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A Community-University Exchange Project Modeled After Europe's Science Shops

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Abstract

This article describes a pilot project of the Morgridge Center for Public Service at the University of Wisconsin–Madison for a new structure for community-based learning and research. It is based on the European-derived science shop model for democratizing campus-community partnerships using shared values of mutual respect and validation of community knowledge. The objective was to find methods that serve both community and institutional goals equally in a streamlined fashion. The Community University Exchange, the official name of the unique brand of science shop described, has just completed its first pilot year. This article analyzes how the stakeholders have found meaning in the process of building an infrastructure to help create more authentic, reciprocal, and mutually beneficial campus-community partnerships. This narrative is a map of the journey and the direction for future development.

Introduction

Over the last 5 years, University of Wisconsin–Madison outreach staff, faculty, and students have held regular meetings and focus groups with community organizers, business owners, farmers, and health providers to discover new ways to structure campus-community partnerships. They decided, based on that research, to pilot leveraging existing resources in the university and the community to streamline complex, multidisciplinary projects. In July 2010, stakeholders met to discuss potential opportunities for university-community-based research interests to align with community-identified priorities. The group explored the "science shop" concept as a possible structure to enhance community access to the university's intellectual resources. This article describes the science shop model for matching community needs to university expertise as it developed in Madison, Wisconsin. The authors briefly describe the evolution of the science shop in Europe, and then describe the University of Wisconsin–Madison's pilot of the model.

The Science Shop Model

A science shop model for community-based research and learning is used throughout Europe and other parts of the world,

including India, Asia, Africa, and South America. Several examples exist in the United States and Canada. An international network of practitioners that provides support and resources for this model is called Living Knowledge: The International Science Shop Network *(http://www.scienceshops.org)*.

The Science Shop: Beginnings in Europe

Beginning in Europe in the late 1970s as a response to ordinary citizens' perception of being excluded from participating in and understanding scientific research, some university researchers worked to consciously democratize academic activities, by using a "request for proposal" format driven by the community's wishes and needs *(Steinhaus, N., personal communication, September 2, 2007)*. This request for proposal structure became known as the "science shop," a name that stuck even though the work is not only about natural science, and rarely charges fees to the community *(Priest, S., 2010)*. The science shop infrastructure can be used to integrate service-learning programs and projects with community-based research to address relevant community issues *(Stoecker, Loving, Redding, & Bollig, 2010)*.

Science Shop Values, Structure, and Funding

Three values of the science shop concept make it a useful, sustainable model for community-based learning and research:

1. Projects on current issues arise from within community and grassroots organizations in consultation with their constituent groups, and must be of value to more than just a few individuals.

2. The projects are interdisciplinary by nature, bringing together faculty members and students to address issues through multiple lenses. The community is validated as a source of knowledge, not on a "need for service" basis alone. Community participation occurs throughout the project, including instrument design, data collection, analysis, and application of the findings *(Stanton, 2007)*.

3. The findings, framed with social action as a goal, are given back to the community that initiated the project.

Although several science shops thrive in Canada, only a few exist in the United States *(Strand, Cutforth, Stoecker, Marullo, & Donohue, 2003)*. The availability of more government subsidies

in Europe may explain the sustained use of science shops there. Science shop funding and organizational structure generally fall into one of three categories: (1) a science shop within a university; (2) a science shop as an independent contractor; or (3) a science shop as a hybrid collaborative *(Mulder, H., 2006)*. Examples of each type are provided below.

As part of a university.

In existence in its current form since 1996, the Community University Research and Learning Center at Loyola University–Chicago is "one of the most vibrant collaborative research centers in the U.S." *(Loyola University, n.d.)*. More than 50 community partners and faculty members from over 30 disciplines are involved in collaborative community-based research using a project team model.

To coordinate the projects, Loyola graduate students apply through a competitive process to work at the center as graduate assistants. In addition, one to three pre-doctoral candidates and a number of undergraduate work-study students assist the center. Loyola's science shop model uses the talents of these students to mobilize a large decentralized campus, given limited funding, and faculty and staff capacity. The use of graduate students as project leaders is a key component of their success at managing up to 25 projects at any one time. The center is now known for actionable results. Organizations seek them out without having to be solicited *(P. Nyden, personal communication, March 20, 2008)*.

As an independent contractor.

The *Wissenschaftsladen Bonn* (WilaBonn or Bonn Science Shop) in Germany is organized as a nonprofit organization. Even with little external funding, the Bonn Science Shop is still able to employ a professional staff of 25 *(Steinhaus, 2007)*. Each project that is accepted receives guidance from a council of delegates—that is, a management team consisting of a project manager, oversight committee, and project team. Delegates are elected from the general group of science shop members representing community organizations and the universities surrounding the Bonn area. The council of delegates guides the project to ensure that research and social projects are conducted according to the tenets of the science shop philosophy and values.

