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An Introductory Reconnaissance,
Including Twelve Organizational Case Studies
and Comparison with the Dutch Science Shops
and the Mainstream American Research System

by:

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with the assistance of :

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L o k a

**The Loka Institute
Amherst, Massachusetts USA**

COMMUNITY-BASED RESEARCH IN THE UNITED STATES

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The Loka Institute
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The Loka Institute is a nonprofit organization dedicated to making research, science and technology more responsive to democratically decided social and environmental concerns.

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Thank you!

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EXECUTIVE SUMMARY

The United States is blessed with abundant resources, wealth and dynamism, and yet burdened with profound social and environmental ills. “We can put a man on the moon,” goes the old saw, but why can’t we empower distressed communities and groups to help understand and address their own problems? The answer, it turns out, is *not* that no one knows how to facilitate such empowerment; the organizations examined in this study do it every day. The answer is that we aren’t properly investing the resources readily available for building the social infrastructure--a nationwide community research system--that would make empowerment-through-mutual-learning universally accessible.

“Community-based research” is research that is conducted by, with, or for communities (e.g., with civic, grassroots, or worker groups throughout civil society). This research differs from the bulk of the research and development (R&D) conducted in the United States, most of which--at a total cost of about \$170 billion per year--is performed on behalf of business, the military, the federal government, or in pursuit of the scientific and academic communities’ intellectual interests.

This report uses case studies of centers that conduct community-based research to develop the most comprehensive overview that exists to date of the U.S. community research system, comparing it with the institutionally more mature community research system that exists in the Netherlands, as well as with the mainstream U.S. research system.

Case Studies of Community-Based Research

The 12 organizations profiled in Chapter 2 illustrate a diversity of concerns, operating modes, institutional settings (both universities and independent nonprofit organizations), geographic locations, and demographic characteristics of their constituencies. The organizations include:

- Jacksonville Community Council, Inc. (Jacksonville, Florida)
- Policy Research Action Group (Chicago)
- Childhood Cancer Research Institute (Worcester, Massachusetts)
- Applied Research Center (Oakland, California)
- Project South (Atlanta)
- Alaska Boreal Forest Council (Fairbanks)
- JSI Center for Environmental Health Studies (Boston)
- Center for Neighborhood Technology (Chicago)
- Neighborhood Planning for Community Revitalization (Minneapolis)
- Highlander Research and Education Center (New Market, Tennessee)
- The Good Neighbor Project (Cambridge, Massachusetts)
- Urban University & Neighborhood Network (Ohio) and a successor organization, the Coalition to Access Technology & Networking in Toledo

Examples of Social Results

Concrete changes that have occurred as a result of community-based research projects conducted by these organizations include:

- Energy conservation retrofits of over 10,000 low-income housing units in Chicago
- A moratorium on forest logging pending the conclusion of negotiations between Alaskan legislators and activists
- One of the most thoroughly prepared legal cases in the history of toxic waste litigation, two companies sued for wrongful death associated with water pollution, and an \$8 million out-of-court settlement with Woburn, Massachusetts plaintiffs
- A requirement that scientists seek permission from a Native American community before including them as research subjects
- Regular dialog between two trade unions, a multiracial coalition of community groups, and the management of the Sun Oil refinery in Philadelphia
- Replacement of poisoned drinking water with a safe water line into a rural Kentucky community, and a legal judgment requiring establishment of an \$11 million community health fund
- Implementation of a new system for providing police service more equitably in the Jacksonville, Florida area
- Creation of a new health program in Chicago for refugee women
- Integration of neighborhood-based projects into university course syllabi

Analysis and Findings

Chapter 3 analyses the case studies to develop a set of findings concerning community-based research in the United States, among them:

1. Social Consequences of Community-Based Research

Community-based research processes differ fundamentally from mainstream research in being coupled relatively tightly with community groups that are eager to know the research results and to use them in practical efforts to achieve constructive social change. Community-based research is not only usable, it is generally used and, more than that, used to good effect.

- Community-based research often produces unanticipated and far reaching ancillary results, including new social relationships and trust, as well as heightened social efficacy. It may thus provide one constructive response to the growing concern that American civil society is in crisis and unraveling.

- Conventional research and development--along with its many social benefits and periodic spectacular successes--also bears some responsibility for environmental pollution, occasional ethical breaches (such as dangerous medical or military experiments performed on

uninformed human subjects), degraded work processes and industrial accidents, weapons of mass destruction, tears in the fabric of civil society, harm to the basic structure of democratic institutions, and so on. Not only does community-based research tend not to produce such negative consequences, it often contributes directly to preventing, mitigating, or remedying them.

- Community research projects frequently involve local groups reacting to urgent problems on the local level. But the majority of the community-based organizations in our study have also formulated a macrosocial analysis that informs their programmatic activities, ensuring that their projects include a proactive component or a translocal outlook. Most community-based research projects have practical implications beyond the local level.

2. Demand for Community-Based Research

There is significant demand for community-based research, and much of it is not being met. Every organization we studied attests to the need for more community-based research. Community research centers are forced to deny many requests for research assistance, either because they don't fall within a center's mission area or due to resource constraints. For instance, Chicago's robust Policy Research Action Group turns down 30-35 of the approximately 50 community-based research proposals that it receives annually. In most cases a community group that a center turns down has no recourse; the needed research is not performed.

- Community-based research is a component of some grants awarded under the Community Outreach Partnership Centers Program of the U.S. Dept. of Housing & Urban Development; however, funding limitations permit this Program to support only 16 of more than 100 proposals that it receives annually. During the two-year period 1995-1996, funding limitations permitted the Environmental Justice Community/University Grants Program of the U.S. Environmental Protection Agency to support only 16 of 156 proposals submitted.

- The Loka Institute has so far been able to identify about 50 U.S. community research centers, estimating crudely that the total number of community research projects conducted annually in the United States is somewhere between 400 and 1,200. For there to be as many community research centers per capita in the United States as already exist in the Netherlands, the U.S. would need 645 centers conducting about 17,000 studies annually.

3. Financial Dimensions of Community-Based Research

Most U.S. community research centers find their work chronically constrained or even jeopardized by an inadequate funding base. Although some feel it more acutely than others, more than half the centers in our study worry that lack of funding could force them to shut down. On the other hand, the United States not only needs more community-based research, but can also easily afford it:

- Traditional research projects in academia, industry, and government often cost from \$50,000 up to \$1 million, and occasionally much more. In comparison, community-based

research is cost-effective. A typical community research project costs on the order of \$10,000, constructively addresses an important social problem, empowers and provides other tangible benefits to groups that are often among society's least advantaged, produces secondary social benefits (such as enhancing participating students' education-for-citizenship), and produces little or no unintended social or environmental harm.

- This study's rough estimate is that the United States and the Netherlands each spend on the order of US\$10 million annually on community-based research. That means that on a per capita basis the Dutch are investing in community-based research at 15 times the U.S. rate. As a fraction of each nation's respective total R&D expenditure, the Dutch are investing in community-based research at 37 times the U.S. rate.

- The \$300 million that the Monsanto company spent developing bovine growth hormone (a product that many small farmers and consumers have actively opposed on economic, social, ethical, or health grounds), would pay for all U.S. community-based research for 30 years at the current level that we estimate it is being conducted.

- In 1994 PepsiCo announced that, following two years of market research conducted among 5,000 people, it would spend a further \$50 million to reinvent its Doritos®-brand tortilla chip--intensifying the flavor on the surface, rounding the chip's corners, and redesigning the package. PepsiCo's principal concern was to ensure that Doritos maintain market dominance in the face of competition from the new "restaurant style" corn chips. (News coverage of this story neglected to mention that the leading "restaurant style" chip, Tostitos®-brand, happens to be a PepsiCo product.) The expenditure of more than \$50 million to ensure that PepsiCo's Doritos remain America's top-selling snack food, ahead of PepsiCo's own competing Tostitos, represents approximately five times the total annual U.S. investment in community-based research.

- In 1998 the United States is scheduled to spend \$41 billion on military R&D. Security threats justifying expenditures of this magnitude remain elusive. In the words of a 1996 *New York Times* editorial: "American military spending is equal to that of the next 10 biggest military powers *combined*--and most of those countries are allies." Meanwhile the budget for U.S. military R&D is more than 4,000 times larger than what we will spend on community-based research. (For a sense of relative social priorities: the budget for Dutch military R&D is only about 4½ times larger than estimated Dutch expenditure on community-based research.)

- For the cost of one B-2 bomber, the U.S. could increase expenditure on community-based research 100-fold (i.e., 10,000 percent) for one year and still have \$500 million or more left over to contribute to other worthy social programs or to shrinking the national debt.

4. Creating a Nationwide Community Research Network

While there are community research centers in the United States, compared with the Netherlands they are few and far between, and they are relatively inaccessible to the groups that could most benefit from them. The Dutch have evolved a *comprehensive community research system* that can address questions on virtually *any* topic for *any* group or organization throughout

Dutch civil society located *anywhere* in the nation.

- Since 1995 the Loka Institute's Community Research Network (CRN) initiative has sought to establish similar capabilities in the United States by organizing a national planning conference, creating a national and international Internet discussion forum for community-based research, publishing a reader, designing a searchable Internet database of community research centers worldwide, and other related activities. Loka's CRN initiative has also inspired efforts to establish community research centers in Canada, Israel, and South Korea. We are hopeful that with time the CRN can, in addition, facilitate greater grassroots engagement in regional, national and international political forums, as well as transnational collaboration among community research centers worldwide.

- To create a U.S. community research system that would provide service as comprehensively and accessibly as does the Dutch system would cost on the order of \$450 million annually. That is about 45 times current U.S. investment in community-based research, but it would still represent less than 0.3 percent of total U.S. R&D expenditure (from all sources, public and private).

- \$450 million for a nationwide Community Research Network would, moreover, represent only about 2 percent of annual federal expenditure at all U.S. government laboratories. The government laboratory system is substantially a byproduct of World War II and the Cold War, and a number of its component labs have now outlived their missions. On the other hand, the underlying rationale for wanting some type of national laboratory system remains sound: to conduct research that is in the social interest but that the conventional research system will not fund or is ill-prepared to conduct. In the context of a post-Cold War world, that sounds much more like a prescription for a Community Research Network than a justification for perpetuating the national laboratory system in its current form.

5. Characteristics of U.S. Community Research Centers and Programs

Collaboration with grassroots and other non-expert groups is one of the defining characteristics of community-based research. The mutually respectful relationship that needs to exist between experts and other community members takes time to build. For example, tensions constantly arise in trying to reconcile university timetables and pacing with the sense of urgency pervasive among community organizations. Community research center staff create environments supporting successful collaboration by developing sensitivity to the areas where tension arises and skills in nurturing and mediating partnerships.

- U.S. community research centers conduct more participatory research than do their Dutch counterparts. ("Participatory research" aspires to involve community members in all stages of the research process.) In the Netherlands, the community group that poses a question is typically involved in the research process only as a member of an ad hoc research oversight committee. The research itself is usually conducted by a university student.

- Student interns are crucial to the operation of at least 10 of the 12 U.S. community

research centers that we studied. From a societal or community research center's point of view, there is a significant economic benefit in enrolling students: they can be rewarded partially or entirely with academic credit rather than monetarily. Students also reap the satisfaction that comes with making a constructive contribution to social improvement, while honing their budding research skills in a practical setting. Society benefits further because the participating students receive a boost in their education-for-citizenship; several of the organizations in our study report that their student interns have been profoundly affected and altered their life outlooks or career paths as a result of their involvement in community-based research. Faculty-supervised student participation can also help universities maintain a more balanced social outlook during a period of deepening university research ties to industry.

- There are differing strengths and drawbacks to community research centers that are based in universities versus those that are independent nonprofit organizations. For example, some centers report that a university affiliation has enhanced their stature in the eyes of potential funders, provided overhead support, or eased recruitment of student interns. Potential drawbacks, however, include the possible requirement to pay high university overhead charges on research grants or becoming subject to inhibiting laws or regulations (e.g., Human Subjects Review Committee procedures that were never designed with participatory, community-based research in mind). While university administrators vary in their attitudes towards community-based research, indifference, skepticism or even resistance appear to be fairly common.

- The success of a community research center depends largely on its being rooted socially and ideologically in the communities it is serving. Nearly all of the organizations we studied, both university-based and not, consider it important that a community research center's governance or oversight structure include strong constituent community representation. For example, Oakland's Applied Research Center, which focuses on issues of race and social justice, has a board composed of key activists from communities of color, gay and lesbian organizations, workers, and other grassroots groups; other board members have backgrounds in the media or in academia and research.

6. The Need for Improved Understanding of Community-Based Research

As far as we know, at this time the Loka Institute knows as much about the overall state of community research in the United States as any other organization, and that is worrisome, because we have a good sense of how incomplete our own knowledge is. Community-based research in the United States has not been studied systematically.

- Few of the organizations we examined have systematic procedures for evaluating the quality and impact of their research, and nobody knows with precision the extent of community-based research in the United States.

- The massive biennial compilation *Science & Engineering Indicators*, prepared under the auspices of the U.S. government's National Science Board, includes exhaustive statistical documentation of the mainstream U.S. research system. However, one also searches in vain throughout the table of contents, chapters, tables, many appendices, and index of *Science & Engineering Indicators* for a single mention of community-based research, participatory research,

or any related topic. Inasmuch as producing *Science & Engineering Indicators* represents a significant, ongoing government investment in understanding the U.S. research system--an investment that is, moreover, paid for entirely with tax dollars--it is hard to imagine the justification for omitting this broad range of data that would seem highly germane to the public interest in R&D.

- For the purposes of understanding the state of community-based research in the United States, to be able to intelligently debate and craft policies for community research, and for community researchers to be able to gauge and improve the quality of their projects, it is vital to develop better systems for documenting and evaluating community-based research centers, programs, and projects.

Conclusion

Our analysis of community-based research reveals a striking mismatch between the United States' generously endowed, mainstream R&D agenda and the urgent needs of countless communities across the country. By expanding the social infrastructure for conducting community-based research, thereby making empowerment-through-mutual-learning universally accessible, we can better direct our nation's prodigious capabilities toward our most urgent social and environmental needs. We can help alleviate suffering, revitalize democracy and community life, and bequeath future generations a world better than we found it.

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We are indebted to the staffs of the twelve U.S. community research centers that we studied, and of the many other organizations that we contacted, for their generosity and patience in taking time away from overcrowded schedules to send us information, participate in interviews, and answer our follow-up questions. We are also grateful to the many staff members of the Dutch science shops who have likewise helped us understand the practice of community research in the Netherlands.

Our overall understanding of community-based research in the U.S. has also been greatly enhanced by the members of the Loka Institute's Community Research Network (CRN) National Advisory Board and by the several hundred subscribers to the Loka Institute's CRN-List discussion forum on the Internet. We are thus deeply in debt to Professor Patrick Hamlett of North Carolina State University, who managed the CRN-List (under its former designation as the "Scishops" list) on an heroic, volunteer basis during the forum's entire first three years. Carl Milofsky (Bucknell University), Benjamin Barber (Rutgers University), John Gaventa (University of Tennessee-Knoxville), Woody Wickham (John D. and Catherine T. MacArthur Foundation), and Gary Delgado (Applied Research Center) provided important counsel and other support during the formative stages of our work. Fran Ansley (University of Tennessee-Knoxville), Daryl Chubin (National Science Foundation), Henk Mulder and Karin Ree (Science Shop for Chemistry, University of Groningen, The Netherlands), and Ned Woodhouse (Rensselaer Polytechnic Institute) were extremely helpful in constructively criticizing a preliminary draft of this report. Ed Hackett (National Science Foundation), Susan Cozzens (Rensselaer Polytechnic Institute), and John Pike (Federation of American Scientists) helped fill in several crucial details.

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We hope that our report may prove seminal, but it is certainly not definitive. Our study represents an introductory reconnaissance of a very large topic, and as such we would be profoundly surprised if we have not made some inadvertent factual errors, faulty judgments, or unwarranted interpretations. We heartily welcome readers' corrections, criticism, and suggestions for additions and improvement, and we will incorporate these, with acknowledgment, in any future revisions or expansions of this study. Thank you!

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ACRONYMS AND ABBREVIATIONS

Acronyms, abbreviations, and names of organizations included in this report as case studies are in bold type, followed by the page number on which that organization's case study begins.

ABFC	Alaska Boreal Forest Council (p. 42)
AEI	Action Education Initiative
ARC	Applied Research Center (p. 28)
ART	Action Research Training
ATSDR	Agency for Toxic Substances Disease Registry
C/LRTC	Community/Labor Refinery Tracking Committee
CATNeT	Coalition to Access Technology & Networking in Toledo (p. 57)
CBO	community-based organization
CCRI	Childhood Cancer Research Institute (p. 15)
CDC	U.S. Centers for Disease Control
CENTED	Center for Technology, Environment and Development
CHEI	Cultural Heritage and Education Institute
CNT	Center for Neighborhood Technology (p. 39)
COPC	Community Outreach Partnership Centers
CRN	Community Research Network
CTWO	Center for Third World Organizing
CURA	Center for Urban & Regional Affairs
DOE	U.S. Department of Energy
ELSI	Ethical, Legal & Social Implications (a program of the Human Genome Project)
EPA	U.S. Environmental Protection Agency
FACE	For A Clean Environment
FAS	Federation of American Scientists
FBI	U.S. Federal Bureau of Investigation
GAO	U.S. General Accounting Office.
GIS	Geographic Information System
GNP	Good Neighbor Project for Sustainable Industries (p. 25)
Highlander	Highlander Research and Education Center (p. 52)
HUD	U.S. Department of Housing and Urban Development
HWRIC	Hazardous Waste Research & Information Center
JCCI	Jacksonville Community Council, Inc. (p. 9)
JSI	John Snow, Inc.
JSI Center	JSI Center for Environmental Health Studies (p. 20)
LISC	Local Initiative Support Corporation
MIT	Massachusetts Institute of Technology
NACS	Network Against Corporate Secrecy
NIH	National Institutes of Health
NIEHS	National Institute for Environmental Health Sciences

Acronyms and Abbreviations (continued)

NPCR	Neighborhood Planning for Community Revitalization (p. 47)
NRP	Neighborhood Revitalization Program
NSF	National Science Foundation
OSHA	U.S. Occupational Safety and Health Agency
OSTP	White House Office of Science & Technology Policy
OUE	Organizations United for the Environment
PAR	participatory action research
PR	participatory research
PRAG	Policy Research Action Group (p. 12)
	Project South (p. 34)
R&D	research and development
SALT	Southern Appalachian Leadership Training Program
SEIA	South East Industrial Area
TIIAP	Telecommunications and Information Infrastructure Assistance Program
TIRN	Tennessee Industrial Renewal Network
UNDP	United Nations Development Program
UNF	University of North Florida
USPCI	U.S. Pollution Control, Inc.
UUNN	Urban University Neighborhood Network (p. 57)
UUP	Urban University Program
WE ACT	West Harlem Environmental ACTION
YCCC	Yellow Creek Concerned Citizens of Kentucky

Chapter 1: INTRODUCTION

Annual expenditure on research and development in the United States is approximately \$170 billion, \$60 billion of which is paid for by the federal government.¹ Currently, however, most research in the United States is conducted on behalf of private enterprise, the military, the federal government, or in pursuit of the scientific and academic communities' intellectual interests.

In contrast, community-based research is intended to empower communities and to give everyday people influence over the direction of research and enable them to be a part of decision-making processes affecting them. Community-based research is rooted in communities.² Communities often *identify* the issue or problem and participate in *defining* the research question, *conducting* the research and, finally, *using the results* toward an action-oriented outcome. Our definition of community-based research (which we sometimes shorten to simply “community research”) is: research conducted by, with, or for communities.

A great deal is known about the mainstream U.S. research system (e.g., National Science Board 1996, Jasanoff et al. 1995). In contrast, remarkably little is known about the overall state of community-based research in the U.S.--e.g., how many centers or programs are conducting it, the number of projects completed annually, at what cost, to what overall social effect, and so on. Hence the purpose of this study has been to better understand the variety, extent, and impact of existing forms of community-based research in the United States; the role of community research in the nonprofit sector and in civil society generally; as well as opportunities and strategies for improving and broadening the practice of community research.

It is our hope that this report will provide valuable information to existing community research centers and programs; to researchers and grassroots organizers who want to start new community research programs; and to others interested in social change, the social organization and impact of research, and research policy.

Origins of this Study

In March 1995, Richard Sclove, executive director of the Loka Institute, published a *Chronicle of Higher Education* opinion essay entitled “Putting Science to Work for Communities.”³ The essay proposed U.S. emulation of the Dutch “science shop” system, through

¹These are the estimated figures for 1995 (National Science Board 1996, p. A-104).

²For the purpose of our study, we do not define “community” exclusively in geographic terms. “Community” can also refer to groups of people united by interest, occupation, gender, culture, and so forth. Examples include students, AIDS patients, workers, and the Latino population of Minneapolis.

³Sclove 1995a; see also Sclove (1995b, esp. pp. 180-196, 199, 225-229).

which university faculty and students conduct research in response to questions posed by the nonprofit sector, grassroots organizations, trade unions, or local government. There are currently 38 science shops distributed among the Netherlands' 13 universities. Their research projects have helped environmentalists analyze industrial pollutants, workers anticipate the implications of new production processes, social workers better understand disaffected teenagers, local governments devise plans for sustainable development, and so on (see pp. 62-64, below).

Dr. Sclove's essay, distributed also over the Internet as a "Loka Alert," yielded enthusiastic responses from, literally, hundreds of readers. Many of those responding already perform community research, but were not previously aware of one another's work. Others wished to found new centers that facilitate community research. Still others were grassroots activists eager to know where they could turn for research assistance.

In response to this interest, the Loka Institute initiated a project to establish a U.S. and worldwide Community Research Network (CRN). The CRN is emerging as a comprehensive network of grassroots, nonprofit, and university-based organizations and government agencies that are committed to strengthening existing community-based research programs and establishing new ones. Together with the University of Massachusetts Cooperative Extension Service, the U. Mass.-Amherst Program in Science, Technology & Society, and several hundred subscribers to the Loka Institute's CRN-List discussion forum on the Internet (formerly known as the "Scishops" list), the Loka Institute organized a national planning conference for the CRN in July 1996. The present study represents one component of the Loka Institute's broader CRN initiative.⁴

Report Overview

This report includes detailed case studies of twelve U.S. community research centers, plus a succinct overview of the Dutch science shop system (Chapter 2). In the course of our research, we also made an effort to identify other community research centers and programs in the U.S. (see Appendix A). In Chapter 3 we use all of this information as a basis for developing a preliminary overview of community-based research in the United States. We also compare U.S. community research with the institutionally more developed community research system that

⁴For further information about the Community Research Network (CRN), see Finding 17 in Chap. 3, below; and also Roush (1996), Snyder et al. (1997), and Murphy et al. (1997); visit the World Wide Web page of the Loka Institute at <<http://www.loka.org>>; or contact the Loka Institute directly. The Loka Institute and our many institutional partners in the CRN are preparing a broad "toolkit" of materials to support the CRN and the practice of community-based research, including--aside from this report: a reader (Murphy et al. 1997); Internet discussion forums; a comprehensive, searchable database of community-based research centers and programs and researchers worldwide, which will be accessible by World Wide Web, E-mail, and telephone (toll-free phone within the U.S.); and so forth. To join, support, or participate in the Community Research Network, please contact the Loka Institute, P.O. Box 355, Amherst, MA 01004-0355, USA; Tel. +(413) 559-5860; Fax +(413) 559-5811; E-mail <Loka@amherst.edu>, or visit our Web page (above). To participate in the Loka Institute's CRN Internet discussion forum, send an E-mail message to: <majordomo@igc.org> with a blank subject line and the message: subscribe crn-list

exists in the Netherlands, as well as with the mainstream U.S. research system.

As is evident in our case studies, the organizations that we have identified as “community research centers” vary enormously in their missions, organizational structures, and modes of operation. Some, such as the Applied Research Center in Oakland or the Policy Research Action Group in Chicago, conduct community-based research as their core activity. Others, such as the Alaska Boreal Forest Council or the Good Neighbor Project for Sustainable Industries (based in Cambridge, Mass.), conduct community-based research intermittently as part of a broader array of social-change-oriented activities. Likewise, some of organizations we studied are university-based; others are independent nonprofit organizations.⁵

Each case study begins with a description of a sample community research project conducted by the center, including ways in which research results have been used by communities to support constructive social change. Each sample project is followed by an organizational description of the center that conducted or facilitated the project. In the case of organizations for which community research is not their core activity, we have described other aspects of the organizations’ structure and work, while highlighting those aspects that most directly support or involve community research.

We have made no effort to identify “the one best model” for organizing a community research center. All of the organizations that we studied function effectively and serve their constituent communities. Depending on one’s point of view, each model has its own unique strengths and limitations. From a macro- or social-systemic standpoint, these models are complementary, fulfilling different niches in the overall ecology of community-based research and constructive social change. It seems reasonable to conclude that “the best model” is whatever works best in a particular social and historical setting, and that naturally varies considerably from one context to the next. Thus we commend all of the models presented in our case studies to the attention of current and aspiring community-based researchers.

Our analysis in Chapter 3 presents findings concerning the ways in which community research results are used, the demand for community-based research, how community research centers nurture collaboration, how community research is funded, and so on.

The organization of our report lends itself to selective reading, depending on each reader’s interests. For example, if your primary interest is in research policy, you may choose to skip ahead to the findings and analysis in Chapter 3. If you are interested in starting or strengthening a community research center, you will probably find the organizational descriptions that constitute

⁵We also attempted to find examples of community-based research efforts involving U.S. national laboratories. While we did learn of a few individuals at national laboratories who have conducted ad hoc community-based research projects (e.g., at Brookhaven National Laboratory), we have to date found no example of an institutionalized system for research collaboration between a national laboratory and communities that has a sufficient track record of accomplishment to permit evaluation. The most promising step in this direction that we have come across is a partnership between Argonne National Laboratory and Bethel New Life, Inc. (a community development corporation in Chicago).

the bulk of Chapter 2 especially useful, along with many of the findings in Chapter 3. Other readers will wish to focus on the short, sample project descriptions that open each case study within Chapter 2. (The report's bibliography is organized for maximum ease of use, and sources for the case studies are grouped together at the back of each individual case. Otherwise, the general bibliographic references for Chapters 1 and 3 are listed at the end of the report.)

Our research draws on the previous work of many practitioners and scholars of community-based research, including the important studies, anthologies, or annotated bibliographies prepared by Maguire (1987), Brown and Mikkelsen (1990), Fals-Borda and Rahman (1991), Whyte (1991), Sandberg et al. (1992), Stoecker and Bonacich (1992 and 1993), Park et al. (1993), Irwin (1995), Blomberg et al. (1996), Stringer (1996), Williams (1996), Murphy et al. (1997), Nyden et al. (1997), Selener (1997), and Smith et al. (1997). These studies have focused on the methodology and practice of community-based research, on case studies of individual community-based research *projects*, or occasionally on descriptions of one or a few community research *centers*.

As far as we know, however, our study represents the most comprehensive attempt to date to develop an overview of the institutional infrastructure for conducting community-based research in the U.S. Ours is also the first effort to analyze, interpret, and evaluate the U.S. community research infrastructure in comparison with other research infrastructures (i.e., with the Dutch science shop system and with the mainstream U.S. research system) and in comparison with the overall national need for community-based research.

As noted in our acknowledgments, above, we hope that our report may prove seminal, but it is certainly not definitive. Our study represents an introductory reconnaissance of a very large topic, and as such we would be profoundly surprised if we have not made some inadvertent factual errors, faulty judgments, or unwarranted interpretations. We heartily welcome readers' corrections, criticism, and suggestions for additions and improvement, and we will incorporate these, with acknowledgment, in any future revisions or expansions of this study. Thank you!

Methodology

We began the preliminary stages of this research project in Sept. 1996, by conducting a literature review--using traditional print resources and the World Wide Web--to compile information about an initial set of 30 candidate organizations for inclusion in our case studies. During this period, and throughout various phases of the study, we also solicited advice and information from the several hundred subscribers to the Loka Institute's CRN-List discussion forum on the Internet (which is organized as a "listserv").

We selected the final 12 organizations included in our case study profiles based on several considerations. First, we wanted the sample projects and other work of the organizations in our study to be driven primarily by community needs; thus when we came upon a "community research center" at which the research agenda and process were driven primarily by intellectual interests of university faculty or professional researchers, we were inclined to put these

organizations aside. (This means that our sample of 12 case study organizations omits those university research centers that do not generally conduct community-based research, but that may do so infrequently on an ad hoc basis.) We also omitted organizations that use the term “community-based research” to mean research conducted *about*--rather than by, with, or for--communities.

Our second concern was to select a range of organizations for study that would be diverse in terms of organizational structure and operating mode, institutional settings (e.g., community research centers that are university-based versus community-based), geographic location, topics addressed, and demographic characteristics of the communities involved in research projects. A final concern was to select organizations that were sufficiently well established to have a documented track record that we could describe and evaluate and from which others might learn.

We conducted only 12 case studies because that is what our available resources for this project would permit.⁶ Thus many outstanding U.S. community-based research programs are not included in our sample.

For each case study we attempted to answer a standard set of questions that we developed partly in collaboration with subscribers to our Internet discussion forum. These questions relate to an organization’s history and institutional setting, research methods, relationship to the communities with which it works, funding sources, and so on (see Appendix B). In every instance we began preparing our case study based on the written information available to us, supplemented afterwards by telephone interviews.

Coordinating interviews was often difficult and somewhat inconvenient for the interviewees, reflecting the fact that the staff of the organizations in our study generally have a full work load and a packed schedule. Nevertheless, all of our interviewees were accommodating, even if it meant rescheduling our interview more than once. We used the prepared questions that were not answered by each organization’s written material as a starting point for open-ended interviews (meaning that we allowed interviewees to take us where they thought it important for us to go).

We recorded all telephone interviews with the permission of the interviewees, after which Loka Institute staff and interns prepared written transcripts from the tapes. After processing all the information and preparing a draft case study, we offered the draft to each organization for review. Most accepted the invitation and provided helpful factual corrections. This process also

⁶To be truthful, 12 case studied proved actually to be *more* than our available resources could readily sustain--in the sense that completing this study with the limited financial resources available to us proved a considerable strain. The core funding for this project was a \$20,000 grant to the Loka Institute from the Aspen Institute’s Nonprofit Sector Research Fund--an amount that was quite generous relative to the Aspen Institute’s own limited resources, but that is small compared to the magnitude and difficulty of the task we undertook. We report this information only to underscore the point--developed more fully in Findings 16 and 18 of Chapter 3--that the resources currently allocated in the United States both for supporting and understanding community-based research are minuscule relative to what the U.S. as a nation needs and can easily afford.

enabled the organizations studied to develop trust that our representation of their work was accurate and tended to incite their enthusiasm for our project.

Our study's comparative analysis of the Dutch science shop system draws on interviews conducted with science shop staff members in 1993-1998, both in person and by E-mail. Like their American counterparts, our Dutch colleagues--as well as science shop staff members that we have come to know in many other countries--have been remarkably generous in their readiness to assist our understanding of their work.⁷

Limitations

Our study is subject to several limitations. First, owing to resource constraints, we were only able to conduct 12 case studies, and even these are not comprehensive. For instance, for each organization we include a detailed description of just one sample community-based research project and its social impact, even though most of the organizations in our study have completed many projects.

Moreover, our case studies are based almost entirely on information provided by the organizations we were studying. Thus in most (but not all) cases we were not able to take into account the perspectives of outside evaluators; of community constituents with whom these organizations had collaborated; or of any additional organizations involved in multi-institutional, community-based research partnerships. We did not, for example, interview the refugee women who worked with the Policy Research Action Group or the metal finishers who worked with the Center for Neighborhood Technology (see pp. 12 and 39, below). Likewise, our account of the now-defunct Urban University Neighborhood Network reflects only the perspective of the members of one successor spin-off organization, the Coalition to Access Technology & Networking in Toledo (pp. 57-61). This is an obvious area in which follow-up research is warranted.

Some of the people we interviewed seemed hesitant to share their organizations' negative experiences. For example, when asked about tensions that may arise between community members and experts while conducting research,⁸ often the reply was along the lines: "We don't experience any more tension than anyone else would." We're not certain how to interpret this

⁷To date we have met or communicated with science shop staff members in the Netherlands, Denmark, Northern Ireland, England, Austria, Canada, South Africa, and at the former science shop at the University of Paris-Jussieu in France; as well as with researchers involved in fledgling efforts to initiate science shops in the Czech Republic, Israel, Romania, Malaysia, and South Korea; and with related community-based research programs--and popular or indigenous knowledge programs--in various other developing countries (e.g., Nepal, India, Sri Lanka, Peru, Chile, Nicaragua, and Mexico).

⁸Many community researchers challenge the conventional distinction between "laypeople" and "experts," which tends to denigrate lay knowledge and expertise. Thus some adopt alternative distinctions, such as "noncredentialed experts" versus "credentialed experts."

type of response. Perhaps it is an indication of the administratively and financially vulnerable circumstances under which many of the organizations in our study are working; some community researchers have reason to fear that senior administrators in their host institutions or funders will not look kindly on evidence of negative experience or “failure.” On the other hand, it could also reflect the prevalence of a pragmatic “can do” orientation among the dedicated individuals who have learned to facilitate or conduct community-based research. That is, these may be the kind of people who, rather than dwell on “negative experiences,” take them for granted as challenges to overcome or circumnavigate.

Aside from limitations in our individual case studies, there are further limitations associated with our overall sampling of case study organizations. We chose our sample of 12 community research centers to represent a broad diversity of types. But that sample size is too small to be exhaustive of all the organizational forms for institutionalizing community-based research in the U.S. For instance, Professor Michael Heiman and colleagues at Dickinson College in Carlisle, Pennsylvania orchestrate important community-based environmental monitoring and analysis projects as a routine component of an undergraduate course.⁹ Similarly, we have elsewhere developed case studies and analysis of community research programs in the U.S. and other nations that support the participatory development and design of new technologies, but we have not included such cases in the present study.¹⁰

Because we were seeking to represent a broad diversity of types of community research centers and community research projects--and, again, because our sample size was small--our case study sampling made no attempt to achieve a statistically random representation of the total population of U.S. community research centers. For instance, many of the candidate case study organizations in our preliminary compilation of U.S. community research centers study environmental health issues, but we did not want to include a preponderance of cases focused just on that one topic area. A majority of the candidate organizations were also only recently established. Although the work of many of these organizations is intriguing and promising, in its present early stage of development it did not satisfy our desire to be able to include a sample project illustrating how community-based research has been used to support social change.

These intentional biases in our sampling procedure mean that one cannot, say, review our 12 case studies and surmise from the fact that 25 percent display characteristic X that therefore 25 percent of all community research centers in the U.S. also display characteristic X.

Notwithstanding these sundry limitations, we have found that it is possible to aggregate the information in our 12 case studies, together with other published information about

⁹Heiman (1994) and (1996). Also, the Interactive Qualifying Program (IQP) at Worcester Polytechnic Institute in Worcester, Massachusetts requires *all* undergraduates to undertake a project actively relating their technical education to a social problem. While most of these projects do not involve community-based research, the IQP model nonetheless has intriguing potential implications for the future organization of university-community research programs (Grogan et al. 1988).

¹⁰Sclove (1995b, pp. 180-196), Fiorilli and Sclove (1997); and see also Blomberg et al. (1996).

community research centers and programs, to draw preliminary but illuminating conclusions about the overall state of U.S. community-based research. The analysis in Chapter 3 presents such conclusions, along with footnotes explaining both their empirical and analytic bases and limitations.

