Scholarship in Action:
Applied Research and Community Change

PD&R

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Foreword

Through its Office of University Partnerships, the U.S. Department of Housing and Urban Development has supported the research efforts of college and university students and faculty for the past 10 years. The department recognizes that good research and analysis is the foundation to meaningful community outreach.

This publication highlights, in an instructive and informative manner, the benefits to be derived from engaged, community-based research. The articles included here describe the application of the scholarly principles of analysis, data collection, and interpretation to the real problems of housing and urban development confronting our communities. This research has had both immediate and long-term impacts on the state of the nation's housing and community development programs.
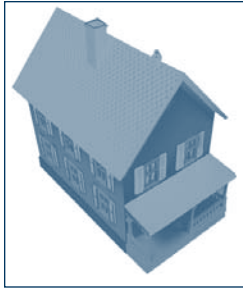
I am pleased that this publication draws attention to the fine work being accomplished nationwide in community-based research. It is my hope that other colleges and universities will be encouraged and inspired to continue this important brand of scholarship.

Dr. Darlene F. Williams
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Linda Silka
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Academic research that takes place outside the laboratory is becoming an increasingly important force in addressing and helping communities solve local problems. Academic researchers use different terms to describe this kind of inquiry, including applied research, engaged research, community-based research, and applied research partnerships. Despite the variety of labels, however, all of this research has a common focus on the application of academic knowledge to specific community-based issues. Through applied research initiatives, communities and institutions of higher education often work together to identify the problem to be studied, investigate that problem through data collection, analyze and interpret the collected information, and decide how to implement an intervention based on the findings. Individual studies may include some or all of these steps of shared research and action.

Common sense might dictate that research, whenever possible, be approached in an engaged fashion. This is not always the case. Institutional and cultural barriers to applied research must be overcome before community-higher education research partnerships can achieve their full potential as they seek to bring rigorous research to bear on the most pressing challenges facing communities. Fortunately many groups are now promoting applied research and helping researchers break down the barriers to its implementation. The U.S. Department of Housing and Urban Development's (HUD's) Office of University Partnerships (OUP) has been a leader in this regard, as have the National Institute of Environment Health Sciences, the Centers for Disease Control and Prevention, and Community Campus Partnerships for Health. In Europe the academic Science Shops movement has also demonstrated the value of engaged research.

Institutional and cultural barriers to applied research must be overcome before community-higher education research partnerships can achieve their full potential as they seek to bring rigorous research to bear on the most pressing challenges facing communities.

The intent of this volume is to showcase emerging applied research and to call for more research that brings together communities and universities in productive ways. The peer-reviewed articles included in this volume take readers through the varied paths by which productive applied research partnerships are developed and nurtured. The articles will be useful to many different groups: academic researchers and community leaders who are new to the applied research arena, faculty members and other experienced applied researchers who are currently engaged in this work, higher education administrators who are seeking a better understanding of the benefits that applied research holds for universities and their communities, community leaders hoping to engage their local colleges and universities, and faculty seeking ways to collaborate on research with local stakeholders. Many of the articles describe research that has been funded by OUP's Community Outreach Partnership Centers (COPC) program.

Drawing on their own experiences as academic researchers and university partners, the authors offer multiple perspectives on how applied or engaged research can best be incorporated into the work of colleges and universities. Barbara Holland begins the publication by providing important background on the development of applied research within higher education. Holland presents compelling evidence that the increased use of applied research to solve local community problems points to a fundamental shift in the nature of research and knowledge generation within academia. She predicts that engaged research will become an important measure of academic quality and prestige within higher education and will be a force for institutional change and diversity.

Philip Nyden builds on Holland's argument by expounding on the varieties of engaged research now being conducted within American higher education and around the world. Nyden offers the experiences of the Center for Urban Research and Learning at Loyola University Chicago as a case study for how engaged research can be incorporated into the mission of a major urban university. He also suggests that new modes of communication are making it possible for applied researchers from around the world to work together to build new knowledge and share the lessons they learn in the course of their work.

The next two papers offer an intriguing look at how universities can establish and nurture community-based relationships that will lead to meaningful applied research. Marie Sandy and Lourdes Arguelles describe the origins of the Ontario Grassroots Think-Tank in Ontario,

*Believing that **conversation must come first** in designing research and outreach projects, members of the conversation group initially devoted their time to building trusting relationships among themselves. This accomplished, they ventured forward to develop a research agenda that was supported by a COPC grant.*

California, a community partnership that began as a series of informal—and often freewheeling—conversations among members of a diverse group of more than 40 community leaders and faculty, students, and staff from the Claremont Colleges. Believing that *conversation must come first* in designing research and outreach projects, members of the conversation group initially devoted their time to building trusting relationships among themselves. This accomplished, they ventured forward to develop a research agenda that was supported by a COPC grant.
Claudio A. Holzner and Sarah D. Munro tell a similar story about how the University Neighborhood Partners (UNP) office at the University of Utah responded to a call for help from neighborhood leaders who were concerned about a lack of resident participation in community decisionmaking. The authors argue that UNP's response to the neighborhood's request for help, and the research project that ensued, dispel the myth that community-based research is a distraction from the core teaching and research responsibilities of the university. The authors show that when colleges and universities support engaged research, they are, in fact, supporting faculty engagement in the core teaching and research missions of their institutions.

Three papers in this collection illustrate how community-based research can be carried out by scholars in specific, and sometimes technical, disciplines. Rob Krueger, Fabio Carrera, and Jason Farmer outline a community-based research project carried out by Worcester Polytechnic Institute in Massachusetts, which used geographic information systems technology to help local residents participate in a local planning process.

Barbara Beck, Marie Wolff, Staci Young, and Syed M. Ahmed provide a provocative look at how the Medical College of Wisconsin is encouraging

medical students and academic physicians to become more engaged in their communities. Beck and her colleagues identify the barriers to such engagement. They also describe several strategies that have helped the medical college create and sustain partnerships that are positively affecting academic physicians, medical students, and community members.

Describing outreach in another health-related field, Laurie Ross and Timothy J. Downs of Clark University in Worcester, Massachusetts, share their experiences working with three community-based organizations to address environmental health threats and stressors in two urban neighborhoods. Ross and Downs describe the partnership's development and offer a refreshingly candid view of what can go wrong when university researchers and community leaders have different perspectives on community needs and advocate different approaches to research. The authors also share how partnerships can ultimately succeed when all members are willing to listen to and take direction from one another.

In the last two articles of this collection, this editor suggests that there are no firm rules for establishing effective academic-community research partnerships. Instead, innovation and creative problem solving are the essential ingredients for success. Using her own experience solving partnership-related problems at the University of Massachusetts Lowell, this editor suggests that those interested in promoting applied research must help academic researchers cultivate the skills necessary to instill their partnership activities with innovation and creativity. This can be accomplished by working hard to tie applied research to the knowledge function of universities, by widely disseminating new ideas about the scholarship of engagement, and by publicly recognizing research innovations that solve

particularly challenging community problems. A summary of interviews this editor conducted with leaders in higher education, which is included in the volume's final article, should help academic researchers look beyond their local communities and take note of some applied research trends that are emerging around the country.

Almost all the articles included here enumerate the challenges associated with applied research. These include the absence of senior faculty who can serve as role models in this evolving area of research; the difficulties encountered with institutional review boards; the laboriousness of the work; the lack of faculty experience in cross-disciplinary, community-university initiatives; and the differences that exist between campus and community cultures. Nearly all of the articles come back to tenure and promotion, and the challenges of ensuring that the reward structures in a university are aligned with—or at least not antithetical to—applied research efforts. Some articles call attention to the important roles that larger policy bodies will need to play if we are to overcome these challenges.

The unifying theme throughout this collection is how much can be achieved by communities and universities working together in research partnerships. Of course, this is not a new idea. A recent edition of *Isis*, a journal focusing on the history of science, featured an article (Schneider, 2000) suggesting that engaged scholarship—the combination of local knowledge and scientific acumen—was largely responsible for the establishment of the science of ecology in the early 1900s. Unfortunately society-changing research partnerships like this have been forgotten or pushed aside in the rush by universities to emphasize science as a practice exclusively conducted within the guild. We need to recover this neglected history and learn how to draw on past practices that show promise in the present. The articles in this volume are part of this effort to reestablish community-university partnerships as ways to address the many problems that remain resistant to isolated, individualistic research approaches.

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Editor

Linda Silka, Ph.D., directs the Center for Family, Work, and Community at the University of Massachusetts Lowell (UML). She is a professor in the interdisciplinary Department of Regional Economic and Social Development and serves as special assistant to the provost for community outreach and partnership. A social and community psychologist by training, Dr. Silka develops programs that create community and university partnerships, using funds from HUD's Office of University Partnerships, the National Institute of Environmental Health Sciences, the U.S. Department of Education, and the Nellie Mae Educational Foundation, among others. Recent UML partnerships have addressed urban environmental health problems confronting refugees and immigrants; worked to increase the likelihood that underserved youth will be better prepared for college; and focused on increasing economic, political, and educational leadership opportunities available to recent immigrants from Africa, Asia, the Caribbean, and South America.

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New Views of Research for the 21st Century: The Role of Engaged Scholarship

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Abstract

To recognize and honor institutional differences among colleges and universities, one must understand and appreciate the different modes of research now being conducted within higher education. The increasing use of engaged research as a means of applying scholarship to local problems and opportunities can be seen as a harbinger of major shifts in the nature of academic research on a global scale. Taking into consideration recent changes in research paradigms, and the evolution of validation and accreditation systems that recognize engagement, the author argues that engaged scholarship will become both a force for greater differentiation among institutional missions, and a factor influencing scholarly prestige.

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Introduction

Academics tend to speak of the centrality of *research* as the monolithic core value associated with scholarly excellence in higher education. However, as demonstrated in this monograph, there are many different types and forms of research. Those differences matter enormously when we consider the impact and quality of individual and institutional scholarly outputs.

More than any other scholar, Ernest Boyer (1990) helped promote the notion that academia, in form and function, is anything but monolithic. Boyer gave us a new way to view scholarly work—not simply as a collection of separate research, teaching, and service silos, but as an interactive pursuit of discovery, teaching, application, and integration. Boyer's work inspired us to change our conceptions of the elements of scholarship and, consequently, to reform academic organizations and cultures.

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No development provides better evidence of this reformation of academic culture than the forthcoming addition of new indicators to the Carnegie Classification of Institutions of Higher Education, a leading topology of American colleges and universities that is widely used to measure institutional diversity in higher education (Carnegie Foundation for the Advancement of Teaching n.d.) Since its inception, the Carnegie classification scheme has been based primarily on measures of an institution's research funding from particular sources, its degree mix, and its production of doctorates. Although institutions were probably always more diverse than the original system acknowledged, the *teaching-to-learning* movement and the wide adoption of modes of *engaged teaching and research* have dramatically enhanced the diversity of our higher education sector and made it obvious that Carnegie's limited set of descriptors was inadequate. Carnegie's new approach will include more subcategories within categories of institutions, and multiple indicators of research activity. In addition, the classification will also begin reporting data on institutional context (urban, suburban, and rural), size, and student characteristics. Perhaps most importantly, two new elective schemes will measure undergraduate teaching, and outreach and community engagement.

The revision of the Carnegie Classification scheme is a dramatic, historic moment of change for higher education; the most comprehensive revision since the foundation launched the classification in 1973 (McCormick 2004). This revision offers direct evidence of the impact of nearly 2 decades of reforms in teaching and research approaches on academic work and culture.

As significant as these changes are, this article will report on emerging evidence of an even deeper, more fundamental shift in the nature of research and knowledge generation within the academy. That evidence further reinforces the role of engaged research as a key strategy for sustaining, if not strengthening, higher education's role in knowledge production and application. The article will review the growing understanding and implementation of engaged research methods in the United States and other countries as well as changes in validation and accreditation systems that recognize engagement. Ultimately, the article will show that engaged research is destined to become an important measure of academic quality and prestige, to the degree that engagement is relevant to the institution's mission and important to its constituency. Thus, engaged teaching and engaged research also will be a force for institutional change and diversity.

Global Shifts in Research Paradigms

For most of the last 50 years, higher education institutions have been seen as engines for local economic development, either because they were economic enterprises in and of themselves or because they promoted technology transfer and innovation. Even the educational programs that colleges and universities provided were viewed by many as a way to provide new economic opportunities to community residents and a boost to local workforce development initiatives.

For its part, research has long been seen as a monolithic and beneficial activity strongly associated with institutional quality and individual faculty reputation. However, important distinctions are drawn between *basic* and *applied* research. Basic research refers to laboratory, bench, or other modes of experimental research based on *big science*. Applied research—which includes all *other* forms of research—was often viewed as having lesser value because it takes place in the professions rather than in core, pure disciplines.

The presumption in traditional academic culture was that applied research would make little contribution to the theoretical foundations of a discipline, to the generation of new knowledge, or, frankly, to the reputation of the institution.

Today, we understand more clearly that applied research has many dimensions and methodological approaches. Community-based research, action research, participatory action research, engaged research, and other terms represent only a few of the permutations of applied research that bring Boyer's integrative view of scholarship to life and reveal the intellectual power inherent in applied research. The scholarship of engagement, in its many forms, demonstrates that knowledge can have a public purpose when it is applied to local problems or opportunities. Indeed, the growing sphere of institutions that embrace engaged scholarship demonstrate its capacity to bring coherence to curricula and strengthen research productivity while also connecting research to a community's quality of life through knowledge exchange relationships with external partners.

What led to our shifting view of applied research—from a pursuit that had little value to one with intellectual power and potential for societal impact? A variety of pressures on colleges and universities—technological, intellectual, financial, and those associated with accountability—are bringing with them fundamental changes in how individuals, both inside and outside of higher education, view academic excellence and the nature of research. The traditional role of universities as the sole generators and transmitters of knowledge is evolving. Now, academic institutions are learning to act as participants in a complex learning society where discovery, learning, and engagement are integrated activities that involve many sources of knowledge generated in diverse settings by a variety of contributors.

To date, much of the literature documenting these conceptual shifts has come from other countries. In the United States, the elite research university sector has only recently begun to recognize that the very nature and traditions of research are evolving quickly and that modes of networked, collaborative research such as engaged scholarship will be an essential element of academic excellence in the 21st century university. Despite this recognition, however, many American scholars continue to protest that engagement is an attempt to pile more responsibilities and expectations onto an already overburdened faculty. Some charge that this new recognition of engaged scholarship is merely an attempt to legitimize service, outreach, or interdisciplinary work, all of which have not been valued in American academic traditions. This erroneous view of engagement as extra or additive work overlooks its potential to integrate competing intellectual tasks into a more coherent whole, and thus has inhibited its broader adoption across American research universities.

An analysis of international literature presents engaged research not as an additive pressure but, rather, as a key aspect of the ongoing transformation of the scholarly work of faculty. The increasingly apparent impact of global technology and communications on the generation, dissemination, and accessibility of knowledge drives this transformation. Simply put, new modes and sources of knowledge production and application are requiring the academy to adopt new modes of research and dissemination.

British scholars, reflecting on new approaches to knowledge production and science research, argue that while the traditional mode of research (called Mode I) continues, there is an emerging and increasingly important new research (Mode II) taking hold in higher education. Mode I is described as the traditional view of research—pure, disciplinary, homogeneous,

expert-led, hierarchical, peer-reviewed, and almost exclusively university-based. Mode II is applied, problem-centered, transdisciplinary, heterogeneous, hybrid, demand-driven, entrepreneurial, network-embedded, and not necessarily led by universities (Gibbons et al. 1994). Mode II is not replacing Mode I, but it does require new, more flexible approaches to knowledge generation that recognize the rapid diffusion of knowledge and the integrated roles of discovery and application.

Mode II research calls for *transdisciplinary* modes where knowledge is produced in the *context* of application. Transdisciplinarity is made necessary by the extensive social distribution of knowledge (Gibbons et al. 1994). In other words, technology has made knowledge, data, and information so widely available that much research now requires dynamic, interactive networks across different organizations, sectors, individuals, and even nations.

Dominique Foray (2004), writing from the perspective of her work as principal administrator at the Centre for Education, Research and Innovation of the Paris-based Organization for Economic Cooperation and Development, also sees major reforms in research paradigms that are driven by the rapid creation of new knowledge and the expansion of access to data across societies and economies. Foray proposes three models of knowledge production: Model 1 refers to research advanced primarily by universities or large industries. Model 2 introduces user needs into knowledge production. Model 3 adds what Foray calls *integrative knowledge* that requires collaboration across organizations and creates the capacity to solve increasingly complex problems.

Putting Theory into Practice

The scholarship of engagement resembles many of the characteristics of Foray's Model 3 research. It is necessarily collaborative and participatory, it draws on many sources of distributed knowledge across and beyond the university, and it relies on partnership relationships across diverse kinds of organizations, each of which offers key aspects of knowledge necessary to examine a question. As such, engaged research is shaped by multiple perspectives and deals with difficult, evolving questions that require long-term effort. Results may become known over time as particular pieces of the puzzle are solved.

As in transdisciplinary scholarship, engaged research is fluid—ever changing and always responsive to the latest findings and to the changing needs of the community. Research teams form, work, and change as problems are solved or questions redefined. Sustained communications networks sustain the group and research results

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are diffused instantly, as they emerge, through these same communications networks. Production and diffusion of knowledge are often merged. The value of knowledge is tested as it is discovered; most importantly, it is tested in the context of how well participants deem it to *work* for themselves and their communities. Subsequent diffusion occurs as participants or the knowledge itself enter successive or new problem contexts.

Disciplinary traditions, subject-driven academic programmatic hierarchies, and organizational boundaries are melting rapidly. In the new engaged models, the knowledge generated by transdisciplinary, networked interactions is not always grounded in the disciplines, nor does it always need to be validated first by those disciplines. New indicators of research quality will consider efficiency, application, and usefulness in addition to traditional scholarly criteria (Gibbons et al. 1994).

New models of engaged scholarship are gaining increasing popularity worldwide and are being implemented with increasing success and increasing support from government. In Australia, for example, the scholarship of engagement:

> …involves practices of professional and community work, social relationships which connect members of the scholarly community of the university with a wide variety of individuals, organizations, and enterprises in the professions, business and industry, [communities] and government. (Kemmis et al. 1999)

These conceptions of engaged research are not solely rhetorical. For example, current discussions about the Australian national system for financing higher education include proposals for direct funding of community and regional engagement as a device to enhance institutional differentiation and responsiveness to issues of community, social, and economic development. Support for such an approach is controversial; however, a national affiliate organization, the Australian University Community Engagement Alliance, has attracted participation from three-quarters of the nation's higher education institutions and will soon launch a refereed journal on community engagement.

A task force of the Association of Commonwealth Universities (ACU) wrote in 2001 that "engagement is now a core value for the university…this implies strenuous, thoughtful, argumentative interaction with the nonuniversity world in at least four spheres: setting universities' aims, purposes, and priorities; relating teaching and learning to the wider world; the back-and-forth dialogue between researchers and practitioners; and taking on wider responsibilities as [institutional] neighbours and citizens." (Association of Commonwealth Universities 2001, I) Just a few years later, a 3-year research and consultation process led by ACU resulted in the 2003 publication of *The Idea of Engagement: Universities in Society*. Both of these works have influenced national higher education funding policy to such an extent that the United Kingdom now provides what is called *third stream funding* for higher education engagement. This funding is proving to be a force for institutional diversification and research cooperation. For example, 10 London area universities recently formed a consortium with the London Development Agency to focus on community-based research that will address the region's challenges and opportunities. (See *www. londonhigher.ac.uk*)

Growing Validation of Engaged Research

Some U.S. scholars may continue to debate the wisdom or appropriateness of Ernest Boyer's reinvention of the separate arenas of research, teaching, and service into an integrated and interactive vision of scholarly work. Yet, as illustrated above, changes in the way research is designed, conducted, and disseminated are global in their implications and are well underway. Accountability systems and reputation factors are already changing within U.S. higher education. The forthcoming transformation of the Carnegie Classification system was described at the beginning of this paper. In addition, several of the regional higher education accreditation organizations have introduced new accreditation standards that relate to engaged research and teaching. For example, the North Central Association Higher Learning Commission recently added "Criterion Five—Engagement and Service," which reads: "As called for by its mission, the organization identifies its constituencies and serves them in ways that both value." (North Central Association Higher Learning Commission 2003, 3.1–6.)

In addition, major federal funders of research—including the National Science Foundation (NSF)—have adopted additional criteria for proposals that encourage attention to collaborative research methods and the potential applications of research findings. NSF criteria now require that grant applicants address the possibility of broader social impacts of the proposed research on factors such as public understanding, policy or practice, educational strategies, or broader participation in research (Ramaley 2005). NSF adopted these criteria because it sought to:

- Develop intellectual capital and devise ways to put that capital to good use.

- Integrate research and education, and broaden participation of diverse geographic regions, institutions, disciplines, and people.

- Promote partnerships for discovery, learning, and innovation (Ramaley 2005).

These and other breakthroughs confirm that the United States is beginning to explore these new perspectives on research paradigms and that our rhetoric and strategies are beginning to align with new research modalities. Key incentive systems associated with institutional prestige and reputation are changing to include recognition of engaged scholarship as a form of teaching and research. Some of America's most prestigious universities now see engagement as an important and relevant dimension of their agenda. For example, Duke University has created a three-stage undergraduate research program called Research Service Learning (RSL), a series of research courses that teaches research methods by involving students in increasingly complex research collaborations with community partners. The program culminates with a full research study that meets both research standards of quality and the community partner's research needs. The program is currently available in five different subject areas, with more planned. A number of other research universities are adopting this model. Surely, as more undergraduates have these research experiences, these programs may become pipelines for future faculty who enter the academic profession committed to engaged modes of research practice.

In the Midwest, the subcommittee on Engage-ment of the Big 10 Universities' Committee on Institutional Cooperation (2005) has written a report on Defining and Benchmarking Engagement that makes seven recommendations for helping institutions measure their commitment

to engaged scholarship. The report suggests criteria for departments to use as they integrate engaged research and teaching into promotion and tenure reviews.

Reward systems for faculty are already changing. In a new book titled *Faculty Priorities Reconsidered: Rewarding Multiple Forms of Scholarship,* editors Kerry Ann O'Meara and Eugene Rice (2005) collect a set of articles that illustrate the struggle to design approaches that document and reward new modes of research and teaching, including engagement, and the persistent challenges related to change in academic cultures. As validation continues to grow through the decisions of funders and policymaking organizations, the challenge of rewarding faculty for new modes of research is quickly moving from debates about why reward systems should change at all, to explorations of methods for documentation.

Conclusions

In my view, major transformations in research modes and scholarly work are creating new conceptions and criteria for identifying excellence across higher education institutions. These new traditions of *excellence* arise from the clear mandate that successful 21st century institutions must be more intentional and coherent in articulating mission, academic culture, and scholarly priorities. Every institution must explore its commitment to engagement, but every institution's level of commitment will vary according to its history, context, capacity, program mix, and alignment of academic strengths with public issues and questions. Early signs indicate that the new traditions of excellence will support distinctive institutional missions and, in doing so, will provide a pathway to excellence and success for each institution. These new, fundamental traditions will look something like this:

- Balanced attention to an intentional mix of multiple modes of scholarly roles across discovery, learning, and engagement.

- Research-based approaches to teaching and learning.

- Distinctive learning goals for students and intentional approaches to the learning environments that align with those goals.

- A strategic perspective that anticipates changes in societal knowledge needs.

- An intentional and evolving research agenda that engages many collaborating external partners as expert resources and builds collective capacity for interdisciplinary and transdisciplinary research.

- Engagement in regional and local issues and conditions in keeping with specific institutional mission and strengths (Holland 2004).

For good or for bad, universities around the world respond to the signals emanating from research funders, policymakers, classification and ranking systems, and even competing research enterprises. Individual faculty, their departments, and their institutions crave respect, pride, and a positive external reputation for the quality of scholarship. Global awareness of the changing nature of research modalities is making engaged research a core element of academic excellence and prestige. Early observation indicates that institutions that make an advanced and sustained effort in this direction reap unexpected benefits, including improved student retention, greater local enrollment, increased private donations, and increased research funding success. Although research and analysis have yet to explain these developments fully, common sense would suggest they can be attributed, at least in part, to enhanced

campus-community relationships that arise from collaborative modes of research and teaching. As higher education students and faculty spend more time in direct interaction with members of a community, from children to senior citizens, the institution becomes a more familiar, welcoming, inclusive presence to those community residents. As communities experience more opportunities for participation in action research or other modes of engaged research, they inevitably will come to feel more strongly that their college or university is an invaluable resource for community capacity-building.

A key next step, especially for public higher education, will be to advocate for public funding policies that support greater college and university involvement in addressing the critical issues facing states. Every state in the nation is being pummeled by the financial challenges of health-care, corrections, and K–12 education. What should be higher education's role in helping states create innovative approaches to these challenges? Kentucky is an early example of a new model that allocates additional base resources to support the involvement of public institutions in urgent regional issues. Virginia's public universities have negotiated their release from restrictive and costly state administrative regulations in return for their greater involvement in engaged research and partnerships. In other states, public and private institutions are gathering to discuss their growing commitment to engaged research and teaching and to explore collaborative inter-institutional

approaches. These approaches could lead institutions of higher education to become valuable assets to their communities as they step beyond their traditional role as economic engines and local employers.

These initiatives bode well for the further adoption of new research modes that can help keep American higher education and its research capacity competitive in the global marketplace. As changing demands for timely, practical, and useful knowledge begin to converge with the individual interests and aspirations of faculty and students, we will surely see engaged research take on greater significance. The complexities of the knowledge economy and wide diffusion of knowledge require academics to think anew about our understanding of collaborative, network-driven approaches to knowledge generation. These networks necessarily include the ultimate users of much of the knowledge—our community partners—in every phase of research. Why? Because to answer the *big* basic questions facing society, the economy, the human condition, nature, and politics, we must involve those who have different types of current expertise and wisdom and those who understand how new knowledge will be applied in diverse contexts. Engaged research has the potential to be an integrating force that contributes to new views of research modalities and thereby contributes to future visions of academic prestige and community success.