A "labor market" service (journals with employment vacancies and job tips), job and education fairs, and training sessions provide

70% of the income that funds the Bonn Science Shop *(Steinhaus, 2007)*. The labor market journals compile nationwide print and website listings, as well as offering a unique section that evaluates current job market trends. This service, and sector-specific workshops in IT/Internet and multimedia learning, renewable energy, and even nutrition, yoga, and qigong *(http://www.wilabonn.de/WILAinform_61englisch.pdf)*, have created a market niche that is substantially self-sustaining. The rest of the funding comes from sponsorships, and government grants and support.

As a hybrid collaborative.

A hybrid collective science shop is a blend of the university infrastructure and the independent contractor model. An example is the Trent Centre for Community-Based Education (Trent Centre) in Peterborough, Ontario, Canada. Although the Trent Centre is a separate entity, about 50% of its funding comes from Trent University. Their initial large multi-year private foundation grant has ended and the Trent Centre is now looking to diversify its funding structure (i.e., private donors, government and foundation grants). It has also recently received charitable status equivalent to U.S. 501(c)(3) classification *(T. Barr, personal communication, July 18, 2011)*.

The Trent Centre for Community-Based Education is an "independent third-party broker" that contracts with Trent University and community agencies in the region to provide services for community-based education. Organizations submit project proposals, which are reviewed by a community advisory committee that has Trent University representation. Proposals selected for action are posted on the Trent Centre's website *(http://www.trentcentre.ca/)* for students and instructors to consider. A community-based education project can be carried out as a thesis, a full or half credit independent study course, or as an assignment in a semester course. Some are service-learning projects, as opposed to the community-based research more common in Europe. The time commitment for projects varies from 50 to 200 hours *(T. Barr, personal communication, July 18, 2011)*.

"There is a project agreement with the TCCBE, signed by the host [nonprofit]; the student; and the supervising faculty." Results must be given to the nonprofit. Two full-time staff may broker 45 projects at one time, with two student interns handling administrative duties such as entering database information *(T. Barr, personal communication, July 18, 2008)*. The staff hosts office hours one or two

afternoons a week for non-profit organizations (NGOs) at coffeehouses in different parts of town to gather new project ideas from community leaders so they do not always have to travel to the Trent Centre.

Best practice components of this hybrid science shop include the carefully designed project agreement to make expectations clear; the student-driven process, signifying student motivation to complete quality work of value to the community; and the use of off-campus office hours as a way to reach the community while still having ties to the university for infrastructure support.

In summary, in any of these three science shop approaches to community-based learning or research projects, science shop staff are matchmakers and coordinators of projects between academics and community partners. The science shop acts as a clearinghouse for community organizations desiring to access a university's knowledge resources. It streamlines the process of project management to benefit faculty, students, and partners. Long-term relationships and partnerships among faculty members from across disciplines also are nourished and sustained through a science shop approach.

The Community University Exchange Structure

The Community University Exchange uses the university-based science shop model, administered through the Morgridge Center for Public Service at the University of Wisconsin–Madison. The Morgridge Center is privately endowed and serves the entire campus with community-based learning opportunities, program facilitation, grant support, and faculty and staff development resources. The university-centered model was selected based on the positioning already enjoyed by the center, including its resources, wide range of established community partnerships, and connections to the University of Wisconsin School of Human Ecology and other academic programs that focus on community impact. Community representation is intentionally incorporated into the model to honor the longstanding connections between the planning staff and the community, and to validate multiple sources of wisdom.

The assistant director of community-based learning at the Morgridge Center, two graduate students, and an academic staff member with faculty-affiliate status oversee the program. The Community University Exchange's three main goals as they pertain to the science shop model are:

- to take on the burden of coordinating the projects while ensuring that community partners are driving the projects;
- to ensure that the research and service programs are inter- and/or trans-disciplinary; and
- to ensure that the project findings are turned over to the community for social change.

The Community University Exchange is the overall umbrella structure in which projects are coordinated. As part of the pilot project, a range of options was explored to encourage faculty, staff, and students to participate. These options included conducting focus groups and holding targeted meetings to gain an understanding of the ways campus could play a part in the Community University Exchange by collaborating with community partners that had expressed interest; ascertaining how these groups would benefit from participation in the Community University Exchange; and offering a course in interdisciplinary studies specifically designed to incorporate student community-based research. Combined, these options provided a multi-faceted approach to a science shop structure at the University of Wisconsin–Madison.