Chapter 2: CASE STUDIES

2.1. JACKSONVILLE COMMUNITY COUNCIL, INC. (JCCI--Jacksonville, Florida)

SAMPLE PROJECT: Assessing the fairness of public service distribution in Jacksonville

Residents within the 840-square mile area of Jacksonville and Duval counties, Florida share the same tax base and municipal facilities. Yet some citizens began to suspect that public services were not being distributed fairly throughout the region. They were concerned about potential disparities in government treatment of neighborhoods that were newly developed versus older, predominantly white versus non-white, affluent versus low income, and suburban versus urban or rural. Responding to this concern, in 1994 the Jacksonville Community Council, Inc. (JCCI), a broad-based community improvement organization, undertook a study of public services in Jacksonville, Florida. Their study took into account streets and drainage, parks and recreation, and police and fire services in order to determine their geographic distribution and to evaluate whether needs were being met in all city areas.

The study found that citizens and neighborhood organizations are inadequately informed and insufficiently involved in public decision making concerning the distribution of services; streets and drainage in many older neighborhoods had been neglected; parks and recreation facilities are distributed based on incomplete information; and police and fire/rescue services lack the service standards needed to determine equity. Based on these findings, JCCI recommended more citizen involvement in decisions about the distribution of public services, enhanced monitoring of public service distribution, better adherence to standards for improving the equity of service distribution, and better communication between city functionaries and the public. These recommendations resulted in implementing an annual “Equity Index” report card system that assesses how evenly public services are distributed in the six districts that make up the Jacksonville area. One early result was that the Sheriff’s Office implemented a new sector system for more equitable patrol services.

ORGANIZATIONAL DESCRIPTION: Jacksonville Community Council, Inc. (JCCI)

The Jacksonville Community Council, Inc. (JCCI) is a nonprofit, nonpartisan civic organization that performs research intended to improve the quality of life in Northeast Florida. Established in 1975 at a local community planning conference, JCCI was modeled on the Minnesota Citizens League of Minneapolis. JCCI’s mission is to create positive changes in the community through the informed participation of citizens, open dialogue, impartial research, and consensus building. Involving a broad cross-section of the population, JCCI addresses a comprehensive range of community issues, ranging from the long term economic health of the area to the maligned image of black males.

JCCI works with the community in several ways. It coordinates human services for the United Way of North Florida and the Human Services Council. It produces an annual report entitled "The Quality of Life in Jacksonville" for the Chamber of Commerce and the City of Jacksonville. And it offers annual community trainings to teach citizens and community leaders how to identify and mediate conflict.

Each year, JCCI also conducts two major studies, one concerning a community improvement issue and the other concerning a human services issue. The JCCI Board of Directors appoints a Program Committee, which solicits study ideas through JCCI's newsletter, press releases, the Internet, and letters to selected groups. The Program Committee selects a dozen or more issues for consideration and presents them to the Board. The Board reviews the Committee's recommendations and approves study topics. The Board president then appoints a chair for each study.

A study committee is recruited that includes 30-60 JCCI members and other interested residents of the community. Diversity is emphasized in forming the committee, including equal representation from members and non-members, and from first-time and experienced volunteers. The study chair selects a management team to help schedule regular committee and fact-finding meetings, guide the study committee's progress, and refine the final report.

The study committee becomes informed about the issue in 15-18 weekly meetings and then takes approximately two additional months to produce a final report. During the fact-finding phase, JCCI staff provide information gathered from background research and present the study committee with resource contacts who can contribute further knowledge. Resource contacts come from many experiential backgrounds and fields of expertise pertinent to study issues, such as public information specialists, academics, affected community members, and other experts. The study committee's report includes both research findings and recommendations.

The committee's work is complete when the report has been reviewed and approved by the JCCI Board of Directors and released to the community at a public luncheon. Afterwards, JCCI seeks to place the issue on the public agenda. The Board appoints a chair for an implementation task force, and study committee members are invited to continue their involvement during the implementation process.

Finding people with the skills and interests needed to handle the required tasks is crucial. Establishing contact with public officials requires people with appropriate political clout and savvy as well as a thorough knowledge of the subject. Implementation includes a general education phase aimed at increasing awareness of the study by public officials and the public. It also includes an advocacy phase for each specific recommendation. JCCI evaluates project effectiveness through a survey of program outcomes to ensure that the work is actually helping those it is designed to serve.

At present, JCCI has a full-time staff of nine people. These include executive and associate directors, community planners, a communications director, a project coordinator, and other office personnel. Funding for the work done at JCCI comes primarily from the United Way

and membership donations. Money also comes from various levels of government and from private foundations in the form of grants and contracts for specific projects.

Currently, JCCI has about 500 members. A regular member is anyone who pays JCCI membership dues, which range from \$35 to \$500. JCCI welcomes new members from all categories of age, race, sex, occupation, and interests; such diversity adds strength to the organization.

The JCCI Board of Directors is made up of 30 citizens from a variety of different backgrounds, most of whom have actively participated in JCCI activities. They are elected by the members of JCCI at their annual meeting. A Board member can serve as many as four consecutive one-year terms.

Through its study process, JCCI has made many connections with other local institutions. Professors and deans from the University of North Florida (UNF) are often invited to collaborate. One JCCI project benefits from the direct participation of an honors communication class. Interns from the Department of Public Administration at UNF have even joined the JCCI staff. JCCI also takes part in teleconferences about community issues with the local community college. The recently established JCCI World Wide Web site, hosted by UNF, contains a wealth of information about JCCI and encourages community members and civic leaders to become involved in all organizational activities.

Sources and Contact Information for Jacksonville Community Council, Inc (JCCI)

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2.2. THE POLICY RESEARCH ACTION GROUP (PRAG--Chicago, Illinois)

SAMPLE PROJECT: Determining health care needs of refugee women in Chicago

The Mutual Aid Associations of Chicago Collaborative, a community-based organization, needed data on the health care needs of refugee women--including women from Cambodia, China, Ethiopia, Laos, and Vietnam--in the Uptown neighborhood of Chicago. A student from Northeastern Illinois University performed an internship with Mutual Aid and, working together, they developed a literature review and designed and administered a questionnaire about health needs that was given to 85 refugee women.

The study found that the women had a low rate of involvement with the American health care system, were frustrated with the overcrowded conditions at the community health clinic, and were concerned with domestic violence. As a result of the research, Mutual Aid started a women's health program that gives refugee women greater access to the health services they were lacking. The internship was arranged and made possible through the Community Studies Internship Program at the Policy Research Action Group (PRAG) in Chicago.

ORGANIZATIONAL DESCRIPTION: Policy Research Action Group (PRAG)

The Policy Research Action Group (PRAG) is a collaborative network that provides research assistance and supports research partnerships between academics and grassroots organizations in Chicago. PRAG grew out of an earlier working group, including people from universities, community-based organizations (CBOs), labor unions, and government agencies. Supported by funding from the John D. and Catherine T. MacArthur Foundation in the late 1980's, the working group set out to identify the most pressing policy issues confronting Chicago at the turn of the decade. In the process of working together to develop creative, effective solutions to real-life neighborhood problems, community organizers and university researchers began to overcome stereotypes of each other and build trust. In doing so, they acknowledged the need for expanding and institutionalizing the practice of community-based research (Nyden et. al. 1997). Thus a committed group of people representing diverse racial, ethnic, economic and educational backgrounds laid the foundation upon which PRAG now rests.

The PRAG collaborative network consists of over 200 academic and community-based activists, researchers, and staff members. Primary institutional affiliates are four universities--Loyola University-Chicago, the University of Illinois at Chicago, DePaul University, and Chicago State University--and 15 CBOs, including Southwest Women Working Together, Instituto del Progreso Latino, Erie Neighborhood House, the Oak Park Regional Housing Center, the Interfaith Leadership Project, and the Southeast Asia Center.

The organizational leadership of PRAG reflects the level of community involvement it promotes in its research projects and programs. For instance, the Core Group, which sits at the top of PRAG's organizational structure and functions as a governing body, consists of about two dozen people, half of whom represent CBOs. Most community representatives in the Core Group are activists who gained their seats through past involvements with PRAG-sponsored community-based research projects. The Core Group convenes every other month for brainstorming sessions in which members share ideas with the practical intention of developing and implementing policies to govern PRAG's activities. In addition to the Core Group, PRAG has six co-chairs who meet bi-monthly (alternately with the Core Group) and oversee many of the day-to-day activities. Representing both CBOs and the participating universities, the co-chairs gather to review grant applications, discuss personnel changes, plan retreats, and so on.

PRAG's early success earned it the credibility needed to procure additional funding, to grow, and to increase the level of research support it can provide CBOs and civic organizations. PRAG has chosen to operate with a small staff consisting of a director (a university faculty member 20 percent time), a project coordinator (which has varied from full-time to two-thirds time), a research outreach coordinator to help community groups develop stronger research projects (two-thirds time), and a secretary. This small staff size has enabled PRAG to funnel most of its money into the support--in the form of student interns, apprentices, and research assistants--that it supplies CBOs for collaborative research projects.

To provide research assistance to CBOs, civic organizations, and community activists, PRAG sponsors a number of different programs: The Community Studies Internship Program supports students to work with community organizations on research projects defined by the community. An On-Line Internship Clearinghouse database allows PRAG to systematically match interested students with CBOs needing research assistance on particular projects (beyond those which are directly sponsored through the internship program.) The database is available to the public through computers at public and university libraries. The Apprenticeship Program provides support for individuals from CBOs to develop their research skills by working on community projects with research mentors at organizations other than their own.

PRAG accepts 15-20 of the approximately 50 proposals requesting research assistance that it receives annually. PRAG members select projects that affect urban development and harbor potential implications for public policy. PRAG supports a wide range of research projects augmenting CBO capacities to address needs in: health care; housing; refugee rights; jobs; environment; education; racial, ethnic and economic diversity; and more. A subcommittee of the Core Group decides which projects to fund. The majority of these projects receive support in the form of student interns from one or more of the participating universities. These students work under the guidance of research mentors from the universities and community mentors from the CBO(s) with which they are working.

CBO members approach PRAG with project proposals, and therefore initiate the research questions. But their involvement doesn't end there. They remain engaged throughout the entire research process. Researchers, who are most often university-based but sometimes independent, work side-by-side with CBO members and activists. (Independent researchers are affiliated with

their own research institutes--for example the Center for Economic Policy Analysis, which works in conjunction with community and labor organizations.) PRAG believes that partnerships based on mutual cooperation and trust are necessary to harness the knowledge and experience of university researchers and community activists, thereby most effectively realizing the overall goal of community improvement (Nyden and Wiewel, 1992).

Beyond its formal programs, PRAG commissions community-based studies, provides presubmission reviews of grant proposals that involve community-based research, and sponsors workshops and annual conferences to present its research findings to community groups and decision makers. In addition, PRAG, through a formal liaison with the Chicago Mayor's Office, organizes policy breakfasts to report its research findings. Roughly 40 percent of PRAG-sponsored projects are also cited in articles in popular and scholarly journals (Nyden 1997). Papers summarizing each of the research projects are available from the PRAG office for a \$5.00 photocopy and postage fee.

Since October 1992, PRAG has provided support to over 130 local CBOs, in the process involving 50 interns, 20 research assistants and 15 community apprentices. Establishing itself at the forefront of centers conducting community-based research in the U.S., PRAG has received more than \$4 million in funding from the MacArthur Foundation and the U.S. Department of Education. Other funders include the Joyce and Kellogg Foundations, the U.S. Department of Housing and Urban Development, Loyola University-Chicago, DePaul University, and the University of Illinois at Chicago.

In order to reach its current level of success and credibility, PRAG has ignored the many skeptics who question the legitimacy of community-based research collaborations. PRAG's advice to those desiring to practice or promote such collaborations is to forge ahead and let the results speak for themselves. Yet PRAG recognizes that the success of research projects depends also on the openness, flexibility, and patience of its collaborating partners. PRAG's success has led it to become the model for several other collaborative research networks now operating in the U.S.¹

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2.3. CHILDHOOD CANCER RESEARCH INSTITUTE (CCRI--Worcester, Massachusetts)

SAMPLE PROJECT: Managing Radiation Contamination Risks in Native American Communities

Throughout years of nuclear testing, government officials told Native American communities located downwind from the Nevada Nuclear Test Site that they would not be harmed. When these communities began to suffer adverse health effects, they surmised that their proximity to the test-site was a primary cause. Government officials, however, denied responsibility.

In 1993 the Childhood Cancer Research Institute (CCRI) responded to Natives' concerns. Through research and education, and by providing organizing support to the Western Shoshone and Southern Paiute communities, CCRI's goal was to prepare community members to make informed decisions in managing the health risks of nuclear hazards. CCRI sought to develop a community-based infrastructure (funding, staffing, and an advisory committee) that would enable the communities to develop and disseminate accessible information on nuclear contamination health hazards and create a community-based hazards management plan.

In collaboration with Clark University in Worcester, Massachusetts and several tribal groups, CCRI developed a model for working in partnership with communities to improve public health protection from environmental contamination. They accomplished this by preparing community exposure profiles, training community members on matters of environmental health, strategizing on nuclear hazards' management, and providing outreach to other Native American communities.

This model was unique in seeking to overcome traditional top-down approaches to research, risk communication, and risk management of concern to Native Americans. In addition to collecting and interpreting technical information about contamination, CCRI emphasized

gathering and validating the communities' own knowledge and experiences involving environmental contamination and degradation. University staff trained community members to develop and translate technical information on nuclear contamination. Community members--incorporating oral histories and their local experiences of environmental and nuclear contamination--disseminated this information via local workshops and educational presentations. As a result of this collaboration, community advisory committees formed and were trained to oversee the planning and implementation of nuclear contamination clean-up programs. Key to the success of this model was that CCRI shared research funding equitably with the community groups in order to build a sustainable infrastructure in which the community would be invested.

Although this project is still in progress, there have already been significant results. Through the organizational and technical support provided by CCRI, the Native communities were able to establish an enduring infrastructure for community planning and decision-making as a group. This newly formed infrastructure provides the participating Native communities with a sense of ownership in the process of risk management and in epidemiological and radioactive-dose-reconstruction studies conducted by federal agencies and academics. This infrastructure also requires university or government scientists to work through the community when doing research, first by obtaining community permission and then, often, their knowledgeable input.

ORGANIZATIONAL DESCRIPTION: Childhood Cancer Research Institute (CCRI)

The Childhood Cancer Research Institute (CCRI) developed out of the research and activities of Alice Stewart, M.D., an epidemiologist whose research focused on the health risks of low-level radiation. Some of Dr. Stewart's work drew attention to increased cancer rates among children exposed to x-rays during their mothers' pregnancy and to the increased risk of cancer among workers at the Hanford, Washington nuclear complex (Richardson 1996). Every time Dr. Stewart published a scientific finding attesting to the negative impacts of low-level radiation exposure, the mainstream scientific community rallied against her. Coinciding with her work, the nuclear industry ran a controversial campaign on the positive benefits of radiation. Dianne Quigley, as founding director of CCRI, responded to industry's and other scientists' reactions by seeking funds to keep Dr. Stewart's work going. This launched the Childhood Cancer Research Institute (CCRI).

Initially CCRI faced two problems. First, Alice Stewart worked in Britain, disqualifying her from competing for American funds. Second, many American foundations were not supportive of work that revealed the harmful effects of radiation. Doctors use radiation all the time. They also sit on many foundation boards, and most don't agree that environmental exposure to low-level radiation is a problem. The first funder of CCRI was a man named David Kleeman. Kleeman worked directly with Alice Stewart to formulate a research mission for CCRI and contributed \$100,000 to finance CCRI's administrative structure for two years. Kleeman's support enabled Dr. Stewart and Dianne Quigley to speak publicly, conduct public education, and provide technical assistance to communities in need.

CCRI's current mission is to prevent childhood cancer by investigating the causes of

disease and educating the public on the findings. The organization specializes in epidemiological studies on radiation and related causes of cancer, and in promoting public participation in radiation and public health risk assessment. This mission is carried out through conferences, education workshops, research projects, development and dissemination of informational materials, technical assistance to community groups, and through subcontracting grants to support community research and action.

The following foundations contributed to sustaining CCRI's earliest and ongoing projects: Ruth Mott Fund, MI; CS Fund, CA; Deer Creek Foundation, MO; Educational Foundation of America, CT; Unitarian Universalists Veatch Program, NY; W. Alton Jones Foundation, VA; Rockefeller Family Associates, NY; Public Welfare Foundation, Washington, DC; and Ben & Jerry's Foundation, VT.

From 1991-1994 Quigley conducted regional educational workshops, providing much needed training on nuclear issues to affected communities. During this time the Native Americans referred to in the preceding sample case study approached her. Approximately six months later, the first funds from the National Institute of Environmental Health Sciences (NIEHS) became available. CCRI, in collaboration with Clark University, was one of only four grantees nationwide in the first year of the grant's availability. This grant provided greatly needed resources and more organizational stability.

A contributing factor in CCRI's success has been a crucial alliance forged by Quigley with professors at CANTED (the Center for Technology, Environment, and Development) at Clark University, where she herself became a research fellow. More stable and established, CANTED was able provide CCRI with professional support, colleagues, and a platform for outreach to the academic community. This association with Clark University also enabled CCRI to subcontract with the university for federal funding.

CCRI's projects are ambitious for a core staff of two people. In addition to nuclear risk management projects with Native American communities in Nevada, Oklahoma, and New Mexico, CCRI has developed a strong voice within the Alliance for Nuclear Accountability (formerly the Military Production Network). This is a network of several dozen community groups around the country whose members live downwind of Department of Energy (DOE) nuclear facilities. They meet three times each year and are a powerful force in negotiations with public health agencies. From this base CCRI organized a working group that, in turn, developed a plan outlining a role for public participation in health related research at DOE nuclear sites.

This working group promoted a conference held by the Centers for Disease Control in 1994 concerning a national public participation plan that would include research and education about nuclear contamination. The conference outlined an implementation plan for developing site-specific health advisory committees to oversee research activities conducted by the federal government. The Federal Advisory Committee Act requires such committees to be chartered by the federal government, but allows community members to contribute recommendations. This provided a mechanism for a small but meaningful measure of community input in public health research activities.

CCRI has sponsored other conferences, such as “Meeting Community Needs: Improving Health Research and Risk Assessment Methodologies” in 1996. Ninety community, academic and government participants from around the country gathered to discuss their work in communities regarding health impacts from environmental contamination. One conference outcome was a set of provisional innovations for incorporating local community knowledge within environmental health research methodologies. CCRI is working closely with the U.S. Centers for Disease Control in adopting such innovations. CCRI staff also speak with various committees established by the federal government on the subject of participatory research methods in affected communities.²

In 1994 CCRI received another grant from the federal Agency for Toxic Substances and Disease Registry (ATSDR). Quigley worked with the Ely Shoshone tribe in Nevada on writing and administering this grant. In this way CCRI, rather than Clark University, functioned as the bridge between federal funders and community groups. CCRI took on the responsibility of funneling grants to its community partners by subcontracting out projects to them. Providing communities with their own funds had been a primary emphasis in the applications for both ATSDR grants. Communities needed to be full partners in the research, with their own staffs, committees, and budgets.

CCRI publishes project updates in newsletters and reports sent to communities and to individuals involved or interested in CCRI’s work. CCRI also distributes a newsletter to a network of community, public health, and scientific researchers and pertinent government staff members around the country. Results from one CCRI project have recently been published in the Department of Energy’s environmental newsletter.

CCRI has experienced challenges while working with community groups and at times encountered community resistance. Communities have, in some cases, become divided on whether to focus directly on health issues versus political and legislative strategies for stopping pollution. In addition, most Native American groups have developed deep distrust of government-funded researchers and of scientists generally. These communities feel that they have been victimized by the federal government and scientists for over 40 years. Although CCRI was not the perpetrating institution, CCRI is nevertheless tied to that institutional context. CCRI has had to invest much time working to gain the trust of affected community members.

Another challenge has been to identify community leaders for CCRI projects who can work well with both the community and with CCRI. Several characteristics in a community leader can help to make the collaborative effort successful: a broad and mature perspective, an ability to keep the community focused on the project mission, and an ability to sustain the sense of community that is so essential to the success of participatory projects.

It has been CCRI’s experience that such participatory processes often do not take hold immediately in communities where years of internalized oppression, hierarchical relationships, and

²Participatory research is a form of community-based research that aspires to involve community members in all stages of the research process (e.g., Park et al. 1993).

negative encounters with internal and external bureaucracy are endemic. Furthermore, in order to empower community groups to contribute to analyzing their own health situation, CCRI must teach community members difficult scientific information and complex concepts. This takes time. Sometimes after CCRI invests substantial effort training a community member to, in turn, educate other members and participate in decision making, the trainee leaves either for personal reasons or due to pressures from divisive factions in the community. CCRI has found that working with such communities often requires much more time than grant periods will support.

The CCRI professionals have also been learning about barriers to successful participatory processes arising at their own end. CCRI staff have become more aware that their use of technical language can be inaccessible to lay people. They've had to learn how to function nonpaternalistically. Accountability is also important. Often professors are used to doing things according to their own schedules. In working together with nonacademic collaborators, the professional researcher must relinquish any sense of special rights or elitism. This means not only learning about a community's physical environment, but also about the community's social, educational and historical circumstances. In many instances academics are out of contact with these real-life situations and complex factors. Through their experiences with community participants, professional researchers confront an opportunity to become aware of their own assumptions and learn to really listen. CCRI believes this is essential both to effective collaboration and to sound research. For two graduate students who have worked for CCRI, community involvement has been a life-changing experience. They have concluded that the academic context of their work is normally out of synch with community contexts.

CCRI has found universities, especially beyond Clark University, deeply skeptical about community-based research. Many academics say that communities of lay people are internally divided and irrational, which makes them inappropriate for being involved in research projects. Researchers use these negative characterizations to excuse themselves from the collaborative process. Although CCRI claims to have experienced division and irrationality in some communities, the staff at CCRI do not take this to mean that rationality, valid observation, and research capability cannot also be found. Developing a program on cultural sensitivity for university and government researchers has thus emerged as one of CCRI's future goals. CCRI and CENTED have also negotiated equitable policies with some communities governing the publication of articles and the development of grant proposals that include those communities.

CCRI would also like to help build a community database of local knowledge about communities' environmental and health status. Compiling communities' own observations and knowledge will contribute to future community-based research activities. Ultimately, the challenge is to find a way to take this community data and give it credibility so that it can be used by scientists, while continuing to keep community members full partners in the subsequent use of that information.

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2.4. JSI CENTER FOR ENVIRONMENTAL HEALTH STUDIES (JSI Center--Boston, Massachusetts)

SAMPLE PROJECT: Identifying the causes of leukemia in Woburn, Massachusetts

In Woburn, Massachusetts between 1969 and 1979, twelve cases of childhood leukemia occurred in a town in which only 5.3 would have been statistically expected. Of the excess cases, six were concentrated in just one of the town’s census tracts. Mothers of the victims and concerned community members formed a group called For a Cleaner Environment (FACE) to address what they perceived to be an alarming problem. While investigating the causes of leukemia, FACE became convinced that the high rates of childhood leukemia were related to exposure to contaminated water from public water wells. Beatrice Foods and W.R.Grace Company were both located near public wells “G” and “H.” FACE members brought their concerns to the attention of the Massachusetts Department of Public Health and the U.S. Centers for Disease Control, who confirmed that there was an elevated incidence of childhood leukemia in Woburn. But officials did not take action, claiming there was no evidence demonstrating contaminants existed during the time of elevated incidence of childhood leukemia.

Dissatisfied, FACE approached several professors at the Harvard School of Public Health who helped the group conduct more conclusive research. Unlike the first study conducted by public agencies, the Harvard study involved concerned Woburn residents in all aspects of the investigation, including design and implementation of the research, as well as analysis of results. Working together, the citizens and professors established that there was a positive statistical correlation between the outbreaks of childhood leukemia and exposure to water from the wells G and H.

The affected families sued Beatrice Foods and W. R. Grace company for wrongful death. The litigation lasted five years and is regarded as one of the most thoroughly prepared legal cases in the history of toxic waste litigation. The evidence developed jointly by Harvard professors and Woburn residents helped the Woburn families secure an \$8 million out-of-court settlement. The Woburn case is one of the clearest examples in the scientific literature of contaminated well-water being associated with adverse health effects such as birth defects and leukemia. The case influenced the reauthorization of federal Superfund legislation that provides resources to clean up the country's worst toxic sites.

ORGANIZATIONAL DESCRIPTION: JSI Center For Environmental Health Studies (JSI Center)

Traditionally, research aimed at linking environmental health hazards to disease or human health injuries has remained solely in the hands of experts (Brown and Mikkelsen, 1990). Affected groups are excluded from the research process owing to a prevailing belief that they lack the special training and skills needed for such highly technical and complex forms of inquiry. Thus important aspects of public health assessment and management are simply out of popular control.

John Snow, Inc. (JSI) is a for-profit health consulting firm in Massachusetts. Under its auspices a nonprofit organization, the Center for Environmental Health Studies (JSI Center), provides public health education and research services for communities and worker organizations that are conducting their own health studies or other projects aimed at addressing environmental health hazards. The JSI Center was established in 1989 with a specific focus on environmental health issues.

The JSI Center's parent organization, John Snow, Inc., was founded in 1978 with the goal of improving service delivery and health management problems facing health care and human services organizations. John Snow, Inc. is named after the father of modern epidemiology, who in 1854 walked through London creating a map that subsequently allowed him to trace the outbreak of cholera to contaminated water. Several years after its establishment, JSI determined that some of the work that needed to be done could best be conducted through a nonprofit organization. The founders of the JSI Center were the university researchers and JSI consultants who worked with the community group in Woburn (FACE) to trace the cluster of leukemia victims to contaminated drinking water.

The JSI Center's primary goal is to assist communities across the U.S. and internationally in investigating and responding to environmental health hazards. It does this by providing citizens with technical and psychological tools that will allow them to become informed and effective in solving their own local problems. Staff at the JSI Center are guided by the philosophy that people in the community know more about the issues they are facing than anyone else. This means that citizens are involved as much as possible in every step of the inquiry. Indeed, the information that the community provides is often critical to solving its specific problems. Staff members facilitate projects by providing their expertise when they work with communities and, when necessary, by

helping communities to locate more information and professional expertise.

The JSI Center has five primary staff members. Three of the staff have strong backgrounds in community organizing and the other two hold advanced academic degrees. Much like the principle of management that characterizes JSI as a whole, the JSI Center's organizational structure is hierarchically flat.

As a rule, the JSI Center tries not to reject any solicitation for help. The staff member who answers a call to the JSI Center either takes the case herself or himself, or asks another staff person that may be more suitable for the project to take it on. Each staff member is responsible for the decisions that arise working with a group, and staff also help to draft any funding proposal needed in the collaboration. The amount of help that the Center can give any particular person or group is largely determined by available funds.

Initially, the bulk of the JSI Center's funding came from private foundations. The Charles Stewart Mott Foundation provided general operating support enabling the staff to do community work during JSI Center's first six years. Under this grant, projects ranged from offering an hour of free advice over the phone, to providing people with literature on specific chemicals, to working closely with groups for up to a year at a time. Currently, the JSI Center's funding comes from private foundations, government agencies, and fees for services.

Although the JSI Center is located in Boston, Massachusetts, it provides assistance in localities across the U.S. and has more recently been engaged in several international projects. Most projects involve the JSI Center's staff working with three primary groups of people: experts, grassroots communities, and agency-government officials. In pulling together these different groups, the JSI Center purposefully creates an environment conducive to mutually respectful collaboration.

Regardless of the geographic region, experts (often university professors) can provide an important source of legitimacy to the community groups. It is very helpful--especially when a community is taking on a huge industry--to have an academic from a high-stature institution speak on the citizens' behalf, using the same highly-technical language used by industry representatives. Thus the JSI Center maintains lists of experts in many different fields, including environmental engineering, toxicology, and industrial hydrology.

Normally before the JSI Center makes referrals to other professional experts, a staff member works with the community. This preliminary advising usually involves defining the problem and identifying the causes. Citizens need to be clear about the information they need. The staff can then help the community frame its issues in ways that academics can understand. Because so little money is available for doing community-based research, participating academics often don't have time to interpret the studies with the community. Under these circumstances the JSI Center can help citizens interpret the information they get from the academics and, if possible, help fund work done by the academic consultants as well. The JSI Center also serves as a preliminary information source that identifies laws and government agencies that will be useful to groups.

Generally the academics who work with communities are committed to bridging the gap between themselves and citizens. This commitment does not, however, always translate into successful collaborative projects. For this reason, the JSI Center often plays a significant role as mediator and communication facilitator. Staff members work with all participants to define their process, time line, and language, and to bring mutual expectations out into the open. Through such efforts the JSI Center helps to build stronger and more beneficial relationships between citizens and experts, while creating research projects that reflect the communities' concerns.

Attention to communities' needs has helped the JSI Center establish a high level of trust with many groups. The JSI Center built this reputation during its first six years when, with the Mott Foundation grant, the JSI Center's staff spent a great deal of time working in communities. The JSI Center has also maintained high rapport with community groups by not allowing people to become discouraged by resistance or indifference from powerful industries and government. At the same time, the JSI Center maintains a good reputation with industry. Communities know this, which puts the JSI Center in a prime position to play a strong intermediary role.

As a policy, the staff's approach to a case is to encourage community groups to attain their goals by first working within the formal political system. But if the available legal and political procedures are not helpful, the JSI Center encourages people to go outside the system in order to draw attention to their issue. This may mean protesting or engaging in some form of public demonstration. After many years of experience the staff members are quick at assessing situations and figuring out what needs to be done.

The JSI Center must remain sensitive to issues of motive in deciding whether to take on a project. Sometimes citizens request help in confronting an individual or industry for personal reasons, without having an explicit health problem for which their opponent bears responsibility.

There is also a danger that university professors will come under attack or endanger their own funding by taking a position in opposition to powerful interests that provide economic support in their own community or to their university.

Although these problems occasionally arise, overall the JSI Center's projects are successful. In many cases the staff keeps in touch with clients long after a project is over. Clients and repeat clients often call the JSI Center to commend a staff member or an affiliate who has been especially helpful. Other than this informal feedback, the JSI Center has no procedure for keeping track of the results of their work. The staff does fill out technical assistance forms so that they can log who they help, but they don't trace the results of projects, in part because many projects take years to complete. The satisfaction communicated by clients leads the staff to judge that their time is better spent working on projects than organizing formal evaluations.

Much of the JSI Center's ability to assist people across the U.S. is a result of using the Internet. For many years the JSI Center has supported a staff person who spends most of her time participating in discussions on Econet, an Internet forum focused on environmental issues. In some cases, staff members with questions about an issue will post a question on the Internet. This has resulted in invaluable suggestions from citizens, other nonprofit organizations,

academics, and agency officials. This form of communication has also increased the organization's visibility and consequently helped it to build a solid reputation both domestically and internationally.

On a more personal level, the JSI Center has had a significant impact on the staff members. One emphasized that over the years her commitment to the issues that the JSI Center addresses has continued to grow. Her experiences have led her to better understand the powerful forces and institutions that citizen groups confront. She has also become a stronger advocate of democratic rights and freedoms. The significance of the democratic processes available to people in America are only more obvious now that the JSI Center is engaged in projects in other countries. For example, in eastern Europe people have traditionally had no recourse when facing an environmental hazard in their community. These cross-national contrasts reinforced her belief that people in the United States should take the right to exercise their freedoms more seriously.

Community-based research has also changed the perspectives of the student interns that aid the staff members. A huge number of students contact the JSI Center and request positions as interns. In general these students are already interested in environmental health issues; however by working at the JSI Center they gain a perspective on reality that influences their future career choices. For example, many students start with the idea that science and technology can by themselves solve many of the health problems people are facing. After working at the JSI Center, they come to realize that communication skills and knowledge about politics and law are equally important problem-solving tools.

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2.5. THE GOOD NEIGHBOR PROJECT FOR SUSTAINABLE INDUSTRIES (GNP--Cambridge, Massachusetts)

SAMPLE PROJECT: Upholding safety and environmental standards at Sun Oil's Philadelphia refinery

In September 1994 an accident at Sun Oil refinery in Philadelphia, Pennsylvania spewed tons of alumina silica upon the local community. Alumina silica is classified as “a chronic and acute health hazard” by the Environmental Protection Agency (EPA). Despite this EPA classification, Sun Oil told the community that the release was nontoxic, and refinery officials refused to discuss response measures with representatives from local community groups. Plant employees alleged that Sun Oil had cut back on needed safety and environmental spending (such as storage tank maintenance) and complained that the plant was plagued by safety and environmental problems (GNP 1994).

These examples of Sun Oil's failure to prioritize worker and community environmental safety were inconsistent with its Board of Directors' previous endorsement of a “green code of ethics” for the refinery. Adoption of this ethical code was supposed to reflect a commitment to conduct all aspects of the corporate business as a responsible steward of the environment, operating in a manner that protects the earth and human health and safety.

In response, community members attempted to hold the refinery accountable for safety and environmental performance. Five thousand of the most active residents of South Philadelphia participated in this effort, led by the Community/Labor Refinery Tracking Committee (C/LRTC). C/LRTC was a multiracial coalition of 15 community groups and two union locals.

C/LRTC sought out the assistance of the Good Neighbor Project for Sustainable Industries (GNP). GNP collaborated with C/LRTC to create a sophisticated agenda for improving conditions at the refinery. The proposed agenda included: C/LRTC's participation in Sun Oil's compliance with the Occupational Safety and Health Act (OSHA) safety management program (thereby supporting GNP's internal goal of nurturing community participation), safe personnel policies (such as worker training and avoidance of lengthy extended shifts for safety-critical workers), replacing or reducing on-site inventories of dangerous materials such as hydrofluoric acid, an aggressive emissions reduction program, and a community-based alert system for emergencies. While officials at the highest levels of Sun Oil endorsed the principles of this plan, plant management was reticent. Management has, however, conceded the need to continue dialogue and negotiation with C/LRTC.

ORGANIZATIONAL DESCRIPTION: The Good Neighbor Project for Sustainable Industries (GNP)

In an era fraught with economic and environmental abuse by corporations, the Good

Neighbor Project (GNP) seeks to promote sustainable local industries. As part of its goal of promoting the prevention of pollution and chemical accidents, GNP conducts research and provides technical, legal and strategic support to concerned plant neighbors and workers. GNP is guided by the philosophy that community organizations and workers should be engaged in decisions and processes that lead to sustainable industrial facilities. (GNP defines sustainable industries as industries that are clean, stable, and fair with regard to their impact on workers and the environment). Thus GNP seeks to secure the right to, and resources for, effective participation by the people who are most affected by industrial hazards. Empowered with this capacity, people can be more effective in holding corporations accountable for their environmental and economic impacts. GNP hopes to foster both economic and environmental justice with a specific focus on low income neighborhoods and communities of color.

GNP employs a variety of methods to nurture new relationships and commitments between communities and corporations. For example, by conducting stakeholder audits, GNP helps evaluate local plants' pollution, safety, and economic longevity with the help of neighbors and workers. By encouraging companies to improve their environmental inefficiencies, such as unnecessary use of toxics and energy, GNP seeks also to prevent plants from being forced to close. By working with industry to reduce toxics production and involve the community in plant oversight, GNP tries also to prevent chemical accidents. Finally, by taking into consideration the local economy and other locality-specific characteristics, GNP hopes to make local government more receptive to, and representative of, the interests of the community. These goals are accomplished through consultations (no-fee when possible), GNP-conducted workshops, and by providing research and technical advice on options for reducing the use and storage of toxic chemicals at local plants.

GNP was founded by the current director, Sanford Lewis, in 1991. At the time, Lewis was the legal director of the National Toxics Campaign Fund. While working on this campaign, he became interested in the idea of community-based negotiations and agreements with local industries. GNP grew out of Lewis's commitment to this model of citizen engagement.