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The complexities of the knowledge economy and wide diffusion of knowledge require academics to think anew about our understanding of collaborative, network-driven approaches to knowledge generation.

Author

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The Challenges and Opportunities of Engaged Research

Philip Nyden
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Abstract

The use of engaged methods such as collaborative university-community research, participatory action research, popular education, and community-based research are examined as a way of strengthening traditional academic research. Particular focus is placed on a collaborative model combining university-based and community-based knowledge. The Loyola University Chicago Center for Urban Research and Learning is used as a case study. The incorporation of grassroots research into broader research initiatives promises to increase the quality of research and connections among communities at national and international levels.

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Introduction

The *culture of questioning* is at the core of academic teaching and research. In the classroom, teachers and academic researchers pose challenging questions to students to make sure they understand course material and develop the critical thinking skills needed to understand, shape, and change the world in which they live and work. Similarly, the act of questioning past research in one's discipline is at the heart of an academic researcher's work because it provides a way to fine-tune discipline-based knowledge. Additional fine-tuning is accomplished through the elaborate formal and informal research review system that exists within universities and academic disciplines. As scholars, we frame research, test hypotheses, collect and analyze data, write up results, and subject our findings to peer review, whether

In the classroom, teachers and academic researchers pose challenging questions to students to make sure they understand course material and develop the critical thinking skills needed to understand, shape, and change the world in which they live and work.

that review takes place during departmental works-in-progress seminars, at annual professional meetings, or through professional journals.

One assumption lies behind this culture of questioning: to have an effective understanding of the world around us, researchers need to look behind the familiar facades of everyday life. We cannot be satisfied with *common sense* explanations of family life, community institutions, and other social practices. As sociologist Herbert Blumer (1969) explains, "The task of scientific study is to lift the veils that cover ... group life...." Clearly, one perspective is not sufficient to satisfy teachers and researchers in this culture of questioning. For this reason, universities consist of multiple disciplines that can bring diverse perspectives to bear as we attempt to understand the complexities of our society.

Despite our attempts at multidisciplinary inquiry, a void still exists in this culture of questioning. In the quest to gather knowledge and consider different perspectives, academic researchers have locked out many members of the very communities that we purport to study. Although we go out into the community to collect census data, distribute surveys, and convene focus groups, we rarely invite the kind of direct input from community members that would inform our research designs or data analyses. In designing and completing our research, we sometimes act as if we were observing white rats in a maze, rather than working in a dynamic, vibrant, and self-aware community. We may ask questions of research subjects, but traditionally we have not asked for advice on how we should go about conducting our research. Without getting direct community input, we cannot assume that our surveys and focus groups collect all the pertinent information on a particular subject. Indeed, longtime residents of a community may have more to offer us than the information they

can provide in a 1-hour interview. Community perspectives can help us determine how we can best approach an issue that is critical to completing a rigorous research project.

In recent years the growth of various approaches to engaged research has served to strengthen both our responsiveness to community needs and the quality of our research. While many of these approaches, including participatory action research, have long intellectual histories, concerted efforts to bring these approaches into the academy have been relatively recent. The traditional separation of the academic and nonacademic worlds has discouraged more collaborative or participatory approaches to research. However, government agencies, foundations, communities, and change-oriented academic researchers have started demanding stronger links between university and community during the past two decades.

After providing an overview of different engaged research approaches, this article will discuss how these approaches are finding wider acceptance inside higher education. Tapping into the experiences of Loyola University Chicago, which established its own research center in 1996, this paper also attempts to provide guidance to researchers who are just beginning to participate in engaged research and those who are seeking to organize teams of researchers into more effective networks or collaborative research centers.

Varieties of Engaged Research

While there is no precise lexicon of engaged research methods, we often use the terms popular education, participatory action research, participatory evaluation research, and collaborative university-community research to refer to community-based research approaches. We often distinguish among these approaches according to the extent to which they do or do not involve university partners.

Popular Education and Participatory Action Research

Popular education and participatory action research models focus on building community research capacity that is independent of universities or other professional research associations. These models emphasize grassroots training that is entirely controlled by the community and research—aimed at developing economic resources, waging political battles against elected officials, or placing pressure on corporations to reduce pollution in the community—that is used for the community's self-interest. This type of research has a longstanding history, stretching back to the early 20th century, when the mapping and land-use research completed by Jane Addams and her colleagues at Hull House was used to understand and document immigrant poverty in Chicago. Although faculty members at the University of Chicago were connected to this project, it was initiated and completed by Hull House workers. This approach, in which research projects are developed by the community, was later depoliticized and used by sociologists at the University of Chicago to lay the foundation for the Chicago School of Sociology (Strand et al. 2003, 4-5; Deagan 1988; Harkavy and Puckett 1994).[1]

Paulo Freire's book, *Pedagogy of the Oppressed* (1970), is a key work outlining the importance of community self-sufficiency in collecting knowledge and using it to challenge more powerful forces in society, including large corporation and unresponsive government leaders. Such research is integrated with action. As Peter Park, sociologist and former president of the Center for Community Education and Action, explains, "participatory research provides a framework in which people seeking to overcome oppressive situations can come to understand the social forces in operation and gain strength through collective action." (Park et al. 1993, 3.) As Park further explains,

> The social and political significance of participatory research, however, does not lie only in the production of narrowly technical knowledge for the control of the physical and social realities. Theorists and practitioners of participatory research have used terms like *empowerment, critical consciousness, transformation, conscientization, dialogue, social action,* and similar terms, as well as participation, to characterize different aspects of participatory research. (Park et al. 1993, 4.)

Organizations and networks in low-income communities in the United States have effectively used this model to address the serious challenges they face, including poverty, environmental hazards, unemployment, and displacement. Most notable has been the work of the Tennessee-based Highlander Center, a popular education center founded in 1932 by Myles Horton. Highlander has educated generations of activists, including those involved in the labor movement of the 1930s, the civil rights movement of the 1960s, and a broad range of recent community movements (Adams 1975; Glen 1988). The Highlander Center's Web site emphasizes the link between democracy and public participation in research and education:

> Highlander's work is rooted in the belief that in a truly just and democratic society the policies shaping political and economic life must be informed by equal concern for and participation by all people. Guided by this belief, we help communities that suffer from unfair government policies and big-business practices as they voice their concerns and join with others to form movements for change. (Highlander Center n.d.)

Collaborative University-Community Research

Collaborative university-community research is distinct from, but related to, popular education and participatory action research. As the name implies, collaborative research emphasizes the integration of both university knowledge and community knowledge in the research enterprise. Historically, there have been tensions between university researchers and community activists. However, this collaborative approach harnesses those tensions into an effective, creative, solutions-oriented force (Nyden and Wiewel 1992). It recognizes that exploring multiple perspectives of an issue represents a positive research strategy. This exploration of multiple perspectives is not a new research approach; researchers often use "triangulation"—measuring something from different approaches or angles—when trying to solve problems. By taking part in this collaborative approach, researchers are expanding the "culture of questioning" to include both community-based knowledge and university-based knowledge.

Community-based knowledge brings with it a detailed awareness of everyday lived experience that comes from community-based organizations, neighborhood councils, and organizations serving local communities. Community-based knowledge represents a unique way of being aware of and understanding the heart of problems, even though the solutions to those problems may remain elusive. Communities may be aware of some of the pieces of the puzzle, but they may not possess the research tools and additional data to systematically analyze all of the relevant information. For example, communities may be aware that there are high numbers of sick children in a neighborhood, but they may not know that toxic waste in ground water is affecting certain blocks in that neighborhood.[2]

University-based knowledge has been developed within various academic disciplines. Using established methodologies as well as professional standards and theoretical frameworks that help guide data analysis, these disciplines have created systematic ways to understand social problems, enhance communication among scientists, build knowledge in the field, and train new scholars. In addition, universities have substantial resources available to complete their research, from academic departments to expensive research facilities. They also have a broad view that helps researchers compare communities, cities, or nations to one another to determine what factors cause social problems to arise in one place and not in another. Such a broad comparative view can help researchers document best practices or small-scale solutions that might be effectively transferred to other locales.

The wisdom of integrating community-based and university-based knowledge and perspectives has been increasingly recognized by foundations and government funders over the past 2 decades. Funding initiatives by the John D. and Catherine T. MacArthur Foundation, the Ford Foundation,

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and the Kellogg Foundation, among others, have emphasized linkages between these two knowledge bases. The desire to more effectively use precious local resources to address pressing social problems in the city of Chicago, for example, led the MacArthur Foundation to support a new multiuniversity, multiorganization network called the Policy Research Action Group (PRAG) in the late 1980s.[3] The U.S. Department of Education's Urban Community Service program and the U.S. Department of Housing and Urban Development's (HUD's) Community Outreach Partnership Centers (COPC) program, both established in the early 1990s, also are examples of government programs that encourage the integration of university and community knowledge.

More recently, various government health research agencies and institutes have embarked on a significant initiative to encourage collaborative, health-related research. This initiative grew out of a multiyear discussion of how government-funded research could more effectively tap into community knowledge and perspectives to produce more rigorous and informed research (Agency for Healthcare Research and Quality 2002, 2003). A strong force in advocating for and shaping this change was the Campus-Community Partnership for Health (CCPH), a highly visible network in the medicine and health fields. CCPH has organized a Community-Based Participatory Research initiative and listserv in its cooperative efforts with federal health agencies. This effort parallels the COPC support for university-community partnerships in urban policy and development areas.[4]

There have also been major efforts to promote collaborative research outside the United States. Most notable is the *science shop* movement in Europe. This movement, dating back to the 1970s in the Netherlands, parallels the collaborative research movement in the U.S. (European Commission 2003; Leydesdorff and Ward 2005; and Sclove et al. 1998). The movement has focused on integrating university and community knowledge in environmental, social, and economic research. Science shops—some based at universities and others established as independent research organizations—seek to provide a bridge between traditional research and the broader public. A number of European universities now have full-time university-supported faculty positions for science shop activities. In 2003 a network of 13 science shops in 10 primarily European countries created a network called "Improving Science Shop Networking" or ISSNET. In addition to facilitating international cooperation among existing science shops, this network initiated a new effort in 2005 to mentor younger faculty and community leaders who would then build new science shops in countries and regions previously lacking such collaborative centers.

At the heart of the science shop movement is the desire to ensure that scientific research is responsive to broader public needs and not just driven by disciplinary priorities. The European Commission (EC), the executive body of the European Union, explains this movement in its publication, *Science Shops: Knowledge for the Community:*

> One key element distinguishing science shops from other knowledge transfer mechanisms is their bottom-up approach. They are built around the concept of participation. Their role is to contribute
> to identifying civil society's needs for expertise and knowledge, and together find the best way to respond to them. (European Commission 2003, 5.)

Like foundations and government agencies in the United States, the EC has recognized that there is a widening separation between scientists and the public in our information society. Ranier Gerold, director of the EC's science and society directorate, describes this separation as a developing crisis in our nations:

> There are more scientists in the world today than ever before and we depend on science and its applications in almost every aspect of our lives, yet we do not always appreciate how intimately it affects each of us. Although researchers are successfully integrating their efforts at a European and even global level to address the increasing complexity of scientific inquiry, there appears to be a yawning gap between science and society at large. Many people see scientists as inhabitants of a strange parallel world that bears little resemblance to their own (European Commission 2003, 3).

In an effort to close the gap between science and society, the EC has provided increasing support to science shops and their international networks in the past decade. ISSNET held international conferences of science shops in 2001 and 2005 and plans future expanded conferences.[5]

While it has no established model, collaborative university-community research typically involves partnerships in all stages of research and dissemination of results, including:

- Conceptualization of the issue to be studied.
- Design of methodology.
- Collection of data.
- Analysis of data.
- Writing of a report or creation of some kind of outcome.

- Dissemination of research results and implementation of changes based on the research.[6]

University and community partners may have varying degrees of involvement in each stage of the research process. However, collaboration in the conceptualization and definition of the issue to be studied is a critical hallmark of effective research partnerships. Collaborative research is not a matter of a professor thinking up a research idea and then asking a community partner if it wants to join the research project. Rather, collaborative research involves a process of give-and-take between university and community partners that integrates the partners' differing perspectives, needs, and knowledge bases.

Collaborative research goes beyond traditional research boundaries that emphasize research as a way to determine *what is.* Instead, collaborative research is constructive and forward thinking; it often seeks to determine *what could be.* There is also a social-change orientation to collaborative research. Whether collaborative research involves the improvement of a social service agency program or broader communitywide change, it is typically aimed at solving problems. In their book, *Community-Based Research and Higher Education,* Strand et al. (2003) describe their model of community-based research (CBR):

- CBR is a collaborative enterprise between academic researchers (professors and students) and community members.
- CBR validates multiple sources of knowledge and promotes the use of multiple methods of discovery and dissemination of the knowledge produced.
- CBR has as its goal social action and social change for the purpose of achieving social justice.

This description does not necessarily imply that researchers are ultimately engaged in implementing the social changes recommended by their research. In most cases community partners are best prepared to advocate for the changes suggested by the research and even to implement the changes within their control. Even though an actionable outcome may have shaped a research project, there are times when a division of labor between university researcher and community leader/activist is appropriate, since community organizations may have more experience conducting certain social change activities. In cases where community organizations may be pressuring elected officials or powerful institutions to enact changes, a separation between researcher and advocate may also be a more effective route. Maintaining a researcher's place as an impartial expert who has engaged in rigorous research that led to a recommendation for changes is more valuable to a collaborative project than having the researcher engage in direct action, like joining a sit-in.[7]

The Center for Urban Research and Learning (CURL): A Model for Collaborative Research

Loyola University Chicago's Center for Urban Research and Learning (CURL) is a notable model for institutionalizing collaborative university-community research. In 2005 CURL had an $8 million endowment, an annual budget of approximately $1.5 million, and nine full-time staff. During an average year it carries out 10–15 different collaborative projects with the assistance of more than 10 graduate fellows, 15 undergraduate fellows, 40 additional undergraduates who are enrolled in a research seminar, 3 community fellows, and 3 faculty fellows.

Other institutions of higher education seeking to build a university-community partnership from scratch might find the CURL model to be a formidable one to follow. However, CURL was established by Loyola University in 1996 after the success of an earlier network of partnerships between community activists and faculty from multiple universities. These partnerships evolved into the Policy Research Action Group (PRAG), a network of universities and community organizations that used a $20,000 grant to initiate collaborative research in the Chicago metropolitan area in 1989. In its first 7 years, this author—then a faculty member and chair of the Sociology and Anthropology Department at Loyola University—coordinated PRAG. Loyola provided a fiscal home for PRAG grants and, impressed by PRAG's success, later sought additional and more substantial funding to establish CURL as its own collaborative research center.

Funding for collaborative research projects did not come to CURL as a result of an aggressive grant-seeking campaign, but rather from the success of university researchers and community leaders in identifying important research issues, addressing community needs, and building lasting partnerships. Working with the community to define research issues has had several advantages. When community partners participate in setting the research agenda, research issues tend to be holistic and interdisciplinary. As a result, CURL's research projects have attracted faculty and students from multiple disciplines and provided community organizations with valuable information that has helped strengthen local social service programs, grassroots organizing campaigns, and advocacy efforts. As one of our community partners put it, "CURL has become our research arm."

Because the community has helped to define the issues, CURL's research outcomes have received significant media attention. This attention provides positive reinforcement for faculty and students

who recognize that a broad audience values their research work. The university's public relations offices also find this media attention attractive because it demonstrates the contribution that the university is providing to local communities. Most important, media attention has been a political resource to CURL's community partners. For example, if a report supporting a community organization's campaign for more affordable housing receives positive play in newspapers or on television, this attention can bolster that organization's advocacy work.

CURL's Structure and Organization

CURL's mission statement explains that: The Center for Urban Research and Learning (CURL) of Loyola University Chicago seeks to promote equality and to improve people's lives in communities throughout the Chicago metropolitan region. CURL pursues this goal by building and supporting collaborative research and education efforts. These partnerships connect Loyola faculty and students with community and nonprofit organizations, civic groups, and government agencies. Such collaborations link the skills and wisdom present within every community with the specialized knowledge and academic discipline of a vital urban university. Working together, community needs are addressed and the academic experience is enriched.

In addition to this mission, CURL employs a set of governing standards that shape all of its collaborative projects. These include:

- **Collaboration.** CURL projects should strengthen university-community partnerships.

- **Institutional change.** CURL projects will further institutionalize university and community practices that promote knowledge exchange.

- **Geographic focus.** CURL will develop a mix of projects that address issues in communities near Loyola's three campuses as well as issues in other communities throughout the city and region.

- **Communication.** CURL will disseminate project outcomes to local stakeholders and to other communities and researchers who will find value in the data, analysis, and outcomes.

Research Teams

CURL research projects typically are carried out by a research team consisting of faculty, graduate students, undergraduate students, community partners, and CURL staff. Funded graduate research assistants generally serve as coordinators of particular projects, communicating with faculty and community partners on a regular basis and supervising other graduate and undergraduate researchers. Graduate research assistants work 20 hours per week during the academic year and full time during the summer months.[8] More recently, CURL has created 1-year, full-time, pre/postdoctoral fellow positions for advanced Ph.D. students or recent Ph.D. graduates.[9]

Undergraduate team members include CURL's undergraduate fellows, who receive a stipend ($1,200 per semester during the 2005–06 academic year) and work 10 hours per week. Funding for these positions either comes from CURL's endowment or is built into its research grants. Undergraduate fellowships are awarded on a competitive basis to students in all departments and schools of the university. Undergraduates enrolled in the university's 6-credit Urban Studies Seminar also participate in CURL's ongoing research projects. These students work 7 hours per week and attend a weekly seminar.

The team approach has been quite effective and has benefited partners and students. The teams help to maintain quality collaborative research by promoting involvement and regular communication between university and community partners. These partners, who typically have other significant work obligations, would not be able to engage in CURL research projects without the support of the research team. Involvement with CURL often represents the first time that many undergraduate and graduate students have been involved in hands-on research projects. CURL staff and more seasoned members of CURL research teams provide the support these students need to build their research skills and self-confidence. Students learn that their contributions to a larger research project can have a visible impact on communities and local policy. In some cases, students get to see their projects covered in the *Chicago Tribune* or *Chicago Sun-Times,* an accomplishment that is difficult for students or even faculty to achieve on their own.

Finally, the CURL experience teaches students how to ask questions and how to learn. This is a most valuable skill to take away from college as one enters the complex and rapidly changing world around us. Students learn this skill, in part, by watching faculty members explore research issues, an exercise that quickly dispels the misleading stereotype that faculty know everything and replaces it with a more useful understanding that there are knowledgeable people in all areas of our workplaces and communities.

Developing CURL Projects[10]

CURL develops projects in a number of different ways. The center may hold community breakfasts with grassroots organizations to discuss possible collaborative research projects. Sometimes Loyola faculty members will approach CURL staff with their own research ideas and ask to be introduced

to potential community partners. In some instances, community organizations will approach CURL to request research on a specific topic.

Occasionally, CURL holds community-organization discussions about possible new research projects around a particular issue. Because community stakeholders often adopt stereotypes about what research is, CURL staff holds an initial conversation with prospective partners to describe collaborative research and the kinds of resources that CURL can bring to the table. CURL staff and faculty quickly disabuse community leaders of any notions that research is esoteric, defined by academics looking through their disciplinary lens, and bound for the library shelf where it will gather dust. Staff and faculty discuss the connections between rigorous research and outcomes that can improve the quality of services being provided by a social service agency, can be used as credible policy research *ammunition* in community organization advocacy efforts with government agencies, or can guide community organization strategies in bringing about local changes.

Depending on the requirements of a particular research project, CURL can assign undergraduates, graduate students, staff, and faculty to the research team. Often one or two individuals work on developing a project and completing initial work, and research teams grow in size as the project proceeds. Since comprehensive community research usually cannot be completed in one semester, CURL manages most projects beyond the limits of a 14-week semester. Although CURL staff typically remain with a particular project from start to finish, the center may recruit different undergraduates and graduate students to work on a team over the life of a project.

Interaction with partners does not end when a project is completed. Community-based

organizations may request information from CURL, such as reports, local data, and mapping data created by graduate students with GIS skills. CURL posts data and research information on its Web site or a community partner's Web site so residents can access reports and local data quickly. In some cases, CURL will find faculty members with the expertise to answer specific questions or will facilitate a partnership between the faculty member and community organization. In cases where there has been broad-based community interest in particular policy issues or research skills, CURL has organized 1- and 2-day workshops, led by Loyola faculty or outside experts, for community members and Loyola students.

In some respects CURL is a knowledge *match-making* service. Among its resources are more than 1,100 Loyola University faculty, all of whom could potentially be involved in a collaborative university-community project. CURL offers faculty fellowships, which typically offer course reductions that can be used to develop a project or complete some phases of research. Local partners can also receive fellowship grants of up to $12,000 to support community-based organizations or support staff that an organization commits to a project. In working with community partners, CURL can provide its own staff to facilitate the grant application process or oversee grant funding after it is awarded. This helps to take the project management burden off of faculty and community partners.

As CURL has matured, it has gained significant credibility among community organizations, many of which approach CURL when they receive funding or while they complete research projects. A few years after CURL was formed, a large nonprofit organization serving a low-income, African American community on Chicago's west side offered the center one-

half of a $100,000 participatory evaluation research project grant it had just received. In a community vote of confidence, the executive director stated that "CURL is the only university research that I trust to do the research." This trust and credibility has helped CURL locate new community partners and continue working with past partners.

Examples of CURL Projects

In the late 1990s CURL worked with an Alinsky-style activist organization and a traditional social service organization to research the impact of the new welfare reform legislation on the 180,000 residents of three stable, racially and ethnically diverse Chicago communities. Both organizations had separately identified concerns regarding how welfare reform might destabilize their neighborhoods. CURL's COPC grant from HUD funded part of the research. Over the next 3 years, CURL produced three reports that received significant media attention. Local and state organizations used the first report to successfully advocate for state legislation protecting the financial stability of legal, elderly immigrants living in the communities. The other reports addressed childcare and access to jobs.

Another project came to CURL after a past community partner had requested that an Illinois State Representative fund research that would study changes in the affordable housing base of a rapidly gentrifying community on Chicago's north side. Affordable housing advocates were alarmed at what they saw as the loss of hundreds of housing units on a monthly basis, while developers and some members of the chamber of commerce felt there were too many affordable housing units and too few market-rate housing developments in the community. Over an 18-month period, CURL faculty and staff worked with an advisory committee representing all sectors of the local community. CURL collected data from an array

of local, state, and federal agencies, none of which had accurate numbers for subsidized housing units in Chicago. The advisory committee poured over data and maps that the research team provided at regular meetings. The end result was a report that provided a more accurate picture of housing in the community of 60,000 residents. This report has been used as a planning document in subsequent work in the community.

Making Connections at National and International Levels

Traditional academic-based researchers often criticize community-engaged research as being parochial and having a limited vantage point. This is not true. When searching for effective community-level models and solutions, grassroots activists are increasingly seeking information from colleagues in other cities, regions, and countries. These activists are taking better advantage of newer, more accessible communications systems, particularly the Internet, and are using national and international linkages that universities bring to the table. These linkages exist because of universities' decades-old visibility in regional, national, and international circles, as well as the regular involvement of their faculty in national and international conferences. While local community organizations typically are not part of such networks, collaborative university-based research organizations can use these networks to connect grassroots projects in one city or country directly with projects in other cities or countries.

With new accessible and inexpensive computer-based communication systems, it is now possible to facilitate these *local-to-local* connections without the help of large international agencies. The ability of local projects to share lessons learned and questions with other local projects represents an underdeveloped source of new knowledge. In an era of very tight local resources, the possibility of

gaining new knowledge, new program ideas, and proven community outreach strategies represents a major new global resource that can affect local communities.

Following the example set by ISSNET, CURL has expanded its cooperative research relationships to include community-based projects in other cities and countries. This has been largely driven by CURL's need to seek additional information from researchers outside Chicago and the United States about effective, proven, and community-based solutions to pressing problems. CURL has facilitated university-community partnership connections with projects in Sydney and Brisbane, Australia; Birmingham and Liverpool in the United Kingdom; and El Salvador. It has also been the primary U.S. center participating in ISSNET. The center is currently working on a four-city equitable development curriculum project involving universities and community partners in the United Kingdom, Spain, and Washington, D.C. Funded by the U.S. Department of Education and the European Commission, the project aims to create a change-oriented, participatory research-oriented educational package that can be used both in university and community settings.[11]

Challenges and Opportunities

Engaged research has made enormous contributions to local communities and has assisted policymakers over many decades of work. The recent growth of university-community research partnerships is a very encouraging sign (Nyden et al. 1997; Maurrasse 2001; Strand et al. 2003). Yet this form of research still faces challenges as it struggles for acceptance and recognition within the academy. Professional or applied fields such as nursing, public health, urban planning, education, social work, law, and business have always integrated community

engagement into research, curriculum, and practicum experiences. Although applied research has been a part of activities within psychology, anthropology, sociology, and political science, it has not always been as valued as *pure* research by many departments or universities. Yet leaders within the social science disciplines have recently started to recognize the importance of better connecting research to communities, organizations, and agencies outside of their fields.

