

**Managing multi-sector research projects:
Developing models for effective movement from problem identification to
problem solving.**

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A Research Trend

Research is increasingly used by non-profit agencies - whether local community-based organizations (CBOs), national and international think tanks or single issue lobby organizations - to assist them in addressing existing or emerging issues they, or the constituencies they represent, face. Whether these issues are environmental, historical, social or defined otherwise, they all have implications on the transformation and evolution of public policy and the varied processes that form policy.

This increase may be an indicator of a movement towards evidence-based decision making¹. It may also be that increased commercialization of traditional research has opened gaps in research which produces information for widely held benefit². It may also be an indicator that increases in the proportion of the populations of North America and Europe with technical or university education has created a critical mass of people who understand the value of research to decision-making³. What is evident is that although individuals within traditional research institutions, such as universities and government agencies often perform research, increasingly organizations are conducting their own research, or entering into partnerships to access and/or develop needed information. The proliferation of non-traditional research points and partnerships means that knowledge is being created and used in new and dynamic ways. This paper addresses the need for an examination of the variety of management practices used by research projects involving partners from multiple sectors. It also addresses the concurrent need for quality peer assessment of which are the most effective techniques, what information can be shared and what are the best

methods for transference of information and practice. The focus is primarily on research activities conducted in partnerships between CBOs and university-based researchers (UBR) however, tertiary partners ranging from federal, state or provincial, and municipal government agencies, to private foundations, to international bodies such as the European Commission are referred to. It focuses on policies and processes that appear to be effective in promoting multi-sector research partner activities with the potential to produce widely applicable results.

This paper does not directly address industry or private sector research done collaboratively with university or government laboratories and agencies. Although the experiences derived from those collaborations are important, and are increasingly flowing over into the tertiary or voluntary sectors⁴, there appears to be sparse literature on the emergence, development, and management of research **outside** of the triple helix formed by business, university and government, hence the focus of this paper on these alternate research collaborations. This paper also does not address governance issues within CBOs or otherwise designated charitable or voluntary organizations, although the decisions of how, if, and when research is undertaken is recognized as an organizational decision. However, the model developed here has potential application to such organizations as they enter into collaborative relationships.

A Program Trend

In Canada, there has been a recent surge of interest in supporting multi-sector research, beyond the aforementioned triple helix. As well, more university-trained researchers are choosing to pursue their professions in non-governmental or non-university-based research organizations and think tanks. Concurrently, a range of programs and initiatives has been created and promoted, which support multi-sector research projects and research-related programs as well as identifying gaps and needs for broadly based research capacity. Among the programs funding these initiatives are the Community-University Research Alliances Program⁵, the Community Alliances for Health Research Program⁶, the Non-profit Sector in Canada joint initiative between SSHRC and the Kahanoff Foundation⁷, various efforts by the Rural Secretariat⁸, and a diverse portfolio of programs through ministries and agencies such as Environment Canada, Natural Resources Canada, Citizenship and Immigration Canada, Status of Women Canada, and Heritage Canada⁹. There are also organizations, agencies, and initiatives that are attempting to map out needs, resources, and gaps in capacity for engaging in collaborative research activities. These include the Canadian Centre for Philanthropy, the National Voluntary Organizations of Canada, and the National Roundtable on the Voluntary Sector. The Policy Research Initiative of the Privy Council Office, one of the four central agencies of the Canadian Federal System, helps determine horizontal research priorities within the federal bureaucracy. The theme chosen for their annual

national research policy conference for 2001 is "Bringing Communities Together"¹⁰. This theme directly addresses the existing gaps in knowledge, personnel, and capacity to adequately deal with the myriad of issues facing Canadian communities. It is also recognition that solutions cannot be delivered exclusively by elites in institutions but must be approached and maintained as a collaborative enterprise with feedback loops to, between, and within CBOs and other stakeholders.

The situations in the United States and Europe are similar to Canada, although the manifestation via programs reflects the very different nature of the societies involved. The United States approach directly involves proportionately fewer government initiatives but substantially more private foundations and private civic entrepreneurship than is found in Canada. The Aspen Institute has developed a comprehensive range of policy programs encouraging multi-sector research: Community Strategies Group, Democracy & Citizenship Program, Justice and Society Program, Non-profit Sector and Philanthropy Program, and the Roundtable on Comprehensive Community Initiatives.¹¹ National University in California has designated itself as a centre for civic entrepreneurship and is encouraging faculty to become directly involved in the needs of communities.

The leading U.S Federal agencies for funding similar-type partnerships are the U.S. Centres for Disease Control & Prevention (CDC) in Atlanta, Georgia, the National Institute of Environmental Health Sciences (NIEHS), and the Environmental Protection Agency (EPA). The CDC maintains programs which fund collaborative community-based research in epidemiology, population health,

disease prevention, as well as system delivery and management¹². Their Urban Research Centres provide substantial funding for partnerships between scientists from CDC, universities, and CBOs. This funding is focused on addressing the many social and environmental determinants of health. The NIEHS and EPA support university-community collaborations with the NIEHS-sponsored Environmental Justice Community-Based Prevention and Intervention Programs, and the EPA's Community-Based Environmental Protection program.

Private foundations such as the W.K. Kellogg Foundation, the C.S. Mott Foundation, the David and Lucille Packard Foundation and the Carnegie Corporation are also putting funds towards collaborative research initiatives, as well as to innovative management tools and practices that encourage multi-sector cooperation. U.S. funding agencies – both public and private - are increasingly recognizing that collaborative partnerships have the potential to leverage additional and unforeseen positive outcomes.

European efforts tend to be more broadly based than the North American models, perhaps a reflection of the greater regional diversity. Programs such as the European Commission's, Improving Human Potential & the Socio-economic Knowledge base¹³ is one example of a program encouraging multi-sector research by funding the development of a network of Science Shops.¹⁴ Examples used here are drawn primarily from North American sources, although a detailed comparative analysis is anticipated within a more comprehensive program of research and activity, which includes this effort.

Some Results and Gaps

One suggested explanation for the rise in collaborative multi-sector research activity is that all communities have more problems than resources to solve them. Involving expertise or experience from universities or other sectors is a method of leveraging intellectual and financial resources perhaps not otherwise available. As obvious as this appears, collaboration has at least two definitions: to co-labour or share the effort of a difficult task, and to work with the enemy as a collaborator. These definitions are opposed but demonstrate a dynamic tension existing between sector-based interests. Whether a community is defined by geography, demography, economy, history, function, or otherwise, it is next to impossible to find literature which demonstrates that resources available within any community equals or surpasses what is needed to address the range of problems faced by that community. By contrast, many examples, anecdotal and documented, are readily available of how resources have been deployed by individuals and organizations within and across communities with relatively greater or lesser effect in dealing with the targeted goals. It is suggested that these form the basis of many of the case studies of the former NSFRE (National Society of Fund-Raising Executives, now known as the Association of Fundraising Professionals, AFP)¹⁵ and of the ARNOVA (Association for Research on Nonprofit Organizations and Voluntary Associations)¹⁶ efforts.

There are however, increasing numbers of success stories of how leveraging resources, knowledge, capacity and history have resulted in mutually beneficial results for the majority of stakeholders in a project. The Loka Institute's examination of community-based research (CBR)¹⁷ was a groundbreaking piece of work that demonstrated the effectiveness of research that is conducted by, with, or for communities (e.g., with civic, grassroots, or worker groups throughout civil society). CBR differs from the bulk of the 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.