GNP receives its primary funding and financial supervision from the Tides Foundation, which also acts as its nonprofit fiscal sponsor. It receives additional financial support from a variety of foundations and institutional partners. GNP identifies potential projects through collaboration with about 50 environmental groups, labor unions, and community organizations across the country. If funds are not available, then GNP seeks out support for these specific projects. For example, when we interviewed Lewis in August 1997, he was chairing a network of approximately 100 organizations that are concerned with corporate secrecy, and he was seeking funds to support this endeavor.

GNP is a small organization. Permanent staff size varies from one to three people. In the past the organization was staffed by a technical advisor, a chemist with 35 years experience in the chemical industry, and the director. At the time of our interview, however, Lewis was the only full-time staff person. A steering committee helps GNP set priorities and workplans for the year, and also periodically advises on specific issues.

When a group seeks out GNP's assistance, Lewis discusses their situation and then determines the potential for a Good Neighbor Agreement. A Good Neighbor Agreement is an agreement between business and a community group or coalition of community groups, requiring the business to adhere to negotiated environmental, economic, labor, or other social and community standards. Sometimes groups seek GNP's help with goals in mind other than establishing conditions for sustainable industries. In these instances GNP may not get involved; GNP only has financial resources for the projects that fit its mission and adheres strictly to that policy.

When GNP determines that there is a potential basis for a Good Neighbor Agreement between a business and a community group, GNP follows an empowerment model based on the idea that change happens when small groups of citizens have sufficient information to effectively critique what local industries are doing. GNP first collaborates with the group to determine what information they already have available and what their research needs are. Primarily, GNP's role is to help community groups assemble and analyze the information they need and then to identify ways of increasing local residents' engagement with nearby industries. GNP believes that this will help a larger portion of the overall population spot opportunities for industries to improve their environmental performance. At that point GNP may also advise the community on how to identify and organize around a company's political, legal, technical, or administrative pressure points.

For maximal efficacy in helping communities improve corporate accountability, GNP maintains strong connections with other environmental organizations and with labor organizations that want to collaborate with environmental organizations. GNP's focus is always on supporting community-based organizations, but inevitably there is an element of this work that helps to build new environmental strategies and to expand on the frontiers of the environmental movement.

To keep in contact with other organizations, GNP periodically updates the *Good Neighbor Handbook: A Community-Based Strategy for Sustainable Industry*. GNP also publishes a newsletter called *Full Disclosure*, available to member organizations of the Network Against Corporate Secrecy (NACS). GNP disseminates the results of its work through an Internet discussion forum (a listserv) for activist members of NACS, through frequent speaking engagements at conferences, publications, and via aggressive use of the World Wide Web.

Over the years, a number of student interns have come to work for GNP. Some have had technical backgrounds and went on afterwards to various professional settings, while others are more oriented toward social change and have moved on to law school or to work on other activist projects. In all cases the interns' experiences have been positive.

Citizen engagement with industry is a new frontier within the longstanding conflict between economic growth and jobs versus worker and environmental safety. After collaborating with many groups and industries over the years, GNP sees enormous opportunity to invent better models and strategies.

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World Wide Web Address: [<http://www.envirolink.org/orgs/gnp/>](http://www.envirolink.org/orgs/gnp/)

2.6. APPLIED RESEARCH CENTER (ARC--Oakland, California)

SAMPLE PROJECT: Improving community safety and police accountability in communities of color

In many U.S. communities of color, police harassment strains relationships between residents and the police. To address this and other problems related to policing, the Center for Third World Organizing (CTWO) collaborated with community-based groups across the U.S. to organize a Campaign for Community Safety and Police Accountability. (CTWO is a national racial justice organization that conducts leadership development workshops and training for community organizers, and that helps community-based organizations with their social change campaigns.) The community-based organizations and CTWO turned to the Applied Research Center (ARC) in Oakland, California for help in developing educational workshops that could be used in the new campaign.

For each workshop organized by CTWO, ARC studied the topic and developed accessible information materials for participants. Discussions in one workshop led to proposed topics for subsequent workshops. Among the 15 workshop discussion topics were "Researching Your Local Police," "Standards for Community Policing," and "Crime and Punishment." Throughout the 1993-1994 campaign ARC completed research on the succession of topics identified in the workshops, and CTWO used the results in succeeding workshops. In this way, participants from community-based organizations had a direct voice in determining the content of the campaign.

An "Immigration Myths and Facts" quiz used in CWTO's Border Police & Immigrants Workshop exemplifies this iterative research-and-campaign process. The Border Police workshop

began with organizers of all the local campaigns sharing their projects, experiences and strategies. One participant mentioned a recent incident in which Border Patrol agents beat alleged immigrants as they crossed the U.S.-Mexico border. To some, this was a clear example of police brutality. However, others in the meeting felt that extreme force is justified in defense of the nation's borders. Illegal immigrants are not citizens, these participants reasoned, and they are not entitled to the same civil rights.

In response to these conflicting perceptions, ARC initiated a study of immigrants' experiences in the United States and of the contributions or burdens immigrants represent within the U.S. economy. ARC investigated questions such as: How much do immigrants pay in taxes and receive in government benefits? How are jobs and wages affected by immigrants? What rights do immigrants have to political and economic asylum? ARC obtained this information from many sources, including public policy studies, metropolitan newspapers, national news magazines, and a federal crime bill. ARC then used the resulting information to develop a quiz called "Immigration: Myths and Facts." Community groups around the country used the quiz as an educational tool at workshops. This led participants to draw connections between border patrol violence with Latino immigrants, and police violence toward other minority communities. Participants also recognized a similarity in societal attitudes toward Latino immigrants and African Americans.

Throughout the campaign, workshop participants and organizers collaboratively identified issues in need of further research and elaboration. ARC provided research, CTWO provided campaign structure, and local groups contributed ideas and concerns for the campaign to address. Through this process the local groups worked to improve safety in their own communities and collaborated with the police to create a more accountable police force.

ARC calls this process "action education" and defines it as the "ongoing systematic process which develops the knowledge and analytical capacity of an organization's base constituency, enabling them to reframe issues and exercise a greater range of actions for producing social change" (Keleher 1997).

In 1995 ARC sponsored a gathering of popular educators, community organizers, and trainers to assess and further develop this model of action education. Several participants responded enthusiastically and have collaborated with ARC to develop the Action Education Initiative (AEI). In AEI, ARC and the Labor Institute coordinate the efforts of nine organizations to develop teaching models for their own members and staff. Thus from an original model that focused on community safety and police accountability, ARC has helped build and promote a shared educational tool that is being applied to a broad range of issues, ranging from environmental justice to reproductive rights, from low-income housing to union jobs.

In 1997 ARC assembled the procedural information and results from 15 workshops on police accountability and community safety into a manual for use by other community groups interested in replicating the action education model. The success of this project can be seen in its continuing impact. Several of the original Campaign for Community Safety and Police Accountability groups continue to hold internal membership education meetings and some campaign materials have developed a life of their own. The immigration myths and facts quiz has

been adopted by immigrants rights groups around the country.

ORGANIZATIONAL DESCRIPTION: Applied Research Center (ARC)

The Applied Research Center (ARC) is a public policy, education, and research institute that focuses on issues of race and social change. It provides background research for advocacy, public policy work, and for organizing efforts conducted by community and labor organizations. For ten years prior to becoming an independent organization, ARC operated as the nonprofit research arm of the Center for Third World Organizing (CTWO). ARC's roots in CTWO and its continued commitment to community organizing are reflected in its mission to develop critical analyses of social change groups, forge collaborative initiatives among these groups, and build strategic support for progressive social change initiatives.

The center's work generally falls into one of three categories: (1) technical assistance and networking to assist community organizations; (2) critical analyses of the effectiveness of social movement work done by nonprofit organizations; and (3) research projects intended to inform debate on issues that are important to allied community groups. These projects serve the needs both of ARC's funders and of the grassroots organizations to which ARC is committed.

Technical assistance involves ARC's provision of various services to community organizations. ARC staff meet with community organizers, suggest strategies, refer organizers to other organizations with similar agendas, and assist in fundraising. ARC also gives administrative assistance to new community groups. Working in close relationship with community organizations provides ARC staff with constant feedback on the types of research that different campaigns and communities need.

In addition to being a resource for a variety of groups, ARC regularly promotes networking among them by convening gatherings of community activists, labor leaders, progressive academics, and/or foundation staff. In July 1993 ARC held a national gathering of progressive researchers from 40 independent and academic research organizations working on social justice, the environment, and community development. ARC followed up with a similar conference in February of 1994 in the San Francisco Bay Area designed specifically to give local community-based activists an opportunity to meet academic researchers and to discuss the possibility of working on projects together. The academic researchers learned about further exposure to community research needs and ways of developing action research.

From these kinds of conferences, participants often develop useful collaborations, sometimes leading to proposals for new projects to be completed through ARC. One result of these conferences was that ARC worked with participants to design an Action Research Training project (ART). This was a five-month training in action research for community activists and researchers. ("Action research" is research that both influences and is informed by engagement in social change efforts.) Activities included instruction in interviewing, in electronic data gathering, and in issue analysis as a means of empowering communities.

ARC has a strong reputation among progressive foundations. Three-quarters of ARC's funding comes from foundation grants. Most of these are national foundations, but some are state or regional funders. The remaining quarter of ARC's funding comes from publication sales and fees for speaking engagements. Collaboration with universities, a strong connection to grassroots organizing, and the overall quality and documentation of their work have contributed to ARC's credibility.

Often foundations commission ARC to analyze the effectiveness of their issue-based funding. In this capacity, ARC has completed critical assessments of organizations involved in such tasks as community leadership development and popular education. These studies also provide valuable information that can be used by grassroots groups. For example, one foundation wanted ARC to investigate the effects of its anti-racism funding on grassroots organizations. ARC convinced the foundation to redefine the project so that ARC could study race relations in the Bay Area and also use the resulting data to help grassroots organizations that were waging anti-racism campaigns.

ARC's ability to work closely with both foundations and grassroots organizations is, in part, a result of the diverse backgrounds of its staff members and Board of Directors. Many are key activists in communities of color, trade unions, gay and lesbian organizations, and other public-interest groups. Other members have backgrounds in research and academia or the media. Since becoming established as an independent organization, ARC has grown steadily from a single staff member to its current staff of more than a dozen people.

ARC's founder, Gary Delgado, holds positions as both president of the board and director of the staff. No other board members are also on the staff, but board and the staff occasionally collaborate in joint working groups. When board and staff positions open, ARC advertises the positions in local newspapers and in the newsletter *Opportunity NOCs (Nonprofit Organization Classifieds)*. When seats open up on the Board of Directors, the current board also nominates candidates. Board terms last two to three years. Although not formally required, in practice all staff and board members have strong backgrounds in social change work. Within the organization, there is a hierarchy for making decisions, with the Director and Associate Director in higher positions of authority than other staff.

Although ARC does not have a strong institutional relationship with universities, it does benefit from periodic collaborations with academics working on university-based projects. Similarly, ARC supports its own Scholars-in-Residence, whereby members of academic or other institutions work with the staff on specific community-oriented projects. For example, a professor of Ethnic Studies at the University of California at Berkeley is collaborating on ARC's "eRacism" project, an effort to assess anti-racist organizing ("eRacism" is a play on the words "erase" and "racism"). These collaborations, combined with those that occur at conferences, help to encourage respect for community-based research in the academic community. Similarly, they provide a forum through which community groups can gain access to academic researchers.

At any given time, ARC typically has six to eight projects underway. ARC believes that several characteristics of its projects lend to their success. In all projects staff members conduct

the research and make the final decisions. Although there is not a standard mechanism for community input into ARC's decision-making process, the staff's constant communication with many different grassroots groups insures that the center's decisions are responsive to community needs. This sensitivity to grassroots needs is supported by the opportunity ARC staff are given to take occasional leaves of absence for work on activist causes.

Once projects are completed, ARC disseminates the results through conferences and publications. Because conferences often bring together both grassroots organizations and grant-making bodies, they provide a prime forum for sharing ARC's research results. ARC also frequently publishes brief reports summarizing a project's motivation, goals, and results. Sometimes such reports include policy prescriptions or suggestions for follow-up work by community-based groups or other organizations. The tone of these reports is modeled on investigative journalism or policy papers, not esoteric academic publication. ARC also published a bi-monthly magazine called *Racefile*. *Racefile* is a collection of critiques of articles on race relations published in established and ethnic periodicals. In plain language, *Racefile* reveals the ways in which race relations are changing and how racism insinuates itself throughout U.S. social and political culture.

ARC influences local and state policy-making process by directly delivering these publications to policy makers and advocates. Staff members also advise advocates and funding organizations on strategies that are more likely to effect social or political change.

In addition to evaluating the work of other organizations, ARC evaluates its own work by holding meetings at the end of each project. All the people involved with the project assess the extent to which it met its stated goals. Over time, staff members have learned to insist that all projects have explicit and measurable goals. ARC's success in projects initiated on behalf of a community's needs is evidenced by the fact that the center chronically has more requests for assistance than it can fulfill. The staff believe that groups recognize that the research results and training ARC provides help them become better advocates and service providers. Similarly, the fact that ARC has been growing steadily since its independent establishment in 1991 shows that foundations are also pleased with the work ARC has completed for them.

Emerging communication technologies have contributed to ARC's research capacity. Staff occasionally use E-mail to communicate with groups, and ARC has recently launched its own World Wide Web site. The staff also use the World Wide Web for research, for access to public databases such as the U.S. census, and to locate sources representing ideological positions that ARC opposes.

Like most progressive nonprofit organizations, ARC confronts the chronic challenge of inadequate funding. To a large degree this is due to the relative dearth of foundation interest in, or support for, the specific topic that ARC has chosen to study. Issues involving racism are not always popular. At one point ARC began to study the funding streams that provided resources to communities of color. However, the center could not find a foundation willing to fund completion of the study.

Another challenge confronting ARC stems from its commitment to prioritizing community concerns. For example, in 1994 and 1996 California ballot referenda included Propositions 187 and 209. The first proposition sought to withhold selected rights from immigrants, and the second attempted to repeal state affirmative action programs. Because both propositions directly threatened ARC's community allies, the center felt compelled to help fight the propositions with research and advocacy, even though it wasn't funded for this work. These efforts forced ARC to slip behind schedule on other funded projects.

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2.7. PROJECT SOUTH (Atlanta, Georgia)

SAMPLE PROJECT: Following the Money in Georgia Politics

Until 1984, two neighboring counties in western Alabama's "Black Belt"--where the population is nearly 75 percent African American--had never elected a Black official.³ Not only were all elected officials White, but the vast majority of active voters were the counties' wealthier White people. After years of White domination of the political structure, voting rights activists organized to increase the involvement of Blacks in the electoral process. Organization of the Black population had a tremendous impact on election outcomes and African American candidates in both counties won the elections by a significant margin.

Shortly after the election, the U.S. Federal Bureau of Investigation (FBI) began to investigate charges of voting fraud. During the following three years, the FBI spent more money on the 1984 Alabama case than on any other vote fraud case in U.S. history. Although the African Americans and their White allies in Alabama defended themselves successfully against the fraud charges, the case showed how power and wealth determine who has access to the electoral process in terms of the ability to vote, to run for office, to decide policies after the election, and the ability to question whether or not decisions are just.

Eight years later, many of the same people involved in the 1984 election defense campaign--known as Project South--turned their focus to Georgia. In 1995, with support from the Center for Responsive Politics--a nonprofit, nonpartisan research group in Washington, D.C.--Project South participants initiated an investigation of how money influences Georgia politics.

Emphasizing equality and unity among grassroots and academic activists, three two-person teams (each including a grassroots community member and a scholar-activist with more formal research training) investigated the campaign contributions received by 68 members of the Georgia State General Assembly and the Lieutenant Governor (Project South, Winter 96). The teams tracked all reported contributions from individuals, corporations, and Political Action Committees, and classified them by economic or ideological interest.

The study showed that campaign contributions are buying access to legislators and that the political system primarily serves the interests of people in power (e.g., global corporations and the rich). Overwhelmingly, the legislators studied come from the professional class that owns and manages businesses and real estate throughout the state.

Project South published these results in two volumes entitled *Who Owns Georgia Politics?: The Impact of Private Money on Georgia Elections*. Project South has also been coordinating follow-on political education workshops to inform legislators, scholars, and community members about the study, and the research is proving to be a valuable tool for a

³Throughout this case study "Black" and "White" are both capitalized at the suggestion of Project South.

coalition that is confronting the Georgia legislature on the issue. Finally, the study results are being used in the national campaign-finance reform movement.

ORGANIZATIONAL DESCRIPTION: Project South

Today Project South is a nonprofit, community-based membership network that develops and conducts popular political and economic education, as well as action research for organizing and liberation. Its director and founding member, Jerome Scott, was a primary organizer with the campaign to defend Alabama activists against the voter fraud charge. This campaign drew national attention to basic political rights still needing to be won in the historic deep South (i.e., the southeast U.S.) A network of grassroots- and scholar-activists across the country formed around the understanding that if the struggles in the South could not be won, then the U.S. as a whole would never know justice for all. When the election defense campaign ended, the network named itself Project South, after the campaign. Between 1987-1989, Jerome Scott and Walda Katz-Fishman, a professor at Howard University in Washington, D.C., spearheaded Project South by organizing speaking tours and writing about the drastic inequities in basic social and political rights in the South.

In 1989 three grassroots organizations with which Katz-Fishman and Scott were involved--the National Welfare Rights Union, the National Union of the Homeless and the National Anti-Hunger Coalition--formed the National Up & Out of Poverty Now! Campaign. This campaign was a response to the growing crises in poor and working-class communities, where jobs were being lost at alarming rates and little existed in the way of institutional support structures. The campaign's purpose was to claim political space and resources for the historically disenfranchised, by empowering them to speak for themselves and, ultimately, to participate directly in the political campaigns that affect them.

The Up & Out of Poverty Now! Campaign sponsored a summit in Philadelphia, which some of the Project South activists attended, to develop its strategy. Many participants were grassroots activists doing "survival work"--including homeless people, welfare recipients, and farmers struggling to keep their land. Survival work is activism that stems from a situation of extreme need rather than an ideological orientation. University professors also attended, primarily as observers. They hoped to understand grassroots needs and how they could shape their scholarship to address those needs. The academics also became familiar with the approach to organizing used by activists doing survival work.

During the campaign a clear need for research and education emerged within the growing survival movement. Because its network included both academic and grassroots members, Project South became the education and research arm of the southern region of the Up & Out of Poverty Now! Campaign.

From 1989-91 Project South continued its speaking tours with the added support of the Up & Out of Poverty Now! Campaign. Funding was tight, so Project South--instead of devoting resources to outreach aimed at enlarging its network--focused on solidifying the group of

individuals who already believed Project South was a necessity. This entailed facilitating more frequent communication both among and between academic and activist collaborators. In 1991 Project South incorporated as a nonprofit organization.

Project South's Board of Directors includes five university scholars and seven community organizers and activists (affiliated with organizations such as Africa Access, Georgians for a Common Sense Health Plan, and the National Commission for Democracy in Mexico). Board members participate actively in Project South research and educational events.

Project South has two offices. The national office is housed in Atlanta in a building belonging to the Georgia Citizens' Coalition on Hunger. The building also houses a food pantry, a thrift shop and a farmers' market, which draw people to Project South who might not otherwise learn of the organization or its activities. The office has a friendly atmosphere, with a library for public use and meeting rooms where community members can hold events. The second office is in Bethesda, Maryland near the home of Professor Katz-Fishman. Project South has found that by operating in the community, rather than from an academic setting, it is more accessible and sensitive to community needs. For this reason the majority of the projects operate out of the Atlanta office.

Project South's national office employs two full-time and one part-time staff members, as well as numerous volunteers. Since incorporation, student interns and volunteers from local and national universities have provided an important and broad labor base. Working in contact with members of the board, the staff, interns, and volunteers are responsible for all of Project South's programmatic activities. Most of these activities fall into two categories: education and research.

The bulk of Project South's education initiatives are participatory public education workshops. The workshops are designed for grassroots- and scholar-activists, organizers, and youth who are struggling to understand the nature of problems facing today's communities. Examples of workshop titles include *Crime, Injustice & Genocide*; *The Changing Face of Health Care*; and *Living in the Global Economy*. Project South arranges workshops at the request of institutions and organizations or to reach selected target populations.

Most of Project South's research is relevant to organizing low-income communities--which are predominantly people of color--for survival. Current research projects include: *What is the impact of globalization on local economies? How are low-income communities affected by the replacement of permanent manufacturing jobs at living wages by temporary and part-time jobs at low wages, especially in the service sector? What impact does private funding of election campaigns have on democracy? Who is contributing to election campaigns? How is the health care system being transformed and how will this affect low-income communities?*

For the larger research projects, such as the Money in Politics initiative, Project South staff coordinate two or three two-person teams. In general, each team has one person with a formal education or research background, and another who is a community leader or low-income activist with little formal or academic education. Team members work 20 hours a week at \$7.50 per hour. The goals for the research projects are: (1) to produce useful and accessible

information for communities that are organizing; and (2) to develop new leaders and in-house specialists in communities, so that citizens are not forced to go outside their community to seek issue expertise. Throughout the research process team members build their own skills and leadership capabilities. At the same time that researchers are learning to use computers and develop research and writing skills, they are also learning and re-learning about the political, social and economic forces that shape their lives. As they begin to understand these ideas in their historical context, they become more confident in building a vision that suits their current circumstances (Stokes 1997).

As of December 1997, Project South was working on its third major research project. The average project duration has been six months. If Project South had more staff, it would do more research. However, the staff has been able to keep up with research requests and has not had to turn anyone away. When staffers are not able to answer a question or assist with a project, they rely on Project South affiliates at universities. At times university members do research in response to community concerns and then share their results with the community. This type of research is valuable, but Project South does not emphasize it because it lacks the leadership development component integral to Project South's collaborative research process.

As a result of the research-and-empowerment approach, research team members who have not finished High School have been inspired to go on to get their General Equivalency Diplomas. Team members have also used their newly acquired computer skills and familiarity with database programs, graphing software, Geographic Information Systems, CD-Rom, and the Internet, to land new jobs.

Project South members explore potential research project ideas with a number of organizations that are part of its larger network, including the Hunger Coalition, environmental organizations, trade unions, and economic and social justice coalitions. For this reason, research projects coalesce around the collective concerns of many different groups. Because research teams are paid, funding is a major consideration. The organization's individual donor base is strong, so it depends on foundation funding only for project support, not to cover core operating costs or overhead. Grants come from both local and national foundations. Because many of the larger national foundations that fund geographic regions do not specifically fund in the South, Project South staff have been working to influence foundation priorities.

At this time, community organizations working with Project South do not draft or sign formal research proposals. However, in the future Project South staff would like to formalize the process by which they agree to conduct research projects. They feel that written agreements will help clarify goals and mutual expectations, including the proposed use of research results.

Despite the relative cohesiveness of Project South members, the organization still struggles with the historical lack of trust between community organizers/grassroots activists and university scholars. For example, many poor people who have previously been studied by academics remain poor, making others hesitant to work closely with academics promising change. Thus at times tension arises between the grassroots- and scholar-activists involved in Project South's work. Inevitably the staff and board confront the difficult issues of class and race that

arise in project collaboration. Through discussions and working together, Project South members learn to overcome the tensions and build trust and respect.

Project South is involved constantly in aiding and retraining academics to develop more respectful relationships with non-academics. This includes making academic knowledge and skills usefully available to community organizations, without dominating the discussion and the ideas. Essentially, Project South is asking that experts and scholars build a more direct relationship with the grassroots, designing research collaboratively and working together to determine research goals.

Project South evaluates its work on a somewhat ad hoc basis. However, research teams consistently monitor their own progress throughout the course of a project. Project South also facilitates dialogue with community groups about how helpful research has been and how they are using it.

Project South prepares a semi-annual publication called *As the South Goes*, which analyzes and reports on current events and economic and political trends, provides updates on local affiliate activities, and lists recent publications and workshops. Project South also publishes graphic reports on research results that it distributes among grassroots groups working on related policy issues. Project South disseminates information in various periodicals and, as more board members publish their own research and articles related to Project South, Project South's work is finding its way into scholarly publications. Project South uses E-mail regularly as a communication tool and also distributes information on the organization's World Wide Web page.

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2.8. CENTER FOR NEIGHBORHOOD TECHNOLOGY (CNT--Chicago, Illinois)

SAMPLE PROJECT: Maintaining jobs and environmental standards in Chicago's metalworking industry

In Chicago, metal finishing plays a critical role in the city's manufacturing sector, supporting an estimated 25,000 related jobs, mostly in low income neighborhoods and in shops of 50 or fewer employees. Two waves of environmental regulations washed over Chicago metal finishers in the 1970's and 1980's; the first wave governed water disposal, and the second landfilling. (Toxins from metal finishing end up in wastewater and spent solutions, as well as in sludges generated from conventional waste-treatment procedures.) Plant closures resulting from noncompliance with the first wave of environmental regulations caused the loss of about 2,500 Chicago-area metal-finishing jobs. The second regulatory wave began in 1980 with passage of the Federal Resource Conservation and Recovery Act (RCRA). Metal finishers were notified that landfilling would be restricted and that industry would be held liable from cradle-to-grave for environmental problems associated with toxic substances. In the 12 months following the deadline for RCRA compliance, landfill costs for metal finishers quadrupled. Moreover, environmental standards kept shifting. It became clear that the environmental regulations posed a threat to a key local industry.

Beginning in 1985, Chicago's Center for Neighborhood Technology (CNT) worked with seven nonprofit community industrial development organizations, providing metal finishers with technical assistance to formulate public policy and gain access to appropriate technology. The groups collaborated on an in-depth study of problems and opportunities facing the industry, interviewing as many metal-finishing companies as possible. When CNT made the study results publicly known, Chicago district commissioners established a new committee on economic development to address the effects of the changing legislation on the industry. Some 100 metal finishers utilized CNT's free environmental audits to help improve their plants and production processes. CNT also turned to the Illinois Hazardous Waste Research and Information Center (HWRIC). HWRIC, an environmental group, funded an investigation of new technologies for a metal-finishing plant that operated with a closed-loop system that minimizes waste. When this technology proved too costly for small shops, CNT organized a task force (including metal finishers, technical consultants, and government representatives) to explore the practicability of a centralized management approach that would offer economies of scale. Metal finishers, who had always felt excluded from the political process, were amazed to encounter, through CNT, environmentalists working as allies rather than adversaries.

ORGANIZATIONAL DESCRIPTION: Center For Neighborhood Technology (CNT)

The Center for Neighborhood Technology, commonly known as CNT, was founded in 1978. CNT's goal is to identify, demonstrate and promote sustainable strategies for meeting the basic needs (food, shelter, energy, jobs, and a healthy environment) of city residents, particularly in lower income neighborhoods. Located in a former weaving factory in one of Chicago's industrial neighborhoods, CNT regards technology as part of the infrastructure of neighborhoods. In turn, CNT believes that the primary impediment to community economic development and environmental improvement is not that appropriate technologies don't exist, but that low-income neighborhoods lack means for financing and delivery. The Center for Neighborhood Technology derives its name by working to put together systems that provide, for example, energy conservation technologies tailored to low-income neighborhoods.

CNT's broad mission is to reinvent neighborhood technological, institutional and financial frameworks so that communities can be successful. CNT conducts research, publicizes, and advocates public policies that support neighborhood empowerment. CNT also develops and participates in efforts to build the capacity of neighborhood-based organizations, and helps build and leverage resources directed toward neighborhood-based solutions. Finally, CNT provides direct services and technical assistance to neighborhood-based groups.

Since its beginning, CNT has regarded information as an empowerment tool. For example, in 1982 CNT convened a collaborative, multiagency task force in Chicago to identify the causes of the city's increasingly high number of abandoned buildings, and work to remedy the trend. The task force learned, among other things, that critical information about buildings and properties (i.e., age, condition, date of last inspection, tax payments, fire safety, etc.) is not easily accessible to communities and potential residents before they are leased, bought, or inhabited. Pursuant to a task force recommendation, CNT received approval and modest funding from the city government to construct a database which, for the first time, integrated all information about a property in one place. This information was made available to community groups. Eventually the information was put on the Internet and subsequently integrated with other related databases (such as Community Reinvestment Act data on home mortgage availability). Anyone in the Chicago area who wants information about their building or block can access the database.

CNT has since organized a coalition to examine ways in which information and new information technologies can continue to be an effective empowerment tool. CNT's World Wide Web page is used heavily. In addition, CNT has a general library of historical information and documents, on site and open to the public. Similarly, each program division at CNT has a library space.

In contrast with traditional hierarchical relationships in which "experts" provide technical assistance and information to communities, CNT always works in partnership with community groups at the neighborhood level. This distinction is important to CNT. Working together, CNT and neighborhood-based organizations use demonstration projects to prove to both policy makers and neighborhood activists that it is possible to achieve CNT's mission. Demonstration projects typically flow from public policy initiatives--both local and national--and seek to show their potential impact. CNT's accomplishments include the energy conservation retrofit of over 10,000 Chicago-area low-income housing units, and over 100 site visits to small electroplating job shops

to conduct 40 energy or pollution prevention assessments.

CNT's founder, Scott Bernstein, intended CNT to function as a point of intersection for the appropriate technology, environmental, and community movements in Chicago. The programs initiated in 1978--focusing on public policy change, technical demonstrations, and information and communications--remain CNT's principal program areas today. CNT's public policy campaigns are organized into three divisions: Transportation and Air Quality, Community Energy, and Sustainable Manufacturing and Recycling. Most campaigns, however, have been interdisciplinary in conception and implementation, cutting across these policy boundaries. CNT also works to link neighborhood-based, local, and regional initiatives to national policy.

CNT's bi-monthly magazine, *The Neighborhood Works*, shares practical experience in community development, urban technology, environmental issues, and grassroots organizing. Every issue features original reporting by CNT staff and community members, working toward major public policy changes in critical areas. Standing at the intersection of environmental and economic development, CNT has extensive networks in both of these arenas in neighborhoods throughout the country, exemplified in the magazine's broad readership.

CNT develops a strategic plan every three years. It is the result of a time consuming effort by 30 board members and 25 staff members, and includes their research agenda. Ideas for the plan evolve over a 6-9 month period of intense conversations, meetings, and negotiations among the board and staff. The board establishes the plan's overall framework and budget, while the staff develops appropriate means to implement it.

CNT has no formal connection to universities in the area, and has seldom worked collaboratively with universities. Historically, few universities have expressed interest in engaging urban issues in an applied way. But in the last few years, some universities have recognized that the fate and well-being of the Chicago region is intertwined with their own, and have developed programs intended to build bridges to the surrounding communities.⁴ Although this increased involvement with universities in the last five years is encouraging, CNT still does not find them a significant source of intellectual or programmatic support. CNT does, however, take on between two and five student interns a year and would like to have the money to hire more.

Funding for CNT initially came from foundations and churches. CNT currently receives funding from over 40 foundations, including Nathan Cummings, Jesse Smith Noyes, Surdna, Energy, Joyce, John D. and Catherine T. MacArthur, and Charles Stewart Mott. Often this money is awarded for specific projects. When working in partnership with a community group, CNT generally writes the proposals unless the partner is better able to do so. Beyond foundation grants, CNT earns income from publications, an annual fundraiser, individual gifts, and various federal and state agencies.

Having served community-based organizations for nearly 20 years, CNT has developed a high profile in Chicago and nationally. Much of its success is attributable to the level of trust it

⁴See, for example, the Policy Research Action Group case study on pp. 12-14 of this report.

has developed with community organizations. Where there is tension, it has usually concerned the allocation of money and the credit received for successful projects. For example, some people feel that all the money generated by CNT should go directly to community groups rather than used partly to support CNT's general operating costs. The tension is usually mediated by the funders. Overwhelmingly, however, the relationships between CNT and community organizations is collaborative and positive.

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2.9. THE ALASKA BOREAL FOREST COUNCIL (ABFC--Fairbanks, Alaska)

SAMPLE PROJECT: Creating consensus to promote sustainable forestry

Just south of Fairbanks, Alaska, along the Tanana river corridor and the south-facing bluffs of the Tanana Valley State Forest land, stand miles of white spruce trees 150-200 years old. After expressing interest for several years, commercial timber companies attempted in 1993 to secure contracts for logging large sections of this multiple-use forest. When the Alaskan government's Division of Forestry notified the public that it was considering entering into long-term, large-scale logging contracts, a series of contentious political conflicts ensued. Part of the opposition came from the Alaska Boreal Forest Council (ABFC), a diverse group of elected officials, agency managers, scientists, native groups, and individuals in the region. With concern for the future of the Alaska boreal forest as its focus, ABFC organized a nine-month community consensus-building process, resulting in a series of roundtable discussions in the fall of 1995 and a follow-up, three-day forest sustainability workshop in March 1996.

The roundtables in 1995 considered issues involving tourism, timber products, fish and wildlife. ABFC encouraged participants to share their experiences and perspectives. Views

ranged all the way from commitments to radical forest preservation to support for drastically increased logging. Despite these differences, people shared their ideas, knowledge from previous and ongoing research projects, and their respective concerns. Organizers working on similar issues, both inside and outside Alaska, were also present and discussed the great potential of community participation in the oversight of forest resources.

During the roundtables, professional facilitators highlighted areas of common ground. The roundtables resulted in the group reaching consensus on undertaking eight projects, with detailed action plans that would lead the community in the direction of sustainable forestry. Among these projects were various community-based research activities.

ABFC is currently compiling an annotated bibliography of publications about boreal forest ecology and uses. This bibliography will be a resource for people who want to familiarize themselves with issues of forest management and become involved in overseeing the forest. The University of Alaska-Fairbanks included this project in a grant proposal to the National Science Foundation. ABFC is also preparing a study of ways to create markets for Alaskan products used in the construction industry. As consumers, community members are providing essential knowledge and ideas.

By involving many different groups in these projects, ABFC has created a model of social change that involves a diverse range of communities in research and decision making about forest policy and solutions. And the forest remains intact as legislators and activists continue to negotiate policy.

ORGANIZATIONAL DESCRIPTION: Alaska Boreal Forest Council (ABFC)

Traditionally, forest management has been controlled by government agencies charged with managing forests in the public's interest. However, this kind of bureaucratically controlled resource management does not always represent the concerns of people interested in the sustainability of forest lands. More commonly, agency officials are swayed by a few powerful interests that have political and financial influence in wood product industries.

The Alaska Boreal Forest Council (ABFC) formed in 1991 after international timber corporations based in the U.S. and Asia showed a sudden interest in the public-owned boreal forest lands (described in the sample project). From its beginning, ABFC has been interested in analyzing how the local timber industry and government might improve inventory data and promote better logging practices that support value-added processing, while expanding non-timber products and markets.

ABFC is committed to the belief that the solutions to problems in forest management reside among the different groups of people that care about the forest. Through deliberate dialogue, often in the form of roundtables, values held in common can be identified and expanded. In building consensus on forest management issues, ABFC hopes to affirm the existing diversity of opinion and experience, thereby expanding responsibility for forest management to encompass

a broader spectrum of the community.

Since its inception, ABFC has grown larger and more influential. Its four areas of focus are public education, ecological integrity, economic analysis, and public consensus. *Public education* involves disseminating information about agency regulations, industry initiatives, and scientific research. ABFC emphasizes the interconnected economic, social, cultural, and environmental dimensions of Alaska's boreal forest. ABFC focuses on the region's *ecological integrity* as a means to develop strategies and promote practices that will assure biological diversity and provide a viable forest resource base for many generations. By conducting *economic analyses* of forest products and services, ABFC is able to identify issues of local, regional, and global significance. With this information, ABFC hopes to encourage broad participation in setting economic objectives for forest resources and promote socially responsible local forest products. By reaching *public consensus*, all members of the community can be brought together to develop a vision for the future of the Tanana River Basin forests.