Initiatives in *public social science* are now present in many of the disciplines. Craig Calhoun (2004, 13), president of the Social Science Research Council, has called for a stronger public social science, stating that:

> Many academic projects are driven by neither deep intellectual curiosity nor pressing public agendas but simply by the internal arguments of academic subfields or theoretically aimless attempts at cumulative knowledge that mostly accumulates lines on CVs. To justify these by an ideology of pure science is disingenuous. To let these displace the attention of researchers from major public issues is to act with contempt towards the public that pays the bills. …. we have to produce better social science.

The American Sociological Association recently established a Task Force on Institutionalizing Public Sociology. A key focus of the Task Force's 2005 Interim Report was on designing tenure and promotion policies aimed at more effectively rewarding faculty who are engaged in the research discussed in this publication. Universities such as Portland State have already adopted tenure and promotion guidelines that expand the definition of scholarship to go beyond traditional boundaries and include *discovery, integration, interpretation,* and *application* as legitimate faculty activities. The Task Force is emphatic in stating that:

> Given both the public sources of our knowledge and the potential for sociological research to address a broad array of social problems, we have an obligation to the public around us. As a discipline we need to communicate our findings beyond the walls of academia. We need to make sure that valuable knowledge does not remain locked up in academic journals read by a few hundred scholars, but rather we need to make sure that valuable knowledge gets distributed to a broad audience so it has maximum impact. (American Sociological Association Task Force 2005, 28)

In this *information age* we cannot ignore the substantial potential of better linking knowledge in all sectors of our society, especially the knowledge that exists inside the university and in local communities. There is now a strong network of engaged scholars who work with a broad array of community partners and who also provide support for younger, up-and-coming engaged researchers and their community partners. Collaborative research centers, community-based participatory networks, and community-university partnership centers that were once labeled as *new* have grown into established, permanent resources for universities and communities. We are truly moving into a new era of vibrant, engaged, and change-oriented scholarship.

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Author

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has also completed extensive research on stable, racially, ethnically, and economically diverse communities.

Notes

1. Excellent examples of the research and social indicator maps that were developed by Hull House researchers are available at the Hull House Museum's Web site: www.uic.edu/jaddams/hull/urbanexp/contents.htm#.

2. The sequence of events in the Love Canal neighborhood near Buffalo, New York, is a good illustration of the process of interaction among *community knowledge* and *researcher knowledge* in understanding and addressing the impact of toxic wastes on that community. See Levine, 1982.

3. See Nyden et al., 1997 for a detailed description of PRAG. PRAG's Web site, www.luc.edu/curl/prag and past issues of the journal, *PRAGmatics,* contain more information. The Loyola University Center for Urban Research and Learning currently houses and supports PRAG activities.

4. More information on CCPH is available on its Web site: http://depts.washington.edu/ccph/index.html. The network also coordinates a Community-Engaged Scholarship listserv (http://mailman1.u.washington.edu/mailman/listinfo/comm-engagedscholarship) particularly focused on the academic review and reward system in the health fields.

5. More information on ISSNET, science shop journals, and continuing science shop networking in Europe can be obtained at the LivingKnowledge Web site: www.scienceshops.org.

6. The research approach taken by the Center for Urban Research and Learning (CURL) at Loyola University Chicago involves discussion with and involvement of community partners at each stage. For example, CURL has worked closely with community organizations to design surveys, train community members, and increase community capacity to shape and complete research activities. It has established bodies of literature and support organizations to help guide other specific collaborative methodological approaches such as participatory evaluation research. For example, the online resources of the Community Tool Box project (http://ctb.ku.edu/index.jsp) at the Work Group for Community Health and Development at the University of Kansas provides substantial guidance on participatory evaluation research and other engaged methods.

7. The notion of academic researcher as *scientific expert* will always be debated. Regarding the *scientific* descriptor, collaborative research assumes that there is always rigorous research taking place that follows established standards of scientific research. This does not mean that defining the research question is not a political decision. The choice of a research project topic is always a political decision. Deciding to engage in research that might challenge the status quo, rather than research that might support the status quo, is a political process. Regarding the *expert* part of the descriptor, a researcher may advertise his educational and research experience credentials to establish credibility. This should not be construed to mean that community partners do not also have expertise in understanding community issues.

8. Graduate fellows generally receive a full tuition scholarship and (in the 2005–06 academic year) a stipend of $12,000–$16,000, depending on whether they work during the summer months.

9. The pre/postdoctoral fellows are treated as full-time university staff and receive full salary and benefits. These fellows acquire excellent collaborative research experience that distinguishes them from other job candidates when they seek teaching or research positions.

10. Over the years CURL has worked on issues such as affordable housing, racial and ethnic diversity in local communities, improvement of early childhood education, impact of welfare reform on economically diverse communities, community safety, lead poisoning prevention, housing low-income individuals with disabilities, use of new computer technologies in serving low-income communities, impact of gentrification and displacement on communities of color, community economic development, health needs of Native Americans in Chicago, homelessness, and youth civic engagement. More information about CURL is available at www.luc.edu/curl.

11. More information on CURL's four-city equitable development curriculum project is available at www.luc.edu/curl/escd.

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Fusing Horizons Through Conversation: A Grassroots Think-Tank Approach to Applied Research

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Abstract

This article summarizes the authors' experiences working in a rapidly growing Latino immigrant community in California. Applying a theoretical framework developed by the philosopher Hans-Georg Gadamer, the article deals primarily with the fusion of horizons of people at the grassroots and people mostly connected with the academic world. At its core is a discussion of the importance of conversation, place, story, and association in developing new community-based pathways for conducting applied research.

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Introduction

It goes without saying that as applied researchers we must meet a plethora of challenges if our work is to be successful. One of the most difficult of these challenges is the facilitation and maintenance of indepth conversations between persons from the grassroots and persons in the professions. Without these conversations, it is impossible to develop the kinds of close relationships that are necessary for the conduct of effective community-based research and action. Sociologist Randy Stoecker (2005, 34) notes that applied researchers are increasingly seen as "… exploiting poor communities or disrupting organizations for their own professional advancements." As a result, Stoecker says, "… Some community organizations now even require outside researchers to sign a contract stating what they will give to the community."

This mistrust is not only due to past misdeeds of applied researchers working in poor communities but to very real differences in horizons between those

"Human thought is consummately social: social in its origins, social in its functions, social in its forms, and social in its applications. At base, thinking is a public activity—its natural habitat is the houseyard, the market place, and the town square."

—Clifford Geertz, The Interpretation of Cultures, 1973.

anchored mostly at the grassroots and those anchored in the professions. These persons from the grassroots are individuals whose horizons tend to be delineated by local space and whose orientations are toward proximate horizons. Postmodern theorist James N. Rosenau (2003, 87) describes such persons in the following words: "They may well be aware of remote events and places that can have consequences for them … but they nonetheless interpret distant proximities through local lenses, as readily absorbable into their longstanding practices and worldviews."

Many people who inhabit the grassroots, particularly immigrants, place an emphasis on "cultural intimacy." Svetlana Boym (2001, 255) argues that in immigrant communities people tend to reconstitute a mini nation state on foreign soil out of longing for their homeland. This, in itself, creates urgent demands for intimate communitywide relations that more likely than not are expected to include indepth conversations of a communal nature. Conversely, professionals working at universities, community agencies, or government tend to share characteristics that derive from our readiness to move personally and electronically across a variety of worlds at a moment's notice. We are oriented mostly toward horizons that are often far removed from where we are physically located. We tend to be oblivious to events occurring in our neighborhoods or in the communities that surround the universities or agencies where we work or study. Not surprisingly we often become impatient with long conversations, particularly those occurring outside the professional and familial realms. In the words of a colleague:

> "… All this emphasis on talking to people outside of our discipline and in the community is a distraction from our obligations, which are principally to publish and teach…" (Bernheimer and Arguelles in press)

Facilitating and maintaining open and indepth conversations between persons with different horizons is not an easy task; yet it is an essential stage in community-based applied research practice. The philosopher Hans-Georg Gadamer (1960, 1975) has argued that the creative renewal of conversation as an art form is critical to the fusing of horizons between persons. Fusing horizons rather than trying to change the horizons of those we disagree with, Gadamer insists, is the only way that understanding can take place and that persons from different backgrounds can come to terms with the *other's* difference and uniqueness. When the horizons of grassroots people and professionals are fused, a common living language emerges. This language, in turn, facilitates a never-ending process of open and deep conversations, and an ongoing fusion of horizons. Thus, like many other researchers and scholars, including Baker, Jensen, and Kolb (2002), we believe that these conversations and fusion of horizons are critical for effective community-based applied research practice.

This article is the story of the Ontario Grassroots Think-Tank and of a rapidly growing and largely Latino immigrant community in a section of the city of Ontario in Southern California. Here, the think-tank facilitates the identification of community needs and assets and mobilizes people to meet those needs by engaging in a variety of civic innovation, research, and outreach efforts.

During its 3 years of operation, the think-tank, formerly called the Ontario Community University Partnership (or simply the *Partnership*) by its community members, has brought a coordinated and community-based applied research agenda to the Claremont Colleges. In the view of many faculty, staff, and students, the Think-Tank has made possible many more transdisciplinary community research projects than would have

been developed without it. During the period of its Community Outreach Partnership Centers (COPC) grant from the Office of University Partnerships at the U.S. Department of Housing and Urban Development (HUD), the think-tank implemented more than 14 different applied research projects in 6 different academic departments, and provided service-learning and research opportunities to more than 100 Claremont undergraduate and graduate students. The think-tank identified, celebrated, and mobilized the capacities of its members and, as a result, has been remarkably efficient in achieving the goals out lined in the COPC grant. These goals revolved around identifying and addressing community needs in one of the most economically depressed and socially disenfranchised sections of the city of Ontario. The think-tank was able to complete the grant's research and outreach objectives ahead of schedule and generated new projects that were not included in the original grant proposal.

Think-Tank Origins

The life of the Ontario Grassroots Think-Tank began in the spring of 2001 with a series of conversations between members of community groups and social agencies, and faculty, students, and staff from the Claremont Colleges. These conversations were organized and facilitated mostly by Marie Sandy, one of the authors, who at the time was a doctoral student at the Graduate University and was directing a college service-learning project in Ontario. A 2002 COPC grant awarded to Claremont Graduate University and Pitzer College, eventually supported the think-tank. Both institutions are part of the Claremont Colleges and are located near Ontario.

The think-tank currently has more than 40 members, all recruited through a *snowball* fashion. Most of the members are working-class

Latino residents of Ontario, while a handful are representatives from a variety of local professional agencies and government departments. Faculty, staff, and students from the Claremont Colleges have participated as members of the think-tank in all stages of its lifespan.

The Foundations and Structure of the Think-Tank

The think-tank is both a foundational process and a field through which the fused horizons of its members find expression. Past and present members of the think-tank have come to believe that conversation is the soul of the think-tank. Through these conversations members came to recognize the important role that deliberation and research could play in helping them manage the affairs of their community. In addition, these conversations allowed think-tank members to understand and appreciate the role that universities can play in clarifying the nature of community problems, mobilizing resources, and fostering civic innovation. Hence, it may be insinuated that these conversations offer hope for bridging the gap between scientific research and the *totality of human life*. (Gadamer 1966, 1976.)

Think-tank founders believed that *conversation must come first* in designing research and outreach projects, and the think-tank provided many opportunities for all involved to cultivate different skills of conversation. One such skill involved sincerely questioning a matter at-hand without setting out to out-wit, out-argue, or divine the intentions of one another. One faculty member described this approach as having its closest analogue in the Socratic *docta ignoranta* (learned ignorance), whereby one learns that "one does not know" and assumes a state of readiness for understanding. Current members of the think-tank believe that their work is and must continue to be grounded in a natural four-fold complex of tools,

practices, and inner reflections. These are: place, stories, action-reflections, and association. Use of these tools, which are described below, represents an alternative conception of community-based applied research.

The Place Foundation

In the literature on contemporary civic innovation and renewal, scholars such as Harkavy (2002) and McCoy and Scully (2002) have underscored the fact that civic engagement that is informed by community-based inquiry can only occur in the kind of physical spaces that are missing and in urgent demand in universities. Other scholars such as Mallory and Thomas (2003, 11) strongly advocate for colleges and universities to provide "intentionally designed, permanent spaces on campus for identifying, studying, deliberating, and planning action regarding pressing issues with ethical or social implication."

In the mid-1990s, Pitzer College Dean of Faculty Alan Jones, then a professor of psychology, and Lourdes Arguelles, one of the authors, were living in the city of Ontario. Feeling the need to further root their teaching and research practices in a community space, and to encourage others to do the same, Jones negotiated on behalf of Pitzer College to purchase a house owned by the city. The Pitzer House rapidly became known as a center for a variety of service-learning and other community-related activities (Sandy and Arguelles 2004) and the obvious choice for a meeting place for the Partnership.

The Story Foundation

The foundation of the think-tank rests upon stories that describe the life and experiences of all its members. This storied foundation ensures that others clearly hear the guiding thoughts, explanations, doubts, and dreams of those who are often ignored in traditional community projects due to their low social rank or lack of institutional affiliation. One student who observed the think-tank in action described it this way: "The emphasis on storytelling facilitated the flow of conversation. In listening, I became convinced that true participation of community folks in projects involving the university is best achieved when there is an emphasis in storytelling. It seems to me that this is the preferred mode of communication at the grassroots."

The Research-Action Foundation

Getting started. Author Marie Sandy began to hold freewheeling conversations with a handful of university faculty and students, as well as with residents and the staff of local agencies, about how the university and community might work together as partners. The group shared stories, which included an incredible amount of gossip and jokes, and slowly began to envision how they could work together to address common problems using both community and university expertise. By telling stories in this way, the group gave shape to what ordinarily remains "chaotic, obscure, and mute" in conversations, lying outside the focus of getting things done (Polkinghorne 1988, 134).

*One faculty member described this approach as having its closest analogue in the Socratic **docta ignoranta** (learned ignorance), whereby one learns that "one does not know" and assumes a state of readiness for understanding.*

Through word of mouth, more and more people joined in these conversations. At each meeting, the group always asked: "Who is not here?" The conversation group wanted more participants who represented community-based and faith-based organizations, neighborhoods, schools, and other local institutions. The group also sought participants who reflected the racial, ethnic, and class diversity of the city in general and its socioeconomically depressed sections in particular. Membership in the group, which now saw itself as a formal community-university partnership, was open. Initially, people were welcomed to join at any time. As the group grew larger, however, new members were asked to participate in an orientation session.

Designing community inquiry. As its ranks swelled and its sessions became more focused, the conversation group began to see itself as a grassroots think-tank whose task was to engage in research-action to address the most pressing community problems. The grassroots members were learning anew what popular educator Madhu Suri Prakash and economist Gustavo Esteva (1998, 72) have described as: "… to walk in their own feet; to trust again their own noses rather than some institutional authority. They were fully asserting the 'powers of the weak'…" For their part, university members were discovering paths to sharing their expertise in ways that were not demeaning. They were rooting themselves in the think-tank by taking creative new steps to escape some of the narrow certainties of academic time and production. The much-anticipated fusion of horizons had begun to take place.

This fusion of horizons was exemplified in the production, distribution, and analysis of a community survey that would help the think-tank identify and prioritize community needs. In truly participatory fashion, the group designed a bilingual (English/Spanish) survey to determine and rank community needs in a section of the city that think-tank members thought needed urgent attention. The survey included sections with Likert-scale and dichotomous questions as well as a few open-ended questions. Partnership members distributed the survey at a Cinco de Mayo festival held at a city park. One grassroots partner came up with the idea to hold a raffle for a scooter to encourage people to complete the survey, and university members promptly developed a mechanism to ensure the anonymity of respondents involved in the raffle. This approach worked remarkably well, and the group collected more than 560 surveys. This survey, which is included in the appendix, may be replicated without the express permission of the authors.

After the surveys were collected, two graduate education students tabulated the survey data, and another former student, Dr. Delacy Ganley, conducted an initial analysis of the quantitative data. Several undergraduate students, who were enrolled in a qualitative research methods class, analyzed the answers to the open-ended questions. The think-tank then met to make sense of the student reports. This was a highly contested and sometimes emotionally charged meeting. Members representing community agencies that provide free and low-cost immunizations to poor Ontario residents were dismayed that residents did not rank immunization as a high priority. Think-tank members representing a local community college were upset that higher education was one of the residents' lowest priorities, although English as a Second Language (ESL) classes, computer training, and job training ranked higher. The group asked questions about the validity as well as the meaning of these responses. Did access to free immunization rank low because this access was already being provided or because it was not needed or valued? If higher education was not

currently a high priority, should the think-tank start a campaign to promote it, or should the group work to provide the type of education residents indicated that they wanted?

Analyzing data to structure think-tank activities. By group consensus, the think-tank decided to honor and begin addressing the priorities identified in the community survey while vowing to conduct further research to explore these and other priorities. From the top seven community priorities identified in the survey, the think-tank selected three areas on which to focus. The group reached its decision by majority vote. The three areas selected, which then became the basis of the COPC grant, were health, housing, and education. Each think-tank member chose one priority area in which to work for at least 1 year, and then joined that subcommittee. The think-tank did not choose to address other critical areas identified by community members, including access to affordable childcare, transportation, and safety. Many group members felt that they did not have the expertise or resources to devote to these issues. Some noted that a substantial amount of Community Development Block Grant money was already being devoted to safety issues and that the police department, among others, could make the greatest impact in this area. The think-tank made survey results available to various city departments; these departments may address other issues in the future.

Informed by conversations on the survey data, the subcommittees began refining their topic areas and outlining needed research and outreach activities. Each subcommittee linked its discussions to the priorities identified through the survey, which became the basis for each subcommittee's activities. For example, the healthcare subcommittee did not include immunization and dental care in its research and outreach agenda since those areas

received relatively low scores. Following the priorities of survey participants, the subcommittee gave higher priority to strategies that would improve access to affordable healthcare and health information, and developed a bilingual healthcare resource directory and a *promotoras de salud* project that emphasized heart health. The education subcommittee focused on job skills training and access to employers rather than on greater access to higher education because community members did not identify the latter as their highest priority.

Undergraduate and graduate students, as well as some faculty members, were recruited by the think-tank's university members and assigned to the subcommittees. Community partners served as the primary authors on some research projects, including the bilingual resource directory and the bilingual Thrifty Living Guide. Students implemented other projects with faculty support. The think-tank paid these students, some of whom also received academic credit for their work. Examples of the research-action projects completed by the students included a meta-analysis of community health needs assessments conducted by area hospitals, a housing research project that identified leverage points for first-time homebuyers and incentives for mortgage lenders, and a project to identify appropriate education program activities for homeless families.

The Associational Foundation

The associational nature of the think-tank has greatly facilitated its research-actions. Associations, we are reminded by community theorists and organizers Jodi Kretzmann and John McKnight (1993), are usually place-based and typically ad hoc. They are the foundation of a democratic society and differ from institutions in that they do not possess a strict hierarchical structure. Think-Tank research and outreach activities have been organizationally nonhierarchical

and decentralized in implementation and have benefited from the perspectives and resources of participants, who represented many different groups, interests, and life experiences and worked in volunteer, temporary, and nonhierarchical capacities. Given the vicissitudes of fortune of small nonprofits and the geographic mobility of faculty and residents, this structure has ensured stability for the group over time because the activities were never dependent on any one organization or individual. This associational foundation was complemented by a centralized communication network and the provision of status-related benefits, which provided the necessary infrastructure to sustain research-action activities. The think-tank gave its members the use of a meeting place, a central phone number, a listserv, a Web site, and business cards that lent status and legitimacy to those individuals who had no institutional affiliation. On this matter, one grassroots member commented: "The university opens doors for me that have always been closed."

The associational feel of think-tank operations reflects what anthropologist Frederique Apffel-Marglin (1998) has described as a collective-action way of making knowledge where "… emotional bonding with particular others is what generates new insights and new knowledge. Knowledge here is not separated from emotion." The emotional bonding that has taken place within the think-tank has helped to break biases and enlarge perspectives. The following conversation about the think-tank's bilingual resource directory illustrates this process:

> **Partner 1:** What I liked about the directory is that [another community partner] and I butted heads so nicely. [Laugh] It was the funniest thing. I came from one perspective. And she came from a totally different perspective.
>
> **Partner 2:** It was like a nightmare, but it was a good nightmare. There were a lot of battles, but you know, it came out nice. When you just have one group of people doing something and they all come from the same background, you are not going to get a good thing. It might be good for the people who did it, but you're not going to get a well-rounded version of what is going to help the majority.

Lessons Learned

For the authors, participation in the think-tank resembled touching any part along the circumference of a wheel and finding a direct line leading to the axis. For us, that access was the experience of the grassroots. Experiencing the grassroots meant learning many new lessons and relearning some of the ones that we had forgotten as we abandoned our own communities—a white working-class community and an immigrant community—for the horizons of the university. These lessons included:

1. **Breaking Bread** - The members of our think-tank relearned the importance of breaking bread together as a regular part of our work. In particular, we put food *first* during our meetings. In the following words of our grassroots partners:

   > **Partner 1:** When you were getting your food and sitting down, it gave everybody a chance to get to know one another. Then we got down to business.
   >
   > **Partner 2:** That one [facilitator] made us sit there in the living room with all of the papers, and no one can leave until we finish, but we knew there was food out in the kitchen and it was late, and do you know what people are thinking when they are sitting there when they know there is food coming? They are wondering what is happening to the food? Is it getting cold?

2. **Validating Participation** - During think-tank meetings, we usually used flipchart paper to keep visual notes, which were helpful when transcribing minutes. Most importantly, the notes helped grassroots members feel they were being heard during meetings. In the words of one grassroots partner:

> **Partner 1:** It is very important to write on the board because that validated what people said. It gave a visual that everyone could see, and everyone else could *remember* what was being said. In our meetings when we wrote it, that meant they heard it, they can see it, in some cases, they could feel it because they could see it in the person's emphasis.

3. **Journeying from the Concrete to the Abstract** - Our think-tank meetings became true journeys from the concrete to the abstract. We typically began our meetings with *refreshments or dinner,* giving people an opportunity to talk together until a *critical mass* of people was ready to begin. We then *held introductions* and introduced discussion of a *specific concrete project,* such as voting on the partnership's logo. Everyone present could participate in the discussion, whether or not they had been involved before. We then proceeded to *review the activities of each of the subcommittees* with community representatives from each subcommittee taking center stage and the entire group offering suggestions and assistance. We continued the meeting by tackling the *conceptualization of new activities* such as the design of future publications or a discussion of strategic planning or advocacy issues. Finally, we ended our meetings with *announcements of upcoming events.*

4. **Hanging In There Through Earthquakes and Hurricanes** - We relearned, or remembered, that conflicts and misunderstandings are inevitable and need to be anticipated, but not in a way that they become a self-fulfilling prophecy. We began to equate these conflicts and misunderstandings with natural events like earthquakes and hurricanes. We also began to share with each other the tools of practical wisdom that had helped us cope with these events in our personal and work lives. Gerald Bruns (2002, 47) suggests that these "talents" of practical wisdom include "responsiveness, flexibility, improvisation, readiness for revision and the imagination (in detail) of infinite possible worlds …."

The most serious earthquakes and hurricanes we experienced occurred after we were

Experiencing the grassroots meant learning many new lessons and relearning some of the ones that we had forgotten as we abandoned our own communities—a white working-class community and an immigrant community—for the horizons of the university.

awarded the COPC grant, and it became known around the city that our group's conversations now involved *real* money and increased university resources. Suddenly more high-level *institutional agency representatives* began to attend the meetings regularly. Most of these people were white and wore expensive business attire, whereas the majority of our original conversational group had been people of color, most of whom were casually dressed. Other earthquakes and hurricanes also occurred after the group received its COPC funds. University partners hired a project director without consulting the grassroots members of the think-tank. They chose a very competent graduate student who, while a woman of color, was not a Latina and did not speak Spanish. For many partnership members, this was an insult. Grassroots members promptly voiced their concerns that the group was being controlled by elite whites.

The sharing of practical tools of wisdom and the group's well-honed conversational skills eventually paid off. We were able to discuss this issue in considerable depth at a rather volatile think-tank meeting. The discussion led to an agreement to radically modify the partnership budget and hire a Latino bilingual coordinator for the think-tank. We also agreed to hold ongoing discussions about the dynamics of race, ethnicity, class, and gender in our work together. As Native American organizational theorist Kay Lynn Two Trees (1998) once advised author Marie Sandy, "you need to hang in there" when doing cross-cultural and community work.

Conclusion

The notion of university-created spaces for association and conversation is an idea whose time may finally have come. In our work with the think-tank, we have found that these spaces are fundamental to the fusing of horizons between people at the grassroots and in the professions, and that this fusion facilitates and improves the conduct of community-based applied research and outreach.

Harkavy (2004), Mallory and Thomas (2003), McCoy and Scully (2002), and Schneider (1999) continue to underscore the necessity for universities to *make commitments* of tangible physical and financial resources for the creation of spaces through which a variety of people— representing the grassroots, local governments and agencies, and the university—can implement socially responsible research and community outreach activities while learning or relearning the skills of conversation and association required for the survival and expansion of our democracy.

Finally we must say that the Ontario Grassroots Think-Tank is an experiment with an uncertain end. Whether it will continue to turn out well in the face of economic, social, and cultural constraints and the everyday personal pressures on its members, is unknown. In the meantime we hope that the lessons learned within the think-tank will help community-based applied researchers in their search for new pathways for conducting their work. In addition, we hope that telling the think-tank story will contribute in a positive manner to the development of a more critical and comprehensive vision for university-community partnerships.

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Authors

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Appendix

Community Needs Survey—Sponsored by an Alliance of Ontario Community and University Groups.