It also presented concrete changes that have occurred as a result of collaborative community-based research projects:

- ▶ Energy conservation retrofits of over 10,000 low-income housing units in Chicago.
- ▶ 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 moratorium on forest logging pending the conclusion of negotiations between Alaskan legislators and activists.
- ▶ Implementation of a new system for providing police service more equitably in the Jacksonville, Florida area.
- ▶ A requirement that scientists seek permission from a Native American community before including them as research subjects.

- ▶ 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.
- ▶ Creation of a new health program in Chicago for refugee women.

From the conclusions of this work, Sclove et al. determined that this method of conducting research was not only cost-effective but produced positive ancillary results, which were unintended but welcome. This effect is similar to what economists refer to as positive externalities. It improved quality of life in communities, transferred results of research directly into policy making and administrative procedures, and was directly responsive to citizen needs and concerns. Furthermore it changes the fundamental nature of research by converting common research subjects into active research participants, and builds social capital by training lay citizens as researchers.

What is not clearly evident from a review of these case studies however, are the management practices, which allowed for successful CBR projects, with the exception of the adherence to principles of democratic participation and direct responsiveness to community concerns. It is recognized that these principles are not necessarily included in traditional research, however the authors suggest that there are models emerging from the case studies which demonstrate how such work can be performed effectively.

This is echoed by a recent study by Edward Jackson, Katherine Graham and Allan Maslove¹⁸ of the Faculty of Public Affairs and Management of Carleton

University in Ottawa. They conclude that "change should, and can, occur in many locations in the university - as part of a coordinated strategy." It is the coordination of a strategy for change within a large institution that compels those seeking to duplicate the efforts of others to take the developed models and implement them in new ways.

The concurrent growth of the number of CBOs involved in research activities for their own, their constituency's, or widely-held benefit, combined with the increasing intensity of challenges, incentives, and catalyst programs encouraging multi-sector collaboration and partnerships leads to the question of how these activities are managed. Studies to date have shown that within the not-for profit sector, ineffective or inappropriate program and organizational management is one of the main reasons behind a less-than effective or unsuccessful project¹⁹.

New Research Modality (?)

Collaborative research activities involving a diversity of partners will continue to increase. Michael Gibbons et. al.²⁰ has argued that these collaborations are actually a new mode of research, what he terms Mode-2 knowledge. Dodgson describes this new mode of knowledge production as having the following characteristics:

- Knowledge created in the context of application
- Transdisciplinarity
- Heterogeneity of producers
- Transient
- Socially and economically accountable and reflexive quality control, and
- Creativity as a group phenomenon

Within this context, he goes on to state that research management is essential in Mode 2 knowledge production. " As this mode is 'context specific', strategy is essential for gaining consensus and unity amongst the diverse groups that define the context and shape the conduct of the research. As much of this research is collaborative, management is necessary to coordinate diverse inputs and plan the distribution of rewards..."²¹

Building on the work of Gibbons, this paper argues the need to develop more appropriate research management models for Mode-2 knowledge production involving participants not only from across disciplines in the academic sense but across a multiplicity of sectors. Management of knowledge production in this mode necessitates the development of new models of research management which consider the needs of the various stakeholders and provide more effective uses of resources; monetary, human, temporal, or otherwise. Following Jane Jacobs advice, this analysis can perhaps be a catalyst for the development of appropriate feedback loops for current and potential research practitioners, such that the energy expended for research and by researchers is more integrated into the nature of economies.²²

Management of research is nominally about developing flexible systems that respond to the needs of a client base. A "once size fits all" system usually fits no user or client properly. More often than not, such a system responds most effectively to those able to afford significant renovations to suit their purposes. Ad-hoc modifications also lead to the emergence of parallel systems which, when not in direct competition with one another for resources, are duplicating efforts.

In traditional, or as Gibbons refers to it - Mode 1 research - management plays a more limited role. Fairtlough states that disciplinary work, which underpins the new mode, depends on three types of coordination: bureaucracy, which ensures public money is spent correctly (with care and integrity); competition, which, by peer review, selects the most original and scientifically rigorous projects; and cooperation, which arises informally within communities of scientists.²³ Obvious difficulties arise when one considers the complications of research activities, which stretch across sectors. Who is to be considered a peer when the variety of stakeholders is increased? How to develop cooperation when the buffers of common education, experience and professional interests are not evident? How to ensure proper integrity when those responsible are also considered partners?

Case Studies of Active Joining

Given the complexity of the process and the diversity among project types, two sets of comparatively similar initiatives were chosen for analysis. The first set is the initial cohort of twenty-two proposals funded under the CURA program in Canada. The second set is the twelve organizational case studies presented in Sclove et. al., "Community-based Research in the United States".

The authors recognize that the statistical significance of these two sets may be questioned. While it is also recognized that the close association of the authors to the two case study sets may produce a bias in analysis, there are at least two mitigating factors, which were deemed significant to supporting the choice of data. With regards to the CURA cohort, the twenty-two cases were the

end result of a broadly based peer-review process that selected the proposals from among over 178 submissions. Each proposal was adjudicated against a set of criteria which determined their ability to foster innovative research, training and the advancement of knowledge in areas of importance for the social, cultural or economic development of communities; promote sharing of knowledge, resources and expertise between universities and organizations in the community; enrich research, teaching methods and curricula in universities and reinforce community decision-making and problem-solving capacity; and enhance students' education and employability through diverse opportunities to build their knowledge, expertise and work-force skills through hands-on research and related experience.²⁴ This process involved senior representatives of each of the sectors involved in the funding process and was managed at arm's length from the funding agency. Although staff is present during the process to ensure adherence to stated program guidelines, they do not directly participate in the deliberations and have no input in the final recommendation process.

In the USA case study set, the 12 organizations profiled, were chosen as a representative sampling of diversity of concerns, operating modes, institutional settings (both universities and independent nonprofit organizations), geographic locations and the demographic characteristics of their constituencies. They were also chosen on the basis of specific community-based research projects conducted by the organization, without any consideration of research management processes.

List of Canadian-based Case Studies

C1:	Alternative dispute resolution: A program of research and training, Vancouver, British Columbia.
C2:	Coastal communities and sustainable fisheries: Building harvester research and ecosystem resource management capacity, Antigonish, Nova Scotia.
C3:	Creating a community-university institute for social research: A partnership to forge healthy communities through research, Saskatoon, Saskatchewan.
C4:	Native knowledge and sustainable development: A new approach to decision making, Sainte-Foy, Quebec.
C5:	Valin-Otish mountains mid-north axis of recreation and tourism development, Chicoutimi, Quebec.
C6:	Equality, plurality and solidarity: New challenges in social relations between men and women, Montreal, Quebec.
C7:	Partnerships for children and families project, Waterloo, Ontario.
C8:	Enhancing the life experiences of school-aged children with special needs who receive therapy services, London, Ontario.
C9:	Memory and history in Nunavut, Sainte-Foy, Quebec.
C10:	Community-university research alliance on the social economy, Montreal, Quebec.
C11:	Research group on social and health aspects of substance abuse, Montreal, Quebec.
C12:	The Laurier Project: Museum resources for the teaching of Canadian history, Montreal, Quebec.
C13:	Newfoundland archaeological heritage outreach program, St. John's, Newfoundland.
C14:	Urban/rural municipal/regional infrastructures, climatic change, and

	epistemic communities in Eastern Ontario, Ottawa, Ontario.
C15:	The Daghida project: Language research and revitalization in a First Nation's community, Edmonton, Alberta.
C16:	Youth in conflict with the law: Alternative responses and community-based decision-making, Ottawa, Ontario.
C17:	Enhancement of youth resiliency and reduction of harmful behaviors leading to healthy lifestyle choices, St. Catherines, Ontario.
C18:	Gender and safety/security issues, Montreal, Quebec.
C19:	A cultural property community research collaboration, Victoria, British Columbia.
C20:	Voluntary sector capacity: Building through development of solutions to the evaluation challenges faced by the sector, Ottawa, Ontario.
C21:	Promoting community sustainability: Linking research and action, Toronto, Ontario.
C22:	Bridging the solitudes: A community-university research alliance linking education and labor market access, Toronto, Ontario.