Complementing these areas of focus, ABFC is currently conducting three different programs. The communications and education program conducts outreach into the community and school districts. Council staff members organize field trips in the forest to talk about the boreal forest, its history, and its uses.

The Geographic Information System (GIS) mapping program uses new technologies to try to expand community involvement in forest policy and research. GIS is an easy-to-use high-technology computer mapping system that can simulate proposed forest uses. ABFC's GIS system is intended to enable any user to assess different management schemes for the purpose of choosing among them. By enhancing their ability to visualize future forest policy, the GIS program hopes to enable residents to be active partners in policy deliberations. The GIS program includes provision of a public access node--an accessible location where anyone can come and use the GIS computer program.

Finally, the community forest fieldwork program features direct community involvement in research and natural resource management. Under the Alaskan Forest Practices Act, activities in forests on both state and private land must be overseen to protect the land. But budget cuts in government agency and university funds have left necessary field work positions vacant. ABFC is trying to use volunteer resources to fill this gap. ABFC arranges training for volunteer crews--including graduate students, retired community members, Athabascan Indians, and educators--in wildlife biology, fisheries biology, and forestry. The crews assist government agencies (such as the State Department of Fish and Game) in conducting surveys and gathering data. These crews are also trained to assess forest inventory and monitor the process that takes place when the state sells timber contracts. In this way, the community becomes actively involved in managing and protecting the ecological integrity of the forests. This participatory program has been designed in collaboration with government resource agencies and the university research community.

The diversity of the volunteer crews is noteworthy. The Athabascans' involvement exemplifies ABFC's success in bringing together groups that have historically been adversaries. It

has taken ABFC and the Alaskan native groups a long time to build trust and work collaboratively. These relationships are developing further through collaboration with a native-run nonprofit organization, the Cultural Heritage and Education Institute (CHEI). Through a university summer course, ABFC and CHEI have together explored indigenous knowledge systems and compared them with western scientific systems.

After working collaboratively on some smaller activities with ABFC, some Athabascan villages have identified unexpected areas of commonality. ABFC works primarily with traditional Athabascan villages that use the forest for subsistence. Previously, Athabascans working for the native logging corporation, and favoring conventional logging practices, were the tribal members most prominently heard by the state. Now, because the Citizens' Advisory Committee to the Tanana Valley State Forest includes broader representation, more conservation-minded Athabascan views about the forest are also being heard.

Building trust with all the different groups that have an interest in the boreal forest is one of ABFC's primary goals. It is also one of its primary challenges. ABFC is heavily science-based, with two professional scientists on staff and several more on the board. This enhances ABFC's credibility in public policy circles, but has also provoked tension with the state's Division of Forestry. ABFC is trying to create a more equitable balance of power between the state and the community, an objective that some government officials find threatening.

ABFC's strong scientific background also poses challenges in working with groups not familiar with science. ABFC's scientists have had to struggle to learn to talk to different audiences and listen to many perspectives--not just the scientific ones. For instance, loggers and timber mill operators are perhaps the most difficult groups with whom ABFC is seeking to establish a good relationship. Mill operators and loggers are dependent on timber and generally skeptical of "sustainable forestry," fearing it will reduce the supply timber. ABFC, however, hopes these groups will come to understand that sustainable forestry does not mean the end of logging but the adoption of different techniques.

Although ABFC has been working to achieve its mission for five years, it has only recently received funding for a general operating budget. Prior to 1997, the only paid positions at ABFC were for student interns. This year, ABFC has been able to provide salaries to some of the core staff, who previously worked as volunteers. The first significant financial breakthrough came in September 1996, when the Alaska Conservation Foundation granted ABFC an initial \$10,000 challenge grant. This was immediately met by the community, and the Alaskan Conservation Foundation provided an additional \$5,000. A national foundation specifically funded the GIS program. This grant contributed about \$50,000 in computer hardware, software, training, and salary. ABFC will use the GIS system on its World Wide Web site and in educational slide programs. ABFC is in an early stage in organizational development, still learning how to write grant proposals and to market itself effectively. A third grantor, an in-state foundation based in Juneau, provided an additional \$20,000.

ABFC's three founders have connections to both the scientific community and the grassroots. One founder is a hay farmer and a geologist, a second is a dog musher and a writer,

and a third is an animal physiologist married to one of the area's preeminent forest ecologists. The founders' credibility and experience set the tone in appealing both to academics and to other constituent groups.

The Alaska Boreal Forest Council (ABFC) selected its provisional board members from among those who attended ABFC's public workshop on sustainability. Council staff invited interested participants to a post-conference meeting to discuss how they would like to see ABFC evolve. Those who demonstrated an interest and commitment to the Council's future became board members. Presently, the backgrounds of the eight board members include community organizing, social work, law, zoology, wildlife biology, Native American activism, and university teaching. The Council has since advertized a successive board election via its newsletter (sent to over 200 individuals and households) and by posting announcements on bulletin boards around city of Fairbanks.

ABFC publishes a quarterly journal, *Alaska Boreal Forest Notes*. The journal provides up-to-date information and articles on forest issues to decision makers, policy analysts and advocates, and university and community members who are concerned with forest policy.

Above all else, ABFC's staff have come to realize the importance of collaboration in resolving controversy. Collaboration creates situations where people learn to step in each other's shoes. It brings together groups that would not naturally convene. When these groups sit and talk, they find new and creative ways to solve problems, helping to sustain the forests' biological productivity and human cultures.

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2.10. NEIGHBORHOOD PLANNING FOR COMMUNITY REVITALIZATION (NPCR--Minneapolis, Minnesota)

SAMPLE PROJECT: Planning to revitalize the South East Industrial Area

Just outside Minneapolis-proper lies the South East Industrial Area (SEIA). Even though

proportionally it supported more industrial and related jobs than the Minneapolis/St. Paul metropolitan centers, residents and business owners became concerned about the viability of the SEIA. The future of this largely industrial and commercial area was threatened by increasing pollution, strict zoning ordinances, crime, and the lack of sidewalks, bike paths and park space that would integrate the residential and commercial areas.

The SEIA community appealed to Neighborhood Planning for Community Revitalization (NPCR) for assistance. NPCR facilitates collaborative research between universities and local community-based organizations. Researchers and SEIA community members, collaborating through NPCR, designed and conducted a two-part research project that resulted in what became known as the SEIA Economic Development Plan.

Phase One of the study assessed business in the SEIA, focusing on the makeup of the business community, recent trends, and concerns. Researchers collected baseline data on the economic and physical characteristics of the SEIA. Information gathering methods included research with public agencies and private databases, and a survey of area businesses. Phase Two of the project included a series of focus groups with SEIA residents and business owners to establish criteria guiding inner-city economic and industrial development strategies.

The study showed that an urban area can compete with the suburbs and still retain industry and heavy commercial business. As a result, the city, county and state agencies recognized the SEIA as an area suitable for development and, in turn, formed the Southeast Economic Development Steering Committee. The committee continues to meet regularly to develop a master economic development plan for the area. This project was funded by NPCR and involved 960 hours of time committed by graduate student researchers. It was especially significant because the groups within the SEIA have a history of contention and prior to this effort had not worked together for many years.

ORGANIZATIONAL DESCRIPTION: Neighborhood Planning For Community Revitalization (NPCR)

The urgency of urban problems can impel citizens to action, yet often it is difficult to understand an issue because of its complexity or because necessary information is inaccessible. In an effort to change this, Neighborhood Planning for Community Revitalization (NPCR) was founded in October of 1993 to facilitate community-based research projects in the neighborhoods of Minneapolis, Minnesota. In 1996 the program expanded across the river to include St. Paul's neighborhood and community development organizations as well. Governed by representatives from local educational institutions and community organizations, NPCR's primary goal is to build capacity in Minneapolis neighborhood organizations by providing them with research assistance tailored to their needs. NPCR also provides valuable learning opportunities to faculty and students of local universities by including them in neighborhood-based applied research projects.

NPCR formed in response to a challenge by the city of Minneapolis in 1990 to develop a 20-year plan for the city's newly established Neighborhood Revitalization Program. The Center

for Urban and Regional Affairs (CURA) at the University of Minnesota established NPCR as a resource for enhancing the ability of Minneapolis neighborhood organizations to utilize the Neighborhood Revitalization Program effectively. A graduate student, trying to identify a structured way for Twin City colleges and universities to work with neighborhood organizations on pressing urban issues, collaborated with community representatives to produce an inventory of programs that could be used by students to work on neighborhood-based projects. The resulting inventory of internships and work study programs at Metropolitan State University, Macalester College, Hamline University, the University of St. Thomas, and the University of Minnesota laid the foundation for further collaboration among these and other institutions through what would become the NPCR consortium. NPCR's structure and mode of operation was modeled partly on the Policy Research Action Group in Chicago.⁵

Located on the University of Minnesota campus, NPCR is staffed by a project director and a half-time administrative associate. NPCR is governed by a Coordinating Council consisting of at least one representative from each member of the consortium--over ten different institutions in the Twin Cities area, including university, municipal, and community organizations--as well as the project director, and CURA's program supervisor for NPCR. Quarterly meetings of the Coordinating Council provide direction for the program and guidance for the project director. Although each member institution has made a formal commitment to community-based research, NPCR's success is largely due to the focused work of the Coordinating Council and the commitment of especially engaged faculty and students. Volunteer subcommittees of the Council tackle issues including conference planning and proposal review. Council membership changes only when circumstances require a member to leave.

NPCR receives funding from the U.S. Department of Education's Urban Community Service Program under Title XI of the Higher Education Act to work with Minneapolis neighborhood organizations. Foundation funding, including from the St. Paul Local Initiatives Support Corporation (LISC), enabled NPCR to expand to St. Paul in 1996. Consortium members provide in-kind support to NPCR.

NPCR's first stage of assistance to neighborhood research projects involves developing a project proposal. To apply for funding, neighborhood organizations identify an issue of concern and write a research proposal that they submit to NPCR. Since most community organizations have never tried to develop research projects, NPCR's project director helps all applicants. Aid ranges from simply reviewing proposal drafts and giving suggestions for improvement to extended conversations during intensive meetings. Most often neighborhood organizations need help in narrowing the research topic and focusing the project. Through this process at least two proposals that were initially denied funding later received approval. During the application process, NPCR explains to the neighborhood groups that research projects must strive for objectivity. This means that researchers do not set out to prove a preconceived conclusion (such as that preferred by the community group). Research results may later be used to inspire community action, but the research projects are not specifically designed to do so. Since NPCR began offering support in the proposal process, there has been an increase in repeat applications

⁵See the Policy Research Action Group case study on pp. 12-14 of this report.

and increased confidence and competence in using academic resources among neighborhood activists.

A rotating subcommittee of representatives from the NPCR governing committee reviews proposals three times each year. NPCR awards Neighborhood Revitalization Program funding based on criteria that determine each project's feasibility and relevance to neighborhood revitalization. The review committee can select a specific, focused objective from a broad proposal or it can instruct the project director to clarify aspects of a proposal before funding is approved, rather than reject entire proposals that show potential. This subcommittee also determines the number of graduate or undergraduate student hours needed for the project.

Of the 90 proposals submitted by community-based organizations from December 1993 through June 1996, 73 have been approved. Participating students have come from many fields of study, including environmental studies, public affairs, economics, history, English, political science and geography. The most common issues addressed in research projects are housing and economic development, the environment, crime and safety. Newer topics include the role of the arts in neighborhood revitalization, as well as creative approaches to long-standing urban problems, such as research on home-based businesses as a part of local economic planning in inner-city neighborhoods.

Of the projects NPCR assisted through 1996, 33 called for graduate student interns and 40 for undergraduate, with an average of 315 hours allotted to each project. Students have benefitted greatly from their experiences as research assistants. Not only have the research projects fulfilled research or internship requirements in respective degree programs, but they have prepared students for employment (three students have been hired as permanent staff by the neighborhood organizations they worked with) and enhanced their education in significant ways. The assistanceships help students see the practical relevance of their academic studies.

Once NPCR approves funding for a project that will employ a student researcher, the research assistant position is advertized at all eight participating colleges and universities in internship offices and academic departments. Interested students apply directly to the neighborhood organizations, not to NPCR. The organizations interview and select research assistants themselves, as well as supervise the projects. The students are paid through the school they attend (\$8.35/hour undergraduate and \$10.88/hour graduate). At the outset of the research process, the NPCR project director meets with the neighborhood project supervisor and the research assistant to explain the project's goals and develop a work plan. NPCR members feel that without clear objectives and constructive feedback during the course of the project, even the best student cannot meet the needs of the organization that proposed the research. Each project is assigned a community and a faculty mentor to help the student throughout. However, the responsibility for, and supervision of, the project is in the hands of the neighborhood organizations.

NPCR has encountered some difficulty matching student researchers with neighborhood organizations. The Coordinating Council subcommittee that is responsible for recruiting student candidates sees its primary challenge as promoting research assistanceships in a way that attracts

students of color. In some cases the community organization requests students of color or of a particular nationality. Filling these specific requests tends to demand more time than NPCR's limited staff can commit. Also, project supervisors have complained that although the undergraduate applicant pool contains well-qualified students, it is too small. As more projects are completed successfully, the demand for students grows, outstripping student availability. In addition, students' schedules vary from one college or program to the next, and neighborhood organizations' deadlines do not always mesh easily with academic calendars. Coordinating a project within the time constraints of both students and community organizations is difficult (Nelson 1997).

Along with student projects, NPCR also facilitates two faculty-led research projects per year. The initial expectation was that projects would emerge from a process of discussion and negotiation between neighborhood organizations and faculty, but this has proven difficult. Community-driven research is time consuming and often risky to pursue, especially for untenured faculty. Institutional biases within the universities offer few, if any, rewards for community-based research. It is also difficult for longstanding faculty research interests to shift in response to community needs. As a result, some professors have begun on their own to propose community-based research projects that, among other things, satisfy their academic interests. Their proposals are reviewed by community members who can speak to the issues presented. NPCR is still in the process of learning to find matches that satisfy both community research needs and faculty professional concerns.

Up to this point, there has been little indication that research projects have changed faculty research methods or influenced their academic interests. However, there have been some modest changes in teaching methods--i.e. inclusion of neighborhood-based projects and issues in course content. One of the faculty research projects was published in an outside publication as well as in the Center for Urban and Regional Affairs (CURA) bimonthly newsletter, *The Reporter*. At the time we conducted our case study of NPCR (Feb. 1997), a student research project was also being considered for publication in the newsletter. At least one faculty research project has been submitted for academic journal consideration.

When a project is completed, NPCR disseminates results by placing project reports in the CURA library and on NPCR's World Wide Web page. Periodic workshops presenting research projects and results--ideally four per year--are open to anyone and advertized in the Twin Cities area. In March 1996 a national conference in Minneapolis called "Research for Change" featured NPCR as a model of successful community-based research through universities.

In order to evaluate the effects of the applied community-based research projects in the Twin Cities, NPCR recently conducted telephone interviews with participants from projects during its first year. Eighty-five percent of those who had worked with NPCR found that the research was useful. Many maintained that their NPCR research project was necessary to their organizations, meaning that if an NPCR research assistant had not been available, some other means would have had to be found to obtain information. Five of the twenty respondents described their projects as catalysts, spurring neighborhood activity on a particular issue. The information resulting from these research projects was used in a number of ways: as a baseline of

information for decision-making, to support advocacy or organizing, in general planning, to set up a program, or given directly to a consultant for the neighborhood. Only three projects out of twenty claimed not to be useful (Gladchild 1996).

Beyond research assistance, NPCR also provides technical assistance to neighborhood organizations engaged in research projects, e.g., via the Community Computer Advisory Committee of NPCR's Coordinating Council. In 1994 six neighborhood organizations initiated an NPCR-funded project to determine interest in, and applications of, the Internet in facilitating exchange of neighborhood resources and to enhance communications between Twin Cities neighborhood organizations. Working in association with the Twin Cities Free-Net, a community-based computer network, NPCR has assisted over 50 neighborhood organizations in connecting to the Internet. Some 25 neighborhood organizations have published information on the World Wide Web, and Twin Cities Free-Net hosts an online discussion with over 170 subscribers. The "Neighborhood Mailing List" provides a forum for neighborhood leaders to discuss policy and program issues and learn from one another. This new technology increases the capacity of Minneapolis and St. Paul neighborhoods to undertake planning and revitalization projects collaboratively.

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2.11. HIGHLANDER RESEARCH AND EDUCATION CENTER (New Market, Tennessee)

SAMPLE PROJECT: Investigating illegal disposal of toxic wastes in Yellow Creek, Kentucky

The Middlesboro Tanning Company operated a tannery situated on Yellow Creek in the town of Yellow Creek, Kentucky. Animals died when drought forced local farmers to water their livestock at the creek. Citizens of Yellow Creek believed pollution from the tannery was responsible. But the company's owners and officials denied that they were pumping poisons into the water supply and that there was anything wrong with the quality of Yellow Creek's water.

In 1980, Yellow Creek Concerned Citizens of Kentucky (YCCC) formed to oppose the negligent disposal of hazardous chemicals and began working with the nonprofit Highlander Research and Education Center. With Highlander's assistance, YCCC conducted health surveys, videotaped waste dumping, and worked with university researchers and scientists to determine the extent of the contamination. Highlander also provided information concerning the Freedom of Information Act, which proved to be an essential tool in uncovering company and city lies and illegalities.

This research effort revealed that leukemia rates from people living in proximity to Yellow Creek were more than five times greater than the national average, while rates of miscarriage and birth defects were also alarmingly high. YCCC publicized this information widely via newsletters, town meetings, the wider media, and in testimony before the U.S. Congress.

The reaction to these research results led YCCC to procure a safe water line to the community and to file a class action suit against the Middlesboro Tanning Company. Ten years after the suit was filed, a jury found the tannery owners guilty of gross negligence and, together with the city of Middlesboro, ordered them to provide \$11 million to establish a community health fund to monitor and identify the effects of the poisoning.⁶

ORGANIZATIONAL DESCRIPTION: Highlander Research and Education Center

“Highlander is more than a place or program. It is a process through which adults learn about issues which confront their communities, and become empowered to initiate strategies to act for themselves.”

--Jim Sessions, Highlander's Director (1997)

The Highlander Research and Education Center is a 66-year-old, private, not-for-profit,

⁶As of July 1997, the community had not actually seen any of this money, because the court decision was still under appeal.

popular education center for grassroots groups. Embracing a vision of non-traditional adult education, popular educator and activist Myles Horton founded Highlander originally as a Folk School. Influenced by folk schools in Denmark, Horton was inspired to educate the feelings and the will of students as much as the mind, instructing primarily through discussion and singing rather than books. Originally the Danish folk schools provided adult education to revitalize native cultural traditions and history for a people suffering under class and foreign cultural domination. Schools were often taught by “young idealists, sensitive to injustices existing in their native land and hopeful for the future.”⁷ The Highlander Folk School set as its goal facilitating the political literacy of adults within a whole social environment.

Highlander has always upheld two general principals: (1) education must be grounded in the real and realizable struggles of people toward democratic control of their lives; and (2) education should challenge people to formulate political goals that constantly move them forward in bringing about social change. Highlander projects have contributed to the critique of mainstream education and how social scientists normally interact with communities.

One of Highlander’s earliest projects was to train leaders in the southeast U.S. to challenge Southern segregation and entrenched political and economic machines. In 1959 the State of Tennessee responded to Highlander’s effort by shutting down the school, claiming that, by permitting racial integration in its school work, it had violated its charter. Two years later, Horton reopened the school with the name Highlander Research and Education Center in Knoxville, Tennessee. In 1971 the Center moved to its current site, a 100-acre mountainside farm in New Market, Tennessee.

Highlander has a rich history, with projects spanning education for workers in the 1930’s; establishing Citizenship Schools for Southerners of African descent in the 1950’s; launching civil rights schools in the 1960’s; building community organizations in Appalachia in the 1970’s and 1980’s; and initiating economy schools, democracy schools, and Stop the Poisoning workshops through the 1990’s. In 1982, the Center was nominated for the Nobel Peace Prize for its historic efforts on behalf of human rights.

Recently the Highlander staff and board have agreed to focus on two key areas which underlie and connect the many specific problems challenging communities in Appalachia and the Deep South: economic injustice and democratic participation--in other words, the concentration of power out of the hands of ordinary people. Board member John Gaventa observes that on a global scale many nongovernmental organizations have identified “the big wrong”--the concentration of power in the hands of a few. This is increasingly a multinational elite, operating beyond the confines of any one government or nation. Highlander has set out to fight the big wrong by struggling at the local level and helping local groups build a popular democracy, find each other and unite, and then create new alliances across borders and hemispheres.

Highlander works primarily with community groups from Appalachia and the Deep South, but maintains exchanges and linkages with national and international groups committed to positive

⁷Adams and Horton (1975, p. 21). For more information on Danish folk schools, see Borish (1991).

social change. For example, in 1996 Highlander assisted the Tennessee Industrial Renewal Network (TIRN) in developing cross-border exchanges between factory workers in Tennessee and Mexico. New initiatives will include a bi-national leadership training program with the Mexican Institute for Community Development in Guadalajara, new economics education work with the labor movement, and leadership training for national Jobs with Justice. Highlander has also hosted visits and facilitated workshops for non-governmental leaders from Latin America, Africa, and Asia.

Today, Highlander's general mission is to work with marginalized and disadvantaged community groups to develop their power and voice to achieve fairness, equality, and justice. Highlander joins with grassroots leaders to address social concerns ranging from civil rights and community empowerment to economic democracy, environmental justice, global education, labor rights, sexual discrimination, and women's rights.

A central Highlander activity is to facilitate workshops and training sessions at its center in New Market, Tennessee for groups facing specific problems in their communities. Working closely with the Appalachian community, Highlander's staff and board decide on initiatives. In 1996 such efforts included, for example, the Community Environmental Health Program which, among other things, assisted communities in establishing their own Stop The Poisoning schools and the Southern & Appalachian Leadership Training Program (SALT). These programs equipped emerging leaders (predominantly low-income women) with tools necessary to tackle local issues.

Highlander staff have facilitated workshops for activists interested in participatory action research and the center has co-sponsored conferences on participatory research. In addition, Highlander published issues of a participatory research newsletter for a loose network of interested people in the U.S. and Canada. When there is an expressed need, Highlander has invited scientific experts and university researchers to work with community activists.

Highlander is equipped with dorm rooms and a full food service for overnight visitors and workshop participants. It is known for its large and bright circle-shaped meeting room where workshop participants meet in rocking chairs. A workshop may involve from one day to one week of intensive conversation, with role-playing and skills-building in areas identified by the participants (such as fundraising, public speaking, writing, organizational development and budgeting). Or, for those living closer to the Highlander Center, it may be a nine-month training period for groups meeting one weekend a month. Generally, the Center doesn't charge any fee to workshop attendees. On occasion, however, when an outside organization meets at the Center, a moderate fee for the use of space is requested to help cover Highlander's overhead costs. Highlander also a library and audiovisual center with a collection of resources focused on strategies for social change, a cultural pavilion, an intern residence, office facilities, and four other residences on the farm.

Presently Highlander has a staff of 15, ranging from ages 27 to 73, with varied educational and experiential backgrounds. Volunteers and student interns also play an important role in the center's operation. The majority of staff members are native southerners and female. Some of

their jobs are focused on projects, while others are responsible for bookkeeping, marketing, food services, and fundraising.

The 24-member governing board holds Highlander accountable to its mission of research and education toward social justice. Future board members are nominated by staff members or current board members, usually from groups directly involved in and affected by current programming. The current board then votes a nominee into office for up to two 3-year terms. At any given time the board will be made up of teachers, leaders of civil rights groups, community organizers, foundation directors, professors from assorted disciplines, researchers, union activists, and artists.

In an effort to evaluate its programs in 1996, Highlander convened "listenings" with 48 community-based groups in eight locations in six states and in a weekend residential listening workshop. At the listenings, Highlander asked what are the most pressing problems in the region now, and where is there some energy and hope about confronting them. Non-regional, focused listenings were also convened with youth, gay-bi-transsexual representatives, and on cultural work and racism.

Although Highlander generates some of its income through programs and educational operations, the largest part comes from individual contributors and grants (approximately 20 percent and 60 percent respectively, in 1994-1995). Highlander's annual budget is about \$1 million with endowments of \$1.6 million. Although financially more secure than many other grassroots social justice organizations, Highlander still struggles with the funding limitations that impede the center's ability to accomplish all of its goals.

The Highlander Center has just begun to explore the limitations and possibilities of new technologies, especially information technologies. The center makes extensive use of E-mail correspondence but has yet to build a presence on the World Wide Web or to incorporate instruction on World Wide Web information searches into its programming.

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2.12. THE URBAN UNIVERSITY & NEIGHBORHOOD NETWORK (UUNN-Ohio) and THE COALITION TO ACCESS TECHNOLOGY & NETWORKING IN TOLEDO (CATNeT--Toledo, Ohio)

The following case study is organized slightly differently from the others in our report. It begins by discussing a failed community-based research effort, the Urban University and Neighborhood Network (UUNN). UUNN used a participatory process to organize a statewide network that promoted and provided Internet access to groups of people traditionally excluded from using the newer information technologies. The organization hoped to use these technologies to foster community-based research on a statewide basis. One consequence of the effort to develop UUNN was the establishment of a different organization, known as the Coalition to Access Technology & Networking in Toledo (CATNeT).

CATNeT has so far been effective in its projects and in maintaining organizational stability. UUNN and CATNeT share some characteristics; however the differences between the organizations are important. They help to explain why one failed while the other is succeeding. Important lessons about successful community-based research projects can be learned by a closer look at the origins and development of these two efforts. The following case study charts the evolution of both UUNN and CATNeT. It then suggests some possible reasons for CATNeT's success and UUNN's demise.

ORGANIZATIONAL DESCRIPTIONS: UUNN and CATNeT

In the mid 1970's, the state of Ohio responded to accelerating urban divestment by creating the Urban University Program (UUP), a funding pool that would support research and problem-solving on local urban issues through Ohio's urban universities. More recently UUP allocated funds to encourage the building of research networks to support grassroots participation in addressing urban problems. These community networks help excluded groups secure access to relevant information, other local residents, businesses, and government officials. These funds were intended to address the complaint that those participating in existing networks tended to be people that were already empowered and relatively affluent, thereby perpetuating the traditional exclusion of poor and marginalized groups.

This problem was part of the rationale that inspired the birth of the Urban University Neighborhood Network (UUNN) in 1994. Originally, UUNN was intended to establish links between core groups of community-based organizations and academic researchers in Ohio's cities. The cities were also to be linked to each other so that the network would be statewide. The University of Toledo Urban Affairs Center received a grant of \$5000 from the UUP to create such a statewide network and Professor Randy Stoecker was asked to coordinate the project. Angela Stuber worked as his lead graduate assistant.

Because both Stoecker and Stuber were researchers who already had strong ties to the academic community, UUNN's first priority was to involve grassroots participants. Early in 1995 UUNN invited community-based organizations to gatherings at which participants could identify

and discuss potential research projects related to community problems. Seven Ohio cities were involved: Akron, Cincinnati, Cleveland, Columbus, Dayton, Toledo, and Youngstown. Some of these meetings were more successful than others, but in the end there was no agreement on an initial research project for the network.

In May 1995 UUNN tried to host a statewide meeting of these groups in Columbus, at which they would choose a first project and then outline a grant proposal to support it. Although UUNN was willing to cover their expenses, none of the community groups could be convinced to attend. However, representatives of the Policy Research Action Group (PRAG) did attend. (PRAG is a metropolitan-area-wide network in Chicago that UUNN was hoping to emulate on a statewide basis.)⁸ Because the meeting was limited to academic researchers in Ohio plus PRAG representatives, the meeting turned into a training session in participatory research.

Despite the poor attendance from grassroots participants, UUNN still needed to pick a topic so that it could apply for the next round of UUP funding. The conference attendees decided on a project that would survey the computer hardware, software, skills, and Internet access of community-based organizations in the seven cities. Although community members were not present to agree to this topic, the idea was originally proposed by one of the community groups at an earlier city-based meeting. UUNN chose this topic because it addressed a primary perceived impediment to developing strong relationships between community-based organizations and academics: poor people's lack of access to computer facilities and to the Internet.

UUNN judged that the exclusion of poor and socially marginalized people from technological resources differs from other more traditional forms of exclusion--such as in housing or education--because it is not yet entrenched. That is, in principle Internet access has the potential to be a social force that is inclusive from the beginning. The conference participants reasoned that Internet access would help facilitate communication between these excluded groups and the organizations and academics interested in working with them to solve their problems.

Following the May conference, UUNN sent a draft grant proposal to the community-based organizations that had not attended. Based on the responses of these organizations, UUNN redrafted the grant proposal and eventually was awarded \$69,800 from UUP. With this money, the project began by building core groups of one researcher plus five community-based organizations in each of the seven cities. The purpose of these initial groups was to design research projects; recommend questions; and build a survey instrument with a core of common questions about computer and Internet access, while also allowing individual cities to add their own questions.

The core groups administered the survey to community-based organizations in each city. Among the larger and more stable community-based organizations, there was a good response to this survey. As expected, only three groups had full Internet access and only about half had computers; nearly all had important information needs that were not being met.

⁸See the case study on PRAG on pp. 12-14 of this report.

Heading into 1996, UUNN's future appeared bright. In May UUNN held its first fully collaborative conference, bringing together over 50 community-based organizations and researchers from the state universities. Conference participants decided on a mission: "to collectively provide tools for the betterment of neighborhoods and their residents." For their next research project, UUNN members chose to study coalition activities among community-based organizations both within and between the cities. UUNN made this information available on its World Wide Web site.

But following this hopeful beginning, things went later in 1996. Unable to get as much funding from UUP in the second year, UUNN could not afford to provide faculty-release time or to reimburse community-based organizations for their travel and time. They also lost two professors at this time. Although two new academics joined UUNN, the transition was time consuming and UUNN fell behind. In desperate need of support, the organization began to write a major grant to the federal Telecommunications and Information Infrastructure Assistance Program (TIIAP). However, by the time it was ready to apply for this grant, communication and rapport had broken down between the city groups.

While soliciting ideas for the grant proposal, it became apparent that each city's goals were different and that each core group wanted a lot of money. The TIIAP grant would be inadequate to fund it all. Particular tension arose between the Toledo Chapter of UUNN and the broader UUNN. Near the end of the proposal-drafting process a new focus emerged: to include community center development and a massive computer recycling campaign. UUNN failed to meet the bureaucratic requirements necessary to finish the TIIAP proposal in time. The cohesiveness established at UUNN's May 1996 conference was lost as the Youngstown and Dayton chapters focused on computer recycling and the Toledo and Cleveland chapters focused on building a community computer network.

As UUNN unraveled, a new organization emerged as a strong, Toledo-centered offshoot. In the fall of 1996, UUNN's Toledo chapter started a collaborative project with Toledo-based Vistula Management. Vistula had successfully applied for funding from the Neighborhood Networks program of the U.S. Dept. of Housing & Urban Development and was in the process of surveying public housing residents to see if they were interested in having public computer labs. Together with other community-based organizations, the Toledo-based UUNN and Vistula Management decided to tackle the issue of equal access to technology.

John Keily from Vistula Management, along with Randy Stoecker and Angela Stuber from the old UUNN, began organizing monthly meetings to define the Toledo group's goals and to determine exactly how to accomplish them. Calling the new effort CATNeT (the Coalition to Access Technology & Networking in Toledo), Stuber sent out notices soliciting the participation of interested individuals and organizations in Toledo. The meetings grew and varied in participation, with new faces constantly filtering in. At one meeting attended by over 40 people, participants split into the following groups: children and families, seniors, people with disabilities, nonprofit organizations and small businesses. Each group discussed the future of CATNeT. Using participatory methods they highlighted key issues and set goals. The groups decided that CATNeT's mission would be: "to contribute to the empowerment of low income citizens and

community-based organizations by providing or facilitating access to the technological tools that are more routinely available to our community's more affluent citizens and organizations." Thus, CATNeT's objectives are to help low income citizens and community-based organizations get access to computers, computer software, local networking, and the Internet and to the training and technical assistance necessary to use these technologies effectively.

Participants at the meeting also nominated a steering committee. The steering committee meets once every few weeks, after each monthly CATNeT meeting. When grant applications are nearing deadlines, the steering committee meets more frequently. While contributing to the TIIAP grant proposal that led up to the collapse of UUNN, CATNeT began a series of research projects that looked at the technological and information needs and desires of senior citizens, small businesses, people with disabilities, and disability service providers. CATNeT developed a research partnership with Vistula Management staff, CATNeT members, and graduate students taught by Randy Stoecker. Graduate students from one of Stoecker's seminars facilitated most of these projects, receiving credit in the "hands-on" portion of the university course. All CATNeT members were informed of the results of these research projects. Stuber and Stoecker also wrote a paper for a small journal that included some of the research results. Meanwhile, CATNeT continued to recruit more participants during the research process and established some baseline measures for later evaluation.

CATNeT is currently collaborating with several organizations. For example, United Auto Workers' Chrysler Ohio Training Center and one of its partners, Training Solutions, are working on a computer training project with CATNeT. Training Solutions is training 20 individuals at the Chrysler Ohio Training Center on personal computer troubleshooting and how to use various software. In return, these 20 individuals will each donate 50 hours of their time to CATNeT over the next three years, serving as volunteers at CATNeT public access sites (computer labs), at monthly computer trainings, and on CATNeT committees.

Lessons About Participatory Research from UUNN and CATNeT

The contrast between the experiences of CATNeT and UUNN reveal important lessons about community-based research projects. Both UUNN and CATNeT were founded on the principles of collaborative research. Collaborative research is based on the premise that academics and members of poor, disinvested, or otherwise neglected communities need to engage in joint projects to address social problems.

Both UUNN and CATNeT were successful in developing participatory research processes. UUNN put together core groups of academics and community members in each of seven Ohio cities early in its organizational development. And CATNeT established relationships with public housing residents through its project with Vistula Management. But at least three factors differentiate the experiences of UUNN and CATNeT: (1) the proportion of academic participation, (2) the geographical distances between the collaborators, and (3) funding.

Academic participation was crucial to UUNN, whereas CATNeT had only one academic,

who took on a role as a facilitator rather than a leader. In turn, UUNN's dependency on academics may help explain why the organization splintered and lost its clarity under pressure to complete the TIIAP grant. While debating appropriate future programs to emphasize in the grant proposal, the members failed to address core conflicts or come to some sort of agreement. Furthermore, for the most part the academics were not used to working in democratic settings or under strict deadlines, and they were unfamiliar with the literature and practice of collaborative research. Hence, they had difficulty recognizing the importance of building relationships and of ongoing grassroots participation. Had there been more unity and clarity among the academics and grassroots participants, UUNN might not have collapsed under pressure.

Unity and clarity of vision were also more likely to remain strong in CATNeT because it does all of its work in Toledo. Geographic proximity among members obviously makes face-to-face meeting much easier. Because contact among participants is personal, CATNeT has developed relationships that can withstand controversy and setbacks. UUNN participants were isolated from each other in cities across the state of Ohio. When UUNN was well funded, the disadvantages of distance were partially overcome by regular meetings and conferences. When they weren't funded, however, there was no substitute for the loss of face-to-face engagement.

UUNN's lack of funding was also detrimental to the relationships between academics and grassroots organizations in individual cities. Without money to pay for faculty-release time, it was less likely that academics could take the time to engage in local core groups and build local programs. Thus, when it came time to deal with deadlines and internal conflicts over the TIIAP proposal, the communication and planning processes of UUNN were inadequate. On the other hand, CATNeT planned for proposal deadlines by starting the grantwriting process sooner and by seeking other sources to sustain it in case grant proposals were not successful. CATNeT planned a kickoff event and began projects so that they would be in place even if a key grant did not come through.