Research as Process: The Not-So-Great Divide Between Community-Based Research and Faculty Productivity

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Abstract

University faculty and administrators often see community-based research (CBR) as a distraction from core teaching and research responsibilities. The goal of this article is to highlight that, under the right conditions, CBR and academic research and teaching are highly complementary activities. By examining the various stages of the research process, the authors argue that collaborative community research supports faculty productivity in at least three ways: it can help researchers complete necessary tasks they would have to undertake for research of any kind; it can be a rich source for multiple new project ideas, courses, and publications; and, with institutional support, it can provide funding and release time for preliminary research, an important consideration given the dearth of funding for exploratory research in general.

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Introduction

Institutions with research and teaching expectations typically evaluate their faculty based on finished products: publications and, to a lesser degree, conference papers and research grants. These institutions are often biased against community-based research (CBR) and counsel junior faculty not to invest too much time in *community service,* lest it slow down their research productivity. Not surprisingly, junior faculty members are often reluctant to invest time and energy in such activities unless it will somehow yield an identifiable payoff. The goal of this article is to encourage faculty and university administrators to recognize that, under the right conditions, CBR and academic research and teaching are highly complementary activities. The authors hope to encourage faculty members to invest in CBR not just out of

The authors hope to encourage faculty members to invest in CBR not just out of a sense of civic responsibility but because CBR can advance their research and teaching agendas and enhance their productivity.

a sense of civic responsibility but because CBR can advance their research and teaching agendas and enhance their productivity. The authors also encourage universities to see the potential that CBR has for supporting and moving forward the research and teaching goals of their faculty.

The complementarity of CBR and faculty productivity is most evident when we recognize that academic research is a *process* in which publications are often the last step. Even if no publication emerges immediately, or ever, from a particular community research partnership, faculty members have not wasted their time. Rigorous and meaningful academic work almost always includes periods of exploratory and preparatory work in which a faculty member defines research questions, chooses research sites and methods, and identifies data sources. All of this has to happen *before* any data are collected or articles written, and it *can* happen in conjunction with community-based activities.

If done well, collaborative community-based research supports faculty productivity in at least three ways:

- CBR can help researchers complete necessary tasks that he or she would be required to undertake for research of any kind.

- CBR can be a rich source for multiple new project ideas, courses, and publications.

- With institutional support, CBR can provide funding and release time for preliminary research in a nearby community. This is an important issue given the dearth of funding for exploratory research in general.

University faculty should not have to choose between pursuing civically engaged scholarship and meeting traditional expectations of academic production. By funding faculty involvement in community research, universities do not slow down faculty research productivity or divert resources away from scholarship. In fact, they strengthen both.

The scenario presented here is a useful example of how faculty at a Research I university— the University of Utah—and residents of a surrounding urban area of Salt Lake City engaged in truly collaborative research that served the interests of the community while supporting the core teaching and research activities of the faculty partners.

Background

The face of Salt Lake City neighborhoods, especially those located on the city's west side, has changed dramatically in recent years, due to an influx of immigrants and refugees from a dozen different countries. In the space of a decade, what used to be majority white, Mormon neighborhoods have become *majority-minority* neighborhoods. Leaders in one of these neighborhoods, a community called Glendale, were concerned that few new neighborhood residents were participating in community decisionmaking, either through community councils, Parent-Teacher Associations, or city government. As a result, a large segment of the population was not being heard by local officials, and pressing problems were being left unsolved. Community leaders wanted the University of Utah to help them identify and overcome the barriers to participation in public decisionmaking among Glendale's diverse residents. This issue extends well beyond Salt Lake City and affects communities across the state and the country, especially those where immigrant communities are growing rapidly.

Through its University Neighborhood Partners (UNP) office, the University of Utah was able to

respond to this request in a focused and productive way. UNP, an office dedicated to the creation of campus-community partnerships, was established in 2001 as part of the university's effort to embrace civic engagement and to recognize that active collaboration between university and community groups can enhance learning, teaching, and research. Institutionally, UNP is part of the Office of the President and receives its primary funding directly from the university. It also received a Community Outreach Partnership Centers (COPC) grant from the U.S. Department of Housing and Urban Development (HUD) in 2004 to support 3 years of partnership programming. Several private grants also support UNP's work.

UNP works in some of Salt Lake City's most diverse communities, most of which have historically been disadvantaged economically and institutionally. The partnerships created through UNP were expected to benefit the University of Utah by increasing the diversity of its student body; they were also expected to benefit local neighborhoods by helping to increase educational and economic opportunities for residents. UNP's physical location in a diverse, low-income neighborhood on the west side of Salt Lake City helped the leaders of the Glendale Community Council voice their concerns about resident participation directly to the university. UNP's community-based staff, in turn, was able to respond directly to the leaders' request for help.

In 2003 UNP convened a group that included five faculty members from three university departments (political science, social work, and communication), three community council leaders, and three Glendale residents representing the Hispanic, Pacific-Island, and Asian communities. UNP felt it was important to bring together a group of interested faculty from different departments *before* the research question was

defined. In this way, UNP was playing the role of a researcher who brings together a research team at the early question-forming stage of research. Faculty members volunteered for this first stage of research, which lasted more than a year. Since they received no compensation or release time, their participation at this stage can truly be seen as community service.

Faculty members were drawn to the project because of a personal or indirect academic interest in local political participation, grassroots democracy, community organizing, or group communication. They did not have an already-developed research project in mind. Three of the faculty members were tenured, one was an untenured assistant professor, and one was a member of the nontenure track teaching faculty. The faculty members' involvement was made possible, in part, because UNP took on the burden of coordinating and directing the group, identifying research partners, gaining access, recruiting study participants, and providing meeting space and snacks. None of the faculty would have been willing, or perhaps able, to commit to the project without this institutional support. Additionally, through its university funding, UNP could offer faculty members the possibility of modest support in the future or of future collaborations with faculty on other funding requests.

The primary purpose of the collaborative project was not to create knowledge for its own sake, build and test theories of community participation, or publish research in academic outlets. Rather the goal was to identify pathways to *action*, for both the university and community partners, that would have a concrete impact on the community. UNP knew it would have difficulty recruiting and maintaining faculty interest in a project that had little prospect of an immediate payoff such as an

academic publication. Indeed, after a few months two faculty members who did not find direct links between the UNP project and their own research interests slowly withdrew. However, because the research process used during the project mirrored standard research practices, the project provided the seeds for new course offerings, faculty research projects, graduate student theses, and future publications.

It was also challenging to engage residents in a long-term research project. Although the community council leaders were enthusiastic about the project, only the president was a consistent participant in meetings and discussions. All residents—particularly those who had already emerged as community leaders—were busy with jobs, family, and other commitments. Some residents were unfamiliar with, or did not value, the project's initial outcome, which would be a research report. To keep people involved in the project, UNP needed to pay careful attention to group dynamics, a task that included setting goals as a group, developing friendship and trust among group members through holiday and other gatherings, and finding opportunities to respond to tangible ideas that emerged during the discussions.

One faculty member and the president of the Glendale Community Council co-chaired the research group, which adopted the name Glendale Community Partnership (GCP). A typical meeting lasted less than 2 hours and emphasized collaborative discussions in which all members took an active part. GCP established these three goals:

1. To make the Glendale Community Council more representative of the Glendale community in terms of participation, attendance, and leadership.

2. To create greater interaction across groups in Glendale.

3. To create a greater sense of ownership and pride in the neighborhood.

After 12 months of discussions, GCP moved from the preliminary identification of questions to more formalized research. For a time faculty team members met independently to craft the first drafts of questions and questionnaires. This gave faculty team members an opportunity to include questions that tapped into factors and relationships in which community residents were interested and also went beyond the narrow goals of the Glendale project. The GCP faculty also applied for and received approval from the university's Human Subjects Institutional Review Board for this study, a necessary step if one wishes to publish and disseminate the results.

To keep people involved in the project, UNP needed to pay careful attention to group dynamics, a task that included setting goals as a group, developing friendship and trust among group members through holiday and other gatherings, and finding opportunities to respond to tangible ideas that emerged during the discussions.

Through its contacts in the community, UNP facilitated the recruitment of local residents for focus groups. Faculty took the lead in conducting the focus groups, and graduate students helped to coordinate and transcribe the discussions. GCP group members then analyzed the results together and wrote the final research report by dividing up the material into manageable sections. GCP faculty and community members continued to collaborate throughout the research phase of the project by engaging in discussions about the appropriateness of specific questions in the questionnaire, by participating in pilot focus groups, and by sharing feedback about the focus group findings. Dissemination of the report to community members, community council leaders, and the mayor's office marked the end of the project's research phase and its transition to the action phase. It also marked the closure of the original GCP group due to changes in the Glendale Community Council's leadership. This change caused UNP to move the project's action steps to another neighborhood.

Payoffs

The GCP project differed from traditional faculty research because its purpose was to identify and carry out *action* that would impact the community. This focus on action often leads faculty and administrators to label such projects as *community service,* as opposed to *academic research* that is presumably more valid. This judgment might seem to be validated by the fact that no faculty team member had published findings from the project in an academic outlet 6 months after the project's conclusion. Yet an absence of immediate publication is discouraging only for those who hold a narrow view of what research productivity means and what the core activities of university faculty should be.

In fact the research process *did* lead to a number of action steps in the community *and* to significant payoffs for the faculty team members. In addition to the research report, which represents a valuable contribution to local understandings of community and political representation, the GCP experience set in motion a close collaboration between community leaders and university faculty and students. This collaboration has created an important link between community and faculty payoffs. For example, a faculty team member from the political science department used the GCP work to develop a new service-learning course, mentor a graduate student, and begin a new research agenda. The new service-learning class, introduced in spring 2005, focuses on the theory and practice of democracy, using west side community councils as case studies of democratic deliberation. Students in the class helped the community council's leadership sponsor and organize a neighborhood street fair to build a sense of community among diverse groups of residents. The festival, recommended in the GCP report, drew more than 500 residents from all ethnic groups and involved 20 undergraduate students from the university. The community council plans to make this an annual event with the ongoing support of the class.

Other faculty payoffs came in the form of graduate student training, financial support for research and creative activities, and curriculum development. The political science faculty member mentioned above further benefited from his participation in GCP by applying for and receiving funding and a course reduction to develop his class and teach it at least three more times.[1] He is now developing a research agenda around community leadership and grassroots democracy that may have other publication, teaching, and community action outlets. In addition, a faculty member from the College of Social Work used his experience

with GCP to apply for and receive funding for a documentary and writing workshop in Glendale. Two doctoral students, invited to join the research team about halfway through the project, were able to explore potential dissertation topics while receiving compensation as research assistants. One of the students subsequently received additional funding to conduct her dissertation research in Salt Lake City's west side neighborhoods. Finally, faculty members participating in the GCP team acquired a nuanced understanding of important community issues that, together with the network of contacts and key informants they developed, contain the seeds for future research projects.

Research as Process

Most research projects, at least in the social sciences, move through five basic stages, whether their goal is theory testing and verification, theory construction and discovery, uncovering meanings, or uncovering causal relationships:

1. Identifying a research question.

2. Choosing appropriate sites, research design, and methods.

3. Identifying data sources and gaining access.

4. Collecting and analyzing data.

5. Reporting findings.[2]

We might think of the first three stages of research as preliminary or exploratory stages and the last two stages as what is usually—but narrowly—viewed as *productive research*.[3] It is hard to overemphasize the importance of preliminary research in the overall research process. At some point all researchers move away from topics and populations that they may have studied for years so they can move into new research areas and new populations. Those new studies require that researchers return to preliminary research. Preliminary research, especially research that is empirical, requires spending some time in the field, interacting with community leaders, learning about problems, and becoming familiar with the issues and cultural frames that inform the way people see the world. Each time researchers do this, they take risks by investing scarce time, resources, and energy in research areas and projects where payoffs, in the form of publications, are still uncertain. Participation in a community-based research project, such as GCP, can usually help researchers complete the first three stages of the research

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process, and sometimes make progress into the latter two.

Identifying a Research Question

Through grounded theory approaches (Glaser and Strauss 1967), researchers allow their research question, concepts, categories, and eventual theories to emerge from direct experience in the field. The contact with individuals and organizations that CBR provides enhances the process of discovery, the development of concepts and categories that make sense to the communities being studied, and ultimately the development of novel hypotheses that can later be incorporated into more developed theories (Strauss and Corbin 1990). When GCP was created, none of the faculty members had a well-defined research project in mind, but all had a theoretical interest either in community participation and democracy or an empirical interest in young immigrant communities.[4] Because four of the five faculty members lacked contacts and prior experience in the west side communities, the first stage of the research process would have been very time-consuming for them. However, GCP's monthly meetings and conversations with community team members provided a regular venue for helping every faculty team member think about the kinds of research projects each could carry out in the community.

Indeed, GCP discussions allowed faculty to identify research questions they otherwise would not have known to ask. For instance, group discussions revealed that the meaning of *community* varies considerably among the groups that now populate the neighborhood. GCP participants quickly learned that behind the decline in resident participation was a change in the very nature of community and the breakdown of long-standing social networks. What do you do, then, when that system begins to break down? This is the question that propelled the research forward. The monthly meetings allowed the group to identify key players in the community, organizations that mattered, and which questions mattered to whom.

After identifying potentially promising topics for study, there are six questions that researchers need to ask about every research question: Does the topic really interest me? Is this a problem that is amenable to scientific/systematic inquiry? Are adequate resources available to study this topic? Is the topic and research practical and doable? Will the research question or methods lead to unreasonable ethical problems? Is this topic of theoretical interest (Bernard 1995, 103)? There is no way to know the answer to these questions, especially in a new area of interest, without doing a good deal of preliminary research. Some of this work can be done in a library, but, for most empirical work with human subjects, these questions can only be answered by immersing oneself in the community or with the population in which one is interested. GCP gave faculty team members this opportunity.

Choosing Appropriate Sites, Research Design, and Methods

The collaborative process used by GCP *strengthened* its research by pointing the way to a research design that fit the research questions and the context. This was critical to the GCP project because inappropriate research methods can lead to unproductive research and to potentially more damaging *mis*representations of communities, social processes, and cause-effect relationships. In the process, inappropriate methods can alienate universities from the communities they are meant to serve.

Through its discussions, the GCP team learned firsthand about the pitfalls of using certain research methods with such a diverse population. For example, the faculty partners had initially planned to conduct a survey of neighborhood residents. Surveys, however, require researchers to identify major variables of interest before collecting the data, and the team was not sure about the main factors that hindered minority group participation. In addition, faculty team members realized early on that surveys among immigrant groups could not use standard questions developed with other populations in mind. Rushing into survey research would prove counterproductive, since Latino, Pacific Island, Asian, and white residents have very different understandings of core categories such as community, neighborhood, family, government, and participation.

The productivity of the GCP monthly meetings, which functioned as informal focus groups, suggested that focus groups would be the most appropriate and flexible method for gathering a rich amount of information quickly from a relatively large number of people. Again, however, GCP learned to tread carefully in recruiting local residents for these groups. This process, if done improperly, could alienate an entire community from the research.

Identifying Data Sources and Gaining Access

Identifying data sources and gaining access can be extremely challenging and time consuming, particularly for researchers who are conducting qualitative research. These researchers have much to gain from becoming involved in university-supported, community-based research. Working alone, researchers have to be creative about gaining access to organizations and populations, and identifying and cultivating key informants. Most important, they must gain the trust of community members, a painstakingly slow process that helps to facilitate research, open doors, and obtain the cooperation of respondents. Without trust, a great research design and question will be impractical and may never yield a publication.

GCP's faculty researchers benefited from their association with UNP, which had already established close contacts with a number of organizations on Salt Lake's west side and had built up considerable trust and social capital among residents. The association with UNP gave the faculty greater access to residents and organizations, making the task of finding key informants or recruiting participants to the study satisfyingly smooth and quick. The lesson? Universities that engage in campus-

Most important, they must gain the trust of community members, a painstakingly slow process that helps to facilitate research, open doors, and obtain the cooperation of respondents. Without trust, a great research design and question will be impractical and may never yield a publication.

community partnership activities, and actively seek collaborative projects with community organizations, are able to deepen and extend their contacts in the community, increase trust, and build social capital, all of which create conditions that facilitate faculty research in those communities.

Collecting and Analyzing Data

In some cases faculty research agendas may overlap directly with a community priority. In other cases, where the initial link between research agenda and community priority may be less direct, faculty can still find creative ways to advance their own research while engaging in the collaborative project. This was the case with the GCP project. For example, each faculty member included questions in the focus group interview schedule that focused on such topics as formal and informal leaders, the meaning of community, and participation in civic organizations. These questions were germane to the project but also held specific interest to the faculty member. As a result, the focus group interviews became a potential data source for future projects. Even though a single collaborative project may not itself lead to an academic product, the work described here prepared at least three faculty members for future research projects that they would not otherwise have identified.

Approval from a university's Human Subjects Institutional Review Board (IRB) is required before a faculty member can apply for research funds or begin data collection. The preliminary research completed through a community-based research project will make IRB approval and external funding easier to obtain. By thinking about research questions, becoming familiar with potential research sites and populations, identifying appropriate methods, and establishing strong contacts in the community, community-

based researchers will have done much of the work needed to write a strong research proposal that stands a good chance of being funded.

Reporting Findings

The GCP group produced a written report that included theoretical interpretation and analysis. Because the report's intended audience included community leaders and residents, the report is unlikely to count toward reappointment, promotion, and tenure (RPT) evaluations. It is also unclear whether any of the collected data or text from the final report will make it into a peer-reviewed academic journal. However, information the group collected and analyzed moved faculty members several steps closer to publishing their own findings because it encouraged them to refine ideas, generate new concepts, and develop hypotheses to test. The process of analyzing the data and writing the report also provided opportunities for graduate student training and for curriculum development, both of which are core parts of faculty responsibilities.

Conclusion

The research process—from the inception of an idea, to the development of a research question, to the publication of findings—is usually a very lengthy process. Several years can pass between the beginning of a project and the final publication of findings. Academic institutions do not support or reward much of the initial groundwork that faculty researchers carry out, including conducting preliminary research, establishing contacts, and identifying research questions. As a result, this groundwork becomes largely invisible work that faculty squeeze in between their other research, teaching, and service commitments. Community-based research and outreach can often seem like an activity best avoided by someone on the path to tenure, lest it slow down research productivity. In this article the authors

have tried to illustrate that university-supported community research projects can jump-start and support faculty members' research and teaching agendas when a faculty member's interests are closely aligned with community outreach. These community-based projects provide faculty with the opportunity, and sometimes the institutional support, to conduct important preliminary research that may not appear on the RPT radar screen and for which there is usually little or no financial support. This research may lead to the development of new undergraduate or graduate courses, master's or doctoral theses, and future faculty research projects. Support during these early phases of the research process allows faculty research and teaching to develop in ways that can speed up the publication process and increase the quality of the work.

The arguments outlined here do not address the role that civically engaged scholarship should play in current forms of faculty performance evaluation. Instead, the authors hope to reframe the debate so that faculty and administrators will recognize that civic engagement and academic excellence can be pursued simultaneously. Rather than viewing community involvement as a distraction from core research and teaching responsibilities, the authors believe that CBR provides opportunities for faculty to be more, not less, productive. When universities support, encourage, and fund faculty participation in civically engaged scholarship through minigrants, course releases, and initiatives like the University of Utah's University Neighborhood Partners office, they are, in fact, supporting faculty engagement in the core teaching and research missions of the university.

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Notes

1. This faculty member received funding for a course release from UPN and development funds from the Lowell Bennion Community Service Center, another important source of support for community-based research at the University of Utah.

2. Ethnographic, archival, and survey research differ in the stages and sometimes the sequencing. All fieldwork can be difficult to plan in advance and is inherently unpredictable, but most research projects follow a similar process from the initial idea to the final reporting of results.

3. This division between the early and later stages of research is somewhat artificial. Certain approaches, such as grounded theory, blur these distinctions altogether (Glaser and Strauss 1967; Lofland and Lofland 1995; Strauss and Corbin 1990).

4. One faculty member was interested in political participation and engagement of recent immigrants. Another was interested in thinking and writing about neighborhood democracy. A third was interested specifically in Glendale.

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Creating Tools for Deliberative Community Planning Through Interdisciplinary Research and Community Engagement

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Abstract

In 2003 researchers and undergraduate students in the Worcester Community Project Center (WCPC) at Worcester Polytechnic Institute (WPI) formed a partnership with the city of Worcester, Massachusetts, to explore issues related to ongoing pressures on the city's development patterns. Worcester needed assistance in creating a series of suitability maps that would provide development guidance to its neighborhood planners; the city also wanted to involve the public in this suitability analysis. This project provided an opportunity for WPI's faculty and students to explore ways in which new technology could be used more effectively to involve a community in decisionmaking. During the project an interdisciplinary team of faculty and students developed and piloted a GIS-based decision tool that enables interested groups to visualize, in real time, the implications of their planning decisions on a variety of community scales. This paper describes how WCPC teams developed the decisionmaking tool within WPI's community partnerships, which are designed to bring together student learning and community needs. Particular attention is given to the students' educational process and the ways in which student learning can be transformed as a result of participating in complex, multisemester research projects.

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Introduction

Many U.S. cities continue to experience rapid urban growth that is fueled by low interest rates and public investment in the regeneration of downtown districts. The consequences of such growth for cities across the country have been an ever-increasing market-rate housing stock and rising property values. The Commonwealth of Massachusetts and its second largest city, Worcester, are no exceptions.

The consequences of such growth for cities across the country have been an ever-increasing market-rate housing stock and rising property values.

Underutilized buildings in inner-city Worcester are being transformed from their former industrial uses to housing stock and mixed-use developments. Green space and farmland are being recruited into production to feed the region's appetite for housing. According to the Massachusetts Audubon Society's report *Losing Ground* (2003), 40 acres per day of *green space* was lost to housing development between 1985 and 1999. Despite the 10,000 new homes built each year, housing costs continue to rise about 17 percent a year in central and eastern Massachusetts (Boston Foundation 2004). Indeed, the region's housing deficit remains high, and some 44,000 units are needed to fill the demand. Moreover, as Boston continues to develop outward toward Worcester, the number of vehicles using local highways continues to increase by about 34.6 percent (Boston Foundation 2004).

In 2000 then-Governor Paul Cellucci authorized Executive Order 418 (EO 418), which made funding available so that every Massachusetts city and town could examine the tensions between economic development, housing, open space, and transportation. The primary vehicle for these analyses was *suitability mapping*. Suitability mapping refers to a process whereby planners examine the appropriateness or *suitability* of current and possible future land uses and identify the highest value for a parcel or parcels of land in some larger policy context. *Highest use* does not imply *highest market value*. Rather, it implies the

best use of land, given abutting uses and larger social need.

Two years after EO 418 was authorized, researchers and undergraduate students in WPI's Worcester Community Project Center (WCPC) formed a partnership with the city of Worcester to explore ongoing pressures created by the city's development patterns. The goal of the project was to create a series of suitability maps that would provide development guidance to neighborhood planners and policymakers. Public involvement was an important component of this project. Indeed, public deliberation on the suitability criteria was a key early step in WCPC's approach, which sought to find a good way to engage local residents in a discussion about suitability that would not be too abstract and distant from their concerns. Through a yearlong project, a team composed of faculty and students developed and piloted a decisionmaking tool, based on the geographical information system (GIS), which would enable interested groups in Worcester to visualize, evaluate, and make recommendations for suitability criteria in real time.

This article begins by describing WPI's institutional infrastructure, enabling students to participate in this project. The article then summarizes the process WCPC research teams followed and describes the development of the GIS-based decisionmaking tool, called the Interactive Visualization Tool (InVsT). The article

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concludes with reflections on the transformation of both faculty and students that resulted from this project.

WPI's Project-Based Learning Approach

Each university has its own approach to involving students in community partnerships that support student learning. More than 25 years ago, WPI instituted project-based learning as a major component of the university's degree requirements. All WPI students must complete three project-based degree requirements during their time at WPI: a capstone experience in the humanities and arts; a senior project experience in the student's major; and an interdisciplinary, *service-learning* project experience during the student's junior year. Of the three project requirements, the interdisciplinary service-learning project, which explores technology-society relationships, is perhaps the most innovative. Faculty advisors receive teaching credit for supervising the project and helping students solve policy-oriented problems at the nexus of techno-scientific and social themes.

Over the years WPI has developed an internal infrastructure—called the Global Perspective Program—to support its growing service-learning initiative. Students can now complete their junior projects at one of 14 project centers around the world, from Boston to Bangkok, Thailand. Each center has a director who solicits projects from public agencies, private companies, educational institutions, and nonprofit organizations, such as nongovernmental organizations (NGOs).

The off-campus centers proved so effective in achieving the educational goals of the junior year project that WPI established the Worcester Community Project Center (WCPC) 5 years ago. WCPC is housed in the school's Division of Interdisciplinary and Global Studies. The center brings together interdisciplinary teams of faculty and students to engage in urban policy problems facing the city of Worcester and the region, and it offers WPI students unique, well-structured opportunities to explore the social dimensions of science and technology. WCPC serves students who were not seeking an international experience, allowing them to complete outreach projects without leaving Worcester or traveling abroad. In addition, a separate WCPC initiative aims to improve the academic quality of local projects by adapting best practices developed at distant residential project sites to the Worcester program.

WCPC outreach projects carry substantial weight in the student's overall degree requirements and count as approximately nine courses. Typically, each project team spends about 1,000 hours working with a community sponsor during two of WPI's 7-week terms, which are equivalent to one 14-week semester at other schools.

A key attribute of WCPC's interdisciplinary service-learning projects is their team orientation. At the beginning of the first term, students are assigned to teams of three or four, depending on their project preferences. Typically, the teams engage in a preparation period during the first term of the program, taking a single class, ID 2050, and attending a weekly team meeting with their faculty advisors. During the second term, the entire team works full time on its project with its sponsoring organization. This gives students an ideal opportunity to have meaningful experiences beyond the *gated community* of the college campus.