List of United States-based Case Studies

US1:	Jacksonville Community Council Inc. (JCCI), Jacksonville, Florida: Assessing the fairness of public service distribution.
US2:	Harvard School of Public Health, Boston, Massachusetts: Helping citizens link leukemia to industrially contaminated wells.
US3:	Policy Research Action Group (PRAG), Chicago, Illinois: Determining health care needs of refugee women.
US4:	Neighborhood Planning for Community Revitalization, Minneapolis, Minnesota: Planning to revitalize an industrial area.
US5:	Center for Neighborhood Technology, Chicago, Illinois: Maintaining jobs and environmental standards in the metalworking industry.
US6:	Project South, Atlanta, Georgia: Following the money in Georgia politics.
US7:	Highlander Center, Investigating illegal disposal of toxic wastes, New

	Market, Tennessee.
US8:	Childhood Cancer Research Institute, Worcester, Massachusetts
US9:	Alaska Boreal Forest Council, Fairbanks, Alaska:
US10:	Applied Research Center, Oakland, California:
US11:	JSI Center for Environmental Health Studies, Boston, Massachusetts:
US12:	Urban University & Neighborhood Network, Toledo, Ohio:

Kinectives: Developing an Evidence-based Model of Active Joining

Using text and content analysis, the authors searched through the proposal texts and project descriptions for relative correlation between the traditional characteristics of research defined by Fairtlough, the new mode-2 described by Dodgson, and for evidence of trends specific to research projects involving CBOs and UBRs. The authors also looked for evidence of activities common to all managers as listed by Lutz²⁵: planning, organizing, staffing, supervising, control, coordinating, leadership, decision-making and representation.

Although further analysis needs to be done and the number of case studies should be increased, there are a number of trends that are indicative of a typical mechanism. These trends include:

- Strong correlation with Dodgson's list, indicating type-2 research,
- Weak correlation with traditional research characteristics, with the exception of sub-projects carried out by discipline based researchers,
- Evidence of common management activities as listed by Lutz, but with strong front-end process of negotiating acceptable parameters.

The observation that multi-sector research projects tend towards a front-end loaded process leads to considerations of the importance for how resources are allocated over the life cycle of projects. The tendency for lengthy deliberations over the applicability, relevance, desirability, and/or importance of an activity or set of activities led the authors to suggest that there is a link between success of an endeavor and the level of social capital present or available in a community or network.

Social Capital Link

“The accumulation of social capital...is a complicated and in many ways mysterious process. While governments can enact policies that have the effect of depleting social capital, they have great difficulties understanding how to build it up again.”²⁶

Social capital has recently been the topic of concerted discussion by such institutions as the World Bank²⁷, the OECD²⁸, and the North American Institute²⁹, among others. It is through the writings of several authors however, that the concept that originates with L.J. Hanifan³⁰ in 1916 has found itself again useful to public debate. In Bowling Alone, Putnam refers to social capital as connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them. This is echoed by Hall’s³¹ definition of social capital as the degree to which people associate regularly with one another in settings of relative equality, thus building up relations of trust and mutual reciprocity. Fukuyama adopts the conceptualization used by sociologist James

Coleman, in stating that social capital is the ability of people to work together for common purposes in groups and organizations, emphasizing the trust which develops as a consequence of these interactions. Boix and Posner³² are more formal in stating that social capital is...a set of institutionalized expectations that other social actors will reciprocate co-operative overtures. What each of these viewpoints share are active association and relationship resulting in trust and reciprocity. The importance of the results is linked to reduction of transaction costs in society generally; increased overall prosperity, institutional adaptability, and the potential for increased and enhanced life expectancy. There are also useful secondary concepts emerging from the above. Included are Putnam's "bridging" and "bonding" distinction and the similar concept of "degree of embeddedness" of networks by Fukuyama.

There is not current consensus on what are the best indicators of dense social capital. Most notably, Hall considers Britain not to have suffered the same decrease in social capital as described by Putnam in America, yet Hall acknowledges that there has been a reduction in the overall level of trust among citizens of Britain. Fukuyama, with Trust as the title of his book on social capital would most likely disagree with Hall. He might suggest, although Britain has maintained its gross level of association activities, that the quality of those associations has decreased. He might further stipulate that this is met with an accompanying decrease in the levels of reciprocity and trust necessary for deeply embedded social capital. Boix might further criticize Hall for not making the distinction "between collaborative interactions that take place in associations

that produce public goods and collaborative interactions that take place in associations that produce private goods.” The confusion is perhaps not about what does or does not produce social capital but to the degree of production. The question, which seems to be most thoroughly dealt with by Putnam, is what type of activity or network produces the best, most enduring, most resilient form of social capital. Putnam’s distinction, referred to earlier, suggests that “bridging” networks are better for linkage to external assets and for information diffusion. In dealing with possible negative aspects of social capital (sectarianism, intolerance, and racism), Putnam creates a series of “Social Capital Indices”, which show a strong correlation between social capital and tolerance, economic equality and civic equality. The authors submit that there is a possible correlation between existing network density, access to resources to assist network development, and success of a collaborative multi-sector research project.

Using Putnam’s indices of social capital, there is a direct positive correlation between social capital and economic equality, social capital and civic equality, and social capital and tolerance. Osberg’s³³ paper confirms that to some extent, a similar relationship exists in Canada. The communities with the highest levels of social capital are also those communities, which have higher levels of tolerance, more economic equality, and greater civic equality. These communities are disproportionately found in urban areas of central Canada. The inequity of projects from urban versus rural areas is a topic for a proposed study and is not discussed here. There is however a correlation between Putnam’s indices and the success of proposals to the CURA program (a comparative

analysis could not be performed on the US-based cohort, largely because these cases were not compiled as proposals for a specific funding program or with specific criteria in mind, other than geographic and topic breadth).

An analysis of the adjudication results of the CURA demonstrates that it is a catalyst for projects in some regions, an apparent consumer of social capital in others, and what appears to be a conductor of social capital in Quebec. The case of Ontario is interesting. There is an almost perfectly consistent ratio between percentage of submissions to the Letter of Intent phase (LOI), the portion then invited to submit to the Detailed Proposal phase (DP), and the final number of DPs funded. One suggestion is that, the wealthiest, most densely populated province, with the highest concentration of university researchers and organized community groups, finds itself in a very comfortable fit with the program objectives and requirements. Using the concepts of bonding and bridging capital, the proposals from Ontario seem to be representative of a relatively balanced system of bonding social capital that allows groups to work together and bridging social capital which allows them to link to external assets. A reactive criticism could be that the program was designed in Ontario (Ottawa), it included a large percentage of Ontario-based applications which could have influenced the intellectual debate, and there was good representation of Ontario on the adjudication committee. Hence, the Ontario results are not surprising.

