCI) announced in November 2017 that it will partner with the STAR Community Rating System to integrate STAR into LEED for Communities and Cities to advance sustainable cities worldwide (Shaver 2017).

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APPENDIX

Table 2. Sample of Sustainable Communities Collaborative engaged scholarship projects by discipline, course, and STAR Category

Department/ Discipline	Course Title	Project	STAR Category*
Architecture	Architecture Studio	School Facility Energy Efficiency Redesign	CE
Biological Engineering**	Design of Stormwater Control	Municipal Stormwater Mitigation Design	NS
Civil Engineering**	Traffic Operations	Operational Traffic Performance of Atherton Corridor	BE
Civil Engineering**	Transportation Safety Analysis	Traffic Safety Analysis – Physical and Human Factors	BE
Communication**	Public Relation Campaigns	Pedestrian & Motorist Safety Awareness Campaign	HS
Communication	Public Relation Campaigns	Nature, Active Lifestyles & Eco-Stewardship	HS; NS
Geography	Geography Capstone	Municipal Greenhouse Gas Inventory	CE
Horticulture	Emerging Issues in Plant Sciences	High School Community Garden Plan	HS
Information Science & Technology	Information Science & Technology Integration & Problem Solving	Disaster Recovery & Resiliency for Local Government	HS
Labor & Employer Relations**	Human Resource Ethics	Sustainability Training for Municipal Employees	AEC
Labor & Employer Relations	Human Resource Ethics	Diversification Plan for Municipal Staffing	EE
Labor & Employer Relations	Human Resource Ethics	Arts & Culture as Employee Engagement Strategy	AEC
Marketing	Sustainable Behaviors – Consumers, Firms, & Society	Green Marketing Plan for an Eco-Hotel	EJ
Nutrition	Community Nutrition	YMCA Backpack Program Nutritional Analysis	HS
Psychology	Psychology of Sustainability	Climate Action Motivation & Norming Strategies	CE
Recreation, Park & Tourism Mgmt.	Program Evaluation & Research in Recreation Services	Assessing Human Health Benefits of Natural Areas	BE; HS

*Key to STAR Categories: Built Environment (BE); Climate and Energy (CE); Economy and Jobs (EJ); Education, Arts, and Community (EAC); Equity and Empowerment (EE); Health and Safety (HS); Natural Systems (NS); and Innovation and Process (IP).
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