During the project's preparation period, each student team member is expected to strengthen his or her critical thinking skills by becoming familiar with the project and its location, learning about the various analytical tools that will be employed

during the project, and writing about the planned project. This learning process allows students to see firsthand that all technological problems are embedded in a social context. By the end of the preparation period, the student teams are expected to develop well-crafted proposals that set out the plan for how they will execute their research during the following term.

A single course—ID 2050—is the prerequisite for students who wish to complete any WCPC project. Each of WPI's international and domestic project centers has its own variant of ID 2050, and the course content varies depending on the particular community projects offered each semester. However, the overall course objectives remain constant: to enhance student skills in the area of critical thinking, written and oral expression, teamwork, and civic engagement. These objectives and the course structure embody WPI's model for service learning, which Hunter and Brisbin (2000) define as "a form of experimental education that combines structured opportunities for learning academic skills, reflection on the normative dimensions of civic life, and experimental activity that addresses community needs or assists individuals, families and communities in need." (See also Krueger and Schachterle 2002.) The WPI course provides students with the basic skills and knowledge they will need to complete their projects, including general information about social science research methods and the concepts of urban systems and change. Weekly meetings provide faculty and their student teams with a forum to discuss project details.

The 7-week implementation period is very demanding for students, who typically spend 40–50 hours per week conducting interviews, collecting data, and writing up a professional report that proposes solutions to a particular agency's problem and balances technical solutions with financial and social feasibility. WCPC has provided dozens of such reports to the city of Worcester, ranging from park and playground maintenance to the development of cultural industries.[1]

Community Planning in Practice: Developing Technology for Public Deliberation

During the October–December 2003 term, project teams focused on development issues that arise in the context of contemporary social and economic demands. The projects placed a particular emphasis on sustainable urban development, using Hall (1998) as a primary textbook. The intent was to help students see that the problems facing urban America are far from irreversible, and that students can be participants in the solutions not only as project team members, but also in their civic lives now and in the future. Students also received instruction in GIS and the policy context of the Massachusetts Executive Order 418 (EO 418), through which the city had received funds to examine the tensions between economic development, housing, open space, and transportation.

The research team for the project included faculty and undergraduate students from a number of disciplines.[2] Participating faculty had backgrounds in management, electrical engineering and computer science, urban planning, and economic development. The nine student researchers involved in the project represented similar majors.

In preparation for the project, the principal investigator[3] and the faculty advisors worked with the city of Worcester to develop three projects that could satisfy the needs of the city and the terms of the city's EO 418 grant. Individual teams were linked to each of the theme areas that required examination under the grant: economic

development, housing, and open space. Each team was expected to produce a suitability map, based on its theme area, which graphically displayed local-level data on such features as the industrial structure of the city, resident characteristics, and the location of open space. The student researchers on the economic development team were Christopher Moller, Jessica Jajosky, and Joshua Zarr. Student housing researchers included Nina Mallozi, Akrad Hamir, and Kate Traynor. Jason Farmer, Jennifer Settle, Matthew St. Pierre, and Christopher Wall comprised the open space team.

Throughout their ID 2050 course, student researchers worked in a seminar environment as they grappled with key concepts. Each of these seminar and team meetings was crucial to the team's ability to complete their proposal's three sections. Drawing on academic literature in the area of urban development allowed students to situate Worcester within a regional and global context. Understanding various policy problems allowed them to contextualize the EO 418 approach and to grapple with how EO 418 sought to address the urban problems that they had discussed more abstractly earlier in the course. Learning about GIS and the types of available data helped students to understand that not all data are equally appropriate in every context. Each phase of this process was linked to a person in Worcester with whom the students could interact. The project's short-term goal was to provide students with information about the structure of their city government and to familiarize them with information sources within that government that could help them complete their projects. Students attended relevant administrative and board-related meetings and began to understand how their government works from both the political and administrative ends. Moreover, as they began speaking with neighborhood activists of various stripes, students began to understand firsthand the complexity of the relationship between the city

government and the citizens of Worcester. Over the long term, however, WCPC wanted students to recognize that, regardless of their career choices, they had something to contribute to civic life after the project was over.

During the project's implementation phase, students worked with the city of Worcester's Planning Director Joel Fontane. All faculty advisors remained on the project during this phase, although students worked in city offices and met with their faculty advisors on a weekly basis. Basically, student teams worked with community partners to provide data, analysis, and recommendations for the city of Worcester's EO 418 Community Development Plan. As mentioned above, suitability maps were central to this endeavor.

Suitability and GIS

Suitability analysis provides a powerful tool for screening potential uses in the early stages of planning. The concept of suitability is standard in the planning literature, but EO 418 required that suitability criteria be confirmed through a public participation process. One of the stated purposes of the former governor's initiative was to "engender local conversations among citizens to explore possible community futures" (Executive Order 418 2000, 2.) The WCPC team not only wanted to start these conversations, but also to find ways to sustain them and create opportunities to empower marginalized groups and constituencies. Examining the dynamic relationships between economic development, housing development, open space, and trans-portation was required by the grant. However, WCPC's larger research goal was to consider how student teams could make use of technology to facilitate more deliberative and more equitable planning decisions. The WPI project would test strategies for integrating public deliberation with GIS analysis (Krueger et al. 2005).

The prospect of bringing GIS to students and the community presented exciting opportunities for everyone. Students, for example, were able to experience firsthand the implications that technology held for examining social problems and policies. For the community, this project created an opportunity for more meaningful deliberation about important issues. These deliberations were particularly meaningful because, as a tool, GIS does much more than simply show static maps or graphs of a community's characteristics. Rather, it brings those characteristics to life. Unlike other mapping software, GIS helps people analyze spatial data through map *layers,* which represent such local characteristics as topography, roads, rivers and streams, and even buildings. By deploying different layers simultaneously, analysts can develop maps that are customized to illustrate particular community problems.

In recent years scholars and practitioners alike have looked for ways to bring GIS from the domain of planners and other analysts to communities (Sheppard 1995; Craig and Elwood 1998; Nedovic-Budic 1998). Most recently, these efforts have emerged under the auspices of Public Participation in GIS (PPGIS), which has promulgated literature about unequal access to the technology (Lietner et al. 2000); the social and political implications of the use of technology (Sheppard et al. 1999; Ghose 2003; Ghose and

Elwood 2003); as well as the actual process by which GIS is used in the public decisionmaking process (Jankowski and Nyerges 2001; Craig, Harris, and Weiner 2002; Drew 2003; Grossardt, Bailey, and Brumm 2003). Indeed, the PPGIS literature has helped create exciting opportunities for communities to develop their GIS capacity and has helped make GIS analysis more responsive to specific community needs.

Because GIS enables analysts to actually *see* relationships among and between parcels, it provided a useful platform through which WPI's student teams could examine the complexity of suitability. To allow the public to see these relationships as well, the student teams had to determine how to structure a public participation process. The teams also had to develop a methodology for piloting a tool that would facilitate that involvement.

The first challenge of the project was defining suitability, an abstract concept with which people often struggle. Student teams needed to develop a public participation process that would help citizens understand the concept and participate in discussions about how suitability would be defined. Students would then develop draft suitability criteria and present those criteria to the public. Once this was accomplished, the students would ask citizens to deliberate on these criteria, using a computer tool called the Interactive Visualization Tool, or InVsT. (For a full description of the

These deliberations were particularly meaningful because, as a tool, GIS does much more than simply show static maps or graphs of a community's characteristics. Rather, it brings those characteristics to life.

process and data collection methodology see Krueger et al. 2005; Benoit et al. 2004; Hamir, Mallozzi, and Traynor 2003; Farmer et al. 2003; and Zarr, Jojosky, and Moller 2003).

Student teams began the tool development process by creating a set of suitability criteria for each of the predetermined themes. The initial suitability criteria drew from the planning literature and from informal interviews students held with planning experts (Fontane 2003; Novick 2003; Scanlan, 2003). These initial suitability criteria were then used to assess the availability of data. Practical concerns—like whether basic GIS data layers were available—played an important role in criteria selection. Student teams could create new GIS layers if supporting data were unavailable on open space, unused parcels, and housing types. However, lack of data would make it difficult for city residents to evaluate suitability at the parcel level. Once the student teams ensured that the basic data requirements were satisfied, they began locating actual quantitative data sources, including archival data (assessor's data) and existing data available through the U.S. Census Bureau, Bureau of Labor Statistics, and the North American Economic Classification System (NAECS).

In the next phase of the project, the students combined their working suitability criteria with the quantitative data to produce the suitability maps for economic development, open space, and hous-ing. The housing team, for example, identified seven factors related to the three dimensions of housing suitability that were drawn from the city's goal to create an adequate mix of affordable, market rate, and specialized housing. The economic develop-ment team established seven factors for assessing economic development suitability across the four broad business segments. One factor, for example, was the proximity of buildings to rail spurs, which would help with the transportation of goods. The teams examined manufacturing, rather than

service-sector activities, because the quantitative data and location quotient analysis suggested that Worcester has a critical mass of manufacturing jobs despite the downward trend nationally. Both the literature and the Worcester context informed the suitability criteria.

## Case Example: Housing Suitability Analysis

The housing analysis began with a thorough housing inventory. Such an inventory was not available through the city of Worcester, so students turned to other sources, locating a recent study conducted by RKG Associates (2002), a consulting firm working for the city. From this source, the student team developed a housing market profile and typology. The team then classified Worcester's housing into types by parcel. Again, students encountered challenges. The Worcester Assessor's data does not explicitly describe land use; the data set does, however, contain useful descriptions of buildings using 103 different descriptors (Hamir et al. 2003). Despite the difficulties with classification, the housing team found that it was able to analyze the housing suitability for two fundamental types of dwellings: single family and multifamily.

The student teams needed to be able to present their information in ways that community residents and policymakers could visualize. To simplify this visualization, the suitability analysis for housing was divided into three subcategories: single-family, multifamily, and special needs and elderly housing. The suitability criteria determined most appropriate for the suitability calculations were lot size, accessibility, and proximity to open space. Map 1 was the result.

GIS technology helped the student teams identify sets of suitable uses versus unsuitable uses. The resulting maps revealed not only the *highest* suitable use, but also made unsuitable uses clear.

This suitability map reveals that downtown Worcester and areas along major arteries are best suited for multifamily houses.

Map 1. Housing Suitability for Worcester

Suitability Categories
- Multi family housing
- Single family housing
- Special housing
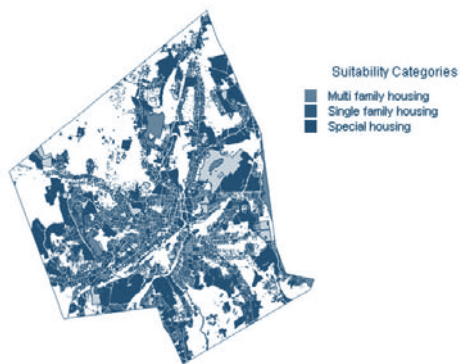
Developing and Piloting InVsT

To this point all of the teams' suitability criteria and analysis had been completed in a vacuum, without public input. The teams did not know whether their criteria were relevant or legitimate. Indeed, they did not know whether, in the eyes of the community, the criteria were sufficient and satisfactory. To solicit public input, the team developed a computerized tool that allowed members of the public to interact with the three databases developed for housing, open space, and economic development. During focus groups, members of the public could use the tool to make dynamic modifications in the relative importance of each set of suitability criteria associated with each of these study areas. One exciting aspect of the tool was that it produced results in *real time* so that citizens engaged in the planning process could see immediately the implications of their land-use decisions.

The purpose of the focus groups was to inform people of the ongoing community development planning process that was part of EO 418 and to pilot test the InVsT. The focus groups were derived from a convenience sample—teams selected names from various lists gathered from local nonprofit and governmental organizations. In addition, teams identified key individuals whose perspective would inform the process. In total, the population sample included more than 200 names from economic development, business, nonprofit and community-based organizations, and environmental groups. From this sample the researchers randomly selected 35 people of various backgrounds to participate in the focus groups. These people were invited to 1-hour meetings held in various points around the city.

Focus group discussions were divided into three segments:

- **A brief overview** of the project, suitability mapping, and InVsT.

- **A discussion about the team's maps and a ranking of suitability criteria.** Through the course of the focus groups, the teams asked participants to respond to the criteria weights that researchers had established and suggest additional suitability criteria. For example, one focus group participant suggested that the open space team add a new criterion relating to the ecological importance of preserving parcels for open space. WPI's criteria had focused on population density and setting a number of open space acres per capita. However, the citizen in question felt that a parcel's suitability for development should also include data about watershed protection or biodiversity. The teams' challenge was to take this and other suggestions under advisement and seek out geocoded data sources (like NAECS codes for economic development) that could be used to create new GIS layers.

- **The development of alternative suitability maps.** During this segment of the meeting, the participants took a survey, which asked them to weight the teams' suitability criteria and to suggest new criteria. Based on the results of this survey, the teams used the InVsT interface to develop a new suitability map for each theme in each focus group. Maps 2 and 3 illustrate the differences between the research team weights and weights suggested by the focus groups.

Map 2. Research Team Map
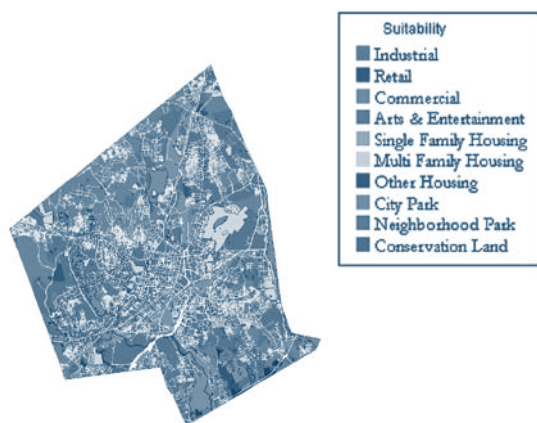
Map 3. Focus Group Map
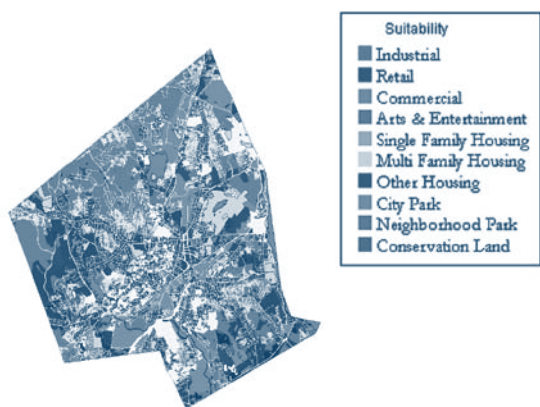
Summary: Interdisciplinary Research That Matters

The community development plan for the city of Worcester was successfully completed in 2004. Since then, some members of the WCPC team (two faculty members and a student) have continued to refine the InVsT tool and apply it to new contexts. In fall 2005, two new teams of students began working with Worcester Common Ground, a local community development corporation, on an externally funded project that will focus on economic development in Worcester's Piedmont neighborhood, a highly mobile immigrant community adjacent to WPI. The students will use GIS, InVsT, and other conventional economic data collection and analysis techniques to make recommendations for helping neighborhood residents start and sustain businesses in the local community.

Not all research projects will use tools like InVsT to bring scholarship into community service. The ability to participate in funded city projects involving technology such as GIS comes with experience. Scholars who are engaging in community research and service-learning for the first time should ease into projects and establish working relationships and project expectations with sponsors.

To conclude, community-based research is time consuming and often challenging. Public participation and technology such as GIS often compound these challenges. Yet, this kind of research must not only continue, it must be fostered. Over the past 20 years WPI has developed the infrastructure to get faculty and students off campus to assist communities in Worcester and around the world. Like the project discussed above, these experiences bring benefits to communities, students, and faculty. For communities, the innovation that comes from

the interaction with an interdisciplinary team of faculty and students often makes the impossible plausible. Through the process, faculty and students, especially those coming from the science and engineering fields, realize that they can make contributions in ways they never imagined.

Not one team member could have developed the InVsT tool alone. All were needed. The social scientist asked the question, the computer scientist developed the software to ask it, and the urban planner helped deliver it to the public. Students need this type of scholarly interaction, and they benefit from the experience, which prepares them to enter industries where work groups often include members with diverse educational backgrounds. The team approach reminded engineering and science students how crucial it is to understand the broader context around science and technology policy issues.

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Notes

1. For more information on these or any WCPC projects, please contact Rob Krueger.

2. The team also included graduate students hired from Clark University in Worcester and Antioch-New England Graduate School.

3. Rob Krueger was the project's principal investigator. He is the director of the Worcester Community Project Center, and taught this section of ID 2050.

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Engaging Academic Physicians in a Community–Academic Partnership: Lessons Learned

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Abstract

In recent years medical schools have expanded their community focus to reflect the changing nature of healthcare financing and delivery. Academic physicians are increasingly being encouraged to develop community-academic partnerships that provide community-based learning experiences for undergraduate and graduate medical students and address community concerns. In this article the authors describe their experience building such a partnership at the Medical College of Wisconsin. They identify individual and institutional barriers that impede community engagement by academic physicians and describe strategies they have used to overcome these barriers and sustain community-academic partnerships that positively affect academic physicians, graduate and undergraduate medical students, and the community.

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Introduction

In 1998 the Center for Healthy Communities (CHC) in the Medical College of Wisconsin's (MCW) Department of Family and Community Medicine formed a partnership—called Partners for Progress (PFP)—with three groups:

- The Housing Authority of the City of Milwaukee (HACM), which oversees 17 high-rise and family public housing sites with more than 6000 residents.

- SET Ministry, Inc., a nonprofit organization that provides case management services at 13 high-rise public housing sites.

Academic physicians are increasingly being encouraged to develop community-academic partnerships that provide community-based learning experiences for undergraduate and graduate medical students and address community concerns.

- Public housing residents who range in age from infants to 102 years.

PFP had a simple mission: to improve the health and quality of life of Milwaukee public housing residents. The partnership began its work by sponsoring community town hall meetings at 17 public housing sites to determine the communities' assets and concerns. Linking these assets and concerns became the focus of PFP partnership activities. The community assets identified during the town hall meetings included:

- The existence of formal and informal leaders.

- An interest in improving the quality of life.

- An openness to a partnership with the medical school.

Members of the community who attended the meetings also expressed their desire to:

- Improve health and wellness.

- Strengthen leadership and advocacy.

- Prevent violence.

- Improve community safety.

- Increase homeownership.

In a mere 7 years, PFP has implemented 20 community-based programs involving more than 120 undergraduate and graduate medical students. Thirteen faculty members from seven different MCW departments and centers have participated in these projects. These faculty members represent CHC; the MCW Cancer Center; and the departments of Family and Community Medicine, Pediatrics, Emergency Medicine, General Internal Medicine, and Urologic Surgery. The partnership's success is clearly illustrated by the $1.5 million in extramural funding it has secured from public and private sources, the Special Achievement in Public Health Partnership award it received in 2003

from the Wisconsin Public Health Association, and Community Partnership Recognition awards that two PFP programs received from the MCW Department of Family and Community Medicine.

Community-academic partnerships are becoming common. Yet successful, sustained medical school partnerships like PFP are still rare. Traditionally, medical schools have been isolated from their surrounding communities and have fulfilled their service missions through the provision of patient care to the uninsured. Medical school faculty and students typically have had limited opportunities to work in communities and have generally not adopted the service-learning model—in which students fulfill academic requirements by engaging in community outreach—which is employed in many other areas of higher education.

This article identifies changes in the healthcare system and medical education that are prompting medical schools to strengthen and expand their community focus. It identifies individual and institutional barriers that physicians face when they seek to participate in community-academic partnerships. It also describes strategies that MCW has used to overcome these barriers. Finally the article discusses how community partnerships have benefited MCW and the community.

Changes in the Healthcare System and Medical Education

The growth of managed care and other changes in healthcare financing and delivery have required physicians to practice cost-effectively, join interdisciplinary teams, and work to maintain the health of entire populations (Seifer, 1998). These changing demands require physicians to possess skills that many were not taught during their medical school training. To fill these education gaps, the Pew Health Commission called in 1991 for changes in medical education that

would integrate a core set of competencies into the traditional, individual-based, disease-specific medical curriculum. These competencies include caring for the community's health, practicing prevention, involving patients and their families in decisionmaking, promoting healthy lifestyles, understanding the role of physical environment, and participating in a culturally diverse society. Seifer (1998); Greenlick (1992); Foreman (1994); Rubenstein, Franklin, and Zarro (1997); and Peabody (1999), as well as others, have also recommended that undergraduate medical education be revised so it can better respond to the changing healthcare system.

Calls for changes that would strengthen the community focus of medical education have been widespread. The Association of American Medical Colleges (2002) emphasized the importance of integrating a community and public health perspective into the undergraduate medical education curriculum in its Report II of the Medical Schools Objectives Project (MSOP). In the report, MSOP defined a public health perspective as one that "encompasses the ability to assess the health needs of a specific population; implement and evaluate interventions to improve the health of that population; and provide care for individual patients in the context of culture, health status, and health needs of the populations of which the patient is a member."

In a similar statement of support for a community focus, the Liaison Committee on Medical Education (2002), sponsored by the Association of American Medical Colleges and the American Medical Association, requires medical students to "demonstrate an understanding of the manner in which people of diverse cultures and belief systems perceive health and illness and respond to various symptoms, diseases, and treatments. Medical students must learn to recognize and

appropriately address gender and cultural biases in themselves and others, and in the process of healthcare delivery."

Barriers to Physician Participation in Community-Academic Partnerships

Medical schools are responding to calls for change by seeking to broaden their outreach missions through effective community partnerships. Such partnerships require physicians to venture beyond their comfort zone—the clinical or academic setting—and venture into the community. Important as such community-academic partnerships are, however, individual and institutional barriers often work against their creation. These barriers are explained below.

Individual Barriers

Time commitment. University faculty in any program are expected to teach and conduct publishable research. In addition, academic physicians are expected to maintain an active clinical practice. As a result, these physicians are very pressed for time. Because community work requires a substantial and ongoing time commitment, physicians are often unprepared for the investment of time required to develop and sustain community trust. That trust is key to the development and implementation of community-academic partnerships and community-based programs.

Poor fit with physician interests. Physicians are typically interested in clinical patient care and specific diseases or illnesses. However, community members may not frame their primary concerns in terms of clinical health issues such as diabetes or hypertension. Instead, community members may express more concern about nonmedical issues, such as affordable and safe housing and employment. As a result of these differing priorities, many physicians struggle to identify a

role for themselves in community-based activities. Only when physicians and physicians-in-training adopt a more holistic approach to health—one that encompasses biological, social, economic, and spiritual factors—will they see a clearer link between community concerns and individual health status.

Objectification in research. Most academic researchers, including physicians, have historically viewed the community and its members as subjects of research rather than as partners in research. Within this traditional model, research has been judged most favorably if it was designed by academics with little or no community input (Ahmed et al. 2004). An investigator's detached attitude toward communities was thought to increase the rigor and objectivity of the research. The legacy of this traditional research model has served as an additional barrier to community-university partnerships. Community members still do not trust researchers and are often reluctant to participate in research and programmatic activities that are linked to a college or university (Casswel 2000).

Lack of respect for community knowledge. Conventional academics and physicians often have difficulty recognizing that community members, who may not have advanced degrees, can make important contributions to the research process. This failure to recognize a community's

assets often separates research institutions from their surrounding neighborhoods. In contrast, the community-academic partnership model emphasizes reciprocal learning, whereby both entities can learn from and teach one another (Lemkau, Ahmed, and Cauley 2000). If community-academic partnerships are to be successful, physicians and other academics must respect community knowledge, and value this knowledge as an additional source of important, critical information.

Fear of the unknown. Perhaps most challenging to the success of community-academic partnerships is the physicians' fear of interacting with nonacademics in the community. Partnering with the community and sharing credit for research can produce anxiety among academic physicians and others in health-related fields. Practitioners have been trained to think in terms of "turf" or exclusive possession of expertise (Ahmed et al. 2004). As a result, they are often uncomfortable venturing into community partnerships where they face the very real prospect of losing control and where they must share decisionmaking with people who have not been trained in the same way.

Institutional Barriers

Limited understanding of community-based research. The recent interest in community-based research emerged many years after medical school leaders completed their academic training. Thus

Only when physicians and physicians-in-training adopt a more holistic approach to health—one that encompasses biological, social, economic, and spiritual factors—will they see a clearer link between community concerns and individual health status.

key decisionmakers in academic institutions—including presidents, vice presidents, deans, department heads, and committee chairs—lack an understanding of community-based research and often do not see it as authentic. This lack of understanding is a major barrier affecting the recognition of community-based scholarship as a valued and desirable research method that complements and provides context for more traditional research methods (Krieger et al. 2002).

Insufficient grants/rewards/incentives for faculty. Most institutions categorize community-related activities—including community research—as community service. As a result, community research is not rewarded to the same degree as other types of research. Since community-based research involves building relationships over time, it often takes longer than clinical research, adding to the difficulties that community-oriented practitioners face when attempting to meet an academic institution's expectations for publication productivity (Gebbie et al. 2003) and to achieve promotion and tenure.

Few community-oriented role models, mentors, and researchers. There are few experienced community-oriented physicians working in academic institutions. Senior faculty and administrators have limited knowledge about how to evaluate the effectiveness of community research. This leaves few role models for junior faculty who are interested in community-academic partnership building and community-based research; few community-oriented physicians to serve on important committees that oversee research, faculty development, curriculum, promotion, and tenure; and few academic physicians who will advocate for curricular change, faculty development activities in the area of community-based work, or promotion of community-oriented physicians.

Strategies to Overcome Barriers

MCW encountered all of the barriers described above when it began to look for ways to strengthen its community-academic partnerships. To overcome these barriers, the college had to be both creative and strategic as it sought to involve academic physicians in community projects. Some of its most effective strategies are described below.