If one wishes to accept the above criticism, the results for Quebec based applications cause the argument to fall apart. There is a strong relative increase in success in Quebec between the LOI phase and the funded DPs phase. It is

the only region in Canada where this happens. The Quebec government, for several decades, has been encouraging the type of activities also encouraged by the CURA program by investing 100s of millions of dollars of public money. Using the social capital argument, it can be argued that the networks, which create bonding, are of more maturity in Quebec than elsewhere. This could imply that the preparation work for a greater proportion of Quebec-based applications was focused on building bridges to resources and information rather than building the networks themselves.

The results in the four other regions of Canada are distinctly different from those described above. The North had no applications. The expression of “nothing ventured, nothing gained” was tossed around at one point during discussion of the results however, a more appropriate explanation might be the almost complete lack of infrastructure needed to support an application found in the North.

The situation of the Prairie and the Atlantic Provinces are remarkably similar. In both regions, the proportional representation from the LOI to the DP phase dropped by half. For the applications funded in either region (2 each or 9% of the national total), twice as much time and energy was devoted to the preparation of a successful application if one uses a gross addition of person-hours. This is explainable by the higher level of association and relationship-building activities necessary to create the bonding social capital needed to meet the requirements of trust and reciprocity.

It can be positively argued that although these regions are less successful in the initial phases of such a program, that the efforts expended will pay dividends in the longer term and eventually the proportional success rate will increase.

The mid-level success in British Columbia appears to be a direct result of its relative position as a "have" province, hence mirroring, to some extent, Ontario. It has also been subject to significant investments by the provincial government into its research infrastructure, thus mirroring Quebec, without the benefit however, of the long-term benefits yet to derived from those investments.

The strongest results are from regions with dense networks; large institutions, multiplicity of community-based organizations, alternate sources of funds and other hard resources, and long histories of collaborative research activities. Cross regional programs may help transfer needed resources to areas currently having difficulty achieving the critical level needed for success?

Examination of the adjudication results of the CURA competitions, the proposal contents, communiqués and conversations with project leaders from ongoing cases in Canada and the United States has led the authors to suggest that there is at least one model for describing the process of achieving successful collaborative multi-sector research projects: Kinective Research Management.

Kinective Research Management

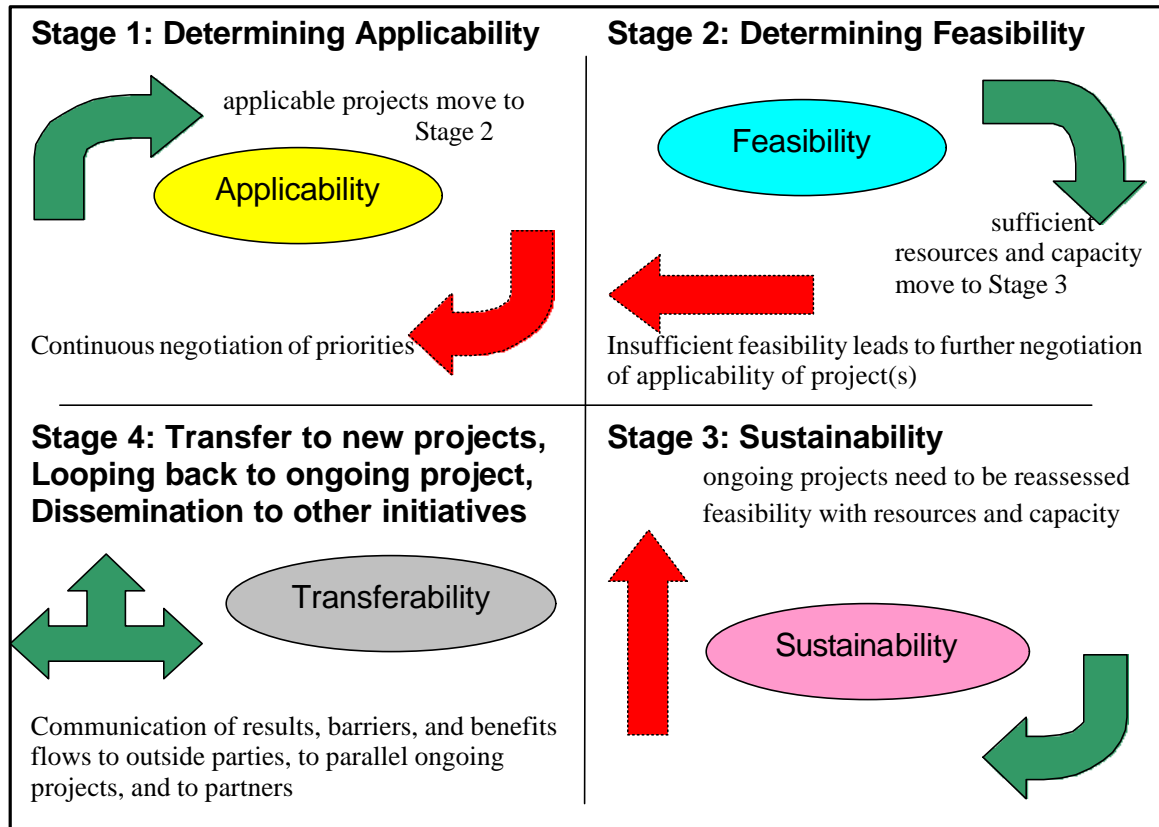
Kinective research management (KRM), with kinective, a derivation of kinetic and connective, meaning active joining, modifies Kolb's Learning Styles

and classic models of participatory action research (PAR)³⁴ for application to the types of research projects and networks represented by the cases chosen.

Although the authors would like to provide benchmarks for the various levels of activities involved in successfully bringing together community members, university researchers and scientists, and funding agencies, at present the analysis only provides descriptions of what they consider to be the stages of a successful project or network.

The kinective model is composed of four stages: determining applicability, determining feasibility, sustainability, and transfer - to new projects, looping back to ongoing project, and dissemination to other initiatives. The first two stages are front-end loaded and the last two relate to dividends of activities or as an indicator of the process' value. Value is not strictly taken to be an aggregate of resources, but considers the **density** of stakeholder relationships in the research process, a direct relationship to the concept of social capital.

Kinective research management (KRM)



Stage One: Determining Applicability

Democratic participation appears as an underlying principle of collaborative research projects. Determining applicability includes defining research questions and choosing methodologies, which will address and hopefully provide solutions for all parties involved – **mutually beneficial results**.

This stage is about harnessing the ability of each participant in the research process to create an alignment of motives, needs, and talents, which is both an efficient and effective use of diverse expertise. For community representatives, that expertise seems to be based in their ability to identify problems, needs, and

historical precedents. The expertise of the university-based researcher resides in their knowledge of research techniques and access to resources; intellectual, financial, infrastructures, among other. Other sectors bring further expertise including political influence, critical assessment, or sheer energy.

This process however is difficult. Dr. John Robinson, Director of the Sustainable Development Research Institute at the University of British Columbia in Vancouver, Canada, does not overstate the case in saying, that if there is not blood on the floor you are not involved in a collaborative relationship – a reference to the co-labor definition.

Features of this stage include:

- Determining needs and desires;
- Determining goals and targets;
- Anticipating desired substantive results;
- Acculturation and re-socialization;
- Outlining barriers – historical, infrastructure, legislative, etc; and
- Prioritization.