In hindsight, Randy Stoecker and Angela Stuber believe that participatory research across large distances requires a high level of funding and a decentralized organizational structure. They also recognize that a network without a strong grassroots foundation will not be participatory. It takes the grassroots foundation--unified groups in local settings--for a larger network to maintain its legitimacy and sustain itself. Ultimately, grassroots mobilization is necessary for changing conditions of power.

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2.13. THE DUTCH "SCIENCE SHOPS": A MODEL NATIONWIDE COMMUNITY RESEARCH NETWORK

As noted in the introduction to this report, one of the world's most highly evolved systems for conducting community-based research operates in the Netherlands. For the purposes of the comparative analysis that follows, we include here a succinct overview of the Dutch science shop system.⁹

Over the past 25 years, the thirteen Dutch universities have established a network of several dozen community research centers (or "science shops") that conduct, coordinate, and summarize research on social and technological issues in response to specific questions posed by community groups, public-interest organizations, local governments, and workers. Each shop's

⁹Sources for this section include interviews conducted by Richard Sclove in Oct. 1994 with Bernie Hermes, Selma Hinderdael, and Andre van Raalte at the University of Amsterdam and with Barend van der Meulen and Jan van Diepen at the University of Twente. Other sources include E-mail correspondence between Richard Sclove and Barend van der Meulen (Sept. and Nov. 1993), Bas L. de Boer (Dec. 1993, Dec. 1994, and Feb. 1995) and Michiel Oele (Nov. 1993) of the University of Amsterdam, Wim Hegeman of Utrecht University (Nov. and Dec. 1993), and Henk Mulder of Groningen University (March 1998); conversations and interviews conducted by Richard Sclove during the course of the national meeting of the Dutch Science Shops, University of Groningen, Groningen, The Netherlands, 8 - 9 May 1996; and Snyder et al. (1997, p. 19).

paid staff members and student interns screen questions and refer challenging problems to university faculty members and students.

The shops developed independently in the mid-1970's when small teams of interested professors and students began volunteering their time. Their motivation was a concern that publicly funded universities were conducting research for government and, increasingly, for industry, while not conducting research in support of other social sectors.

As a result of their bottom-up origins, today the science shops vary widely in structure, financing, and operational procedures. During the shops' formative years, faculty generally performed the research, but now graduate and undergraduate students do much of the work, under faculty supervision. (A few shops have larger staffs and are thus able to conduct original research in-house, sometimes with the aid of recent university graduates.)

Today the shops provide answers to about 2,000 inquiries per year. Of these, approximately one-half can be answered relatively easily--e.g., by an undergraduate spending several afternoons doing literature research in the library. The other 1,000 questions require a substantial original research effort--e.g., a master's thesis or occasionally a doctoral dissertation (van den Broecke 1991 and 1993).

The students who participate frequently receive university credit, often turning their investigations into graduate theses or adjusting their career plans to reflect a newfound sensitivity to social problems. Because students are doing research and writing papers, and faculty are supervising and evaluating their work, both groups are doing what they would be doing as part of their regular workloads; thus the extra cost and time are minimal. The difference is that project results aren't simply filed away and forgotten. Instead, they help people in the real world address important social problems.

The budget for a typical Dutch science shop is modest. The small staff (1.5 to 2 staff members per shop, on average) is normally paid out of the university's general budget. Other operating and research expenses are paid for partly with government and foundation grants or the fees paid by client groups that have financial resources. An indirect subsidy is also utilized, in the sense that Dutch university students' educational expenses are partially financed by the government.¹⁰

¹⁰Dr. Henk Mulder of the Science Shop for Chemistry, University of Groningen (E-mail to Richard Sclove, 16 March 1998) has kindly explained the current Dutch system for financing the costs of a university education: On average, 50% of the money students receive from the Dutch government is in the form of a loan; the other 50% is a gift (the maximum gift is about US\$350 per month). The total government support that students receive is below the social security bottom line, so they depend also on parental support or on the earnings from a part-time job. Students must use these various sources of support not only to pay their living expenses, but also their university tuition and fees. The government loan must be paid back after completing or discontinuing university study; the loan repayment schedule is capped at 10% of the recipient's annual income, and the interest rate is fixed at ½ percent beneath the normal bank loan rate. If a student fails to pass a certain minimum number of exams each year, the government gift for that year converts irreversibly into a loan. Students are eligible to receive this combination of government gift-plus-loan for a maximum of four years, and

For a question to be accepted by a science shop, the inquiring group must show that it lacks the resources to pay for research, is not commercially motivated, and will be able to use the research results productively. Some shops also accept socially relevant inquiries from organizations--such as national environmental groups or local governments--that are able to contribute to the cost of research. In their earlier years the shops did not pursue questions posed by individuals, thus avoiding idiosyncratic concerns unlikely to have broader societal relevance. Today about 20 percent of the questions studied are submitted by individuals, but shops only accept an individual's request when it is anticipated that the results will be of some general interest--e.g., to one or more community groups (Ree 1996).

Over time, many of the science shops have specialized in different areas of research and now direct clients to the Dutch center best suited to address their concerns. While a few Dutch universities have just a single, generalized science shop, others--such as the universities of Utrecht and Groningen--each have up to 10 specialized shops.

The Dutch system has, among other things, helped environmentalists to analyze industrial pollutants, workers to evaluate the safety and employment consequences of new production processes, and social workers to improve their understanding of disaffected teenagers. One science shop conducted a study for Amnesty International to discover whether publishing graphic photographs of victims of political torture would stimulate or repel donations. Another assessed the market potential for a proposed women's radio station. About 5 percent of the questions are posed by Dutch organizations that focus on problems confronting developing nations. (As these examples suggest, the questions addressed by the Dutch shops are as apt to involve knowledge and methodologies from the social sciences and humanities as from the natural sciences or engineering.)

Research projects generally result in a printed report, a summary in the shop's newsletter, and a press release. The resulting media coverage, in turn, has benefitted universities. As a result of their work with science shops, some professors have conducted follow-up research projects, published scholarly articles on new topics, developed innovative research methods, forged new interdisciplinary collaborations, and modified the courses they teach (e.g., Zaal and Leydesdorff 1987; Leydesdorff and van den Besselaar 1987). Through the shops, the Dutch university system now serves society more directly, and, inspired by the Dutch model, science shops have been created in other European nations, including Denmark, Austria, Germany, Norway, Northern Ireland, England and the Czech Republic, as well as elsewhere (e.g., in Canada and at the University of Cape Town in South Africa).¹¹

Sources on the Dutch and Other Science Shops

not after they are 27 years old.

¹¹Efforts to establish science shops in France and Australia that did not take hold permanently are described, respectively, in Stewart (1988) and Bammer et al. (1992).

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More information on the Dutch science shops is available via the World Wide Web at <<http://www.bu.tudelft.nl/wetensch/lsw/ehome.htm>>.

Chapter 3: FINDINGS AND ANALYSIS

FINDING 1: Community-based research produces knowledge that is used to achieve constructive, sustainable social change, including change in local and national policies.

Academic and scientific research is responsible for some of the great achievements of human civilization. But significant achievements are an important exception, not the rule. A great deal of research produces results of little interest to other scholars and of no interest or use to anyone outside academia. Even research that could *potentially* be of social value may languish in little-read scholarly journals.

Community-based research processes differ fundamentally in being coupled relatively tightly with community groups that are eager to know the research results and to use them in practical efforts to achieve constructive social change. Community-based research is not only *usable*, it is generally *used* and, more than that, *used to good effect*.

In this practical results orientation and close coupling with users, community-based research is more closely analogous to applied industrial research than to conventional academic research. The difference is that community-based research is produced in response to the concerns of civil society--indeed, often to the concerns of the least advantaged members of society, and with their direct participation in conducting the research--whereas industrial research is conducted primarily in response to the profit drive of corporations or to the wants of consumers. (In fact, a healthy portion of community-based research is conducted *in opposition* to unhealthy or unpopular fruits of industrial research and production.)

One of the clearest examples of how community-based research has contributed to social change involves the documentation of excess incidence of disease in Woburn, Massachusetts. This celebrated participatory research effort led to one of the most thoroughly prepared legal cases in the history of toxic waste litigation, two companies sued for wrongful death associated with water pollution, and an \$8 million out-of-court settlement with Woburn plaintiffs.

Other examples from our case studies of concrete, sustainable changes that have occurred as the result of community-based research include: energy conservation retrofits of over 10,000 low-income housing units in Chicago; a moratorium on forest logging pending the conclusion of negotiations between Alaskan legislators and activists; a requirement that scientists seek permission from a Native American community before including them as research subjects; regular dialog between two trade unions, a multiracial coalition of community groups, and the management of the Sun Oil refinery in Philadelphia; replacement of poisoned drinking water with a safe water line into a rural Kentucky community and a legal judgment requiring establishment of an \$11 million community health fund; implementation of a new sector system for providing police service more equitably in the Jacksonville, Florida area; creation of a new health program in

Chicago for refugee women; the integration of neighborhood-based projects in university course content, and so on.

Community-based research results are frequently empowering for grassroots organizations. For instance, Prof. Fran Ansley, Co-Director of the Community Partnership Center at the University of Tennessee-Knoxville, observes that research can provide grassroots groups with “a sturdier place at the table” in stakeholder negotiations, ensuring that they have a real voice and are not simply present as passive tokens.¹

Community-based research is applied research (in the sense of being aimed toward practical results and outcomes), but it is hardly straightforward or lacking in creativity.² Community-based research often involves methodological innovation, heightened sensitivity to context, and constant innovation in the social relations of research.³

FINDING 2: Community-based research often produces results that are unanticipated and far reaching. Among the important ancillary outcomes are new social relationships and trust, as well as heightened social efficacy.

A familiar canon of traditional scientific research is that on rare but important occasions, it produces unexpected social benefits (e.g., the tuberculosis medicine that accidentally proves effective as a treatment for depression). In the case of community-based research, producing secondary or indirect social benefits that were not originally envisioned seems more the norm than a rare exception.

One of the far-reaching effects of the participatory epidemiology studies conducted in Woburn, Massachusetts was to add impetus for reauthorizing federal Superfund legislation. The Woburn case also profoundly affected the researchers working with the community group FACE (For A Cleaner Environment), inspiring scientists at the Harvard School of Public Health and John Snow, Inc. to form the JSI Center for Environmental Health Studies. As a result, communities needing research assistance in investigating environmental health hazards now have a reliable point of access for sympathetic, collaboration-oriented expertise.

Another example of secondary social effects: as a result of collaborating with Native American communities, the Childhood Cancer Research Institute has begun working with the U.S. government’s Centers for Disease Control (CDC) on innovations for incorporating community knowledge into the CDC’s existing environmental and health research methods. This

¹Telephone communication with Richard Sclove, 13 April 1998.

²Stokes (1997) challenges over-simplified distinctions between “basic” and “applied” research, observing that there are many instances of “applied” research that, while motivated toward a practical result, produce fundamental knowledge.

³See Findings 6 and 7, and also Brown and Mikkelsen (1990), Fals-Borda and Rahman (1991), Park et al. (1993), Nyden et al. (1997), Smith et al. (1997).

work will not necessarily result in any immediate social change, but--in contrast with customary research methods that communities don't understand or feel threaten their interests--it is a step toward building a government infrastructure supporting participatory research.

When metal finishers began working with the Center for Neighborhood Technology (CNT), they were amazed to engage environmentalists as allies rather than adversaries. For over a decade the metal finishers had struggled to survive the costs of complying with new environmental regulations. And for several decades environmentalists and workers had been pitted against each other. As an unanticipated result of working with CNT, the metal finishers began collaborating with an environmental organization called the Illinois Hazardous Waste Research Information Center to develop new metal finishing technologies with closed-loop systems that minimize hazardous waste production. As a follow-on activity, CNT has organized a task force to find ways of implementing these new technologies. Thus the result of working with CNT has had a rippling effect, with one good result leading to other positive, unanticipated results.

Community-based research leads to unanticipated positive results as a consequence of the way it seeks solutions. For instance, if one line of inquiry does not satisfy a community's needs, community researchers often continue until the original concern has been adequately addressed. At the outset of this study, we hoped to include *two* sample projects for each of the 12 organizations in our case studies. Our idea was to select one sample project that had a relatively successful outcome and a second that was less successful, enabling us to understand the lessons our case study organizations have learned about conditions contributing to success. However, we were generally frustrated in our attempt to find outright instances of "unsuccessful" projects. This could mean, of course, that community research centers are reluctant to share stories of failure (see pp. 6-7, above). It may also mean that effective community researchers develop a tenacious "won't-take-failure-for-an-answer" attitude. In the case of community participants, this is certainly understandable. Their interest in a research project is never idle or academic; everyday people, especially if stressed or distressed, are ordinarily only going to make time for research if they believe that the results are vital to their ability to overcome a pressing problem and improve their lives or world. Thus a research set-back or obstacle is not an occasion to accept "failure," but a time to rethink premises and find another way forward.

Collaborating researchers and community members are normally committed not only to solving immediate problems, but to understanding and remedying the systemic causes of those problems. By its nature, community-based research is a broad-based form of inquiry and so, too, are its results (Smith et. al. 1997).

Community-based research is also distinguished from other research forms in part by a cluster of characteristic byproducts: strengthened (or new) social relationships and enhanced social trust. When it is successful, community-based research forges social bonds between groups that were formerly alienated from, or even antagonistic towards, one another (e.g., university professors and disenfranchised minority groups), as well as enhancing the self-confidence and social relations among community members (see also Findings 6 and 9). The resulting trust, attitudes, and relationships are not only necessary to completing a research project, but also

enhance participants' abilities to use the resulting knowledge constructively in follow-on actions. These enhanced social relationships thus constitute a foundation enhancing the likelihood of a cascade of beneficial secondary results.

In short, community-based research contributes to rebuilding frayed and attenuated social relationships. It may thus provide one constructive response to the growing concern that American civil society is in crisis and unraveling.⁴

FINDING 3: Many community research programs take steps to ensure that their project portfolios achieve a balance between being local and reactive *versus* translocal or proactive.

It is not surprising to find that community-based research projects often involve local groups reacting to urgent problems on the local level. Impressive examples include the success of Woburn, Massachusetts residents in helping to conduct a local health survey that led to an \$8 million legal settlement, or the analogous success of Yellow Creek Concerned Citizens in assembling local data that helped them secure safe drinking water in their community and file a lawsuit that culminated in an \$11 million judgment in their favor. But while projects that are local and reactive constitute a vital and commendable aspect of community-based research, they do not tell the whole story.

The virtue of local and reactive projects is that they involve everyday people--not infrequently some of our society's most disempowered groups--directly in identifying and addressing issues that urgently concern them, issues which otherwise would likely be ignored or addressed much less effectively. A potential limitation in projects that are predominantly local and reactive is that they do not directly empower participants in setting their own social and political agenda. Instead, the larger world (meaning, in many cases, powerful institutions or groups) imposes or helps generate a severe local problem, and local groups then bear the burden of seeking redress or some other solution. In other words, under this scenario local groups and communities act on an imposed agenda rather than helping to determine their own social agenda proactively.

But the real world of community-based research turns out to be more interesting and complex than the preceding simple scenarios imply. For instance, the activities of the Woburn citizens' group FACE (For a Better Environment) may have been reactive, but bore translocal fruit in helping to support reauthorization of federal Superfund legislation. Similarly, Yellow Creek Concerned Citizens did not merely act locally; the group also testified before the U.S. Congress.

The majority of the community-based organizations in our study have formulated a macrosocial analysis that informs their programmatic activities, ensuring that their projects have a

⁴See also Ansley and Gaventa (1997, pp. 51-52). The crisis in American civil society has been highlighted especially in the recent work of Robert Putnam (1995 and 1996)

proactive component or intention, or a translocal outlook, so that they will have practical implications beyond the local level. For instance, the illustrative Applied Research Center project that we described involved diverse communities of color in constructively addressing problems of police harassment across the U.S. Similarly, the Highlander Research and Education Center concentrates most of its work in the southeast U.S. and Appalachia, but it has also hosted meetings and collaborated with groups in Latin America, Africa, and Asia. The Center for Neighborhood Technology seeks projects reflecting its commitment to operationalizing neighborhood and community control over local and regional capital flows and urban infrastructural systems, and also links neighborhood-based local and regional initiatives to changes in national policy. Project South acts from a commitment to understand and transform the structural roots of poverty and racial injustice in the southeast U.S. Rather than reactively opposing industrial production, the Good Neighbor Project seeks to empower workers and citizens in processes that transform polluting or hazardous businesses into environmentally and socially responsible enterprises.

Even the university-based community research centers we studied, such as the Policy Research Action Group (PRAG) and Neighborhood Planning for Community Revitalization (NPCR), which operate largely on the basis of proposals submitted by local community groups, take steps that encourage a proactive component in their work. For instance, PRAG's research is, by design, locally focused but includes a healthy balance of reactive and proactive elements. Two activities that help encourage this balance are roundtables and working groups.

In the summer of 1996 PRAG assembled representatives from different community-based organizations that had previously been involved with PRAG research projects for a series of roundtable discussions on such topics as Urban Health and the Environment, Community Economic Development, and Workforce Preparation and Education. Each roundtable discussed common themes or problems confronting the variety of community-based organizations and constituencies in Chicago, and then formulated recommendations for future action.

PRAG has also created a set of "Working Groups" concerned with subjects such as Adult Education and Workforce Preparation, Citizen Participation/Empowerment, and Alternative Community Economic Development Strategies. Each working group is co-chaired by a community group representative and a university faculty member. The working groups are, among other things, committed to initiating research projects, developing strategies for applying research results in Chicago neighborhoods, and informing policy decisions. Working groups involve representatives from a variety of different community organizations, along with academics, in formulating and implementing longer-term collaborative projects. Both PRAG's roundtable discussions and working groups are mechanisms that encourage participants to stretch their horizons, form new partnerships, and adopt a more long term perspective.⁵

It is thus untrue that community-based research is entirely local, parochial or reactive. On the other hand, while community-based research in the United States is *sporadically* effective in

⁵Information on PRAG's roundtables and working groups is available on the World Wide Web: <<http://www.luc.edu/depts/curl/prag/PROJECTS/>>.

functioning proactively or in cultivating grassroots influence within state, regional, national, or transnational political arenas, it has not yet developed into a system that is *consistently* effective in these ways.⁶

FINDING 4: In the absence of an integrated national infrastructure for community research, there are three common ways in which community research projects are initiated. Ad hoc community research projects sometimes give birth to enduring community research centers.

Our case studies reveal three common ways in which a question posed by a community becomes a community research project:

(a) *A community group proposes a research project to a pre-existing community research center.* Seven of our twelve case studies involve extant centers that routinely field questions posed by community groups. In this respect they resemble the Dutch science shop model, where most universities have one or more standing community research centers (see pp. 62-64, above). Functioning almost exclusively for the purpose of facilitating community-based research, PRAG (the Policy Research Action Group) and NPCR (Neighborhood Planning for Community Revitalization) are our clearest examples. When a grassroots organization has a concern or query, they write a proposal to--and to some degree with--the center. If the proposal is accepted, the center allocates staff time and funding to the project. Both PRAG and NPCR work closely with the inquiring communities to define the research question and to ensure that it addresses the community's actual needs.

(b) *A community research project is proposed and conducted by an already established partnership.* Several of organizations we studied do more than facilitate community-based research. In contrast with the Dutch science shop model: (i) they are not sponsored by a university or government agency; (ii) members are activists and organizers before they are researchers; (iii) they do not facilitate community research projects for outsiders; and (iv) when they conduct research, it is in the context of a larger social agenda or campaign in which they are heavily involved. Jacksonville Community Council, Inc. (JCCI), Project South, and the Center for Neighborhood Technology are examples of such organizations; their membership includes experts and community members who regularly collaborate on research projects. JCCI is a membership-based organization that includes citizens from a variety of different backgrounds as well as professors and researchers from the local university. A board-appointed committee selects the two major research projects that JCCI conducts each year. The committee includes representatives of diverse community interests, ensuring that the research projects respond to community needs and advance JCCI's larger agenda. Community-based research is one of their activities because it is an effective organizing tool and a necessary component of their broader agenda for social and civic improvement.

⁶Some useful works that consider various aspects of local-translocal knowledge politics include Cicourel (1981), Gerlach (1991), and Sachs (1991).

(c) *Without the assistance of a pre-existing infrastructure supporting research collaborations, a community group or organization embarks on a community-based research project. In the process they sometimes establish an enduring community research center for undertaking future research projects.* When there is no community research center or program to turn to, groups or organizations may initiate the challenging and often arduous process of assembling participatory research partnerships from scratch. The collaborative and mutually respectful relationship that needs to exist between experts and other community members takes time to build. Many professional researchers not familiar with community-based research aren't interested in investing the requisite time and effort; in such cases the research process can escape the community's hands and, rather than becoming empowered, they feel disempowered and out of control.⁷

The Loka Institute learned of the Alaska Boreal Forest Council (ABFC) when a volunteer E-mailed to ask if we could help ABFC identify researchers to assist them in setting up a community research center. ABFC is a diverse group of community representatives, including local residents and businesses, who organized to investigate the costs and benefits of large-scale industrial logging in the Alaskan-owned boreal forest lands. This group happened to be committed to seeking solutions to forest management problems among the different groups of people that care about the forest. When they had an idea for a research project, they conducted the research, and then formed the equivalent of a community research center for investigating other Alaskan forestry issues in the future. This was not an easy process. For six years ABFC relied solely on volunteers and struggled for support and legitimacy.

In our search for case study organizations, we discovered other efforts to create new community research centers that were not successful. One researcher we interviewed, who sits on the boards of both the Highlander Center and the Childhood Cancer Research Institute, was involved in an attempt to establish a women's research center. Her colleagues' attempt to create a community-based research program responsive to the concerns of women in the southeast U.S. failed primarily because the fledgling organization couldn't secure adequate funding.

There are yet other examples of ad hoc community research projects that are successful in producing new knowledge and in contributing to constructive social action, but that do not lead to an institutionalized infrastructure for conducting future studies. For instance, we had originally planned to conduct a case study of Organizations United for the Environment (OUE), a community-based organization that took the lead in challenging proposals to site environmentally hazardous facilities in the central Susquehanna region of rural Pennsylvania. In 1990, United States Pollution Control, Inc. (USPCI) announced its intention to build a \$100 million hazardous waste incinerator in the Allenwood Township of Union County. Soon after this announcement, OUE had to hire its first full time employee to handle the large quantities of incoming donations from local concerned citizens:

⁷“Empowerment refers to people's access to resources which increase their capacity as individuals and groups to take greater control of decisions at personal and community levels, so they might challenge relationships and structures of power” (Martin 1997, p. 3).

Local borough, township and county governments, the regional council of governments, state and national legislators, the Chamber of Commerce, churches - over 250 organizations had joined the effort Scientists from Bucknell, Penn State, Cornell and several non-profit institutes offered their expertise. (Mangel 1995)

OUE conducted research and public education on the hazards of incineration, supporting Union County's opposition to the incinerator. Finally in 1994, USPCI canceled the proposed incinerator. After their victory, funding dried up and OUE dismantled.

If the U.S. already had a robust community research infrastructure able to meet the demand, stories of an ad hoc research project that does not coalesce into an enduring community research program could conceivably be seen as societally healthy. After all, we all know stories of bureaucracies and programs that continue to function long after their founding mission has become irrelevant (Pentagon programs directed toward a Soviet threat that no longer exists are a current example). In such situations, allowing individual organizations to collapse when they are no longer needed is socially rational.

But community-based research is not at that stage in the United States. Our study suggests that there is substantial unmet need for the benefits that community research can bring. Under these circumstances, the story of an ad hoc effort that succeeds in forging the necessary relations for conducting community research, but then dies after completing a single mission, would seem to represent an important lost opportunity to build the enduring community research infrastructure that the U.S. currently lacks.⁸

FINDING 5: There is significant demand for community-based research in the United States, and much of it is not being met.

When the Loka Institute launched its Community Research Network initiative early in 1995, we wondered sometimes if a *Field of Dreams* strategy would work (i.e., "If we build it, people will come.") Is there really demand for community-based research? Our case studies demonstrate that there is indeed substantial demand--both manifest and latent--and furthermore offer strong grounds for believing that much of this demand is not being met.

Every organization we spoke with while conducting our case studies attested to the need for more community-based research. Oakland's Applied Research Center, for example, reports that it chronically fields more requests for assistance than it can fulfill. We have heard similar stories from organizations not included in our case studies. West Harlem Environmental ACTION (WE ACT) is a nonprofit organization based in Harlem, NY organizing to promote environmental justice. Having carried out several successful community-based research projects (e.g., involving the health effects of diesel bus pollution in Harlem communities of color), WE ACT is now

⁸For useful tangential ideas, see Milofsky and Messer (1998).

struggling to handle the deluge of requests for information and assistance that it is receiving.⁹

We have also discovered a number of large, socially important issue areas that, to the best of our knowledge, currently haven't a single U.S. center or program dedicated to facilitating community-based research about them. For our case studies, we sought out programs that conduct research and are demonstrably responsive to groups whose needs have traditionally been under-represented in mainstream research agendas (e.g., women, disadvantaged minorities, youth, workers, the poor, and so on). In the process, we learned about a number of community research centers that focus, for example, on questions concerning environmental justice and health. But we could not identify even one center or program that focuses on conducting community-based research on issues of concern to women.¹⁰

Moreover, every one of the organizations we studied is limited in its ability to respond to research requests due either to regional restrictions or subject area constraints. Eight of the 12 organizations we studied focus their work within a particular geographic region (the Center for Neighborhood Technology and the Policy Research Action Group in Chicago; Jacksonville Community Council, Inc. in northeast Florida; Project South in the southeast U.S; the Highlander Center in Appalachia and the Deep South; the Urban University and Neighborhood Network in Ohio, etc.). Of these eight, three further limit their research by issue area (Alaska Boreal Forest Council focuses on forests, Neighborhood Planning for Community Revitalization [NPCR] on urban revitalization, and Project South on economic and racial liberation).

The remaining four organizations in our study that are *not* limited in their regional scope, limit their research projects based on the organization's substantive mission area. The Applied Research Center specializes in issues having to do with race, the Good Neighbor Project (GNP) works only to promote sustainable industries, the Childhood Cancer Research Center Institute works on the causes of childhood cancer, and the JSI Center for Environmental Health Studies works primarily on environmental health hazards.

Thus in the course of our study we learned of many requests for research assistance that are denied because they do not fall within a community research center's mission area or area of expertise. For instance, the JSI Center, NPCR and GNP, all reported having to turn away requests they receive from people and organizations needing research that does not fall within their respective mission areas.

The Policy Research Action Group (PRAG) receives approximately 50 community-based

⁹Peggy Shepard, Executive Director, WE ACT, personal communication with Madeleine Scammell, 28 Oct. 1997.

¹⁰E.g., we contacted the Center for Research on Women and the Institute for Women's Policy Research, which undertake important research projects but do not conduct community-based research as defined in this study. We also spoke with Nancy Mills, Director of the Workplace Democracy Center at the AFL-CIO in Washington, DC, who affirmed that the U.S. trade union movement has a great unmet need for access to community-based research capabilities (personal communication with Richard Sclove, 5 June 1997).

research proposals each year, but it declines 30-35 of these (based on the combination of resource limitations and the requirement that a project must involve urban development and harbor implications for public policy).

The U.S. Dept. of Housing & Urban Development supports some community-based research under its Community Outreach Partnership Centers (COPC) Program. However, funding limitations permit the COPC Program to support only 16 of more than 100 proposals that it receives annually. The U.S. Environmental Protection Agency (EPA) similarly supports some community-based research under several environmental justice grantmaking programs. During the two-year period 1995-1996, funding limitations permitted EPA's Environmental Justice Community/University Grants Program to support only 16 of 156 proposals submitted.¹¹

In most cases a community group turned down for research assistance has no recourse; the needed research is not performed.

Moreover, most U.S. cities and communities do not have the equivalent of a PRAG or NPCR--that is, a multipurpose community research center able to respond to community-posed research questions covering a wide variety of topics. Thus if PRAG and NPCR together are conducting some four dozen studies annually in just two metropolitan areas (Chicago and Minneapolis-St. Paul), it seems reasonable to assume that there is comparable latent demand not being met in Dallas, New Orleans, Newark, Boise, Tucson, and most other U.S. communities.

The evidence that there is latent unmet demand in the U.S. for community-based research is bolstered by comparing the U.S. with the Netherlands. Between them, the 38 existing Dutch science shops conduct approximately 1,000 substantial community research projects annually--in a nation with 15.6 million people (5.8 % of the U.S. population).

According to the U.S. Census Bureau, the 1996 population of the metropolitan Chicago area was 7.7 million, and that of Minneapolis-St. Paul was 2.8 million.¹² The Center for Neighborhood Technology (CNT) and PRAG in Chicago, together with NPCR in Minneapolis-St. Paul, conduct a total of approximately 60 community-based research projects annually in these two metropolitan areas.

To provide the same per capita density of community-based research studies in the Chicago-Minneapolis-St. Paul metropolitan areas as the Dutch science shops currently provide across the Netherlands, 635 studies would have to be conducted annually--which is more than 10 times larger than the actual 60 that PRAG, CNT, and NPCR are currently able to conduct. Likewise, to have as many community research centers per capita in Chicago as the Dutch science shops provide across the Netherlands, CNT and PRAG would have to be joined by 17 new community research centers in the greater Chicago area.

¹¹Information available on the World Wide Web from HUD at <<http://www.hud.gov/copcsu.html>> and from EPA at <<http://es.epa.gov/oeca/oej/grlink2.html>>. See also p. 95, n. 36, below.

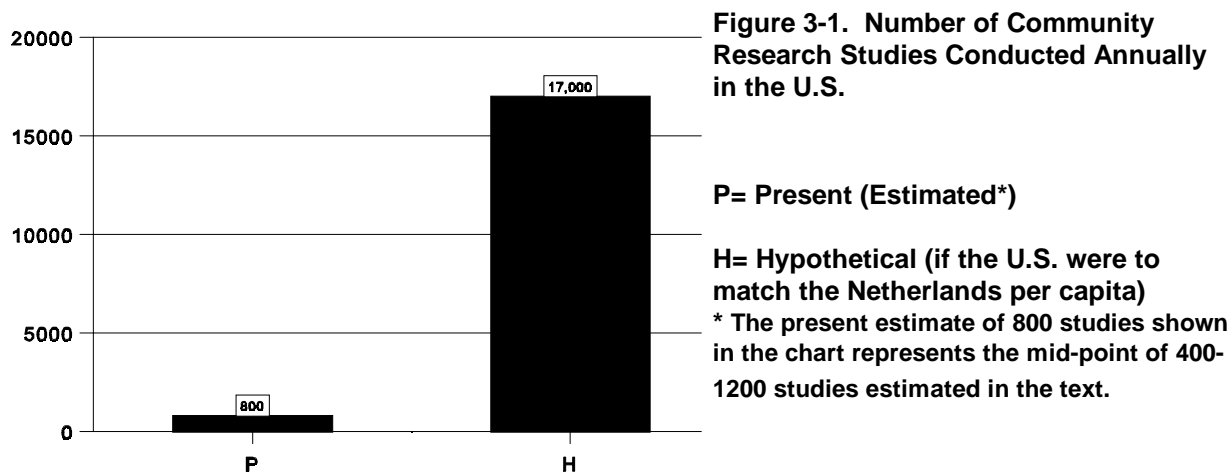
¹²Data procured via the World Wide Web: <<http://www.census.gov>>.

No one knows exactly how many community research studies are conducted annually across the entire United States. But assuming that between them PRAG, CNT and NPCR (as centers that are atypically large, robust and active) currently conduct somewhere between 5 and 15 percent of all the community research in the U.S., then we would estimate that the total annual number of community research projects conducted in the U.S. is somewhere between 400 and 1,200.¹³

¹³This 5 - 15 percent range is merely an informed “guesstimate,” not a solid number. On the other hand, it may not be a bad back-of-the-envelope guess. One can calculate a plausible upper limit estimate by assuming--unrealistically--that community-based research is being conducted across all the U.S. at the same per capita rate that NPCR + PRAG + CNT are conducting it in their respective metropolitan areas. Since the combined population of greater Chicago + Minneapolis-St. Paul is 3.9 percent of the U.S. population, this upper limit estimate would be that about 1,500 community-based research projects are completed annually in the U.S. The real number is almost certainly less. (Between them, the 12 organizations that we studied produce fewer than 100 studies annually. We have also so far identified about 50 community research centers and programs in the U.S. If we assume that the actual number of U.S. community research centers and programs might be 100 and that their average output is comparable to that of the organizations in our case studies, then the total number of community research studies completed annually in the U.S. would be fewer than 833. The real number could be lower [e.g., because our case study sample includes PRAG and NPCR, which are atypically productive] or larger [e.g., see below, regarding ad hoc community research projects].)

There are at least three specific reasons why it is difficult to calculate a number precisely: (1) There is a definitional problem. We define community-based research as “research conducted by, with, or for communities.” That definition is imprecise enough that there will inevitably be many gray instances. (2) There is a (surmountable) measurement problem. It would be challenging but not impossible to try to identify all the standing community-based research centers or programs in the U.S. and find out how many studies they complete annually. (3) There is a further identification problem. It is possible to identify enduring community research centers, but it seems impossible to identify directly all the ad hoc instances in which an individual professor, researcher, student, or grassroots group conducts a one-time community research project not in affiliation with a center or program or in which, similarly, an organization that does not ordinarily conduct community-based research does so very occasionally on an ad hoc basis. But if it were important enough, survey sampling techniques could be used to generate an estimate of these numbers.

For our purpose, the latter number--that is, the number of ad hoc unaffiliated projects--is somewhat less important. That is, from a societal point of view, it is probably more important to establish enduring community research centers and programs than to encourage community-based research collaborations on a more ad hoc, individual basis. The several advantages to an enduring center or program are that: (a) it is easier to achieve some quality control and accountability; (b) a center or program can more easily realize social efficiencies associated with institutional memory and learning and with administrative economies of scale; (c) it is easier for a center or program to secure legitimacy both for affiliated researchers and for project results; and (d) in general, it is easier for community groups to locate enduring centers than to search for an individual research collaborator on an ad hoc basis. Regarding the latter benefit, for instance, the worried residents of Woburn Massachusetts had a vastly harder time locating individual, sympathetic scientist-collaborators (ultimately they found them at Harvard University) than have subsequent communities who can now turn to the JSI Center for Environmental Health Studies and who have an easier time finding it based on its achieved track record and reputation. On the other hand, in cases where it proves administratively difficult to establish a formal community research program (e.g., at universities where there is administrative resistance), Milofsky and Burnham (1995) describe the establishment of informal “nonprograms” as a creative alternative.



For comparison, to achieve the per capita density of community research studies that is being achieved in the Netherlands, the total number of studies conducted annually in the U.S. would have to be 17,000--a number at least an order of magnitude greater than we estimate is currently being achieved (see Figure 3-1).