Integrate community-based activities with required courses. A service-learning model gains legitimacy among faculty and students when it is included in the curriculum (Seifer, Mutha, and Conners 1996). Over the past 4 years, MCW medical students in their first, second, and third years have had the opportunity to participate in the community-based experiences at Milwaukee's public housing sites that are coordinated by Partners for Progress (PFP). Through the Senior Mentor Program, which is part of MCW's required clinical continuum, first- and second-year medical students serve as mentors to elderly public housing residents, taking the place of the traditional physician mentor. Third-year students enrolled in the required Family Medicine Clerkship work with one of several health education programs offered to public housing residents. Fourth-year students enrolled in an elective course called Promoting Health in Underserved Communities also participate in the public housing-based program. MCW's curriculum and evaluation committee developed and approved the elective course as a service-learning experience.

Other medical college programs have also strengthened community-university collaborations. The Chat and Chew program, a component of the Healthy Aging Initiative sponsored by the college's Center for Healthy Communities (CHC), works to improve the health and quality of life of older adults through community-based health programs,

research, and medical education. Chat and Chew trains medical students and medical residents to present health information to older, minority community members while learning to view these community members as teachers and patients. Although students involved in the program do not interact with housing tenants over an extended period, they do have the opportunity to learn about some of the community's healthcare beliefs and practices while addressing a community-identified need. Students and medical residents are able to place their medical knowledge within a broader context, including the social and economic issues that influence health. The Accreditation Council for Graduate Medical Education (1999) supports this approach, stating that new practitioners must understand the social and economic influences that affect health and be able to integrate this understanding into their practice. Housing tenants are in a key position to help physicians see how social and economic influences affect health. For this reason, the medical college believes that the skills and knowledge students and residents obtain in the program will benefit them as they continue in their medical careers.

Initially, Chat and Chew was a voluntary experience offered to students and medical residents. This changed in 2003 when CHC faculty and staff decided to require that medical students in their third-year family medicine clerkship participate in the program. In addition, CHC invited a residency program within the Department of Family and Community Medicine to take part in Chat and Chew. The residency program, acknowledging the lack of community-based training available to its students, now requires family medicine residents to participate in Chat and Chew, making the program part of a graduate medical education curriculum. Family medicine residents complete the requirement during their behavioral health rotation.

The integration of Chat and Chew into the Department of Family and Community Medicine residency education actually began in 2002 when the department received a Graduate Medical Education in Primary Care grant from the Health Resources and Services Administration (HRSA). An important aim of the grant was to strengthen the community health curriculum in all four of the family medicine residency programs. Researchers working on the grant identified seven community health competencies, including teamwork, knowledge and use of community resources, sociocultural competency, community education,

Although students involved in the program do not interact with housing tenants over an extended period, they do have the opportunity to learn about some of the community's healthcare beliefs and practices while addressing a community-identified need. Students and medical residents are able to place their medical knowledge within a broader context, including the social and economic issues that influence health.

community partnership, population health, and research and evaluation. During the grant period, each residency program developed curricular experiences by which medical residents would be trained in these competencies. Two of the family medicine programs incorporated Chat and Chew into their students' curricular experiences as a way to develop competencies in community education and sociocultural issues.

Reward faculty for community scholarship . As faculty have become more involved with their communities, new strategies have been developed to assess and document the scholarship of engagement. These strategies, proposed by various authors, are based on the work of Ernest Boyer, Charles Glassick, and others to identify the dimensions of scholarship (Boyer 1990; Glassick, Huber, and Maeroff 1997; Alverno College Faculty 1986; Association of Schools of Public Health 1999; Michigan State University Evaluating Quality Outreach Faculty Working Committee 1996; Simpson et al. 1998, 2000). At MCW, Simpson et al. (1998) have developed an *Educator's Portfolio*© that provides specific criteria to document and assess an educator's scholarship activities, in addition to a template that can be revised to create a community scholarship portfolio. Maurana et al. (2001) have recommended that colleges and universities use this approach to document and evaluate the community scholarship that results from community engagement. Several MCW faculty members, including two of the authors, have used a community engagement portfolio to demonstrate the effectiveness of their community work when seeking promotion. Being recognized and rewarded by the institution for the scholarship that occurs in the community creates an incentive for more faculty members to become involved in community activities.

Participate in and conduct projects. Practitioners who are new to community-based work may find it helpful to start on a small scale by participating in another faculty member's community project or by developing a pilot project. This experience often teaches new community researchers more about community-based activities than they can learn from formal coursework or journal articles. Hands-on experience teaches the novice practitioner how to implement basic principles of partnership and what kinds of problems to avoid. In addition, these experiences demonstrate the need to be pragmatic when getting involved in any community-based activity.

MCW's flexibility in offering practitioners several options for involvement—options based on their interest level, time, and community experience—has allowed more and more diverse faculty members to participate in community outreach. MCW faculty with community-based experience have become more involved in PFP program development and implementation, while faculty new to the community experience have had minimal programmatic involvement. For instance, an emergency department pediatrician who directs her own community-based youth violence-prevention program developed and implemented a series of educational presentations for public housing residents and staff. On the other hand, an oncologist with limited community experience gave one 45-minute cancer education presentation to a smaller group of public housing residents.

Link community activities to funding opportunities. A recent increase in local funding for community-based projects has also encouraged MCW faculty to become involved in community programs. Most notably, MCW and the University of Wisconsin recently were designated as beneficiaries of the Wisconsin United Health Foundation, which was established to improve

public health. Sixty-five percent of the funds will support the Advancing a Healthier Wisconsin program, which will sponsor healthcare provider education and medical research. The remaining 35 percent of the endowment will fund the Healthier Wisconsin Partnership Program (HWPP), which supports community-medical school partnerships that address public and community health improvement. To date, HWPP has received 196 proposals from academic physicians interested in launching community-based projects.

Develop and implement institutional policies that support community-based activities. Other changes at MCW have also increased support for community-based activities. In 2002 MCW created the new position of senior associate dean for public and community health. One of the dean's first activities was to establish the MCW Strategic Council on Public and Community Health. This council, composed of 12 MCW faculty members with varied medical and community partnership expertise, provides leadership in promoting and developing public and community health initiatives at MCW. The new dean also interviewed 150 MCW faculty interested in developing community-academic partnerships and has successfully matched many, if not all, of these faculty with community partners. This marks the first time in MCW's history that there has been a strategic, coordinated, and institutionalized effort to link faculty with community partners to address community-identified concerns.

The MCW Strategic Council on Public and Community Health has four committees: the community visibility, partnership development, and advocacy committee develops both internal and external opportunities to create publicity for public and community health accomplishments and opportunities at MCW. The faculty development committee provides MCW faculty with professional development opportunities that increase and enhance the skills they need to develop, implement, and evaluate community-academic partnerships. The curriculum development committee develops recommendations for a standardized 4-year medical school curriculum that emphasizes public and community health. The promotion of scholarship in the public and community health committee develops standards for public and community health activities and develops scholarly products.

Each committee consists of nine faculty members representing the following MCW departments and centers: Family and Community Medicine, Geriatrics, Emergency Medicine, Injury Research Center, Epidemiology, Pediatrics, Planning and Government Affairs, Internal Medicine, Surgical Oncology, Bioethics, Physiology, Surgery, and Pulmonary and Critical Care Medicine.

This marks the first time in MCW's history that there has been a strategic, coordinated, and institutionalized effort to link faculty with community partners to address community-identified concerns.

Benefits of Physicians in the Community

MCW implemented the strategies described above to help overcome both individual and institutional barriers to building and strengthening community-academic partnerships. As a result, sustained community-academic partnerships are positively affecting faculty, medical students, and the community.

Faculty benefits. Academic physicians at MCW are reaping many benefits from their work in a multidisciplinary setting with professionals in social work, social science, and community organizing. Community partnerships are expanding the contacts of physicians whose traditional practice-based experience often limits their interaction with other medical colleagues. In addition, community experiences are helping to expand the typical medical model of disease to encompass a broader understanding of the social determinants of health and illness. Physicians at MCW report that they are gaining a better understanding of the complex social, economic, environmental, and cultural factors that affect people's health and health-seeking behaviors. These physicians note that they understand better the varied approaches to healthcare that are used within the community and appreciate how community members can benefit from these alternative approaches. This deeper knowledge and recognition of the actual circumstances of people's lives appears to enable physicians to communicate more effectively with their clinic patients, who represent diverse socioeconomic and cultural backgrounds.

Undergraduate and graduate medical student benefits. More than 100 undergraduate and graduate medical students have now participated in PFP programs and, like medical school faculty, they have a better understanding of the impact of sociocultural factors on health. Medical residents involved in the Chat and Chew program report that talking with housing tenants about their experiences with particular health conditions has given them a better understanding of individual health concerns and health-seeking behaviors, as well as patients' perspectives on healthcare and health maintenance. Fourth-year medical students report that their integrated selective course, which includes a variety of PFP community-based projects, has helped them see the ways in which communities are adversely affected by inadequate healthcare. One student commented that the selective "was a distillation of the sort of teaching that will happen everyday in my practice. I got the added benefit of going out into my patients' world and seeing how they live so that I can understand their surroundings and be able to anticipate their needs or adapt to them when I see patients in clinic."

Students' responses to the Medical School Graduate Questionnaire, administered annually by the American Association of Medical Colleges (AAMC), also illustrate their positive experiences with community-based projects. The questionnaire assesses the perceptions of graduating medical students about the adequacy of time devoted to instruction on public and community health. In 2001 MCW student responses fell below the national average in this area. However, responses from MCW students included in most recent AAMC data surpassed the national average for all questions about public and community health. Table 1 compares MCW responses to the national average (Division of Medical Education 2001, 2004).

PFP cannot take sole credit for these positive shifts in perception. However, between 2001 and 2004, PFP provided community-based learning experiences for students in all 4 years of undergraduate medical school and on through residency. It is very likely that these community-based educational experiences, in conjunction

with the institutional changes described above, contributed to MCW students' more positive perceptions of time dedicated to public and community health instruction.

Community member benefits. MCW's experience shows that community members benefit from physician participation in community-based activities. Through MCW programs, community members are interacting with health professionals in their own environment. This environment may be more comfortable than the clinical setting, which can be intimidating and where time constraints can hinder discussion. Events such as health fairs and health presentations are enabling community members to ask questions of physicians and share with healthcare providers their personal experiences with the healthcare system. Public housing residents involved in a Community Health Advocate program report that

health presentations offered by physicians and medical students have made them more aware of their own health and better equipped to develop and sustain health programs for other community members. Additionally, community members take pride in the fact that they are helping to train future physicians.

Conclusion

Recent changes in healthcare financing and delivery have prompted medical schools to expand and strengthen their community focus. Faculty are encouraged to develop community-academic partnerships that provide community-based learning experiences for undergraduate and graduate medical students, and address community-identified concerns. Several individual barriers, such as physicians' limited time, interest, and experience working with communities—as well as institutional barriers that

Table 1
Medical School Graduate Questionnaire
MCW Graduate Responses Compared to the National Average

(Percentage Rating of Appropriateness of Time Devoted to Instruction in Five Areas of Public and Community Health)

Topic and School	2001	2004
1. **Public Health and Community Medicine**		
All Schools	69.2%	72.0%
MCW	66.7%	77.1%
2. **Role of Community Health and Social Service Agencies**		
All Schools	60.9%	64.5%
MCW	58.9%	70.2%
3. **Health Issues for Underserved Populations**		
All Schools	68.9%	72.9%
MCW	59.9%	78.4%
4. **Cultural Differences and Health-Related Behaviors**		
All Schools	63.8%	75.3%
MCW	59.9%	79.3%
5. **Culturally Appropriate Care for Diverse Populations**		
All Schools	63.5%	75.1%
MCW	59.4%	79.3%

do not encourage or recognize community-based activities as scholarly work—often stifle community engagement by academic physicians. MCW has implemented several strategies to help overcome these barriers. It has integrated community-based activities with required courses, rewarded faculty for community scholarship, provided various types of experiences for faculty participation, linked community activities to funding opportunities, and developed and implemented institutional policies that support community-based activities.

Although these strategies do not address all the barriers to physician involvement in community-based projects, they have been successful in increasing the numbers of MCW physician faculty participating in community-based projects, including those sponsored by Partners for Progress. Faculty and students have also gained a greater understanding of the role that sociocultural factors play in one's health status. These students have improved their skills so they can work more effectively with diverse populations. In return, community members have an opportunity to interact with physicians on their own *turf* and strengthen the education of current and future physicians.

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University-Community Partnerships to Promote Environmental Health and Justice in Worcester, Massachusetts

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Abstract

Clark University and three community-based organizations are working in partnership to address environmental health threats and stressors in two socially, economically, and environmentally distressed neighborhoods in Worcester, Massachusetts. In this article the authors describe how the community-university research team was formed and discuss the challenges and benefits involved in co-creating research tools and conducting environmental sampling. The authors attempt to develop a more complex, but useful conception of the **community** in community-based research (CBR). This discussion highlights the essential role of deliberation and discourse in building a productive relationship among CBR partners. Finally, the authors attempt to address the common tension between research and action by highlighting how they interact to achieve social-change objectives.

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Introduction

The densely populated Piedmont and Main South neighborhoods in Worcester, Massachusetts, have the highest minority populations, the lowest income, and the highest crime rates in the city. The present-day built environment in these neighborhoods reflects Worcester's industrial past. The landscape is marred with large tracts of decaying factories and warehouses and dotted with abandoned lots and buildings. The color brown prevails and green space is scarce. Residents face a constellation of socioeconomic, political, and environmental stressors, including a pervasive climate of violence; tolerance of illegal activities, such as prostitution, drug sales, and drug abuse; elevated exposure to indoor and outdoor pollution; inadequate recreation space and transportation service; substandard housing; and illegal trash dumping.

The landscape is marred with large tracts of decaying factories and warehouses and dotted with abandoned lots and buildings. The color brown prevails and green space is scarce.

In spite of these conditions, Piedmont and Main South are not neighborhoods of despair. Each neighborhood has many active groups and community-based organizations (CBOs) working on resident empowerment, housing, environmental, health, and youth development issues. In spring 2005 a collaboration between Piedmont's community development corporation (CDC) and a business association led to the planting of trees along a busy thoroughfare that cuts through the neighborhood. Another CDC in Main South is working with Clark University and the Boys and Girls Club to transform former gang territory and brownfields into sites for affordable housing, a new Boys and Girls Club facility, and Clark University athletic fields. Productive partnerships are bringing tangible progress to these neighborhoods.

Clark University has been a catalyst for neighborhood change and development, particularly in Main South (Deakin 2004).[1] Many faculty and students are engaged in research and service in the surrounding neighborhood. Until now faculty and students have not undertaken multiyear, community-based research endeavors in which Main South and Piedmont residents are equal partners in creating the environmental health research agenda. Given the complexity of the problems facing these neighborhoods, however, a participatory community-based research approach is appropriate and necessary.

Participatory Community-Based Research (CBR) for Environmental Justice in Piedmont and Main South

Much community-based research draws on participatory models (Israel et al. 1998; Minkler and Wallerstein 2003; Fawcett et al. 1995). Clark University's approach builds on the CBR principles identified by Strand et al. (2003, 6):

1. CBR is a collaborative enterprise between community members and academic researchers (professors and students).

2. CBR seeks to democratize knowledge by validating multiple sources of knowledge and promoting the use of multiple methods of dissemination and discovery.

3. CBR has as its goal social action for the purpose of achieving social change and social justice.

These three features lie at the heart of the Environmental Justice: Partnerships for Communication grant awarded to Clark University in fall 2004 by the National Institute of Environmental Health Sciences (NIEHS). This 4-year project, which ends in 2008, is called Strengthening Vulnerable Communities in the Worcester Built Environment and involves collaboration between Clark's Department of International Development, Community, and Environment; the George Perkins Marsh Institute; the Family Health Center (FHC); the Regional Environmental Council (REC); and the Worcester Youth Center (WYC). (See Table 1 for a description of the project partners.)

Clark developed the Environmental Justice (EJ) project in the context of literature about holistic approaches to health involving multiple stressors and the limitations of traditional biomedical methods to explain and address health disparities in poor settings. This literature flags the need to incorporate sociopolitical, economic, cultural, and ecological factors in health assessment and health policy (Kawachi and O'Neill 2005; Clark 2005; Corburn 2004; Larson and Narain 2001; Perera et al. 2002; Lebel 2003). Although the aims of the Clark's EJ project are more extensive, this article considers three questions central to conducting health-related community-based research:

Table 1
Main Partners and Technical Advisory Group Members

Regional Environmental Council (REC) is a 501(c)(3) organization that focuses on inner-city neighborhoods with minority and low-income residents who have traditionally been excluded from projects addressing local environmental stressors. Specific REC programs include an urban gardening program with a significant youth component; coordination of citywide Earth Day activities; a household toxic education program; and general environmental advocacy. Executive Director Peggy Middaugh and Environmental Justice Coordinator Jennifer Smith participate on the EJ Technical Advisory Group (TAG), the project's steering committee.

The **Family Health Center** (FHC), a federally funded community health center, is located within and has been serving the Main South and Piedmont neighborhoods for 30 years. FHC runs school-based health centers in public schools in the study area. It offers comprehensive medical, dental, translation, and social services, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and outreach programs targeted to immigrant populations. Suzanne Patton, director of development, and Sarah Rulnick, head of school-based health centers, participate on TAG.

The **Worcester Youth Center**, located in the Piedmont neighborhood, offers a wide range of programs, including education, work readiness, youth leadership, mental health services, food provision, and community service opportunities. Youth at the center have been engaged in a variety of projects documenting neighborhood conditions. Executive Director Adolfo Arrastia and young people from the center participate on TAG.

The **George Perkins Marsh Institute at Clark University** is dedicated to research on the relationship between humans and the natural environment. Built on a tradition of basic and applied research about environmental hazards, the institute fosters interdisciplinary, team-based research that engages graduate students and research faculty in problem formulation and resolution. Senior Researcher Rob Goble and Marsh Project Manager Octavia Taylor serve on TAG.

Clark University's Department of International Development, Community, and Environment (IDCE) addresses one of the greatest challenges of the 21st century: sustaining environmental resources while promoting development. IDCE's approach builds ownership of problems and solutions on local levels and fosters alliances among researchers, students, community groups, governments, and nongovernmental organizations. Tim Downs and Laurie Ross, IDCE faculty and co-principal investigators for the EJ project, sit on TAG.

1. How can academic researchers and community-based organizations collaborate to develop data-gathering protocols and conduct environmental sampling that will contribute to the development of a strategic plan to reduce the community's vulnerability to environmental stress?

2. How can community partners implement that plan in a collaborative manner that shares responsibilities and benefits among stakeholders?

3. How can community partners share what they learn about community-based research with other collaboratives that also seek to address environmental health and other community development issues?

Given the nature and extent of the social, economic, and environmental problems facing the Piedmont and Main South neighborhoods, the project partners recognize that they can only be successful if they collaborate and innovate; emphasize opportunities for co-learning and co-creation of knowledge; and strive for equity in social, economic, political, and environmental conditions in the neighborhoods of Worcester and beyond.

Core Concepts Shaping Project Implementation

Health is a complex, emotive, sociopolitical, and economic issue that challenges how policymakers allocate resources for its protection in society.

Changes in the environment will impact health, especially the health of young children, the elderly, and pregnant women. This fact makes environmental justice an issue with great potential for authentic neighborhood involvement in CBR efforts (U. S. Department of Health and Human Services 2001). Worcester's EJ project seeks to advance two areas of innovation: partnership over participation, and a holistic definition of health (Israel et al. 1998; Minkler and Wallerstein 2003).

Partnership over participation. Like others engaged in health-related, community-based participatory research, Clark University sought to establish an effective partnership between scientists and communities at risk (Fawcett et al. 1995; Stoecker 2003). Over the years, as the fields of health science, environmental protection, city planning, and land development have become more specialized, gaps have inevitably developed between these potential partners (Black 2000). This is due, in part, to the fact that those seeking public health improvement have traditionally focused on infectious diseases, healthcare delivery, and occupational health. In addition, our present regulatory approach to environmental health issues tends to reflect the structure of environmental regulatory agencies. Omenn (1996) points out that this approach targets one medium (air, water, food, or soil); one contaminant (lead, mercury, or PCBs); or one health effect (asthma, obesity, or diabetes) at a time. Scientists have tended to interact with

people at risk to better understand their exposure to pollution (Lynn 2000; Arcury et al. 1999; Ashford and Rest 1999; Couto 1984; Israel et al. 1998; Levine 1982; Lynn and Busenburg 1995; Scammell 1999; Schell and Tarbell 1998). Expanding on this approach, community-based participatory research (CBPR) is increasingly being recognized by health scholars and donors as a potent approach to collaboratively studying and acting to address health disparities (Minkler and Wallerstein 2003).[2]

Holistic health. The EJ project research team is using risk and vulnerability theory (RVT) to take a holistic approach to conceptualizing health. RVT is a sound, evidence-based approach to prioritizing health problems based on the probability of an outcome multiplied by its severity, should it occur (Wilson and Crouch 2001). *Risk hot spots* occur where both probability and severity are high, while *vulnerability hot spots* occur where risks are high and adaptability or ability to cope with those risks is low. As these definitions indicate, the vulnerability theory expands the scope of risk theory by including social, political, cultural, economic, and environmental variables. It measures a population's differential exposure to risk agents, such as toxics; differential susceptibility or sensitivity to adverse outcomes, if exposed; differential preparedness to respond to stressors; and differential resilience, adaptability, or ability to recover from adverse effects (National

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Environmental Justice Advisory Council 2004; Ahmad et al. 2001). The study of HIV/AIDS has advanced the science of vulnerability assessment considerably and has made significant advancements in addressing the need to work with people at risk in poor and rich countries alike (Galea, Ahern, and Karpati 2005; Piwoz and Bentley 2005; Abel and Chambers 2004; Bates et al. 2004; De Moura 2004).

The *2010 Healthy People Report*, a statement of national health objectives, indicates that physical inactivity, obesity, tobacco use, substance abuse, sexual behavior, exposure to injury and violence, poor environmental quality, immunization status, and access to healthcare are the most significant factors affecting health (U. S. Department of Health and Human Services 2003). Urban environment stressors of a physical, chemical, and socioeconomic nature conspire to increase the population's vulnerability to ill health and diseases in the Main South and Piedmont Neighborhoods. This reflects findings elsewhere (Corburn 2004; Lebel 2003; Perera et al. 2002; Kreiger and Higgins 2002; Platts 1997; Fullilove et al. 1998; Weist 1996).

Given the constellation of health threats bombarding residents in Main South and Piedmont, RVT has distinct advantages for a community-based health research project. This theory provides explicit justification for social learning and capacity building because both can reduce exposure to risks and increase adaptive capacity. In addition, RVT accommodates multiple stressors and sources of risk and expands the range of interventions that can be mobilized in concert. Finally, it provides data that are spatially explicit and, therefore, allows for mapping with a geographical information system (GIS). GIS, a systematic data presentation and analysis approach, allows users to *layer* different data

sources, including census and public health data. In Worcester's case the analysis allows the user to see patterns and relationships between the structure of neighborhoods and health outcomes. Clark University employs risk and vulnerability theory to inform the prioritization of problems and is mapping hot spots using GIS methods.

Project Partners and Steering Committee

In spring 2003 academic researchers at Clark University learned about the Environmental Justice: Partnerships for Communication program sponsored by NIEHS and thought the program would fit closely with their academic interests while allowing them to formalize and deepen their collaborative work with community partners. The academic partners then consulted with the Regional Environmental Council (REC) and the Family Health Center (FHC) about the project, and both expressed interest in working together to write a proposal.

Work on the proposal consisted of a series of meetings with the partners during summer 2003. Because the partners had all worked together in the past, a basis of trust was already established and they moved quickly into project design. The academic researchers took on the role of coauthoring the proposal, two graduate students conducted a full literature review, and Clark University provided administrative support. This process and support ensured that the partners had sufficient time to fully discuss the concepts and scope of proposed grant activities as well as the budget. Progressive drafts of the proposal were shared for feedback.

CBR processes informed the development of the proposal. Laurie Ross, one of the academic researchers and coauthor of this article, worked with a graduate student to conduct preliminary research with a number of neighborhood

stakeholders—including teenagers involved with the Worcester Youth Center (WYC)—to assess local perception of risks and priority problems and to explore the relationship between social, economic, political, health, and environmental problems. This outreach informed the conceptual framework of the proposal, which looked at environmental health and injustice from the perspective of such stressors as degraded physical space like brownfields, pollution, and the community's pervasive climate of violence and toleration for illegal activities. Preliminary research also revealed the importance of involving youth in the project; as a result, WYC became the project's fourth partner.

The differences in perspectives held by academic and community representatives became apparent during the writing of the proposal. Academic language, not always readily accessible to partners, tended to dominate the document. It became a major challenge to write a competitive proposal that was scientifically and technically rigorous and, at the same time, practical and appealing to those with an action agenda. In their review of the proposal, NIEHS scientists and community advocates encouraged the academic partners to simplify some of the proposal's language. Reviewers also recommended that the proposal be revised so that it more clearly demonstrated how the collaboration would function and how it would lead to positive change in the target neighborhoods. The academic partners also adjusted the budget to better reflect partnership roles and responsibilities.