In 2010, a community organization in the South Park Street area of Madison was selected as a pilot community partner because of its longstanding ties to the university. The Community University Exchange served as the "broker" to coordinate partnerships and community-based learning/community-based research projects to meet three specific community-identified priorities that had been derived through the past year of organizational meetings in the affected area. The pilot focused projects on three broad topic areas: economic vitality; "re-imaging" South Park Street; and access to healthy foods and nutrition education.

Setting the Context: The South Park Street Area of Madison, Wisconsin

Madison, Wisconsin, has a population of about 220,000 *(U.S. Census, 2010)*; the University of Wisconsin–Madison enrolls about 42,000 students *(University of Wisconsin–Madison, n.d.)* in a highly decentralized university system. The South Park Street district of Madison, defined loosely as a geographic corridor connecting the university with the freeway, faces economic and social challenges. Its demographic characteristics have manifested themselves in the citywide perception of this area (colloquially, "Hell's Half Acre";

Penn, n.d.) as challenged and undesirable, even though many South Madison residents, whom university partners have been working with over the last 10 years do not consider this the case. Table 1 illustrates the contrasts between South Madison and the city of Madison in its entirety *(U.S. Census, 2010)*.

Table 1. Demographics, South Madison versus Madison

	South Madison	Madison
Median family income	$24,975	$41,941
Poverty rate	32.6%	15%
Less than high school education	32.6%	7.8%
People of color	68.5%	16%
Rentership as opposed to home ownership	78.2%	52.3%
Female-headed households	32.5%	21.6%

The Community University Exchange Science Shop Pilot Project

The Community University Exchange Science Shop Pilot Project began its official academic role in 2011. Several courses, as well as individual faculty members and students, became involved, with central coordination by Morgridge Center staff. The three community-identified priorities were addressed by a combination of methods.

- A consumer science class interviewed business owners along the corridor and made recommendations on attracting more students to their stores and restaurants.
- The Slow Food University of Wisconsin student organization began long-term work with the Farmers Market and the Boys and Girls Club on health and nutrition, starting a cooking class for teens with a cooperative family dinner, interning at the Farmers Market, taking middle-school youth from the club's after school program to the Farmers Market to sample various healthy foods, and passing out simple recipes with free produce.
- A geographic information systems certificate student mapped foreclosed properties in the county and gave the data to a local community development nonprofit with the goal of seeking neighborhood stabilization funds for property acquisition and redevelopment.

University of Wisconsin–Madison course supports community-university exchange science shop model.

The centerpiece was a 500-level course in the School of Human Ecology's Interdisciplinary Studies department, titled "Community University Exchange—South Madison." The course, which enrolled seven students, was designed to provide practical opportunities to apply course knowledge in a real-world setting specifically in the South Park Street project area. Students were introduced to the community through readings, discussions, and events. The course met weekly on campus and once a month at the host site, a community center on South Park Street. This allowed the students to gain a context for the class discussions and also enabled the community partners to attend.

During the first few weeks of class, instructors and community mentors discussed project possibilities based on the three community-identified priorities. After an assessment of the student skills and interests in this course, the Community University Exchange–South Madison students chose to research the question of stigma, or what the image of the area was perceived to be.

Assessing the Community University Exchange Pilot Program

An evaluation of the Community University Exchange pilot began immediately after the semester in May 2011. Specifically, the tenets of the science shop being evaluated for the Community University Exchange pilot are its strengths in three categories: achieving the community-identified priorities, which is connected to the first tenet of science shops—that issues arise from the community; success of student learning through interdisciplinary methods and diversity, and validation of community knowledge – which addresses the second science shop principle; and coordinating the volunteer, service-learning, and community-based research (CBR) programs in South Madison through the Morgridge Center for Public Service, which addresses the efficacy of the overall Science Shop structure. The third principle of science shops, that findings are given back to the community, was not addressed in the evaluation because the report was not complete at the time of this writing.

The initial evaluation used a logic model to determine primary research questions. All the Community University Exchange planners contributed to and reviewed the interview instrument.

The interview sample consisted of six students in the Community University Exchange class who were able to participate after the semester's end, one independent study public health student, three of the Community University Exchange core planners, and four of the community partners. In total 13 interviews were conducted. The interviews were then transcribed and are currently in the analysis phase. The coding method is based on the grounded theory method of open coding *(Strauss & Corbin, 1998)*.

In addition to the interviews, participant observation of the community-based research process, student observation, and monthly reflections will also serve as data for the evaluation. A more comprehensive evaluation of the Community University Exchange is planned.