For there to be as many community research centers per capita in the U.S. as already exist in the Netherlands, the U.S. would need 645 centers--13 times the number (approximately 50) that we have so far been able to identify (see Figure 3-2). Moreover, to the extent that the U.S. is a more class divided and culturally heterogeneous society than the Netherlands, and consequently may experience deeper and more complex social problems, the need for community-based research is probably if anything proportionately greater in the U.S.¹⁴

¹⁴The United States is a very wealthy nation in aggregate statistical terms and on an average per capita basis (e.g., UNDP 1997), but it does not rank nearly as high when intranational disparities in income and well-being are taken into account. For instance, according to the latest international rankings using the well-regarded Index of Social Progress (Estes 1997), the Netherlands currently ranks 12th in the world in terms of national ability to provide for the basic social and material needs of its citizens (roughly tied with Germany, Italy, and Iceland). The U.S. ranks 27th, lagging Bulgaria and roughly tied with Estonia and the Slovak Republic. (Denmark is 1st, followed by Norway, Austria, and Sweden.) A University of Pennsylvania press release announcing Estes' report states that:

“The relatively poor standing of the United States (27) in the current survey -- it was 18th in 1990 -- is attributed in part to the persistence of poverty for some 37 million Americans, 40 percent of whom are children under the age of 18, according to Estes. He also cited the widening income gap between the country's highest and lowest wage earners as being responsible for the country's recent social decline.”

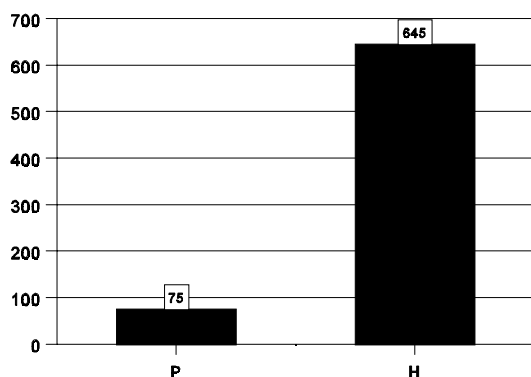


Figure 3-2. Number of Community Research Centers in the U.S.

P= Present (Estimated*)
H= Hypothetical (if the U.S. were to match the Netherlands per capita)

* The present estimate of 75 centers shown in the chart represents an adjustment up from the actual 50 U.S. community research centers that the Loka Institute has identified to date.

FINDING 6: Collaboration between experts and community members is vital for finding long term solutions to complex, controversial issues.

“ Collaboration creates situations where people learn to step in each other’s shoes. It brings together groups that would not generally convene. When these groups sit and talk, they find new and creative ways to solve problems. These solutions are new and synergistic.”

--Jan Dawe, Executive Director, Alaska Boreal Forest Council¹⁵

In contrast with traditional research forms, community-based research involves the collaboration of community members (e.g., grassroots activists, community organizers, workers, or everyday citizens) and experts (e.g., university researchers or professional scientists).¹⁶ Where traditional research is often specialized by discipline and limited to a single field of inquiry, community-based research requires expertise in more than one field. As Finding 1 showed, such collaborations can produce powerful and long-lasting results, reflecting the knowledge and investment of each party. Expert-community collaboration is critical to all of the organizations we studied--indeed, most take it as a premise that such collaboration is necessary to effective social problem solving.

The Policy Research Action Group (PRAG) describes itself on its Web page and in other literature as a “collaborative partnership between 4 universities and more than 20 community

¹⁵Telephone interview with Breena Holland, 22 July 1997.

¹⁶E.g., Heiman (1996), Martin (1997), Murphy et al. (1997), Nyden et al. (1997).

organizations.” PRAG includes over 200 academic and community-based staff, activists, and researchers. Community improvement in Chicago is PRAG’s ultimate goal. Its premise is that the best way to realize this goal is by harnessing the knowledge and experience of both university researchers and community activists. According to PRAG this requires partnerships based on mutual cooperation and trust. PRAG’s function is to provide a link between the university researchers and community organizations. Community-based organizations and their members approach PRAG with project proposals and research questions, and PRAG staff link the community members with experts in the PRAG network. The community then develops a collaborative relationship with the expert, remaining engaged throughout the entire research process. Neighborhood Planning for Community Revitalization (NPCR) functions similarly.

Staff at the JSI Center for Environmental Health Studies--in addition to facilitating the link between experts and community organizations--also work directly with community organizations on research projects. Most JSI Center projects involve the staff working with at least three primary groups: experts, grassroots community organizations, and government officials.

The Good Neighbor Project (GNP) is guided by the philosophy that community organizations and workers should be engaged in the processes and decision making that lead to sustainable industrial facilities. For maximum efficacy in helping communities raise corporate accountability, GNP maintains strong connections with industry, with other environmental organizations, and with labor organizations that want to collaborate with environmental organizations.

In addition to collaboration between communities and experts, collaboration also takes place among each of these groups. For instance, community-based research projects sometimes provide an occasion for grassroots organizations to build new coalitions with one another. Similarly, community research projects frequently provide academic researchers with a context for forging new collaborative relationships with colleagues in other disciplines.

Although the Highlander Center works primarily with community groups from Appalachia and the Deep South, it also maintains exchanges and linkages with national and international groups committed to positive social change. Through these relationships Highlander and the other organizations learn from one another about issues and processes for addressing them. The groups also provide sources of inspiration and motivational energy for one another.

The staff at the Applied Research Center (ARC) encourage disparate grassroots organizations to work with each other by referring organizers to other groups with similar agendas. ARC also fosters collaboration across disciplines and between experts and communities by convening conferences of community activists, labor leaders, progressive academics, and foundation staff. Eight of the 12 organizations we studied mentioned that conferences involving community members, university researchers, policy makers, and foundation officers are a good way to increase collaborations and maintain a participatory spirit.

The Center for Neighborhood Technology (CNT) differs from the other organizations in our study in defining its own research agenda and conducting most of its research in-house (i.e., not via participatory research). However, the process remains community-based both because

CNT is itself a community-based organization and also because, throughout its wide range of research, organizing and advocacy work, CNT is constantly in collaboration with other community-based organizations.

From our case studies, collaboration with grassroots and other non-expert groups emerges as one of the defining characteristics of community-based research. It certainly is one of the characteristics that most clearly distinguishes it from other, more traditional forms of inquiry that do not require the input of community members.

FINDING 7: The process of collaboration is frequently fraught with tension. Community research center staff create environments supporting successful collaboration by developing sensitivity to the areas where tension arises and skills in nurturing and mediating partnerships.

(a) Sources of Tension

Many community research centers confront the historical lack of trust between community organizers, grassroots activists, and professional researchers on a daily basis. For instance, while the Childhood Cancer Research Institute (CCRI) has succeeded in building close working relationships with colleagues at Clark University, CCRI has found most academics profoundly skeptical about community-based research. CCRI reports that many university professors perceive communities of lay people as internally divided, fractious and irrational, and therefore inappropriate as partners in research projects.

Neighborhood Planning for Community Revitalization (NPCR) is located on a university campus for the purpose of making community collaborations easier for university researchers. NPCR facilitates two faculty-led research projects per year, but launching these projects has proven more difficult than originally anticipated. Building collaborative relations with community groups takes time, and few academic institutions reward faculty for conducting this type of research. This makes participation in community-based research especially risky for untenured faculty. Indeed, there are professors who believe they were denied tenure because they conducted community-based research.¹⁷

While university administrators vary in their openness and attitudes towards community-based research, indifference, skepticism or even resistance appear to be fairly common. One tenured professor at an eastern university (who chooses to remain anonymous) told us that his university's administration feels sufficiently threatened by community-based research that he and his colleagues have found it more practical to adopt quasi-underground tactics rather than organize their activities into a formal program or center:

Although people at my university have been actively involved in

¹⁷Raffensperger (1997).

community-based research, the administration has ranged between passive and hostile. I've put energy over the years into getting the university to sign onto a community partnership that would facilitate student internships/field research/volunteering. Although a huge amount already goes on, the university did not want to sign onto a formal program for fear of liability, a need to contribute resources and, (I think) anxiety about losing control. This year I have just given up on trying to get cooperation from the university, and settled into working with folks in my department and the people in the community.

The upshot of this is that although a lot of community research activity is going on, we have had no pressure or inclination to write it up as a 'program' with a description. In fact, we have come to think that our lack of institutionalization is a plus because we do not have to worry about maintaining staff or program offices, and also we are able to stay very low to the ground when issues blow up. We may be centrally involved, but we do not get attention or credit, and that's important. (From an E-mail communication)

Staff at the JSI Center for Environmental Health Studies suggest that some academics decline involvement in social change-oriented community-based research for fear that it could jeopardize the funding for traditional research that they, their university, or their home community receive from mainstream sources (e.g., corporations).¹⁸

Tensions constantly arise in trying to reconcile university timetables and pacing with the sense of urgency pervasive among community organizations. Community groups typically need answers "now," whereas university research customarily proceeds at a more leisurely pace. Moreover, most universities operate on a semester or quarterly basis; communities don't. For instance, the Urban University and Neighborhood Network (UUNN) had difficulty motivating academics to meet proposal deadlines. It appeared more characteristic of the academic world to let deadlines slip than it is in the world of community-based nonprofit and grassroots organizations. The time it takes to operate democratically and build collaborative relationships also proved a source of tension. UUNN staff attribute the collapse of their organization partly to these tensions.

An additional factor contributing to the demise of UUNN was the fact that it was trying to work on a statewide level rather than locally. This meant that UUNN participants were isolated from each other in cities spanning the entire state of Ohio. In contrast, CATNeT (the Coalition to Access Technology & Networking in Toledo), an offspring organization of UUNN, works only in Toledo. Because contact among participants is personal and easy to maintain, CATNeT has been able to build relationships that can withstand controversy, setback, and time limitations.

¹⁸Raffensperger (1997) also addresses this issue.

(b) Managing Tensions

Successful community research centers have developed a variety of strategies for managing the tensions that are endemic to expert-community research collaborations.

Staff at the JSI Center for Environmental Health Studies believe they have established a high level of trust with many community groups by paying very close attention to community needs. JSI Center staff members work with community members to define the research process, time-line, and language that will be used, and to bring the respective expectations of all partners out into the open. In this way the Center acts as a collaboration mediator. By filling this role, the Center has created mutually beneficial, long term relationships between citizens and experts.

Some community research centers, such as Neighborhood Planning for Community Revitalization (NPCR) and the Policy Research Action Group (PRAG), find it helpful to negotiate a formal contract or agreement between collaborators prior to initiating a project. Aside from stating mutual expectations, such agreements allow community members to explain the political context in which a research project is being done and thus enable researchers to assess how the results might be used.

In an effort to expand the practice of community-based research and overcome university skepticism, PRAG emphasizes that science improves when researchers work in partnership with communities. To reach its current level of success and credibility, PRAG had to ignore the many skeptics who challenged the legitimacy of community-based research, instead letting the results speak for themselves: an ongoing series of university-community research collaborations that have produced creative, effective solutions to real-life neighborhood problems. Over time PRAG has found that its work is beginning to broaden Loyola University faculty tenure and promotion criteria to take into account community-based research.¹⁹

While not university-based, the Applied Research Center (ARC) has similarly found that periodic collaboration with universities and a strong connection with grassroots organizing have helped build ARC's credibility in both the academic and grassroots worlds. These collaborations

¹⁹After publication of Richard Sclove's (1995a) *Chronicle of Higher Education* essay calling for U.S. emulation of the Dutch "science shop" system, an internationally recognized full professor from a southern U.S. university E-mailed:

"Congratulations on your recent article in the *Chronicle*. It is right up the alley of a new Center we have now created at [my university]. I am just finishing a year long training course for graduate students in collaborative and participatory research, in which they have been involved in local community-defined projects . . . Your article helped give instant credibility. It is being circulated now by my dean to all the higher ups. Our center reports to the Vice Chancellor for Research, who is a hard scientist and very interested in technology. The way you framed the article will help these folks understand what we are trying to do."

"We are encountering difficulties with getting some of our projects through the [university's] human subjects review board, who are used to more clinical or experimental projects, not participatory action oriented ones. I intend to circulate the article to them as well."

have also helped encourage respect for community-based research within academia.

The Childhood Cancer Research Institute (CCRI) has begun to develop a program to enhance community and cultural sensitivity among university and government researchers. CCRI also exemplifies the possibility of developing effective community research partnerships across long distances (a challenge that, as noted above, contributed to the collapse of UUNN). CCRI staff have learned to collaborate effectively with Native American communities located 2,000 miles away by visiting the communities for extended periods of time, and by living and sharing meals with community members. CCRI also tries to ensure that the same team of researchers work together consistently in a community. These measures add significantly to the time required to complete a research project, but everyone involved agrees it is necessary to achieving effective research relationships and credible findings.

The JSI Center for Environmental Health Studies also collaborates with community groups across the U.S. Because these groups often don't have the resources to pay travel expenses, JSI Center staff try to meet with them by piggybacking off the extensive travel that the staff does in conjunction with other JSI Center activities (such as paid consulting or participation in conferences). For instance, one JSI Center staffer recently took advantage of a paid trip to South Carolina--as an expert legal witness--to meet afterwards with a South Carolina community group.²⁰

The centrality of participatory research (PR) or participatory action research (PAR) methods among American community researchers distinguishes their practice from that of the Dutch science shops. In both the U.S. and the Netherlands, community-based research normally involves a community group, nonprofit organization, trade union, or the like posing the initial problem or research question. But in the Netherlands, the community group that poses a question is typically involved in the research process only as a member of an ad hoc research oversight committee assembled by the science shop staff. The research itself is usually conducted by a university student, or else occasionally by a professor or a science shop staff member.

Our best guess is that greater prevalence of participatory research methods in the U.S. compared with the Netherlands reflects the greater degree of class stratification and cultural, racial, and ethnic diversity in the U.S. For instance, whereas all the Dutch universities are government funded, many U.S. colleges and universities are private (i.e., not government supported), and even the public ones sometimes have fairly large tuition fees. Thus access to a university education in the U.S., and the type of education available, has a stronger class bias. Both university and government researchers have also often operated in the U.S. in high-handed, community-insensitive ways. Thus, talking with social or grassroots activists in the U.S., one quickly discovers a large reservoir of skepticism or outright hostility toward universities and toward university and government researchers.²¹ In this context, it is not hard to understand why participatory research methods are appealing: they provide a straightforward way for those asking

²⁰Dr. Richard Clapp, JSI Center for Environmental Health Studies, telephone interview with Richard Sclove, 6 Feb. 1998.

²¹See Finding 9, below, and also Perkins and Wandersman (1990), Nyden and Wiewel (1992).

the question to help ensure that the subsequent research is genuinely serving their interests.

In contrast, staff of the Dutch science shops report that generally Dutch community and public-interest organizations do not feel alienated from universities and are therefore pleased to be able to delegate research activities, thereby freeing up more of their own resources for other essential activities.²²

While the Dutch science shops do not report the same level of class and cultural conflict that are endemic in American community-based research, they do experience tensions concerning research timetables. They also report frequent tension between the informational needs of an inquiring organization versus the kinds of research projects that will satisfy a university student's course or degree requirements. The normal Dutch solution is that a science shop staff member meets with a representative of the inquiring group and with the student who will conduct the research (and/or with the student's faculty supervisor). The staff member strives to translate the concern posed by the inquiring group into a researchable question that simultaneously satisfies the group's informational needs and timetable, while also enabling the student to conduct a research project that will satisfy academic requirements. Over time the Dutch science shops have become very adept at this initial translation and negotiation process, as well as at helping subsequently to monitor the research-in-progress to ensure that it stays faithful to the negotiated agreement.

FINDING 8: It is not clear whether there are significant net advantages or disadvantages to locating a community research center on, or in close proximity to, a university campus.

At the outset of our research, we hypothesized that the majority of successful community research centers would be situated in locations accessible and inviting to community members. We therefore speculated that a community research center physically located on a university campus would be relatively uninviting, based on the assumption that grassroots community members would find academic settings intimidating.²³ So far, this latter supposition has proven false.

²²The science shop at the Danish Technical University (DTU) in Lyngby, a northern Copenhagen suburb, offers an interesting exception to the norm among European science shops. The 13-year-old DTU science shop is co-directed by a professor of social psychology and a professor of engineering (both released half-time from their other teaching responsibilities), who also teach courses, respectively, on participatory research and on participatory approaches to technological design. Students who take these courses can then earn additional university course credit for conducting participatory community research projects under the science shop's auspices. (Prof. Børge Lorentzen, DTU science shop, meeting with Richard Sclove on 13 May 1996.)

²³We were influenced to make this supposition based partly on the reasoning of the London Technology Networks--a system of community research centers that supported grassroots technological development and innovation in greater London during the 1980's. The Technology Networks were located near, but not on, university and polytechnic campuses, to try to mitigate English working class antipathy toward university settings. (Mole and Elliot 1987, chap. 3; Sclove 1995b, pp. 185-187; and interviews by Richard Sclove with Mike Cooley, Director, Technology Division, Greater London Enterprise Board, Oct. 1984 and Oct. 1986).

With the exception of the Center for Neighborhood Technology, all organizations we studied rely to some degree on university research expertise. However, among the 12 organizations that we studied, nine were not located on a university campus.

Among the remaining three centers that are located at universities (Neighborhood Planning for Community Revitalization [NPCR], the Policy Research Action Group [PRAG], and the Childhood Cancer Research Institute [CCRI]), not one has found its physical location to be a hindrance to effective community-based research. On the contrary, NPCR and PRAG are among the largest and most robust community research centers in the United States in terms of the number of studies completed annually. In the case of CCRI, the physical location of the office is irrelevant, because constituent communities (e.g., Native American tribes in Oklahoma and Nevada) contact CCRI by telephone or E-mail, or meet with CCRI staff who travel to the communities.

On the other hand, Abbie Illenberger at Project South mentioned that being centrally located in downtown Atlanta--in a building that also houses a food pantry, thrift shop, and farmers' market--helps the staff stay sensitive to community needs. She also believes that the downtown location draws in some people who would not otherwise hear of the organization.

If physical location on a university campus is not obviously a hindrance to community engagement, there are clearly some material benefits to a university affiliation. The relationship of the Childhood Cancer Research Council (CCRI) with Clark University's Center for Technology, Environment & Development (CENTED) proved critical to CCRI's survival during its early stages. Not only did CENTED provide Dianne Quigley, CCRI's founder, with a research fellowship, but CENTED's stature and recognition enhanced CCRI's legitimacy in the eyes of potential funders and other experts.

Neighborhood Planning for Community Revitalization (NPCR) is coordinated out of the University of Minnesota's Center for Urban & Regional Affairs (CURA). CURA has a strong reputation among community organizers who, consequently, were predisposed to trust NPCR more than they might have if NPCR had not had CURA's backing. CURA has also provided NPCR with overhead support.

At some universities the aforementioned advantages of a university affiliation are at least partially offset by sundry potential drawbacks. These may include the danger of becoming ensnared in time-consuming or stultifying administrative bureaucracy, the typical hazards of university politics (e.g., petty backstabbing and vendettas), the possible requirement to pay high university overhead charges on research grants, and becoming subject to inhibiting laws or regulations (e.g., Human Subjects Review Committee procedures that were never designed with participatory, community-based research in mind; the risk that confidential files compiled about a grassroots group could be made public under the Open Records Act; or administrative anxiety about legal liability for the consequences of community research activities).²⁴

²⁴Prof. Fran Ansley, Community Partnership Center, University of Tennessee-Knoxville, personal communication with Richard Sclove on 13 April 1998; and Milofsky and Burnham (1995).

In the Netherlands, Dutch science shop clients strongly favor the shops' being university-based, because university research is normally regarded throughout Dutch society as being value-free and objective. Thus science shop reports are accepted in the media and in legal proceedings as truth rather than as opinion, subjective judgment, or biased by political interest.²⁵ U.S. grassroots groups report some ambivalence about this issue. On the one hand, if they trade on the perceived impartiality of university research, it can unquestionably enhance their standing in particular political struggles or legal proceedings. On the other hand, leaning too heavily on this perception can effectively denigrate lay knowledge or dull attentiveness to the reality that some university research is tainted by community-adverse political or financial motivations.²⁶ (This taint that has become infamous in the case of researchers paid by the tobacco industry to discredit studies linking cigarette smoking to lung cancer and to other diseases).

There are currently four science shops in Austria, loosely modeled on the Dutch science shops, but all are located off campus and operate independently of universities. When they were created in 1993, the Austrian shops initially sought to enroll university students as researchers. However, over time they found that, operating independently of the universities, the science shop staff were putting so much time into supervising students that it was more efficient to switch to a model in which now the staff themselves conduct most projects. This could conceivably begin to change, as the Austrian shops are currently seeking to develop closer university ties.²⁷

²⁵Henk Mulder, Science Shop for Chemistry, University of Groningen, E-mail to Richard Sclove, 16 March 1998. During the 1980's there were several Dutch attempts to establish science shops independently of universities, but all of these failed to secure stable funding (Ree 1996; van den Berg 1998, p. 10).

²⁶Based on informal conversations during the July 1996 national planning conference for the Community Research Network organized in Amherst, Massachusetts by the Loka Institute, UMass Extension, and the University of Massachusetts Program in Science, Technology & Society.

²⁷Andrea Gnaiger, Science Shop Vienna, interview with Richard Sclove on 22 August 1997.

FINDING 9: Successful community research centers are well rooted socially in their constituent communities.

More than physical location, what matters most to the success of a community research center is that it is rooted socially and ideologically in the communities it is serving. Roots take time to grow, and community organizers and community researchers probably know this better than most people. More than half of the centers in our study have been functioning for at least a decade.

For instance, the Highlander Center is the oldest organization that we studied and one of the best known nationally and internationally. Highlander has been working in Appalachia and the Deep South for over 50 years. Jacksonville Community Council, Inc., has been functioning as a citizen-based civic organization in northeast Florida since 1975. The Center for Neighborhood Technology attributes its current success to its longstanding reputation among community organizers in Chicago, earned over the preceding 20 years. Project South has been functioning as a network for 14 years. The staff at the JSI Center for Environmental Health Studies built their reputation in the community by working alongside the families affected by the Woburn leukemia cluster for years.

The ethos of nurturing community roots is well-expressed on the Policy Research Action Group's (PRAG) homepage on the World Wide Web:

PRAG distinguishes itself from the traditional university/community research relationship by being very consciously community-driven. All funded research activity must be community-based, and funded activities must involve a collaborative process--researchers and community-based organizations must work together in identifying issues, research methodologies, data analysis, written reports, and action plans.

PRAG is a network within which community stereotypes about aloof academic researchers pursuing esoteric, irrelevant research projects have broken down. At the same time, academic stereotypes about community organizations have also been erased. University researchers have become aware that community organizations are not only interested in social policy research, but many leaders and staff members also have interests and expertise in various facets of social science research. PRAG has created a forum in which activists from the community have moved into the research office, where they can be equal partners in the selection of research issues and development of methodologies. PRAG is sometimes referred to as a progressive community-based think tank where ideas are exchanged freely--both sides feel free to criticize each other's ideas but each side also listens to the other, recognizing that more accurate, more useful, more relevant, and more powerful research can come out of such a collaborative process. By more actively bringing the community into the research process and not treating "community" merely as a place to do research, a source of data, or a variable to be manipulated, the PRAG model represents an alternative to much of

the traditional, academic, discipline-based research.²⁸

During the course of our study, one of the organizations in our case studies (the Urban University and Neighborhood Network, UUNN) folded just three years after it started. We don't know how many community research centers or programs collapse each year. But it is safe to say that generally centers are most at risk during their early years, because during those years a fledgling community research center is faced with the dual challenge of establishing credibility both with community groups and funders.

FINDING 10: A board of directors or oversight committee with strong constituent representation, to which the organization is held accountable, can be a major contributor to the success of a community research center.

Most of the community research centers included in our study are independent nonprofit corporations, and as such are legally required to have a board of directors. Community research centers that are administratively part of a larger nonprofit organization, such as a university (e.g., the Policy Research Action Group based at Chicago's Loyola University, and Neighborhood Planning for Community Revitalization based at the University of Minnesota), ordinarily establish a governing or oversight committee, even though this is not a legal requirement.

According to nearly all of the organizations in our case studies, it is important that a community research center's governance or oversight structure include strong constituent community representation (see also Ansley and Gaventa 1997, p. 52). Board diversity helps ensure that the interests of all the organizations' stakeholders are being served.

Oakland's Applied Research Center (ARC), which focuses on issues of race and social justice, has a board composed of key activists from communities of color, gay and lesbian organizations, workers, and other grassroots groups. Other board members have backgrounds in academia and research or in the media. ARC attributes its ability to work closely with both foundations and grassroots organizations in part to the diverse backgrounds of its staff and board members. When board and staff positions open, ARC advertises for suitable candidates in local newspapers and in the newsletter *Opportunity NOCs (Nonprofit Organization Classifieds)*. Although it is not a formal requirement, in practice all of ARC's staff and board members have prior experience in social change activity.

The Alaska Boreal Forest Council (ABFC) selected its initial board members from among those who attended one of ABFC's public workshops. Council staff invited interested participants to a post-conference meeting to discuss how they would like to see the Council evolve. Those who demonstrated an interest and commitment to the Council's future became board members. Presently, the backgrounds of the eight board members include community organizing, social work, law, zoology, wildlife biology, Native American activism, and university

²⁸Web address: <<http://www.luc.edu/depts/curl/prag/>>.

teaching. The Council has since advertized a successive board election via its newsletter (sent to over 200 individuals and households) and by posting announcements on bulletin boards around city of Fairbanks.

The Highlander Center's future board members are nominated either by staff members or by current board members, usually from groups directly involved in and affected by the Center's work. At any given time the board typically includes teachers, leaders of civil rights groups, community organizers, foundation directors, university professors, researchers, union activists, and artists.

Although not an independent nonprofit organization, Neighborhood Planning for Community Revitalization is governed by a Coordinating Council consisting of representatives from local educational institutions and community organizations. At the top of the Policy Research Action Group (PRAG)'s organizational structure there is a Core Group that develops and implements policies governing PRAG's work. Half of the Core Group's members are representatives of community-based organizations.

Most of the Dutch science shops likewise include an oversight or steering committee. Formerly, these typically included--along with university faculty, administrator, or student members--several community group representatives as well. This pattern persists today at some of the Dutch science shops. For instance, at Delft University of Technology the six-member advisory boards of the general Science Shop and of the Science Shop for the Arts include, respectively, two and three community group representatives; and the Science Shop for Pharmaceuticals at the University of Utrecht reports that, over time, community groups are playing an increasingly active role on its advisory board. However, a number of other Dutch science shops have found that grassroots groups no longer want to serve on such advisory committees. For example, the Science Shop for Law at the University of Utrecht and the Science Shops for Physics and for Chemistry at the University of Groningen find that grassroots groups have gradually withdrawn from their advisory committees--typically because they are generally satisfied with the work the science shops are doing and therefore chose not to allocate their scarce time to participating in such committee meetings. The general Science Shop at the Catholic University of Nijmegen has never had community group representatives on its advisory board. The Science Shop for Biology at the University of Utrecht has reached an intermediate position; while community representatives no longer serve on its advisory board, the shop invites them to a meeting once a year to review the shop's annual report, evaluate its work, and discuss its future.²⁹

One can speculate that the diminished role of community group representatives on Dutch science shop advisory boards, compared with their stronger role on the boards of U.S. community

²⁹E-mail communication with Richard Sclove from Henk Mulder (Science Shop for Chemistry, University of Groningen, 16 March 1998), Joop Busquet (Science Shop, Delft University of Technology, 15 April 1998), Frits van den Berg (Science Shop for Physics, University of Groningen, 15 April 1998), Roy Knuiman (Science Shop for Law, Utrecht University, 15 April 1998), Fried Anepool (Science Shop for Biology, Utrecht University, 15 April 1998), Els Dik (Science Shop for Pharmaceuticals, Utrecht University, 15 April 1998), and Brigit Fokkinga (Science Shop, Catholic University of Nijmegen, 16 April 1998).

research centers, may reflect, again, the relatively greater homogeneity of Dutch civil society. Or perhaps the involvement of Dutch grassroots representatives as advisors has gradually lessened as the Dutch shops have established successful track records and thus long-standing, trusting relationships with community groups.

FINDING 11: Community research centers use newsletters and reports as primary mechanisms for documenting the results of community-based research and conducting outreach to communities. Use of the Internet is growing.

The community-based research centers that we studied use publications to simultaneously document their research, disseminate results, and conduct outreach to communities.

All but two of the organizations we studied that are physically and administratively independent of a university published a regular newsletter that they send to members, constituents, and policy makers. The following is a list of some of the newsletters or other periodic publications produced by the research centers that we studied:

- *Alaska Boreal Forest Notes*, Alaska Boreal Forest Council
- *Racefile*, Applied Research Center
- *The Neighborhood Works*, Center for Neighborhood Technology
- *Highlander Reports*, Highlander Research & Education Center
- *Full Disclosure*, Good Neighbor Project
- *As the South Goes*, Project South

Two of the four university-based organizations included in our study produce regular newsletters. The Childhood Cancer Research Institute distributes *Childhood Cancer Research Institute Newsletter* to members and constituents nationwide. The Policy Research Action Group (PRAG) issued the first 16-page issue of *PRAGmatics: The Journal of Community-Based Research* in the spring of 1998. PRAG also estimates that roughly 15 percent of the projects that it coordinates are reported in articles in popular and scholarly journals, and roughly 40 percent are cited in articles and books as examples of community-based research or for the substance of the research findings. Instead of producing their own newsletters, Neighborhood Planning for Community Revitalization and the Urban University and Neighborhood Network have documented and disseminated their work via scholarly publications, books written to be accessible to communities and academics alike, World Wide Web pages, and articles written for the newsletters of various grassroots groups.

In addition to publications, community research centers hold conferences and luncheons to disseminate the results of their work to grassroots organizations, policy makers, the media, and potential funders.

Use of the Internet as a communication tool is, not surprisingly, on the rise. All of the organizations we studied use E-mail (most regularly, a few only sporadically). Ten of the twelve organizations that we studied have a homepage on the World Wide Web.

In comparison, the Dutch science shops normally publish a printed report, a summary in the respective shop's newsletter, and a press release for each completed project. The Dutch media frequently report the conclusions of science shop projects. For instance, in the early 1990's the general science shop at the University of Amsterdam found that about one in ten of its projects received heavy local and national media coverage (although the science shop wasn't always credited as the source of the information).³⁰ The Dutch shops are, like American community research centers, increasingly using E-mail and the World Wide Web as communication tools.

FINDING 12: Student interns play a vital role in the functioning of many community research centers.

*“ When collaborative research involves undergraduate and graduate students as part of the research team, it produces memorable experiences for the students. After graduation they remember their involvement in that community survey or that report that was ultimately featured in the local newspaper. When students think about urban issues, they no longer pull up some fuzzy abstract image in their mind; they see real communities and real faces. ”*³¹

Student interns are crucial to the operation of at least 10 of the 12 centers that we studied. From a societal or community research center's point of view, there is a significant economic benefit in enrolling students: they can be rewarded partially or entirely with academic credit rather than monetarily. Further non-economic benefits are that students reap the satisfaction that comes with making a constructive contribution to social improvement, while honing their budding research skills in a practical setting. Society benefits further because the participating students receive a boost in the education-for-citizenship that it is widely agreed ought to be part of any university education in a democratic society. This boost is not hypothetical; several of the organizations in our study--such as the Childhood Cancer Research Institute and the JSI Center for Environmental Health Studies--report that their student interns have been profoundly affected and altered their life outlooks as a result of their involvement in community-based research. Faculty-supervised student participation can also help universities maintain a more balanced social outlook during a period of deepening university research ties to industry.³²

To conduct their respective research projects, the Policy Research Action Group and Neighborhood Planning for Community Revitalization both rely almost entirely on students. The

³⁰Interview with Bernie Hermes and Selma Hinderdael, Science Shop, University of Amsterdam, by Richard Sclove on 10 Oct. 1994.

³¹Nyden et al. (1997, p. 12).

³²The growth in industrial support of U.S. academic research is documented in National Science Board (1996, pp. 5-11, 5-12, and A-168).

staff of the Childhood Cancer Research Institute includes Dianne Quigley, as director, and one or two graduate students. A majority of the students who participate in community research projects are enrolled in graduate degree programs, but undergraduates represent a sizeable minority. As in the Netherlands, it is not uncommon for a U.S. community research project to turn into a master's thesis.

It is typical for community research centers to start small and grow slowly as they establish themselves. During the early years, staff often work long hours with little or no pay. Student volunteers or low-paid student interns are frequently crucial to a center's survival at this stage. The Alaska Boreal Forest Council operated during its first six years without any funding, relying on volunteers and student interns.

The Dutch science shops rely extensively on student interns and on student and postgraduate volunteers. All Dutch university students' education is partially government financed (see p. 63, n. 10, above). Some Dutch science shops work only with student volunteers; others pay a modest supplementary stipend. For instance, in 1996 the general science shop at the Free University in Amsterdam paid students a supplementary stipend equivalent to about US\$330 per month.

Participating students often report that their science shop experience alters their understanding of the social significance of research and affects their subsequent career choices. Because the Dutch economy currently has trouble absorbing recent university graduates quickly, some of the Dutch science shops now rely also on volunteers who are in their first year after graduation and receiving a social security stipend from the Dutch government. These volunteers choose to work with the science shop partly because the practical experience enhances their ability to land a paying job afterwards.³³ This experience helps build a cadre of community-conscious research professionals.

The four science shops in Austria have been hindered in their ability to enroll students by the fact that Austrian universities, unlike their Dutch or Danish counterparts, will not give students academic credit for research conducted with a science shop.³⁴

FINDING 13: The role of staff members distinguishes community research centers that are community-based from those that are university-based.

Staff at community research centers based at universities tend to function more as coordinators, administrators, and mediators rather than as researchers. In the case of

³³Prof. Barend van der Meulen, University of Twente, The Netherlands, E-mail communication with Richard Sclove on 16 Sept. 1993; Andre van Raalte, Science Shop for Chemistry, University of Amsterdam, interview with Richard Sclove on 10 Oct. 1994; and Dr. Jeanine de Bruin, Coordinator, Science Shop, Free University of Amsterdam, interview with Richard Sclove on 8 May 1996.

³⁴Andrea Gnaiger, Science Shop Vienna, interview with Richard Sclove on 22 August 1997. See also Finding 8, above.

Neighborhood Planning for Community Revitalization (NPCR), project director Kris Nelson works with community groups to help them formulate their research proposals. Once proposals are accepted, his responsibility shifts to making the available research projects known to students. Nelson also maintains contact with the inquiring community organization during each project, follows up on the research after it is complete, and nurtures new relationships with other community organizations. At all four of the university-based centers in our case studies, full-time staff numbered no more than three. The staff of the Policy Research Action Group (PRAG) consists of a director who works 20 percent of the time and is a professor during the rest of the week, a project coordinator whose position varies from full-time to two thirds-time, a research coordinator at two thirds-time and a secretary.

The Childhood Cancer Research Institute (CCRI) represents a partial exception among the university-based centers that we studied. Dr. Quigley is CCRI's senior researcher working with Native American communities, in addition to being the director of the organization. The graduate students working with her divide their time between research and other staff functions, such as organizing conferences and preparing publications. As at PRAG, CCRI's director is also a university faculty member.

Community research centers that are not university-based tend to have more staff who work as researchers. Rather than linking community groups with other researchers, the 14-member staff of the Applied Research Center (ARC) works directly with communities on research and empowerment projects. The Center for Neighborhood Technology and the Highlander Center each have staffs of 20 or more people and, as at ARC, staff members are directly involved in conducting research projects.

The Dutch science shops are all university-based and, like PRAG and NPCR in the U.S., generally have small paid staffs who mediate between inquiring organizations and student researchers. But there are several important exceptions. For instance, the staff of the Science Shop for Chemistry at the University of Amsterdam--the largest of all the Dutch science shops--includes about 12 professors (part time) and researchers (full time) who conduct much of the shop's research themselves, along with a number of short-term student interns and volunteers.³⁵ The eight specialized science shops at the Technical University of Eindhoven are atypical in the opposite direction; they are staffed entirely by students on a voluntary basis (Ree 1996).

FINDING 14: In contrast with the Dutch science shops, the majority of the organizations we studied rely on private foundations as a primary source of support, albeit to varying degrees.