After Clark University received the grant, the academic and community-based partners formed the Technical Advisory Group (TAG) to steer the project and promote communication. In traditional research universities usually provide technical assistance to their community groups. In this case, however, neighborhood-based partners have provided technical assistance to the university on local health and environmental conditions. FHC, REC, and WYC have loaned academic researchers their contacts in the community and the legitimacy they enjoy with local officials. In turn, university representatives serving on TAG provide technical assistance on long-term program planning

In their review of the proposal, NIEHS scientists and community advocates encouraged the academic partners to simplify some of the proposal's language. Reviewers also recommended that the proposal be revised so that it more clearly demonstrated how the collaboration would function and how it would lead to positive change in the target neighborhoods. The academic partners also adjusted the budget to better reflect partnership roles and responsibilities.

and introduce rigorous research and sampling approaches to issues raised by the neighborhood.

The EJ collaborative is drawing on local knowledge to address environmental health threats and stressors in the Main South and Piedmont neighborhoods. Throughout the process the authors have learned many lessons. In an attempt to develop a more complex but useful conception of *community* in CBR, this article tells multiple stories about how project partners collaborated to create research tools and conduct environmental sampling. The article also discusses the essential role of deliberation and discourse in building a foundation of trust among CBR partners (Forester 2001). Finally, it attempts to address the common tension between research and action by highlighting how they interact to achieve social-change objectives (Marullo et al. 2003).

Developing a Household Survey: A Microcosm of the Tensions in CBR

Much of the goodwill generated during the proposal writing stage of the EJ project was threatened by missteps that will be familiar to those who are struggling to establish effective long-term, community-based research partnerships. The requirements of the funder clashed with the collaborative model of decisionmaking being created in the partnership. These clashes can best be illustrated by the story of how the partners developed a baseline household survey.

To develop a representative profile of the health and neighborhood issues among residents in the target area, the project proposal called for a survey of 100 households in each of the two neighborhoods. While TAG members agreed that graduate student research assistants would be primarily responsible for conducting the interviews, problems quickly emerged. Our

funder required that the project obtain Clark's Institutional Review Board (IRB) approval prior to the start of work. In response, the principal investigators put together an initial draft of the household survey, which they did not share with other TAG members until after the IRB application had been submitted.

As academic researchers, we learned quickly that to preserve collaboration, we needed to discuss all elements of the research program with our partners. The draft survey generated friction and controversy among TAG members concerned about the instrument's overall tone and the sensitive nature of its health-related questions. Through e-mails and intense discussions at TAG meetings, REC and WYC expressed their concerns that the tool was too invasive, that it focused too much on neighborhood deficits, and that the predominance of closed-ended questions reduced the possibility for real dialogue with residents. Partners were also concerned that the survey was very long and suggested that few residents would sit for an hour to complete it. Some neighborhood residents wondered why we needed to ask certain questions; many felt the existence of such problems as trash, pollution, and crime were already well understood. Additionally, the WYC director questioned whether graduate students were the best people to conduct interviews in the neighborhood. The director raised questions about whether students would be safe and whether they would be able to understand and respect residents' cultural backgrounds and socioeconomic situations. This intense dialogue reminded all TAG members that the household survey had a dual purpose. The tool had to generate reliable and valid data about the health and vulnerability status of the neighborhood residents. It also had to engage residents in the project over the long term. In light of these dual purposes, the project's steering committee spent significant time over

the next months clarifying the objectives of the household survey, reworking the tool, developing survey protocols, and training the interviewers. This process clearly illustrated how important it is to involve different partners with different experiences in every aspect of the research.

TAG's community partners strengthened the survey instrument by pointing out the need to add more open-ended questions and more questions about neighborhood and resident strengths and resources. At their suggestion, academic partners undertook an extensive review of existing health and neighborhood data that allowed TAG to remove some of the most sensitive questions from the survey. All of the partners collaborated in developing a comprehensive interviewer training and community outreach workshop, and the academic partners developed extensive protocols for how interviewers would initiate dialogue with potential interviewees.

Once the tool and procedures were revised, the academic partners piloted the process for the partnership. The new tool achieved the dual goals of collecting valid data and engaging residents.

Early concerns that the length of the survey would affect residents' willingness to participate were resolved once the survey became more responsive to community concerns. Although interviews are taking even longer to complete than originally anticipated, they are also offering residents a welcome opportunity to tell stories never before shared about their health and neighborhood. TAG's intense deliberation led to the development of an instrument that is better equipped to reveal the nature of people's vulnerability to environmental stress and is encouraging previously disconnected residents to become involved with the EJ project. Through this process, the academic partners learned that researchers engaging in CBR should be prepared for a bumpy ride as their methods are rightfully scrutinized and they are held accountable. The academic partners found that the constructs of risk and vulnerability were useful in helping them conceptualize a wide array of factors affecting health, as long as they also paid attention to the community's resilience and adaptability, and worked together with community partners under the banner of mutual respect and dialogue. All the EJ partners also learned that there is not a singular

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Environmental Sampling: Demonstrating the Research-Action Loop in Lead Assessment and Abatement

The partnership's goal was to gather data on actual environmental health threats in the neighborhood, including the sociopolitical, economic, cultural, and ecological factors of health (Kawachi and O'Neill 2005; Clark 2005; Corburn 2004; Larson and Narain 2001; Lebel 2003). Complex environment-population research calls for "mixed methods," or qualitative and quantitative methods applied together (Creswell 2003). How then might partnership projects combine a comprehensive qualitative survey and quantitative samples to measure air, water, soil pollution, and risk? Because sampling technology has advanced sufficiently, TAG was able to acquire sensors certified by the U.S. Environmental Protection Agency (EPA) for indoor and outdoor sampling and to train residents on how to use them. For $15,000, the project purchased equipment to test for volatile organic compounds (VOCs) and other harmful gases; particulate matter (PM); and lead in soil, water, paint, and dust. Allied to this sampling effort, portable global positioning system (GPS) units allowed researchers to georeference findings and put them into a GIS database so that results could be mapped. Such affordable, accessible technologies promise to revolutionize data gathering in the EJ project and will raise the awareness, sense of empowerment, and ownership among community members who use the data. The project is minimizing concerns about quality control and assurance by developing comprehensive sampling protocols, training all environmental sampling volunteers, and having teams of university partners and residents work together.

The EJ project is also conducting indoor household sampling for a range of pollutants, including radon gas; airborne asbestos; airborne mold; lead in water, paint, and dust; and bacteria, lead, chlorine, and nitrate in drinking water. Houses chosen for the sampling meet certain criteria:

- The tenant agreed to be trained in conducting the test.
- The household survey classified the home as having a moderate-to-high risk.
- A survey of outdoor and indoor housing quality judged the home to be in poor-to-very-poor condition.

In a collaboration similar to the one that revised the household survey, partners have raised important questions about the possible consequences of conducting household environmental sampling. For example, REC partners wanted to know how researchers would obtain consent to collect the samples, whether landlords of rental properties would be notified, and what would happen if a problem was discovered. Although REC wants to know about environmental health threats in residents' homes, it does not want to impose more burdens or harm on people already living at the margin. Developing responses to these questions is helping to ensure that the project's procedures for indoor household sampling will respect the rights of tenants and landlords, will provide adequate information, and will ensure that if any environmental hazards are discovered, the project has the resources to address them.

The Lead Collaborative

In addition to increasing local capacity to sample for a wide array of indoor and outdoor toxics, the EJ project has also led to the creation of a new partnership called the Worcester Lead Action

Collaborative (WoLAC). WoLAC came into being when the district councilor responsible for the target neighborhoods learned about the EJ grant. Due to the age of the housing stock in her district and the poverty level of her constituents, this councilor already had a keen interest in reducing families' exposure to lead. She convened a meeting of EJ project partners, the mayor, the city manager, the city's commissioner of health and human services, city staff working on housing development, and officials from the State Department of Public Health and the Worcester Department of Public Health. Participants at this meeting heard a presentation from a coalition in Boston that has been very successful in increasing lead inspections, lead abatement, and lead screening rates among children. This meeting was extremely energizing and led to a request for a second meeting. During the next meeting, the group reviewed Worcester's lead statistics and efforts to make Worcester lead safe and identified additional important stakeholders, including the president of a property owners association, an organization that deals with tenants' rights, a

Table 2
Operating Principles for University–Community Partnerships to Promote Environmental Health and Justice

1. Invest in social learning that builds trust, social capital, and the capacity to target priority health problems while stimulating ownership of problems and solutions. This is an organic, nonlinear process that should be guided, but not constrained, by formal plans. Communication and flexibility are essential.

2. Build a partnership that includes representatives from formal community-based organizations (CBOs); informal civil society groups (especially marginal groups, women, and youth); academic researchers; local and state governmental agencies; health providers and practitioners; nongovernmental agencies (NGOs); and private-sector businesses. Understanding power relations among the groups and institutional frameworks is important.

3. Monitor and mitigate disruptive forces, including corruption, destructive political interactions, and burdensome transaction costs.

4. Clearly explain and agree on the rules of engagement and the roles and responsibilities of partners. These rules and roles may not be well-defined at the start; they should evolve over time.

5. Collectively build the knowledge base about health conditions, characteristics, priorities, and drivers. Include local knowledge, using an evidence-based risk and vulnerability approach.

6. Allow stakeholders to define the progress and success of efforts in their own terms. Incorporate lessons learned—both successes and failures—into the learning process.

7. Make sure decisionmaking is transparent and that there is agreement about priority problems, viable alternative solutions, the criteria with which solutions will be compared, and how comparison will be carried out.

8. Identify strategic solutions that can accomplish a great deal per unit of effort. Use asset and resource mapping to understand how available resources may limit particular solutions. Use capacity building to strengthen those resources.

9. Clearly delineate the capacity-building benefits that partners will reap and make sure all partners benefit equally. This will ensure sustained buy-in and commitment. Draw up action plans that include the requisite capacity building needed to sustain solutions.

10. Pay careful attention to the dissemination of results; publicize the work in the mass media to garner favorable public opinion and wider support.

grassroots group that addresses lead in the soil, contractors who work on lead abatement, and a nonprofit organization that trains individuals to conduct abatement of low-to-moderate lead levels in their own homes. This expanded group continues to meet bimonthly. Meetings are informal, with a high degree of shared decisionmaking.

In just 2 months WoLAC has developed its vision and mission, identified a core set of goals, and started a strengths, weaknesses, opportunities, and threats (SWOT) analysis of the local lead situation. The knowledge around the table is considerable. Clark University is providing technical expertise in the area of lead sampling, which is being conducted with indoor and outdoor equipment at priority home sites that satisfy research-based risk criteria. These homes were built prior to 1978, are on bare-soil lots; and house low-income tenants with young children. With a HUD lead abatement grant due soon, the data collected by WoLAC will inform strategic abatement efforts that target lead-risk hotspots.

In the spirit of partnership, the EJ project donated its lead analyzer to the city's Department of Public Health (DPH) Laboratory, and Clark University students will work closely with DPH to support the sampling and lab work. The local press covered this *handover* event, which coincided with a proclamation on lead issued by the mayor and ratified by the city council. Such an event solidifies political support and raises awareness in the wider community. WoLAC illustrates that social change can arise from a community-based research project.

Community-Based Research Yields Superior Research and Informed Action

CBR creates an inevitable tension between academic research and action agenda goals. As Clark University researchers, we are part of the *community,* but we do not always understand the nuances of neighborhood life, and we lack knowledge of local conditions. During the early stages of the EJ project, we sometimes lost sight of the sensitivity and common sense needed to conduct research with marginalized neighborhoods. Our partners got frustrated with our intent to ask residents very personal interview questions as well as with the fact that we had not planned to compensate residents for their time and knowledge. Due to our *outsider* status, partners questioned whether residents would even talk to us. Time and time again, our partners guided us on how to engage respectfully with the neighborhood.

Likewise, we were not always successful at articulating the need to undertake detailed scientific research that would confirm what the community already suspected. We often heard phrases like, "We already know this," when plans for household survey and environmental sampling were being discussed. This confirmed for us that we needed to find a way to draw on an abundance of anecdotal information about risks and vulnerability. ("We know people are poor and the place is polluted.") Our partners helped us learn to be flexible about modifying our field research agenda while maintaining academic rigor. Deliberation over the research objectives was also helpful in raising the partners' awareness of critical gaps in the data. Partnership discussions focused on devising strategies that would help us understand how the components of resident poverty and vulnerability—economic, educational, sociopolitical, and cultural—relate to different health effects and spatial patterns of vulnerability and health indicators. The partnership spent considerable time discussing how such data could inform scientific understanding of vulnerability and health disparities (which interested researchers and the funder) and how the data could inform the

design of interventions with the most vulnerable groups (which interested all the partners). In the two examples discussed above—the household interview tool and environmental sampling—deliberation proved to be essential. The original grant proposal had included implementation plans that specified partner roles and responsibilities, but considerable dialogue was needed to make these plans a reality. Although arduous at times, the dialogue has increased the level of trust among the partners and greatly improved the quality of the research and action agendas. See Table 2 for 10 operating principles for multistakeholder environmental health projects. These principles represent a synthesis of the lessons learned to date from this project and from the wider literature.

Concluding Remarks

Worcester's Environmental Justice (EJ) project draws on emerging trends in community-university research. Like other similar projects, the EJ project is building a community-based research partnership that attempts to bring a holistic understanding of health to an urban-built environment. The partnership is combining qualitative, quantitative, and participatory data gathering and analysis to study issues of environmental health and neighborhood well-being. In addition, the partnership is working to democratize knowledge and increase the community's capacity to act on environmental stressors by making powerful environmental sampling equipment accessible to neighborhood and city stakeholders. The partnership is attempting to learn how research and action can become two sides of the same coin in CBR, rather than discrete activities where only university researchers conduct research and only community-based organizations engage in action.

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Notes

1. For more information about other Clark University partnerships, see www.clarku.edu/local/upp.

2. For tools to work collaboratively with communities, see the Community Toolbox http://ctb.ku.edu.

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Reconfiguring Applied Research: Research Partnerships as Opportunities for Innovation

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Abstract

Groups conducting community-based research often look for hard and fast rules to guide them into successful community-university partnerships. This article argues that success will not necessarily follow from the identification and application of rules for effective partnerships. Rather, successful partnerships will emerge from efforts by community and university partners to use their differences to craft innovative research solutions. This article uses community partnerships at the University of Massachusetts Lowell to illustrate some of the common conditions that require innovation and problemsolving in research partnerships. Future initiatives should focus on finding ways to unleash the creative capacity within partnerships and reward that creativity.

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Introduction

New England's economic misfortune is a cautionary tale for those of us in universities who have assumed that what served us well in the past will continue to work in the present. As a result of painful readjustments to the global economy, New England has discovered that continuous innovation is its only hope for economic survival. The spur to innovation is cost. New England is a very expensive place in which to live and do business; a product might be created here, but other places with lower labor

Although a problem which stubbornly resists solution by traditional means may perhaps be insoluble, the probability is rather that those means are themselves inadequate: the concepts, attitudes, and procedures employed are probably at fault and in need of being transcended in a fresh approach."

*—Brewster Gheselin, **The Creative Process***

and manufacturing costs will eventually produce that product more cheaply and will put us out of work. Thus New Englanders must always be open to new approaches that could usher in the next opportunity for maintaining the region's economic prosperity. Instead of directing our efforts toward perpetuating the status quo, we have had to learn the habit of innovation.

Universities, too, have begun to recognize that many of their past practices will no longer work. Like the New Englanders in the previous example, universities must continuously seek out new, more innovative ways to conduct their activities. Without such innovation, universities will become irrelevant to the interests and needs of their regions. Chief among these innovations will be community-university applied research partnerships.

Because community-university partnerships are becoming more common and, indeed, are reaching maturity, it seems an appropriate time to step back and consider what makes these partnerships successful. Observers of these partnerships might be tempted to devise a set of hard and fast rules for success—maxims that unfortunately might work only for a short time. A better approach would be to recognize that community-university partnerships are particularly fertile ground for innovation and problemsolving. These characteristics should be honed and encouraged, since the staying power of partnerships will depend on them.

When veterans of community-university partnerships speak about their experiences, they frequently focus on how much problem-solving and innovation is involved in every aspect of their work. They also point to partnership-related problems that remain unsolved, including how universities can best work with their partners, how they can engage students in partnership efforts, and how partnerships can make their research findings more useful to communities.

Existing community-university partnerships, like those in place at the University of Massachusetts Lowell (UML), may be valuable models for how to engage the creativity and problemsolving skills of partners in addressing local challenges. UML's partnership development began in 1996 when the university received a Community Outreach Partnership Centers (COPC) grant from the U.S. Department of Housing and Urban Development (HUD) to support its community outreach activities. This was followed by a COPC New Directions grant in 2002.[1] By 2004 it became clear that the Lowell community-university partnership could not expect much in the way of new outside resources. Any success we would achieve from that point forward would come from our own efforts to invent new uses for what we had. Observers of our COPC might be puzzled about how a partnership actually goes about the seemingly endless task of reorienting its use of resources. The answer is relatively simple: our partnership works hard to break mindsets and examine old problems in new ways. The remainder of this article provides additional examples—in the areas of housing, health, and youth issues—of this innovation-centered approach.

Housing: Moving Beyond the Academic Habits

Academic research produces new facts through the conduct of original inquiry. Yet sometimes we do not need more facts as much as we need to organize what we know in new ways. With this newly organized information, community leaders and their academic partners can envision new answers to the pressing questions facing their neighborhoods.

Consider housing. Housing prices are rapidly escalating in and around Lowell, which is located 25 miles northwest of Boston. Boston has been identified as one of the most overpriced housing markets in the country, and Lowell remains one of the last affordable cities within Boston's commuting range. Lowellians feel this pressure and worry about being forced to move elsewhere as once-affordable housing slips out of their reach and into the hands of affluent newcomers. Community partners alarmed by this trend approached UML for help.

There are no UML faculty who specialize in housing. However, university faculty do specialize in economic development, regional job growth and decline, community decisionmaking, healthy homes, immigrant issues, and urban environmental questions. One of COPC's primary challenges was figuring out how to draw on the knowledge of these faculty members, particularly those who have little experience stepping outside their areas of expertise to contribute individual pieces to an overall housing picture.[2]

COPC needed to change its approach. Rather than following the typical research steps, which include consulting the literature, we instead sought to understand the conceptual framing that underlay housing questions that were being raised at open meetings, focus groups, and community forums. Participants in these forums assumed that some other entity—landlords, local community development corporations, and government at the local, state, and federal levels—could solve Lowell's housing problems by building more affordable housing, addressing homelessness, providing more government subsidies, or bringing companies to town that would pay higher wages so employees could afford to buy or rent local housing. Yet each entity lacked crucial tools and resources and was encountering constraints that would prevent

action. As a result, the entire community faced a crisis in housing affordability and availability that no single group could address (Turcotte, Chalupka, and Silka 2004; Hall and Silka in press).

To help bring clarity to the housing crisis, UML organized a search of existing studies that were framed around the same assumptions, questions, and issues raised by community residents. Some residents felt there was nothing we could do about housing problems, since these problems had always been with us and always would be. Others felt overwhelmed and wondered why we should even try to find solutions to the city's chronic housing problems. Still others questioned why Boston's housing market should matter to people in Lowell. Finally, many residents did not understand what local job creation strategies had to do with housing. Our literature review did not yield free-floating, isolated facts; rather, it provided a framework that linked housing to the economy, to a resource analysis, and to action possibilities. The community found this more usable. The COPC created an online manual (www.uml/edu/centers/cfwc) to help community members consider connections that otherwise might go unnoticed, including, for example, the link between housing availability and zoning changes that would mandate increased lot sizes.

To encourage long-term faculty involvement in initiatives like the housing project and to increase university capacity and responsiveness, UML created the University in the City Scholars program (Forrant and Silka 1999). The program, which recently received a *Best Practices* award from the U.S. Department of Housing and Urban Development, solicits faculty involvement in a range of collaborative projects identified by a community-faculty team familiar with urgent community needs and areas of faculty expertise. Faculty members who are selected for the program

receive course releases so they can establish collaborations that will redesign courses, redirect research interests, or begin to develop products. After initial support for a semester or year, the collaboration is expected to sustain itself. Projects established through the scholars program are varied. A new course created during the program might provide additional outreach opportunities for students; a new coalition of faculty and community leaders might conduct community-based research and intervention. Recent University in the City Scholars include faculty from such diverse disciplines and departments as electrical engineering, developmental psychology, physical therapy, regional economic and social development, English, and management.

No New Resources: The Case of Pediatric Asthma

Sometimes a problem emerges just at a time when resources are becoming increasingly scarce. Yet partnerships can still continue to follow traditional resource-intensive patterns despite the fact that the context has changed and resources are increasingly hard to come by.

Consider asthma. The rapid increase in the incidence of childhood asthma has become a pressing problem in our region. To collectively address this problem, UML and its community partners formed an asthma coalition to help families deal with asthma cases that are being aggravated by Lowell's deteriorating housing. Coalition members saw the need to institute home visits to evaluate housing conditions and to educate families about how to reduce asthma triggers. Yet they also recognized that families were already overwhelmed by many visitors entering their homes to assess children's preschool readiness, complete home visits of newborns, or to bring resources from a church or temple. Often, the issue of pediatric asthma was not among the families' most pressing concerns.

Coalition members agreed that, in light of severe budget cutbacks in Lowell, the city was unlikely to hire new home visitors just to tackle the problem of asthma. Given this limitation, coalition members saw the need to approach existing practices differently. They proposed that visitors, who were already going into homes and had established strong relationships with families, be enlisted to deliver information on asthma triggers along with their existing messages about school readiness or child wellness. Many home visitors worked for agencies that belonged to the coalition, thus making it easier to add this additional issue to their outreach activities while reinforcing linkages among agencies.

The addition of asthma and housing assessments to home visitors' messages meant that these visitors would require new training, a prospect that often impedes the initiation of new practices. The coalition needed to find a way to motivate home visitors so they would willingly seek out new training. It discovered that these visitors were interested in learning more about the cultural practices of Lowell's immigrant families, whose rich traditions must be taken into account by

Coalition members saw the need to institute home visits to evaluate housing conditions and to educate families about how to reduce asthma triggers.

anyone who is helping them devise healthy home plans. Such plans, for example, must take into consideration the use of incense, mercury, and tobacco in interior spaces, whether shoes are worn inside, and the families' decisionmaking processes. To address these issues and to draw home visitors to the training sessions, the coalition designed its asthma training around the cultural information that it knew would interest the visitors.

In summary, the asthma coalition was able to view two constraints—too little money and too many visitors—as an opportunity to be innovative in developing strategies to address the problem of childhood asthma.

Gang Violence Prevention: Shaping Assumptions About What Will Work

Intuitive theories about how to create change are often central to partnerships. Community stakeholders often come to partnerships with pre-existing views of what they think will work in their community. They are not simply waiting for academic partners to provide empirical data or research-based frameworks. Community experience shapes what people see as possible. At UML we struggle with how to use innovations to help community and academic partners move beyond commonly perceived constraints.

Consider the topic of gang prevention. The city of Lowell recently sponsored three summits during which local leaders came together to discuss the prevention of gang involvement among local youth. UML moderated these summits and contributed applied research to help direct future efforts. During the meetings various obstacles quickly became apparent.

First, some local leaders seem to have forgotten the lessons learned during earlier gang-prevention efforts, a trend that frustrates those who feel that

the community is wasting time relearning the same old lessons. Paradoxically, a second obstacle appears to be an unwillingness among city stakeholders to move beyond past practices. Many residents seem to assume that whatever worked in the past is certain to work now, even though the demographics of the community have changed. Because the answer to the problem of gangs seems obvious to some stakeholders, they see little need for fresh information about the nature of Lowell's current challenges. A third obstacle grows out of confusion over how to adapt the best-practice literature from other communities to Lowell, especially when those settings are so different from Lowell. A final impediment involves UML's involvement in finding solutions to the problems that gang involvement would present. Faculty members with expertise in the study of gangs and crime prevention have made clear that they are not interested in becoming involved in any local efforts, partly because they regard local involvement as a poor avenue to building a national scholarly reputation. An under-resourced university like UML will not hire other scholars with the same expertise if current faculty choose not to become involved.

Understanding that these challenges are all too familiar in community-university partnerships (Silka 1999, 2005), the COPC staff wondered how other partnerships deal with them. Do other partnerships find ways to draw on past practices without being bound by them? Do they involve faculty from *unexpected* disciplines in the work they are undertaking? COPC also tried to clarify the actual problem confronting the city, as opposed to a problem that we might just be imagining. We discovered that Lowell's problem is not that large numbers of youth are *involved* with gangs, but that many youth are *aware* of gangs and how enticing they can be. This makes Lowell's gang problem a community development issue as well as a crime-prevention issue. Clarifying these issue categories

helped COPC to think in more creative ways about the resources UML might bring to the issue. When faculty members with crime-prevention expertise expressed little interest in working on the gang issue, for example, COPC enlisted the help of faculty members who had expertise in youth, community development, and immigrant issues as well as computer science faculty who had worked with young people in afterschool programs. In this way, COPC has successfully followed an iterative process of comparing available resources with approaches that could help to solve the problem at hand.

Third-Tier Cities: Bringing Disciplines Together in New Ways

Applied research often involves bringing outside ideas into a local context to test their applicability. The challenge, of course, is to discern whether general theories that were created elsewhere can be adapted to local contexts. HUD publications, for example, sometimes provide general theories intended as guides to local or regional efforts. Local partnerships then determine how far they can take these ideas or how they can modify the ideas to meet local needs. Sometimes, these needed modifications highlight important interdisciplinary issues within universities and help identify what may be missing from an analysis.

Consider the use of HUD's *Places Left Behind* document within the Lowell COPC. In this publication HUD focuses on midsize cities that have undergone population loss or demographic changes and have seen much of their industrial bases disappear. These cities—over 300 in number—were once catalysts for growth in their regions but are now struggling merely to survive. Mt. Auburn Associates, a consulting firm, analyzed the economic development policies that these third-tier cities might need to adopt to overcome their mounting economic problems.