Initial Findings

The preliminary findings showed that several objectives of the pilot had been met and that progress was made toward some of the long-term goals and aspirations for using this infrastructure.

Achievement of community-identified priorities.

Several indicators of success in this area surfaced: ability to ask for help with research and obtain help in defining the questions; useful data from the research; and fresh ideas for solutions. The first benefit of the Community University Exchange process happened before the project's official start. Community interview respondents reported that the discussions prior to the project agreement helped define and clarify the issues to pursue. The core planners who had been involved with community partnerships in that area for many years commented that the Community University Exchange helped to articulate issues in an academic format and provided a structure for addressing them. When asked if campus-community partnerships were effective at addressing neighborhood questions, one of the community members said, "It is difficult to get funding to do anything, so if you can get some of that done with students, I think it is very attractive."

Regarding the media research on perceived stigma of the South Park Street area, community partners thought there was good information that could be pursued with the neighborhood. One community member saw the media project as providing the background information that could be used to back up their empirical observations in discussing media portrayals of their community with journalists. Community members and instructors

also discussed conducting a review of the relevant economic and community development literature to determine how other neighborhoods develop responses to negative stigma. The research could be used to guide economic development efforts by providing a background of case studies.

Discussing the recommendations of the consumer science class, community members expressed appreciation for students' fresh ideas to make the area more attractive, such as installing bike racks and wayfinding maps, and developing a stronger web presence. They also felt the class introduced new ways to get students to visit the South Park Street area.

Student learning and community knowledge validation.

The Community University Exchange pilot put a face on the South Park Street community for many of the students. Due to the years of work that some of the Community University Exchange planners had put into building long-term relationships, the students gained more intimate access to the community. Working closely with community partners was one of the most valuable experiences for the students. Early reflections from the students' first visit to the community celebration showed some recurring themes. It got them away from campus life, and reminded them that there is a "real world" off-campus. It helped them experience something different from everyday college life.

A major theme in the student interviews was the importance of having diverse voices at the table. The Community University Exchange class consisted of students from varied ethnic backgrounds. More important, however, the students commented on the varying life experiences of the team members (e.g., two were adult students from the South Park Street area themselves). Students learned to appreciate and incorporate the various forms of knowledge that were represented by their community mentors in designing the collaborative research project. Positive feedback from community members made the research more relevant, in real time. The students felt that they were more successful because the community valued what they had done. One recommendation the students posed was the creation of a two-semester commitment of linked coursework or independent study for some of the future project work so that students would have time to get oriented to the community and develop relationships before beginning the main research project.

Coordination of community-university engagement by the University of Wisconsin–Madison Morgridge Center for Public Service.

The Morgridge Center staff laid groundwork for more interdisciplinary campus-community partnerships by playing a convening role, and brought new campus partners to the long-standing University of Wisconsin–Madison–South Park Street collaboration. The science shop model's focus on inter- and trans-disciplinary research methods was valuable in both the academic sense and in relation to life experiences and backgrounds. Students, instructors, and guest speakers involved in the pilot came from a wide range of backgrounds and disciplines. The contributors and speakers represented a variety of departments, including Nonprofit Leadership, Consumer Science, Human Development and Family Studies, Urban and Regional Planning, Journalism, Environmental Studies, Law, and Education Policy and Leadership.

The Community University Exchange structure provided efficiency and avoidance of duplication in the project. Partners in the area have long expressed a concern that residents not be treated like "lab rats" *(Tryon, 2008)*. There have been numerous surveys and assessments in the South Park Street area, but little action has resulted. Community leaders and academic staff cautioned that the Community University Exchange be mindful not to increase research fatigue among residents. Community University Exchange leaders addressed this concern by moving forward from the findings of previous research (instead of repeating recent work), and sharing data with all disciplines involved. Thus, by coordinating projects to meet multiple course objectives, the research impact on residents was minimized and the scope of the findings was amplified.

Students and faculty shared information and ideas from all of the classes and independent study courses at the end-of-semester community presentation. This led to a more holistic view of campus-community partnerships and demonstrated how classes could complement each other to provide a "one-stop-shop" for community partners to learn about several partnership projects at once. It also highlighted the input of the community mentors, who acted in the role of consultants on the media project and whose opinions were sought on all aspects of the pilot. One community mentor spoke of his frustration that many valuable voices in the community were not usually represented or invited to speak at the university. He applauded the Community University Exchange's invitations to community guest speakers and stated, "This is what I really seek out."