The majority of the organizations in our case studies receive their primary support in the form of grants from private nonprofit foundations or government agencies. Federal agencies that have funded our case study organizations include the Agency for Toxic Substances & Disease

³⁵Andre van Raalte, Science Shop for Chemistry, University of Amsterdam, interview with Richard Sclove, 10 oct. 1994. Because this particular shop has begun to do some research for industry and the Dutch government, it has recently crossed the line from being a noncommercial science shop to becoming a commercial consulting center (Ree 1996; van den Berg 1998, p. 10).

Registry, the National Institute of Environmental Health Sciences, the Environmental Protection Agency, the Department of Education, and the Department of Housing & Urban Development.³⁶ Additional sources include financial contributions from major individual donors, fees for services, and membership dues. Publications provide an additional source of income for some community research centers, although they function primarily as educational tools and networking devices.

Project South, the Highlander Center, and the Jacksonville Community Council, Inc. (JCCI) represent exceptions to this general funding pattern. Membership donations provide a significant component of JCCI's financial support. Currently, JCCI's 500 members pay between \$35 - \$500 apiece in annual membership dues. Project South has also developed a strong individual donor base, partly out of necessity: there are relatively few national foundations that fund social change efforts specifically in the southeast U.S. As a result, one of Project South's activities involves trying to educate foundations about the need to establish such programs. The Highlander Center receives about one-fifth of its budget from individual donors.

The Center for Neighborhood Technology (CNT) and the Policy Research Action Group (PRAG) have benefitted financially from their location in Chicago. Compared with most other U.S. cities, Chicago has a long and strong tradition of community organizing and funding programs to support it. For instance, the John D. and Catherine T. MacArthur Foundation, one of the ten largest U.S. charitable foundations, is headquartered in Chicago and has a major program dedicated exclusively to funding projects in Chicago. The MacArthur Foundation has

³⁶For instance, the Community Outreach Partnership Centers (COPC) Program at the U.S. Dept. of Housing and Urban Development (HUD) currently awards up to one quarter of its \$7.5 million annual budget (i.e., up to \$1.87 million) to support applied, community-oriented research conducted with university participation. However, a review of the COPC grants awarded in Fiscal Years 1994-1997 suggests that, in practice, considerably less than one quarter of the Program's funds are allocated to research and--of those research funds--not all is for research that is community-based (Office of University Partnerships 1996 and 1997). General information about the COPC Program is available on the World Wide Web at <<http://www.hud.gov/copcsu.html>> and at <<http://www.hud.gov/outreach.html>> or by telephoning HUD in Washington, DC at +(202) 708-1420.

Information about community-based research on environmentally associated disease prevention, intervention, and environmental justice funded by the National Institute of Environmental Health Sciences (NIEHS) is available on the World Wide Web at <<http://www.niehs.nih.gov/dert/programs/cbpir.htm>>, <<http://www.niehs.nih.gov/dert/programs/envjust.htm>>, and <<http://jeeves.niehs.nih.gov/oc/factor/9711/env-just.htm>>; or contact Dr. Allen Deary, NIEHS, Division of Extramural Research & Training, P.O. Box 12233, MD 3-04, 111 T.W. Alexander Drive, Research Triangle Park, NC 27709, USA; Tel. +(919) 541-4500, Fax (919) 541-2843; E-mail: <dearry@niehs.nih.gov>. There is some possibility that NIEHS's environmental justice grantmaking program will be terminated. However, some grants for community-based research on environmental justice are also available from the U.S. Environmental Protection Agency (EPA) in Washington, DC; information is available on the World Wide Web at <<http://es.epa.gov/oeca/oej/ejgrantf.html>> and at <<http://www.epa.gov/owowwtr1/watershed/wacademy/fundjust.html>>; or call the EPA at +(202) 564-2515 or the EPA toll-free hotline at (800) 962-6215.

The U.S. Dept. of Education has funded some community-based research--including Minneapolis-based Neighborhood Planning for Community Revitalization (see pp. 47-51 of this report)--under its Urban Community Service Program. President Clinton has been trying for several years to terminate this program as part of the Administration's reinventing government and cost-savings efforts. For information, contact Ms. Sarah E. Babson at the Dept. of Education, Tel. +(202) 260-3472, E-mail: <sarah_babson@ed.gov>.

been a major contributor to both CNT and PRAG.

Community research centers that are part of universities (e.g., the Policy Research Action Group and Neighborhood Planning for Community Revitalization) often receive financial subsidy from their respective universities in the form of overhead support, faculty release time, and administrative assistance.

The Netherlands provides an interesting counterpoint to the U.S. funding pattern. The first Dutch science shops were started in the mid-1970's by graduate student and faculty volunteers. As they grew in number and in the number of completed projects, their popularity also grew. Gradually the organizations throughout Dutch civil society that benefitted from the shops' research assistance communicated their gratitude to the Dutch government. By the early 1980's the government, in turn, led the Dutch universities to understand that in its continued provision of university financing, the government would look kindly on those universities that used some of their discretionary government funds to support science shops. As a result, today most of the Dutch science shops are funded mainly by their host universities (out of some combination of general university funds or subsidiary school or department funds). This general operating support typically covers some or all the salaries of a small core staff at each shop. Additional funding for research projects may come from government grants, university research funds or, in the case of some shops, fees charged clients on an ability-to-pay, sliding scale basis. As mentioned earlier, compared with American universities, the Dutch shops receive an additional indirect subsidy inasmuch as a portion of the basic educational expenses of all Dutch university students is government financed (see p. 63, n. 10, above).

FINDING 15: Compared with conventional research endeavors, community-based research is cost-effective.

The cost of conducting a community research project naturally varies greatly, depending, for instance, on the type and duration of the project. But on average, community-based research is relatively inexpensive and provides excellent value for the money.

Research projects conducted by the Policy Research Action Group (PRAG) range in cost from about \$2,500 (e.g., for the stipend and administrative costs of an undergraduate intern's research project) up to \$50,000 annually (for an ambitious long-term project involving multiple researchers), with an average PRAG project costing on the order of \$10,000. Neighborhood Planning for Community Revitalization (NPCR) projects also cost in the neighborhood of \$10,000 on average.³⁷

³⁷Phil Nyden, Director, Policy Research Action Group, E-mail to Richard Sclove on 29 Jan. 1998; Kris Nelson, Project Director, Neighborhood Planning for Community Revitalization, E-mail to Madeleine Scammell on 29 Jan. 1998. Both of these \$10,000 estimates reflect all project expenses, plus each project's share of the respective center's general operating costs. E.g., NPCR currently conducts 30 projects annually, operating on an annual organizational budget of about \$300,000.

It makes some sense to calculate an average project cost for NPCR and PRAG, because both conduct many projects a year, using variations on a few standard models for organizing the social relations of a project

It is difficult to compare the cost of research projects cross-nationally, because of different administrative structures and accounting conventions. Nonetheless, rough calculations suggest that the cost of studies conducted by the Dutch science shops is on the same order of magnitude (i.e., also about US\$10,000 per project).³⁸

(e.g., undergraduate intern versus graduate student intern). We don't have comparable budget data for all the organizations included in our case studies. But it is less obvious that it would make sense to perform such calculations for community research centers that conduct fewer studies and in which the models for organizing projects are less standardized. However as one cross check, we note that at Project South, which operates on a very different model than PRAG or NPCR, a research team also costs on the order of \$10,000 (about \$8,000 to pay two part-time researchers for 6 months, plus research expenses and administrative overhead).

³⁸Among the challenges in comparing American and Dutch community research costs is that of understanding national variations in how overhead costs are taken into account, and also adjusting for the fact that Dutch university students' basic education is partially government financed (which means that, compared with U.S. community research centers, Dutch science shops are receiving an effective government subsidy when they enroll student researchers).

Van den Broecke (1993, p. 2) estimates the annual budget of the entire Dutch science shop system at approximately US\$9 million, which works out to an average project cost of about \$9,000. Assuming that, for the purposes of fair comparison with the U.S. (where students engaged in community-based research more often need to be paid a stipend), one should add \$1,000 to this figure, the estimated average cost of a Dutch project rises to \$10,000.

We are deriving the shadow price of \$1,000 per project based on information provided by Henk Mulder, Science Shop for Chemistry, University of Groningen, E-mail communication with Richard Sclove on 16 March 1998. Dutch science shop research projects typically take from 1 to 6 months of a student or volunteer researcher's time. Students receive outright government educational gifts on the order of \$300 per month, and volunteers receive about \$600 per month in government unemployment benefits. That suggests that the indirect government subsidy for such a research project ranges from about \$150 (for a student working half-time for 1 month) up to an occasional high of \$3,600 (for a volunteer working on a project full-time for 6 months). It seems reasonable to adjust the Dutch estimate for the government subsidy to student educational and living costs when comparing with the U.S. However, in purely Dutch terms the science shops are *not* subsidized, inasmuch as the education of all Dutch university students is government financed, regardless of whether or not they are in that minority of students who choose to do a science shop project. In these comparisons we are overlooking the role of government loans, inasmuch as both U.S. and Dutch university students are eligible for educational loans under preferential government rates and conditions.)

For a few cross-checks on the preceding average project cost estimate: According to Bas L. de Boer (Director, Science Shop, University of Amsterdam, E-mail with Richard Sclove on 9 Dec. 1993), in 1992 the general science shop at the University of Amsterdam received from the university a core operating budget of US\$60,000, plus \$530,000 in funding for research projects. In addition, the university paid the salaries of a core staff of 6-7 people (equivalent to 4.8 full-time employees). If one assumes that the average full-time employee cost \$35,000/year in salary plus benefits (this is the approximate personnel cost rate at PRAG in the U.S.), then one would estimate the annual budget of the Amsterdam shop at $(4.8 \times \$35,000) + \$60,000 + \$530,000 = \$758,000$. In 1992 the shop in question completed 66 studies. Thus the average project cost about \$11,500 (or \$12,500 if one adds in the assumed indirect government subsidy calculated in the preceding paragraph). The average cost of a project at this Amsterdam shop is probably not a bad ballpark proxy for the average cost of projects at all Dutch science shops, in the sense that--as a non-specialized shop--its projects ranged across all disciplines and topic areas. (Although it is Henk Mulder's impression that the projects at this Amsterdam shop may have been a bit more ambitious, on average, than the typical project at many other science shops.)

The Science Shop for History at the University of Groningen is organized and financed very differently, yet reports similar average project costs. Unlike the aforementioned Amsterdam shop, in the mid-1990's the

Community-based research is relatively economical in part because it often relies on low cost student interns or on student or community volunteers. For instance, the epidemiology studies conducted in collaboration with concerned residents of Woburn, Massachusetts would have been vastly more expensive had the FACE (For a Clean Environment) citizens' group had to pay professional researchers to administer community health surveys (Brown and Mikkelsen 1990, pp. 131-132). The one relative cost factor that can rise when conducting community-based research is the added time sometimes involved in organizing collaborative, democratic processes among members of an unusually diverse project team.

In contrast with community-based research, traditional research projects in academia, industry, and government often cost from \$50,000 up to \$1 million, and occasionally much more.³⁹ For example, the Monsanto company reportedly spent \$300 million developing a single chemical--a genetically engineered growth hormone for use as a stimulant to cows' milk production (e.g., Schneider 1990). In comparison, it is hard to deny that community-based research is impressively low cost.

Moreover, community-based research provides unusually good value for the money invested. True, community-based research is unlikely to invent the transistor, a polio vaccine, or the special theory of relativity. (Well, actually in a sense community-based research *did* invent the special theory of relativity, inasmuch as young Albert Einstein was at the time an ordinary citizen who developed the theory in his spare time, while working full-time as a patent clerk in Switzerland. And community-based indigenous knowledge systems are responsible for countless

Groningen History Shop received only about 1.5 percent of its total operating budget from the university; the rest came from sliding scale fees for services and outside grants. (In receiving so little of its budget from the university, this shop is quite atypical of most Dutch science shops.) During this period, the History Shop completed about 40 projects annually, on a budget of US\$507,000, which works out to an average project cost of approximately \$12,700. About 25 of these 40 projects represent students' master's theses; the other half were conducted by the History Shop's 7 - 8 full-time professional researchers (occasionally using participatory methods in collaboration with local amateur historians). Factoring in an assumed effective government subsidy of \$900 per student (\$300 government gift/student-month X 6 months per thesis X 1/2-time work on thesis), the estimated average cost of a Groningen Science Shop for History project rises to about \$13,200. (Based on data provided by Klaas Lugtenborg, Director, Science Shop for History, University of Groningen, interview with Richard Sclove on 10 May 1996.)

Henk Mulder reports average project costs at the Science Shop for Chemistry, University of Groningen--where the typical project duration is just 1.5 months--of only about US\$4,000 (a figure that includes an allowance of about \$500 to reflect the indirect government subsidy of a student researcher's educational expenses).

³⁹It is problematic to calculate average research project costs. For instance, a multi-year research project is sometimes funded as a single unified project, and sometimes as separate annual projects. A multi-institution project may, likewise, be treated as a single unified project or as a set of independent projects. Projects supported by one funding institution may, without the knowledge of that institution, also receive support from other funders. Nonetheless, for a little ballpark validation (subject to caveats such as those just stated): project costs in the U.S. National Science Foundation's (NSF's) Division of Social, Behavioral & Economic Research currently range from about \$20,000 to \$1 million. Similarly, the current average research grant award by NSF's Program in Science & Technology Studies is \$65,000. (Dr. Ed Hackett, Director, Science & Technology Studies Program, NSF, E-mail communication with Richard Sclove on 15 April 1998.)

vital innovations in agriculture, medicine, and pharmacology.⁴⁰) But the overwhelming majority of conventional research programs produce no such spectacular results either. This observation does not amount to an argument against traditional research,⁴¹ but it is important to bear in mind when assessing the relative merits of community-based research.

Community-based research is, on the other hand, thoroughly distinctive in routinely producing knowledge that is not only useful but actually used to realize constructive social change, as well as contributing to a host of secondary social benefits, such as education-for-citizenship and improvements in social relations and social trust (Findings 1, 2 and 12). From an ethical standpoint, community-based research wins strong additional merit for more consistently empowering and providing other benefits to groups that are among society's least advantaged.⁴²

Finally, we have not discovered instances of community-based research producing unintended social and environmental harm.⁴³ In contrast, traditional research and development--along with its many social benefits and periodic spectacular successes--also bears some responsibility for environmental pollution, occasional ethical breaches (such as dangerous medical or military experiments performed on uninformed human subjects), degraded work processes and industrial accidents, weapons of mass destruction, tears in the fabric of civil society, harm to the basic structure of democratic institutions, and so on.⁴⁴ Not only does community-based research tend not to produce such negative consequences, it often contributes directly to preventing,

⁴⁰E.g., Brush and Stabinsky (1996), Marglin (1997), Shiva (1997). The Science Shop for Chemistry at the University of Groningen, the Netherlands, observes that over time the research requests it receives from environmental organizations have gradually shifted from only examining environmental and health effects to also promoting or developing environmentally improved products and production processes, such as ways of improving occupational safety by substituting vegetable oils for dangerous organic solvents (Ree 1996).

⁴¹For some interesting recent arguments that *do* challenge conventional arguments for government support of basic research in the natural sciences, see Sarewitz (1996), Fuller (1997), and Roy (1997).

⁴²This is the foundational ethical standard for basic social structure upheld in John Rawls's *Theory of Justice* (1971).

⁴³Henk Mulder (Science Shop for Chemistry, University of Groningen, the Netherlands, E-mail with Richard Sclove on 16 March 1988), playing devil's advocate, hypothesizes one type of circumstance in which science shop research could conceivably contribute to environmental harm: Suppose local environmental groups use science shop research to successfully oppose the construction of new, nearby waste treatment facilities that, from a societal standpoint, are environmentally preferable to the existing waste treatment practices? Or suppose that on aesthetic "visual pollution" grounds such groups successfully oppose the construction of windmills for generating electricity, thereby perpetuating societal reliance on more dangerous or polluting electricity generating technologies (such as coal-burning or nuclear power plants)?

One possible answer to such examples of the NIMBY (Not-In-My-Back-Yard) syndrome is that they would arise less frequently if there were earlier, empowered participation of community groups in technological decisions. See, for example, Piller (1991); Morris (1994, pp. 216-217); Sclove (1995b, pp. 183-184).

⁴⁴On unethical human experimentation see, for example, Jones (1981), Schneider (1994). Otherwise see, for example, Sclove (1995b), Putnam (1996).

mitigating, or remedying them.⁴⁵

We repeat, community-based research is economical and by many standards provides outstanding value for the money.

FINDING 16: The majority of the community research centers we studied find their work chronically constrained or even jeopardized by an inadequate funding base.

Even though community research is unusually economical and cost effective, inadequate funding constantly limits organizational capacities to meet the demand for community-based research. Insufficient funds have forced the Applied Research Center (ARC), for example, to make difficult trade-offs in setting research priorities. In 1994 and 1996 a sense of social obligation compelled ARC to conduct research on two statewide referenda that had direct implications for its community allies. ARC was not funded for this work and as a result fell behind schedule in completing other funded projects.

The Good Neighbor Project regularly has to turn away requests for assistance that do not fit within GNP's mission area. This is simply a consequence of not having the resources to stray from its mission. Funded primarily by a federal grant for urban revitalization, Neighborhood Planning for Community Revitalization is similarly constrained to a specific mission area and projects outside this area are turned down. The general policy of the JSI Center for Environmental Health is not to reject any solicitations for help. However, in practice the level of assistance the JSI Center can provide any group is substantially determined by available funds, which are generally meager.

The Center for Neighborhood Technology takes on 2 - 5 student interns per year, but wishes there were money to hire more. Project South also mentioned lacking the funds to hire the student interns it needs.

Although some feel it more acutely than others, more than half the community research centers in our study worry that lack of funding could force them to shut down. Still another indication of inadequate funding is that many of the staff members that we contacted at community research centers are so overworked that it was difficult for them to find the time to schedule interviews with us, despite the fact that being profiled in a study such as ours can bring helpful recognition to a center.

While there is limited funding available from foundations and selected government agencies to support selected community research *projects*, many community research *centers* struggle particularly for core operating support. Yet without core support a center cannot build and maintain the social infrastructure needed to provide reliable service.⁴⁶ The situation is notably

⁴⁵See Chap. 2 and Chap. 3, Findings 1 and 2, above; and also Sclove (1995b, p. 192).

⁴⁶The general inadequacy of core operating support available to progressive organizations in the U.S. is documented and analyzed in Shuman (1997), e.g.: "Progressive funders . . . are inclined to avoid general-support

different in the Netherlands, where universities use discretionary government funding to cover the core operating costs of most science shops.

The relative underinvestment in community-based research in the U.S. compared with the Netherlands can be estimated quantitatively. In 1993 the total Dutch investment in science shops represented about US\$9 million, equivalent to 0.23 percent of all Dutch research and development (R&D) expenditure or to approximately 0.9 percent of all the R&D performed by Dutch universities.⁴⁷

We estimate crudely that annual expenditure for community-based research in the United States is also on the order of \$10 million,⁴⁸ amounting to 0.006 percent of all U.S. R&D expenditure, or equivalent financially to approximately 0.05 percent of all the R&D performed by U.S. universities and colleges (see Figure 3-3).⁴⁹

Were U.S. universities instead matching their Dutch counterparts in allocating the equivalent of 0.9 percent of their R&D effort to community-based projects, U.S. university expenditure on community-based research would have been about \$179 million in 1993. In reality, we estimate that the actual 1993 expenditure by U.S. universities on community-based research was only a fraction of \$10 million (i.e., only a fraction of the \$10 million total investment that we are estimating for U.S. community-based research conducted both with and without university participation).

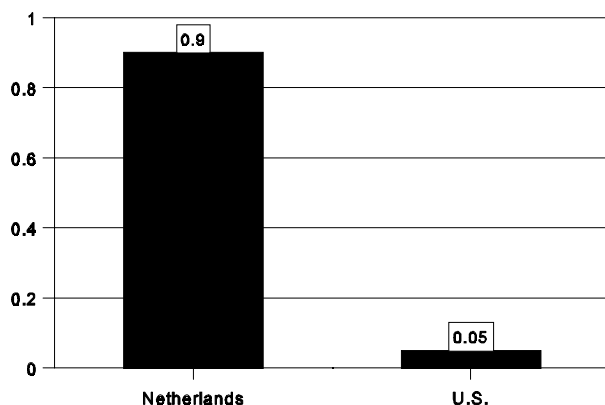
funding. The natural result is a proliferation of short-term projects attached to flimsy institutions.”

⁴⁷Van den Broecke (1993, p. 2). This US\$9 million figure omits the correction factor for the government subsidy of university students' education (see Finding 15), which is irrelevant to calculations internal to the Dutch economy (since, for example, non-science shop research at Dutch universities also benefits from this subsidy). In 1993 the Netherlands' Gross Domestic Product was US\$218 billion, \$4 billion of which represented investment in research and development (about half financed by government and half by industry). Dutch universities performed 25 percent of this R&D (National Science Foundation 1996). We are calculating aggregate Dutch science shop research costs as a percentage of Dutch R&D expenditure, although in practice the science shops are generally funded from Dutch universities' education budgets, not their research budgets.

⁴⁸This is a very crude estimate, but again suffices for initial ballpark comparisons. We derive it by multiplying Finding 3's estimate of 400 - 1,200 community research projects completed annually in the U.S. by Finding 15's estimate that an average project by PRAG, NPCR or Project South costs \$10,000--which yields a range of \$4 - \$12 million for total U.S. annual expenditure on community-based research. We report this as a round \$10 million in the text, as a reminder that this is only a first, crude order-of-magnitude estimate. (As noted in Finding 5, we don't know if this figure adequately captures projects conducted on an ad hoc basis by individual researchers who are not affiliated with a community research center or program. On the other hand, our estimate for the Netherlands also omits any Dutch community research projects that are not conducted under the auspices of a science shop.)

⁴⁹In 1993 total U.S. R&D expenditure was \$165.8 billion (from all sources, government and private sector). The total cost of the R&D performed by U.S. universities that year was \$19.9 billion (National Science Board 1996, p. A104).

Figure 3-3. University Expenditure on Community Research Expressed as a Percentage of Total University R&D Expenditure



As a fraction of each nation's respective total R&D expenditure, we thus estimate that the Dutch are investing in community-based research at 37 times the U.S. rate. On a per capita basis, it appears that the Dutch are investing financially in community-based research at 15 times the U.S. rate. Moreover, there is no reason to assume that even the Dutch are investing in community research at an optimal level. For instance, in the Netherlands and across

the industrialized world, science shops and other community research centers generally lack the resources needed to effectively support community and worker participation in designing and developing new technologies.⁵⁰

The \$300 million that the Monsanto company spent developing bovine growth hormone (a product that many small farmers and consumers have actively opposed on economic, social, ethical, or health grounds),⁵¹ would pay for all U.S. community-based research for 30 years at the current level that we estimate it is being conducted.

In 1994 PepsiCo announced that, following two years of market research conducted among 5,000 people, it would spend a further \$50 million to reinvent its Doritos®-brand tortilla chip--intensifying the flavor on the outer surface, rounding the chip's corners, and redesigning the package (Collins 1994). PepsiCo's principal concern was to ensure that Doritos maintain market dominance in the face of growing competition from the new "restaurant style" corn chips. (News coverage of this story neglected to mention that the leading "restaurant style" chip, Tostitos®-brand, also happens to be a PepsiCo product.)

⁵⁰Leydesdorff and Zeldenrust (1984), Leydesdorff and van den Besselaar (1987b), Sclove (1995b, pp. 188-196); but for several examples in which a Dutch science shop has helped stimulate environmentally benign innovations, see (Ree 1996). There is also the obvious question of whether community research centers would conduct more ambitious projects if more money were available and, in that case, whether the added expenditure would be socially worthwhile. The latter question is not particularly pressing, since there is no evidence to suggest that the Netherlands, the United States, or any other nation is at present remotely in danger of crossing over from the zone of underinvestment into overinvestment in community-based research. Moreover, because the normal direct motivation of community-based researchers is social improvement rather than, say, a patent, tenure or a Nobel Prize, there may be less temptation to spare no expense in getting ahead of competing research teams or beyond the recognized frontier of an academic discipline. Thus while anything is possible, it doesn't seem especially likely that community-based research projects would attempt to emulate the gold-plated investment levels associated with contemporary, "cutting edge" Big Science and Technology (e.g., the Human Genome Project, the Space Station, the Super-Conducting Supercollider, Star Wars, or the B-2 Bomber).

⁵¹See Finding 15 and Schneider (1990).

The expenditure of more than \$50 million to ensure that Pepsico's Doritos remain America's top-selling snack food, ahead of Pepsico's own competing Tostitos, represents approximately five times the total annual U.S. investment in community-based research.

In 1995 the U.S. federal government spent \$22.5 billion for R&D conducted at government laboratories, including anachronistic Department of Energy nuclear weapons and nuclear power laboratories that are widely acknowledged to be struggling to identify missions that would justify their continued existence.⁵² That \$22.5 billion is more than 2,000 times greater than the U.S. investment in community-based research--that is, in research that is cost effective, socially responsive, and authentically serves the common good.

In 1998 the U.S. is scheduled to spend \$41 billion on military R&D.⁵³ Eager sleuths searching for a potential security threat that would justify expenditures of this magnitude have come up empty handed. In the words of a 1996 *New York Times* editorial: "American military spending is equal to that of the next 10 biggest military powers *combined*--and most of those countries are allies."⁵⁴ Meanwhile the budget for U.S. military R&D is more than 4,000 times larger than what we will spend on community-based research. For a sense of relative social priorities: the budget for Dutch military R&D is only about 4½ times larger than estimated Dutch expenditure on community-based research.⁵⁵ (See Figure 3-4.)

Looking beyond R&D budgets, one can also find ample slack in other parts of the the U.S. government budget for considering reallocation of funds to community-based research. For example, for the cost of just one unneeded and ineffectual B-2 bomber, the U.S. could increase expenditure on community-based research 100-fold (i.e., 10,000 percent) for one year and still have \$500 million or more left over to contribute to other worthy social programs or to shrinking

⁵²National Science Board (1996, pp. 4-26 to 4-28). One of the new Dept. of Energy (DOE) lab missions involves trying to clean up the legacy of mismanaged radioactive and toxic chemical wastes that the labs produced over the previous half century. The ten major DOE labs are Los Alamos, Lawrence Livermore, Sandia, Oak Ridge, Lawrence Berkeley, Pacific Northwest, Idaho Engineering, Argonne, and Brookhaven, plus the newer National Renewable Energy Laboratory. While there are many hundreds of U.S. government laboratories, in 1995 the DOE labs accounted for about 15 percent (\$3.4 billion) of total federal R&D expenditure at government labs.

⁵³1998 U.S. federal R&D budgets are available from the R&D Budget and Policy Project of the American Association for the Advancement of Science, on the World Wide Web at: <<http://www.aaas.org/spp/dspp/rd/rdwwwpg.htm>>.

⁵⁴"Get Smarter on Smart Weapons" (1996), emphasis added.

⁵⁵In 1993 the Dutch military R&D budget represented less than 2 percent of total Dutch government R&D, or somewhat less than U.S.\$40 million (National Science Foundation 1996). In 1993 U.S. military R&D represented 59 percent of total U.S. federal government R&D; in 1998 this figure will drop to 53 percent--which is still higher than the 45-50 percent levels that prevailed during the Vietnam War, at the height of the Cold War (figures derived from National Science Board 1987, p. 265; National Science Board 1996, p. A-150; and from the R&D Budget and Policy Project of the American Association for the Advancement of Science, on the World Wide Web at: <<http://www.aaas.org/spp/dspp/rd/rdwwwpg.htm>>).

the national debt.⁵⁶

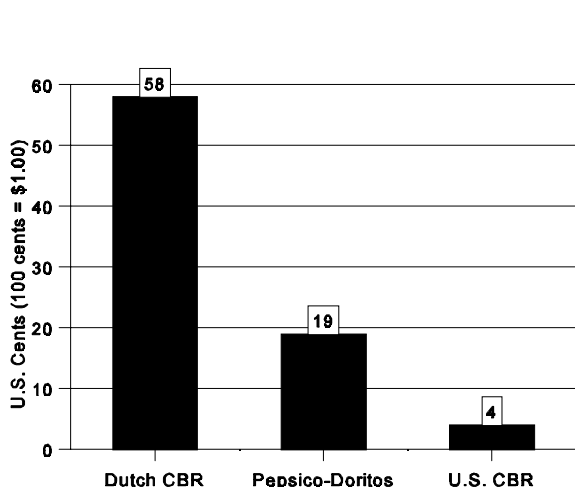
In short, the U.S. needs and can easily afford more community-based research.

FINDING 17: While there are community research centers in the United States, compared with the Netherlands these are few and far between; relatively inaccessible to the groups that could most benefit from them; and do not begin to represent a comprehensive, nationwide community research system.

“Accessible and engaged community-based researchers are few and far between A network of community-based researchers--accessible to our neighborhood organizations and constituents through the [Community Research Network] database--would greatly enhance our capacity to run successful campaigns.”

--Jen Kern, Research Coordinator of ACORN (a leading national organization of low-income and minority groups)⁵⁷

Figure 3-4. Estimated Per Capita Expenditure in U.S. Cents (ca. 1995)



Dutch CBR = Annual community-based research expenditure in the Netherlands, per capita (\$0.58 in U.S. dollars)

Pepsico-Doritos = Pepsico’s per capita expenditure to reinvent the Doritos corn chip in the U.S. (\$0.19)

U.S. CBR = Annual community-based research expenditure in the United States, per capita (\$0.04)

For further comparison: In 1995 annual per capita expenditure on R&D by U.S. universities was \$77. U.S. federal per capita expenditure on government laboratory R&D

was \$86 and on military R&D it was \$152. The preceding three numbers are all too large to fit on this chart. (For the Netherlands, annual per capita expenditure on military R&D is about US\$2.50--only 4½ times Dutch expenditure on community-based research).

⁵⁶In 1995 the Pentagon spent \$4.5 million on studies which concluded the U.S. needs no new B-2 bombers beyond the 21 originally purchased (at a hefty \$2.2 billion apiece). Additional bombers are projected to cost \$1.5 billion apiece over the lifetime of each plane (Schultz 1997). The military efficacy of the B-2 bomber is challenged in a recent report from the General Accounting Office (1997); see also FAS (1997).

⁵⁷Letter of 25 March 1997 to Madeleine Scammell, the Loka Institute.

If you are working for social change in Jacksonville, Florida and need research assistance, you are comparatively fortunate. The Jacksonville Community Council, Inc. conducts two major community research projects annually, so--if you wait long enough--maybe one year JCCI will be able to take on your issue. It could be worse; if you lived in Pensacola or Sarasota, for instance, you would, as far as we can tell, have no local access to a community-based research program.

If you live in Alaska and need information to support your involvement in forest conservation, we have good news for you: there's the Alaska Boreal Forest Council. But if you're working on other social issues in Alaska, it seems you're out of luck. Indeed, there are entire states where to date we have identified no community research centers (e.g., New Hampshire and Maine in the northeast, and Mississippi and Louisiana in the south).⁵⁸

Or suppose you live in a community that has been badly polluted and deindustrialized, and you need help figuring out what to do about it. Then fortune smiles upon you, and you somehow hear about the JSI Center for Environmental Health Studies. Now you are half way home; the JSI Center can help you evaluate the health implications of pollution. But they can't help you formulate an alternative economic development strategy for your community. That's not within their mission area or expertise.

Our point is that while there are community research programs in the United States, compared with the Netherlands they are few and far between. And the community research centers and programs that do exist in the U.S. are specialized geographically or topically, so that even if you are able to locate a center, it may not be able to help with the issue that concerns you.

The Netherlands differs from the U.S. not merely in its higher geographic and per capita density of community research centers, but also in the systemic linkages among them. The Dutch science shops are networked with one another in ways that U.S. community research centers are not, and this greatly enhances their overall social efficacy, measured in terms of user referral capability, social visibility and accessibility, institutional learning, and capacity for collective action.

All the Dutch science shops know about one another and are in routine contact with each other. Thus if a Dutch community group finds its way to a science shop that specializes in community-based economics, but the group has a question requiring the help of a chemist or social psychologist, the first shop refers them to another shop that can help. The Dutch have thus evolved a *comprehensive community research system* that can address questions on virtually *any* topic for *any* group or organization throughout Dutch civil society located *anywhere* in the nation.

The Dutch science shop system not only has this referral capability; it is also more visible

⁵⁸Moreover, many U.S. community research programs--such as those funded under the Community Outreach Partnership Centers Program at the Dept. of Housing & Urban Development--conduct research only on a very narrowly circumscribed range of topics and/or within just one or a few selected urban neighborhoods (Office of University Partnerships 1996 and 1997).

and accessible to the groups that it is intended to help. Dutch science shop staff generally agree that if one randomly stopped Dutch citizens in the street and asked them, “What’s a science shop?,” very few would know. But probably half of all Dutch university students know about the science shops and, more importantly, the majority of Dutch community, worker and public-interest organizations and local government agencies know about the shops.⁵⁹ Thus compared with the U.S., a much higher proportion of the intended users know there is a system they can turn to for help and how to find it.⁶⁰

The linkages among the Dutch science shops also enhance their institutional learning capability. Five times a year each Dutch university sends a representative from one of its science shops to a small gathering that keeps all the shops directly in touch with one another. Every two years there is a large national conference of the staff members from all the individual science shops throughout the Netherlands. Shops at different Dutch universities that are interested in the same specialties (e.g., worker health and safety, or chemistry) also meet together in between the various national gatherings. Through these various conferences and meetings the shops discuss research methodologies, common organizational problems, and strategies for coping with problems. They share information about projects underway or completed, thereby avoiding redundant research efforts and building on one another’s research programs.

Together, all the Dutch shops maintain a small central secretariat, which rotates periodically among the Dutch universities. The secretariat keeps the shops up to date with one another in between meetings. Newsletters were for many years a key communication medium, but today sharing information among the shops has become easier with the advent of the Internet. For example, the Dutch science shops now share a single Internet discussion forum and a central homepage on the World Wide Web.⁶¹

Aside from facilitating communication and learning, the linkages among the Dutch science shops have also enabled them to develop some capacity for collective action. For instance, compared with most U.S. community research centers, the Dutch science shops’ funding is more predictable and secure, but it is by no means 100 percent guaranteed. As the growing pressures of global economic competition began to squeeze government budgets throughout the industrialized world in the early 1990’s, and as student enrollment in Dutch universities declined (both for demographic and financial reasons), Dutch universities experienced new financial constraints. Several science shops (including the very effective general shops at the Universities

⁵⁹Bernie Hermes and Selma Hinderdael, University of Amsterdam, interview with Richard Sclove on 10 Oct. 1994; Barend van der Meulen and Jan van Diepen, University of Twente, interview with Richard Sclove on 12 Oct. 1994.

⁶⁰In contrast, at the Loka Institute we’ve spent the past three years trying actively to identify all the community research centers and programs in the U.S.; it has not proven an easy task and our work is not done. By and large U.S. community-based research programs are relatively invisible not only to the broad population of potential users, but even to one another.