The UML Department of Regional Economic and Social Development (RESD) began to examine the analysis presented by Mt. Auburn Associates to see what insights that analysis could provide for UML's work in Lowell and Lawrence, which are both third-tier cities. During RESD-sponsored symposia, designed to allow other academic departments to offer their perspectives on the HUD document, faculty in UML's Graduate School of Education pointed out that education was largely missing from the analysis of third-tier cities. Although education is often the largest employer in these cities, its role as a driver of growth was not considered. As a result of this discussion, RESD and the Graduate School of Education joined forces to develop an approach to working in Lowell and Lawrence that makes greater use of UML resources. The perspectives of each department are now being incorporated into plans to build shared opportunities for students and community partners. Graduate students in both departments are now attempting to integrate these perspectives into applied research projects of concern to local partners.

The Need for Community Repositories of Knowledge

The gang prevention example described earlier illustrates the problems that can be created when information about the past is lost. These problems are not limited to gang prevention initiatives, of course. Partners in the Lowell COPC have been surprised at the extent to which information loss undercuts the sustainability of our partnership efforts. COPC needs a record of these partnership efforts so it can learn from its mistakes and maximize its successes. Creating and preserving this record requires innovative problemsolving (Silka 2003).

Scholarly journals are often considered the gold standard for archiving information. These journals

are an appropriate choice when academics act alone to create new information. However, efforts to archive the kind of shared knowledge created through applied research projects will suffer unless that record is accessible to all partners. Journals often fail this accessibility test because community members are often unfamiliar with these academic outlets and do not feel comfortable with their style and language. The fact that it often takes a year or longer between the generation of findings and their publication further limits the value of journals to communities that are struggling to solve immediate problems. Clearly, there is the need for innovative styles, venues, and strategies for organizing information about applied research.

To address these problems, the Lowell COPC attempted to design two separate archival outlets, one for communities and one for researchers. Such an approach has limitations; it is labor intensive, and it does little to build common ground among partners. A more promising approach would integrate storytelling and other community-friendly communication styles with the content and rigor of journals. Toward that end, COPC has begun to involve students in creating a community repository of knowledge on the UML Web site (www.uml.edu/centers/cfwc/archives).

Although the creation of an accessible community repository is a worthwhile step, the mere existence of a Web site will not ensure its usage. Within the academic community there is a culture of use built around journal articles; scholars who are planning research or writing an article know that they need to consult journals. Creating the same culture of usage for community repositories of knowledge can be a challenge. COPC now struggles to make community leaders aware of its Web-based resources so they will use it routinely whenever they are planning new projects or interventions.

The Motivational Impacts of Framing

Much applied research culminates in efforts to involve large numbers of community residents in deliberations about how the research findings should be used. Researchers often set up special events for this purpose, sending out invitations to the few community residents who respond. Researchers respond to this lack of interest by redoubling their efforts, sending out more announcements, having the announcements translated in several languages, and working to ensure that they are broadcast widely on local cable radio and television. In other words, researchers simply put more effort into the same approach instead of envisioning new ways to accomplish their goal.

Like many partnerships, COPC at UML struggles with how to change its ways. Over the years we have failed many times to reach people with our events. Our community partners helped us see that outreach will be ineffective unless we reframe the events themselves. Our event announcements had an academic feel, suggesting by their dry tone that the events we were promoting would be unconnected to the life of the community. The partnership's environmental work—particularly the recent "Talking Trash" summit—illustrates the importance of the lessons we have learned (Silka 2002a, 2002b).

Originally the partnership intended to publicize a summit in which environmental experts would inform community leaders about how to address solid waste problems. The decision to sponsor a meeting titled "Talking Trash" transformed our dry, academic meeting into an exciting opportunity for community residents to participate in a lively exchange of ideas. During this new program, local residents were invited to share the innovative strategies they use to reduce trash in their own neighborhoods. The program also gave the

community an opportunity to think about how these strategies could gain greater prominence and more common use in Lowell, and helped the community-university partnership create a rich repository of innovative ideas that can be used now and in the future. One participant, for example, described watching garbage trucks stop in front of every house in his neighborhood to collect the trash left there. This resident convinced his neighbors to put their trash at the edge of their yards, next to a neighbor's trash. Using the new system, the garbage truck made only half the number of stops, saving fuel and improving air quality.

Reframing its approach has led the university to integrate community perspectives into much of its environmental work. Our past environmental justice work took place in the community, but those most affected by urban environmental problems saw few links between our work and their lives. In an effort to change this, the community-university partnership began to reorganize its efforts through the New Ventures initiative, established after we discovered that residents usually notice environmental problems when they start new ventures. These residents might begin a garden and find out that their soil is contaminated; they might take up fishing and discover that the river and ponds are polluted; they might set up a new business in one of Lowell's mill buildings and find that it harbors environmental hazards. The simple concept of New Ventures

brought people together, changed the focus of UML research, and expanded the number of disciplines that were drawn into research partnerships with the community.

Reframing environmental issues can have important implications for states and local municipalities. Many states have reframed sprawl issues as planning issues so municipalities can look at sprawl in terms of smart growth, instead of traffic congestion. Unfortunately, smart growth fails to resonate in Massachusetts (Geigis et al. 2006; Geigis, Hamin, and Silka 2005) because the state lacks a regional infrastructure on which most smart growth strategies are based. In light of these political realities, Massachusetts' lead environmental agency reframed the smart growth issue as a community preservation issue. In doing so, the state was able to bring together competing constituencies—including advocates for open space, affordable housing, transportation, and historic preservation—to work on preservation issues and, by extension, sprawl and smart growth issues. The University of Massachusetts System and the Executive Office of Environmental Affairs worked together on this initiative, which led to significant applied research.

Concluding Comments: Where Do We Go From Here?

This paper has sought to convey the everydayness of the innovations required by applied research partnerships. As the examples suggest,

Our past environmental justice work took place in the community, but those most affected by urban environmental problems saw few links between our work and their lives.

partnerships confront many issues for which there are no straightforward answers, including how they will address problems in the absence of conventional expertise, how they will draw on past lessons without being bound by them, how they will be guided by theory while transforming it to fit local conditions, and how they will solve problems by reframing them or evaluating resources in new ways. Cookbook approaches to these issues will rarely work. Instead, innovative problemsolving will be needed. The examples here show the process by which one university has slowly transformed its approaches to community-university research partnerships.

In reaching the conclusion of this article, readers may be tempted to formulate for themselves a series of rules based on the examples shared here. One rule for successful partnerships might be to reuse existing human resources (as in the asthma home visitors example). A second rule might require that partnerships reframe seemingly insoluble problems in ways that make them actionable (as in the housing crisis example). In a limited range of circumstances, such rules might sometimes prove useful, at least for a while. But that would miss this article's larger point. The examples in this article are intended to help readers break mindsets rather than generate hard and fast rules. The examples should exemplify and inspire innovative thinking, rather than provide case material for durable precepts.

According to the poet Stephen Spender (1973, 113) "There is a danger of my appearing to put across my own experiences as the general rule, when every poet's way of going about his work and his experience of being a poet are different." The same holds true for community-university partnerships. As noted at the outset of this article, there is danger in viewing the promotion of applied research simply as a task that involves

formulating rote steps that all community-university partnerships can follow to predictable success. Instead, this article suggests that the key to a partnership's success involves continuous efforts to problemsolve, innovate, and grasp how the emergent problems of partnership can be addressed under current community conditions. Community-university partnerships can encourage problemsolving and innovation by tapping into what universities value most and by using their resources to disseminate ideas about present awards for innovations that solve particularly challenging problems.

Applied research is likely to receive the support and recognition it deserves only to the extent that all partners recognize and reinforce its link to the core knowledge function of universities. Too frequently, the ways in which applied research strengthens and advances the knowledge function of the university have gone unrecognized. The importance of this link cannot be overestimated because it places applied research within the core mission of most universities, rather than tying it solely or largely to the service mission. This dual focus on innovation and knowledge generation is now receiving much attention. Stanford University's Business School, for example, publishes a journal called *Social Innovations* that examines ways to bring business innovations to social programs.

Various groups are also focusing their attention on rewarding innovation in the kinds of work that community-university partnerships undertake. HUD has developed its Best Practice award, for example; in the public sector, the Harvard University/Government Innovators Network (www.innovations.harvard.edu) has set up various ways to encourage innovation:

The Government Innovators Network is a marketplace of ideas and examples of government innovation for policymakers, policy advisors, and practitioners. Through our content—news, documents, descriptions of award-winning innovative programs, and events—and our online communities of practice, we strive to stimulate new ideas and bring people and ideas together around innovations in governance.

The network also recognizes innovations and creativity through awards presented by its Innovations in American Government Program (www.ashinstitute.harvard.edu/Ash/awards.htm), which serves as a catalyst for "continued progress in addressing the nation's most pressing public concerns." Since 1986 the program has recognized 315 government programs for their innovations and has awarded just under $20 million dollars in grants to recognize and further these innovations.

Both of these approaches—closely aligning applied research partnerships to the knowledge functions of universities and finding ways to ensure that these innovations receive wide publicity—are likely to increase the quality, as well as quantity, of applied research. As Brewster Gheselin's quote at the outset of this article reminds us, it is often not the problem itself that is intractable, but rather our employment of worn approaches that failed to work in the past and continue to fail in the present. Many of the problems that community-university partnerships address continue to be seen as problems that defy resolution. Applied research partnerships that focus on apt innovations may move us to a point where we believe that things can get better, that intractable problems can be solved, and that universities have a great deal to offer to the entire process.

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Notes

1. The partnership outreach initiatives at UML are supported by funds from HUD, the National Institute of Environmental Health Sciences, the U.S. Department of Education, the Robert Wood Johnson Foundation, the Nellie Mae Education Foundation, the National Science Foundation, the Parker Foundation, Sociological Inquiries, the Environmental Protection Agency, and UML internal funding.

2. Graduate training teaches academics to publish in traditional journals and to focus on the limits of their findings rather than on how the information, however imperfect, could be useful. The eminent cognitive psychologist Donald Norman (1988) in his keynote address at the American Psychological Association Convention wryly suggested that this training produces "on the other hand" researchers—academics who always see the need for another study and do not consider whether available information is sufficient.

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In the midst of daily pressures, it is perhaps inevitable that one's attention is absorbed by the effort required to sustain a local partnership. But what of the national scene? What are the emerging trends? Are successes similar from partnership to partnership? Are partnerships encountering similar obstacles? How can the research partnership movement keep up its momentum? These are questions I had the opportunity to ask of several individuals who have designed some of the major initiatives to bring communities and universities together and who have served in positions that give them firsthand knowledge of the challenges that many partnerships confront.

Five leaders agreed to be interviewed: Sharon Brehm, former chancellor of Indiana University Bloomington, a major Research I university campus; Armand Carriere, former head of HUD's Office of University Partnerships and now executive director of the Worcester (Massachusetts) UniverCity Partnership; Stephen Engle, director of the Center for Community GIS, a technology support center linking a university and a multistate, two-country region; Charles Lee, a leader of the U.S. Environmental Protection Agency and guider of environmental justice partnerships; and Sarena Seifer, executive director of Community-Campus Partnerships for Health (CCPH), a nonprofit organization that promotes health (broadly defined) through partnerships between communities and higher educational institutions. These leaders speak for themselves, not for everyone in their *category*.

Applied Research Partnerships and the Work Involved

Applied research partnerships do not just happen. They are the culmination of hard work. The leaders interviewed for this article commented on the

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prodigious amount of effort involved in developing and nurturing applied research partnerships, but noted that this is not different from the amount of work required in other kinds of research. Moreover, applied research is often more complicated to perform since it requires more collaborations.

Laboratory research in the basic sciences, or fieldwork in disciplines such as archeology, takes great effort, and this effort is often seen as *part and parcel* of the research enterprise. The status of applied research is more complex. In some disciplines such as environmental studies, basic and applied research are closely connected, and the same faculty are often involved in both. More generally, the connection between applied and basic research has become stronger in many of the sciences because today's basic discovery lays the groundwork for the development of a new application. However, in some disciplines applied research still has less prestige than more traditional forms of research and scholarship.

It is very important that applied researchers, particularly untenured faculty, have enthusiastic support from their department chairs and, in some cases, their deans. A number of the leaders noted that deans and department chairs sometimes steer untenured faculty toward basic research, rather than applied research partnerships because of the latter's laboriousness. Untenured faculty are sometimes told it is more beneficial professionally to engage in *scholarly* research. This very wording suggests that applied research is still, at times, seen as an activity outside the bounds of scholarship.

The Need for More than a Few Champions

Given all this, who then *is* doing applied research partnership work? The leaders suggest the need for more faculty to become involved. Communities and universities nationwide often point to particular heroes and pioneers who are advancing this work. In Worcester, Massachusetts, which is home to nearly a dozen colleges and universities and hundreds of faculty members, many community partners tend to work with the same handful of faculty members, reports Armand Carriere. However, these partnerships cannot survive on the basis of a lone faculty member who champions a cause or excels at this form of collaborative research. The leaders noted that the research partnership movement must find sustainable ways to involve more faculty and students.

The *Disconnect* with Academic Culture

Efforts aimed at promoting applied research can sometimes be at odds with the culture of certain

More generally, the connection between applied and basic research has become stronger in many of the sciences because today's basic discovery lays the groundwork for the development of a new application. However, in some disciplines applied research still has less prestige than more traditional forms of research and scholarship.

types of higher education institutions, say the leaders. If the movement is to grow, changes will be needed at the institutional level. Sharon Brehm notes that professional schools generally emphasize applied research more than traditional arts-and-sciences disciplines do. However, there is tremendous variation in what emphasis individual schools and disciplines in large research universities place on basic and applied research. That variation depends on many factors, including faculty interests, funding opportunities, and the current Zeitgeist in the field.

Over the past 20 years, interest in both multidisciplinary and applied work has increased dramatically, and there is every indication that this trend will continue for some time to come. Despite this increase, however, there are still multiple strikes against applied research efforts within disciplines and departments—including the arts and sciences—considered to be at the heart of research institutions. These disciplines value basic research, reward individual scholarship, and value the national and international reputation of the university's scholars. Research that is applied, that involves working with others, and that is local in focus has difficulty receiving appropriate respect.

Some change is beginning to occur. With funding from the U.S. Department of Education, CCPH has convened a collaborative of 10 universities that is working to establish faculty promotion and tenure policies and systems that better recognize and reward community-based participatory research and other forms of community-engaged scholarship. At the same time, the Community-Engaged Scholarship Toolkit, available online at www.communityengagedscholarship.info, is designed to assist faculty working in the current system to develop strong portfolios for promotion and tenure.

Independent organizations can act as a bridge between community and academic cultures and should be used to a greater extent. Stephen Engle suggests that community service centers, like the one he directs, can help colleges, universities, disciplines, and departments find common ground for research by coordinating multiparty data collection, leveraging additional project funding, supervising interns, and warehousing data for communities.

Greater recognition of the different forms of partnership and the challenges these forms face will also be necessary if the applied research partnership movement will expand. Partnerships can include a community and one institution of higher education, several communities and one university, one community, or multiple universities. Worcester, Massachusetts, with its many institutions of higher education, is an example of the latter type of partnership. By forming a collaborative, a group of colleges and universities like the ones located in Worcester can address the challenges that their community is experiencing. Difficulties can arise, however, when the institutions have little experience working together on community-based issues or when their missions are different. These institutions can find ways to work together with their community through a neutral convener who can find common ground among all of the institutions.

The Importance of Demonstrating Impact

If partnership efforts are to receive continued support on the national level, says Charles Lee, partnerships must document the impact they are having. In environmental areas, partnerships must be prepared to justify their effectiveness in terms of costs and savings, because the cost-effectiveness of their collaborative efforts are already being compared against other types of interventions.

Lee also suggests that coalitions need to devise appropriate measures that are capable of capturing partnership outcomes. These coalitions are sometimes subjected to inappropriate measures, but this can be attributed, in part, to a failure to achieve consensus on what would be appropriate.

Research Partnerships Must Meet the Needs of Both Partners

Given the current state of affairs, partnerships are not natural outgrowths of activities for universities or for communities. Many faculty feel they do not have time to participate, community members have neither the time nor often the expectation that they will be included, and many faculty are not used to organizing their research efforts in collaborative ways. If partnerships are to succeed, say the leaders, each partner must be able to achieve some of its own goals through the partnership. Partnership collaborations cannot be conducted as a favor by one partner to the other. While this observation has become a truism of sorts, the leaders interviewed encouraged new thinking among partners about the form that shared goal achievement might take.

It Is Not the Large Philosophical Differences That Get in the Way

Radical changes in philosophy are not necessarily needed to make partnerships work, say the leaders. Instead, it appears that small differences—like academic schedules—often stand in the way

of effective partnerships. Stephen Engle notes the difficulties of sustaining partnerships when students are transient and semesters are short. Armand Carriere suggests that certain community projects may not attract faculty attention only because the need for them emerges after classes are well underway. Such schedule differences make it hard to coordinate resources even when partners are in agreement about which resources would be useful.

Harnessing the Power of Larger Associations

Universities have discovered many ways to organize among themselves to advance partnership work. However, Sarena Seifer points out, community partners continue to face difficulties communicating with one another and have few venues in which they can share strategies for working effectively with various types of colleges and universities. To begin to close this gap, the CCPH plans to host a Wingspread Conference for community partners interested in organizing themselves. To help universities that face a similar need to organize, the research partnership movement could draw on many of the national associations with which faculty affiliate. This could be challenging, however, since such organizations primarily facilitate conversations within disciplines, while partnerships are frequently interdisciplinary in nature. To aid in the development of community-university

Radical changes in philosophy are not necessarily needed to make partnerships work, say the leaders. Instead, it appears that small differences—like academic schedules—often stand in the way of effective partnerships.

research partnerships, says Sharon Brehm, national organizations need to find ways to help encourage and support projects that can serve as models.

This is an International Movement

By no means are efforts to establish applied research partnerships between communities and institutions of higher education limited to the United states. Sarena Seifer reminds us of the importance of giving close scrutiny to the community-campus partnerships emerging elsewhere. Her organization, CCPH, draws on international models and sponsored a partnership conference in 2004 that drew participants from more than 40 countries. The organization also has a growing membership in Canada and is planning to hold its 2007 conference in Toronto. Similarly, the community GIS service center overseen by Stephen Engle is supported by an American-Canadian nonprofit organization, draws its community partners from both the Northeast United States and Maritime Canada, and shares project models through an exchange program. These two leaders remind us that the struggles that face other countries are similar to our own and that important opportunities are emerging to learn from the efforts now taking place abroad.

The Place of Publications

Community partners often make the comment that they have been "studied to death"; they note that they want action, not publications. Yet many of the leaders suggest that applied researchers must reach a broader audience through publications so that more partnerships can learn of and replicate effective practices. Indeed, community views of publications may be changing. Sarena Seifer describes the case of a national foundation that received a proposal to fund a university's research about a community problem. The foundation's initial position was that it did not fund research, but it also noted that the university's proposal included the kernel of an idea for community partnership research that would provide vital information. The foundation decided to work with university researchers and their community partners to ensure that rigorous research could be produced to meet the community's needs and build its capacity. In an interesting turn of events, the community became an advocate for publication of project outcomes in a prestigious journal because its leaders saw the benefit of delivering their local message to a national audience. Partnerships will have to struggle with the questions about which research can be of value to national audiences while meeting local needs.

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All of these comments and observations by the national leaders go to the heart of the challenges that the community-based research partnership movement continues to face. Research partnerships operate locally. Individual faculty are concerned with the transportability of their skills. Faculty are academic gypsies. Institutions of higher education are concerned with the visibility of the research their faculty conduct and the resulting impact of that research on the institution's national reputation.

As these leaders noted, many questions remain. How will all of this change? Where might the pressure, support, and advocacy for this kind of local work come from? Have we reached critical mass? Have we reached a *tipping point* whereby the partnership movement has enough momentum and a sufficient number of advocates that it can maintain itself? I remain hopeful that the answers to these questions will emerge over the next few years as the research partnership movement continues to grow and mature.

Sponsored by an Alliance of Ontario Community and University Groups

Please help us identify how we can improve our community. The information will be used to develop programs that can help strengthen our community.

1. Please identify which services are most needed in the community.

Level of Need for These Services	Very Low Need	Low Need	Average Need	High Need	Very High Need
Child Care and Preschool	1	2	3	4	5
Job Training/Job Placement Services	1	2	3	4	5
Affordable Medical Services	1	2	3	4	5
Affordable Housing	1	2	3	4	5
Medical Insurance	1	2	3	4	5
Transportation	1	2	3	4	5
Social Services (Medi-Cal, Food Stamps, AFDC)	1	2	3	4	5
Mental Health Services/Consulting	1	2	3	4	5
GED or High School Education	1	2	3	4	5
English Classes	1	2	3	4	5
Tutoring/Mentoring Programs for Students	1	2	3	4	5
Improved Communication Between Parents and School	1	2	3	4	5
Health Education	1	2	3	4	5
Homeownership Workshops	1	2	3	4	5
Financial Planning (Money Management, Bank Accounts, Credit)	1	2	3	4	5
Business Training - How to Start and Manage and Finance a Business	1	2	3	4	5
Recreation Programs for Youth	1	2	3	4	5

2. If the following services were available, check those that you feel would be most useful to you, your family, and other community members.

Parents

- ☐ Reading and writing classes
- ☐ Continuing education after high school
- ☐ Vocational or technical training for a job
- ☐ ESL/Citizenship classes
- ☐ Computer training
- ☐ Parent support group
- ☐ Training to volunteer at school
- ☐ Understanding school resources

Youth

- ☐ Reading and writing classes
- ☐ College education
- ☐ Substance abuse
- ☐ Homework assistance/ mentoring
- ☐ Help for teens in gangs
- ☐ Volunteer service opportunities

Health and Well-Being

- ☐ Stress Management
- ☐ Family counseling
- ☐ Anger management
- ☐ Support for divorce/separation
- ☐ Domestic violence services
- ☐ Substance abuse counseling
- ☐ Dental care
- ☐ Immunizations

If you had to pick the three most serious problems, what would they be?

1. _____

2. _____

3. _____

Thank you for your help. Please contact us at (909) 983-4233 if you have any questions.

Encuesta Sobre las Necesidades en la Comunidad

Patrocinado por la Alianza de Grupos Comunitarios y Universitarios de Ontario

Por favor ayúdenos a identificar como podemos mejorar nuestra comunidad. Esta información será usada para desarrollar programas que pueden ayudar a reforzar nuestra comunidad.

1. Por favor identifique los servicios que son más necesitados en la comunidad.

Nivel de Necesidad de Estos Servicios	Muy Bajo Necesidad	Bajo Necesidad	Necesidad Promedio	Alto Necesidad	Muy Alto Necesidad
Cuidado de Niños y Educación Pre-Escolar	1	2	3	4	5
Entrenamiento para Trabajar/Ayuda en la Búsqueda de Empleo	1	2	3	4	5
Servicios Médicos Económicos de Bajo Costo	1	2	3	4	5
Vivienda de Bajo Costo	1	2	3	4	5
Seguro Médico	1	2	3	4	5
Transportación	1	2	3	4	5
Servicios Sociales (Medi-Cal, Sellos de Comida "Estampillas," AFDC, WIC)	1	2	3	4	5
Servicios de Salud Mental/Consejería	1	2	3	4	5
Diploma de Bachillerato	1	2	3	4	5
Clases de Inglés	1	2	3	4	5
Asistencia Académica para Estudiantes/Guía para Estudiantes	1	2	3	4	5
Mejorar la Comunicación Entre Padres y Escuelas	1	2	3	4	5
Educación Sobre la Salud	1	2	3	4	5
Talleres Sobre Compra de Casas	1	2	3	4	5
Planeamiento Financiero (Manejo de Dinero, Cuentas Bancarios, Crédito)	1	2	3	4	5
Educación de Negocios - Como Comenzar y Financiar un Negocio	1	2	3	4	5
Programas de Recreo para Jóvenes	1	2	3	4	5

2. Si los servicios siguientes estuvieran disponibles, indique los que usted siente serían lo más útil para usted, su familia y otros miembros de la comunidad.

Servicios Para Padres

- ☐ Clases de Lectura y Escritura
- ☐ Educación Posterior a la Escuela Secundario
- ☐ Educación (Entrenamiento) Profesional o Técnica para un Trabajo
- ☐ Clases de Inglés y de Ciudadanía
- ☐ Entrenamiento Sobre Computación (Computadoras)
- ☐ Grupo para Apoyo para Padres
- ☐ Entrenamiento para Servicio Voluntario en la Escuela de Sus Niños
- ☐ Clases para Entender los Recursos Escolares

Servicios Para La Juventud

- ☐ Clases de Lectura y Escritura
- ☐ Educación de Universidad
- ☐ Consejos Sobre Vicio de Drogas
- ☐ Asistencia para Completar Tareas/Guía para Estudiantes
- ☐ Ayuda para Jóvenes en Pandillas
- ☐ Oportunidades de Servicio Voluntario

Salud y Bienestar

- ☐ Manejo de Tensiones
- ☐ Consejos para Familias
- ☐ Manejo de Furia/Enojo
- ☐ Apoyo para Personas Que Se Están Divorciando/Separando
- ☐ Servicios Sobre Violencia Domestica
- ☐ Consejos Sobre Vicio de Drogas
- ☐ Cuidado Dental
- ☐ Vacunas

Si usted tuviera que identificar los tres problemas mas serios en su comunidad ¿cuáles serian?

1. _____

2. _____

3. _____

Gracias por su participación. Por favor póngasa en contacto con nosotros en (909) 983-4233 si usted tiene algunas preguntas.

U.S. Department of Housing and Urban Development
Office of University Partnerships
451 Seventh Street, SW
Washington, DC 20410-3000

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Scholarship in Action: Applied Research and Community Change