Each feature must have representation from each sector and chosen approaches are then negotiated and modified as a consequence of reaction from alternate perspectives. Needs and desires for community-based organizations are often dramatically different than those of researchers faced with meeting the demands of the traditional merit system of universities. Hence, the emphasis on choosing mutually beneficial directions cannot be over-emphasized.

The onerous nature of this process often means that many projects never get off the ground. Furthermore, if sufficient acculturation and re-socialization is not performed, many projects initiated will quickly or eventually collapse under stresses of misunderstanding or inappropriate activities.

Stage Two: Determining Feasibility

Once potential partners decide to engage in collaboration and have chosen on what to collaborate, the discussion turn to feasibility. Obviously, some of this will have been addressed during the applicability stage.

Feasibility refers to both hard and soft resources. Hard resources include the financial and in-kind contributions of partners, the physical infrastructure available for use, data sets, availability of subject matter, etc. Soft resources refer principally to human capital and social issues. Do the people involved have the intellectual capacity, experience, skills, or track record to accomplish their goals? Is there the commitment and willingness to work together over the length of the project(s)? Is there respect of alternative perspectives? What are alternative resources available should one or several partners choose to back out?

The decision to accept the feasibility of activities means that the process enters into discussions of sustainability. However, judgements of insufficient feasibility require partners to return to negotiation of applicability. This does not necessarily mean that all aspects must be re-negotiated, although priorities may

have to be re-assessed, new partners invited to participate, or timetables or projects scopes are redesigned.

All project leaders consulted supported the concept that this process was front-end loaded. It was also recommended that programs supporting collaborative research initiatives should permit resources for soft activities such as the acculturation and re-socialization processes. Although there may be a public perception that these are superfluous to the “real” research, the authors received strong assurances that without them, the direct probability of failure increases substantially.

Stage Three: Sustainability

Sustainability refers to more than “feeding the beast” of research project infrastructure although it is recognized that once begun, research activities require ongoing inputs of resources. In this context, sustainability refers to an ongoing process of returning to the discussions of Stage 1 and Stage 2 to reassess changes in priorities resulting from new information and examination of that information, as well as to reconfirm the feasibility of activities. It also refers to implementing incremental improvements into the process; new equipment, better forms of communication, dealing with unforeseen ethical, economic, and environmental changes resulting from the activities undertaken.

Sustainability also refers to the potential “polypotency”³⁵ of the results of collaborative research initiatives. Polypotency means “potent in many ways” and is contrasted to the term of omnipotence, which means potent in all ways. The

case studies examined demonstrated polypotent tendencies. Sustainability of activities appear directly linked to exploiting opportunities which evolve.

Stage Four: Transfer - to new projects, looping back to ongoing project, dissemination to other initiatives

Transferability and sustainability described above are considered dividend stages. It is at these stages that the true values of the substantial investments of the first two stages are realized. Transferability refers to closing the loop between the production of research and its implementation in communities. The triple-helix model of research demonstrates that when the users - business and government - are involved in deciding what research is funded, including basic research, the results of that research is picked up and used more readily, whether in new research projects, in production processes, management systems, or problem solving. It may be argued that research is a serendipitous activity. There are plenty of examples to support this claim including penicillin, post-it notes and Plexiglas. Serendipity is often used by traditional scientists as a rationale for supporting "A" base funding for research. The authors do not argue against serendipity however, they caution that the focus of research has much to do with what "discoveries" happen. Concerted efforts focused on solving community-defined problems will result in more "serendipitous" discoveries that result in more broadly held benefits.

The inclusion of a transfer stage is recognition that dissemination is more than publishing in journals or writing reports. It includes presentations that a lay

person can understand, ask questions about, and relate back to their particular circumstance. It also recognizes that the effects of research activity have purpose and effect beyond the particular issue under investigation. Sclove's concept of polypotency challenges researchers to consider what are the external effects of their activities - both positive and negative. Transferability in this context is linked to the precautionary principle. The precautionary principle has been defined as "when an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically". It includes taking action in the face of uncertainty; shifting burdens of proof to those who create risks; analysis of alternatives to potentially harmful activities; and participatory decision-making methods.³⁶

The claim is made that by including the concept of transferability into the equation of what, how, and if research is undertaken, also included is implementation of the precautionary principle. When there is deliberate consideration of how the results of a particular activity will affect communities and the people, who belong to these communities, there is also a fundamental consideration of the possible negative effects of that action.

Limitations and Suggested Program of Research and Discussion

This paper is an initial attempt to describe the changing topography of the research enterprise. It touches only a small part of the immense amount of activity which is producing benefits for those not necessarily served by the triple-

helix of industry-government-university based research. This preliminary attempt to frame how the research process is managed and what are the stress points on individuals and resources is in need of much more thorough investigation.

Although the perspectives, knowledge and experience of the authors limit it, the hope is that interested individuals and groups will react to this work and fill in many of the gaps that are both apparent and unanticipated.

These gaps include examining further cases beyond those chosen to confirm or reject the model proposed or to suggest better models of research management.

It is suggested that the triple-helix may be modified or expanded to include further involvement of community-based interests and experience. How this may be accomplished is open to suggestion. There needs to be a detailed comparative analysis of programs funding multi-sector research alliances with an emphasis on the inclusion of community-based organizations. The authors suggest that many of the resources now producing research that is of undetermined or even of questionable value could be channeled into problem solving and asset building activities in communities across the spectrum.

There needs to be further examination of the poor ability of funding agencies set up to address mode-1 research to deal with the process and policy changes needed to adequately support the emerging mode-2. If the research trend described in this paper continues, (and as we expect grows) it is expected that the resulting institutional crises will impact negatively on those who ignore mode-2 activities. Beyond the funding mechanisms are barriers related to the

peer-review system, the merit system, the changing roles of the various institutions involved in supporting and structuring the research process, the basis of which is questioned when the range of partners is increased or modified.

Inequities across regions and communities are a fundamental problem that may be addressed by the creation of problem-focused research initiatives. Obvious examples include environmental problems, which are interlinked across boundaries and communities, immigration and settlement problems, etc. The normalization of programs, which support and encourage these initiatives, is a crucial aspect of their ability to address the needs of communities and to better harness the skills available within the current research infrastructure.

There is a need for better understanding the workable communication strategies between individuals representing diverse and possibly conflicting interests.

The range of possibilities for further debate and investigation stretches across intellectual, cultural, geographic and social boundaries. It is virtually limitless and is characteristic of most disciplinary foci, thus there are more questions than answers. The essential question asked here is based on the consideration that research has value. The determination of that value however, is directly linked to a process which includes who is determining it, what processes are included, and what is done with the results. Traditional research is purposely exclusionary. What is suggested here is how could research be purposely inclusionary?

Appendix One: Description of Canadian-based Case Studies

C1: Alternative dispute resolution: A program of research and training.

An interdisciplinary team drawn from law, psychology, sociology and education is exploring and evaluating alternatives to adversarial approaches to legal disputes, which are often costly, slow and emotionally draining for all those involved. In active collaboration with professional, government and community groups, it will look at alternative dispute resolution (ADR) mechanisms for mediation in personal injury accident cases, family law, construction law, and human rights cases. Its assessments will compare cases resolved through the alternative mechanism with others where mediation was not attempted or did not succeed. The CURA will also feed into a new program of ADR instruction at University of British Columbia's Faculty of Law to train a new generation of lawyers in non-adversarial dispute resolution.