⁶¹Dr. Jeanine de Bruin, Coordinator, Science Shop, Free University of Amsterdam, interview with Richard Sclove on 8 May 1996; Snyder et al. (1997, p. 19). An English translation of the Web site is at: <<http://tt0.wtm.tudelft.nl/Wetenschapswinkel/egnatio.htm>>.

of Amsterdam and Leiden) were forced to shut down during the past few years. However, this has galvanized the rest of the Dutch shops into collective action to protect one another and the system as a whole--an effort that has so far proven successful in helping to prevent other threatened closures.⁶²

Since 1995 the Loka Institute's Community Research Network (CRN) initiative has sought to establish similar capabilities in the United States by organizing a national planning conference, creating a national and international Internet discussion forum for community-based research, publishing a reader, designing a searchable Internet database of community research centers worldwide, and other related activities.⁶³ Loka's CRN initiative has also inspired efforts to establish community research centers in Canada, Israel, and South Korea.⁶⁴ We are hopeful

⁶²From notes taken by Richard Sclove during open discussions at the national meeting of the Dutch science shops, University of Groningen, The Netherlands, 8-9 May 1996; Mulder et al. (1996); Ree (1996); and E-mail communication with Richard Sclove from Henk Mulder (Science Shop for Chemistry, University of Groningen, 16 March 1998) and Brigit Fokkinga (Science Shop, Catholic University of Nijmegen, 16 April 1998). See also the discussion in Finding 4, above, about the need to be able to stabilize and sustain fledgling community research programs. The importance of a background infrastructure in supporting loosely coupled, decentralized, alternative organizational and social systems is described in Best (1990, pp. 227-240--regarding the background institutions that support stability and efficacy among cooperating networks of small, northern Italian manufacturing firms); in Milofsky and Messer (1998--describing the role of Central Pennsylvania's Community Resource Exchange in mediating between community needs, local organizations, and social networks); and in Whyte and Whyte (1988--regarding the network of secondary institutions that support the 100-plus, thriving, worker-owned cooperatives in the Mondragon system of Spain's Basque region). As Whyte (1990, p. 181) reports: "One general conclusion in the Mondragon case is clear: an individual, isolated cooperative in a sea of private enterprises has poor prospects for survival and growth. There is great need to develop a supporting infrastructure." On the potential of a decentralized, nationwide popular knowledge system as a vehicle for rebuilding and invigorating civil society (recall Finding 2), see Borish (1991) on the history of the Danish folk schools; and also the case study of the Highlander Research and Education Center (p. 53. above), explaining that Highlander was originally modeled on the Danish folk schools.

⁶³Roush (1996), Snyder et al. (1997), Murphy et al. (1997). For further information on the Community Research Network, contact the Loka Institute, P.O. Box 355, Amherst, MA 01004, USA; Tel. +(413) 559-5860; Fax +(413) 559-5811; World Wide Web <<http://www.loka.org>>; E-mail <Loka@amherst.edu>.

⁶⁴For example, in 1997 the Executive Director of the Humanities & Social Sciences Federation of Canada wrote in the *Bulletin* of the Canadian Association of University Teachers:

"In March 1995, a piece in the Chronicle of Higher Education caught the Federation's attention. It described the Dutch Science Shops project. The author of the article, Richard Sclove wrote: 'a group of universities has devised a secret weapon to stimulate student learning and at the same time address urgent social problems' In conclusion, he suggested that a similar initiative would work well in the U.S."

"We at the Federation agreed with Sclove's conclusion and decided that this was a model worth exploring for Canada A funding proposal to investigate in more detail the Dutch shops was submitted to [the Social Sciences and Humanities Research Council of Canada] and a presidential grant was awarded The Federation's final report was released in January 1997 and calls for the creation of some 25 Community Research and Information Crossroads in universities across Canada." (Lauzière 1997).

that with time the CRN can in addition facilitate greater grassroots engagement in regional, national and international political forums, as well as transnational collaboration among community research centers worldwide.⁶⁵

To create a U.S. Community Research Network that would provide service as comprehensively and accessibly as science shops do in the Netherlands might cost in the vicinity of \$450 million annually--about 45 times the amount we have estimated that the U.S. is currently investing in community-based research.⁶⁶ That's a large number, but it's actually small compared with the overall U.S. research system--less than 0.3 percent of total U.S. R&D expenditure (from all sources, public and private).

It is not particularly hard to imagine allocating 0.3 percent of U.S. R&D to community-based research, especially if one considers the precedent in the budget of the federally funded Human Genome Project, 5 percent of which is earmarked to support studies of the project's Ethical, Legal and Social Implications (ELSI). (The Human Genome Project precedent is only partial, because ELSI awards have not generally been allocated to community-based studies.)

Another illuminating comparison: \$450 million for a nationwide Community Research Network would represent only about 2 percent of the annual budget of all U.S. government laboratories. The government laboratory system is substantially a byproduct of World War II and the Cold War, and a number of its component labs have now outlived their missions.⁶⁷ Indeed, critics observe that some of the largest national laboratories have historically, along with their achievements, also played a role in developing unworkable or dubious, vastly expensive, weapons and nuclear energy schemes (e.g., neutron bombs, Star Wars, nuclear powered aircraft, the Plowshares "peaceful" nuclear explosion program for digging canals and eliminating "unwanted" mountain ranges, plutonium-based nuclear breeder reactors, and "PACER fusion" which would have detonated hundreds of hydrogen bombs underground annually to generate electricity by vaporizing water to spin turbines); in conducting atomic weapons tests that exposed the entire planet--but especially immediate downwind populations--to radioactive fallout; in obstructing or opposing various nuclear disarmament and arms limitation treaties; and in recklessly mismanaging

This Canadian initiative has recently received a two-year US\$2.25 million award from Canada's Social Sciences and Humanities Research Council ("Science Shops in Canadian Universities" 1998).

⁶⁵See Finding 3; and Sclove (1997).

⁶⁶We derive this figure by assuming the U.S. would need 645 community research centers to match the per capita density of centers that exist in the Netherlands (Finding 5), and by assuming that each center's annual budget would be \$667,000 (the approximate annual budget of the Policy Research Action Group from 1993 to 1998). That works out to \$430 million, which we have adjusted up to \$450 million to cover systemic costs (e.g., the costs of administering distribution of the money, of routine evaluations of centers, and of linking centers together into a publicly visible, cross-referring, learning system with periodic regional and national meetings and so on). Obviously a mature, nationwide community research system could be designed to cost less or more, depending on many variables.

⁶⁷For a recent overview of the status of major national laboratories by the White House Office of Science and Technology Policy, see OSTP (1997).

toxic chemical and radioactive waste dumps.⁶⁸ Thus one might say that the labs are not merely relatively ineffective in scratching where we now itch, but also bear responsibility for generating some of the “skin rashes” that cause us to itch. On both counts (i.e., not curing “rashes,” but sometimes causing them), one could argue that the problem is precisely that the national labs are about as far from being “community-based” as it is possible to get--traditionally insulated from market signals, from effective public scrutiny, and from popular opinion as well.

On the other hand, the underlying rationale for wanting some type of national laboratory system remains sound: to conduct research that is in the social interest but that the conventional research system (e.g., existing university, business and government research facilities) will not fund or is ill-prepared to conduct. In the context of a post-Cold War world, that rationale sounds much more like a prescription for a nationwide Community Research Network than a justification for perpetuating the national laboratory system in its current form. For that reason we have elsewhere described the Community Research Network as a system that could “evolve into the decentralized core of an alternative, strongly democratic, post-Cold War national laboratory system” (Sclove 1995b, p. 228). Compared with the present national laboratory system, a mature Community Research Network would better scratch where our society is itching, and at only a minute fraction of the cost of the current system.⁶⁹

FINDING 18: Community-based research in the United States has not been studied systematically. Few of the organizations we studied have systematic procedures for evaluating the quality and impact of their research, and nobody knows with precision the extent of community-based research in the United States.

Several of the organizations that we studied have procedures for evaluating their community-based research projects, but in general community research centers and programs lack the resources to conduct evaluations on a systematic basis.

Staff members at the JSI Center for Environmental Health Studies try to stay in touch with groups after assisting them and track their own work by filling out technical assistance request forms, making note of the assistance provided, and, when possible, recording the outcome of the project. However, the JSI Center does not have a formal process for evaluating its projects. Staff believe that given the scarcity of their resources, their time is better spent providing assistance to community groups than conducting after-the-fact evaluations.

The Applied Research Center organizes meetings at the end of each project at which everyone involved from inside and outside the organization can assess how well the project met

⁶⁸See, for example, the World Wide Web page of the U.S. Nuclear Weapons Cost Project, directed by Stephen I. Schwartz of the Brookings Institution: <<http://www.brook.edu/pub/books/atomic.htm>>.

⁶⁹See Hollander (1984) on a pilot attempt by the U.S. government to create a set of community research centers during the late 1970's; spearheaded by Democratic Senator Edward Kennedy, this effort was aborted prematurely early in the first Reagan Administration.

its goals. The results of these evaluations are not documented. Project South has only completed a handful of studies and has not institutionalized an evaluation process. Research teams evaluate their progress informally, however, throughout the course of a project. Project South also facilitates dialogue with community groups on how helpful the research has been and how they are using it.

To evaluate the effects that applied community-based research projects have had in the Twin Cities, Minnesota area, Neighborhood Planning for Community Revitalization (NPCR) recently conducted telephone interviews with participants from projects during its first year. Seventeen out of 20 of the community organizations that had worked with NPCR found that the research was useful. Many maintained that the research they conducted with NPCR was necessary to their organizations in the sense that, had NPCR not provided assistance, the organizations would have felt compelled to seek the information in some other way. Jacksonville Community Council, Inc. also evaluates project effectiveness through a survey of program outcomes to ensure that the work is actually helping those it is designed to serve.

The bottom line, however, is that overall community research organizations do not have the resources to develop systematic procedures for evaluating the quality or impact of their work. (Evaluating *impacts* is especially challenging, inasmuch as impacts sometimes may not be felt until many years after a research project is concluded. For instance, the litigation resulting from the community-based research projects conducted by residents of Woburn, Massachusetts and Yellow Creek, Kentucky stretched out over many years.)

Moreover the 12 organizations that we studied are if anything better than average in documenting and evaluating their work, in the sense that in searching for candidate organizations to include in our case studies, we had to reject some because their work was so poorly documented that it would have been difficult to study.

Generally European science shops also lack the resources for systematically evaluating their work. Dutch and Danish science shop staff have told us much the same thing that we heard, for example, from the JSI Center staff in the U.S.: the demands on their time are so great relative to their resources, that they feel it would be irresponsible to take time from facilitating research projects to conduct evaluations.⁷⁰ One might say that science shops appear, ironically, to need the services of . . . a science shop, to conduct the evaluations they don't have time to conduct for themselves.

In short, project evaluations by individual community research centers are generally informal, sporadic or, in some cases, non-existent. Moreover, most of the evaluations that do exist have been organizational self-evaluations, which of course creates potential for bias in assembling and interpreting the data.

If the evaluation of individual community research centers is spotty and uneven, the

⁷⁰Based on conversations during a small gathering of Danish and Dutch science shops staff members co-organized by the Science Shop at the Danish Technical University and the Loka Institute, Lyngby, Denmark, 7 Oct. 1997.

documentation and evaluation of the overall practice of community research in the United States is abysmal. As we have mentioned throughout this report, it is difficult even to identify all the community research centers and programs that exist in the U.S., not to mention evaluate their work.⁷¹ As far as we know, at this time the Loka Institute knows as much about the overall state of community research in the United States as any other organization, and that is worrisome, because we have a good sense of how incomplete our own knowledge is.

In a sense, the poor overall understanding of community-based research in the United States is merely symptomatic of the socially unresponsive nature of the mainstream U.S. research system:

Who should sit at the table when science policy is being decided? Across the higher echelons of U.S. government, the longstanding norm is to invite scientific leaders, but no one else who will be affected or who might have an illuminating alternative perspective.

For instance, to help frame a year-long effort to develop a post-Cold War U.S. science policy, on 23 October [1997] the House Science Committee convened an elite group: the presidents of the National Academies of Science and Engineering, four representatives from the Council on Competitiveness, leaders of the Sandia and Lawrence Berkeley National Laboratories, the retired President of Hewlett-Packard Corporation, the President of MIT, and so on. Notably absent were any representatives from the many grassroots, worker, and public-interest organizations that are concerned with science policy. There were no social scholars of science, no proponents of alternative science policies (from within the science community or without), and only a solitary science policy critic.

This event's restricted roster was hardly anomalous. For example, in 1992 and 1993--when Democrats controlled Congress--the House Science Committee organized 30 hearings on a comprehensive National Competitiveness Act. Among 120 invited witnesses there was not one from an environmental, defense conversion, or labor organization commenting on a major piece of legislation with extensive ecological, employment, and other social implications. In the Executive branch, the composition of high-level science advisory panels--such as the President's Committee of Advisors on Science and Technology and the National Science Board--is similarly constricted.⁷²

⁷¹The important published studies or anthologies about U.S. community-based research (e.g., Whyte 1991, Stoecker and Bonacich 1992 and 1993, Park et al. 1993, Murphy et al. 1997, Nyden et al. 1997, Smith et al. 1997) generally discuss methodological issues and/or document and evaluate selected research *projects*, not the overall work of community research *centers* or *programs*, and not one describes or evaluates the overall state of community-based research in the U.S. The best previous step we have found in the latter direction is a short but excellent article by Ansley and Gaventa (1997). Limitations in research concerning the U.S. nonprofit sector generally are reviewed in Boris et al. (1993), Hall (1993), and Smith (1993).

⁷²Sclove (1998). See also Chapman and Yudken (1993), Brown (1993), Sclove (1995b, esp. chap. 12), and Sarewitz (1996).

The massive biennial compilation *Science & Engineering Indicators*, prepared under the auspices of the U.S. government's National Science Board, includes exhaustive statistical documentation of "basic" research, "applied" research and "development" (even while acknowledging in the most recent edition that these distinctions are problematic⁷³). This documentation covers both the natural and social sciences as well as engineering, broken down by funding source, institutional performer, academic discipline, and so on. The report also includes extensive narrative and statistical description of the education and training of U.S. researchers, on the size and composition of the U.S. research community, and of popular understanding and attitudes regarding selected aspects of science and engineering.

However, the 1996 edition of the report includes only a brief (11-page) chapter attempting to assess the social significance or impact of research. Even those few pages focus on economic rather than broader social evaluation, barely mentioning the elementary fact that R&D produces not only social "benefits," "gains," "positive effects," "beneficial spillover effects," "advances," and "improvements" (all terms that appear in the chapter), but also sundry unintended social and environmental costs or harms.⁷⁴ In that sense, the report falls far short of the standards of comprehensiveness and objectivity toward which it aspires.

One also searches in vain throughout the table of contents, chapters, tables, many appendices, and index of *Science & Engineering Indicators* for a single mention of community-based research, participatory research, participatory action research, participatory design, participatory technology assessment, or participatory science and technology policy making. Inasmuch as producing *Science & Engineering Indicators* represents a significant, ongoing government investment in understanding the U.S. research system--an investment that is, moreover, paid for entirely with U.S. tax dollars⁷⁵--it is hard to imagine the justification for omitting this broad range of data that would seem highly germane to the public interest in R&D.

One thus hopes that future editions of *Science & Engineering Indicators* will include new statistical compilations and new social indices for documenting and evaluating the U.S. research system--perhaps, for example, assessing the cost-efficacy of alternative research institutions and

⁷³National Science Board (1996, p. 4-10). Appointed by the President of the United States, the National Science Board is the committee of elite U.S. researchers and research administrators that is charged with overseeing the National Science Foundation.

⁷⁴National Science Board 1996, chap. 8. The solitary direct mention of a social or environmental cost involves the possibility that introducing new information technologies in workplaces is increasing the wage disparity between highly educated versus less educated employees (ibid., pp. 8-10 and 8-11). See Finding 14, above, for a brief but broader list of some of the other social and environmental costs associated directly or indirectly with conventional R&D.

⁷⁵*Science and Engineering Indicators* is a prime example of the National Science Foundation's (NSF's) preeminence in statistical understanding of the mainstream U.S. research enterprise. It is thus somewhat ironic that NSF has made no effort to estimate the cost of preparing *Science and Engineering Indicators* (Jennifer Sue Bond, Science and Engineering Indicators Unit, National Science Foundation, telephone call with Richard Sclove on 17 April 1998).

programs in meeting democratically decided ethical, social and environmental goals.⁷⁶ Our case studies suggest that against such standards, community-based research will measure up rather well.

For the purposes of understanding the state of community-based research in the United States, to be able to intelligently debate and craft policies for community research, and for community researchers to be able to gauge and improve the quality of their projects, it is vital to develop better systems for documenting and evaluating community-based research centers, programs, and projects. That will require additional funding or reallocation of funds, above and beyond the funding required to expand the practice of community-based research.⁷⁷

CONCLUSION

Daniel Sarewitz has written eloquently of the “preposterous mismatch” between the R&D agendas of industrialized nations and the urgent needs of developing nations:

The R&D agenda of the United States, focusing as it does predominantly on military technology, space exploration, basic research in the natural sciences, and the medical problems of an affluent, long-lived society, is almost totally disengaged from the problems that face the developing world. From a global perspective, this disengagement represents an abject policy failure; from the philosophical perspective of the Enlightenment, it is a direct contravention of the principle that scientific progress benefits all humanity.⁷⁸

⁷⁶On the democratic determination of national R&D objectives and priorities see, for example, Chapman and Yudken (1993), Sclove (1995b), Sclove (1996), and Hackman (1997). Developing cost-efficacy measures for alternative science and technology institutions and programs would, in fact, be in keeping with recent federal performance reporting requirements as mandated under laws such as the Government Performance and Results Act of 1993 and the Federal Financial Management Improvement Act of 1996 (e.g., Collins 1997).

⁷⁷The need to fund evaluations is taken into account in Finding 17's estimate of the costs entailed in expanding the U.S. community research system to make its per capita capabilities comparable to those of the Dutch science shop system. The results of such evaluation would doubtless find other applications as well. For instance, in 1995 the social sciences received only 1.4 percent of all U.S. government funding for basic research, and only 3.5 percent of all U.S. government funding for applied research (National Science Board 1996, pp. A-137 and A-139). On the other hand, van den Broecke (1993, p. 3) reports that a surprisingly large fraction of the research performed by the Dutch science shops involve humanities and social science research. Were comparable documented results to emerge for a mature U.S. community research system, that might, for example, provide one indication that the U.S. is underinvesting in social science (especially in empowerment social science) relative to natural science and engineering. (For a variety of reasons such evidence would provide only an “indication,” not proof. For example, perhaps community groups would request more assistance in participating in designing new technologies if resources were available for them to be able to do so; see Finding 16.)

⁷⁸Sarewitz (1996, pp. 184, 195). We are grateful to Ned Woodhouse for suggesting the salience of these passages to our work.

Our analysis of community-based research reveals an equally “preposterous mismatch” domestically--that is, between the United States’ generously endowed, mainstream R&D agenda and the urgent needs of countless communities across the country.

The United States is blessed with abundant resources, wealth and dynamism, and yet burdened with profound social and environmental ills. “We can put a man on the moon,” goes the old saw, but why can’t we empower distressed communities and groups to help understand and address their own problems? The answer, it turns out, is *not* that no one knows how to facilitate such empowerment; the organizations examined in this study do it every day. The answer is that we aren’t properly investing the resources readily available for building the social infrastructure--a community research network--that would make empowerment-through-mutual-learning universally accessible.

Appendix A: PRELIMINARY LIST OF COMMUNITY RESEARCH CENTERS AND PROGRAMS IN THE UNITED STATES

We list here U.S. community research centers, as well as other U.S. organizations that conduct community-based research as part of a broader portfolio of activities. We are acutely aware that this list is incomplete. If you know of a U.S. community research center or program that is not listed here, we would be grateful if you would let us know: The Loka Institute, P.O. Box 355, Amherst, MA 01004, USA; Tel. +(413) 559-5860; Fax +(413) 559-5811; E-mail <Loka@amherst.edu>. We are putting all of this information--including more detailed information about each community research center or program--into the Loka Institute's Community Research Network database, which will be accessible via the World Wide Web, E-mail, or telephone (toll-free within the U.S.).

Community-Based Centers and Programs:

- **Alaska Boreal Forest Council**, Fairbanks, AK, building consensus in making decisions about the use of the forest through community-based research and education.
- **Applied Research Center (ARC)**, Oakland, CA, a public policy, education and research institute focusing on issues of race and social change.
- **Center for Community Change**, Washington, DC, helping low income people develop the power and capacity needed to influence the policies and institutions that affect them and their communities.
- **Childhood Cancer Research Institute (CCRI)**, Concord, MA, preventing childhood cancer through community-based research and education.
- **Citizens Clearinghouse on Hazardous Waste**, Falls Church, VA, helping community groups suffering from the effects of toxic dumps.
- **Center for Neighborhood Technology (CNT)**, Chicago, IL, identifying, demonstrating and promoting sustainable strategies for meeting the basic needs of city residents, especially in lower income neighborhoods.
- **DataCenter**, Oakland, CA, meeting the strategic information needs of social justice activists.
- **Good Neighbor Project (GNP)**, Cambridge, MA, providing technical, legal and strategic support to concerned plant neighbors and workers to create sustainable and democratic industries.
- **Grassroots Empowerment Training Unity Program**, New Bedford, MA, providing training and research to grassroots organizations making changes in their communities.

- **Highlander Research and Education Center**, New Market, TN, providing a place for people to share their experiences and learn from each other; and to affirm cultural and racial diversity and thereby work together as individuals, issue groups, and communities to address the problems of their regions.
- **Institute for Agriculture and Trade Policy**, Minneapolis, MN, assisting public interest organizations in effectively influencing both domestic and international agriculture and trade policymaking.
- **Jacksonville Community Council, Inc. (JCCI)**, Jacksonville, FL, performing research intended to improve the quality of life in Northeast Florida.
- **JSI Center for Environmental Health Studies**, Boston, MA, providing public health education and research services for communities and worker organizations that are conducting their own health studies, as well as other projects addressing environmental health hazards.
- **Project South**, Atlanta, GA, developing and conducting popular political and economic education and action research for organizing and liberation in the South.
- **Urban Coalition**, Saint Paul, MN, increasing the capacity of low-income communities to address political, economic and social concerns and to promote the public dialogue through research-based advocacy and policy work.
- **West Harlem Environmental Action (WE ACT)**, New York, NY, organizing and conducting community-based research to promote environmental justice
- **Work & Technology Institute**, Washington, DC, creating high performance, high participation work systems that support stronger employers, better jobs, and more effective unions.

University-Based Centers and Programs:

- **Appalachian Center for Community Service**, Emory & Henry College, Emory, VA*
- **Center for Community Action & Research**, Pennsylvania State University, Harrisburg, PA, addressing the needs of the South Central Pennsylvania community through assessment of existing community systems, and the design, implementation, and evaluation of innovative programs of system change.
- **Center for Community Partnerships**, University of Pennsylvania, Philadelphia, PA, improving the quality of life in Philadelphia through effective partnerships between the University and the community.
- **Center for Community Planning**, University of Massachusetts at Boston, Boston, MA, supporting college-community collaborations through community-based curricula and

participatory action research.

- **Center for Energy Research, Education & Service**, Ball State University, Muncie, IN.
- **Center for Learning Through Community Service**, The University of Michigan, Ann Arbor, MI, joining academic programs to community service and research.*
- **Center for Rural Community Revitalization & Development**, University of Nebraska, Lincoln, NE, assisting people and communities in rural areas in a manner that contributes to quality of life.
- **Center for Service Learning**, Guilford College, Greensboro, NC.*
- **Center for Service Learning**, Hood College, Frederick, MD.*
- **Center for Service Learning**, Mars Hill College, Mars Hill, NC.*
- **Center for Service Learning**, Oberlin College, Oberlin, OH,.
- **Community Action Program**, University of Denver, Denver, CO.*
- **Community Partnerships Center**, The University of Tennessee, Knoxville, TN, promoting problem solving collaboration between university researchers and groups rooted in low-and moderate-income communities.
- **Community Planning Workshop**, University of Oregon, Eugene, OR, providing research and planning assistance to Oregon communities and rural areas.
- **Community Research Partnership**, University of Washington, Seattle, WA, community-based research for public-interest health.
- **Community Scholars Program**, University of California at Los Angeles, CA, providing community and labor activists with opportunities to participate in graduate classes and seminars in economic development; and contributing to the development of new community institutions, responsive to community needs.
- **Community University Consortium for Regional Environment**, Rutgers University, New Brunswick, NJ, an information and research infrastructure for environmental justice in New Jersey, New York and Puerto Rico.
- **Cornell University Participatory Action Research Network**, Ithaca, NY.
- **DataCenter**, University of Wisconsin, Milwaukee, WI, a community research resource for the residents of Milwaukee.
- **Department of Pan-African Studies**, University of Louisville, Louisville, KY, service learning in the African-American tradition; the university in the community.*

- **East St. Louis Action Research Project**, University of Illinois at Urbana-Champaign, IL, participatory planning for urban revitalization.
- **Ecopolity Center**, Rutgers University, New Brunswick, NJ, working with fishermen and fishing communities to help them have a greater voice in the decisions that affect them.
- **Environmental Justice Resource Center**, Clark Atlanta University, Atlanta, GA, assisting, supporting, training, and educating people-of-color professionals and grassroots community leaders with the goal of facilitating their inclusion into the mainstream of environmental decision making.
- **Environmental Resource Program**, University of North Carolina, Chapel Hill, NC, promoting environmental stewardship and public health through education, applied research and community service.
- **Great Cities Institute**, University of Illinois, Chicago, IL, directing teaching, research and service to address human needs in Chicago and in metropolitan areas worldwide by becoming a partner with government and public agencies, corporations and philanthropic and civic organizations.
- **Hartman Center for Civic Education & Leadership**, DePauw University, Greencastle, IN.*
- **Institute for Science & Interdisciplinary Studies (ISIS)**, Hampshire College, Amherst, MA, connecting scientists with communities so that research is developed collaboratively to address complex and pressing problems, such as environmental degradation, economic crises in agriculture and industry, provision of effective health care, and toxic and nuclear waste disposal.
- **Middlesex County College**, Edison, NJ, history mathematics and psychology professors working with students and community organizations on community-based research projects.*
- **Neighborhood Planning for Community Revitalization (NPCR)**, University of Minnesota, Minneapolis, MN, facilitating community-based research projects for urban revitalization in the neighborhoods of St. Paul and Minneapolis.
- **Office of Community Service**, Morehouse College, Atlanta, GA, bringing together faculty and students from many disciplines to do community-based research and learning.*
- **Participatory Research Program**, University of Illinois, Urbana, IL, building research partnerships for natural resource issues.
- **Policy Research Action Group (PRAG)**, Loyola University, Chicago, IL, connecting academics and community activists in research partnerships through a collaborative network designed to connect research with grassroots activism.

- **Pollution Prevention Education and Research Center**, Occidental College, Los Angeles, CA, improving environmental health through an interdisciplinary program of education, research and outreach.
- **Pratt Institute Center for Community & Environmental Development**, Pratt Institute, Brooklyn, NY, using the professional skills of architects and planners to work for social and economic justice by providing low- and moderate-income communities with the tools and resources needed to plan and implement their own future.
- **Project D.C.**, Georgetown University, Washington, DC, urban community-based research and service learning in local neighborhoods.*
- **Sustainable Research Center**, Long Island University, Long Island, NY, community-based research for urban revitalization and a sustainable community.
- **Swearer Center**, Brown University, Providence, RI, education for civic responsibility and social change.
- **Toxics Use Reduction Institute (TURI)**, University of Massachusetts, Lowell, MA, promoting reduction in the use of toxic chemicals and in the generation of toxic by-products in industry and commerce in the Commonwealth of Massachusetts.
- **University of Massachusetts Cooperative Extension**, UMass, Amherst, MA, serving the public good through the creation, communication and application of knowledge with a commitment to public learning, pluralism, participation, connectedness, and innovation.
- **Urban Institute**, University of North Carolina, Charlotte, NC.

Community Research Networks:

- **Asian Pacific Environmental Network (APEN)**, Oakland, CA
- **Community Programs for Clinical Research on AIDS**, 15 units across the country.
- **Poverty & Race Research Action Council (PRRAC)**, Washington, DC
- **Science & Environmental Health Network (SEHN)**, Windsor, ND
- **United States Public Interest Research Group (USPIRG)**, Washington, DC

Individual Community Research Network (CRN) Affiliates:

(Individuals and organizations interested in establishing a community research center or who would like to participate in the CRN as researchers)

Kathy Addelson, Dept. of Philosophy, Smith College, Northampton, MA
Kathy Ball, Concord College, Athens, WV*
Beller, Ohio State University, Columbus, OH*
Elizabeth Bird, Consortium for Sustainable Agriculture Research & Education, Madison, WI
Terry Bowen, Institute of Government, University of North Florida
Fred Cagle, Tijuana Watershed International Man in the Biosphere Project, San Diego, CA
Jean Colvin, Research Expeditions Program, University of California, Berkeley, CA
John Edwards, Northeast Florida Community Action Agency, Jacksonville, FL
Frank Emspak, School for Workers, University of Wisconsin, Madison, WI
Josephine Ensign, Department of Community Health, University of Washington, Seattle, WA
Tamara J. Ferguson, Department of Psychology, Utah State University, Logan, UT
Celia Fisher, Doctoral Specialization in Applied Developmental Psychology, Fordham University, Bronx, NY
Michael Flower, Interdisciplinary Science Studies, Portland State University, Portland, OR
Michael Gelobter, Graduate Dept. of Public Administration, Rutgers University
Eleanor Harrison, Princeton University, Princeton, NJ*
Michael Heiman, Environmental Studies, Dickinson College, Carlisle, PA
Michael Hendryx, Washington State University, Seattle, WA
Marie Kennedy, Community Planning Center, UMASS Boston, Boston, MA
Jonathan King, Dept. of Biology, Massachusetts Institute of Technology, Cambridge, MA
S. Bruce Kohn, SBK Environmental Research, Amherst, NY
Sue Lurie, Health Science Center, University of North Texas, Fort Worth, TX
Frederique A. Marglin, Dept. of Anthropology, Smith College, Northampton, MA
Melissa Mazin, Occidental College, Los Angeles, CA*
Jamie McClelland, Libraries for the Future, New York, NY
Carl Milofsky, Dept. of Sociology and Anthropology, Bucknell University, Lewisburg, PA
Peter Miller, Community Technology Center Network, Newton, MA
Kate O'Brien, Public Service Center, Cornell University, Ithaca, NY
Marina Pantazidou, Environmental Engineer, Carnegie Mellon University, Pittsburgh, PA
Ruth Pittard, Davidson College, Davidson, NC*
Marlene Rebori, University of Nevada Reno Cooperative Extension, Reno, NV
Joan Roelofs, Green Party USA
Douglas Schuler, Computer Professionals for Social Responsibility, Seattle, WA
Phil Shepard, Urban Options, East Lansing, MI
Henry Thomas, Department of Political Science & Public Administration, University of North Florida, Jacksonville, FL

*Project Partners in the Bonner Foundation's Learn & Serve America Community Research Grant funding the establishment of a community research center during the course of 1997-1999.

Appendix B: CASE STUDY QUESTIONNAIRE

1. History/Background Information:

- How and when did the center/program become established?
- What range of topics does the center address?
- How is the center organized?
- If there is a governing board, who is on it, how are they selected, and what role do they play?
- Who are the researchers, and how are they affiliated with the center?
- How many projects are undertaken at once?
- Where does funding for the center and specific projects come from?

2. Community Relations:

- Who initiates community-based research projects? If research is initiated from outside the center, how does that occur?
- What criteria are used to select projects?
- Who participates in establishing, conducting, and interpreting the research?
- If there is tension between university research standards and the standards of the community, how is that tension mediated?

3. Institutional/Political Setting:

- How is the center or particular projects institutionally supported (e.g., university, grassroots, and/or corporate affiliations)?
 - How does the institution that hosts your center approach community-based research (hostile, encouraging, indifferent, etc.)?
- Has community-based research affected the host institution's organization or operations?
- What strategies are effective in diffusing skepticism and hostility towards community-based research?
- What is the center's relationship with the government, politics, or social movements?

4. Constraints:

- What hindrances to community-based research has the center encountered, such as resource restraints, cultural barriers, etc.?
- Are there types of research the center has wanted to do but been unable to undertake?
- Are certain social groups advantaged/disadvantaged when it comes to projects at the center?

5. Research Results and Impacts:

- How are research results disseminated?
- What mechanisms are used to evaluate the quality and usefulness of a project?
- How have the results been received and applied by the intended beneficiaries?
- Are there barriers to more effective use of the results?
- Does the center encourage citizen action, spur social change, or inspire public policy deliberations?

6. Effects on Researchers:

- Do university-based projects alter faculty research and teaching methods?
- If students are used, how are they recruited, supervised and rewarded?
- Does participation in a community-based research project affect students' academic performance, career choices, political attitudes, or behavior?

7. Collaboration:

- Does the center ever undertake projects with other institutions? If so, why and how?
- Can both university and community groups benefit from collaborative projects?

8. Technology:

- Are new technologies altering: the choice of topics, clients, collaborative relationships, research methodologies, research quality, or the social impacts of research results?

9. Sample Project:

- Can you give an example of a particular project completed by the center? Please include lessons learned while doing the project and what, in retrospect, might have been done differently.

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ABOUT THE LOKA INSTITUTE

Founded in 1987, the mission of the Loka Institute is to make research, science, and technology more responsive to democratically decided social and environmental concerns. We do this by conducting research and public education, animating and providing technical assistance to social change efforts, and testing and establishing new institutions. The Loka Institute is recognized by the I.R.S as a 501(c)(3) tax-exempt nonprofit organization.

The Loka Institute's efforts are based on the belief that: (1) In the contemporary world broad historical trends, political and community structures, and the texture of daily life are all shaped by research, science, and technology in more profound and subtle ways than most people realize. (2) The effects of science and technology extend from relatively obvious environmental repercussions, such as pollution, to critical social and political consequences, such as job insecurity, community atrophy and, ultimately, a dysfunctional democracy. (3) In order to anticipate and avert such negative effects, it is essential to interject community perspectives into science and technology decisions. (4) What is desirable is also practicable; recent but little-publicized procedural innovations (often emanating from Europe) demonstrate that there are practical ways to enable people from all walks of life to contribute to science and technology decisions, thereby improving people's well-being and the well-being of their communities:

- In the Netherlands, most universities each have between one and ten "science shops" that conduct research in response to questions posed by grassroots and public-interest groups, trade unions, and local government agencies. *The Loka Institute is bringing this idea to the U.S. and other countries by organizing a worldwide Community Research Network.*

- A growing number of European governments have begun to assemble panels of everyday citizens who listen to competing expert testimony before announcing their own science and technology policy recommendations at a national press conference. *The Loka Institute initiated the first U.S. pilot introduction of this process in April 1997, on the topic of telecommunications policy. Following an invitation to brief Clinton Administration officials and Congressional staff, Loka is now laying the groundwork for nationwide citizen panels.*

- No nation on earth has an effective system for assessing technologies' direct and indirect effects on democracy itself. *The Loka Institute is collaborating with the Danish Parliament's Board of Technology to develop participatory methods through which citizens will be able to evaluate the democratic implications of alternative technologies and technology policies.*

- If one is concerned with the environment, as we at the Loka Institute are, there is a dense network of thousands of environmental organizations worldwide that one can join and support. *The Loka Institute has begun the long-term process of assembling a comparable network concerned with making science and technology more democratically responsive. Our Internet discussion forums and newsletters include more than 9,000 subscribers worldwide. Our publications, including our award-winning book, Democracy and Technology, are likewise being used in classrooms around the world.*

To join the Community Research Network, receive our free electronic newsletter, participate in our Internet discussion forums, or work with us, please contact the Loka Institute, P.O. Box 355, Amherst, MA 01004 USA; Tel. +(413) 559-5860; Fax +(413) 559-5811; E-mail <Loka@amherst.edu>; World Wide Web <www.loka.org>. Contributions to the Loka Institute are most welcome--indeed they are vital to our ability to continue our work--and they are deductible on U.S. tax returns to the full extent of the law. Thank you!