The infrastructure provided a mechanism to continue the University of Wisconsin–Madison–South Park Street partnership, and the main benefit to the community was the continued university presence and program support. A community mentor who had been involved with other campus-community partnerships in South Madison said, "These programs provide resources that the community does not have . . . when we get these studies done we are able to use them to promote and fund community development programs." Another community mentor said that if students and the University of Wisconsin–Madison were not doing this work, no one would. One of the core planners of the pilot poject who is involved in numerous academic-community partnerships in South Madison said that the Community University Exchange "was a way to organize the kind of benefit we were trying to bring [to the partnership]." Two students, residents of South Madison themselves, observed that the more the community members felt that they were respected, the more they respected the academic partners and the concept of the value of higher education.

The Future of the Community University Exchange Pilot Project

Two goals for the Community University Exchange Science Shop pilot are (1) to ensure capacity-building to transition university involvement and resources over to community partner leadership so as to build community capacity for sustaining the work done so far, and (2) to secure continued funding for expansion to new projects. The goals are interdependent: The community needs funds and expertise; the university seeks fieldwork in real-time situations. The functions of the Community University Exchange Science Shop pilot that will be useful to sustain and improve working relationships in strategic community partnerships include

- building a reputation of university responsiveness to issues;
- listening and demonstration of respect for community knowledge; and
- project management that coordinates the efforts of different disciplines and community partners.

The initial evaluation findings have been well received by university directors and department chairs. To help the Community University Exchange infrastructure grow, Morgridge Center

staff have hired two doctoral students as Community University Exchange "fellows." One will work at the Boys and Girls Club in the South Park Street area, and the other will coordinate campus-community projects resulting from a grant received by a transdisciplinary project team with the department of Public Health.

Recommendations from the evaluation will be incorporated into future Community University Exchange infrastructure to increase program efficiency. The class will be offered again. Students will be given a choice of three well-developed projects. All of the main partners in the Community University Exchange pilot program will continue to be involved. The long-term goal for the Community University Exchange is to seek more extensive funding to expand project capacity and eventually develop a request for proposal process.

Conclusion

The authors are learning about the complex nature of this work. Four lessons learned regarding the science shop model of university-community partnerships are presented in this section.

Lesson 1: Extensive Planning Is Required

The interdisciplinary and interconnected science shop model increases the amount of planning time needed to lay the foundation for community-based research projects. The Community University Exchange core planning team spent more than an academic semester planning for the pilot project and still found that more time could have been spent in the project development stage. Planning continued throughout the pilot semester. The first value of the science shop model, that research projects arise from the community, means that building a trusting relationship with partners includes multiple listening sessions, negotiation of feasible research questions and project design, and re-validating of the community's perspective to be sure the undertaking does not veer off-track due to student or faculty "over-steering."

Lesson 2: Plan for All Levels and Interests of Students

A second tenet of the science shop model, that teams be interdisciplinary in nature, means that planning is required to recruit and train students and faculty from a range of backgrounds and disciplines. Also important and effective is the inclusion of

professionals and students at different levels on a team. A model in which faculty mentors and academic staff guide graduate students, with undergraduates performing tasks like data collection, is effective. Phil Nyden has said, "We couldn't do this without the graduate students!" *(personal communications, 2008–2010)*. Although including undergraduates on research teams is uncommon, with a seasoned graduate student researcher providing oversight, the science shop model can increase capacity and reach.

Lesson 3: Be Creative About Student Credit and Course Requirements

In the Community University Exchange pilot program, some students wanted to participate in the South Madison class but had time conflicts. The Community University Exchange planning team made a decision to be flexible with students who had expertise and interest to bring to the project, and allow them to outline their time commitment and level of involvement by using variable credit or independent study.

Lesson 4: Balance Student Interest With Community Need

Program leaders must take responsibility for balancing student interests with community needs. In the Community University Exchange pilot program, many graduate and undergraduate students expressed interest in community gardening. Gardening was also a topic of interest in the community. However, other issues (e.g., unemployment, home foreclosure, and the impact of the area's negative image) were higher priorities. Thus, the way that students were recruited and the projects they focused on were re-evaluated to prevent an overabundance of garden-focused student projects and a dearth of student projects that addressed the community's priorities.

In summary, with continued enthusiasm from students, commitment from faculty and staff, and robust community partners, the University of Wisconsin–Madison's Community University Exchange program has the potential to be an effective, sustainable science shop model. The lessons learned from the University of Wisconsin–Madison's science shop pilot program (investing significant time and effort in planning a university-community project, including students at various education levels, being flexible with student credit and course requirements, and mediating student interest and community needs) may help readers enhance their own university-community partnerships.

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