C2: Coastal communities and sustainable fisheries: Building harvester research and ecosystem resource management capacity.

In this CURA, Mi'Kmaq and non-native fish harvesters organizations focus on developing their current applied research capacity in order to enhance their ability to collaborate in managing marine resource ecosystems. This is particularly important in light of the recent Marshall decision handed down by the Supreme Court and the fact that these organizations are gradually assuming a more direct role in the governance of marine ecosystems and resource harvesting. The non-native and Mi'Kmaq groups work with their university partners to enhance their expertise in areas such as traditional ecological knowledge, family and community histories in fishing, mapping local marine habitats, developing economic opportunities in their area, and many others. The CURA will also provide applied research internships for social sciences and business students.

C3: Creating a community-university institute for social research: A partnership to forge healthy communities through research.

This Saskatoon-based CURA will serve as a focal point for community-based research and strive to integrate the social and economic research needs and practical knowledge of community-based organizations with the technical expertise available at the University in three main areas: (1) community health determinants and health policy; (2) community economic development; and (3) quality of life indicators. Its overall goal is to build the capacity of researchers, community-based organizations, and ordinary citizens to enhance the quality of life in healthy and sustainable communities throughout Saskatchewan. Among other things, it will provide training to students through scholarships and internships, communicate its findings to the community through a variety of channels, create a "data warehouse" accessible to the public, and develop culturally and socially appropriate research techniques.

C4: Native knowledge and sustainable development: A new approach to decision making.

This CURA is the result of long-term cooperation among researchers, practitioners, professionals (Native and non-Native) and Native communities, particularly the Cree communities of James Bay. The objective is to gather new information on Native peoples' knowledge and its role in sustainable development initiatives in Native settings, and to create new training, communication and planning tools for the benefit of local communities and the research community. It is also designed to strengthen communities' capacity to make decisions on development options, to act on and implement such decisions, and to anticipate and manage the consequences, especially with respect to land-use planning and wildlife resource management - two major issues that affect all aspects of the social, cultural, political and economic life of Native communities.

C5: Valin-Otish mountains mid-north axis of recreation and tourism development.

The purpose of this CURA is to conduct a feasibility study on the development of the recreation and tourism industry of the mid-north area of the Saguenay-Lac-Saint-Jean region between the Valin and Otish Mountains. The scenarios being considered include a linear park, a route reserved for recreational purposes and a forest trail. With these goals in mind, the CURA is taking an innovative approach to bringing together the local Native and non-Native communities by creating culture- and ecology-based business partnerships. The project includes research, education and training and knowledge dissemination components.

C6: Equality, plurality and solidarity: New challenges in social relations between men and women.

The aim of this CURA is to contribute to the development of new knowledge, analytical models and action strategies on social change in light of the new challenges posed by the evolving nature of social relationships between men and women and true gender equality in today's rapidly changing world. Working in the area of feminist research and practice, the community and university partners will focus their activities on three main themes: the family, the economy, and politics and citizenship. These activities include research, training and knowledge transfer. They are designed to broaden existing collaborative efforts and make them more systematic, give rise to and monitor new initiatives, and bring the various partners involved to interact extensively - in working together with women's groups, producing new knowledge, and mentoring and coaching students.

C7: Partnerships for children and families project.

This CURA focuses on practical and research issues related to current preoccupations with improving child welfare and children's mental health services throughout Ontario and Canada. Its community partners are central participants

in regional reform initiatives of these services. Their extensive hands-on experience and the lessons learned from their best practices, combined with the leading-edge research expertise of university researchers, give the CURA rich insights into the best ways to foster improvements in existing policies and programs, delivery systems, administration and interventions and to enhance the lives of large numbers of disadvantaged children and their families. One of the CURA's priorities is to identify important areas within organizations and the population generally where it is possible to demonstrate the impact of new and promising ways of doing things.

C8: Enhancing the life experiences of school-aged children with special needs who receive therapy services.

This CURA looks for practical ways to enhance the quality of life of school-age children with special mobility, communication and fine motor skills needs by looking at (1) the factors that affect the manner in which they function and participate in school and the broader community; (2) effective ways of providing them with therapy services; and (3) effective strategies to change attitudes and increase the awareness of community members regarding the special needs of these children. It will focus on what is practical and useful in the daily life experiences of children with special needs. The CURA will also offer new interdisciplinary research training opportunities for university students (the future service providers) and community-based therapists and teachers to enhance their research skills and foster the practical applications of the team's work.

C9: Memory and history in Nunavut.

The aim of this CURA is to explore and highlight the oral tradition of the Nunavut Inuit. It is a continuation and an expansion of an innovative oral history project that is based on close cooperation between local and outside researchers, students and Inuit elders and is designed to collect, preserve and analyze the historical knowledge of the elders of Iqaluit and disseminate it effectively in Nunavut and elsewhere. The activities focus on three themes: (1) shamanism and Christianity; (2) communities and identities; and (3) life stories, oral history and ethno history. The result will be the consolidation and systematization of the collective memory of a people - a people who find in their culture and traditions points of reference as well as major sources of inspiration and identity, both individual and collective, that help them deal with the modern world and changes such as those that led to the recent creation of Nunavut Territory.

C10: Community-university research alliance on the social economy.

The objective of this CURA is to meet research and training requirements in various sectors of the new social economy, which has been a major force since the late eighties: local and regional development; continued employment and integration through employment; sustainable development; initiatives with Native people and cultural communities; specialized services for individuals, such as home care and assistance for young children; and community and social

housing. The CURA's activities will help to broaden cooperation between the groups and people working in the above sectors, thereby providing a systematic framework for existing knowledge and skills and laying the foundations for the acquisition of new knowledge that will contribute to community development based on such values as autonomy and responsibility, democracy, quality of life, gender equality and sustainable development. By participating, students will acquire professional skills and qualifications needed to deal with the new social economy and its challenges.

C11: Research group on social and health aspects of substance abuse.

The purpose of this CURA is to establish prevention and healing strategies to combat substance abuse, a problem that may affect up to 10% of the adult population and represent costs equivalent to about 2.7% of the GDP. Basically, the partners are endeavoring to describe and understand the personal profiles of actual and potential substance abusers and develop, in cooperation with the communities concerned, more effective social and health response strategies. They are focusing on often-neglected factors in substance abuse such as the socioeconomic dimensions of the family, community and professional environments. The project will help all participating students to acquire the knowledge, skills and personal qualities needed to pursue a productive career in the field and will enhance their employability by integrating them in team projects and giving them exposure to the professional community involved in substance abuse treatment.

C12: The Laurier Project: Museum resources for the teaching of Canadian history.

In this CURA, historians, history teachers, and members of the public history community work together to integrate museum-based resources into the Canadian history curriculum at the elementary and secondary levels to give students a richer understanding of their history and heritage. History often comes alive when people can see what their forebears saw and hold what their hands shaped. This happens in museums, where the images, documents, and objects that make up our collective heritage are collected and preserved. However, access to museums is often limited by distance, time, and other factors, which is why the CURA is exploring traditional as well as new technological approaches, particularly the Internet, to bring museum artifacts closer to teachers and students, in their classrooms and their homes.

C13: Newfoundland archaeological heritage outreach program.

This CURA aims at facilitating information transfers to and from local community heritage organizations in Newfoundland and Labrador engaged in or planning archaeological projects. The community partners will benefit from expert assistance in evaluating proposals for archaeological site development as well as information about prehistoric and historic artifacts and cultures, conservation, cataloguing, site interpretation, and funding. The academic participants will attempt to gain a better understanding of the non-archaeological reasons which

drive the development of sites, the various ways in which communities access their past, and the factors critical to the success or failure of local projects. Overall, the exchange of information and expertise will contribute to the social, cultural and economic development of local communities, promoting the research and interpretation of their own archaeological heritage, reinforce community-level decision-making and problem-solving, enhance student education and employability, and enrich teaching and research at Memorial University.

C14: Urban/rural municipal/regional infrastructures, climatic change, and epistemic communities in Eastern Ontario.

This CURA will assess the extent to which urban and rural municipalities have the institutional capacity to adapt to climatic change and its impacts on a region's overall water resources. First, it will detail and analyze these impacts and draw up a list of anticipatory and remedial adjustments that should be made in response. These findings will then be applied to 17 Eastern Ontario municipalities and climatic impacts on their natural (i.e. ecosystems), physical (i.e. engineering works, utilities, etc.), human (i.e. health care, welfare, etc.) and social (i.e. institutional organizations, laws, etc.) infrastructure will be assessed. The CURA will also attempt to unify and mobilize regional expertise from the public, private and voluntary sectors to better address future problems and issues that are too complex for municipalities, universities, and other stakeholders operating alone to deal with.

C15: The Daghida project: Language research and revitalization in a First Nations community.

Named after a Chipewyan word meaning "we are alive", this CURA has a triple objective: (1) to conduct a linguistic study of the Chipewyan language and its speakers on and around the Cold Lake First Nations reserve; (2) to reintroduce the language into daily life at the reserve; and (3) to develop means to transmit the language and culture of this community to its younger and future generations. The First Nations and university partners want to counter the rapid decline of this language - which parallels the decline of most aboriginal languages in Canada - through a concerted effort, which is expected to help restore the community's wellness and pride in its identity and culture. In addition to increasing awareness of the essential value of Canada's indigenous languages, the CURA's work will foster social development at the reserve in the form of education training and a community-managed interpretive center.

C16: Youth in conflict with the law: Alternative responses and community-based decision making.

Considering that people with strong ties to their communities - including opportunities for personal growth and access to social services - are less likely to offend or re-offend, the community and university partners in this CURA will focus on a district where youth crime rate is high and attempt to build the "social web" necessary for healthy and successful transitions into adulthood. Using an innovative approach, they will strive to create a context in which young offenders

can take responsibility for their actions, restitution can be made to their victims, offenders can be reintegrated into their community, and harmony can be restored to the community. The team will provide the approximately 200 youth expected to complete this restorative justice program with enhanced support aimed at the spiritual, educational, vocational, cultural, family, health and leisure aspects of their lives, as well as a unique opportunity to reintegrate into school, work and their communities.

C17: Enhancement of youth resiliency and reduction of harmful behaviors leading to healthy lifestyle choices.

This CURA brings together the expertise, knowledge and resources of community partners and university-based researchers and students to examine the resilience of today's adolescents, including "high-risk" groups. Particularly, the CURA will examine the ability of adolescents to bounce back from problem behaviors. They will also look at the factors influencing positive lifestyle choices in areas such as substance use and gambling, as well as physical activity, sexual activity, and academic achievement. The partners will focus on bringing risk behavior down to a moderate level to protect "problem youth" from adverse consequences. In a more preventative way, the CURA will devise an extensive program of activities to support the development, enhancement and implementation of school- and community-based youth lifestyle policies and interventions fostering positive coping skills in all adolescents. The CURA will also disseminate its findings to parents, youth and professionals, and network nationally and internationally with other groups focusing on youth issues.

C18: Gender and safety/security issues.

The objective of this CURA is to develop innovative tools to meet the specific needs of women who have lived in situations of conflict. The community and university partners are trying to gain a better understanding of the many aspects of the life of women who have come to Canada after living in a climate of violence, constant insecurity and systematic violation of human rights in other countries. Their aim is to (1) identify these women's needs and available strategies to help them deal with the prevailing situation in their country of origin; (2) develop and implement integration programs in Canada; and (3) consolidate the process of sharing expertise and resources with a number of women's associations in Canada and in countries in conflict. The approach could help to improve programs promoting the integration of female refugees into Canadian society.

C19: A cultural property community research collaboration.

Recognizing the increasing importance of greater outreach in the areas of art and culture, this CURA links the expertise and resources of the University of Victoria (History of Art) and partners within the BC cultural community, for projects such as joint exhibitions, catalogue web-sites, collection inventories, high school cultural curriculum development, visually interactive databases, and many others. Among other things, the partnership is expected to (1) expand to

other community organizations; (2) develop professional links among curators, educators, and community-based interest groups in BC and Yukon; (3) give students opportunities to work collaboratively with real collections and museum professionals and gain experience relevant to future employment; and (4) contribute to the economy by serving such sectors as education, tourism, and recreation.

C20: Voluntary sector capacity: Building through development of solutions to the evaluation challenges faced by the sector.

The purpose of this CURA is to bring together the voluntary sector with university researchers and students to develop solutions to the evaluation challenges currently faced by voluntary organizations as the pressures to demonstrate the value of their work mount. The partners will assess current evaluation needs and existing strengths, build the first national inventory of evaluation tools, create new resources or modify existing ones, test these resources by conducting a pilot program in various communities, and even evaluate their own performance as a CURA. They will create a national resource center and learning network accessible by voluntary organizations anywhere in the country and spark an ongoing dialogue among voluntary organizations, funders, and governments about the sector's evaluation needs and capacities.

C21: Promoting community sustainability: Linking research and action.

This CURA aims to increase collaboration among universities, governments and non-profit groups in promoting initiatives for a more sustainable society. To date, this collaboration has been relatively weak, in spite of the varied and complementary resources each sector has to offer. The partners will carry out an array of complementary projects linking research and action and ranging from assessing capacity for urban food growth, through expanding the role of non-profit organizations in environmental governance, to providing professional development for sustainable learning. A key benefit of this work will be enhanced social and economic community development characterized by action and research initiatives that promote and achieve tangible gains for sustainability. The partnership should also lead to long-lasting community-university collaboration and increased opportunities for hands-on experience for university students, researchers and various community groups.

C22: Bridging the solitudes: A community-university research alliance linking education and labor market access

This CURA brings together community-based experience and university research expertise to explore new ways of moving beyond the tenacious systemic barriers preventing traditionally marginalized groups from participating fully in the labor market and society. It will focus on opening access to higher education and professional training for youth from such groups and carry out cutting-edge research on linking education and training to innovative paths into the labor market. This will include a work-placement program developed and

supervised jointly by the partners. The CURA will also attempt to deepen and broaden knowledge sharing between university, college and community organizations, and change the culture in universities and colleges to enhance research engagement within the community as well as equity in education and, ultimately, employment.

Appendix Two: Description of United States-based Case Studies

US1: Jacksonville Community Council Inc. (JCCI), Jacksonville, FL: Assessing the fairness of public service distribution.

JCCI is a broad-based civic organization that performs research intended to improve the quality of life in Northeast Florida. In 1994, JCCI examined Jacksonville's public services--including streets and drainage, parks and recreation, and police and fire services--to determine their geographic distribution, and to evaluate whether needs were being met throughout city. Their research led to the creation of an annual "Equity Index" that assesses the distribution of public services in the Jacksonville area. One early result was that the Sheriff's Office implemented a new sector system for more equitable patrol services.

US2: Harvard School of Public Health and the JSI Center for Environmental Health Studies, Boston: Helping citizens link leukemia to industrially contaminated wells.

During the 1970's parents in Woburn, Massachusetts noticed an alarming pattern of leukemia, urinary tract, respiratory disease, and miscarriages in their town, and wondered if the water supply was contaminated. State officials told them the water was safe. With the help of scientists at the Harvard School of Public Health, they initiated their own epidemiological research and identified industrial carcinogens in the town's well water. Their civil suit resulted in an \$8 million out-of-court settlement (detailed in the best-selling book and forthcoming Hollywood movie, *A Civil Action*) and provided major impetus for congressional action to reauthorize federal Superfund legislation.

US3: Policy Research Action Group (PRAG), Chicago: Determining health care needs of refugee women.

PRAG, a collection of Chicago-based academics and community activists, has built a sophisticated network that connects research with grassroots activism. For example, PRAG found an intern from Northeastern Illinois University to work with a community-based organization (the Mutual Aid Associations of Chicago Collaborative) that sought data on the health care needs of refugee women in the Uptown neighborhood of Chicago. In cooperation with Mutual Aid, the intern designed and administered a questionnaire that was given to 85 refugee women. As a result of the research, The Mutual Aid Associations started a women's health program that offers refugee women greater access to the health services they need.

US4: Neighborhood Planning for Community Revitalization: Minneapolis: Planning to revitalize an industrial area.

Residents and business owners in the South East Industrial Area (SEIA), just outside Minneapolis, were concerned that their area's viability was threatened by increasing pollution, over-strict zoning, crime, and the lack of

sidewalks, bike paths, and park space. In addition, various groups affected by the SEIA had a contentious history and had not worked together for years. 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 working jointly through NPCR and the SEIA community members conducted a research project, which established that an urban area could compete with the suburbs and still retain industrial and heavy commercial business. As a result, the city, county, and state agencies formed the Southeast Economic Development Steering committee, charging it to prepare a master development plan for the area. This project was funded by NPCR and involved 960 hours of time committed by graduate student researchers.

US5: Center for Neighborhood Technology, Chicago: Maintaining jobs and environmental standards in the metalworking industry.

In Chicago, metal finishing provides many jobs in low-income neighborhoods. During the 1970's and 1980's, two waves of environmental regulation caused the immediate loss of 2,500 metal finishing jobs when non-complying plants were forced to shut down. It became clear that environmental regulations threatened this key industry and thousands of related jobs. The nonprofit Center for Neighborhood Technology (CNT) collaborated with industrial development organizations to conduct an in-depth study of options for bringing Chicago's remaining metal finishers into regulatory compliance. CNT helped the groups identify the problems facing metal finishers, access free environmental audits of their plants, investigate alternative technologies for compliance, determine criteria for a centralized approach that would offer economies of scale, and secure financing for implementation. This effort represented a remarkable collaboration between manufacturers and environmentalists.

US6: Project South, Atlanta: Following the money in Georgia politics.

Project South is a grassroots education and action-research organization concerned with social and racial justice in the southeastern U.S. In 1995, with support from the Center for Responsive Politics--a nonprofit research group in Washington, DC--Project South launched an investigation into how money affects Georgia politics. Three 2-person teams studied the campaign contributions received by members of the Georgia State General Assembly and the Lieutenant Governor. Each team included a grassroots community member and a scholar-activist with more formal research training. The teams tracked and classified all reported contributions from individuals, corporations, and Political Action Committees. 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 wealthy individuals). Overwhelmingly, the legislators studied come from the professional class that owns and manages businesses and real estate throughout the state. In Georgia, Project South is a member of a coalition that is confronting the state legislature

on these issues. The study results are also being used in the national movement for campaign finance reform.

US7: Highlander Center, New Market, TN: Investigating illegal disposal of toxic wastes.

Beginning in 1980, the Highlander Research & Education Center began collaborating with Yellow Creek Concerned Citizens of Kentucky (YCCC), who opposed Middlesboro Tanning Co.'s management of hazardous chemicals. Tannery sludge overran the municipal sewage treatment plant, polluting drinking water. But company officials and owners denied there was a problem. With Highlander's help, YCCC conducted health surveys, videotaped waste dumping, and worked with university researchers to determine the extent of poisoning. As a result, YCCC was able to get a safe water line to the community and file a lawsuit. Ten years later a jury found the tannery owners guilty of gross negligence and, together with the city of Middlesboro, ordered them to provide \$11 million for a community health fund.

US8: Childhood Cancer Research Institute, Worcester, Massachusetts

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. 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. This model was unique in seeking to overcome traditional top-down approaches to research, risk communication, and risk management of concern to Native Americans. Key to the model's success is that CCRI shared research funding equitably with community groups. 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.

US9: Alaska Boreal Forest Council, Fairbanks, Alaska:

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, and a series of political conflicts ensued. Part of the opposition to the contracts 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 discussion in the fall of 1995 and a workshop in 1996. During the roundtables, facilitators highlighted areas of common ground, and the result was a consensus to undertake eight projects with detailed action plans that would lead the community in the direction of sustainable forestry.

US10: Applied Research Center, Oakland, California:

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. The community-based organizations and CTWO turned to the Applied Research Center (ARC) for help in developing an educational workshop that could be used in the new campaign. Throughout the campaign, workshop participants and organizers collaboratively identified issues in need for further research and elaboration. ARC provided research, CTWO provided campaign structure, and local groups contributed ideas and concerns for the campaign to address. In 1997 ARC assembled the procedural information and results from 15 workshops into a manual for use by other community groups interested in replicating the action education model.

US11: Good Neighbor Project, Cambridge, Massachusetts: 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. The U.S. Environmental Protection Agency (EPA) classifies alumina silica as "a chronic and acute health hazard". 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 and complained that safety and environmental problems plagued the plant. Sun's Board of Directors had previously endorsed a "green code of ethics" for the refinery, so a group of community members attempted to hold the refinery accountable for safety and environmental performance. This group sought out the assistance of the Good Neighbor Project for Sustainable Industries, which collaborated with the community groups to develop a sophisticated agenda for improving conditions at the refinery. While highest levels of Sun Oil endorsed the principles of the agenda, plant management was reticent. Management has, however, conceded the need to continue dialogue and negotiations with the neighborhood groups.

US12: Urban University & Neighborhood Network and The Coalition to Access Technology & Networking in Toledo, Toledo, Ohio

In 1994, the Urban University Neighborhood Network (UUNN) was established in an effort to develop links between core groups of community-based organizations

and academic researchers in Ohio's cities. UUNN's first priority was to invite grassroots participants into the network, although UUNN staff ran into difficulties in deciding on a research project for the work. After meeting face-to-face with many community-based organizations, UUNN chose to survey the computer hardware, software, skills and Internet access of community-based organizations in the seven cities. This was topic suggested by a community-based organization in an earlier meeting. The Toledo chapter of UUNN began to establish itself as a strong organization and began a collaborative project with the Toledo-based Vistula Management, leading to the creation of the Coalition to Access Technology & Networking in Toledo (CATNeT). Due to funding issues and internal conflicts, UUNN disbanded in the fall of 1996. CATNeT, however, continues to exist and provide Toledo-based communities with access to computer technologies.

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